# H3C CR16000-F Routers

## Hardware Information and Specifications

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# Preface

This document describes the hardware information and specifications for the H3C CR16000-F routers, including router overview, removable module compatibility and specifications, and cables.

This preface includes the following topics about the documentation:

- Audience.
- Conventions.
- Documentation feedback.

# Audience

This documentation is intended for:

- Network planners.
- Field technical support and servicing engineers.
- Network administrators working with the CR16000-M routers.

# Conventions

The following information describes the conventions used in the documentation.

### Command conventions

| Convention | Description |
|---|---|
| **Boldface** | **Bold** text represents commands and keywords that you enter literally as shown. |
| *Italic* | *Italic* text represents arguments that you replace with actual values. |
| [ ] | Square brackets enclose syntax choices (keywords or arguments) that are optional. |
| { x \| y \| ... } | Braces enclose a set of required syntax choices separated by vertical bars, from which you select one. |
| [ x \| y \| ... ] | Square brackets enclose a set of optional syntax choices separated by vertical bars, from which you select one or none. |
| { x \| y \| ... } * | Asterisk marked braces enclose a set of required syntax choices separated by vertical bars, from which you select a minimum of one. |
| [ x \| y \| ... ] * | Asterisk marked square brackets enclose optional syntax choices separated by vertical bars, from which you select one choice, multiple choices, or none. |
| &<1-n> | The argument or keyword and argument combination before the ampersand (&) sign can be entered 1 to n times. |
| # | A line that starts with a pound (#) sign is comments. |

### GUI conventions

| Convention | Description |
|---|---|
| **Boldface** | Window names, button names, field names, and menu items are in Boldface. For example, the **New User** window opens; click **OK**. |
| > | Multi-level menus are separated by angle brackets. For example, **File** > **Create** > **Folder**. |

## Symbols

| Convention | Description |
|---|---|
| **WARNING!** | An alert that calls attention to important information that if not understood or followed can result in personal injury. |
| **CAUTION:** | An alert that calls attention to important information that if not understood or followed can result in data loss, data corruption, or damage to hardware or software. |
| **IMPORTANT:** | An alert that calls attention to essential information. |
| **NOTE:** | An alert that contains additional or supplementary information. |
| **TIP:** | An alert that provides helpful information. |

## Network topology icons

| Convention | Description |
|---|---|
|  | Represents a generic network device, such as a router, switch, or firewall. |
|  | Represents a routing-capable device, such as a router or Layer 3 switch. |
|  | Represents a generic switch, such as a Layer 2 or Layer 3 switch, or a router that supports Layer 2 forwarding and other Layer 2 features. |
|  | Represents an access controller, a unified wired-WLAN module, or the access controller engine on a unified wired-WLAN switch. |
|  | Represents an access point. |
|  | Represents a wireless terminator unit. |
|  | Represents a wireless terminator. |
|  | Represents a mesh access point. |
|  | Represents omnidirectional signals. |
|  | Represents directional signals. |
|  | Represents a security product, such as a firewall, UTM, multiservice security gateway, or load balancing device. |
|  | Represents a security module, such as a firewall, load balancing, NetStream, SSL VPN, IPS, or ACG module. |

## Examples provided in this document

Examples in this document might use devices that differ from your device in hardware model, configuration, or software version. It is normal that the port numbers, sample output, screenshots, and other information in the examples differ from what you have on your device.

# Documentation feedback

You can e-mail your comments about product documentation to info@h3c.com.

We appreciate your comments.

# Contents

# 1 About the router

## Chassis views

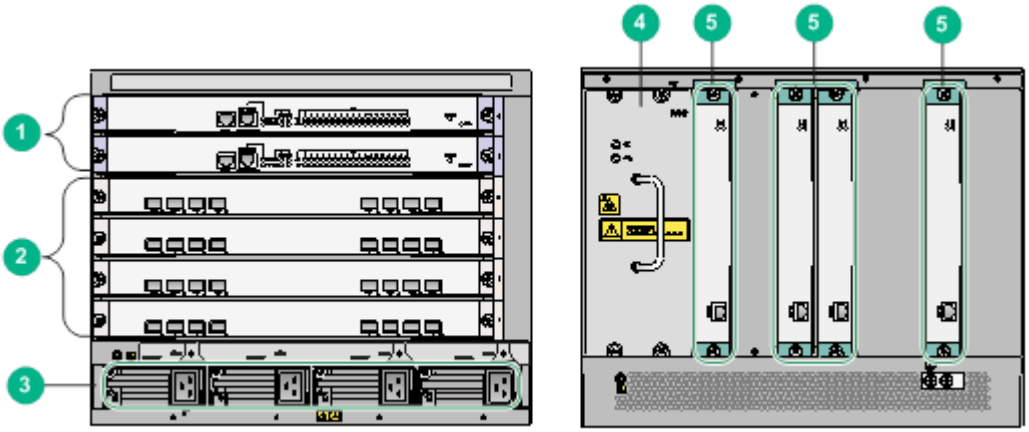
H3C CR16000-F routers are CR16000 high-end routers, which include the following models:

- CR16006-F
- CR16010-F (one fan tray)
- CR16010-F (two fan trays)
- CR16010H-F (five switching fabric modules)
- CR16010H-F (four switching fabric modules)
- CR16010H-FA
- CR16014-F
- CR16018-F (five switching fabric modules)
- CR16018-F (four switching fabric modules)
- CR16018-FA
- CR16003E-F
- CR16005E-F
- CR16010E-F

**NOTE:**

- The chassis views in this section are for illustration only.
- The available chassis models and accessories vary by country and region. This document describes only the preceding models. For the chassis models and accessories available in your country or region, contact the local H3C marketing personnel.

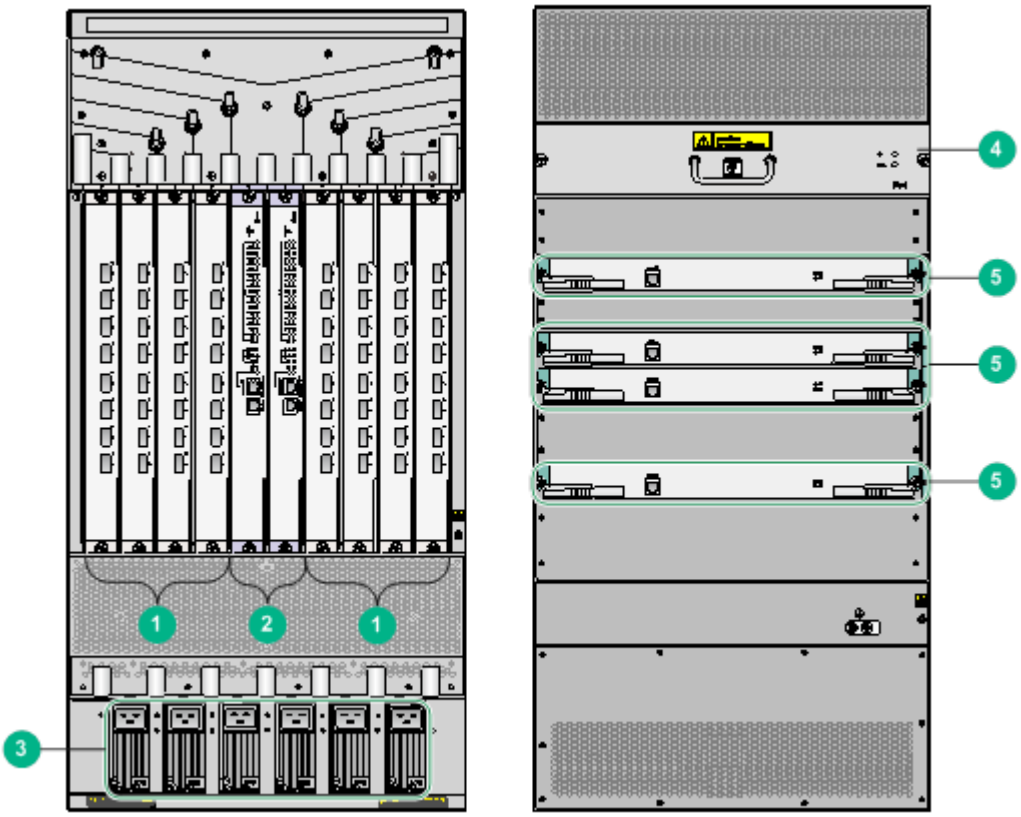
**Figure1-1 CR16006-F front and rear views**




| | | |
|---|---|---|
| (1) MPUs (slots 0 and 1) | (2) Service modules (slots 2 to 5).<br>Service modules with network processor (NP) forwarding chips can be installed in the slots. | (3) Power supplies |

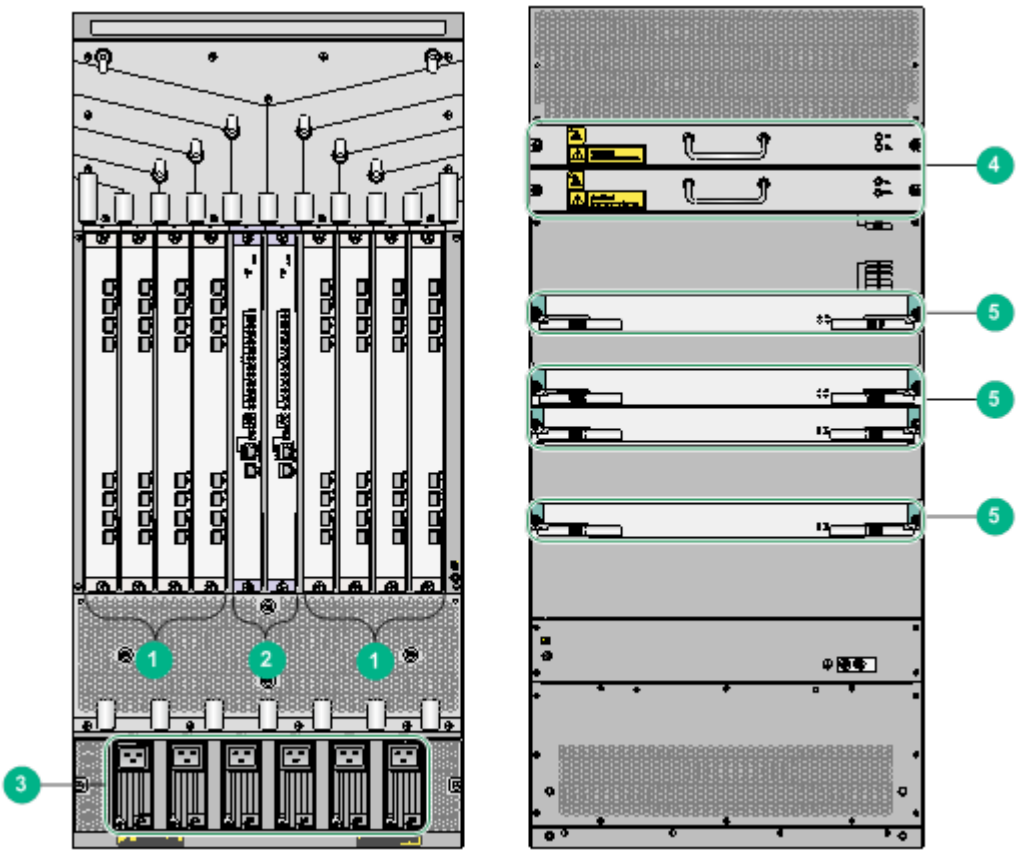
| | |
|---|---|
| (4) Fan tray | (5) Switching fabric modules (slots 6 to 9) |

**Figure1-2 CR16010-F (one fan tray) front and rear views**



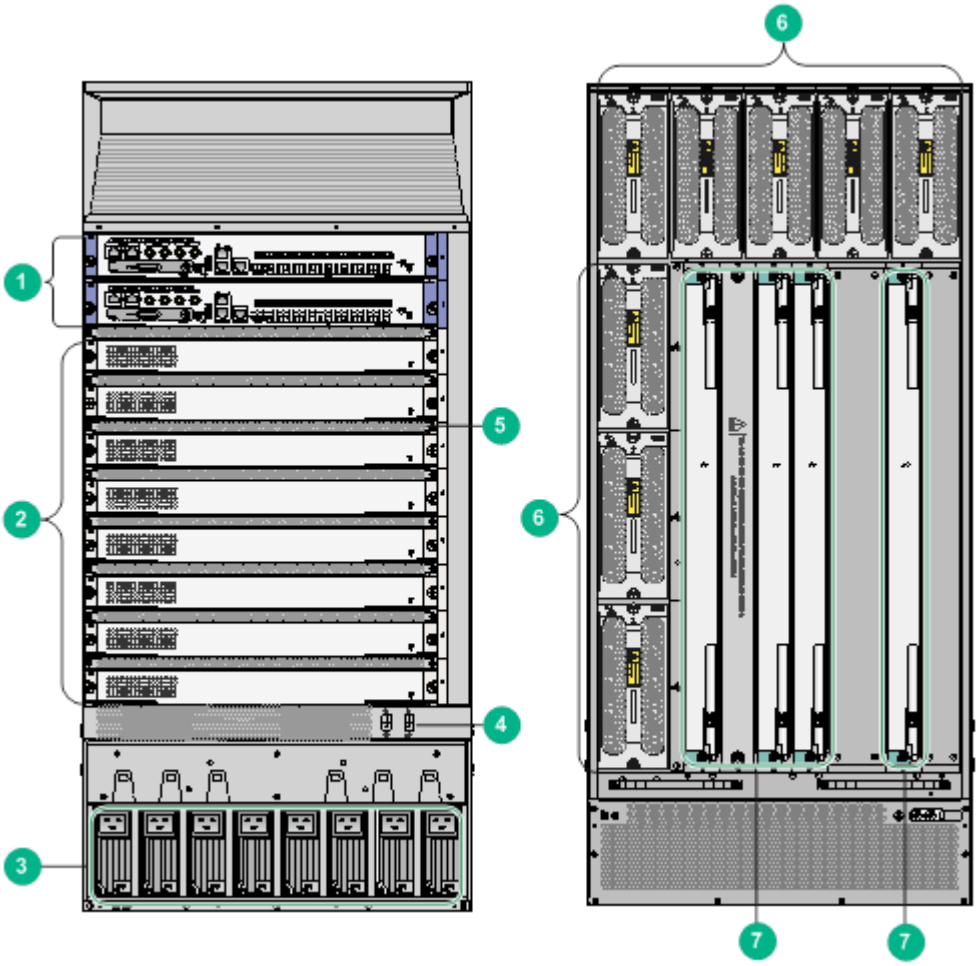

| | | |
|---|---|---|
| (1) Service modules (slots 0 to 3 and slots 6 to 9). Service modules with NP forwarding chips can be installed in the slots. | (2) MPUs (slots 4 and 5) | (3) Power supplies |
| (4) Fan tray | (5) Switching fabric modules (slots 10 to 13) | |

**Figure1-3 CR16010-F (two fan trays) front and rear views**



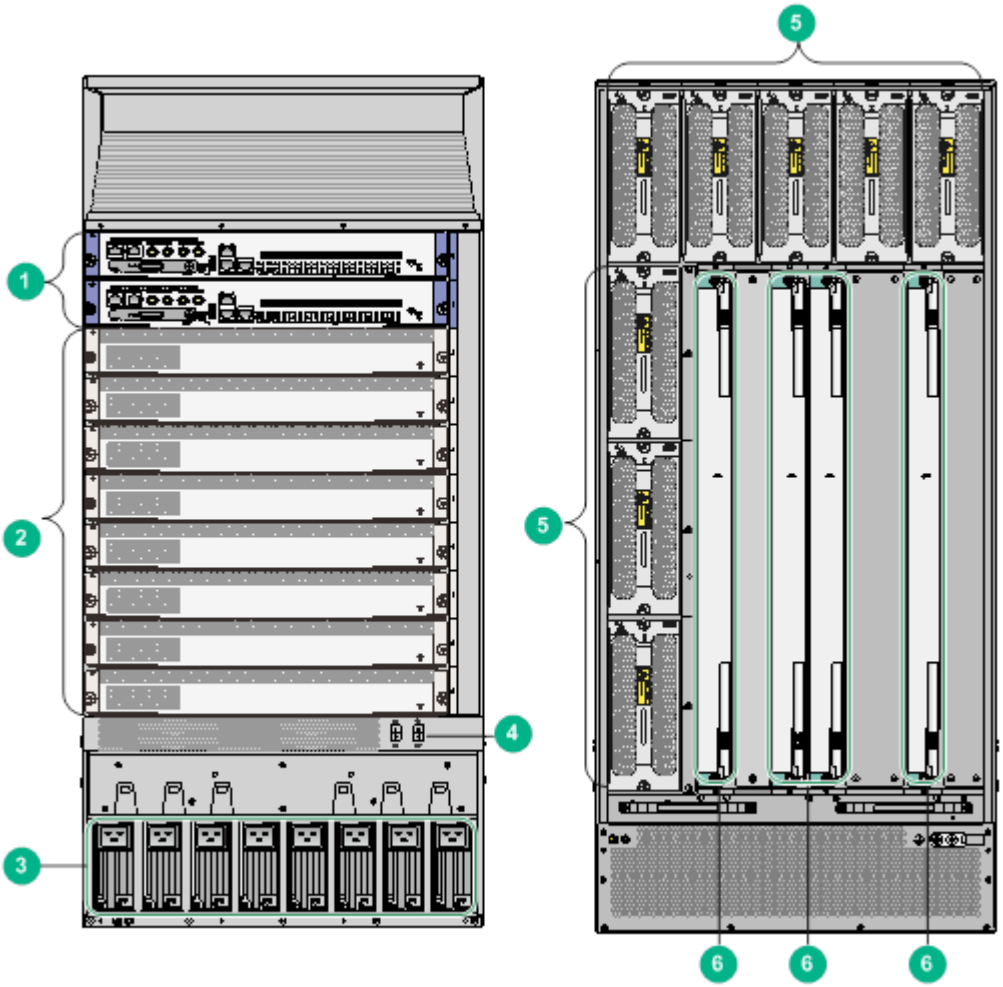

| | | |
|---|---|---|
| (1) Service modules (slots 0 to 3 and slots 6 to 9). Service modules with NP forwarding chips can be installed in the slots. | (2) MPUs (slots 4 and 5) | (3) Power supplies |
| (4) Fan trays | (5) Switching fabric modules (slots 10 to 13) | |

**Figure1-4 CR16010H-F (five switching fabric modules)/CR16010H-FA front and rear views**



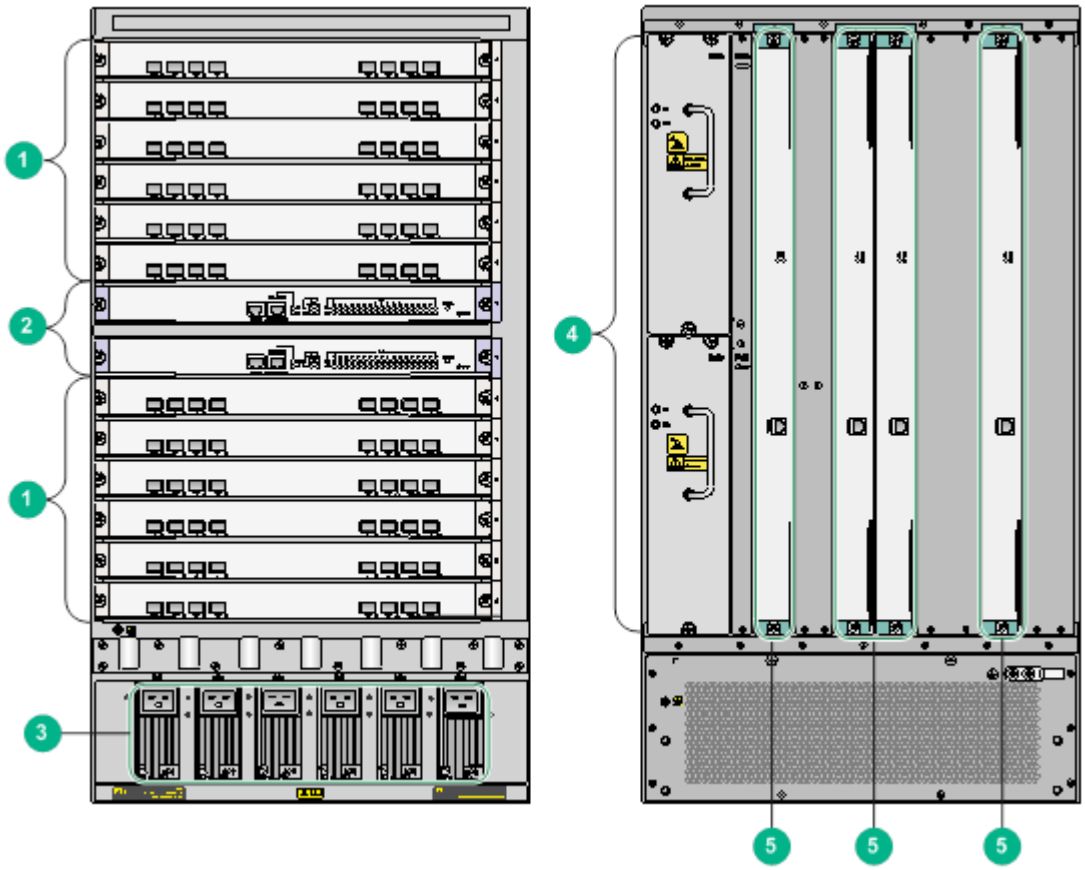

| | | |
|---|---|---|
| (1) MPUs (slots 0 and 1) | (2) Service modules (slots 2 to 9). Service modules with NP forwarding chips can be installed in the slots. | (3) Power supplies |
| (4) Power switches | (5) Air duct | (6) Fan trays |
| (7) Switching fabric modules (slots 10 to 14) (slot 11 can be used only when five switching fabric modules are required) | | |

**Figure1-5 CR16010H-F (four switching fabric modules) front and rear views**



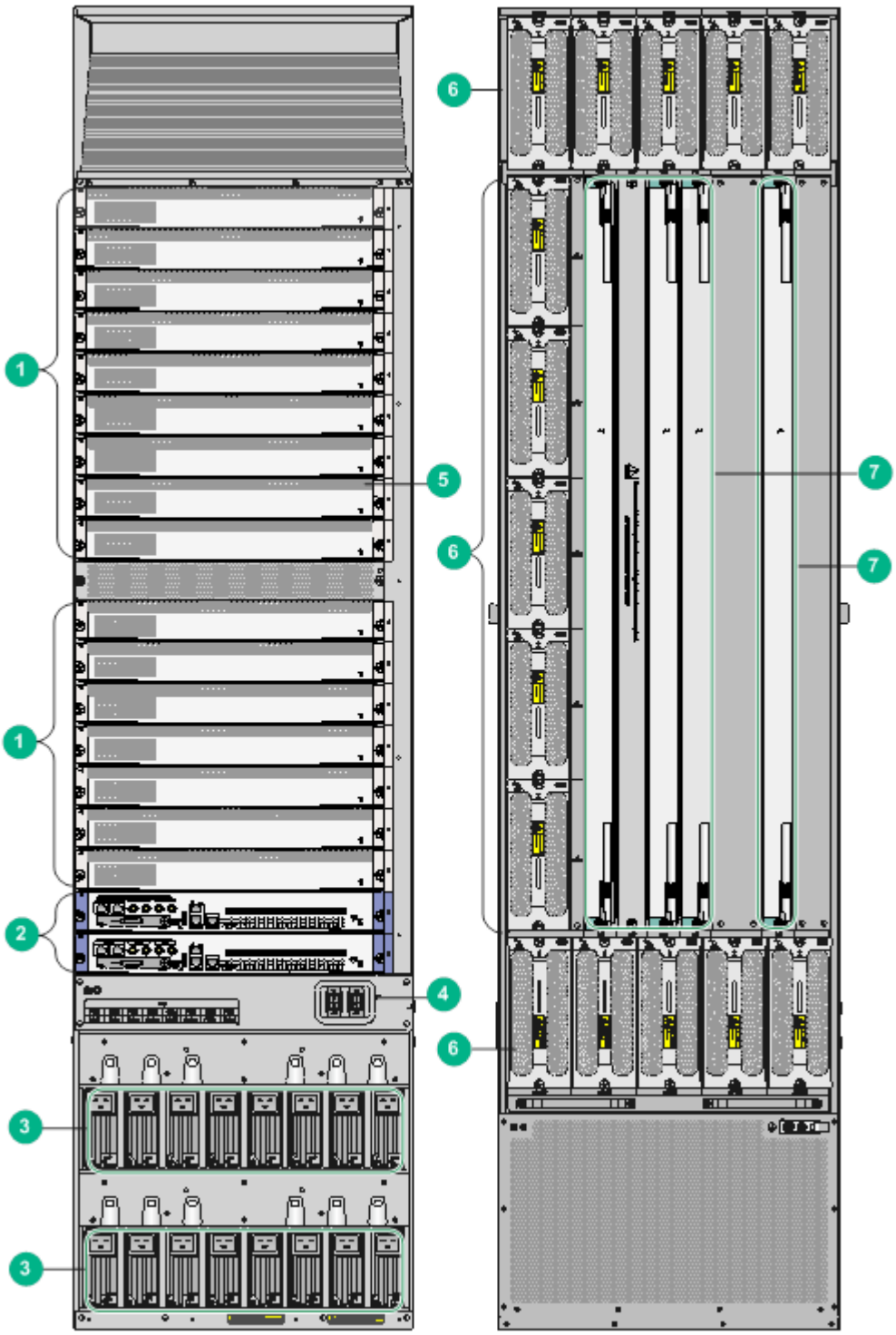

| | | |
|---|---|---|
| (1) MPUs (slots 0 and 1) | (2) Service modules (slots 2 to 9). Service modules with NP forwarding chips can be installed in the slots. | (3) Power supplies |
| (4) Power switches | (5) Fan trays | (6) Switching fabric modules (slots 10 to 13) |

**Figure1-6 CR16014-F front and rear views**



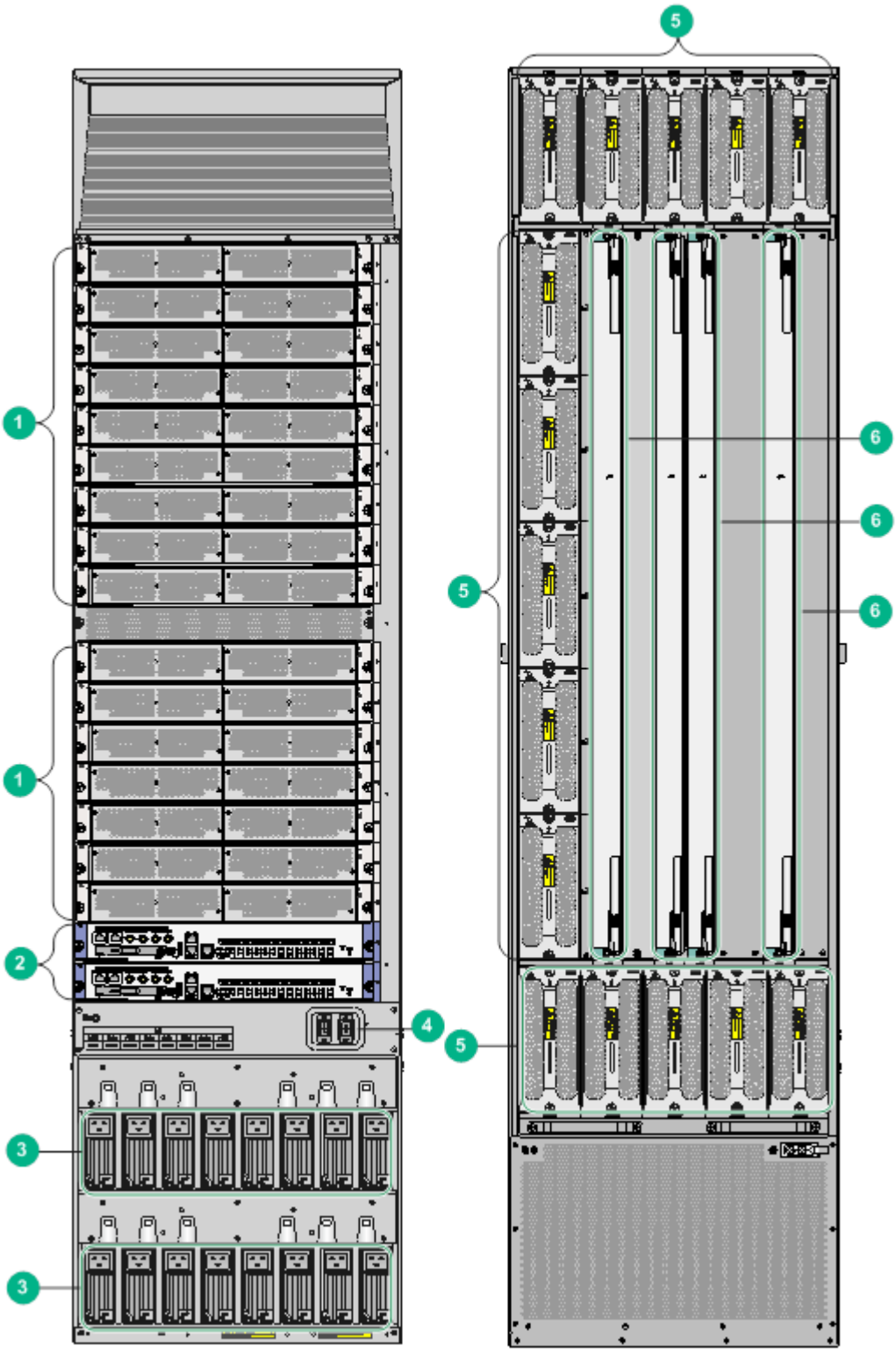

| | | |
|---|---|---|
| (1) Service modules (slots 0 to 5 and slots 8 to 13). Service modules with NP forwarding chips can be installed in the slots. | (2) MPUs (slots 6 and 7) | (3) Power supplies |
| (4) Fan trays | (5) Switching fabric modules (slots 14 to 17) | |

**Figure1-7 CR16018-F (five switching fabric modules)/CR16018-FA front and rear views**




| | | |
|---|---|---|
| (1) Service modules (slots 0 to 15). Service modules with NP forwarding chips can be installed in the slots. | (2) MPUs (slots 16 and 17) | (3) Power supplies |
| (4) Power switches | (5) Air duct | (6) Fan trays |
| (7) Switching fabric modules (slots 18 to 22) (slot 19 can be used only when five switching fabric modules are required) | | |

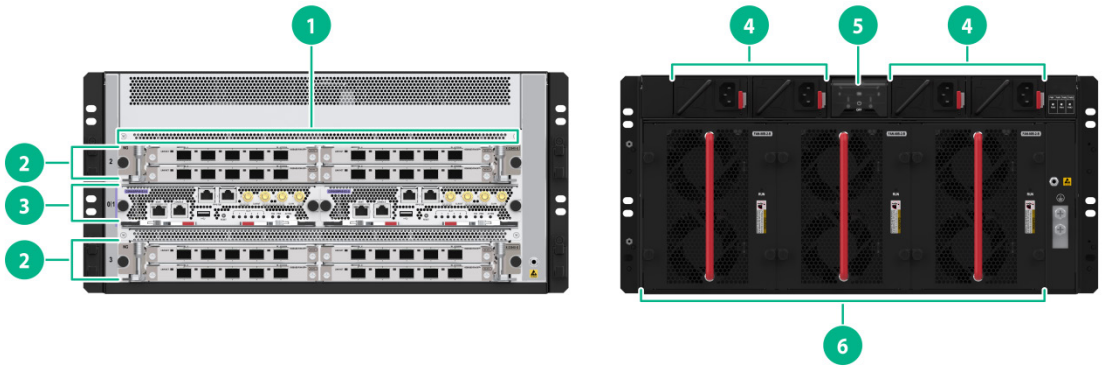
**Figure1-8 CR16018-F (four switching fabric modules) front and rear views**




| | | |
|---|---|---|
| (1) Service modules (slots 0 to 15). Service modules with NP forwarding chips can be installed in the slots. | (2) MPUs (slots 16 and 17) | (3) Power supplies |

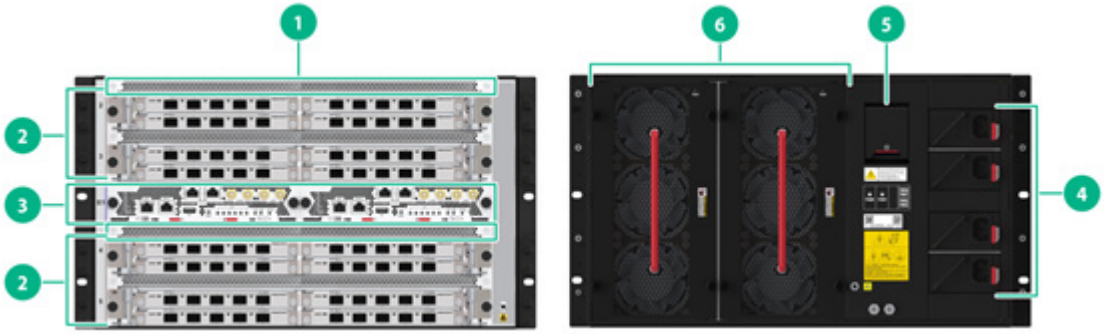
| | | |
|---|---|---|
| (1) Service modules (slots 0 to 15). Service modules with NP forwarding chips can be installed in the slots. | (2) MPUs (slots 16 and 17) | (3) Power supplies |
| (4) Power switches | (5) Fan trays | |
| (6) Switching fabric modules (slots 18 to 21) | | |

**Figure1-9 CR16003E-F front and rear views**



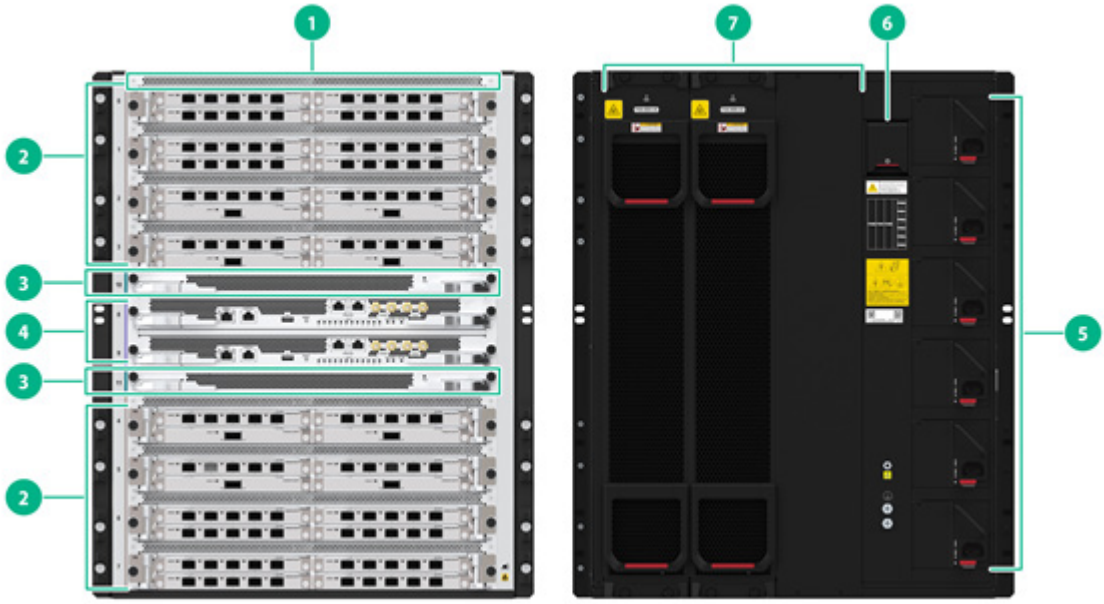

| | | |
|---|---|---|
| (1) Air duct | (2) Service modules (slots 2 and 3). Service modules with NP forwarding chips can be installed in the slots. | (3) MPUs (slots 0 and 1) |
| (4) Power supplies | (5) Power switch | (6) Fan trays |

**Figure1-10 CR16005E-F front and rear views**




| | | |
|---|---|---|
| (1) Air duct | (2) Service modules (slots 2 to 5). Service modules with NP forwarding chips can be installed in the slots. | (3) MPUs (slots 0 and 1) |
| (4) Power supplies | (5) Power switch | (6) Fan trays |

**Figure1-11 CR16010E-F front and rear views**




| | | |
|---|---|---|
| (1) Air duct | (2) Service modules (slots 0 to 7). Service modules with NP forwarding chips can be installed in the slots. | (3) Switching fabric modules (slots 10 and 11) |
| (4) MPUs (slots 8 and 9) | (5) Power supplies | (6) Power switch |
| (7) Fan trays (comes with two fan trays and supports up to three fan trays) | | |

# Device slots and slot numbering

## Module slot numbering

The slot numbering sequence for all models of CR16000-F follows the principle of front-to-back, top-to-bottom, and left-to-right.

**Table1-1 Module slot numbering**

| MPU location | Model | Numbering |
|---|---|---|
| Upper front | CR16006-F, CR16010H-F, and CR16010H-FA | See Figure1-12 (CR16006-F is used as an example) |
| Middle upper | CR16010-F, CR16014-F, CR16003E-F, CR16005E-F, CR16010E-F | See Figure1-13 (CR16014-F is used as an example) |
| Lower front | CR16018-F (four switching fabric modules), CR16018-F (five switching fabric modules), and CR16018-FA | See Figure1-14 (CR16018-F with five switching fabric modules is used as an example) |

**Figure1-12 Slot numbering on the CR16006-F**

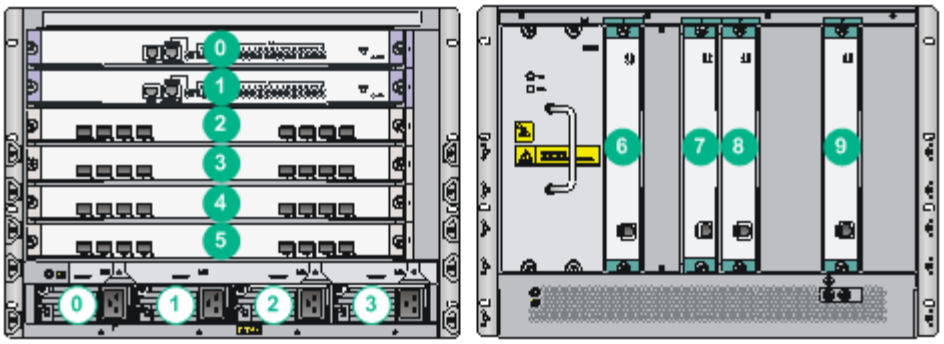



**Figure1-13 Slot numbering on the CR16014-F**

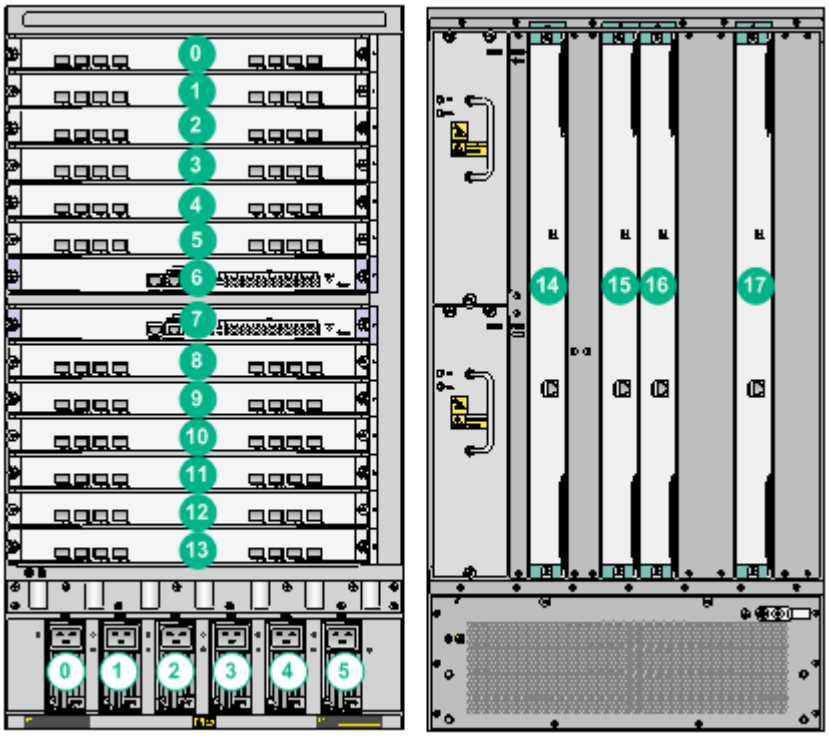


**Figure1-14 Slot numbering on the CR16018-F (five switching fabric modules)**

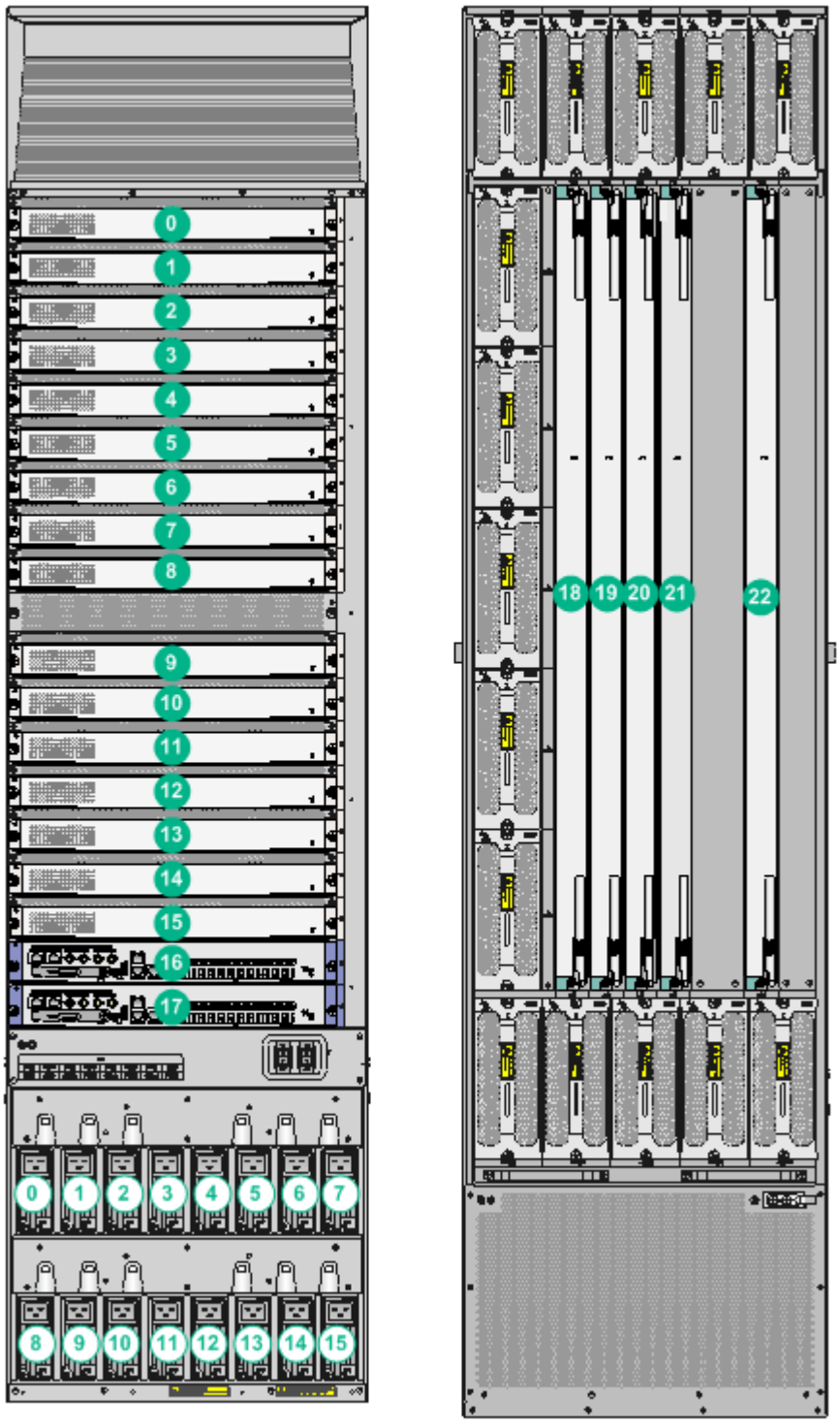
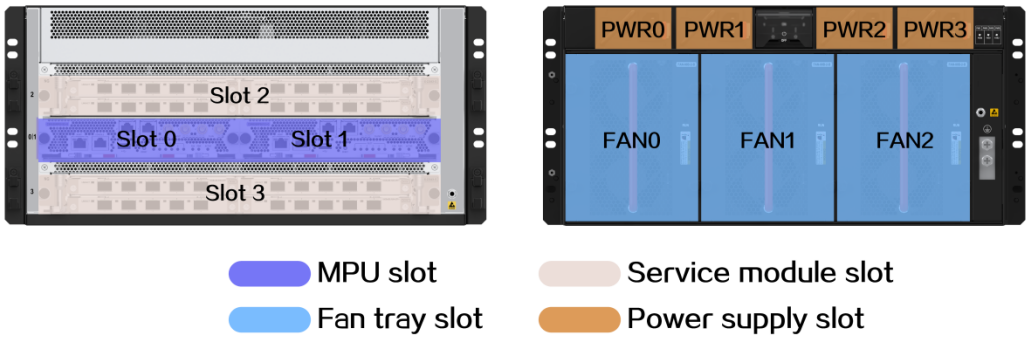
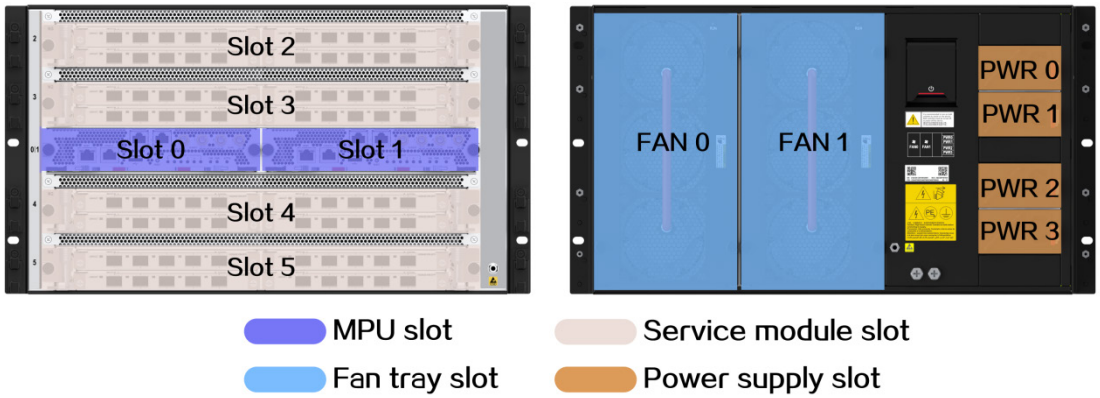


**Figure1-15 Slot numbering on the CR16003E-F**



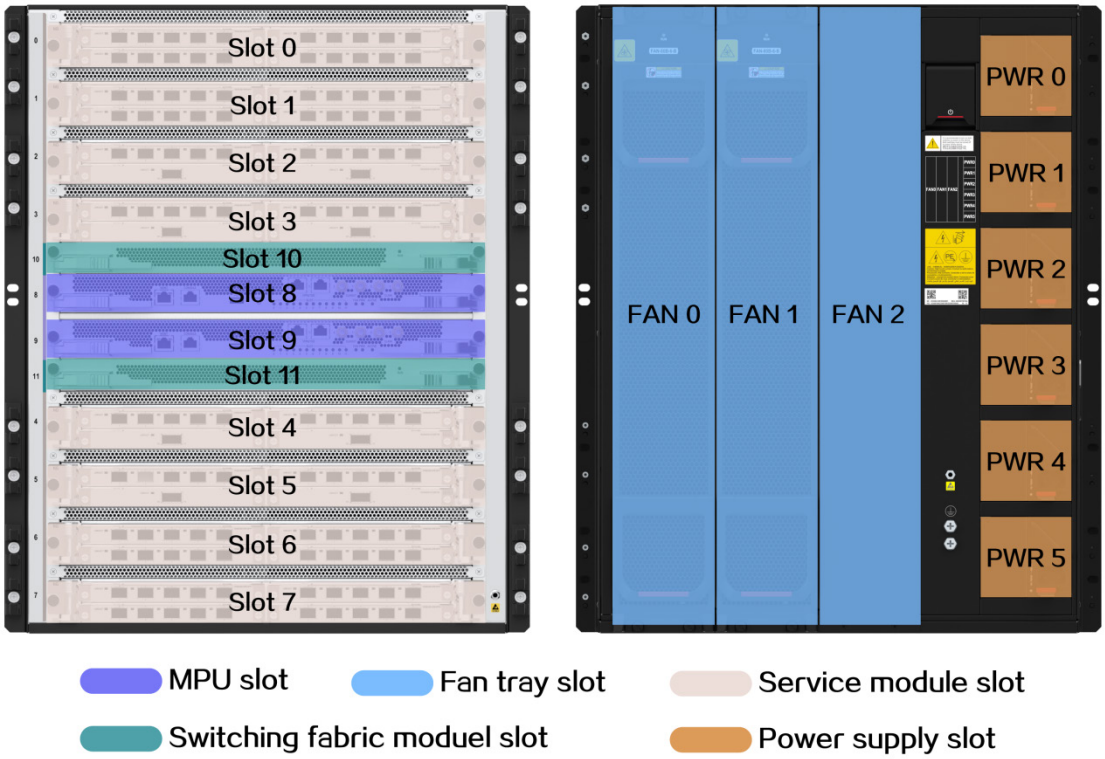

| | |
|---|---|
| Slot 0 and Slot 1: MPU slots | Slot 2 and Slot 3: Service module slots |
| PWR 0 to PWR 3: Power supply slots | FAN 0 to FAN 2: Fan tray slots |

**Figure1-16 Slot numbering on the CR16005E-F**




| | |
|---|---|
| Slot 0 and Slot 1: MPU slots | Slot 2 to Slot 5: Service module slots |
| PWR 0 to PWR 3: Power supply slots | FAN 0 and FAN 1: Fan tray slots |

**Figure1-17 Slot numbering on the CR16010E-F**



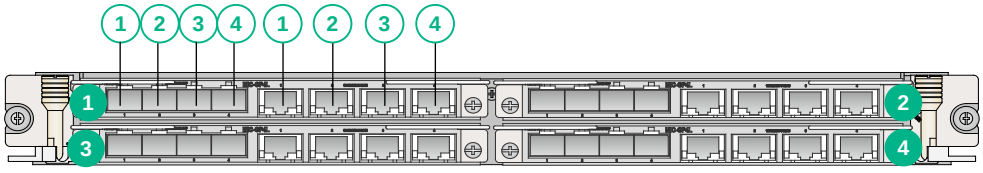

| | |
|---|---|
| Slot 8 and Slot 9: MPU slots | Slot 0 to Slot 7: Service module slots |
| PWR 0 to PWR 5: Power supply slots | FAN 0 to FAN 2: Fan tray slots |
| Slot 10 and Slot 11: Switching fabric module slots | |

# Interface module slot numbering and interface numbering

The slot numbering sequence for all interface modules follows the principle of top-to-bottom and left-to-right.

For example, as shown in Figure1-18, if you install MIC-GP4L interface modules on the CSPEX-1504X, white-background numbers represent interface numbers, and green-background numbers represent slot numbers. The fiber and copper ports of a combo interface are numbered in pairs.

**Figure1-18 Subslot numbering and interface numbering**




# Power supply slot numbering

The slot numbering sequence for all models of CR16000-F follows the principle of left-to-right and top-to-bottom.

- For example, on the CR16006-F, the power supply slots are number 0 through 3 from the left to right, as shown by the white-background numbers in Figure1-12.
- For example, on the CR16014-F, the power supply slots are number 0 through 5 from the left to right, as shown by the white-background numbers in Figure1-13.
- For example, on the CR16018-F, the power supply slots in the first row are numbered 0 through 7 and the slots in the second row are numbered 8 through 15 from the left to right, as shown by the white-background numbers in Figure1-14.

# Module slots

**Table1-2 Slots for MPUs, service modules, and switching fabric modules**

| SRPU | Installation slots |
|---|---|
| MPUs | CR16006-F: Slot 0 and Slot1<br>CR16010-F (single fan tray): Slot 4 and Slot 5<br>CR16010-F (dual fan trays): Slot 4 and Slot 5<br>CR16010H-F: Slot 0 and Slot 1<br>CR16010H-FA: Slot 0 and Slot 1<br>CR16014-F: Slot 6 and Slot 7<br>CR16018-F: Slot 16 and Slot 17<br>CR16018-FA: Slot 16 and Slot 17<br>CR16003E-F: Slot 0 and Slot 1<br>CR16005E-F: Slot 0 and Slot 1<br>CR16010E-F: Slot 8 and Slot 9 |
| Service modules | CR16006-F: Slot 2 through Slot 5<br>CR16010-F (single fan tray): Slot 0 through Slot 3, Slot 6 through Slot 9<br>CR16010-F (dual fan trays): Slot 0 through Slot 3, Slot 6 through Slot 9<br>CR16010H-F: Slot 2 through Slot 9<br>CR16010H-FA: Slot 2 through Slot 9<br>CR16014-F: Slot 0 through Slot 5, Slot 8 through Slot 13<br>CR16018-F: Slot 0 through Slot 15<br>CR16018-FA: Slot 0 through Slot 15<br>CR16003E-F: Slot 2 and Slot 3<br>CR16005E-F: Slot 2 through Slot 5<br>CR16010E-F: Slot 0 through Slot 7 |
| Switching fabric modules | CR16006-F: Slot 6 through Slot 9<br>CR16010-F (single fan tray): Slot 10 through Slot 13<br>CR16010-F (dual fan tray): Slot 10 through Slot 13<br>CR16010H-FA: Slot 10 through Slot 14<br>CR16010H-F (five switching fabric modules): Slot 10 through Slot 14<br>CR16010H-F (four switching fabric modules): Slot 10 through Slot 13<br>CR16014-F: Slot 14 through Slot 17<br>CR16018-FA: Slot 18 through Slot 22<br>CR16018-F (five switching fabric modules): Slot 18 through Slot 22<br>CR16018-F (four switching fabric modules): Slot 18 through Slot 21<br>CR16010E-F: Slot 10 and Slot11 |

# Interface numbering

## Interface numbering

The CR16000-F supports varies types of interfaces, including console ports, USB console ports, GE ports, XGE ports, network management ports, and POS interfaces.

The interfaces are numbered according to the following rules:

The number of an interface is in the *interface-type slot/subslot/num* format, where:

- *interface-type*: Represents the interface type, such as GigabitEthernet and POS.
- *slot*: Represents the number of the module slot. For more information, see the green-background numbers in Figure1-12, Figure1-13, and Figure1-14.
- *subslot*: Represents the number of the subslot, a slot on a CSPEX, CMPE, or SPE interface module. For more information, see the green-background numbers in Figure1-18. For a CSPC, CEPC, or OAA module, the subslot number is 0.
- *num*: Specifies the interface number, the number of the interface on a CSPC, CEPC, or OAA module or on an interface module. For more information, see the white-background numbers in Figure1-18. Note that each combo interface contains one SFP fiber port and one RJ-45 copper port. The fiber port and copper port are numbered in pairs.

Note that:

- In an IRF fabric, the number of a router is in the *chassis*/*slot/subslot/num* format, where *chassis* represents the member device number in the IRF fabric. For example, on a device with member number 1, interfaces on the device are numbered in the *interface-type* 1/*slot/subslot/num* format. For more information about member numbering in IRF, see *H3C CR16000-F Routers Configuration Guides*.
- For different interface submodules on the same CSPEX, CMPE, or SPE module, their slot numbers are the same.
- For different interfaces on the same interface submodule, their subslot numbers are the same.
- The interface number for each type of interfaces starts from 1 and is consistent with the interface number on the CSPC, CEPC, or OAA module or interface sub-module.
- The management interface number is independent of the installation slot of the MPU on the router, and the slot number, subslot number, and interface number for the management interface are all fixed to 0.

## Interface numbering example

- Two CSR05SRP1L1 MPUs are installed on the CR16006-F

  The number of MPU network management interface M-GigabitEthernet is fixed to M-GigabitEthernet 0/0/0.
- One MIC-GP4L submodule is installed in the CSPEX-1504X module in slot 3 on the router.
  - If an MIC-GP4L interface submodule is installed in slot 1 on the CSPEX-1504X, GigabitEthernet interfaces on the submodule are numbered as follows:
    - GigabitEthernet 3/1/1
    - GigabitEthernet 3/1/2
    - GigabitEthernet 3/1/3
    - GigabitEthernet 3/1/4
  - If an MIC-GP4L interface submodule is installed in slot 2 on the CSPEX-1504X, GigabitEthernet interfaces on the submodule are numbered as follows:
    - GigabitEthernet 3/2/1
    - GigabitEthernet 3/2/2
    - GigabitEthernet 3/2/3

        - GigabitEthernet 3/2/4
    - If an MIC-GP4L interface submodule is installed in slot 3 on the CSPEX-1504X, GigabitEthernet interfaces on the submodule are numbered as follows:
        - GigabitEthernet 3/3/1
        - GigabitEthernet 3/3/2
        - GigabitEthernet 3/3/3
        - GigabitEthernet 3/3/4
    - If an MIC-GP4L interface submodule is installed in slot 4 on the CSPEX-1504X, GigabitEthernet interfaces on the submodule are numbered as follows:
        - GigabitEthernet 3/4/1
        - GigabitEthernet 3/4/2
        - GigabitEthernet 3/4/3
        - GigabitEthernet 3/4/4
- One CSPC-GP48LB module is installed in slot 3 on the router

  GigabitEthernet interfaces on the CSPC-GP48LB are numbered GigabitEthernet 3/0/1 through GigabitEthernet 3/0/48.

# Technical specifications

**Table1-3 Technical specifications (1)**

| Item | CR16006-F | CR16010-F (single fan tray) | CR16010-F (dual fan trays) |
|---|---|---|---|
| Cabinet requirements | 19 inches | 19 inches | 19 inches |
| Chassis height | 8 RUs | 20 RUs | 21 RUs |
| Physical dimensions (H × W × D) | 353 × 440 × 660 mm (13.90 × 17.32 × 25.98 in) | 886 × 440 × 660 mm (34.88 × 17.32 × 25.98 in) | 930 × 440 × 660 mm (36.61 × 17.32 × 25.98 in) |
| Max. weight (fully configured) | ≤ 76 kg (167.55 lb) | ≤ 120 kg (264.55 lb) | ≤ 170 kg (374.78 lb) |
| Availability | 99.999% | 99.999% | 99.999% |
| Heat dissipation | Fan cooling | Fan cooling | Fan cooling |
| Airflow direction | Left-to-right | Front-to-back | Front-to-back |
| Total number of slots | 15 | 21 | 22 |
| Number of MPU slots | 2 | 2 | 2 |
| Number of service modules | 4 | 8 | 8 |
| Number of switching fabric modules | 4 | 4 | 4 |
| Number of power supply slots | 4 | 6 | 6 |
| Number of fan tray slots | 1 | 1 | 2 |
| Noise level | • Fan noise (room temperature): 62.3 dBA | • Fan noise (room temperature): 61.6 dBA | • Fan noise (room temperature): 65.7 dBA |

| Item | CR16006-F | CR16010-F (single fan tray) | CR16010-F (dual fan trays) |
|---|---|---|---|
| | • Fan noise (full fan speed): 75.5 dBA | • Fan noise (full fan speed): 72.6 dBA | • Fan noise (full fan speed): 73.3 dBA |
| Weight | Chassis (including mounting brackets and filler panels) + modules + power supplies + fan trays + swappable interface modules + other swappable modules | | |
| Power consumption | Min router power consumption = Static power consumption of modules + Min fan tray power consumption<br>Max router power consumption = Dynamic consumption of modules + Max fan tray power consumption | | |
| Heat dissipation volume | Heat dissipation volume per hour = 0.9*Total power consumption/0.9*3.4121 | | |
| Temperature | • Operating temperature: 0°C to 45°C (32°F to 113°F)<br>• Not Operating temperature: –40°C to +70°C (–40°F to +158°F) | | |
| Operating temperature change | ≤ 30°C (86°F) per hour | | |
| Relative humidity | • Operating humidity: 10% to 95% RH, non-condensing<br>• Storage humidity: 5% to 95% RH, non-condensing | | |
| Altitude | ≤ 5000 m (16404.20 ft) | | |

**Table1-4 Technical specifications (2)**

| Item | CR16010H-F (four switching fabric modules)<br>CR16010H-F (five switching fabric modules)<br>CR16010H-FA | CR16014-F | CR16018-F (four switching fabric modules)<br>CR16018-F (five switching fabric modules)<br>CR16018-FA |
|---|---|---|---|
| Cabinet requirements | 19 inches | 19 inches | 19 inches |
| Chassis height | 21 RUs | 18 RUs | 38 RUs |
| Physical dimensions (H × W × D) | 931 × 440 × 640 mm (36.65 × 17.32 × 25.20 in) | 797 × 440 × 660 mm (31.38 × 17.32 × 25.20 in) | 1687 × 440 × 640 mm (66.42 × 17.32 × 25.20 in) |
| Max. weight (fully configured) | ≤ 245 kg (540.12 lb) | ≤ 174 kg (383.60 lb) | ≤ 440 kg (970.02 lb) |
| Availability | 99.999% | 99.999% | 99.999% |
| Heat dissipation | Fan cooling | Fan cooling | Fan cooling |
| Airflow direction | Front-to-back | Left-to-right | Front-to-back |
| Total number of slots | • CR16010H-F (four switching fabric modules): 30<br>• CR16010H-F (five switching fabric modules) and CR16010H-FA: 31 | 26 | • CR16018-F (four switching fabric modules): 53<br>• CR16018-F (five switching fabric modules) and CR16018-FA: 54 |
| Number of MPU slots | 2 | 2 | 2 |
| Number of service modules | 8 | 12 | 16 |

| Item | CR16010H-F (four switching fabric modules)<br>CR16010H-F (five switching fabric modules)<br>CR16010H-FA | CR16014-F | CR16018-F (four switching fabric modules)<br>CR16018-F (five switching fabric modules)<br>CR16018-FA |
|---|---|---|---|
| Number of switching fabric modules | • CR16010H-F (four switching fabric modules): 4<br>• CR16010H-F (five switching fabric modules) and CR16010H-FA: 5 | 4 | • CR16018-F (four switching fabric modules): 4<br>• CR16018-F (five switching fabric modules) and CR16018-FA: 5 |
| Number of power supply slots | 8 | 6 | 16 |
| Number of fan tray slots | 8 | 2 | 15 |
| Noise level | • Fan noise (room temperature): 66.4 dBA<br>• Fan noise (full fan speed): 84.0 dBA | • Fan noise (room temperature): 66 dBA<br>• Fan noise (full fan speed): 79 dBA | • Fan noise (room temperature): 75.9 dBA<br>• Fan noise (full fan speed): 91 dBA |
| Weight | Chassis (including mounting brackets and filler panels) + modules + power supplies + fan trays + swappable interface modules + other swappable modules | | |
| Power consumption | Min router power consumption = Static power consumption of modules + Min fan tray power consumption<br>Max router power consumption = Dynamic consumption of modules + Max fan tray power consumption | | |
| Heat dissipation volume | Heat dissipation volume per hour = 0.9*Total power consumption/0.9*3.4121 | | |
| Temperature | • Operating temperature: 0°C to 45°C (32°F to 113°F)<br>• Not Operating temperature: –40°C to +70°C (–40°F to +158°F) | | |
| Operating temperature change | ≤ 30°C (86°F) per hour | | |
| Relative humidity | • Operating humidity: 10% to 95% RH, non-condensing<br>• Storage humidity: 5% to 95% RH, non-condensing | | |
| Altitude | ≤ 5000 m (16404.20 ft) | | |

**Table1-5 Technical specifications (3)**

| Item | CR16003E-F | CR16005E-F | CR16010E-F |
|---|---|---|---|
| Rack type | 19-inch standard rack | 19-inch standard rack | 19-inch standard rack |
| Chassis height | 5 RUs | 6 RUs | 13 RUs |
| Physical dimensions (H × W × D) | 220 × 440 × 480 mm (8.66 × 17.32 × 18.90 in) | 267 × 440 × 602 mm (10.51 × 17.32 × 23.70 in) | 578 × 440 × 602 mm (22.76 × 17.32 × 23.70 in) |
| Max. weight (fully configured) | ≤ 62.7 kg (138.23 lb) | ≤ 100 kg (220.46 lb) | ≤ 200 kg (440.92 lb) |

| Item | CR16003E-F | CR16005E-F | CR16010E-F |
|---|---|---|---|
| Availability | 99.999% | 99.999% | 99.999% |
| Heat dissipation | Fan tray cooling | Fan tray cooling | Fan tray cooling |
| Airflow direction | From front to rear | From front to rear | From front to rear |
| Total slots | 11 | 12 | 20 |
| MPU slots | 2 | 2 | 2 |
| Service module slots | 2 | 4 | 8 |
| Switching fabric module slots | N/A | N/A | 2 |
| Power supply slots | 4 | 4 | 6 |
| Fan tray slots | 3 | 2 | 2 |
| Noise level | • Fan noise (normal temperature): 70.4 dBA<br>• Fan noise (full fan speed): 77.5 dBA | • Fan noise (normal temperature): 56.5 dBA<br>• Fan noise (full fan speed): 77.9 dBA | • Fan noise (normal temperature): 60.2 dBA<br>• Fan noise (full fan speed): 77.4 dBA |
| Weight | Chassis weight (including mounting brackets and filler panels) plus removable component weights (including cards, power supplies, fan trays, removable interface components, and other removable components) | | |
| Power consumption | • Minimum system power consumption: static power consumption of all cards + minimum power consumption of all fan trays<br>• Maximum system power consumption: dynamic power consumption of all cards + maximum power consumption of all fan trays | | |
| Heat dissipation volume (per hour) | 0.9 × system power consumption/0.9 × 3.4121 | | |
| Temperature | • Operating: 0°C to 45°C (32°F to 113°F)<br>• Storage: –40°C to +70°C (–40°F to +158°F) | | |
| Operating temperature change | ≤ 30°C/hour (86°F/hour) | | |
| Relative humidity | • Operating: 10% RH to 95% RH (noncondensing)<br>• Storage: 5% RH to 95% RH (noncondensing) | | |
| Altitude | ≤ 5000 m (16404.20 ft) | | |

**NOTE:**

- Rack Unit (RU) is a measurement unit used to indicate the height of a rack. 1 RU is equal to 44.45 mm (1.75 in).
- The dimension data refers to the size value of the chassis itself and does not include the dimensions of chassis ears, cable management brackets, modules, power supplies, and other installed components and accessories.
- The heat generated by the device is closely related to its power consumption. It is generally assumed that 90% of the power consumption is converted to heat, and the power supply's conversion efficiency is 90%. The unit of heat is generally measured in BTU/h, and 1 watt is equal to 3.4121 BTU/h.
- The noise value is tested using the bystander sound pressure level test method of ISO 7779.
- For information about the power consumption of each component, see "Appendix B  FRUs and compatibility matrixes."
- When the CR16003E-F router is installed with the CSR05SRP051E3-G MPUs, it supports only two fan trays.

# Contents

# 2 FRUs and compatibility matrixes

For compatibility between the cards and the software release, see the release notes.

For compatibility between the cards and transceiver modules, see the cards and transceiver modules compatibility matrixes for the device.

**NOTE:**

This document uses the identifier printed on a card or subcard as its model name.

**IMPORTANT:**

- All subcards except for the MIC-SM are hot swappable.
- Only fiber-to-copper transceiver modules can be used to switch the port speed from 1000 Mbps to 100 Mbps. To configure a GE port to operate at 100 Mbps, first install a compatible fiber-to-copper transceiver module and then execute the **speed 100** command.

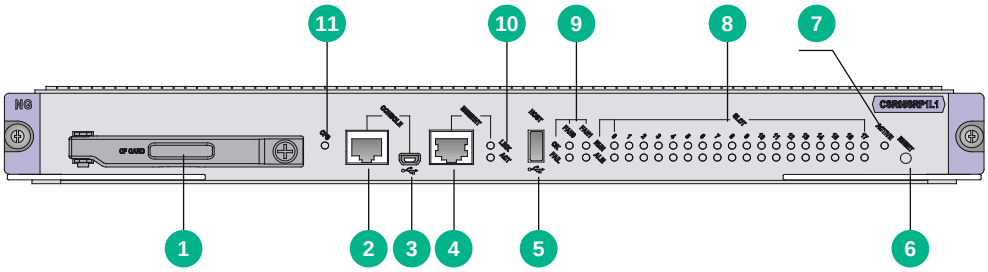
# MPUs

You can install one MPU, or two MPUs for redundancy for the router. To install two MPUs for the router, make sure they are the same model.

## CSR05SRP1L1

### View

**Figure2-1 CSR05SRP1L1 view**




| | |
|---|---|
| (1) CF card | (2) Console port |
| (3) USB console port | (4) Management Ethernet port (10/100/1000Base-T) |
| (5) USB 2.0 port | (6) System reset button |
| (7) MPU active/standby LED. For the LED description, see Table2-1. | (8) Card status LEDs. For the LED description, see Table2-2. |
| (9) Fan tray status LEDs. For the LED description, see Table2-3. | (10) Management Ethernet port LED. For the LED description, see Table2-4. |
| (11) CF card LED. For the LED description, see Table2-5. | |

## LEDs

**Table2-1 MPU active/standby LED description**

| LED mark | Status | Description |
|---|---|---|
| ACTIVE | Steady green | The MPU is in active state. |
| | Off | The following are the possible causes:<br>• The MPU is in standby state.<br>• The MPU has failed. To identify the failure, see the card status LED description. |

**Table2-2 Card status LED description**

| Status | | Description |
|---|---|---|
| RUN (Green) | ALM (Red) | |
| Flashing green (once every 2 seconds) | Off | The card in the corresponding slot is operating correctly. |
| Fast flashing green (once every 4 seconds) | Steady on | The card in the corresponding slot is loading software. If the card keeps in this state, the software version running on the device is not compatible with the card. |
| Flashing green (once every 2 seconds) | Flashing red (once every 4 seconds) | The temperature of the card in the corresponding slot is abnormal. The temperature has exceeded the upper warning temperature threshold or dropped below the lower temperature threshold. |
| Steady on | Steady on | The card in the corresponding slot is starting or faulty. |
| Off | Off | No card is available in the corresponding slot. |

**NOTE:**

At the system startup, the ALM LED being on for a while does not mean that the card is faulty.

**Table2-3 Fan tray status LED description**

| Status | | Description |
|---|---|---|
| OK (Green) | FAIL (Red) | |
| Steady on | Off | The fan tray is operating correctly. |
| Off | Steady on | One or more fans in the fan tray have failed or the fan tray is not in position. |
| Off | Off | The router is not powered on. |

**Table2-4 Management Ethernet port LED description**

| Status | | Description |
|---|---|---|
| LINK (green) | ACT (yellow) | |
| Steady on | Flashing green | The port is in sending or receiving data. |
| Steady on | Off | A link is present on the port. |

| Status | | Description |
|---|---|---|
| LINK (green) | ACT (yellow) | |
| Off | Off | No link is present on the port. |

**Table2-5 CF card LED description**

| LED | Status | Description |
|---|---|---|
| CF card | Steady green | The CF card is present and idle. Do not hot swap it. |
| | Flashing green | The CF card is present and the system is reading/writing the card. Do not hot swap it. |
| | Off | The CF card is not in position, or the CF card is in offline state. You can hot swap it. |

## Ports

### Console port

The console port can be connected to a computer for system debugging, configuration, maintenance, management, and host software loading.

**Table2-6 Console port specifications**

| Item | Description |
|---|---|
| Connector type | RJ-45 |
| Compliant standard | Asynchronous EIA/TIA-232 |
| Transmission baud rate | ≤ 115200 bps. The default value is 9600 bps. |
| Transmission medium and max transmission distance | Common asynchronous serial interface cable, with a maximum transmission distance of 15 m (49.21 ft) |
| Services | Connects to the serial port on a local PC running a terminal emulation program. |

### USB console port

**Table2-7 USB console port specifications**

| Item | Description |
|---|---|
| Connector type | USB-AB |
| Compliant standard | USB 2.0, full speed |
| Transmission baud rate | ≤ 115200 bps. The default value is 9600 bps. |
| Transmission medium and max transmission distance | USB-AB cable, with a maximum transmission distance of 2 m (6.56 ft) |
| Services | Connects to the USB port on a local PC running a terminal emulation program to provide a command-line interface for the router. A generic USB to serial port driver is required on the PC.<br>Connects routers to PCs or similar terminals that do not have a serial port. |

### Management Ethernet port

The management Ethernet port can be connected to a computer for router program loading and router debugging, or connects to a remote NMS for remote management.

**Table2-8 Management Ethernet port specifications**

| Item | Description |
|---|---|
| Connector type | RJ-45 |
| Port quantity | 1 |
| Transmission baud rate | 10/100/1000 Mbps |
| Transmission medium and max transmission distance | Category-5 or above twisted pair cable, with a transmission distance of 100 m (328.08 ft) |
| Services | For router software upgrade and network management |

### USB port

USB ports can connect multiple types of devices and provide a higher data transfer rate than common parallel interfaces and serial interfaces.

**Table2-9 USB port specifications**

| Item | Description |
|---|---|
| Connector type | USB A |
| Compliant standard | USB 2.0 |
| Services | External storage media |

**NOTE:**

Extension cables are not supported.

### CF card slot

A CF card is a mobile storage device that features fast speed, large capacity, small size, light weight, and low power consumption.

**Table2-10 External CF card specifications**

| Item | Description |
|---|---|
| CF card slots | 1 |
| CF card capacity | 4 GB |
| Services | You can use a CF card to store logs, application program files, and configuration files. |

**NOTE:**

Before you use a CF card, insert the CF card into the card slot and fasten the card cover.

## Technical specifications

**Table2-11 Technical specifications**

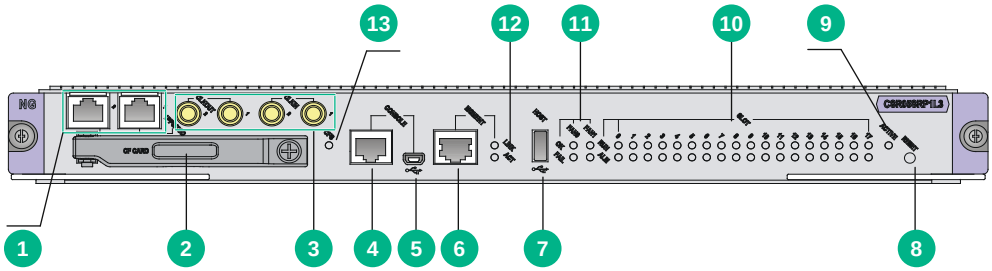
| Item | Description |
|---|---|
| Dimensions (H × W × D) | 40 × 399 × 352 mm (1.57 × 15.71 × 13.86 in) |

| Item | Description |
|---|---|
| Weight | 3.05 kg (6.72 lb) |
| Maximum power consumption | 53 W |
| Power consumption (with typical configuration) | 47 W |
| Minimum power consumption | 46 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |
| SDRAM | 8 GB or 16 GB (subject to the card specifications) |

# CSR05SRP1L3

## View

**Figure2-2 CSR05SRP1L3 view**




| | |
|---|---|
| (1) High-precision time synchronization ports (Both are input ports by default. When both ports are input ports, only port 1 takes effect.) | (2) CF card |
| (3) SMB coaxial clock ports (2 input ports and 2 output ports) | (4) Console port |
| (5) USB console port | (6) Management Ethernet ports (10/100/1000Base-T) |
| (7) USB 2.0 port | (8) System reset button |
| (9) MPU active/standby LED. For the LED description, see Table2-12. | (10) Card status LEDs. For the LED description, see Table2-13. |
| (11) Fan tray status LEDs. For the LED description, see Table2-14. | (12) Management Ethernet port LED. For the LED description, see Table2-15. |
| (13) CF card LED. For the LED description, see Table2-16. | |

## LEDs

**Table2-12 MPU active/standby LED description**

| LED mark | Status | Description |
|---|---|---|
| ACTIVE | Steady green | The MPU is in active state. |

| LED mark | Status | Description |
|---|---|---|
| | Off | The following are the possible causes:<br>• The MPU is in standby state.<br>• The MPU has failed. To identify the failure, see the card status LED description. |

**Table2-13 Card status LED description**

| Status | | Description |
|---|---|---|
| **RUN (Green)** | **ALM (Red)** | |
| Flashing green (once every 2 seconds) | Off | The card in the corresponding slot is operating correctly. |
| Fast flashing green (once every 4 seconds) | Steady on | The card in the corresponding slot is loading software. If the card keeps in this state, the software version running on the device is not compatible with the card. |
| Flashing green (once every 2 seconds) | Flashing red (once every 4 seconds) | The temperature of the card in the corresponding slot is abnormal. The temperature has exceeded the upper warning temperature threshold or dropped below the lower temperature threshold. |
| Steady on | Steady on | The card in the corresponding slot is starting or faulty. |
| Off | Off | No card is available in the corresponding slot. |

**NOTE:**

At the system startup, the ALM LED being on for a while does not mean that the card is faulty.

**Table2-14 Fan tray status LED description**

| Status | | Description |
|---|---|---|
| **OK (Green)** | **FAIL (Red)** | |
| Steady on | Off | The fan tray is operating correctly. |
| Off | Steady on | One or more fans in the fan tray have failed or the fan tray is not in position. |
| Off | Off | The router is not powered on. |

**Table2-15 Management Ethernet port LED description**

| Status | | Description |
|---|---|---|
| **LINK (green)** | **ACT (yellow)** | |
| Steady on | Flashing green | The port is in sending or receiving data. |
| Steady on | Off | A link is present on the port. |
| Off | Off | No link is present on the port. |

**Table2-16 CF card LED description**

| LED | Status | Description |
|---|---|---|
| CF card | Steady green | The CF card is present and idle. Do not hot swap it. |
| | Flashing green | The CF card is present and the system is reading/writing the card. Do not hot swap it. |
| | Off | The CF card is not in position, or the CF card is in offline state. You can hot swap it. |

## Ports

### Console port

The console port can be connected to a computer for system debugging, configuration, maintenance, management, and host software loading.

**Table2-17 Console port specifications**

| Item | Description |
|---|---|
| Connector type | RJ-45 |
| Compliant standard | Asynchronous EIA/TIA-232 |
| Transmission baud rate | ≤ 115200 bps. The default value is 9600 bps. |
| Transmission medium and max transmission distance | Common asynchronous serial interface cable, with a maximum transmission distance of 15 m (49.21 ft) |
| Services | Connects to the serial port on a local PC running a terminal emulation program. |

### USB console port

**Table2-18 USB console port specifications**

| Item | Description |
|---|---|
| Connector type | USB-AB |
| Compliant standard | USB 2.0, full speed |
| Transmission baud rate | ≤ 115200 bps. The default value is 9600 bps. |
| Transmission medium and max transmission distance | USB-AB cable, with a maximum transmission distance of 2 m (6.56 ft) |
| Services | Connects to the USB port on a local PC running a terminal emulation program to provide a command-line interface for the router. A generic USB to serial port driver is required on the PC.<br>Connects routers to PCs or similar terminals that do not have a serial port. |

### Management Ethernet port

The management Ethernet port can be connected to a computer for router program loading and router debugging, or connects to a remote NMS for remote management.

**Table2-19 Management Ethernet port specifications**

| Item | Description |
|---|---|
| Connector type | RJ-45 |
| Port quantity | 1 |
| Transmission baud rate | 10/100/1000 Mbps |
| Transmission medium and max transmission distance | Category-5 or above twisted pair cable, with a transmission distance of 100 m (328.08 ft) |
| Services | For router software upgrade and network management |

### USB port

USB ports can connect multiple types of devices and provide a higher data transfer rate than common parallel interfaces and serial interfaces.

**Table2-20 USB port specifications**

| Item | Description |
|---|---|
| Connector type | USB A |
| Compliant standard | USB 2.0 |
| Services | External storage media |

**NOTE:**

Extension cables are not supported.

### CF card slot

A CF card is a mobile storage device that features fast speed, large capacity, small size, light weight, and low power consumption.

**Table2-21 External CF card specifications**

| Item | Description |
|---|---|
| CF card slots | 1 |
| CF card capacity | 4 GB |
| Services | You can use a CF card to store logs, application program files, and configuration files. |

**NOTE:**

Before you use a CF card, insert the CF card into the card slot and fasten the card cover.

### SMB coaxial clock input/output port

SMB coaxial clock ports provide input or output clock references at 2.048 Mbps (2.048 MHz). You can set the data rate mode or frequency mode through the CLI. Two of them are input ports and two are output ports.

**Table2-22 SMB coaxial clock input/output port specifications**

| Item | Description |
|---|---|
| Connector type | SMB coaxial |

| Item | Description |
| --- | --- |
| Compliant standard | GJB681 |
| Transmission baud rate | 2.048 Mbps |
| Transmission medium | 75-ohm coaxial cable |
| Services | Sends and receives 2.048 MHz clocks and 2.048 Mbps signals to synchronize the clocks of the router and other devices, such as routers and the terminals. |

### High-precision time synchronization port

**Table2-23 High-precision time synchronization port specifications**

| Item | Description |
| --- | --- |
| Connector type | RJ-45 |
| Compliant standard | QB-B-016-2010 |
| Transmission baud rate | 9600 bps |
| Transmission medium | Category-5 or above twisted pair cable |
| Services | You can configure the port as an input port or output port at the CLI.<br>Synchronizes the clocks of the router and other devices, such as GPS receivers and terminals. |

## Technical specifications

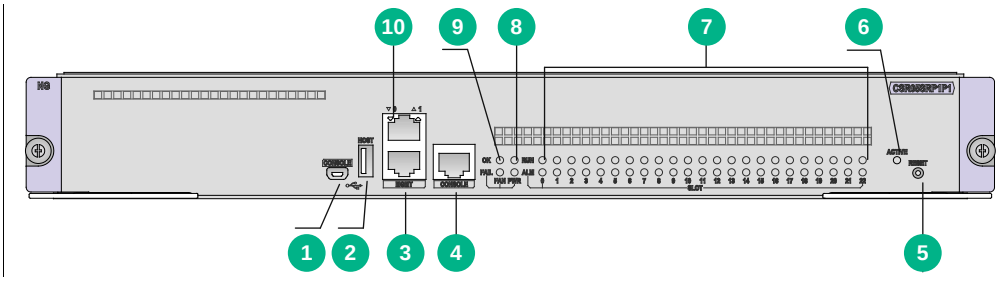
**Table2-24 Technical specifications**

| Item | Description |
| --- | --- |
| Dimensions (H × W × D) | 40 × 399 × 352 mm (1.57 × 15.71 × 13.86 in) |
| Weight | 3.18 kg (7.01 lb) |
| Maximum power consumption | 53 W |
| Power consumption (with typical configuration) | 52 W |
| Minimum power consumption | 50 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |
| SDRAM | 8 GB or 16 GB (subject to the card specifications) |

# CSR05SRP1P1

## View

**Figure2-3 CSR05SRP1P1 view**




| | |
|---|---|
| (1) USB console port | (2) USB 2.0 port |
| (3) Management Ethernet ports (10/100/1000Base-T) (port 1 reserved for future use) | (4) Console port |
| (5) System reset button | (6) MPU active/standby LED. For the LED description, see Table2-25. |
| (7) Card status LEDs. For the LED description, see Table2-26. | (8) Power supply status LED. For the LED description, see Table2-27. |
| (9) Fan tray status LED. For the LED description, see Table2-28. | (10) Management Ethernet port LED. For the LED description, see Table2-29. |

## LEDs

**Table2-25 MPU active/standby LED description**

| LED mark | Status | Description |
|---|---|---|
| ACTIVE | Steady green | The MPU is in active state. |
| | Off | The following are the possible causes:<br>• The MPU is in standby state.<br>• The MPU has failed. To identify the failure, see the card status LED description. |

**Table2-26 Card status LED description**

| Status | | Description |
|---|---|---|
| RUN (Green) | ALM (Red) | |
| Flashing green (once every 2 seconds) | Off | The card in the corresponding slot is operating correctly. |
| Fast flashing green (once every 4 seconds) | Steady on | The card in the corresponding slot is loading software. If the card keeps in this state, the software version running on the device is not compatible with the card. |
| Flashing green (once every 2 seconds) | Flashing red (once every 4 seconds) | The temperature of the card in the corresponding slot is abnormal. The temperature has exceeded the upper warning temperature threshold or dropped below the lower temperature threshold. |

| Status | | Description |
|---|---|---|
| RUN (Green) | ALM (Red) | |
| Steady on | Steady on | The card in the corresponding slot is starting or faulty. |
| Off | Off | No card is available in the corresponding slot. |

**NOTE:**

At the system startup, the ALM LED being on for a while does not mean that the card is faulty.

**Table2-27 Power supply status LED description**

| Status | | Description |
|---|---|---|
| OK (Green) | FAIL (Red) | |
| Steady on | Off | All power supplies in the chassis are operating correctly. |
| Off | Steady on | A power supply in the chassis does not have power output, because the power supply is faulty, the power supply is not powered on, the power cable is faulty, or the external power supply system has a power outage. |
| Off | Off | The following are the possible causes:<br>• No power supplies exist in the chassis.<br>• No power supply in the chassis has power output, because the power supplies are faulty, the power supplies are not powered on, the power cables are faulty, or the external power supply system has a power outage. |

**Table2-28 Fan tray status LED description**

| Status | | Description |
|---|---|---|
| OK (Green) | FAIL (Red) | |
| Steady on | Off | The fan tray is operating correctly. |
| Off | Steady on | One or more fans in the fan tray have failed or the fan tray is not in position. |
| Off | Off | The router is not powered on. |

**Table2-29 Management Ethernet port LED description**

| LED mark | Status | Description |
|---|---|---|
| LINK/ACT | Flashing green | The port is in sending or receiving data. |
| | Steady green | A link is present on the port. |
| | Off | No link is present on the port. |

## Ports

### Console port

The console port can be connected to a computer for system debugging, configuration, maintenance, management, and host software loading.

**Table2-30 Console port specifications**

| Item | Description |
|---|---|
| Connector type | RJ-45 |
| Compliant standard | Asynchronous EIA/TIA-232 |
| Transmission baud rate | ≤ 115200 bps. The default value is 9600 bps. |
| Transmission medium and max transmission distance | Common asynchronous serial interface cable, with a maximum transmission distance of 15 m (49.21 ft) |
| Services | Connects to the serial port on a local PC running a terminal emulation program. |

**USB console port**

**Table2-31 USB console port specifications**

| Item | Description |
|---|---|
| Connector type | USB-AB |
| Compliant standard | USB 2.0, full speed |
| Transmission baud rate | ≤ 115200 bps. The default value is 9600 bps. |
| Transmission medium and max transmission distance | USB-AB cable, with a maximum transmission distance of 2 m (6.56 ft) |
| Services | Connects to the USB port on a local PC running a terminal emulation program to provide a command-line interface for the router. A generic USB to serial port driver is required on the PC.<br>Connects routers to PCs or similar terminals that do not have a serial port. |

**Management Ethernet port**

The management Ethernet port can be connected to a computer for router program loading and router debugging, or connects to a remote NMS for remote management.

**Table2-32 Management Ethernet port specifications**

| Item | Description |
|---|---|
| Connector type | RJ-45 |
| Port quantity | 2 (port 1 reserved for future use) |
| Transmission baud rate | 10/100/1000 Mbps |
| Transmission medium and max transmission distance | Category-5 or above twisted pair cable, with a transmission distance of 100 m (328.08 ft) |
| Services | For router software upgrade and network management |

**USB port**

USB ports can connect multiple types of devices and provide a higher data transfer rate than common parallel interfaces and serial interfaces.

**Table2-33 USB port specifications**

| Item | Description |
|---|---|
| Connector type | USB A |
| Compliant standard | USB 2.0 |
| Services | External storage media |

**NOTE:**

Extension cables are not supported.

### Technical specifications

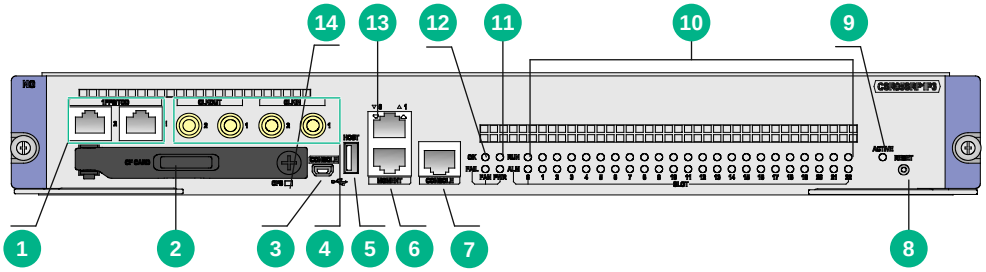
**Table2-34 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 52.2 × 399 × 352 mm (2.06 × 15.71 × 13.86 in) |
| Weight | 4.30 kg (9.48 lb) |
| Maximum power consumption | 64 W |
| Power consumption (with typical configuration) | 60 W |
| Minimum power consumption | 58 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |
| SDRAM | 8 GB |

# CSR05SRP1P3/CSR05SRP1P3A

### View

**Figure2-4 CSR05SRP1P3 view**




| | |
|---|---|
| (1) High-precision time synchronization ports (Both are input ports by default. When both ports are input ports, only port 1 takes effect.) | (2) CF card |
| (3) USB console port | (4) SMB coaxial clock ports (2 input ports and 2 output ports) |
| (5) USB 2.0 port | (6) Management Ethernet ports (10/100/1000Base-T) (port 1 reserved for future use) |

| | |
|---|---|
| (7) Console port | (8) System reset button |
| (9) MPU active/standby LED. For the LED description, see Table2-35. | (10) Card status LEDs. For the LED description, see Table2-36. |
| (11) Power supply status LED. For the LED description, see Table2-37. | (12) Fan tray status LED. For the LED description, see Table2-38. |
| (13) Management Ethernet port LED. For the LED description, see Table2-39. | (14) CF card LED. For the LED description, see Table2-40. |

The views of the CSR05SRP1P3 and CSR05SRP1P3A are similar. This figure uses the CSR05SRP1P3 as an example.

## LEDs

**Table2-35 MPU active/standby LED description**

| LED mark | Status | Description |
|---|---|---|
| ACTIVE | Steady green | The MPU is in active state. |
| | Off | The following are the possible causes:<br>• The MPU is in standby state.<br>• The MPU has failed. To identify the failure, see the card status LED description. |

**Table2-36 Card status LED description**

| Status | | Description |
|---|---|---|
| RUN (Green) | ALM (Red) | |
| Flashing green (once every 2 seconds) | Off | The card in the corresponding slot is operating correctly. |
| Fast flashing green (once every 4 seconds) | Steady on | The card in the corresponding slot is loading software. If the card keeps in this state, the software version running on the device is not compatible with the card. |
| Flashing green (once every 2 seconds) | Flashing red (once every 4 seconds) | The temperature of the card in the corresponding slot is abnormal. The temperature has exceeded the upper warning temperature threshold or dropped below the lower temperature threshold. |
| Steady on | Steady on | The card in the corresponding slot is starting or faulty. |
| Off | Off | No card is available in the corresponding slot. |

**NOTE:**

At the system startup, the ALM LED being on for a while does not mean that the card is faulty.

**Table2-37 Power supply status LED description**

| Status | | Description |
|---|---|---|
| OK (Green) | FAIL (Red) | |
| Steady on | Off | All power supplies in the chassis are operating correctly. |
| Off | Steady on | A power supply in the chassis does not have power output, because the power supply is faulty, the power supply is not powered on, the |

| Status | | Description |
|---|---|---|
| OK (Green) | FAIL (Red) | |
| | | power cable is faulty, or the external power supply system has a power outage. |
| Off | Off | The following are the possible causes:<br>No power supplies exist in the chassis.<br>No power supply in the chassis has power output, because the power supplies are faulty, the power supplies are not powered on, the power cables are faulty, or the external power supply system has a power outage. |

**Table2-38 Fan tray status LED description**

| Status | | Description |
|---|---|---|
| OK (Green) | FAIL (Red) | |
| Steady on | Off | The fan tray is operating correctly. |
| Off | Steady on | One or more fans in the fan tray have failed or the fan tray is not in position. |
| Off | Off | The router is not powered on. |

**Table2-39 Management Ethernet port LED description**

| LED mark | Status | Description |
|---|---|---|
| LINK/ACT | Flashing green | The port is in sending or receiving data. |
| | Steady green | A link is present on the port. |
| | Off | No link is present on the port. |

**Table2-40 CF card LED description**

| LED | Status | Description |
|---|---|---|
| CF card | Steady green | The CF card is present and idle. Do not hot swap it. |
| | Flashing green | The CF card is present and the system is reading/writing the card. Do not hot swap it. |
| | Off | The CF card is not in position, or the CF card is in offline state. You can hot swap it. |

## Ports

### Console port

The console port can be connected to a computer for system debugging, configuration, maintenance, management, and host software loading.

**Table2-41 Console port specifications**

| Item | Description |
|---|---|
| Connector type | RJ-45 |
| Compliant standard | Asynchronous EIA/TIA-232 |

| Item | Description |
| --- | --- |
| Transmission baud rate | ≤ 115200 bps. The default value is 9600 bps. |
| Transmission medium and max transmission distance | Common asynchronous serial interface cable, with a maximum transmission distance of 15 m (49.21 ft) |
| Services | Connects to the serial port on a local PC running a terminal emulation program. |

**USB console port**

**Table2-42 USB console port specifications**

| Item | Description |
| --- | --- |
| Connector type | USB-AB |
| Compliant standard | USB 2.0, full speed |
| Transmission baud rate | ≤ 115200 bps. The default value is 9600 bps. |
| Transmission medium and max transmission distance | USB-AB cable, with a maximum transmission distance of 2 m (6.56 ft) |
| Services | Connects to the USB port on a local PC running a terminal emulation program to provide a command-line interface for the router. A generic USB to serial port driver is required on the PC.<br>Connects routers to PCs or similar terminals that do not have a serial port. |

**Management Ethernet port**

The management Ethernet port can be connected to a computer for router program loading and router debugging, or connects to a remote NMS for remote management.

**Table2-43 Management Ethernet port specifications**

| Item | Description |
| --- | --- |
| Connector type | RJ-45 |
| Port quantity | 2 (port 1 reserved for future use) |
| Transmission baud rate | 10/100/1000 Mbps |
| Transmission medium and max transmission distance | Category-5 or above twisted pair cable, with a transmission distance of 100 m (328.08 ft) |
| Services | For router software upgrade and network management |

**USB port**

USB ports can connect multiple types of devices and provide a higher data transfer rate than common parallel interfaces and serial interfaces.

**Table2-44 USB port specifications**

| Item | Description |
| --- | --- |
| Connector type | USB A |
| Compliant standard | USB 2.0 |
| Services | External storage media |

**NOTE:**

Extension cables are not supported.

### CF card slot

A CF card is a mobile storage device that features fast speed, large capacity, small size, light weight, and low power consumption.

**Table2-45 External CF card specifications**

| Item | Description |
|---|---|
| CF card slots | 1 |
| CF card capacity | 4 GB |
| Services | You can use a CF card to store logs, application program files, and configuration files. |

**IMPORTANT:**

Before you use a CF card, insert the CF card into the card slot and fasten the card cover.

### SMB coaxial clock input/output port

SMB coaxial clock ports provide input or output clock references at 2.048 Mbps (2.048 MHz). You can set the data rate mode or frequency mode through the CLI. Two of them are input ports and two are output ports.

**Table2-46 SMB coaxial clock input/output port specifications**

| Item | Description |
|---|---|
| Connector type | SMB coaxial |
| Compliant standard | GJB681 |
| Transmission baud rate | 2.048 Mbps |
| Transmission medium | 75-ohm coaxial cable |
| Services | Sends and receives 2.048 MHz clocks and 2.048 Mbps signals to synchronize the clocks of the router and other devices, such as routers and the terminals. |

### High-precision time synchronization port

**Table2-47 High-precision time synchronization port specifications**

| Item | Description |
|---|---|
| Connector type | RJ-45 |
| Compliant standard | QB-B-016-2010 |
| Transmission baud rate | 9600 bps |
| Transmission medium | Category-5 or above twisted pair cable |
| Services | You can configure the port as an input port or output port at the CLI.<br>Synchronizes the clocks of the router and other devices, such as GPS receivers and terminals. |

### Technical specifications

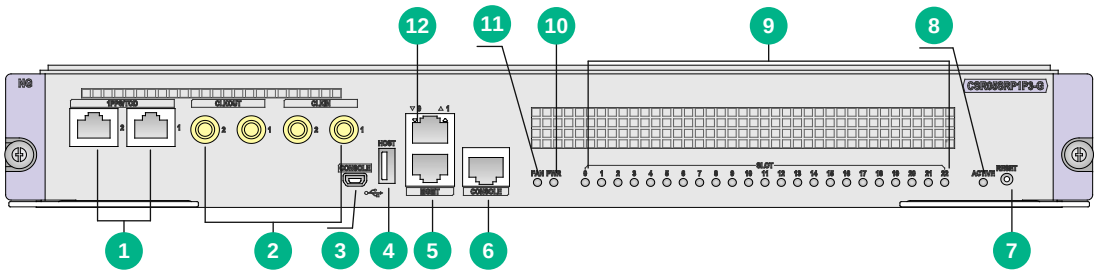
**Table2-48 CSR05SRP1P3/CSR05SRP1P3A MPU**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 52.2 × 399 × 352 mm (2.06 × 15.71 × 13.86 in) |
| Weight | CSR05SRP1P3: 4.80 kg (10.58 lb)<br>CSR05SRP1P3A: 4.40kg (9.70 lb) |
| Maximum power consumption | 64 W |
| Power consumption (with typical configuration) | 60 W |
| Minimum power consumption | 58 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |
| SDRAM | 16 GB |

# CSR05SRP1P3-G

### View

**Figure2-5 CSR05SRP1P3-G view**




| | |
|---|---|
| (1) High-precision time synchronization ports (Both are input ports by default. When both ports are input ports, only port 1 takes effect.) | (2) SMB coaxial clock ports (2 input ports and 2 output ports) |
| (3) USB console port | (4) USB 2.0 port |
| (5) Management Ethernet ports (1000Base-T) | (6) Console port |
| (7) System reset button | (8) MPU active/standby LED. For the LED description, see Table2-49. |
| (9) Card status LEDs. For the LED description, see Table2-50. | (10) Power supply status LED. For the LED description, see Table2-51. |
| (11) Fan tray status LED. For the LED description, see Table2-52. | (12) Management Ethernet port LED. For the LED description, see Table2-53. |

### LEDs

**Table2-49 MPU active/standby LED description**

| LED mark | Status | Description |
|---|---|---|
| ACTIVE | Steady green | The MPU is in active state. |

| LED mark | Status | Description |
|---|---|---|
| | Off | The following are the possible causes:<br>• The MPU is in standby state.<br>• The MPU has failed. To identify the failure, see the card status LED description. |

**Table2-50 Card status LED description**

| LED status | Description |
|---|---|
| Flashing green | The card in the corresponding slot is operating correctly. |
| Fast flashing green (4 Hz) | The card in the corresponding slot is loading software. If the card keeps in this state, the software version running on the device is not compatible with the card. |
| Steady red | The card in the corresponding slot is starting or faulty. |
| Flashing red | The temperature of the card in the corresponding slot is abnormal. The temperature has exceeded the upper warning temperature threshold or dropped below the lower temperature threshold. |
| Off | No card is available in the corresponding slot. |

**Table2-51 Power supply status LED description**

| Power supply status LED | Status | Description |
|---|---|---|
| PWR (Red or green) | Green | All power supplies in the chassis are operating correctly. |
| | Red | A power supply in the chassis does not have power output, because the power supply is faulty, the power supply is not powered on, the power cable is faulty, or the external power supply system has a power outage. |
| | Off | The following are the possible causes:<br>• No power supplies exist in the chassis.<br>• No power supply in the chassis has power output, because the power supplies are faulty, the power supplies are not powered on, the power cables are faulty, or the external power supply system has a power outage. |

**Table2-52 Fan tray status LED description**

| Fan tray status LED | Status | Description |
|---|---|---|
| FAN (Red or green) | Green | The fan tray is operating correctly. |
| | Red | One or more fans in the fan tray have failed or the fan tray is not in position. |
| | Off | The router is not powered on. |

**Table2-53 Management Ethernet port LED description**

| LED mark | Status | Description |
|---|---|---|
| LINK/ACT | Flashing green | The port is in sending or receiving data. |

| LED mark | Status | Description |
|---|---|---|
| | Steady green | A link is present on the port. |
| | Off | No link is present on the port. |

## Ports

### Console port

The console port can be connected to a computer for system debugging, configuration, maintenance, management, and host software loading.

**Table2-54 Console port specifications**

| Item | Description |
|---|---|
| Connector type | RJ-45 |
| Compliant standard | Asynchronous EIA/TIA-232 |
| Transmission baud rate | ≤ 115200 bps. The default value is 9600 bps. |
| Transmission medium and max transmission distance | Common asynchronous serial interface cable, with a maximum transmission distance of 15 m (49.21 ft) |
| Services | Connects to the serial port on a local PC running a terminal emulation program. |

### USB console port

**Table2-55 USB console port specifications**

| Item | Description |
|---|---|
| Connector type | USB-AB |
| Compliant standard | USB 2.0, full speed |
| Transmission baud rate | ≤ 115200 bps. The default value is 9600 bps. |
| Transmission medium and max transmission distance | USB-AB cable, with a maximum transmission distance of 2 m (6.56 ft) |
| Services | Connects to the USB port on a local PC running a terminal emulation program to provide a command-line interface for the router. A generic USB to serial port driver is required on the PC.<br>Connects routers to PCs or similar terminals that do not have a serial port. |

### Management Ethernet port

The management Ethernet port can be connected to a computer for router program loading and router debugging, or connects to a remote NMS for remote management.

**Table2-56 Management Ethernet port specifications**

| Item | Description |
|---|---|
| Connector type | RJ-45 |
| Port quantity | 2 |
| Transmission baud rate | 1000 Mbps, full duplex |

| Item | Description |
| --- | --- |
| Transmission medium and max transmission distance | Category-5 or above twisted pair cable, with a transmission distance of 100 m (328.08 ft) |
| Services | For router software upgrade and network management |

### USB port

USB ports can connect multiple types of devices and provide a higher data transfer rate than common parallel interfaces and serial interfaces.

**Table2-57 USB port specifications**

| Item | Description |
| --- | --- |
| Connector type | USB A |
| Compliant standard | USB 2.0 |
| Services | External storage media |

**NOTE:**

Extension cables are not supported.

### SMB coaxial clock input/output port

SMB coaxial clock ports provide input or output clock references at 2.048 Mbps (2.048 MHz). You can set the data rate mode or frequency mode through the CLI. Two of them are input ports and two are output ports.

**Table2-58 SMB coaxial clock input/output port specifications**

| Item | Description |
| --- | --- |
| Connector type | SMB coaxial |
| Compliant standard | GJB681 |
| Transmission baud rate | 2.048 Mbps |
| Transmission medium | 75-ohm coaxial cable |
| Services | Sends and receives 2.048 MHz clocks and 2.048 Mbps signals to synchronize the clocks of the router and other devices, such as routers and the terminals. |

### High-precision time synchronization port

**Table2-59 High-precision time synchronization port specifications**

| Item | Description |
| --- | --- |
| Connector type | RJ-45 |
| Compliant standard | QB-B-016-2010 |
| Transmission baud rate | 9600 bps |
| Transmission medium | Category-5 or above twisted pair cable |
| Services | You can configure the port as an input port or output port at the CLI.<br>Synchronizes the clocks of the router and other devices, such as GPS receivers and terminals. |

### Technical specifications

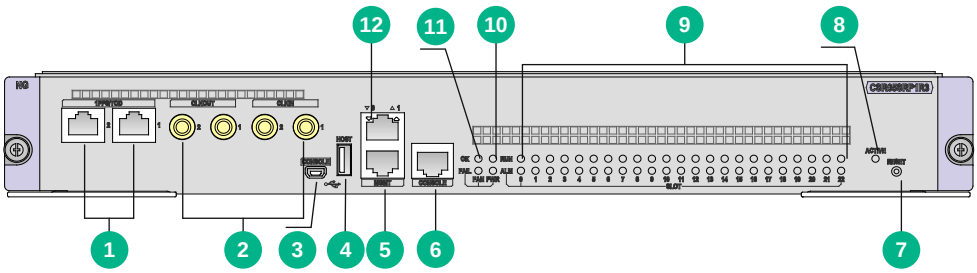
**Table2-60 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 52.2 × 399 × 352 mm (2.06 × 15.71 × 13.86 in) |
| Weight | 4.50 kg (9.92 lb) |
| Maximum power consumption | 65W |
| Power consumption (with typical configuration) | 50 W |
| Minimum power consumption | 40 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |
| SDRAM | 16 GB |

# CSR05SRP1R3/CSR05SRP1R3A

### View

**Figure2-6 CSR05SRP1R3 view**




| | |
|---|---|
| (1) High-precision time synchronization ports (Both are input ports by default. When both ports are input ports, only port 1 takes effect.) | (2) SMB coaxial clock ports (2 input ports and 2 output ports) |
| (3) USB console port | (4) USB 2.0 port |
| (5) Management Ethernet ports (1000Base-T) (port 1 reserved for future use) | (6) Console port |
| (7) System reset button | (8) MPU active/standby LED. For the LED description, see Table2-61. |
| (9) Card status LEDs. For the LED description, see Table2-62. | (10) Power supply status LED. For the LED description, see Table2-63. |
| (11) Fan tray status LED. For the LED description, see Table2-64. | (12) Management Ethernet port LED. For the LED description, see Table2-65. |

The views of the CSR05SRP1R3 and CSR05SRP1R3A are similar. This figure uses the CSR05SRP1R3 as an example.

## LEDs

**Table2-61 MPU active/standby LED description**

| LED mark | Status | Description |
|---|---|---|
| ACTIVE | Steady green | The MPU is in active state. |
| | Off | The following are the possible causes:<br>• The MPU is in standby state.<br>• The MPU has failed. To identify the failure, see the card status LED description. |

**Table2-62 Card status LED description**

| Status | | Description |
|---|---|---|
| RUN (Green) | ALM (Red) | |
| Flashing green (once every 2 seconds) | Off | The card in the corresponding slot is operating correctly. |
| Fast flashing green (once every 4 seconds) | Steady on | The card in the corresponding slot is loading software. If the card keeps in this state, the software version running on the device is not compatible with the card. |
| Flashing green (once every 2 seconds) | Flashing red (once every 4 seconds) | The temperature of the card in the corresponding slot is abnormal. The temperature has exceeded the upper warning temperature threshold or dropped below the lower temperature threshold. |
| Steady on | Steady on | The card in the corresponding slot is starting or faulty. |
| Off | Off | No card is available in the corresponding slot. |

**NOTE:**

At the system startup, the ALM LED being on for a while does not mean that the card is faulty.

**Table2-63 Power supply status LED description**

| Status | | Description |
|---|---|---|
| OK (Green) | FAIL (Red) | |
| Steady on | Off | All power supplies in the chassis are operating correctly. |
| Off | Steady on | A power supply in the chassis does not have power output, because the power supply is faulty, the power supply is not powered on, the power cable is faulty, or the external power supply system has a power outage. |
| Off | Off | The following are the possible causes:<br>No power supplies exist in the chassis.<br>No power supply in the chassis has power output, because the power supplies are faulty, the power supplies are not powered on, the power cables are faulty, or the external power supply system has a power outage. |

**Table2-64 Fan tray status LED description**

| Status | | Description |
|---|---|---|
| **OK (Green)** | **FAIL (Red)** | |
| Steady on | Off | The fan tray is operating correctly. |
| Off | Steady on | One or more fans in the fan tray have failed or the fan tray is not in position. |
| Off | Off | The router is not powered on. |

**Table2-65 Management Ethernet port LED description**

| LED mark | Status | Description |
|---|---|---|
| LINK/ACT | Flashing green | The port is in sending or receiving data. |
| | Steady green | A link is present on the port. |
| | Off | No link is present on the port. |

## Ports

### Console port

The console port can be connected to a computer for system debugging, configuration, maintenance, management, and host software loading.

**Table2-66 Console port specifications**

| Item | Description |
|---|---|
| Connector type | RJ-45 |
| Compliant standard | Asynchronous EIA/TIA-232 |
| Transmission baud rate | ≤ 115200 bps. The default value is 9600 bps. |
| Transmission medium and max transmission distance | Common asynchronous serial interface cable, with a maximum transmission distance of 15 m (49.21 ft) |
| Services | Connects to the serial port on a local PC running a terminal emulation program. |

### USB console port

**Table2-67 USB console port specifications**

| Item | Description |
|---|---|
| Connector type | USB-AB |
| Compliant standard | USB 2.0, full speed |
| Transmission baud rate | ≤ 115200 bps. The default value is 9600 bps. |
| Transmission medium and max transmission distance | USB-AB cable, with a maximum transmission distance of 2 m (6.56 ft) |
| Services | Connects to the USB port on a local PC running a terminal emulation program to provide a command-line interface for the router. A generic USB to serial port driver is required on the PC.<br>Connects routers to PCs or similar terminals that do not have a serial port. |

### Management Ethernet port

The management Ethernet port can be connected to a computer for router program loading and router debugging, or connects to a remote NMS for remote management.

**Table2-68 Management Ethernet port specifications**

| Item | Description |
|---|---|
| Connector type | RJ-45 |
| Port quantity | 2 (port 1 reserved for future use) |
| Transmission baud rate | 1000 Mbps, full duplex |
| Transmission medium and max transmission distance | Category-5 or above twisted pair cable, with a transmission distance of 100 m (328.08 ft) |
| Services | For router software upgrade and network management |

### USB port

USB ports can connect multiple types of devices and provide a higher data transfer rate than common parallel interfaces and serial interfaces.

**Table2-69 USB port specifications**

| Item | Description |
|---|---|
| Connector type | USB A |
| Compliant standard | USB 2.0 |
| Services | External storage media |

**NOTE:**

Extension cables are not supported.

### SMB coaxial clock input/output port

SMB coaxial clock ports provide input or output clock references at 2.048 Mbps (2.048 MHz). You can set the data rate mode or frequency mode through the CLI. Two of them are input ports and two are output ports.

**Table2-70 SMB coaxial clock input/output port specifications**

| Item | Description |
|---|---|
| Connector type | SMB coaxial |
| Compliant standard | GJB681 |
| Transmission baud rate | 2.048 Mbps |
| Transmission medium | 75-ohm coaxial cable |
| Services | Sends and receives 2.048 MHz clocks and 2.048 Mbps signals to synchronize the clocks of the router and other devices, such as routers and the terminals. |

### High-precision time synchronization port

**Table2-71 High-precision time synchronization port specifications**

| Item | Description |
|---|---|
| Connector type | RJ-45 |
| Compliant standard | QB-B-016-2010 |
| Transmission baud rate | 9600 bps |
| Transmission medium | Category-5 or above twisted pair cable |
| Services | You can configure the port as an input port or output port at the CLI.<br>Synchronizes the clocks of the router and other devices, such as GPS receivers and terminals. |

### Technical specifications

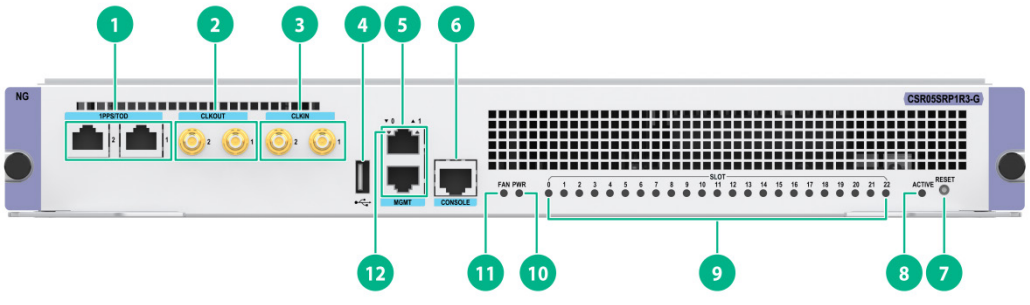
**Table2-72 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 52.2 × 399 × 352 mm (2.06 × 15.71 × 13.86 in) |
| Weight | 4.90 kg (10.80 lb) |
| Maximum power consumption | 130W |
| Power consumption (with typical configuration) | 95W |
| Minimum power consumption | 89W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |
| SDRAM | 2 × 16 GB |

# CSR05SRP1R3-G/CSR05SRP1R3A-G

### View

**Figure2-7 CSR05SRP1R3-G view**




| | |
|---|---|
| (1) High-precision time synchronization ports (Both are input ports by default. When both ports are input ports, only port 1 takes effect.) | (2) SMB coaxial clock output ports (2 in total) |
| (3) SMB coaxial clock input ports (2 in total) | (4) USB 2.0 port |

| | |
|---|---|
| (5) Management Ethernet ports (1000Base-T) | (6) Console port |
| (7) System reset button | (8) MPU active/standby LED. For the LED description, see Table2-73. |
| (9) Card status LEDs. For the LED description, see Table2-74. | (10) Power supply status LED. For the LED description, see Table2-75. |
| (11) Fan tray status LED. For the LED description, see Table2-76. | (12) Management Ethernet port LED. For the LED description, see Table2-77. |

The views of the CSR05SRP1R3-G and CSR05SRP1R3A-G are similar. This figure uses the CSR05SRP1R3-G as an example.

## LEDs

**Table2-73 MPU active/standby LED description**

| LED mark | Status | Description |
|---|---|---|
| ACTIVE | Steady green | The MPU is in active state. |
| | Off | The following are the possible causes:<br>• The MPU is in standby state.<br>• The MPU has failed. To identify the failure, see the card status LED description. |

**Table2-74 Card status LED description**

| LED status | Description |
|---|---|
| Flashing green | The card in the corresponding slot is operating correctly. |
| Fast flashing green (4 Hz) | The card in the corresponding slot is loading software. If the card keeps in this state, the software version running on the device is not compatible with the card. |
| Steady red | The card in the corresponding slot is starting or faulty. |
| Flashing red | The temperature of the card in the corresponding slot is abnormal. The temperature has exceeded the upper warning temperature threshold or dropped below the lower temperature threshold. |
| Off | No card is available in the corresponding slot. |

**Table2-75 Power supply status LED description**

| Power supply status LED | Status | Description |
|---|---|---|
| PWR (Red or green) | Steady green | All power supplies in the chassis are operating correctly. |
| | Steady red | A power supply in the chassis does not have power output, because the power supply is faulty, the power supply is not powered on, the power cable is faulty, or the external power supply system has a power outage. |
| | Off | The following are the possible causes:<br>• No power supplies exist in the chassis.<br>• No power supply in the chassis has power output, because the power supplies are faulty, the power supplies are not powered on, the power cables are faulty, or the external power supply system |

| Power supply status LED | Status | Description |
|---|---|---|
| | | has a power outage. |

**Table2-76 Fan tray status LED description**

| Fan tray status LED | Status | Description |
|---|---|---|
| FAN (Red or green) | Steady green | The fan tray is operating correctly. |
| | Steady red | One or more fans in the fan tray have failed or the fan tray is not in position. |
| | Off | The router is not powered on. |

**Table2-77 Management Ethernet port LED description**

| LED mark | Status | Description |
|---|---|---|
| LINK/ACT | Flashing green | The port is in sending or receiving data. |
| | Steady green | A link is present on the port. |
| | Off | No link is present on the port. |

## Ports

### Console port

The console port can be connected to a computer for system debugging, configuration, maintenance, management, and host software loading.

**Table2-78 Console port specifications**

| Item | Description |
|---|---|
| Connector type | RJ-45 |
| Compliant standard | Asynchronous EIA/TIA-232 |
| Transmission baud rate | ≤ 115200 bps. The default value is 9600 bps. |
| Transmission medium and max transmission distance | Common asynchronous serial interface cable, with a maximum transmission distance of 15 m (49.21 ft) |
| Services | Connects to the serial port on a local PC running a terminal emulation program. |

### Management Ethernet port

The management Ethernet port can be connected to a computer for router program loading and router debugging, or connects to a remote NMS for remote management.

**Table2-79 Management Ethernet port specifications**

| Item | Description |
|---|---|
| Connector type | RJ-45 |
| Port quantity | 2 |

| Item | Description |
| --- | --- |
| Transmission baud rate | 1000 Mbps, full duplex |
| Transmission medium and max transmission distance | Category-5 or above twisted pair cable, with a transmission distance of 100 m (328.08 ft) |
| Services | For router software upgrade and network management |

### USB port

USB ports can connect multiple types of devices and provide a higher data transfer rate than common parallel interfaces and serial interfaces.

**Table2-80 USB port specifications**

| Item | Description |
| --- | --- |
| Connector type | USB A |
| Compliant standard | USB 2.0 |
| Services | External storage media |

**NOTE:**

Extension cables are not supported.

### SMB coaxial clock input/output port

SMB coaxial clock ports provide input or output clock references at 2.048 Mbps (2.048 MHz). You can set the data rate mode or frequency mode through the CLI. Two of them are input ports and two are output ports.

**Table2-81 SMB coaxial clock input/output port specifications**

| Item | Description |
| --- | --- |
| Connector type | SMB coaxial |
| Compliant standard | GJB681 |
| Transmission baud rate | 2.048 Mbps |
| Transmission medium | 75-ohm coaxial cable |
| Services | Sends and receives 2.048 MHz clocks and 2.048 Mbps signals to synchronize the clocks of the router and other devices, such as routers and the terminals. |

### High-precision time synchronization port

**Table2-82 High-precision time synchronization port specifications**

| Item | Description |
| --- | --- |
| Connector type | RJ-45 |
| Compliant standard | QB-B-016-2010 |
| Transmission baud rate | 9600 bps |
| Transmission medium | Category-5 or above twisted pair cable |
| Services | You can configure the port as an input port or output port at the CLI.<br>Synchronizes the clocks of the router and other devices, such as GPS receivers |

| Item | Description |
|---|---|
| | and terminals. |

### Technical specifications

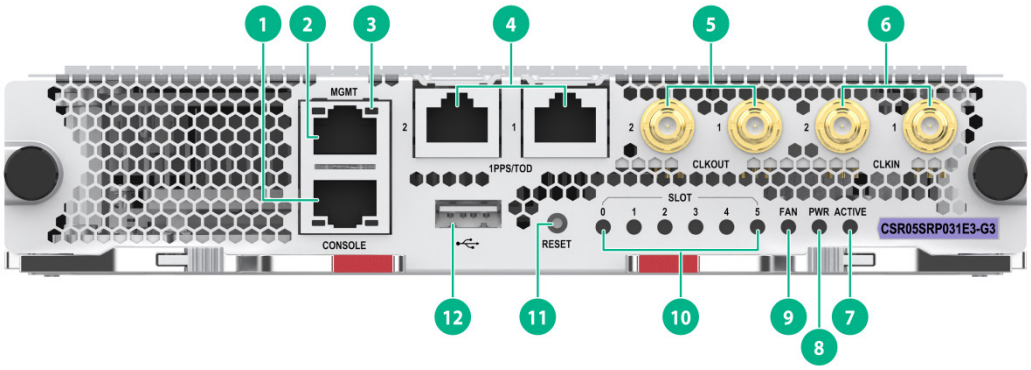
**Table2-83 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 52.2 × 399 × 352 mm (2.06 × 15.71 × 13.86 in) |
| Weight | 4.55 kg (10.03 lb) |
| Maximum power consumption | 130 W |
| Power consumption (with typical configuration) | 117 W |
| Minimum power consumption | 55 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |
| SDRAM | 16 GB or 32 GB (subject to the card specifications) |

# CSR05SRP031E3-G3

### View

**Figure2-8 CSR05SRP031E3-G3 view**




| | |
|---|---|
| (1) Console port | (2) Management Ethernet port (10/100/1000Base-T) |
| (3) Management Ethernet port LED. For the LED description, see Table2-84. | (4) High-precision time synchronization ports (Both are input ports by default. When both ports are input ports, only port 1 takes effect.) |
| (5) SMB coaxial clock output ports (2 in total) | (6) SMB coaxial clock input ports (2 in total) |
| (7) MPU active/standby LED. For the LED description, see Table2-85. | (8) Power supply status LED. For the LED description, see Table2-86. |
| (9) Fan tray status LED. For the LED description, see Table2-87. | (10) Card status LEDs. For the LED description, see Table2-88. |
| (11) System reset button | (12) USB 2.0 port |

## LEDs

**Table2-84 Management Ethernet port LED description**

| Status | | Description |
|---|---|---|
| LINK (green) | ACT (yellow) | |
| Steady on | Flashing | A link is present, and the port is sending or receiving data. |
| Steady on | Off | A link is present, but the port is not sending or receiving data. |
| Off | Off | No link is present on the port. |

**Table2-85 MPU active/standby LED description**

| LED mark | Status | Description |
|---|---|---|
| ACTIVE | Steady green | The MPU is in active state. |
| | Off | The following are the possible causes:<br>• The MPU is in standby state.<br>• The MPU has failed. To identify the failure, see the card status LED description. |

**Table2-86 Power supply status LED description**

| Power supply status LED | Status | Description |
|---|---|---|
| PWR (Red or green) | Steady green | All power supplies in the chassis are operating correctly. |
| | Steady red | A power supply in the chassis does not have power output, because the power supply is faulty, the power supply is not powered on, the power cable is faulty, or the external power supply system has a power outage. |
| | Off | The following are the possible causes:<br>• No power supplies exist in the chassis.<br>• No power supply in the chassis has power output, because the power supplies are faulty, the power supplies are not powered on, the power cables are faulty, or the external power supply system has a power outage. |

**Table2-87 Fan tray status LED description**

| Fan tray status LED | Status | Description |
|---|---|---|
| FAN (Red or green) | Steady green | The fan tray is operating correctly. |
| | Steady red | One or more fans in the fan tray have failed or the fan tray is not in position. |
| | Off | The router is not powered on. |

**Table2-88 Card status LED description**

| LED status | Description |
|---|---|
| Flashing green | The card in the corresponding slot is operating correctly. |

| LED status | Description |
| --- | --- |
| Fast flashing green (4 Hz) | The card in the corresponding slot is loading software. If the card keeps in this state, the software version running on the device is not compatible with the card. |
| Steady red | The card in the corresponding slot is starting or faulty. |
| Flashing red | The temperature of the card in the corresponding slot is abnormal. The temperature has exceeded the upper warning temperature threshold or dropped below the lower temperature threshold. |
| Off | No card is available in the corresponding slot. |

**NOTE:**

At the system startup, a card status LED being red for a while does not mean that the card is faulty.

## Ports

### Console port

The console port can be connected to a computer for system debugging, configuration, maintenance, management, and host software loading.

**Table2-89 Console port specifications**

| Item | Description |
| --- | --- |
| Connector type | RJ-45 |
| Compliant standard | Asynchronous EIA/TIA-232 |
| Transmission baud rate | ≤ 115200 bps. The default value is 9600 bps. |
| Transmission medium and max transmission distance | Common asynchronous serial interface cable, with a maximum transmission distance of 15 m (49.21 ft) |
| Services | Connects to the serial port on a local PC running a terminal emulation program. |

### Management Ethernet port

The management Ethernet port can be connected to a computer for router program loading and router debugging, or connects to a remote NMS for remote management.

**Table2-90 Management Ethernet port specifications**

| Item | Description |
| --- | --- |
| Connector type | RJ-45 |
| Port quantity | 1 |
| Transmission baud rate | 10/100/1000 Mbps |
| Transmission medium and max transmission distance | Category-5 or above twisted pair cable, with a transmission distance of 100 m (328.08 ft) |
| Services | For router software upgrade and network management |

### High-precision time synchronization port

**Table2-91 High-precision time synchronization port specifications**

| Item | Description |
|---|---|
| Connector type | RJ-45 |
| Compliant standard | QB-B-016-2010 |
| Transmission baud rate | 9600 bps |
| Transmission medium | Category-5 or above twisted pair cable |
| Services | You can configure the port as an input port or output port at the CLI.<br>Synchronizes the clocks of the router and other devices, such as GPS receivers and terminals. |

### SMB coaxial clock input/output port

SMB coaxial clock ports provide input or output clock references at 2.048 Mbps (2.048 MHz). You can set the data rate mode or frequency mode through the CLI. Two of them are input ports and two are output ports.

**Table2-92 SMB coaxial clock input/output port specifications**

| Item | Description |
|---|---|
| Connector type | SMB coaxial |
| Compliant standard | GJB681 |
| Transmission baud rate | 2.048 Mbps |
| Transmission medium | 75-ohm coaxial cable |
| Services | Sends and receives 2.048 MHz clocks and 2.048 Mbps signals to synchronize the clocks of the router and other devices, such as routers and the terminals. |

### USB port

USB ports can connect multiple types of devices and provide a higher data transfer rate than common parallel interfaces and serial interfaces.

**Table2-93 USB port specifications**

| Item | Description |
|---|---|
| Connector type | USB A |
| Compliant standard | USB 2.0 |
| Services | External storage media |

**NOTE:**

Extension cables are not supported.

## Technical specifications

**Table2-94 Technical specifications**

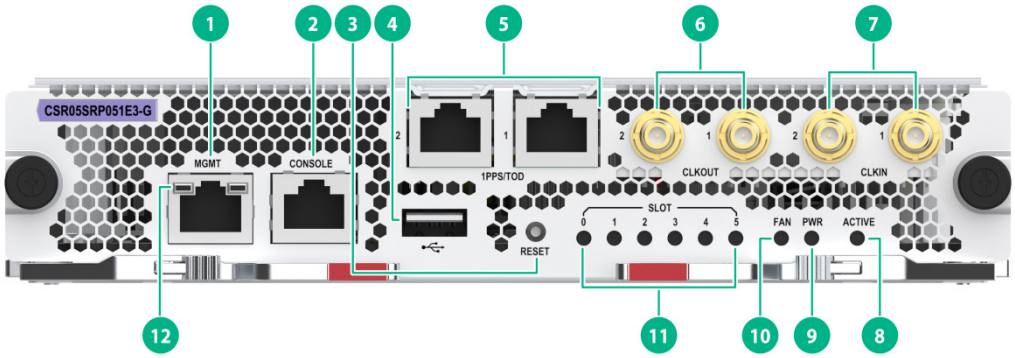
| Item | Description |
|---|---|
| Dimensions (H × W × D) | 38.9 × 199 × 355 mm (1.53 × 7.83 × 13.98 in) |
| Weight | 2.25 kg (4.96 lb) |

| Item | Description |
| --- | --- |
| Maximum power consumption | 120 W |
| Power consumption (with typical configuration) | 100 W |
| Minimum power consumption | 94 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |
| SDRAM | 16 GB |

# CSR05SRP051E3-G

## View

**Figure2-9 CSR05SRP051E3-G view**




| | |
| --- | --- |
| (1) Management Ethernet port (10/100/1000Base-T) | (2) Console port |
| (3) System reset button | (4) USB 2.0 port |
| (5) High-precision time synchronization ports (Both are input ports by default. When both ports are input ports, only port 1 takes effect.) | (6) SMB coaxial clock output ports (2 in total) |
| (7) SMB coaxial clock input ports (2 in total) | (8) MPU active/standby LED. For the LED description, see Table2-95. |
| (9) Power supply status LED. For the LED description, see Table2-96. | (10) Fan tray status LED. For the LED description, see Table2-97. |
| (11) Card status LEDs. For the LED description, see Table2-98. | (12) Management Ethernet port LED. For the LED description, see Table2-99. |

## LEDs

**Table2-95 MPU active/standby LED description**

| LED mark | Status | Description |
| --- | --- | --- |
| ACTIVE | Steady green | The MPU is in active state. |

| LED mark | Status | Description |
|---|---|---|
| | Off | The following are the possible causes:<br>• The MPU is in standby state.<br>• The MPU has failed. To identify the failure, see the card status LED description. |

**Table2-96 Power supply status LED description**

| Power supply status LED | Status | Description |
|---|---|---|
| PWR (Red or green) | Steady green | All power supplies in the chassis are operating correctly. |
| | Steady red | A power supply in the chassis does not have power output, because the power supply is faulty, the power supply is not powered on, the power cable is faulty, or the external power supply system has a power outage. |
| | Off | The following are the possible causes:<br>• No power supplies exist in the chassis.<br>• No power supply in the chassis has power output, because the power supplies are faulty, the power supplies are not powered on, the power cables are faulty, or the external power supply system has a power outage. |

**Table2-97 Fan tray status LED description**

| Fan tray status LED | Status | Description |
|---|---|---|
| FAN (Red or green) | Steady green | The fan tray is operating correctly. |
| | Steady red | One or more fans in the fan tray have failed or the fan tray is not in position. |
| | Off | The router is not powered on. |

**Table2-98 Card status LED description**

| LED status | Description |
|---|---|
| Flashing green | The card in the corresponding slot is operating correctly. |
| Fast flashing green (4 Hz) | The card in the corresponding slot is loading software. If the card keeps in this state, the software version running on the device is not compatible with the card. |
| Steady red | The card in the corresponding slot is starting or faulty. |
| Flashing red | The temperature of the card in the corresponding slot is abnormal. The temperature has exceeded the upper warning temperature threshold or dropped below the lower temperature threshold. |
| Off | No card is available in the corresponding slot. |

**NOTE:**

At the system startup, a card status LED being red for a while does not mean that the card is faulty.

**Table2-99 Management Ethernet port LED description**

| Status | | Description |
|---|---|---|
| LINK (green) | ACT (yellow) | |
| Steady on | Flashing | A link is present, and the port is sending or receiving data. |
| Steady on | Off | A link is present, but the port is not sending or receiving data. |
| Off | Off | No link is present on the port. |

## Ports

### Management Ethernet port

The management Ethernet port can be connected to a computer for router program loading and router debugging, or connects to a remote NMS for remote management.

**Table2-100 Management Ethernet port specifications**

| Item | Description |
|---|---|
| Connector type | RJ-45 |
| Port quantity | 1 |
| Transmission baud rate | 10/100/1000 Mbps |
| Transmission medium and max transmission distance | Category-5 or above twisted pair cable, with a transmission distance of 100 m (328.08 ft) |
| Services | For router software upgrade and network management |

### Console port

The console port can be connected to a computer for system debugging, configuration, maintenance, management, and host software loading.

**Table2-101 Console port specifications**

| Item | Description |
|---|---|
| Connector type | RJ-45 |
| Compliant standard | Asynchronous EIA/TIA-232 |
| Transmission baud rate | ≤ 115200 bps. The default value is 9600 bps. |
| Transmission medium and max transmission distance | Common asynchronous serial interface cable, with a maximum transmission distance of 15 m (49.21 ft) |
| Services | Connects to the serial port on a local PC running a terminal emulation program. |

### USB port

USB ports can connect multiple types of devices and provide a higher data transfer rate than common parallel interfaces and serial interfaces.

**Table2-102 USB port specifications**

| Item | Description |
|---|---|
| Connector type | USB A |

| Item | Description |
| --- | --- |
| Compliant standard | USB 2.0 |
| Services | External storage media |

**NOTE:**

Extension cables are not supported.

### High-precision time synchronization port

**Table2-103 High-precision time synchronization port specifications**

| Item | Description |
| --- | --- |
| Connector type | RJ-45 |
| Compliant standard | QB-B-016-2010 |
| Transmission baud rate | 9600 bps |
| Transmission medium | Category-5 or above twisted pair cable |
| Services | You can configure the port as an input port or output port at the CLI.<br>Synchronizes the clocks of the router and other devices, such as GPS receivers and terminals. |

### SMB coaxial clock input/output port

SMB coaxial clock ports provide input or output clock references at 2.048 Mbps (2.048 MHz). You can set the data rate mode or frequency mode through the CLI. Two of them are input ports and two are output ports.

**Table2-104 SMB coaxial clock input/output port specifications**

| Item | Description |
| --- | --- |
| Connector type | SMB coaxial |
| Compliant standard | GJB681 |
| Transmission baud rate | 2.048 Mbps |
| Transmission medium | 75-ohm coaxial cable |
| Services | Sends and receives 2.048 MHz clocks and 2.048 Mbps signals to synchronize the clocks of the router and other devices, such as routers and the terminals. |

## Technical specifications

**Table2-105 Technical specifications**

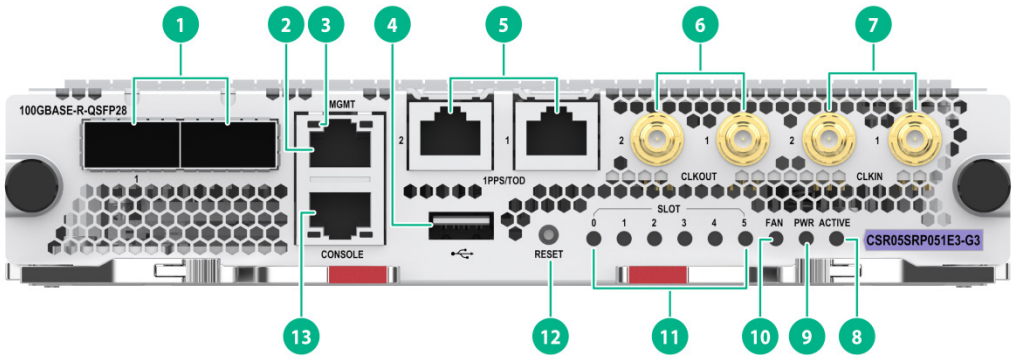
| Item | Description |
| --- | --- |
| Dimensions (H × W × D) | 38.9 × 199 × 353 mm (1.53 × 7.83 × 13.90 in) |
| Weight | 2.45 kg (5.40 lb) |
| Maximum power consumption | 120 W |
| Power consumption (with typical configuration) | 100 W |
| Minimum power | 94 W |

| Item | Description |
|---|---|
| consumption | |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |
| SDRAM | 16 GB or 32 GB (subject to the card specifications) |

# CSR05SRP051E3-G3

## View

**Figure2-10 CSR05SRP051E3-G3 view**




| | |
|---|---|
| (1) IRF physical interfaces | (2) Management Ethernet port (10/100/1000Base-T) |
| (3) Management Ethernet port LED. For the LED description, see Table2-106. | (4) USB 2.0 port |
| (5) High-precision time synchronization ports (Both are input ports by default. When both ports are input ports, only port 1 takes effect.) | (6) SMB coaxial clock output ports (2 in total) |
| (7) SMB coaxial clock input ports (2 in total) | (8) MPU active/standby LED. For the LED description, see Table2-107. |
| (9) Power supply status LED. For the LED description, see Table2-108. | (10) Fan tray status LED. For the LED description, see Table2-109. |
| (11) Card status LEDs. For the LED description, see Table2-110. | (12) System reset button |
| (13) Console port | |

## LEDs

**Table2-106 Management Ethernet port LED description**

| Status | | Description |
|---|---|---|
| LINK (green) | ACT (yellow) | |
| Steady on | Flashing | A link is present, and the port is sending or receiving data. |
| Steady on | Off | A link is present, but the port is not sending or receiving data. |
| Off | Off | No link is present on the port. |

**Table2-107 MPU active/standby LED description**

| LED mark | Status | Description |
|---|---|---|
| ACTIVE | Steady green | The MPU is in active state. |
| | Off | The following are the possible causes:<br>• The MPU is in standby state.<br>• The MPU has failed. To identify the failure, see the card status LED description. |

**Table2-108 Power supply status LED description**

| Power supply status LED | Status | Description |
|---|---|---|
| PWR (Red or green) | Steady green | All power supplies in the chassis are operating correctly. |
| | Steady red | A power supply in the chassis does not have power output, because the power supply is faulty, the power supply is not powered on, the power cable is faulty, or the external power supply system has a power outage. |
| | Off | The following are the possible causes:<br>• No power supplies exist in the chassis.<br>• No power supply in the chassis has power output, because the power supplies are faulty, the power supplies are not powered on, the power cables are faulty, or the external power supply system has a power outage. |

**Table2-109 Fan tray status LED description**

| Fan tray status LED | Status | Description |
|---|---|---|
| FAN (Red or green) | Steady green | The fan tray is operating correctly. |
| | Steady red | One or more fans in the fan tray have failed or the fan tray is not in position. |
| | Off | The router is not powered on. |

**Table2-110 Card status LED description**

| LED status | Description |
|---|---|
| Flashing green | The card in the corresponding slot is operating correctly. |
| Fast flashing green (4 Hz) | The card in the corresponding slot is loading software. If the card keeps in this state, the software version running on the device is not compatible with the card. |
| Steady red | The card in the corresponding slot is starting or faulty. |
| Flashing red | The temperature of the card in the corresponding slot is abnormal. The temperature has exceeded the upper warning temperature threshold or dropped below the lower temperature threshold. |
| Off | No card is available in the corresponding slot. |

**NOTE:**

At the system startup, a card status LED being red for a while does not mean that the card is faulty.

## Ports

### IRF physical interface

IRF physical interfaces connect IRF member devices and must be bound to an IRF port.

The Intelligent Resilient Framework (IRF) technology virtualizes multiple physical devices at the same layer into one virtual fabric to provide data center class availability and scalability. IRF virtualization technology offers processing power, interaction, unified management, and uninterrupted maintenance of multiple devices.

**Table2-111 IRF physical interface specifications**

| Item | Description |
|---|---|
| Interface type | 100GE QSFP28 fiber Ethernet port |
| Quantity | 2 |
| Transmission baud rate | 100 Gbps |
| Services | Connects IRF member devices |

### Management Ethernet port

The management Ethernet port can be connected to a computer for router program loading and router debugging, or connects to a remote NMS for remote management.

**Table2-112 Management Ethernet port specifications**

| Item | Description |
|---|---|
| Connector type | RJ-45 |
| Port quantity | 1 |
| Transmission baud rate | 10/100/1000 Mbps |
| Transmission medium and max transmission distance | Category-5 or above twisted pair cable, with a transmission distance of 100 m (328.08 ft) |
| Services | For router software upgrade and network management |

### Console port

The console port can be connected to a computer for system debugging, configuration, maintenance, management, and host software loading.

**Table2-113 Console port specifications**

| Item | Description |
|---|---|
| Connector type | RJ-45 |
| Compliant standard | Asynchronous EIA/TIA-232 |
| Transmission baud rate | ≤ 115200 bps. The default value is 9600 bps. |
| Transmission medium and max transmission distance | Common asynchronous serial interface cable, with a maximum transmission distance of 15 m (49.21 ft) |
| Services | Connects to the serial port on a local PC running a terminal emulation program. |

### USB port

USB ports can connect multiple types of devices and provide a higher data transfer rate than common parallel interfaces and serial interfaces.

**Table2-114 USB port specifications**

| Item | Description |
|---|---|
| Connector type | USB A |
| Compliant standard | USB 2.0 |
| Services | External storage media |

**NOTE:**

Extension cables are not supported.

### High-precision time synchronization port

**Table2-115 High-precision time synchronization port specifications**

| Item | Description |
|---|---|
| Connector type | RJ-45 |
| Compliant standard | QB-B-016-2010 |
| Transmission baud rate | 9600 bps |
| Transmission medium | Category-5 or above twisted pair cable |
| Services | You can configure the port as an input port or output port at the CLI.<br>Synchronizes the clocks of the router and other devices, such as GPS receivers and terminals. |

### SMB coaxial clock input/output port

SMB coaxial clock ports provide input or output clock references at 2.048 Mbps (2.048 MHz). You can set the data rate mode or frequency mode through the CLI. Two of them are input ports and two are output ports.

**Table2-116 SMB coaxial clock input/output port specifications**

| Item | Description |
|---|---|
| Connector type | SMB coaxial |
| Compliant standard | GJB681 |
| Transmission baud rate | 2.048 Mbps |
| Transmission medium | 75-ohm coaxial cable |
| Services | Sends and receives 2.048 MHz clocks and 2.048 Mbps signals to synchronize the clocks of the router and other devices, such as routers and the terminals. |

## Technical specifications

**Table2-117 Technical specifications**

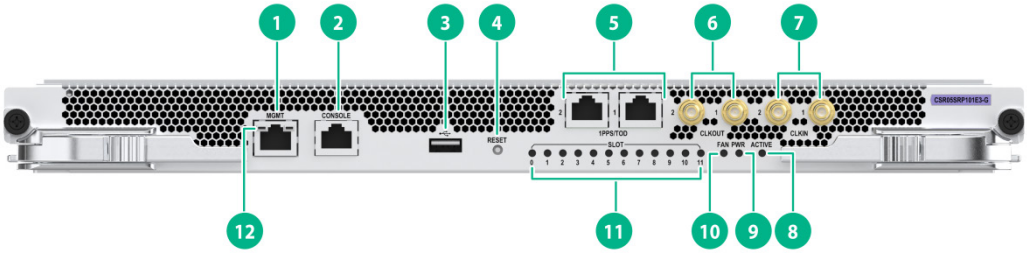
| Item | Description |
|---|---|
| Dimensions (H × W × D) | 38.9 × 199 × 353 mm (1.53 × 7.83 × 13.90 in) |
| Weight | 2.55 kg (5.62 lb) |

| Item | Description |
|---|---|
| Maximum power consumption | 120 W |
| Power consumption (with typical configuration) | 100 W |
| Minimum power consumption | 94 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |
| SDRAM | 16 GB |

# CSR05SRP101E3-G

## View

**Figure2-11 CSR05SRP101E3-G view**




| | |
|---|---|
| (1) Management Ethernet port (10/100/1000Base-T) | (2) Console port |
| (3) USB 2.0 port | (4) System reset button |
| (5) High-precision time synchronization ports (Both are input ports by default. When both ports are input ports, only port 1 takes effect.) | (6) SMB coaxial clock output ports (2 in total) |
| (7) SMB coaxial clock input ports (2 in total) | (8) MPU active/standby LED. For the LED description, see Table2-118. |
| (9) Power supply status LED. For the LED description, see Table2-119. | (10) Fan tray status LED. For the LED description, see Table2-120. |
| (11) Card status LEDs. For the LED description, see Table2-121. | (12) Management Ethernet port LED. For the LED description, see Table2-122. |

## LEDs

**Table2-118 MPU active/standby LED description**

| LED mark | Status | Description |
|---|---|---|
| ACTIVE | Steady green | The MPU is in active state. |
| | Off | The following are the possible causes:<br>• The MPU is in standby state.<br>• The MPU has failed. To identify the failure, see the card status LED description. |

**Table2-119 Power supply status LED description**

| Power supply status LED | Status | Description |
|---|---|---|
| PWR (Red or green) | Steady green | All power supplies in the chassis are operating correctly. |
| | Steady red | A power supply in the chassis does not have power output, because the power supply is faulty, the power supply is not powered on, the power cable is faulty, or the external power supply system has a power outage. |
| | Off | The following are the possible causes:<br>• No power supplies exist in the chassis.<br>• No power supply in the chassis has power output, because the power supplies are faulty, the power supplies are not powered on, the power cables are faulty, or the external power supply system has a power outage. |

**Table2-120 Fan tray status LED description**

| Fan tray status LED | Status | Description |
|---|---|---|
| FAN (Red or green) | Steady green | The fan tray is operating correctly. |
| | Steady red | One or more fans in the fan tray have failed or the fan tray is not in position. |
| | Off | The router is not powered on. |

**Table2-121 Card status LED description**

| LED status | Description |
|---|---|
| Flashing green | The card in the corresponding slot is operating correctly. |
| Fast flashing green (4 Hz) | The card in the corresponding slot is loading software. If the card keeps in this state, the software version running on the device is not compatible with the card. |
| Steady red | The card in the corresponding slot is starting or faulty. |
| Flashing red | The temperature of the card in the corresponding slot is abnormal. The temperature has exceeded the upper warning temperature threshold or dropped below the lower temperature threshold. |
| Off | No card is available in the corresponding slot. |

**NOTE:**

At the system startup, a card status LED being red for a while does not mean that the card is faulty.

**Table2-122 Management Ethernet port LED description**

| Status | | Description |
|---|---|---|
| LINK (green) | ACT (yellow) | |
| Steady on | Flashing | A link is present, and the port is sending or receiving data. |
| Steady on | Off | A link is present, but the port is not sending or receiving data. |
| Off | Off | No link is present on the port. |

## Ports

### Management Ethernet port

The management Ethernet port can be connected to a computer for router program loading and router debugging, or connects to a remote NMS for remote management.

**Table2-123 Management Ethernet port specifications**

| Item | Description |
|---|---|
| Connector type | RJ-45 |
| Port quantity | 1 |
| Transmission baud rate | 10/100/1000 Mbps |
| Transmission medium and max transmission distance | Category-5 or above twisted pair cable, with a transmission distance of 100 m (328.08 ft) |
| Services | For router software upgrade and network management |

### Console port

The console port can be connected to a computer for system debugging, configuration, maintenance, management, and host software loading.

**Table2-124 Console port specifications**

| Item | Description |
|---|---|
| Connector type | RJ-45 |
| Compliant standard | Asynchronous EIA/TIA-232 |
| Transmission baud rate | ≤ 115200 bps. The default value is 9600 bps. |
| Transmission medium and max transmission distance | Common asynchronous serial interface cable, with a maximum transmission distance of 15 m (49.21 ft) |
| Services | Connects to the serial port on a local PC running a terminal emulation program. |

### USB port

USB ports can connect multiple types of devices and provide a higher data transfer rate than common parallel interfaces and serial interfaces.

**Table2-125 USB port specifications**

| Item | Description |
|---|---|
| Connector type | USB A |
| Compliant standard | USB 2.0 |
| Services | External storage media |

**NOTE:**

Extension cables are not supported.

### High-precision time synchronization port

**Table2-126 High-precision time synchronization port specifications**

| Item | Description |
|---|---|
| Connector type | RJ-45 |
| Compliant standard | QB-B-016-2010 |
| Transmission baud rate | 9600 bps |
| Transmission medium | Category-5 or above twisted pair cable |
| Services | You can configure the port as an input port or output port at the CLI.<br>Synchronizes the clocks of the router and other devices, such as GPS receivers and terminals. |

### SMB coaxial clock input/output port

SMB coaxial clock ports provide input or output clock references at 2.048 Mbps (2.048 MHz). You can set the data rate mode or frequency mode through the CLI. Two of them are input ports and two are output ports.

**Table2-127 SMB coaxial clock input/output port specifications**

| Item | Description |
|---|---|
| Connector type | SMB coaxial |
| Compliant standard | GJB681 |
| Transmission baud rate | 2.048 Mbps |
| Transmission medium | 75-ohm coaxial cable |
| Services | Sends and receives 2.048 MHz clocks and 2.048 Mbps signals to synchronize the clocks of the router and other devices, such as routers and the terminals. |

## Technical specifications

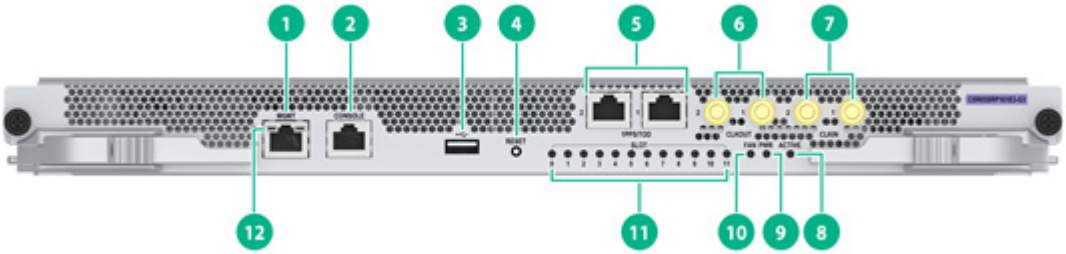
**Table2-128 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 35 × 399 × 355 mm (1.38 × 15.71 × 13.98 in) |
| Weight | 4.70 kg (10.36 lb) |
| Maximum power consumption | 106 W |
| Power consumption (with typical configuration) | 98 W |
| Minimum power consumption | 95 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |
| SDRAM | 16 GB or 32 GB (subject to the card specifications) |

# CSR05SRP101E3-G3

## View

**Figure2-12 CSR05SRP101E3-G3 view**




| | |
|---|---|
| (1) Management Ethernet port (10/100/1000Base-T) | (2) Console port |
| (3) USB 2.0 port | (4) System reset button |
| (5) High-precision time synchronization ports (Both are input ports by default. When both ports are input ports, only port 1 takes effect.) | (6) SMB coaxial clock output ports (2 in total) |
| (7) SMB coaxial clock input ports (2 in total) | (8) MPU active/standby LED. For the LED description, see Table2-129. |
| (9) Power supply status LED. For the LED description, see Table2-130. | (10) Fan tray status LED. For the LED description, see Table2-131. |
| (11) Card status LEDs. For the LED description, see Table2-132. | (12) Management Ethernet port LED. For the LED description, see Table2-133. |

## LEDs

**Table2-129 MPU active/standby LED description**

| LED mark | Status | Description |
|---|---|---|
| ACTIVE | Steady green | The MPU is in active state. |
| | Off | The following are the possible causes:<br>• The MPU is in standby state.<br>• The MPU has failed. To identify the failure, see the card status LED description. |

**Table2-130 Power supply status LED description**

| Power supply status LED | Status | Description |
|---|---|---|
| PWR (Red or green) | Steady green | All power supplies in the chassis are operating correctly. |
| | Steady red | A power supply in the chassis does not have power output, because the power supply is faulty, the power supply is not powered on, the power cable is faulty, or the external power supply system has a power outage. |
| | Off | The following are the possible causes:<br>• No power supplies exist in the chassis.<br>• No power supply in the chassis has power output, because the |

| Power supply status LED | Status | Description |
|---|---|---|
| | | power supplies are faulty, the power supplies are not powered on, the power cables are faulty, or the external power supply system has a power outage. |

**Table2-131 Fan tray status LED description**

| Fan tray status LED | Status | Description |
|---|---|---|
| FAN (Red or green) | Steady green | The fan tray is operating correctly. |
| | Steady red | One or more fans in the fan tray have failed or the fan tray is not in position. |
| | Off | The router is not powered on. |

**Table2-132 Card status LED description**

| LED status | Description |
|---|---|
| Flashing green | The card in the corresponding slot is operating correctly. |
| Fast flashing green (4 Hz) | The card in the corresponding slot is loading software. If the card keeps in this state, the software version running on the device is not compatible with the card. |
| Steady red | The card in the corresponding slot is starting or faulty. |
| Flashing red | The temperature of the card in the corresponding slot is abnormal. The temperature has exceeded the upper warning temperature threshold or dropped below the lower temperature threshold. |
| Off | No card is available in the corresponding slot. |

**NOTE:**

At the system startup, a card status LED being red for a while does not mean that the card is faulty.

**Table2-133 Management Ethernet port LED description**

| Status | | Description |
|---|---|---|
| LINK (green) | ACT (yellow) | |
| Steady on | Flashing | A link is present, and the port is sending or receiving data. |
| Steady on | Off | A link is present, but the port is not sending or receiving data. |
| Off | Off | No link is present on the port. |

## Ports

### Management Ethernet port

The management Ethernet port can be connected to a computer for router program loading and router debugging, or connects to a remote NMS for remote management.

**Table2-134 Management Ethernet port specifications**

| Item | Description |
|---|---|
| Connector type | RJ-45 |
| Port quantity | 1 |
| Transmission baud rate | 10/100/1000 Mbps |
| Transmission medium and max transmission distance | Category-5 or above twisted pair cable, with a transmission distance of 100 m (328.08 ft) |
| Services | For router software upgrade and network management |

### Console port

The console port can be connected to a computer for system debugging, configuration, maintenance, management, and host software loading.

**Table2-135 Console port specifications**

| Item | Description |
|---|---|
| Connector type | RJ-45 |
| Compliant standard | Asynchronous EIA/TIA-232 |
| Transmission baud rate | ≤ 115200 bps. The default value is 9600 bps. |
| Transmission medium and max transmission distance | Common asynchronous serial interface cable, with a maximum transmission distance of 15 m (49.21 ft) |
| Services | Connects to the serial port on a local PC running a terminal emulation program. |

### USB port

USB ports can connect multiple types of devices and provide a higher data transfer rate than common parallel interfaces and serial interfaces.

**Table2-136 USB port specifications**

| Item | Description |
|---|---|
| Connector type | USB A |
| Compliant standard | USB 2.0 |
| Services | External storage media |

**NOTE:**

Extension cables are not supported.

### High-precision time synchronization port

**Table2-137 High-precision time synchronization port specifications**

| Item | Description |
|---|---|
| Connector type | RJ-45 |
| Compliant standard | QB-B-016-2010 |
| Transmission baud rate | 9600 bps |

| Item | Description |
| --- | --- |
| Transmission medium | Category-5 or above twisted pair cable |
| Services | You can configure the port as an input port or output port at the CLI.<br>Synchronizes the clocks of the router and other devices, such as GPS receivers and terminals. |

**SMB coaxial clock input/output port**

SMB coaxial clock ports provide input or output clock references at 2.048 Mbps (2.048 MHz). You can set the data rate mode or frequency mode through the CLI. Two of them are input ports and two are output ports.

**Table2-138 SMB coaxial clock input/output port specifications**

| Item | Description |
| --- | --- |
| Connector type | SMB coaxial |
| Compliant standard | GJB681 |
| Transmission baud rate | 2.048 Mbps |
| Transmission medium | 75-ohm coaxial cable |
| Services | Sends and receives 2.048 MHz clocks and 2.048 Mbps signals to synchronize the clocks of the router and other devices, such as routers and the terminals. |

### Technical specifications

**Table2-139 Technical specifications**

| Item | Description |
| --- | --- |
| Dimensions (H × W × D) | 35 × 399 × 355 mm (1.38 × 15.71 × 13.98 in) |
| Weight | 4.70 kg (10.36 lb) |
| Maximum power consumption | 160 W |
| Power consumption (with typical configuration) | 105 W |
| Minimum power consumption | 97 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |
| SDRAM | 16 GB or 32 GB (subject to the card specifications) |

# Compatibility information

**Table2-140 Compatibility matrix between MPUs and routers**

| Card model | Applicable router models |
| --- | --- |
| CSR05SRP1L1 | CR16006-F, CR16010-F, CR16014-F |
| CSR05SRP1L3 | CR16006-F, CR16010-F, CR16014-F |
| CSR05SRP1P1 | CR16010H-F, CR16018-F |

| Card model | Applicable router models |
|---|---|
| CSR05SRP1P3 | CR16010H-F, CR16018-F |
| CSR05SRP1P3A | CR16010H-FA, CR16018-FA |
| CSR05SRP1P3-G | CR16010H-F, CR16018-F |
| CSR05SRP1R3 | CR16010H-F, CR16018-F |
| CSR05SRP1R3A | CR16010H-FA, CR16018-FA |
| CSR05SRP1R3-G | CR16010H-F, CR16018-F |
| CSR05SRP1R3A-G | CR16010H-FA, CR16018-FA |
| CSR05SRP031E3-G3 | CR16003E-F |
| CSR05SRP051E3-G | CR16003E-F, CR16005E-F |
| CSR05SRP051E3-G3 | CR16003E-F, CR16005E-F |
| CSR05SRP101E3-G | CR16010E-F |
| CSR05SRP101E3-G3 | CR16010E-F |

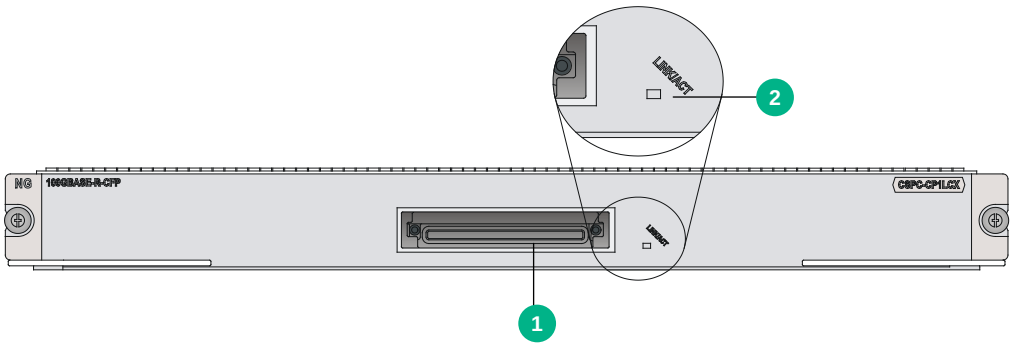
# CSPC LPUs

A combo interface is a logical interface that contains an SFP port and an RJ-45 Ethernet port. Only one of them can be activated at a time.

# CSPC-CP1LCX

## View

**Figure2-13 CSPC-CP1LCX view**




| | |
|---|---|
| (1) 100GBASE-R-CFP fiber port (1 in total) | (2) CFP port LED. For the LED description, see Table2-141. |

## LEDs

**Table2-141 CFP port LED description**

| LED | Status | Description |
|---|---|---|
| CFP port LED | Flashing | The CFP port is sending or receiving data. |

| LED | Status | Description |
|---|---|---|
| | Steady on | A link is present on the CFP port. |
| | Off | No link is present on the CFP port. |

### Ports

**Table2-142 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| CSPC-CP1LCX | 1-port 100GE optical interface module | LC | 1 | 100 Gbps |

### Technical specifications

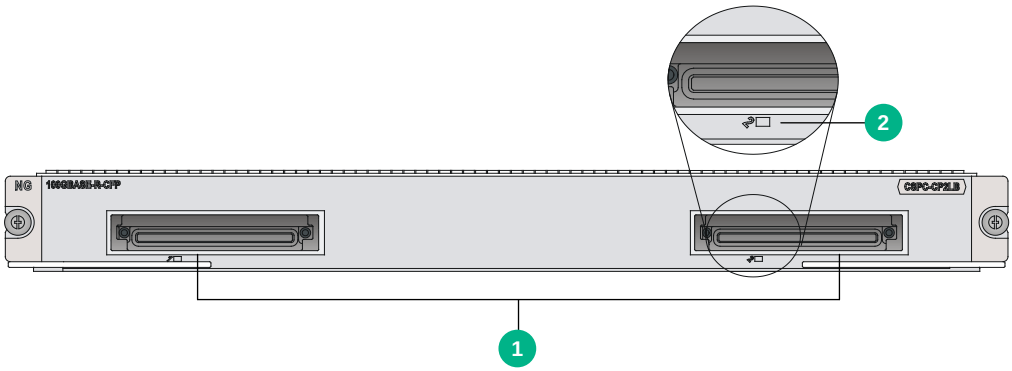
**Table2-143 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 40 × 399 × 352 mm (1.57 × 15.71 × 13.86 in) |
| Weight | 3.50 kg (7.72 lb) |
| Maximum power consumption | 173 W |
| Power consumption (with typical configuration) | 156 W |
| Minimum power consumption | 115 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# CSPC-CP2LB

### View

**Figure2-14 CSPC-CP2LB view**




| | |
|---|---|
| (1) 100GBASE-R-CFP fiber ports (2 in total) | (2) CFP port LED. For the LED description, see Table2-144. |

### LEDs

**Table2-144 CFP port LED description**

| LED | Status | Description |
|---|---|---|
| CFP port LED | Flashing | The CFP port is sending or receiving data. |
| | Steady on | A link is present on the CFP port. |
| | Off | No link is present on the CFP port. |

### Ports

**Table2-145 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| CSPC-CP2LB | 2-port 100GE optical interface module | LC | 2 | 100 Gbps |

### Technical specifications

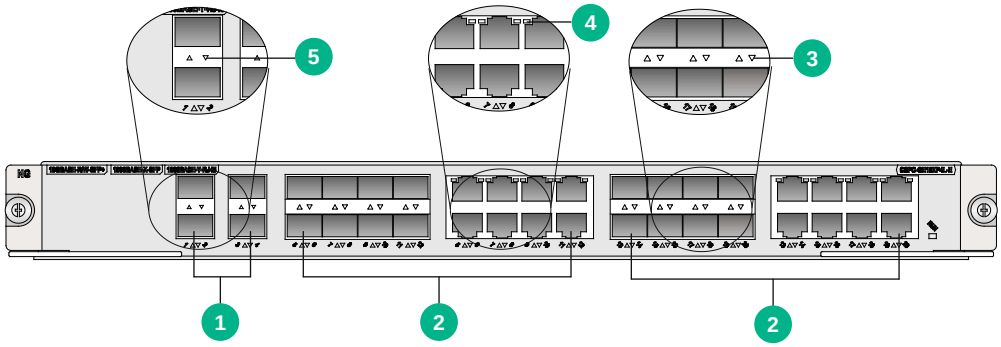
**Table2-146 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 40 × 399 × 352 mm (1.57 × 15.71 × 13.86 in) |
| Weight | 4.06 kg (8.95 lb) |
| Maximum power consumption | 197 W |
| Power consumption (with typical configuration) | 178 W |
| Minimum power consumption | 150 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# CSPC-GE16XP4L-E

### View

**Figure2-15 CSPC-GE16XP4L-E view**




| | |
|---|---|
| (1) 10GBASE-R-SFP+ fiber ports (4 in total) (10GE SFP+ modules supported) | (2) Combo interfaces (16 in total) (10GE SFP+ modules supported in 1000BASE-X-SFP fiber ports) |
| (3) SFP port LED. For the LED description, see Table2-148. | (4) RJ-45 Ethernet Interface LED. For the LED description, see Table2-147. |
| (5) SFP+ port LED. For the LED description, see Table2-149. | |

## LEDs

**Table2-147 RJ-45 Ethernet port LED description**

| LED | Status | Description |
|---|---|---|
| RJ-45 Ethernet port LED | Flashing | The port is sending or receiving data. |
| | Steady on | A link is present on the port. |
| | Off | No link is present on the port. |

**Table2-148 SFP port LED description**

| LED | Status | Description |
|---|---|---|
| SFP port LED | Flashing | The port is sending or receiving data. |
| | Steady on | A link is present on the port. |
| | Off | No link is present on the port. |

**Table2-149 SFP+ port LED description**

| LED | Status | Description |
|---|---|---|
| SFP+ port LED | Flashing | The port is sending or receiving data. |
| | Steady on | A link is present on the port. |
| | Off | No link is present on the port. |

**NOTE:**

You can identify the speed of an SFP+ port by observing the color of its LED. Green indicates a speed of 10 Gbps, and yellow indicates a speed of 1000 Mbps.

## Ports

**Table2-150 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| CSPC-GE16XP4L-E | 16-port GE combo interface + 4-port 10GE optical interface module | RJ-45 | 16 | 10/100/1000 Mbps |
| | | LC | 16 | 1000 Mbps |
| | | | 4 | 10 Gbps |

## Technical specifications

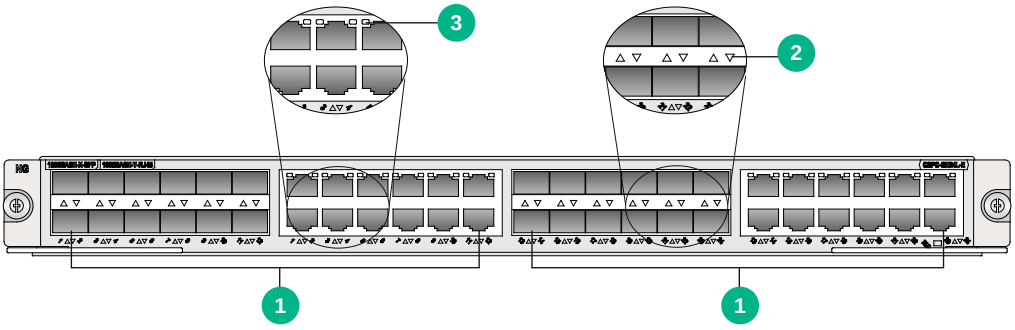
**Table2-151 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 40 × 399 × 352 mm (1.57 × 15.71 × 13.86 in) |
| Weight | 4.35 kg (9.59 lb) |
| Maximum power consumption | 127 W |
| Power consumption (with typical configuration) | 114 W |
| Minimum power consumption | 107 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# CSPC-GE24L-E

## View

**Figure2-16 CSPC-GE24L-E view**




| | |
|---|---|
| (1) Combo interfaces (24 in total) (10GE SFP+ modules supported in 1000BASE-X-SFP fiber ports) | (2) SFP port LED. For the LED description, see Table2-153. |
| (3) RJ-45 Ethernet Interface LED. For the LED description, see Table2-152. | |

## LEDs

**Table2-152 RJ-45 Ethernet port LED description**

| LED | Status | Description |
|---|---|---|
| RJ-45 Ethernet port LED | Flashing | The port is sending or receiving |

| LED | Status | Description |
|---|---|---|
| | | data. |
| | Steady on | A link is present on the port. |
| | Off | No link is present on the port. |

**Table2-153 SFP port LED description**

| LED | Status | Description |
|---|---|---|
| SFP port LED | Flashing | The port is sending or receiving data. |
| | Steady on | A link is present on the port. |
| | Off | No link is present on the port. |

### Ports

**Table2-154 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| CSPC-GE24L-E | 24-port GE Combo interface service module | RJ-45 | 24 | 10/100/1000 Mbps |
| | | LC | 24 | 1000 Mbps |

### Technical specifications

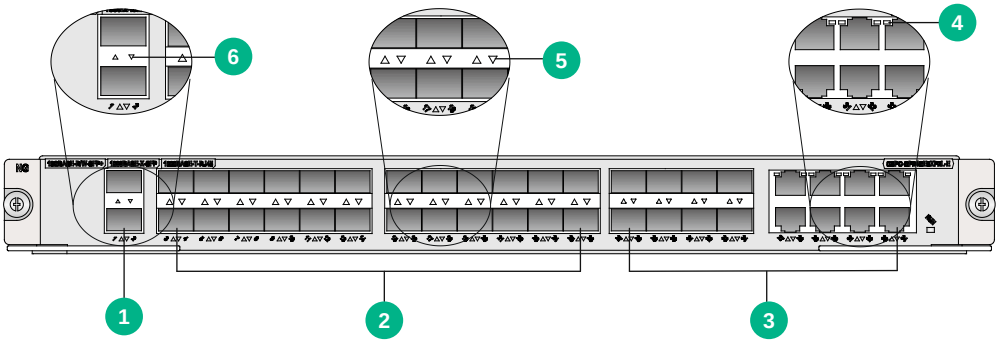
**Table2-155 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 40 × 399 × 352 mm (1.57 × 15.71 × 13.86 in) |
| Weight | 4.45 kg (9.81 lb) |
| Maximum power consumption | 114 W |
| Power consumption (with typical configuration) | 110 W |
| Minimum power consumption | 108 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# CSPC-GP24GE8XP2L-E

### View

**Figure2-17 CSPC-GP24GE8XP2L-E view**




| | |
|---|---|
| (1) 10GBASE-R-SFP+ fiber ports (2 in total) (10GE SFP+ modules supported) | (2) 1000BASE-X-SFP fiber ports (24 in total) (GE SFP modules supported) |
| (3) Combo interfaces (8 in total) (10GE SFP+ modules supported in 1000BASE-X-SFP fiber ports) | (4) RJ-45 Ethernet Interface LED. For the LED description, see Table2-156. |
| (5) SFP port LED. For the LED description, see Table2-157. | (6) SFP+ port LED. For the LED description, see Table2-158. |

## LEDs

**Table2-156 RJ-45 Ethernet port LED description**

| LED | Status | Description |
|---|---|---|
| RJ-45 Ethernet port LED | Flashing | The port is sending or receiving data. |
| | Steady on | A link is present on the port. |
| | Off | No link is present on the port. |

**Table2-157 SFP port LED description**

| LED | Status | Description |
|---|---|---|
| SFP port LED | Flashing | The port is sending or receiving data. |
| | Steady on | A link is present on the port. |
| | Off | No link is present on the port. |

**Table2-158 SFP+ port LED description**

| LED | Status | Description |
|---|---|---|
| SFP+ port LED | Flashing | The port is sending or receiving data. |
| | Steady on | A link is present on the port. |
| | Off | No link is present on the port. |

**NOTE:**

You can identify the speed of an SFP+ port by observing the color of its LED. Green indicates a speed of 10 Gbps, and yellow indicates a speed of 1000 Mbps.

### Ports

**Table2-159 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| CSPC-GP24GE8XP2L-E | 24-port 1000BASE-X Ethernet optical interface (SFP, LC) + 8-port 1000BASE-X Ethernet combo interface + 2-port 10GBASE-R/W Ethernet optical interface line processing unit (SFP+, LC) (E Type) | RJ45 | 8 | 10/100/1000 Mbps |
| | | LC | 32 | 1000 Mbps |
| | | | 2 | 10 Gbps |

### Technical specifications

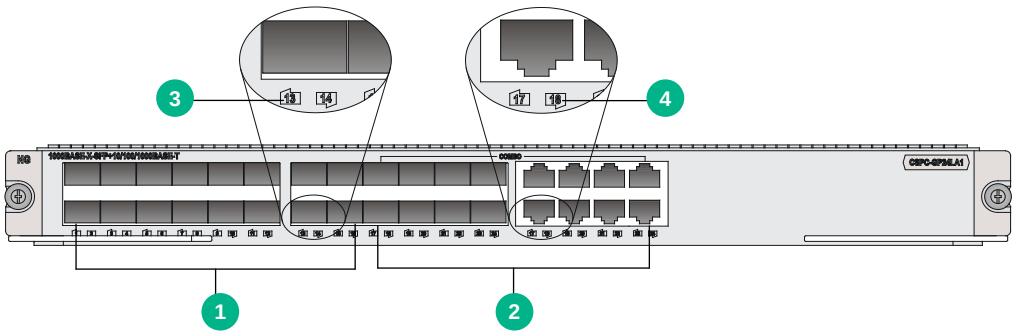
**Table2-160 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 40 × 399 × 352 mm (1.57 × 15.71 × 13.86 in) |
| Weight | 4.45 kg (9.81 lb) |
| Maximum power consumption | 126 W |
| Power consumption (with typical configuration) | 113 W |
| Minimum power consumption | 101 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# CSPC-GP24LA1

### View

**Figure2-18 CSPC-GP24LA1 view**




| | |
|---|---|
| (1) 1000BASE-X-SFP fiber ports (16 in total) | (2) Combo interfaces (8 in total) |
| (3) SFP port LED. For the LED description, see | (4) RJ-45 Ethernet port LED. For the LED description, see |

Table2-162. Table2-161.

**NOTE:**

- A combo interface is a logical interface that contains an SFP fiber port and an RJ-45 copper port. The two ports share one forwarding channel. As a result, they cannot work simultaneously. When you activate one port, the other port is automatically disabled. You can activate the fiber or copper port as needed. By default, the copper port is activated.
- Use a category 5 or above twisted pair cable to connect a 1000BASE-T RJ-45 copper port. The maximum transmission distance is 100 m (328.08 ft).

## LEDs

**Table2-161 RJ-45 Ethernet port LED description**

| LED | Status | Description |
|---|---|---|
| RJ-45 Ethernet port LED | Flashing | The port is sending or receiving data. |
| | Steady on | A link is present on the port. |
| | Off | No link is present on the port. |

**Table2-162 SFP port LED description**

| LED | Status | Description |
|---|---|---|
| SFP port LED | Flashing | The port is sending or receiving data. |
| | Steady on | A link is present on the port. |
| | Off | No link is present on the port. |

## Ports

**Table2-163 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| CSPC-GP24LA1 | 16-port 1000BASE-X Ethernet optical interface (SFP, LC) + 8-port combo interface module (A Type) | RJ45 | 8 | 10/100/1000 Mbps |
| | | LC | 24 | 100 Mbps |
| | | | | 155 Mbps |
| | | | | 1000 Mbps |

## Technical specifications

**Table2-164 Technical specifications**

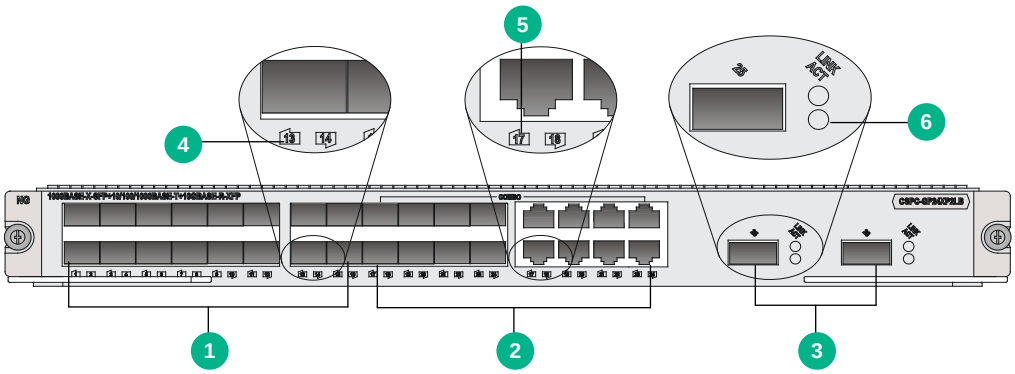
| Item | Description |
|---|---|
| Dimensions (H × W × D) | 40 × 399 × 352 mm (1.57 × 15.71 × 13.86 in) |
| Weight | 3.01 kg (6.64 lb) |
| Maximum power | 75 W |

| Item | Description |
|---|---|
| consumption | |
| Power consumption (with typical configuration) | 68 W |
| Minimum power consumption | 47 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# CSPC-GP24XP2LB

## View

**Figure2-19 CSPC-GP24XP2LB view**




| | |
|---|---|
| (1) 1000BASE-X-SFP fiber ports (16 in total) | (2) Combo interfaces (8 in total) |
| (3) 10GBASE-R-XFP fiber ports (2 in total) | (4) SFP port LED. For the LED description, see Table2-166. |
| (5) RJ-45 Ethernet port LED. For the LED description, see Table2-165. | (6) XFP port LED. For the LED description, see Table2-167. |

## LEDs

**Table2-165 RJ-45 Ethernet port LED description**

| LED | Status | Description |
|---|---|---|
| RJ-45 Ethernet port LED | Flashing | The port is sending or receiving data. |
| | Steady on | A link is present on the port. |
| | Off | No link is present on the port. |

**Table2-166 SFP port LED description**

| LED | Status | Description |
|---|---|---|
| SFP port LED | Flashing | The port is sending or receiving data. |
| | Steady on | A link is present on the port. |

| LED | Status | Description |
|---|---|---|
| | Off | No link is present on the port. |

**Table2-167 XFP port LED description**

| XFP port LED status | | Description |
|---|---|---|
| LINK | ACT | |
| Steady on | Flashing green | A link is present, and the XFP port is sending or receiving data. |
| Steady on | Off | A link is present, but the XFP port is not sending or receiving data. |
| Off | Off | No link is present on the XFP port. |

## Ports

**Table2-168 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| CSPC-GP24XP2LB | 16-port 1000BASE-X optical interface (SFP, LC) + 8-port combo interface + 2-port 10GE optical interface module (XFP, LC) (B Type) | RJ45 | 8 | 10/100/1000 Mbps |
| | | LC | 2 | 10 Gbps |
| | | | 24 | 155 Mbps |
| | | | | 1000 Mbps |

## Technical specifications

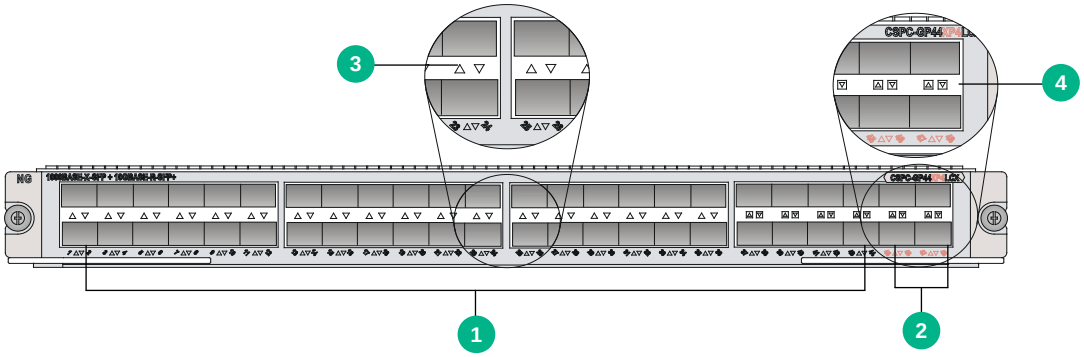
**Table2-169 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 40 × 399 × 352 mm (1.57 × 15.71 × 13.86 in) |
| Weight | 3.08 kg (6.79 lb) |
| Maximum power consumption | 100 W |
| Power consumption (with typical configuration) | 90 W |
| Minimum power consumption | 51 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# CSPC-GP44XP4LCX

## View

**Figure2-20 CSPC-GP44XP4LCX view**




| | |
|---|---|
| (1) 1000BASE-X-SFP fiber ports (44 in total) | (2) 10GBASE-R-SFP+ fiber ports (4 in total) |
| (3) SFP port LED. For the LED description, see Table2-170. | (4) SFP+ port LED. For the LED description, see Table2-171. |

## LEDs

**Table2-170 SFP port LED description**

| LED | Status | Description |
|---|---|---|
| SFP port LED | Flashing | The port is sending or receiving data. |
| | Steady on | A link is present on the port. |
| | Off | No link is present on the port. |

**Table2-171 SFP+ port LED description**

| LED | Status | Description |
|---|---|---|
| SFP+ port LED | Flashing | The port is sending or receiving data. |
| | Steady on | A link is present on the port. |
| | Off | No link is present on the port. |

**NOTE:**

You can identify the speed of an SFP+ port by observing the color of its LED. Green indicates a speed of 10 Gbps, and yellow indicates a speed of 1000 Mbps.

## Ports

**Table2-172 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| CSPC-GP44XP4LCX | 44-port 1000BASE-X Ethernet optical interface module (SFP, LC) + 4-port 10GBASE Ethernet optical interface module (SFP+, LC) (C Type) | LC | 44 | 100 Mbps |
| | | | | 155 Mbps |
| | | | | 1000 Mbps |
| | | | 4 | 10 Gbps |

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| | | | | 1000 Mbps |

### Technical specifications

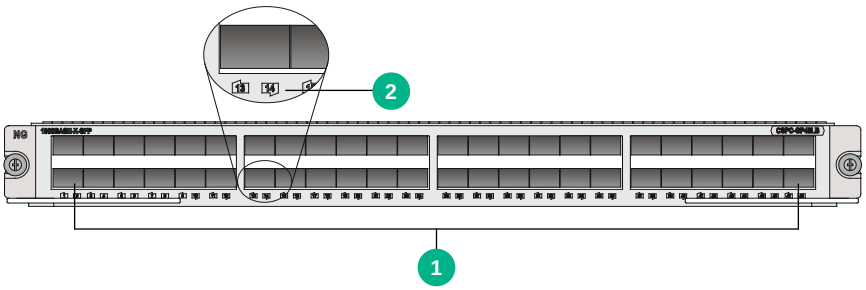
**Table2-173 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 40 × 399 × 352 mm (1.57 × 15.71 × 13.86 in) |
| Weight | 3.60 kg (7.94 lb) |
| Maximum power consumption | 142 W |
| Power consumption (with typical configuration) | 128 W |
| Minimum power consumption | 118 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# CSPC-GP48LB

### View

**Figure2-21 CSPC-GP48LB view**




| | |
|---|---|
| (1) 1000BASE-X-SFP fiber ports (48 in total) | (2) SFP port LED. For the LED description, see Table2-174. |

### LEDs

**Table2-174 SFP port LED description**

| LED | Status | Description |
|---|---|---|
| SFP port LED | Flashing | The port is sending or receiving data. |
| | Steady on | A link is present on the port. |
| | Off | No link is present on the port. |

### Ports

**Table2-175 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| CSPC-GP48LB | 48-port enhanced 1000BASE-X Ethernet optical interface module (SFP, LC) (B Type) | LC | 48 | 100 Mbps |
| | | | | 155 Mbps |
| | | | | 1000 Mbps |
| | | | 2 | 10 Gbps |

### Technical specifications

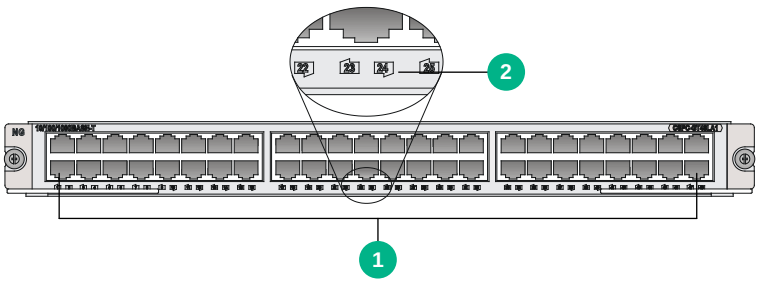
**Table2-176 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 40 × 399 × 352 mm (1.57 × 15.71 × 13.86 in) |
| Weight | 3.25 kg (7.17 lb) |
| Maximum power consumption | 110 W |
| Power consumption (with typical configuration) | 99 W |
| Minimum power consumption | 43 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# CSPC-GT48LA1

### View

**Figure2-22 CSPC-GT48LA1 view**




| | |
|---|---|
| (1) 10/100/1000BASE-T copper ports (48 in total) | (2) RJ-45 Ethernet port LED. For the LED description, see Table2-177. |

### LEDs

**Table2-177 RJ-45 Ethernet port LED description**

| LED | Status | Description |
| --- | --- | --- |
| RJ-45 Ethernet port LED | Flashing | The port is sending or receiving data. |
| | Steady on | A link is present on the port. |
| | Off | No link is present on the port. |

### Ports

**Table2-178 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
| --- | --- | --- | --- | --- |
| CSPC-GT48LA1 | 48-port 10/100/1000BASE-T Ethernet interface module (RJ45) (A Type) | RJ45 | 48 | 10/100/1000 Mbps |

### Technical specifications

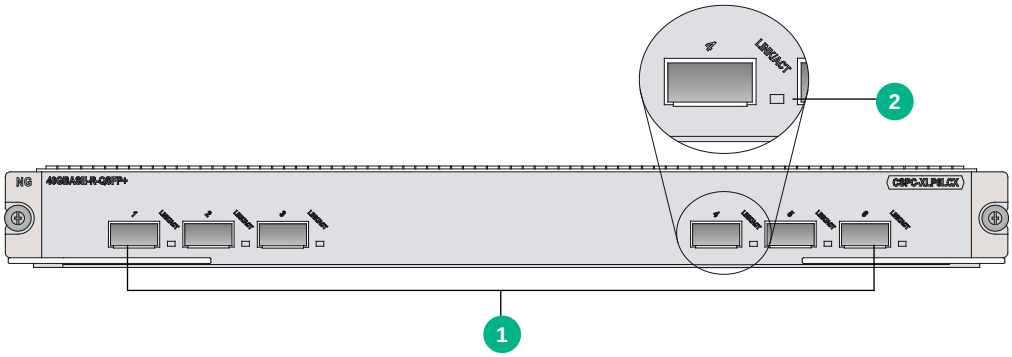
**Table2-179 Technical specifications**

| Item | Description |
| --- | --- |
| Dimensions (H × W × D) | 40 × 399 × 352 mm (1.57 × 15.71 × 13.86 in) |
| Weight | 3.31 kg (7.30 lb) |
| Maximum power consumption | 95 W |
| Power consumption (with typical configuration) | 86 W |
| Minimum power consumption | 67 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# CSPC-XLP6LCX

### View

**Figure2-23 CSPC-XLP6LCX view**




| | |
|---|---|
| (1) 40GBASE-R-QSFP+ fiber ports (6 in total) | (2) QSFP+ port LED. For the LED description, see Table2-180. |

## LEDs

**Table2-180 QSFP+ port LED description**

| LED | Status | Description |
|---|---|---|
| QSFP+ port LED | Flashing | The QSFP+ port is sending or receiving data. |
| | Steady on | A link is present on the QSFP+ port. |
| | Off | No link is present on the QSFP+ port. |

## Ports

**Table2-181 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| CSPC-XLP6LCX | 6-port 40GBASE Ethernet optical interface module (QSFP+, MPO) (C Type) | LC/MPO | 6 | 40 Gbps |

## Technical specifications

**Table2-182 Technical specifications**

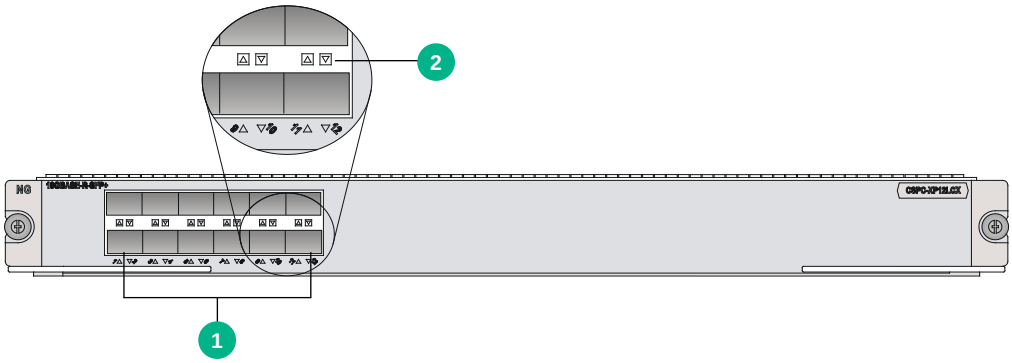
| Item | Description |
|---|---|
| Dimensions (H × W × D) | 40 × 399 × 352 mm (1.57 × 15.71 × 13.86 in) |
| Weight | 3.95 kg (8.71 lb) |
| Maximum power consumption | 290 W |
| Power consumption (with typical configuration) | 261 W |

| Item | Description |
|---|---|
| Minimum power consumption | 181 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# CSPC-XP12LAX/CSPC-XP12LCX

## View

**Figure2-24 CSPC-XP12LCX view**




| | |
|---|---|
| (1) 10GBASE-R-SFP+ fiber ports (12 in total) | (2) SFP+ port LED. For the LED description, see Table2-183. |

The views of the CSPC-XP12LAX and CSPC-XP12LCX are similar. This figure uses the CSPC-XP12LCX as an example.

## LEDs

**Table2-183 SFP+ port LED description**

| LED | Status | Description |
|---|---|---|
| SFP+ port LED | Flashing | The port is sending or receiving data. |
| | Steady on | A link is present on the port. |
| | Off | No link is present on the port. |

**NOTE:**

You can identify the speed of an SFP+ port by observing the color of its LED. Green indicates a speed of 10 Gbps, and yellow indicates a speed of 1000 Mbps.

## Ports

**Table2-184 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| CSPC-XP12LAX | 12-port 10GE optical | LC | 12 | 10 Gbps |

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| | interface module | | | 1000 Mbps |
| CSPC-XP12LCX | 12-port 10GE optical interface module | LC | 12 | 10 Gbps |
| | | | | 1000 Mbps |

### Technical specifications

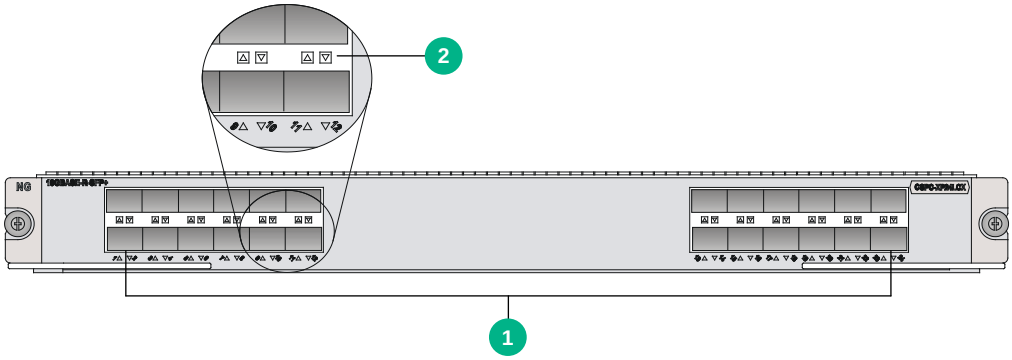
**Table2-185 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 40 × 399 × 352 mm (1.57 × 15.71 × 13.86 in) |
| Weight | 3.65 kg (8.05 lb) |
| Maximum power consumption | • CSPC-XP12LAX: 130 W<br>• CSPC-XP12LCX: 173 W |
| Power consumption (with typical configuration) | • CSPC-XP12LAX: 117 W<br>• CSPC-XP12LCX: 156 W |
| Minimum power consumption | • CSPC-XP12LAX: 107 W<br>• CSPC-XP12LCX: 122 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# CSPC-XP24LAX/CSPC-XP24LCX

### View

**Figure2-25 CSPC-XP24LCX view**




| | |
|---|---|
| (1) 10GBASE-R-SFP+ fiber ports (24 in total) | (2) SFP+ port LED. For the LED description, see Table2-186. |

The views of the CSPC-XP24LAX and CSPC-XP24LCX are similar. This figure uses the CSPC-XP24LCX as an example.

### LEDs

**Table2-186 SFP+ port LED description**

| LED | Status | Description |
|---|---|---|
| SFP+ port LED | Flashing | The port is sending or receiving data. |
| | Steady on | A link is present on the port. |
| | Off | No link is present on the port. |

**NOTE:**

You can identify the speed of an SFP+ port by observing the color of its LED. Green indicates a speed of 10 Gbps, and yellow indicates a speed of 1000 Mbps.

### Ports

**Table2-187 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| CSPC-XP24LAX | 24-port 10GBASE Ethernet optical interface module (SFP+, LC) (A Type) | LC | 24 | 10 Gbps |
| | | | | 1000 Mbps |
| CSPC-XP24LCX | 4-port 10GBASE Ethernet optical interface module (SFP+, LC) (C Type) | LC | 24 | 10 Gbps |
| | | | | 1000 Mbps |

### Technical specifications

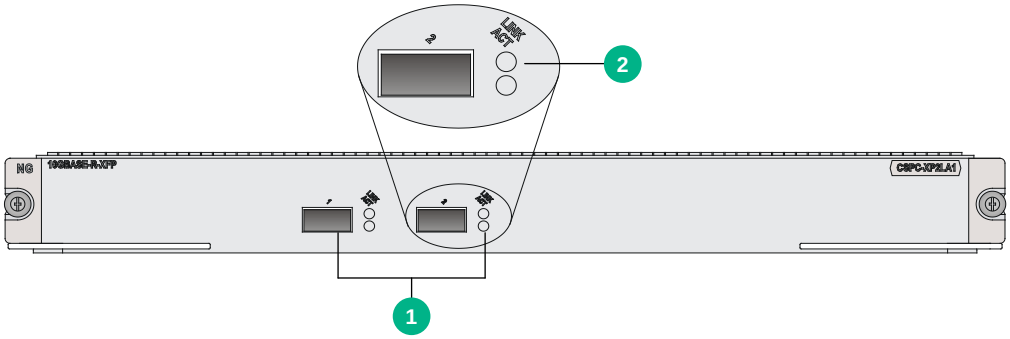
**Table2-188 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 40 × 399 × 352 mm (1.57 × 15.71 × 13.86 in) |
| Weight | 4.15 kg (9.15 lb) |
| Maximum power consumption | • CSPC-XP24LAX: 209 W<br>• CSPC-XP24LCX: 294 W |
| Power consumption (with typical configuration) | • CSPC-XP24LAX: 189 W<br>• CSPC-XP24LCX: 265 W |
| Minimum power consumption | • CSPC-XP24LAX: 153 W<br>• CSPC-XP24LCX: 178 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# CSPC-XP2LA1

### View

**Figure2-26 CSPC-XP2LA1 view**




| | |
|---|---|
| (1) 10GBASE-R-XFP fiber ports (2 in total) | (2) XFP port LED. For the LED description, see Table2-189. |

## LEDs

**Table2-189 XFP port LED description**

| XFP port LED status | | Description |
|---|---|---|
| LINK | ACT | |
| Steady on | Flashing green | A link is present, and the XFP port is sending or receiving data. |
| Steady on | Off | A link is present, but the XFP port is not sending or receiving data. |
| Off | Off | No link is present on the XFP port. |

## Ports

**Table2-190 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| CSPC-XP2LA1 | 2-port 10GBASE Ethernet optical interface module (XFP, LC) (A Type) | LC | 2 | 10 Gbps |

## Technical specifications

**Table2-191 Technical specifications**

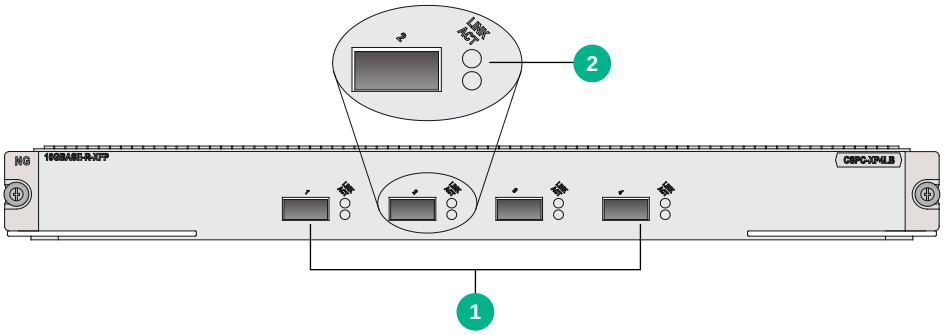
| Item | Description |
|---|---|
| Dimensions (H × W × D) | 40 × 399 × 352 mm (1.57 × 15.71 × 13.86 in) |
| Weight | 2.93 kg (6.46 lb) |
| Maximum power consumption | 55 W |
| Power consumption (with typical configuration) | 50 W |
| Minimum power consumption | 43 W |

| Item | Description |
| --- | --- |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# CSPC-XP4LB

## View

**Figure2-27 CSPC-XP4LB view**




| | |
| --- | --- |
| (1) 10GBASE-R-XFP fiber ports (2 in total) | (2) XFP port LED. For the LED description, see Table2-192. |

## LEDs

**Table2-192 XFP port LED description**

| XFP port LED status | | Description |
| --- | --- | --- |
| LINK | ACT | |
| Steady on | Flashing green | A link is present, and the XFP port is sending or receiving data. |
| Steady on | Off | A link is present, but the XFP port is not sending or receiving data. |
| Off | Off | No link is present on the XFP port. |

## Ports

**Table2-193 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
| --- | --- | --- | --- | --- |
| CSPC-XP4LB | 4-port Enhanced 10GBASE Ethernet optical interface module (XFP, LC) (B Type) | LC | 4 | 10 Gbps |

## Technical specifications

**Table2-194 Technical specifications**

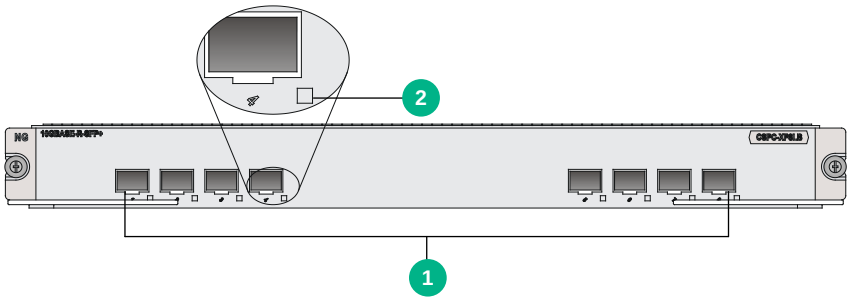
| Item | Description |
| --- | --- |
| Dimensions (H × W × | 40 × 399 × 352 mm (1.57 × 15.71 × 13.86 in) |

| Item | Description |
|---|---|
| D) | |
| Weight | 2.93 kg (6.46 lb) |
| Maximum power consumption | 80 W |
| Power consumption (with typical configuration) | 72 W |
| Minimum power consumption | 53 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# CSPC-XP8LB

## View

**Figure2-28 CSPC-XP8LB view**




| | |
|---|---|
| (1) 10GBASE-R-SFP+ fiber ports (8 in total) | (2) SFP+ port LED. For the LED description, see Table2-195. |

## LED

**Table2-195 SFP+ port LED description**

| LED | Status | Description |
|---|---|---|
| SFP+ port LED | Flashing | The port is sending or receiving data. |
| | Steady on | A link is present on the port. |
| | Off | No link is present on the port. |

**NOTE:**

You can identify the speed of an SFP+ port by observing the color of its LED. Green indicates a speed of 10 Gbps, and yellow indicates a speed of 1000 Mbps.

## Ports

**Table2-196 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| CSPC-XP8LB | 8-port Enhanced 10GBASE Ethernet optical interface module (SFP+, LC) (B Type) | LC | 8 | 10 Gbps |
| | | | | 1000 Mbps |

### Technical specifications

**Table2-197 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 40 × 399 × 352 mm (1.57 × 15.71 × 13.86 in) |
| Weight | 3.44 kg (7.58 lb) |
| Maximum power consumption | 170 W |
| Power consumption (with typical configuration) | 153 W |
| Minimum power consumption | 117 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# Compatibility information

**Table2-198 Compatibility matrix between CSPC cards and routers**

| Card model | CR16006-F, CR16010-F, CR16014-F | CR16010H-F (with five fabric modules), CR16018-F (with five fabric modules), CR16018-FA | CR16010H-F (with four fabric modules), CR16018-F (with four fabric modules) | CR16003E-F, CR16005E-F, CR16010E-F |
|---|---|---|---|---|
| CSPC-GT48LA1 | Supported | Not supported | Not supported | Not supported |
| CSPC-GE24L-E | Supported | Not supported | Not supported | Not supported |
| CSPC-GP24LA1 | Supported | Not supported | Not supported | Not supported |
| CSPC-GP24XP2LB | Supported | Not supported | Not supported | Not supported |
| CSPC-GP24GE8XP2L-E | Supported | Not supported | Not supported | Not supported |
| CSPC-GE16XP4L-E | Supported | Not supported | Not supported | Not supported |
| CSPC-XP2LA | Supported | Not supported | Not supported | Not supported |

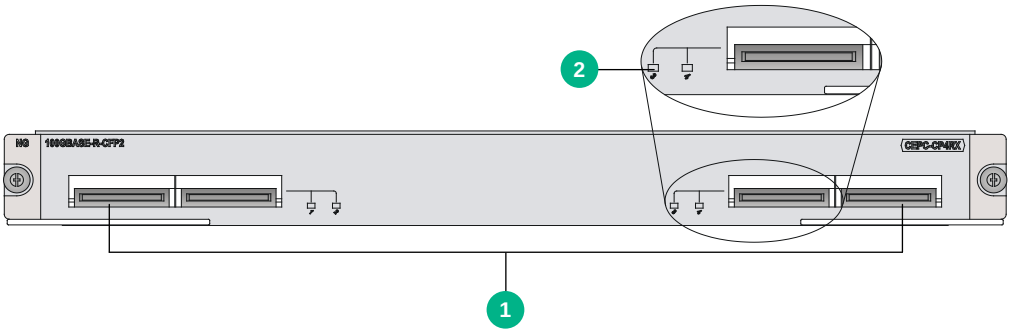
| Card model | CR16006-F, CR16010-F, CR16014-F | CR16010H-F (with five fabric modules), CR16018-F (with five fabric modules), CR16018-FA | CR16010H-F (with four fabric modules), CR16018-F (with four fabric modules) | CR16003E-F, CR16005E-F, CR16010E-F |
|---|---|---|---|---|
| 1 | | | | |
| CSPC-XP4LB | Supported | Not supported | Not supported | Not supported |
| CSPC-XP8LB | Supported | Not supported | Not supported | Not supported |
| CSPC-GP48LB | Supported | Not supported | Not supported | Not supported |
| CSPC-GP44XP4LCX | Supported | Not supported | Not supported | Not supported |
| CSPC-XP24LCX | Supported | Not supported | Not supported | Not supported |
| CSPC-XP24LAX | Supported | Not supported | Not supported | Not supported |
| CSPC-XP12LCX | Supported | Not supported | Not supported | Not supported |
| CSPC-XP12LAX | Supported | Not supported | Not supported | Not supported |
| CSPC-XLP6LCX | Supported | Not supported | Not supported | Not supported |
| CSPC-CP1LCX | Supported | Not supported | Not supported | Not supported |
| CSPC-CP2LB | Supported | Not supported | Not supported | Not supported |

# CEPC LPUs (interface modules)

## CEPC-CP4RX/CEPC-CP4RXA

### View

**Figure2-29 CEPC-CP4RX view**




| | |
|---|---|
| (1) 100GBASE-R-CFP2 fiber ports (4 in total) | (2) CFP2 port LED. For the LED description, see Table2-199. |

The views of CEPC-CP4RX and CEPC-CP4RXA are similar. This figure uses the CEPC-CP4RX as an example.

### LEDs

**Table2-199 CFP2 port LED description**

| LED | Status | Description |
|---|---|---|
| CFP2 port LED | Flashing | The CFP2 port is sending or receiving data at 100 Gbps. |
| | Steady on | A 100 Gbps link is present on the CFP2 port. |
| | Off | No link is present on the CFP2 port. |

### Ports

**Table2-200 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| CEPC-CP4RX | 4-port 100GBASE Ethernet optical interface module (CFP2) | LC | 4 | 100 Gbps |
| CEPC-CP4RXA | 4-port 100GBASE Ethernet optical interface module A (CFP2) | LC | 4 | 100 Gbps |

### Technical specifications

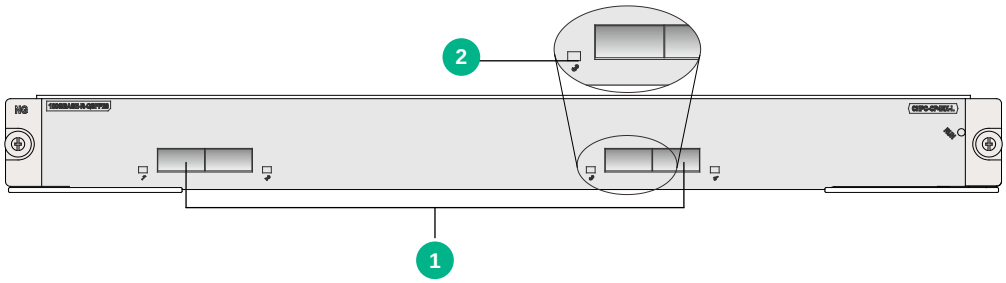
**Table2-201 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 40 × 399 × 352 mm (1.57 × 15.71 × 13.86 in) |
| Weight | 4.20 kg (9.26 lb) |
| Maximum power consumption | 368 W |
| Power consumption (with typical configuration) | 331 W |
| Minimum power consumption | 228.5 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# CEPC-CP4RX-L

### View

**Figure2-30 CEPC-CP4RX-L view**




| | |
|---|---|
| (1) 100GBASE-QSFP28 fiber ports (4 in total) (100G QSFP 28 modules supported) | (2) QSFP 28 port LED. For the LED description, see Table2-202. |

## LEDs

**Table2-202 QSFP28 port LED description**

| LED | Status | Description |
|---|---|---|
| QSFP28 port LED | Flashing | The QSFP28 port is sending or receiving data at 100 Gbps. |
| | Steady on | A 100 Gbps link is present on the QSFP28 port. |
| | Off | No link is present on the QSFP28 port. |

## Ports

**Table2-203 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| CEPC-CP4RX-L | 4-port 100G Ethernet optical interface line processing unit (QSFP28, LC) | LC | 4 | 100 Gbps |
| | | | | 40 Gbps |

## Technical specifications

**Table2-204 Technical specifications**

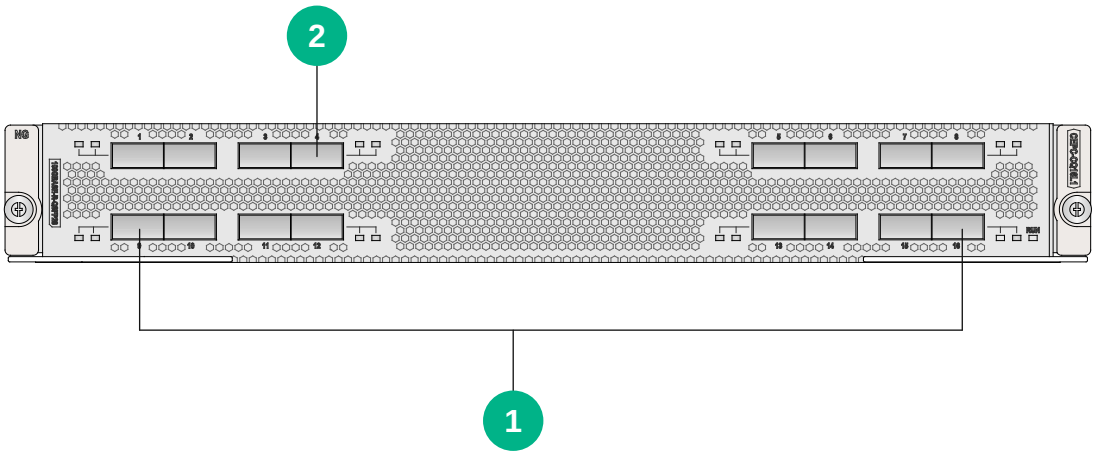
| Item | Description |
|---|---|
| Dimensions (H × W × D) | 40 × 399 × 352 mm (1.57 × 15.71 × 13.86 in) |
| Weight | 8.30 kg (18.30 lb) |
| Maximum power consumption | 354 W |
| Power consumption (with typical configuration) | 252 W |
| Minimum power consumption | 191 W |

| Item | Description |
| --- | --- |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# CEPC-CQ16L1

## View

**Figure2-31 CEPC-CQ16L1 view**




| | |
| --- | --- |
| (1) 100GBASE-QSFP28 fiber ports (16 in total) | (2) QSFP 28 port LED. For the LED description, see Table2-205. |

## LEDs

**Table2-205 QSFP28 port LED description**

| LED | Status | Description |
| --- | --- | --- |
| QSFP28 port LED | Flashing | The QSFP28 port is sending or receiving data at 100 Gbps. |
| | Steady on | A 100 Gbps link is present on the QSFP28 port. |
| | Off | No link is present on the QSFP28 port. |

## Ports

**IMPORTANT:**

Only ports 1, 2, 7, 8, 9, 10, 15, and 16 support switching the speed between 100 Gbps and 40 Gbps.

**Table2-206 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
| --- | --- | --- | --- | --- |
| CEPC-CQ16L1 | 16-port 100G Ethernet optical interface line processing unit (QSFP28,LC) | LC | 16 | 100 Gbps |
| | | | | 40 Gbps |

### Technical specifications

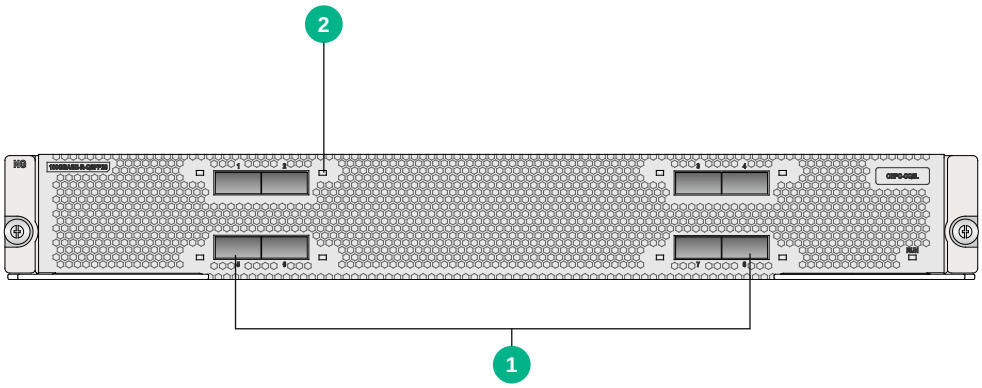
**Table2-207 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 52.5 × 399 × 370 mm (2.07 × 15.71 × 14.57 in) |
| Weight | 8.25 kg (18.19 lb) |
| Maximum power consumption | 1240 W |
| Power consumption (with typical configuration) | 970 W |
| Minimum power consumption | 760 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# CEPC-CQ8L/CEPC-CQ8LA/CEPC-CQ8L1A/CEPC-CQ8L3A

### View

**Figure2-32 CEPC-CQ8L view**




| | |
|---|---|
| (1) 100GBASE-QSFP28 fiber ports (8 in total) | (2) QSFP 28 port LED. For the LED description, see Table2-208. |

The views of CEPC-CQ8L, CEPC-CQ8LA, CEPC-CQ8L1A, and CEPC-CQ8L3A are similar. This figure uses the CEPC-CQ8L as an example.

### LEDs

**Table2-208 QSFP28 port LED description**

| LED | Status | Description |
|---|---|---|
| QSFP28 port LED | Flashing | The QSFP28 port is sending or receiving data at 100 Gbps. |
| | Steady on | A 100 Gbps link is present on the QSFP28 port. |

| LED | Status | Description |
| --- | --- | --- |
| | Off | No link is present on the QSFP28 port. |

### Ports

**Table2-209 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
| --- | --- | --- | --- | --- |
| CEPC-CQ8L | 8-port 100G Ethernet optical interface line processing unit (QSFP28, LC) | LC | 8 | 100 Gbps |
| CEPC-CQ8LA | 8-port 100G Ethernet optical interface line processing unit A (QSFP28,LC) | LC | 8 | 100 Gbps |
| | | | | 40 Gbps |
| CEPC-CQ8L1A | 8-port 100G Ethernet optical interface line processing unit A (QSFP28,LC) | LC | 8 | 100 Gbps |
| | | | | 40 Gbps |
| CEPC-CQ8L3A | 8-port 100G Ethernet optical interface line processing unit A (QSFP28,LC) | LC | 8 | 100 Gbps |
| | | | | 40 Gbps |

### Technical specifications

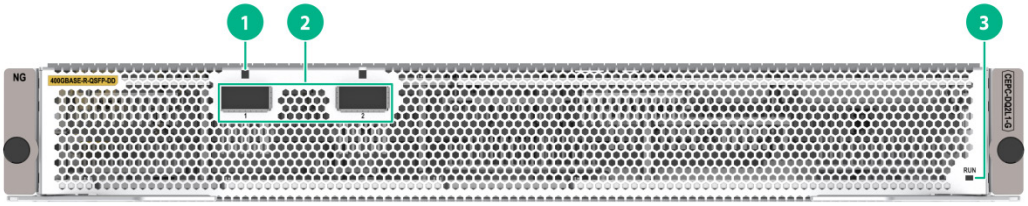
**Table2-210 Technical specifications**

| Item | Description |
| --- | --- |
| Dimensions (H × W × D) | 52.5 × 399 × 370 mm (2.07 × 15.71 × 14.57 in) |
| Weight | 8.00 kg (17.64 lb) |
| Maximum power consumption | • CEPC-CQ8L, CEPC-CQ8L1A, CEPC-CQ8L3A: 1100 W<br>• CEPC-CQ8LA: 810 W |
| Power consumption (with typical configuration) | • CEPC-CQ8L, CEPC-CQ8L1A, CEPC-CQ8L3A: 880 W<br>• CEPC-CQ8LA: 705 W |
| Minimum power consumption | • CEPC-CQ8L, CEPC-CQ8L1A, CEPC-CQ8L3A: 653 W<br>• CEPC-CQ8LA: 610 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# CEPC-DQ2L1-G

### View

**Figure2-33 CEPC-DQ2L1-G view**




| | |
|---|---|
| (1) QSFP-DD port LED. For the LED description, see Table2-211. | (2) 400GBASE-R-QSFP-DD fiber ports (2 in total) (400G QSFP-DD modules supported) |
| (3) Card status LED. For the LED description, see Table2-212. | |

## LEDs

**Table2-211 QSFP-DD port LED description**

| LED | Status | Description |
|---|---|---|
| QSFP-DD port LED | Flashing | The QSFP-DD port is sending or receiving data. |
| | On | A link is present on the QSFP-DD port. |
| | Off | No link is present on the QSFP-DD port. |

**Table2-212 Card status LED description**

| LED | Status | Description |
|---|---|---|
| RUN (Green) | Steady on | The card is faulty. |
| | Off | The card is faulty or is not in position. |
| | Flashing (about once per second) | The card is operating correctly. |
| | Fast flashing (about eight times per second) | The card is starting up. If the LED keeps fast flashing, card registration has failed. |

## Ports

**Table2-213 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| CEPC-DQ2L1-G | 2-port 400G Ethernet optical interface line processing unit (QSFP-DD,LC) | LC | 2 | 400 Gbps |

## Technical specifications

**Table2-214 Technical specifications**

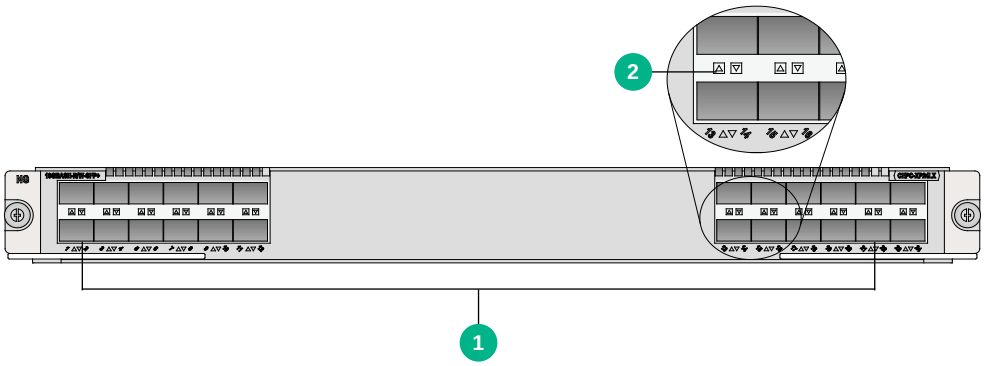
| Item | Description |
|---|---|
| Dimensions (H × W × D) | 52.5 × 399 × 370 mm (2.07 × 15.71 × 14.57 in) |

| Item | Description |
| --- | --- |
| Weight | 6.96 kg (15.34 lb) |
| Maximum power consumption | 540 W |
| Power consumption (with typical configuration) | 510 W |
| Minimum power consumption | 450 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# CEPC-XP24LX

## View

**Figure2-34 CEPC-XP24LX view**




| | |
| --- | --- |
| (1) 10GBASE-R/W-SFP+ fiber ports (24 in total) (10GE SFP+ modules supported) | (2) SFP+ port LED. For the LED description, see Table2-215. |

## LEDs

**Table2-215 SFP+ port LED description**

| LED | Status | Description |
| --- | --- | --- |
| SFP+ port LED | Flashing | The SFP+ port is sending or receiving data. |
| | Steady on | A link is present on the SFP+ port. |
| | Off | No link is present on the SFP+ port. |

## Ports

**Table2-216 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
| --- | --- | --- | --- | --- |

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| CEPC-XP24LX | 24-port 10GBASE-R/W Ethernet optical interface line processing unit (SFP+, LC) | LC | 24 | 10 Gbps |

### Technical specifications

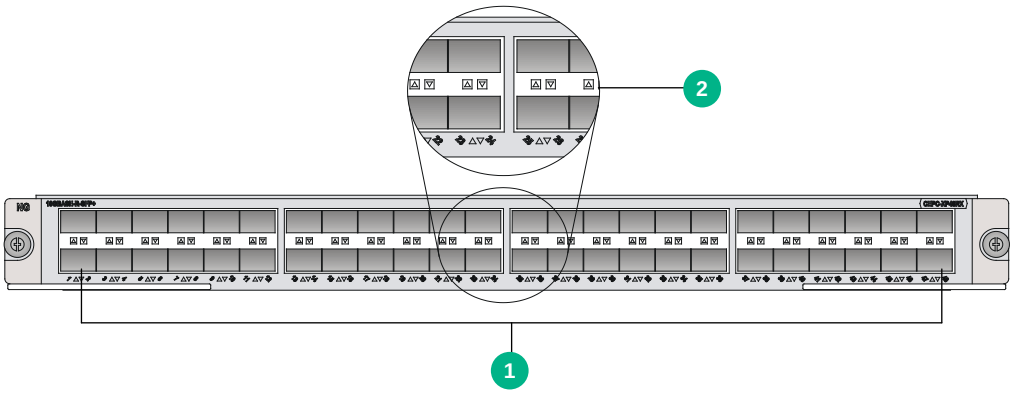
**Table2-217 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 40 × 399 × 352 mm (1.57 × 15.71 × 13.86 in) |
| Weight | 4.70 kg (10.36 lb) |
| Maximum power consumption | 321 W |
| Power consumption (with typical configuration) | 289 W |
| Minimum power consumption | 237.6 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# CEPC-XP48RX

### View

**Figure2-35 CEPC-XP48RX view**




| | |
|---|---|
| (1) 10GBASE-R-SFP+ fiber ports (48 in total) | (2) SFP+ port LED. For the LED description, see Table2-218. |

### LEDs

**Table2-218 SFP+ port LED description**

| LED | Status | Description |
|---|---|---|

| LED | Status | Description |
| --- | --- | --- |
| SFP+ port LED | Flashing | The SFP+ port is sending or receiving data. |
| | Steady on | A link is present on the SFP+ port. |
| | Off | No link is present on the SFP+ port. |

### Ports

**Table2-219 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
| --- | --- | --- | --- | --- |
| CEPC-XP48RX | 48-port 10GBASE-R/W Ethernet optical interface module (SFP+, LC) | LC | 48 | 10 Gbps |

### Technical specifications

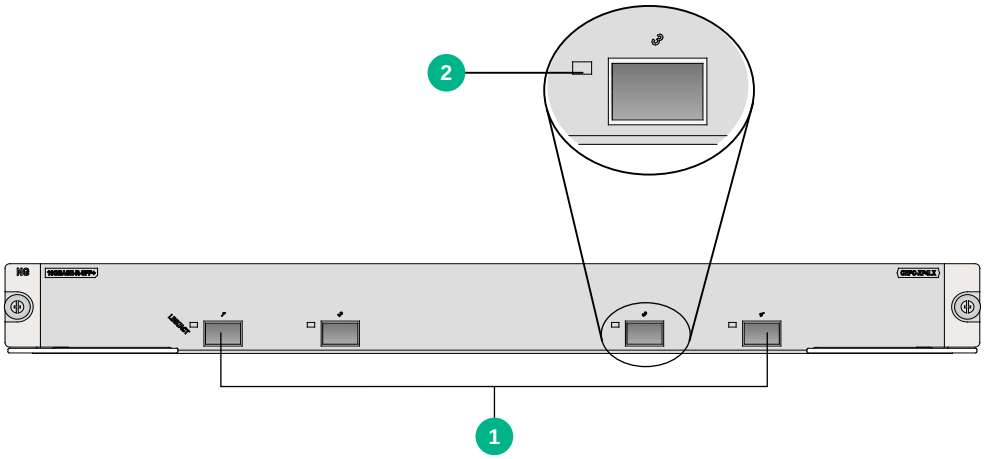
**Table2-220 Technical specifications**

| Item | Description |
| --- | --- |
| Dimensions (H × W × D) | 40 × 399 × 352 mm (1.57 × 15.71 × 13.86 in) |
| Weight | 4.75 kg (10.47 lb) |
| Maximum power consumption | 407 W |
| Power consumption (with typical configuration) | 336 W |
| Minimum power consumption | 234.8 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# CEPC-XP4LX

### View

**Figure2-36 CEPC-XP4LX view**




| | |
|---|---|
| (1) 10GBASE-R/W-SFP+ fiber ports (4 in total) (10GE SFP+ modules supported) | (2) SFP+ port LED. For the LED description, see Table2-221. |

## LEDs

**Table2-221 SFP+ port LED description**

| LED | Status | Description |
|---|---|---|
| SFP+ port LED | Flashing | The SFP+ port is sending or receiving data. |
| | Steady on | A link is present on the SFP+ port. |
| | Off | No link is present on the SFP+ port. |

## Ports

**Table2-222 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| CEPC-XP4LX | 4-port 10GBASE-R/W Ethernet optical interface line processing unit module (SFP+, LC) | LC | 4 | 10 Gbps |

## Technical specifications

**Table2-223 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 40 × 399 × 352 mm (1.57 × 15.71 × 13.86 in) |
| Weight | 4.90 kg (10.80 lb) |
| Maximum power consumption | 184 W |
| Power consumption (with typical | 117 W |

| Item | Description |
| --- | --- |
| configuration) | |
| Minimum power consumption | 102 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# Configuration restrictions and guidelines

For adequate ventilation and cooling, you can install the CEPC-CP4RX, CEPC-XP48RX, and CEPC-XP24LX cards in the following slots only when the other slots are not available.

- **CR16010-F router**—Slots 0, 8 and 9.
- **CR16014-F router**—Slots 0 and 13.

# Compatibility information

**Table2-224 Compatibility matrix between CEPC cards and routers (1)**

| Card model | CR16006-F | CR16010-F, CR16014-F | CR16010H-F (with five fabric modules), CR16018-F (with five fabric modules) | CR16010H-F (with four fabric modules), CR16018-F (with four fabric modules) | CR16010H-FA, CR16018-FA |
| --- | --- | --- | --- | --- | --- |
| CEPC-XP48RX | Not supported | Supported | Supported | Not supported | Not supported |
| CEPC-CP4RX | Not supported | Supported | Supported | Not supported | Not supported |
| CEPC-CP4RXA | Not supported | Not supported | Not supported | Not supported | Supported |
| CEPC-CP4RX-L | Not supported | Supported | Supported | Not supported | Not supported |
| CEPC-XP24LX | Not supported | Supported | Supported | Not supported | Not supported |
| CEPC-XP4LX | Supported | Supported | Supported | Not supported | Not supported |
| CEPC-CQ8L | Not supported | Not supported | Supported | Supported | Not supported |
| CEPC-CQ8LA | Not supported | Not supported | Not supported | Not supported | Supported |
| CEPC-CQ8L1A | Not supported | Not supported | Not supported | Not supported | Supported |
| CEPC-CQ8L3A | Not supported | Not supported | Not supported | Not supported | Supported |
| CEPC-CQ16L1 | Not supported | Not supported | Supported | Supported | Not supported |

| Card model | CR16006-F | CR16010-F, CR16014-F | CR16010H-F (with five fabric modules), CR16018-F (with five fabric modules) | CR16010H-F (with four fabric modules), CR16018-F (with four fabric modules) | CR16010H-FA, CR16018-FA |
|---|---|---|---|---|---|
| CEPC-DQ2L 1-G | Not supported | Not supported | Supported | Not supported | Not supported |

**Table2-225 Compatibility matrix between CEPC cards and routers (2)**

| Card model | CR16003E-F | CR16005E-F | CR16010E-F |
|---|---|---|---|
| CEPC-XP48RX | Not supported | Not supported | Not supported |
| CEPC-CP4RX | Not supported | Not supported | Not supported |
| CEPC-CP4RXA | Not supported | Not supported | Not supported |
| CEPC-CP4RX-L | Not supported | Not supported | Not supported |
| CEPC-XP24LX | Not supported | Not supported | Not supported |
| CEPC-XP4LX | Not supported | Supported | Supported |
| CEPC-CQ8L | Not supported | Not supported | Not supported |
| CEPC-CQ8LA | Supported | Not supported | Supported |
| CEPC-CQ8L1A | Not supported | Not supported | Not supported |
| CEPC-CQ8L3A | Not supported | Not supported | Not supported |
| CEPC-CQ16L1 | Supported | Not supported | Supported |
| CEPC-DQ2L1-G | Supported | Not supported | Supported |

# CSPEX base cards

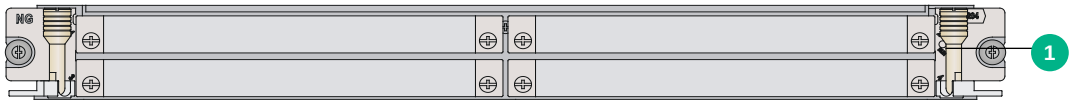
## CSPEX-1104-E/CSPEX-1204/CSPEX-1304X/CSPEX-1404X/CSPEX-1504X/CSPEX-1504XA

**IMPORTANT:**

A CSPEX-1104-E card supports a maximum of three MIC-XP4L1 and MIC-GP4L subcards in total.

### View

**Figure2-37 CSPEX-1204 view**




(1) Card status LED. For the LED description, see Table2-226.

The views of CSPEX-1204, CSPEX-1304X, CSPEX-1404X, CSPEX-1504X, CSPEX-1504XA, and CSPEX-1104-E are similar. This figure uses the CSPEX-1204 as an example.

## LEDs

**Table2-226 LED description**

| LED | Status | Description |
|---|---|---|
| RUN (Green) | Steady on | The card is faulty. |
| | Off | The card is faulty or is not in position. |
| | Flashing (about once per second) | The card is operating correctly. |
| | Fast flashing (about eight times per second) | The card is starting up. If the LED keeps fast flashing, card registration has failed. |

## Subcard slots

**Table2-227 Subcard slots**

| Card model | Number of subcard slots |
|---|---|
| CSPEX-1104-E | 4 |
| CSPEX-1204 | 4 |
| CSPEX-1304X | 4 |
| CSPEX-1404X | 4 |
| CSPEX-1504X | 4 |
| CSPEX-1504XA | 4 |

## Technical specifications

**Table2-228 Technical specifications**

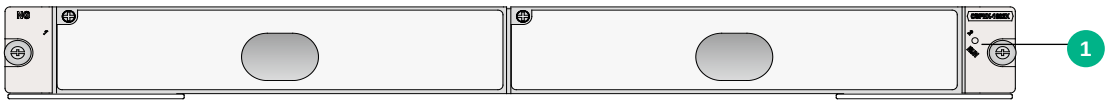
| Item | Description |
|---|---|
| Dimensions (H × W × D) | 40 × 399 × 352 mm (1.57 × 15.71 × 13.86 in) |
| Weight | • CSPEX-1104-E: 3.45 kg (7.61 lb)<br>• CSPEX-1204: 3.50 kg (7.72 lb)<br>• CSPEX-1304X: 3.75 kg (8.27 lb)<br>• CSPEX-1404X: 7.20 kg (15.87 lb)<br>• CSPEX-1504X: 7.20 kg (15.87 lb)<br>• CSPEX-1504XA: 3.80 kg (8.38 lb) |
| Maximum power consumption | • CSPEX-1104-E: 164 W<br>• CSPEX-1204: 190 W<br>• CSPEX-1304X: 184 W<br>• CSPEX-1404X: 230 W<br>• CSPEX-1504X, CSPEX-1504XA: 261 W |
| Power consumption (with typical configuration) | • CSPEX-1104-E: 88 W<br>• CSPEX-1204: 104 W<br>• CSPEX-1304X: 101 W<br>• CSPEX-1404X: 138 W<br>• CSPEX-1504X, CSPEX-1504XA: 154 W |

| Item | Description |
| --- | --- |
| Minimum power consumption | • CSPEX-1104-E: 79 W<br>• CSPEX-1204: 88 W<br>• CSPEX-1304X: 90 W<br>• CSPEX-1404X: 111.6 W<br>• CSPEX-1504X, CSPEX-1504XA: 112.1 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# CSPEX-1502X/CSPEX-1502XA/CSPEX-1602X/CSPEX-1602XA

## View

**Figure2-38 CSPEX-1602X view**




(1) Card status LED. For the LED description, see Table2-229.

The views of the CSPEX-1602X, CSPEX-1602XA, CSPEX-1502X, and CSPEX-1502XA are similar. This figure uses the CSPEX-1602X as an example.

## LEDs

**Table2-229 LED description**

| LED | Status | Description |
| --- | --- | --- |
| RUN (Green) | Steady on | The card is faulty. |
| | Off | The card is faulty or is not in position. |
| | Flashing (about once per second) | The card is operating correctly. |
| | Fast flashing (about eight times per second) | The card is starting up. If the LED keeps fast flashing, card registration has failed. |

## Subcard slots

**Table2-230 Subcard slots**

| Card model | Number of subcard slots |
| --- | --- |
| CSPEX-1502X | 2 |
| CSPEX-1502XA | 2 |
| CSPEX-1602X | 2 |
| CSPEX-1602XA | 2 |

## Technical specifications

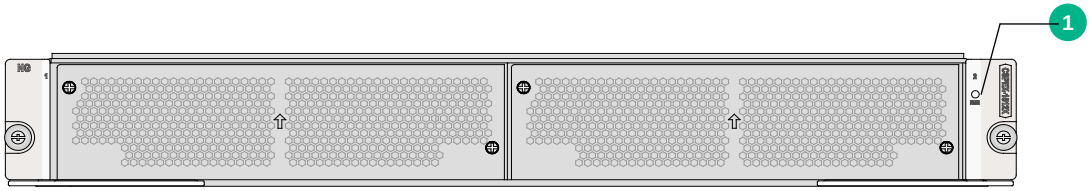
**Table2-231 Technical specifications**

| Item | Description |
| --- | --- |
| Dimensions (H × W × D) | • CSPEX-1502X, CSPEX-1602X, CSPEX-1602XA: 40 × 399 × 352 mm (1.57 × 15.71 × 13.86 in)<br>• CSPEX-1502XA: 52.5 × 399 × 361 mm (2.07 × 15.71 × 14.21 in) |
| Weight | • CSPEX-1502X: 3.95 kg (8.71 lb)<br>• CSPEX-1502XA: 5.00 kg (11.02 lb)<br>• CSPEX-1602X, CSPEX-1602XA: 7.50 kg (16.53 lb) |
| Maximum power consumption | • CSPEX-1502X, CSPEX-1502XA: 270 W<br>• CSPEX-1602X, CSPEX-1602XA: 354 W |
| Power consumption (with typical configuration) | • CSPEX-1502X, CSPEX-1502XA: 135 W<br>• CSPEX-1602X, CSPEX-1602XA: 222 W |
| Minimum power consumption | • CSPEX-1502X, CSPEX-1502XA: 120 W<br>• CSPEX-1602X, CSPEX-1602XA: 174.6 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# CSPEX-1512X/CSPEX-1612X/CSPEX-1812X/CSPEX-1812X-E/CSPEX-1802X/CSPEX-1802XA/CSPEX-2612X-E

## View

**Figure2-39 CSPEX-1512X view**




(1) Card status LED. For the LED description, see Table2-232.

The views of the CSPEX-1512X, CSPEX-1612X, CSPEX-1812X, CSPEX-1812X-E, CSPEX-1802X, CSPEX-1802XA, and CSPEX-2612X-E are similar. This figure uses the CSPEX-1512X as an example.

## LEDs

**Table2-232 LED description**

| LED | Status | Description |
| --- | --- | --- |
| RUN (Green) | Steady on | The card is faulty. |
| | Off | The card is faulty or is not in position. |
| | Flashing (about once per second) | The card is operating correctly. |
| | Fast flashing (about eight times per second) | The card is starting up. If the LED keeps fast flashing, card registration has failed. |

## Subcard slots

**Table2-233 Subcard slots**

| Card model | Number of subcard slots |
|---|---|
| CSPEX-1512X | 2 |
| CSPEX-1612X | 2 |
| CSPEX-1812X | 2 |
| CSPEX-1812X-E | 2 |
| CSPEX-1802X | 2 |
| CSPEX-1802XA | 2 |
| CSPEX-2612X-E | 2 |

### Technical specifications

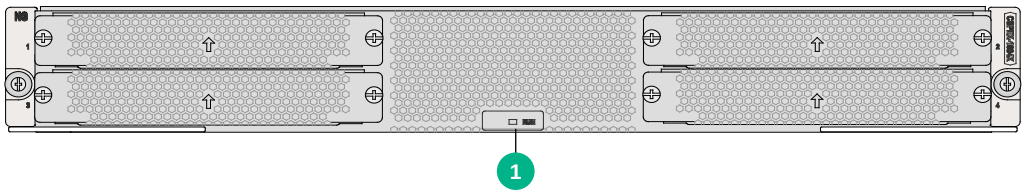
**Table2-234 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 52.5 × 399 × 352 mm (2.07 × 15.71 × 13.86 in) |
| Weight | • CSPEX-1512X: 5.40 kg (11.90 lb)<br>• CSPEX-1612X: 8.75 kg (19.29 lb)<br>• CSPEX-1812X: 5.95 kg (13.12 lb)<br>• CSPEX-1812X-E, CSPEX-1802X, CSPEX-1802XA: 9.00 kg (19.84 lb)<br>• CSPEX-2612X-E: 6.00 kg (13.23 lb) |
| Maximum power consumption | • CSPEX-1512X: 281 W<br>• CSPEX-1612X: 320 W<br>• CSPEX-1812X: 657 W<br>• CSPEX-1812X-E, CSPEX-1802X, CSPEX-1802XA: 486 W<br>• CSPEX-2612X-E: 538 W |
| Power consumption (with typical configuration) | • CSPEX-1512X: 202 W<br>• CSPEX-1612X: 238 W<br>• CSPEX-1812X: 426 W<br>• CSPEX-1812X-E, CSPEX-1802X, CSPEX-1802XA: 333 W<br>• CSPEX-2612X-E: 457 W |
| Minimum power consumption | • CSPEX-1512X: 185 W<br>• CSPEX-1612X: 200 W<br>• CSPEX-1812X: 413 W<br>• CSPEX-1812X-E. CSPEX-1802X, CSPEX-1802XA: 275 W<br>• CSPEX-2612X-E: 330 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# CSPEX-1804X

### View

**Figure2-40 CSPEX-1804X view**




(1) Card status LED. For the LED description, see Table2-235.

## LEDs

**Table2-235 LED description**

| LED | Status | Description |
|---|---|---|
| RUN (Green) | Steady on | The card is faulty. |
| | Off | The card is faulty or is not in position. |
| | Flashing (about once per second) | The card is operating correctly. |
| | Fast flashing (about eight times per second) | The card is starting up. If the LED keeps fast flashing, card registration has failed. |

## Subcard slots

**Table2-236 Subcard slots**

| Card model | Number of subcard slots |
|---|---|
| CSPEX-1804X | 4 |

## Technical specifications

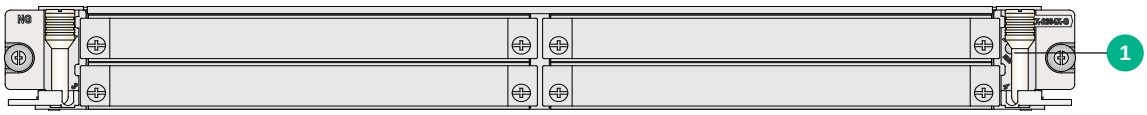
**Table2-237 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 52.5 × 399 × 352 mm (2.07 × 15.71 × 13.86 in) |
| Weight | 6.30 kg (13.89 lb) |
| Maximum power consumption | 625 W |
| Power consumption (with typical configuration) | 510 W |
| Minimum power consumption | 460 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# CSPEX-2304X-G

## View

**Figure2-41 CSPEX-2304X-G view**




(1) Card status LED. For the LED description, see Table2-238.

## LEDs

**Table2-238 LED description**

| LED | Status | Description |
|---|---|---|
| RUN (Green) | Steady on | The card is faulty. |
| | Off | The card is faulty or is not in position. |
| | Flashing (about once per second) | The card is operating correctly. |
| | Fast flashing (about eight times per second) | The card is starting up. If the LED keeps fast flashing, card registration has failed. |

## Subcard slots

**Table2-239 Subcard slots**

| Card model | Number of subcard slots |
|---|---|
| CSPEX-2304X-G | 4 |

## Technical specifications

**Table2-240 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 40 × 399 × 352 mm (1.57 × 15.71 × 13.86 in) |
| Weight | 4.65 kg (10.25 lb) |
| Maximum power consumption | 280 W |
| Power consumption (with typical configuration) | 242 W |
| Minimum power consumption | 200 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# CSPEX-2304X-G2

## View

**Figure2-42 CSPEX-2304X-G2 view**


(1) Card status LED. For the LED description, see Table2-241.

## LEDs

**Table2-241 LED description**

| LED | Status | Description |
|---|---|---|
| RUN (Green) | Steady on | The card is faulty. |
| | Off | The card is faulty or is not in position. |
| | Flashing (about once per second) | The card is operating correctly. |
| | Fast flashing (about eight times per second) | The card is starting up. If the LED keeps fast flashing, card registration has failed. |

## Subcard slots

**Table2-242 Subcard slots**

| Card model | Number of subcard slots |
|---|---|
| CSPEX-2304X-G2 | 4 |

## Technical specifications

**Table2-243 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 40 × 399 × 352 mm (1.57 × 15.71 × 13.86 in) |
| Weight | 3.80 kg (8.38 lb) |
| Maximum power consumption | 261 W |
| Power consumption (with typical configuration) | 154 W |
| Minimum power consumption | 112 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# CSPEX-2304X-LG

## View

**Figure2-43 CSPEX-2304X-LG view**


(1) Card status LED. For the LED description, see Table2-244.

## LEDs

**Table2-244 LED description**

| LED | Status | Description |
|---|---|---|
| RUN (Green) | Steady on | The card is faulty. |
| | Off | The card is faulty or is not in position. |
| | Flashing (about once per second) | The card is operating correctly. |
| | Fast flashing (about eight times per second) | The card is starting up. If the LED keeps fast flashing, card registration has failed. |

## Subcard slots

**Table2-245 Subcard slots**

| Card model | Number of subcard slots |
|---|---|
| CSPEX-2304X-LG | 4 |

## Technical specifications

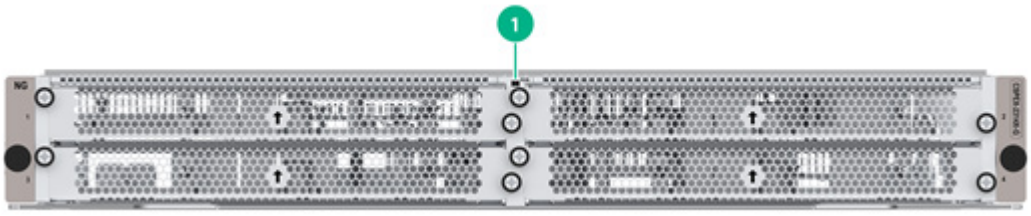
**Table2-246 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 40 × 399 × 352 mm (1.57 × 15.71 × 13.86 in) |
| Weight | 4.65 kg (10.25 lb) |
| Maximum power consumption | 280 W |
| Power consumption (with typical configuration) | 242 W |
| Minimum power consumption | 200 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# CSPEX-2314X-G

### View

**Figure2-44 CSPEX-2314X-G view**




(1) Card status LED. For the LED description, see Table2-247.

### LEDs

**Table2-247 LED description**

| LED | Status | Description |
|---|---|---|
| RUN (Green) | Steady on | The card is faulty. |
| | Off | The card is faulty or is not in position. |
| | Flashing (about once per second) | The card is operating correctly. |
| | Fast flashing (about eight times per second) | The card is starting up. If the LED keeps fast flashing, card registration has failed. |

### Subcard slots

**Table2-248 Subcard slots**

| Card model | Number of subcard slots |
|---|---|
| CSPEX-2314X-G | 4 |

### Technical specifications

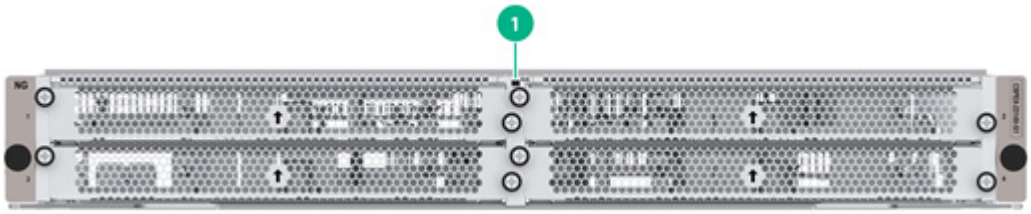
**Table2-249 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 52.5 × 399 × 352 mm (2.07 × 15.71 × 13.86 in) |
| Weight | 11.57 kg (25.51 lb) |
| Maximum power consumption | 385 W |
| Power consumption (with typical configuration) | 333 W |
| Minimum power consumption | 185 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# CSPEX-2314X-G1

### View

**Figure2-45 CSPEX-2314X-G1 view**




(1) Card status LED. For the LED description, see Table2-250.

### LEDs

**Table2-250 LED description**

| LED | Status | Description |
|---|---|---|
| RUN (Green) | Steady on | The card is faulty. |
| | Off | The card is faulty or is not in position. |
| | Flashing (about once per second) | The card is operating correctly. |
| | Fast flashing (about eight times per second) | The card is starting up. If the LED keeps fast flashing, card registration has failed. |

### Subcard slots

**Table2-251 Subcard slots**

| Card model | Number of subcard slots |
|---|---|
| CSPEX-2314X-G1 | 4 |

### Technical specifications

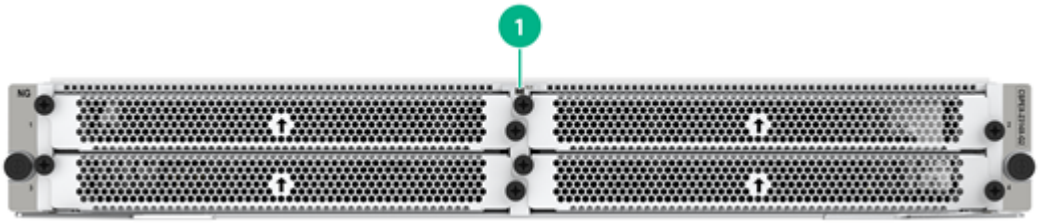
**Table2-252 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 52.5 × 399 × 352 mm (2.07 × 15.71 × 13.86 in) |
| Weight | 5.15 kg (11.35 lb) |
| Maximum power consumption | 320 W |
| Power consumption (with typical configuration) | 268 W |
| Minimum power consumption | 120 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

## CSPEX-2314X-G2

## View

**Figure2-46 CSPEX-2314X-G2 view**




(1) Card status LED. For the LED description, see Table2-253.

## LEDs

**Table2-253 LED description**

| LED | Status | Description |
|---|---|---|
| RUN (Green) | Steady on | The card is faulty. |
| | Off | The card is faulty or is not in position. |
| | Flashing (about once per second) | The card is operating correctly. |
| | Fast flashing (about eight times per second) | The card is starting up. If the LED keeps fast flashing, card registration has failed. |

## Subcard slots

**Table2-254 Subcard slots**

| Card model | Number of subcard slots |
|---|---|
| CSPEX-2314X-G2 | 4 |

## Technical specifications

**Table2-255 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 52.5 × 399 × 352 mm (2.07 × 15.71 × 13.86 in) |
| Weight | 5.15 kg (11.35 lb) |
| Maximum power consumption | 320 W |
| Power consumption (with typical configuration) | 268 W |
| Minimum power consumption | 120 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# CSPEX-2612XA/CSPEX-2612X3A

## View

**Figure2-47 CSPEX-2612X3A view**


(1) Card status LED. For the LED description, see Table2-256.

The views of the CSPEX-2612XA and CSPEX-2612X3A are similar. This figure uses the CSPEX-2612X3A as an example.

## LEDs

**Table2-256 LED description**

| LED | Status | Description |
|---|---|---|
| RUN (Green) | Steady on | The card is faulty. |
| | Off | The card is faulty or is not in position. |
| | Flashing (about once per second) | The card is operating correctly. |
| | Fast flashing (about eight times per second) | The card is starting up. If the LED keeps fast flashing, card registration has failed. |

## Subcard slots

**Table2-257 Subcard slots**

| Card model | Number of subcard slots |
|---|---|
| CSPEX-2612XA | 2 |
| CSPEX-2612X3A | 2 |

## Technical specifications

**Table2-258 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 52.5 × 399 × 352 mm (2.07 × 15.71 × 13.86 in) |
| Weight | 9.00 kg (19.84 lb) |
| Maximum power consumption | 610 W |
| Power consumption (with typical configuration) | 410 W |

| Item | Description |
| --- | --- |
| Minimum power consumption | 317 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# CSPEX-2612X3-E

## View

**Figure2-48 CSPEX-2612X3-E view**


(1) Card status LED. For the LED description, see Table2-259.

## LEDs

**Table2-259 LED description**

| LED | Status | Description |
| --- | --- | --- |
| RUN (Green) | Steady on | The card is faulty. |
| | Off | The card is faulty or is not in position. |
| | Flashing (about once per second) | The card is operating correctly. |
| | Fast flashing (about eight times per second) | The card is starting up. If the LED keeps fast flashing, card registration has failed. |

## Subcard slots

**Table2-260 Subcard slots**

| Card model | Number of subcard slots |
| --- | --- |
| CSPEX-2612X3-E | 2 |

## Technical specifications

**Table2-261 Technical specifications**

| Item | Description |
| --- | --- |
| Dimensions (H × W × D) | 52.5 × 399 × 352 mm (2.07 × 15.71 × 13.86 in) |
| Weight | 9.00 kg (19.84 lb) |
| Maximum power consumption | 610 W |

| Item | Description |
|---|---|
| Power consumption (with typical configuration) | 410 W |
| Minimum power consumption | 317 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# Configuration restrictions and guidelines

- A CR16006-F router installed with Type-A switching fabric modules does not support the CSPEX-1304X, CSPEX-1404X, or CSPEX-1504X cards.
- For adequate ventilation and cooling, install the CSPEX-1602X card in the following slots only when the other slots are not available.
  - **CR16010-F router**—Slots 0, 8 and 9.
  - **CR16014-F router**—Slots 0 and 13.

# Compatibility information

**Table2-262 Compatibility matrix between CSPEX cards and routers (1)**

| Card model | CR16006-F | CR16010-F | CR16014-F | CR16010H-F (with five fabric modules), CR16018-F (with five fabric modules) | CR16010H-F (with four fabric modules), CR16018-F (with four fabric modules) | CR16010 H-FA, CR16018-FA |
|---|---|---|---|---|---|---|
| CSPEX-1204 | Supported | Supported | Supported | Not supported | Not supported | Not supported |
| CSPEX-1104-E | Supported | Supported | Supported | Not supported | Not supported | Not supported |
| CSPEX-1304X | Supported | Supported | Supported | Supported | Not supported | Not supported |
| CSPEX-1404X | Supported | Supported | Supported | Supported | Not supported | Not supported |
| CSPEX-1504X | Supported | Supported | Supported | Supported | Not supported | Not supported |
| CSPEX-1504XA | Not supported | Not supported | Not supported | Not supported | Not supported | Supported |
| CSPEX-1502X | Not supported | Supported | Supported | Supported | Not supported | Not supported |
| CSPEX-1502XA | Not supported | Not supported | Not supported | Not supported | Not supported | Supported |
| CSPEX-1602X | Not supported | Supported | Supported | Supported | Not supported | Not supported |

| Card model | CR16006-F | CR16010-F | CR16014-F | CR16010H-F (with five fabric modules), CR16018-F (with five fabric modules) | CR16010H-F (with four fabric modules), CR16018-F (with four fabric modules) | CR16010 H-FA, CR16018-FA |
|---|---|---|---|---|---|---|
| CSPEX-1602XA | Not supported | Not supported | Not supported | Not supported | Not supported | Supported |
| CSPEX-1802X | Not supported | Not supported | Not supported | Supported | Supported | Not supported |
| CSPEX-1804X | Not supported | Not supported | Not supported | Supported | Supported | Not supported |
| CSPEX-1512X | Not supported | Not supported | Not supported | Supported | Supported | Not supported |
| CSPEX-1612X | Not supported | Not supported | Not supported | Supported | Supported | Not supported |
| CSPEX-1812X | Not supported | Not supported | Not supported | Supported | Supported | Not supported |
| CSPEX-1812X-E | Not supported | Not supported | Not supported | Supported | Supported | Not supported |
| CSPEX-1802XA | Not supported | Not supported | Not supported | Supported | Not supported | Supported |
| CSPEX-2304X-G | Supported | Supported | Supported | Supported | Not supported | Not supported |
| CSPEX-2304X-G2 | Supported | Supported | Supported | Supported | Not supported | Not supported |
| CSPEX-2304X-LG | Supported | Supported | Supported | Supported | Not supported | Not supported |
| CSPEX-2314X-G | Not supported | Not supported | Not supported | Supported | Not supported | Not supported |
| CSPEX-2314X-G1 | Not supported | Not supported | Not supported | Supported | Not supported | Not supported |
| CSPEX-2314X-G2 | Not supported | Not supported | Not supported | Supported | Not supported | Not supported |
| CSPEX-2612XA | Not supported | Not supported | Not supported | Not supported | Not supported | Supported |
| CSPEX-2612X3A | Not supported | Not supported | Not supported | Not supported | Not supported | Supported |
| CSPEX-2612X3-E | Not supported | Not supported | Not supported | Supported | Supported | Not supported |
| CSPEX-2612X-E | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |

**Table2-263 Compatibility matrix between CSPEX cards and routers (2)**

| Card model | CR16003E-F | CR16005E-F | CR16010E-F |
|---|---|---|---|
| CSPEX-1204 | Not supported | Not supported | Not supported |
| CSPEX-1104-E | Not supported | Not supported | Not supported |
| CSPEX-1304X | Supported | Supported | Supported |
| CSPEX-1404X | Supported | Supported | Supported |
| CSPEX-1504X | Supported | Supported | Supported |
| CSPEX-1504XA | Not supported | Not supported | Not supported |
| CSPEX-1502X | Not supported | Not supported | Not supported |
| CSPEX-1502XA | Not supported | Not supported | Not supported |
| CSPEX-1602X | Not supported | Not supported | Not supported |
| CSPEX-1602XA | Not supported | Not supported | Not supported |
| CSPEX-1802X | Supported | Not supported | Supported |
| CSPEX-1804X | Not supported | Not supported | Not supported |
| CSPEX-1512X | Not supported | Not supported | Not supported |
| CSPEX-1612X | Not supported | Not supported | Not supported |
| CSPEX-1812X | Not supported | Not supported | Not supported |
| CSPEX-1812X-E | Not supported | Not supported | Not supported |
| CSPEX-1802XA | Supported | Not supported | Supported |
| CSPEX-2304X-G | Supported | Supported | Supported |
| CSPEX-2304X-G 2 | Supported | Supported | Supported |
| CSPEX-2304X-L G | Supported | Supported | Supported |
| CSPEX-2314X-G | Supported | Supported | Supported |
| CSPEX-2314X-G 1 | Supported | Supported | Supported |
| CSPEX-2314X-G 2 | Supported | Supported | Supported |
| CSPEX-2612XA | Not supported | Not supported | Not supported |
| CSPEX-2612X3A | Not supported | Not supported | Not supported |
| CSPEX-2612X3- E | Supported | Supported | Supported |
| CSPEX-2612X-E | Supported | Not supported | Supported |

**Table2-264 Compatibility matrix between CSPEX cards and subcards (1)**

| Subcard model | CSPEX cards | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | CSPEX-1204 | CSPEX-1304X | CSPEX-1504X<br>CSPEX-1404X<br>CSPEX-2304X-G2 | CSPEX-1504XA | CSPEX-1502X | CSPEX-1502XA | CSPEX-1602X | CSPEX-1602XA | CSPEX-1804X |
| GIC-CLP2L-G | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| GIC-CQ1LF | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| GIC-CQ1L-G | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| GIC-ET16L-G | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| GIC-GP12L-G | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| GIC-GT10L-G | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| GIC-MSC-G | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| GIC-PSP4L-G | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| GIC-SP4L-G | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| GIC-SP8L-G | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| GIC-TCP8L-G | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| GIC-XP4L-G | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| GIC-XP6L-G | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| GIC-XP12LF | Not support | Not support | Not support | Not support | Not support | Not support | Not support | Not support | Not support |

| Subcard model | CSPEX cards | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | CSPEX-1204 | CSPEX-1304X | CSPEX-1504X<br>CSPEX-1404X<br>CSPEX-2304X-G2 | CSPEX-1504XA | CSPEX-1502X | CSPEX-1502XA | CSPEX-1602X | CSPEX-1602XA | CSPEX-1804X |
| | ed | ed | ed | ed | ed | ed | ed | ed | ed |
| GIC-XP12L-G | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| PIC-GP10L | Slots 1 and 2: Supported<br>Slots 3 and 4: Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| PIC-TCP8L | Slots 1 and 2: Supported<br>Slots 3 and 4: Not supported | Not supported | Slots 1 and 2: Supported<br>Slots 3 and 4: Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| PIC-PSP4L | Slots 1 and 2: Supported<br>Slots 3 and 4: Not supported | Not supported | Slots 1 and 2: Supported<br>Slots 3 and 4: Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| PIC-PS2G4L | Slots 1 and 2: Supported<br>Slots 3 and 4: Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| PIC-PUP1L | Slots 1 and 2: Supported<br>Slots 3 | Not supported | Slots 1 and 2: Supported<br>Slots 3 | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |

| Subcard model | CSPEX cards | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | CSPEX-1204 | CSPEX-1304X | CSPEX-1504X<br>CSPEX-1404X<br>CSPEX-2304X-G2 | CSPEX-1504XA | CSPEX-1502X | CSPEX-1502XA | CSPEX-1602X | CSPEX-1602XA | CSPEX-1804X |
| | and 4: Not supported | | and 4: Not supported | | | | | | |
| PIC-XP1L | Slots 1 and 2: Supported<br>Slots 3 and 4: Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| MIC-GT20L | Not supported | Slots 1 and 2: Supported<br>Slots 3 and 4: Not supported | Slots 1 and 2: Supported<br>Slots 3 and 4: Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| MIC-GT20L1 | Not supported | Not supported | Supported only by CSPEX-1504X and CSPEX-2304X-G2 | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| MIC-GT20LA | Not supported | Not supported | Not supported | Slots 1 and 2: Supported<br>Slots 3 and 4: Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| MIC-ET16L | Supported | Supported | Supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| MIC-CLP2L | Supported | Supported | Supported | Not support | Not support | Not support | Not support | Not support | Not support |

| Subcard model | CSPEX cards | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | CSPEX-1204 | CSPEX-1304X | CSPEX-1504X<br>CSPEX-1404X<br>CSPEX-2304X-G2 | CSPEX-1504XA | CSPEX-1502X | CSPEX-1502XA | CSPEX-1602X | CSPEX-1602XA | CSPEX-1804X |
| | | | | ed | ed | ed | ed | ed | ed |
| MIC-CLP4L | Supported | Supported | Supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| MIC-SP4L | Supported | Supported | Supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| MIC-SP8L | Supported | Supported | Supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| MIC-GP4L | Slots 1 and 2: Not supported<br>Slots 3 and 4: Supported | Supported | Supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| MIC-GP8L | Slots 1 and 2: Not supported<br>Slots 3 and 4: Supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| MIC-GP10L1 | Slots 1 and 2: Not supported<br>Slots 3 and 4: Supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| MIC-GP10L2 | Not supported | Not supported | Supported only by CSPEX-1504X and CSPEX-2304X | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |

| Subcard model | CSPEX cards | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | CSPEX-1204 | CSPEX-1304X | CSPEX-1504X<br>CSPEX-1404X<br>CSPEX-2304X-G2 | CSPEX-1504XA | CSPEX-1502X | CSPEX-1502XA | CSPEX-1602X | CSPEX-1602XA | CSPEX-1804X |
| | | | -G2 | | | | | | |
| MIC-GP10L-V2 | Not supported | Slots 1, 2, and 3: Supported<br>Slot 4: Not supported | Supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| MIC-GP10LA | Not supported | Not supported | Not supported | Supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| MIC-GP20L | Not supported | Slots 1 and 2: Supported<br>Slots 3 and 4: Not supported | Slots 1 and 2: Supported<br>Slots 3 and 4: Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| MIC-GP20L1 | Not supported | Not supported | Not supported | Not supported | Supported | Not supported | Supported | Not supported | Not supported |
| MIC-XP2L | Not supported | Supported | Supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| MIC-XP2L-LAN | Not supported | Supported | Supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| MIC-XP4L1 | Not supported | Supported | Supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| MIC-XP5L | Not supported | Supported | Supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| MIC-XP5L1 | Not supported | Supported | Supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| MIC-XP5L2 | Not supported | Supported | Supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |

| Subcard model | CSPEX cards | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | CSPEX-1204 | CSPEX-1304X | CSPEX-1504X<br>CSPEX-1404X<br>CSPEX-2304X-G2 | CSPEX-1504XA | CSPEX-1502X | CSPEX-1502XA | CSPEX-1602X | CSPEX-1602XA | CSPEX-1804X |
| MIC-XP8L | Not supported | Not supported | Not supported | Not supported | Supported | Not supported | Not supported | Not supported | Not supported |
| MIC-XP10LF | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| MIC-XP10L-LAN | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| MIC-XP20L | Not supported | Not supported | Not supported | Not supported | Supported | Not supported | Supported | Not supported | Not supported |
| MIC-XP20LA | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Supported | Not supported |
| MIC-QP1L | Not supported | Supported | Supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| MIC-CP1L | Not supported | Not supported | Slots 1 and 2: Supported<br>Slots 3 and 4: Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| MIC-CP1L-V2 | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Supported |
| MIC-CP2L | Not supported | Not supported | Not supported | Not supported | Supported | Not supported | Supported | Not supported | Not supported |
| MIC-CP2L-V2 | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Supported |
| MIC-CQ1L1 | Not supported | Not supported | Slots 1 and 2: Supported<br>Slots 3 and 4: | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |

| Subcard model | CSPEX cards | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | CSPEX-1204 | CSPEX-1304X | CSPEX-1504X<br>CSPEX-1404X<br>CSPEX-2304X-G2 | CSPEX-1504XA | CSPEX-1502X | CSPEX-1502XA | CSPEX-1602X | CSPEX-1602XA | CSPEX-1804X |
| | | | Not supported | | | | | | |
| MIC-CQ1L2 | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| MIC-CQ1LF | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| MIC-CQ2L | Not supported | Not supported | Not supported | Not supported | Supported | Not supported | Supported | Not supported | Not supported |
| MIC-PSP4L | Not supported | Supported | Supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| MIC-TCP8L | Not supported | Slots 1, 2, and 3: Supported<br>Slot 4: Not supported | Supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| MIC-SEC | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| NIC-GT20L | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| NIC-QP3L | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| NIC-GP20L | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| NIC-GP24L | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| NIC-GP24L1 | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |

| Subcard model | CSPEX cards | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | CSPEX-1204 | CSPEX-1304X | CSPEX-1504X<br>CSPEX-1404X<br>CSPEX-2304X-G2 | CSPEX-1504XA | CSPEX-1502X | CSPEX-1502XA | CSPEX-1602X | CSPEX-1602XA | CSPEX-1804X |
| NIC-GP24L1A | Not supported | Not supported | Not supported | Not supported | Not supported | Supported | Not supported | Not supported | Not supported |
| NIC-GP24L1A-G | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| NIC-XP5L | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| NIC-XP10L | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| NIC-XP20L | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| NIC-XP20L1 | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| NIC-XP20L1A | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| NIC-XP20L1A-G | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| NIC-CC1L | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| NIC-CC2L | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| NIC-CQ1L | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| NIC-CQ2L | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| NIC-CQ2LA | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| NIC-CQ2LA-G | Not support | Not support | Not support | Not support | Not support | Not support | Not support | Not support | Not support |

| Subcard model | CSPEX cards | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | CSPEX-1204 | CSPEX-1304X | CSPEX-1504X<br>CSPEX-1404X<br>CSPEX-2304X-G2 | CSPEX-1504XA | CSPEX-1502X | CSPEX-1502XA | CSPEX-1602X | CSPEX-1602XA | CSPEX-1804X |
| | ed | ed | ed | ed | ed | ed | ed | ed | ed |
| RX-NIC-GP20L | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| RX-NIC-XP5L | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| RX-NIC-XP10L | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| RX-NIC-XP20L | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| RX-NIC-YGS4L | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| RX-NIC-LGQ2L | Not supported | Not supported | Not supported | Not supported | Not supported | Supported | Not supported | Not supported | Not supported |
| RX-NIC-LGQ4L | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| RX-NIC-CQ1LF | Not supported | Not supported | Not supported | Not supported | Not supported | Supported | Not supported | Not supported | Not supported |
| RX-NIC-CQ2LF | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| RX-NIC-CC1L | Not supported | Not supported | Not supported | Not supported | Not supported | Supported | Not supported | Not supported | Not supported |
| RX-NIC-CC2L | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |

**Table2-265 Compatibility matrix between CSPEX cards and subcards (2)**

| Subcard model | CSPEX cards | | | | | | |
|---|---|---|---|---|---|---|---|
| | CSPEX-1104-E | CSPEX-1512X | CSPEX-1612X | CSPEX-1812X | CSPEX-1812X-E | CSPEX-1802X | CSPEX-1802XA |
| GIC-CLP2L-G | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| GIC-CQ1LF | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| GIC-CQ1L-G | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| GIC-ET16L-G | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| GIC-GP12L-G | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| GIC-GT10L-G | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| GIC-MSC-G | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| GIC-PSP4L-G | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| GIC-SP4L-G | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| GIC-SP8L-G | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| GIC-TCP8L-G | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| GIC-XP4L-G | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| GIC-XP6L-G | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| GIC-XP12LF | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| GIC-XP12L-G | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| PIC-GP10L | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| PIC-XP1L | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| PIC-TCP8L | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| PIC-PS2G4L | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| PIC-PSP4L | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| PIC-PUP1L | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| MIC-GP4L | Supported A | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |

| Subcard model | CSPEX cards | | | | | | |
|---|---|---|---|---|---|---|---|
| | CSPEX-1104-E | CSPEX-1512X | CSPEX-1612X | CSPEX-1812X | CSPEX-1812X-E | CSPEX-1802X | CSPEX-1802XA |
| | maximum of three cards are supported | | | | | | |
| MIC-GP8L | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| MIC-GP10L1 | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| MIC-GP10L2 | Supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| MIC-SP4L | Supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| MIC-CLP2L | Supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| MIC-CLP4L | Supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| MIC-SP8L | Supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| MIC-ET16L | Supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| MIC-GP20L | Slots 1 and 2: Supported<br>Slots 3 and 4: Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| MIC-GP20L1 | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| MIC-GT20L | Slots 1 and 2: Supported<br>Slots 3 and 4: Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| MIC-GT20L1 | Supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| MIC-GT20LA | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| MIC-CP1L | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| MIC-GP10L-V2 | Supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| MIC-GP10LA | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| MIC-XP2L | Supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |

| Subcard model | CSPEX cards | | | | | | |
|---|---|---|---|---|---|---|---|
| | CSPEX-1104-E | CSPEX-1512X | CSPEX-1612X | CSPEX-1812X | CSPEX-1812X-E | CSPEX-1802X | CSPEX-1802XA |
| MIC-XP2L-LAN | Supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| MIC-XP4L1 | Supported<br>A maximum of three cards are supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| MIC-XP5L | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| MIC-XP5L1 | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| MIC-XP5L2 | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| MIC-XP8L | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| MIC-XP10LF | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| MIC-XP10L-LAN | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| MIC-XP20L | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| MIC-XP20LA | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| MIC-CP2L | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| MIC-QP1L | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| MIC-CP1L-V2 | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| MIC-CP2L-V2 | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| MIC-CQ1L1 | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| MIC-CQ1L2 | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| MIC-CQ1LF | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| MIC-CQ2L | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| MIC-PSP4L | Supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| MIC-TCP8L | Supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |

| Subcard model | CSPEX cards | | | | | | |
|---|---|---|---|---|---|---|---|
| | CSPEX-1104-E | CSPEX-1512X | CSPEX-1612X | CSPEX-1812X | CSPEX-1812X-E | CSPEX-1802X | CSPEX-1802XA |
| MIC-SEC | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| NIC-GT20L | Not supported | Supported | Supported | Supported | Not supported | Not supported | Not supported |
| NIC-QP3L | Not supported | Not supported | Not supported | Not supported | Not supported | Supported | Not supported |
| NIC-GP20L | Not supported | Supported | Supported | Supported | Not supported | Not supported | Not supported |
| NIC-GP24L | Not supported | Supported | Supported | Supported | Not supported | Not supported | Not supported |
| NIC-GP24L1 | Not supported | Not supported | Not supported | Not supported | Supported | Supported | Not supported |
| NIC-GP24L1A | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Supported |
| NIC-GP24L1A-G | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| NIC-XP5L | Not supported | Supported | Supported | Supported | Supported | Supported | Not supported |
| NIC-XP10L | Not supported | Supported | Supported | Supported | Supported | Supported | Not supported |
| NIC-XP20L | Not supported | Not supported | Not supported | Supported | Supported | Supported | Supported |
| NIC-XP20L1 | Not supported | Not supported | Not supported | Supported | Supported | Supported | Supported |
| NIC-XP20L1A | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Supported |
| NIC-XP20L1A-G | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| NIC-CC1L | Not supported | Not supported | Supported | Supported | Supported | Supported | Not supported |
| NIC-CC2L | Not supported | Not supported | Not supported | Supported | Supported | Supported | Not supported |
| NIC-CQ1L | Not supported | Not supported | Supported | Supported | Supported | Supported | Not supported |
| NIC-CQ2L | Not supported | Not supported | Not supported | Supported | Supported | Supported | Not supported |
| NIC-CQ2LA | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Supported |
| NIC-CQ2LA-G | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| RX-NIC-GP20L | Not supported | Supported | Supported | Supported | Not supported | Not supported | Not supported |
| RX-NIC-XP5L | Not supported | Supported | Supported | Supported | Supported | Supported | Not supported |

| Subcard model | CSPEX cards | | | | | | |
|---|---|---|---|---|---|---|---|
| | CSPEX-1104-E | CSPEX-1512X | CSPEX-1612X | CSPEX-1812X | CSPEX-1812X-E | CSPEX-1802X | CSPEX-1802XA |
| RX-NIC-XP10L | Not supported | Supported | Supported | Supported | Supported | Supported | Not supported |
| RX-NIC-XP20L | Not supported | Not supported | Not supported | Supported | Supported | Supported | Not supported |
| RX-NIC-YGS4L | Not supported | Not supported | Not supported | Supported | Supported | Supported | Not supported |
| RX-NIC-LGQ2L | Not supported | Not supported | Not supported | Supported | Supported | Supported | Not supported |
| RX-NIC-LGQ4L | Not supported | Not supported | Not supported | Supported | Not supported | Supported | Not supported |
| RX-NIC-CQ1LF | Not supported | Not supported | Not supported | Supported | Supported | Supported | Not supported |
| RX-NIC-CQ2LF | Not supported | Not supported | Not supported | Supported | Supported | Supported | Not supported |
| RX-NIC-CC1L | Not supported | Supported | Supported | Supported | Supported | Supported | Not supported |
| RX-NIC-CC2L | Not supported | Not supported | Not supported | Supported | Supported | Supported | Not supported |

**Table2-266 Compatibility matrix between CSPEX cards and subcards (3)**

| Subcard model | CSPEX cards | | | | | | |
|---|---|---|---|---|---|---|---|
| | CSPEX-2612XA | CSPEX-2612X3A | CSPEX-2612X3-E | CSPEX-2304X-G<br>CSPEX-2304X-LG | CSPEX-2314X-G | CSPEX-2314X-G1<br>CSPEX-2314X-G2 | CSPEX-2612X-E |
| GIC-CLP2L-G | Not supported | Not supported | Not supported | Not supported | Supported | Supported | Not supported |
| GIC-CQ1LF | Not supported | Not supported | Not supported | Not supported | Supported | Supported (only in slots 1 and 2) | Not supported |
| GIC-CQ1L-G | Not supported | Not supported | Not supported | Not supported | Supported | Supported | Not supported |
| GIC-ET16L-G | Not supported | Not supported | Not supported | Not supported | Supported | Supported | Not supported |
| GIC-GP12L-G | Not supported | Not supported | Not supported | Not supported | Supported | Supported | Not supported |
| GIC-GT10L-G | Not supported | Not supported | Not supported | Not supported | Supported | Supported | Not supported |
| GIC-MSC-G | Not supported | Not supported | Not supported | Not supported | Supported | Supported | Not supported |
| GIC-PSP4L-G | Not supported | Not supported | Not supported | Not supported | Supported | Supported | Not supported |

| Subcard model | CSPEX cards | | | | | | |
|---|---|---|---|---|---|---|---|
| | CSPEX-2612XA | CSPEX-2612X3A | CSPEX-2612X3-E | CSPEX-2304X-G<br>CSPEX-2304X-LG | CSPEX-2314X-G | CSPEX-2314X-G1<br>CSPEX-2314X-G2 | CSPEX-2612X-E |
| GIC-SP4L-G | Not supported | Not supported | Not supported | Not supported | Supported | Supported | Not supported |
| GIC-SP8L-G | Not supported | Not supported | Not supported | Not supported | Supported | Supported | Not supported |
| GIC-TCP8L-G | Not supported | Not supported | Not supported | Not supported | Supported | Supported | Not supported |
| GIC-XP4L-G | Not supported | Not supported | Not supported | Not supported | Supported | Supported | Not supported |
| GIC-XP6L-G | Not supported | Not supported | Not supported | Not supported | Supported | Supported | Not supported |
| GIC-XP12LF | Not supported | Not supported | Not supported | Not supported | Supported | Supported (only in slots 1 and 2) | Not supported |
| GIC-XP12L-G | Not supported | Not supported | Not supported | Not supported | Supported | Supported | Not supported |
| PIC-GP10L | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| PIC-XP1L | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| PIC-TCP8L | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| PIC-PS2G4L | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| PIC-PSP4L | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| PIC-PUP1L | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| MIC-GP4L | Not supported | Not supported | Not supported | Supported | Not supported | Not supported | Not supported |
| MIC-GP8L | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| MIC-GP10L1 | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| MIC-GP10L2 | Not supported | Not supported | Not supported | Supported | Not supported | Not supported | Not supported |
| MIC-SP4L | Not supported | Not supported | Not supported | Supported | Not supported | Not supported | Not supported |
| MIC-CLP2L | Not supported | Not supported | Not supported | Supported | Not supported | Not supported | Not supported |
| MIC-CLP4L | Not supported | Not supported | Not supported | Supported | Not supported | Not supported | Not supported |

| Subcard model | CSPEX cards | | | | | | |
|---|---|---|---|---|---|---|---|
| | CSPEX-2612XA | CSPEX-2612X3A | CSPEX-2612X3-E | CSPEX-2304X-G<br>CSPEX-2304X-LG | CSPEX-2314X-G | CSPEX-2314X-G1<br>CSPEX-2314X-G2 | CSPEX-2612X-E |
| MIC-SP8L | Not supported | Not supported | Not supported | Supported | Not supported | Not supported | Not supported |
| MIC-ET16L | Not supported | Not supported | Not supported | Supported | Not supported | Not supported | Not supported |
| MIC-GP20L | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| MIC-GP20L1 | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| MIC-GT20L | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| MIC-GT20L1 | Not supported | Not supported | Not supported | Supported | Not supported | Not supported | Not supported |
| MIC-GT20LA | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| MIC-CP1L | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| MIC-GP10L-V2 | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| MIC-GP10LA | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| MIC-XP2L | Not supported | Not supported | Not supported | Supported | Not supported | Not supported | Not supported |
| MIC-XP2L-LAN | Not supported | Not supported | Not supported | Supported | Not supported | Not supported | Not supported |
| MIC-XP4L1 | Not supported | Not supported | Not supported | Supported | Not supported | Not supported | Not supported |
| MIC-XP5L | Not supported | Not supported | Not supported | Supported | Not supported | Not supported | Not supported |
| MIC-XP5L1 | Not supported | Not supported | Not supported | Supported | Not supported | Not supported | Not supported |
| MIC-XP5L2 | Not supported | Not supported | Not supported | Supported | Not supported | Not supported | Not supported |
| MIC-XP8L | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| MIC-XP10LF | Not supported | Not supported | Not supported | Supported | Not supported | Not supported | Not supported |
| MIC-XP10L-LAN | Not supported | Not supported | Not supported | Supported | Not supported | Not supported | Not supported |
| MIC-XP20L | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| MIC-XP20LA | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |

| Subcard model | CSPEX cards | | | | | | |
|---|---|---|---|---|---|---|---|
| | CSPEX-2612XA | CSPEX-2612X3A | CSPEX-2612X3-E | CSPEX-2304X-G<br>CSPEX-2304X-LG | CSPEX-2314X-G | CSPEX-2314X-G1<br>CSPEX-2314X-G2 | CSPEX-2612X-E |
| MIC-CP2L | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| MIC-QP1L | Not supported | Not supported | Not supported | Supported | Not supported | Not supported | Not supported |
| MIC-CP1L-V2 | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| MIC-CP2L-V2 | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| MIC-CQ1L1 | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| MIC-CQ1L2 | Not supported | Not supported | Not supported | Supported | Not supported | Not supported | Not supported |
| MIC-CQ1LF | Not supported | Not supported | Not supported | Supported | Not supported | Not supported | Not supported |
| MIC-CQ2L | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| MIC-PSP4L | Not supported | Not supported | Not supported | Supported | Not supported | Not supported | Not supported |
| MIC-TCP8L | Not supported | Not supported | Not supported | Supported | Not supported | Not supported | Not supported |
| MIC-SEC | Not supported | Not supported | Not supported | Supported | Not supported | Not supported | Not supported |
| NIC-GT20L | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| NIC-QP3L | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| NIC-GP20L | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| NIC-GP24L | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| NIC-GP24L1 | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Supported |
| NIC-GP24L1A | Supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| NIC-GP24L1A-G | Not supported | Supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| NIC-XP5L | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Supported |
| NIC-XP10L | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Supported |
| NIC-XP20L | Not supported | Not supported | Supported | Not supported | Not supported | Not supported | Supported |

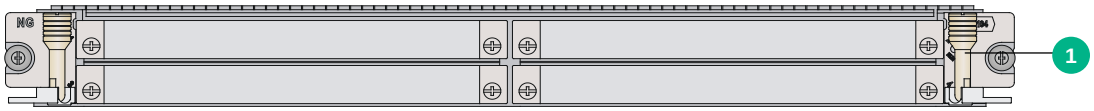
| Subcard model | CSPEX cards | | | | | | |
|---|---|---|---|---|---|---|---|
| | CSPEX-2612XA | CSPEX-2612X3A | CSPEX-2612X3-E | CSPEX-2304X-G<br>CSPEX-2304X-LG | CSPEX-2314X-G | CSPEX-2314X-G1<br>CSPEX-2314X-G2 | CSPEX-2612X-E |
| NIC-XP20L1 | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Supported |
| NIC-XP20L1A | Supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| NIC-XP20L1A-G | Not supported | Supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| NIC-CC1L | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| NIC-CC2L | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| NIC-CQ1L | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Supported |
| NIC-CQ2L | Not supported | Not supported | Supported | Not supported | Not supported | Not supported | Supported |
| NIC-CQ2LA | Supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| NIC-CQ2LA-G | Not supported | Supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| RX-NIC-GP20L | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| RX-NIC-XP5L | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Supported |
| RX-NIC-XP10L | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Supported |
| RX-NIC-XP20L | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Supported |
| RX-NIC-YGS4L | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Supported |
| RX-NIC-LGQ2L | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| RX-NIC-LGQ4L | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Supported |
| RX-NIC-CQ1LF | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| RX-NIC-CQ2LF | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Supported |
| RX-NIC-CC1L | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |
| RX-NIC-CC2L | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported | Not supported |

# CMPE base cards

## CMPE-1104

### View

**Figure2-49 CMPE-1104 view**




(1) Card status LED. For the LED description, see Table2-267.

### LEDs

**Table2-267 LED description**

| LED | Status | Description |
|---|---|---|
| RUN (Green) | Steady on | The card is faulty. |
| | Off | The card is faulty or is not in position. |
| | Flashing (about once per second) | The card is operating correctly. |
| | Fast flashing (about eight times per second) | The card is starting up. If the LED keeps fast flashing, card registration has failed. |

### Subcard slots

**Table2-268 Subcard slots**

| Card model | Number of subcard slots |
|---|---|
| CMPE-1104 | 4 |

### Technical specifications

**Table2-269 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 40 × 399 × 352 mm (1.57 × 15.71 × 13.86 in) |
| Weight | 3.52 kg (7.76 lb) |
| Maximum power consumption | 158 W |
| Power consumption (with typical configuration) | 94 W |
| Minimum power consumption | 91 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# Configuration restrictions and guidelines

The subslot restrictions of a CMPE card depend on the subslot mode. For more information about subslot modes, see *H3C CR16000-F Routers Configuration Guides*.

# Compatibility information

**Table2-270 Compatibility matrix between CMPE cards and routers**

| Card model | CR16006-F, CR16010-F, CR16014-F | CR16010H-F (with five fabric modules), CR16018-F (with five fabric modules) | CR16010H-F (with four fabric modules), CR16018-F (with four fabric modules) | CR16010H-FA, CR16018-FA | CR16003E-F, CR16005E-F, CR16010E-F |
|---|---|---|---|---|---|
| CMPE-1104 | Supported | Not supported | Not supported | Not supported | Not supported |

**Table2-271 Compatibility matrix between CMPE cards and subcards**

| Subcard model | CMPE cards |
|---|---|
| GIC-CLP2L-G | Not supported |
| GIC-CQ1LF | Not supported |
| GIC-CQ1L-G | Not supported |
| GIC-ET16L-G | Not supported |
| GIC-GP12L-G | Not supported |
| GIC-GT10L-G | Not supported |
| GIC-MSC-G | Not supported |
| GIC-PSP4L-G | Not supported |
| GIC-SP4L-G | Not supported |
| GIC-SP8L-G | Not supported |
| GIC-TCP8L-G | Not supported |
| GIC-XP4L-G | Not supported |
| GIC-XP6L-G | Not supported |
| GIC-XP12LF | Not supported |
| GIC-XP12L-G | Not supported |
| PIC-GP10L | Not supported |
| PIC-TCP8L | Not supported |
| PIC-PSP4L | Not supported |
| PIC-PS2G4L | Not supported |
| PIC-PUP1L | Not supported |
| PIC-XP1L | Not supported |

| Subcard model | CMPE cards |
|---|---|
| MIC-GT20L | Not supported |
| MIC-GT20L1 | Not supported |
| MIC-GT20LA | Not supported |
| MIC-CLP4L | Supported |
| MIC-ET16L | Supported |
| MIC-CLP2L | Supported |
| MIC-SP8L | Only one is supported.<br>Can be installed only slot 1 or slot 2. |
| MIC-SP4L | Supported |
| MIC-GP4L | Supported |
| MIC-GP8L | Not supported in slot 3 or slot 4 |
| MIC-GP10L1 | Not supported |
| MIC-GP10L2 | Not supported |
| MIC-GP10L-V2 | Not supported |
| MIC-GP10LA | Not supported |
| MIC-GP20L | Not supported |
| MIC-GP20L1 | Not supported |
| MIC-XP2L | Not supported |
| MIC-XP2L-LAN | Not supported |
| MIC-XP4L1 | Not supported |
| MIC-XP5L | Not supported |
| MIC-XP5L1 | Not supported |
| MIC-XP5L2 | Not supported |
| MIC-XP8L | Not supported |
| MIC-XP10LF | Not supported |
| MIC-XP10L-LAN | Not supported |
| MIC-XP20L | Not supported |
| MIC-XP20LA | Not supported |
| MIC-QP1L | Not supported |
| MIC-CP1L | Not supported |
| MIC-CP1L-V2 | Not supported |
| MIC-CP2L | Not supported |
| MIC-CP2L-V2 | Not supported |
| MIC-CQ1L1 | Not supported |
| MIC-CQ1L2 | Not supported |
| MIC-CQ1LF | Not supported |
| MIC-CQ2L | Not supported |

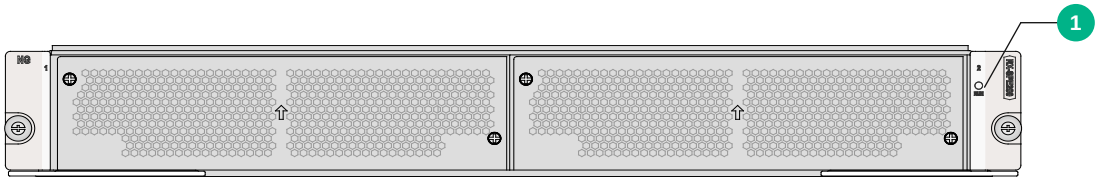
| Subcard model | CMPE cards |
|---|---|
| MIC-CQ2LA | Not supported |
| MIC-PSP4L | Not supported |
| MIC-TCP8L | Not supported |
| MIC-SEC | Not supported |
| NIC-GT20L | Not supported |
| NIC-QP3L | Not supported |
| NIC-GP20L | Not supported |
| NIC-GP24L | Not supported |
| NIC-GP24L1 | Not supported |
| NIC-GP24L1A | Not supported |
| NIC-GP24L1A-G | Not supported |
| NIC-XP5L | Not supported |
| NIC-XP10L | Not supported |
| NIC-XP20L | Not supported |
| NIC-XP20L1 | Not supported |
| NIC-XP20L1A | Not supported |
| NIC-XP20L1A-G | Not supported |
| NIC-CC1L | Not supported |
| NIC-CC2L | Not supported |
| NIC-CQ1L | Not supported |
| NIC-CQ2L | Not supported |
| NIC-CQ2LA | Not supported |
| NIC-CQ2LA-G | Not supported |
| RX-NIC-GP20L | Not supported |
| RX-NIC-XP5L | Not supported |
| RX-NIC-XP10L | Not supported |
| RX-NIC-XP20L | Not supported |
| RX-NIC-YGS4L | Not supported |
| RX-NIC-LGQ2L | Not supported |
| RX-NIC-LGQ4L | Not supported |
| RX-NIC-CQ1LF | Not supported |
| RX-NIC-CQ2LF | Not supported |
| RX-NIC-CC1L | Not supported |
| RX-NIC-CC2L | Not supported |

# SPE base cards

# RX-SPE200/RX-SPE200-E

## View

**Figure2-50 RX-SPE200 view**




(1) Card status LED. For the LED description, see Table2-272.

The views of the RX-SPE200 and RX-SPE200-E are similar. This figure uses the RX-SPE200 as an example.

## LEDs

**Table2-272 LED description**

| LED | Status | Description |
|---|---|---|
| RUN (Green) | Steady on | The card is faulty. |
| | Off | The card is faulty or is not in position. |
| | Flashing (about once per second) | The card is operating correctly. |
| | Fast flashing (about eight times per second) | The card is starting up. If the LED keeps fast flashing, card registration has failed. |

## Subcard slots

**Table2-273 Subcard slots**

| Card model | Number of subcard slots |
|---|---|
| RX-SPE200 | 2 |
| RX-SPE200-E | 2 |

## Technical specifications

**Table2-274 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 52.5 × 399 × 352 mm (2.07 × 15.71 × 13.86 in) |
| Weight | • RX-SPE200: 5.35 kg (11.79 lb)<br>• RX-SPE200-E: 5.00 kg (11.02 lb) |
| Maximum power consumption | • RX-SPE200: 530 W<br>• RX-SPE200-E: 270 W |
| Power consumption (with typical configuration) | • RX-SPE200: 300 W<br>• RX-SPE200-E: 135 W |
| Minimum power | • RX-SPE200: 280 W |

| Item | Description |
| --- | --- |
| consumption | • RX-SPE200-E: 120 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# Compatibility information

**Table2-275 Compatibility matrix between SPE cards and routers**

| Card model | CR16006-F, CR16010-F, CR16014-F | CR16010H-F (with five fabric modules), CR16018-F (with five fabric modules) | CR16010H-F (with four fabric modules), CR16018-F (with four fabric modules) | CR16010H-FA, CR16018-FA | CR16003E-F, CR16005E-F, CR16010E-F |
| --- | --- | --- | --- | --- | --- |
| RX-SPE200 | Not supported | Supported | Not supported | Not supported | Supported |
| RX-SPE200-E | Not supported | Supported | Not supported | Not supported | Not supported |

**Table2-276 Compatibility matrix between SPE cards and subcards**

| Subcard model | RX-SPE200 | RX-SPE200-E |
| --- | --- | --- |
| GIC-CLP2L-G | Not supported | Not supported |
| GIC-CQ1LF | Not supported | Not supported |
| GIC-CQ1L-G | Not supported | Not supported |
| GIC-ET16L-G | Not supported | Not supported |
| GIC-GP12L-G | Not supported | Not supported |
| GIC-GT10L-G | Not supported | Not supported |
| GIC-MSC-G | Not supported | Not supported |
| GIC-PSP4L-G | Not supported | Not supported |
| GIC-SP4L-G | Not supported | Not supported |
| GIC-SP8L-G | Not supported | Not supported |
| GIC-TCP8L-G | Not supported | Not supported |
| GIC-XP4L-G | Not supported | Not supported |
| GIC-XP6L-G | Not supported | Not supported |
| GIC-XP12LF | Not supported | Not supported |
| GIC-XP12L-G | Not supported | Not supported |
| PIC-GP10L | Not supported | Not supported |
| PIC-TCP8L | Not supported | Not supported |
| PIC-PSP4L | Not supported | Not supported |
| PIC-PS2G4L | Not supported | Not supported |

| Subcard model | RX-SPE200 | RX-SPE200-E |
|---|---|---|
| PIC-PUP1L | Not supported | Not supported |
| PIC-XP1L | Not supported | Not supported |
| MIC-GT20L | Not supported | Not supported |
| MIC-GT20L1 | Not supported | Not supported |
| MIC-GT20LA | Not supported | Not supported |
| MIC-CLP4L | Not supported | Not supported |
| MIC-ET16L | Not supported | Not supported |
| MIC-CLP2L | Not supported | Not supported |
| MIC-SP8L | Not supported | Not supported |
| MIC-SP4L | Not supported | Not supported |
| MIC-GP4L | Not supported | Not supported |
| MIC-GP8L | Not supported | Not supported |
| MIC-GP10L1 | Not supported | Not supported |
| MIC-GP10L2 | Not supported | Not supported |
| MIC-GP10L-V2 | Not supported | Not supported |
| MIC-GP10LA | Not supported | Not supported |
| MIC-GP20L | Not supported | Not supported |
| MIC-GP20L1 | Not supported | Not supported |
| MIC-XP2L | Not supported | Not supported |
| MIC-XP2L-LAN | Not supported | Not supported |
| MIC-XP4L1 | Not supported | Not supported |
| MIC-XP5L | Not supported | Not supported |
| MIC-XP5L1 | Not supported | Not supported |
| MIC-XP5L2 | Not supported | Not supported |
| MIC-XP8L | Not supported | Not supported |
| MIC-XP10LF | Not supported | Not supported |
| MIC-XP10L-LAN | Not supported | Not supported |
| MIC-XP20L | Not supported | Not supported |
| MIC-XP20LA | Not supported | Not supported |
| MIC-QP1L | Not supported | Not supported |
| MIC-CP1L | Not supported | Not supported |
| MIC-CP1L-V2 | Not supported | Not supported |
| MIC-CP2L | Not supported | Not supported |
| MIC-CP2L-V2 | Not supported | Not supported |
| MIC-CQ1L1 | Not supported | Not supported |
| MIC-CQ1L2 | Not supported | Not supported |

| Subcard model | RX-SPE200 | RX-SPE200-E |
|---|---|---|
| MIC-CQ1LF | Not supported | Not supported |
| MIC-CQ2L | Not supported | Not supported |
| MIC-PSP4L | Not supported | Not supported |
| MIC-TCP8L | Not supported | Not supported |
| MIC-SEC | Not supported | Not supported |
| NIC-GT20L | Supported | Not supported |
| NIC-QP3L | Supported | Supported |
| NIC-GP20L | Supported | Not supported |
| NIC-GP24L | Supported | Not supported |
| NIC-GP24L1 | Not supported | Supported |
| NIC-GP24L1A | Not supported | Not supported |
| NIC-GP24L1A-G | Not supported | Not supported |
| NIC-XP5L | Not supported | Not supported |
| NIC-XP10L | Supported | Not supported |
| NIC-XP20L | Not supported | Not supported |
| NIC-XP20L1 | Not supported | Not supported |
| NIC-XP20L1A | Not supported | Not supported |
| NIC-XP20L1A-G | Not supported | Not supported |
| NIC-CC1L | Not supported | Not supported |
| NIC-CC2L | Not supported | Not supported |
| NIC-CQ1L | Supported | Not supported |
| NIC-CQ2L | Not supported | Not supported |
| NIC-CQ2LA | Not supported | Not supported |
| NIC-CQ2LA-G | Not supported | Not supported |
| RX-NIC-GP20L | Supported | Not supported |
| RX-NIC-XP5L | Supported | Supported |
| RX-NIC-XP10L | Supported | Supported |
| RX-NIC-XP20L | Not supported | Not supported |
| RX-NIC-YGS4L | Supported | Supported |
| RX-NIC-LGQ2L | Supported | Supported |
| RX-NIC-LGQ4L | Not supported | Not supported |
| RX-NIC-CQ1LF | Supported | Supported |
| RX-NIC-CQ2LF | Not supported | Not supported |
| RX-NIC-CC1L | Supported | Supported |
| RX-NIC-CC2L | Not supported | Not supported |

# GIC subcards

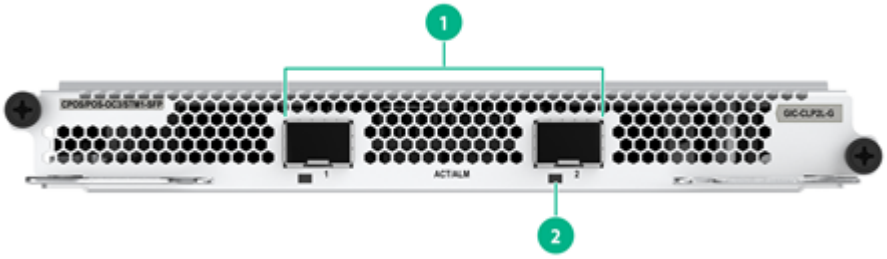
**IMPORTANT:**

- To use a GIC interface card, you must install it on a CSPEX base card. You cannot install it directly on the router.
- For the compatibility between GIC interface cards and CSPEX base cards, see the compatibility information for the base cards.
- Some GIC subcards support changing the speed and operating mode. For more information, see *H3C CR16000-F Routers Configuration Guides*.

# GIC-CLP2L-G

## View

**Figure2-51 GIC-CLP2L-G view**




| | |
|---|---|
| (1) OC-3/STM-1 SFP fiber ports (2 in total) | (2) Port LED. For the LED description, see Table2-277. |

## LEDs

**Table2-277 WAN port LED description**

| LED | Status | Description |
|---|---|---|
| WAN port LED (ACT/ALM) | Steady green | A link is present on the WAN port. |
| | Flashing green | The WAN port is receiving or sending data correctly. |
| | Steady yellow | A transceiver module has been installed in the WAN port, but an alarm has occurred. |
| | Off | No transceiver module is installed in the WAN port. |

## Ports

**Table2-278 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| GIC-CLP2L-G | 2-port OC-3/STM-1 (155M) channelized POS optical interface | LC | 2 | 155 Mbps (OC-3/STM-1) |

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| | card | | | |

### Technical specifications

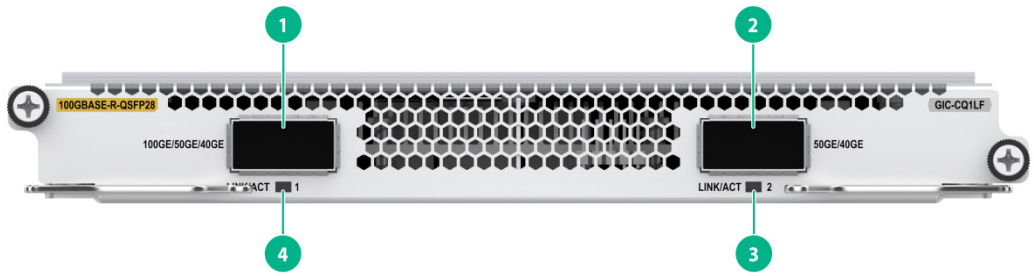
**Table2-279 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 22.3 × 190 × 154 mm (0.88 × 7.48 × 6.06 in) |
| Weight | 1.05 kg (2.31 lb) |
| Maximum power consumption | 18 W |
| Minimum power consumption | 16 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# GIC-CQ1LF

### View

**Figure2-52 GIC-CQ1LF view**




| | |
|---|---|
| (1) 100G/50G/40G fiber port (1 in total) | (2) 50G/40G fiber port (1 in total) |
| (3) 50G/40G fiber port LED. For the LED description, see Table2-280. | (4) 100G/50G/40G fiber port LED. For the LED description, see Table2-280. |

### LEDs

**Table2-280 Fiber port LED description**

| LED | Status | Description |
|---|---|---|
| Fiber port LED (LINK/ACT) | Flashing | The port is receiving or sending data. |
| | On | A link is present on the port. |
| | Off | No link is present on the port. |

**NOTE:**

You can identify the speed of a QSFP28 port by observing the color of its LED. Green indicates a speed of 100 Gbps, and yellow indicates a speed of 50 Gbps or 40 Gbps.

### Ports

**Table2-281 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| GIC-CQ1LF | 2-port 50G/1-port 100G flexible Ethernet optical interface card | LC | 1 | 100 Gbps |
| | | | 2 | 40 Gbps |
| | | | | 50 Gbps |

**NOTE:**

You can change the speed of only port 1 to 100 Gbps. After the change, port 2 is unavailable. For more information about the commands used for changing the speed of ports on the subcard, see *H3C CR16000-F Routers Command Reference*.

### Technical specifications

**Table2-282 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 22.3 × 190 × 154 mm (0.88 × 7.48 × 6.06 in) |
| Weight | 0.75 kg (1.65 lb) |
| Maximum power consumption | 50 W |
| Minimum power consumption | 27 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# GIC-CQ1L-G

### View

**Figure2-53 GIC-CQ1L-G view**


| | |
|---|---|
| (1) 100GBASE-R QSFP28 fiber port (1 in total) | (2) QSFP28 port LED. For the LED description, see Table2-283. |

### LEDs

**Table2-283 QSFP28 port LED description**

| LED | Status | Description |
|---|---|---|

| LED | Status | Description |
|---|---|---|
| QSFP28 port LED | Flashing | The QSFP28 port is receiving or sending data. |
| | On | A link is present on the QSFP28 port. |
| | Off | No link is present on the QSFP28 port. |

**NOTE:**

You can identify the speed of a QSFP28 port by observing the color of its LED. Green indicates a speed of 100 Gbps, and yellow indicates a speed of 10 Gbps.

### Ports

**Table2-284 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| GIC-CQ1L-G | 1-port 100G Ethernet optical interface card | LC | 1 | 100 Gbps |
| | | | | 10 Gbps |

### Technical specifications

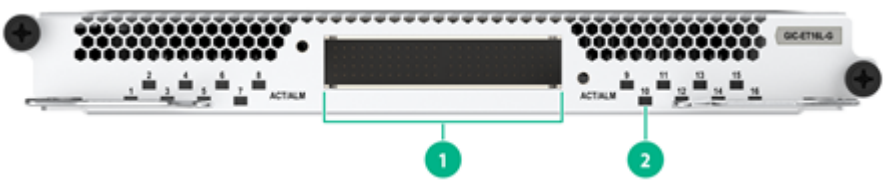
**Table2-285 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 22.3 × 190 × 154 mm (0.88 × 7.48 × 6.06 in) |
| Weight | 1.00 kg (2.20 lb) |
| Maximum power consumption | 15 W |
| Minimum power consumption | 13 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# GIC-ET16L-G

### View

**Figure2-54 GIC-ET16L-G view**




| | |
|---|---|
| (1) E1-HM96 copper ports (16 in total) | (2) Port LED. For the LED description, see Table2-286. |

### LEDs

**Table2-286 WAN port LED description**

| LED | Status | Description |
|---|---|---|
| ACT/ALM | Steady green | A link is present on the port. |
| | Flashing green | The port is receiving or sending data correctly. |
| | Steady yellow | An E1 cable is has been connected to the port, but an alarm has occurred. |
| | Off | No E1 cable is connected to the port. |

## Ports

**Table2-287 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| GIC-ET16L-G | 16-port E1 copper interface card | HM96 male connector | 16 | E1 |

## Technical specifications

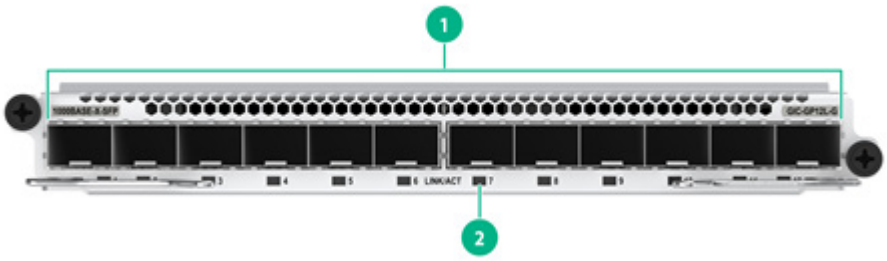
**Table2-288 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 22.3 × 190 × 154 mm (0.88 × 7.48 × 6.06 in) |
| Weight | 1.00 kg (2.20 lb) |
| Maximum power consumption | 14 W |
| Minimum power consumption | 12 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# GIC-GP12L-G

## View

**Figure2-55 GIC-GP12L-G view**




| | |
|---|---|
| (1) 1000BASE-X SFP fiber ports (12 in total) | (2) SFP port LED. For the LED description, see Table2-289. |

## LEDs

**Table2-289 GE SFP port LED description**

| LED | Status | Description |
|---|---|---|
| GE SFP port LED (LINK/ACT) | Flashing | The SFP port is receiving or sending data. |
| | On | A link is present on the SFP port. |
| | Off | No link is present on the SFP port. |

**NOTE:**

You can identify the speed of an SFP port by observing the color of its LED. Green indicates a speed of 1000 Mbps, and yellow indicates a speed of 10/100 Mbps.

## Ports

**Table2-290 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| GIC-GP12L-G | 12-port 1000BASE-X Ethernet optical interface card | LC | 12 | 10/100/1000 Mbps |

## Technical specifications

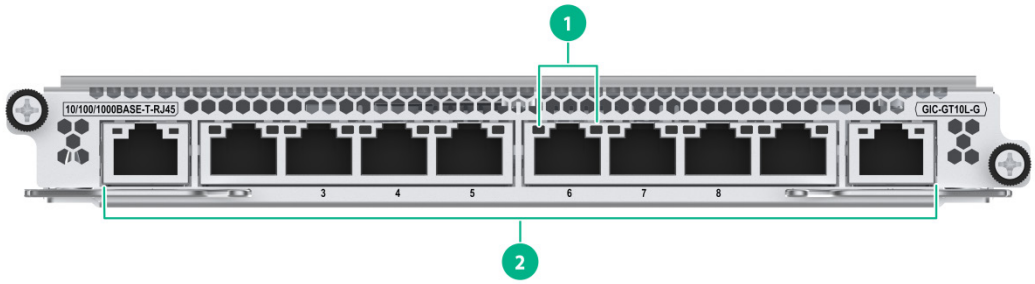
**Table2-291 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 22.3 × 190 × 154 mm (0.88 × 7.48 × 6.06 in) |
| Weight | 1.05 kg (2.31 lb) |
| Maximum power consumption | 26 W |
| Minimum power consumption | 15 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# GIC-GT10L-G

## View

**Figure2-56 GIC-GT10L-G view**




| | |
|---|---|
| (1) RJ-45 Ethernet port LEDs. For the LED description, see Table2-292. | (2) 10/100/1000BASE-T copper ports (10 in total) |

## LEDs

**Table2-292 RJ-45 Ethernet port LED description**

| LED | Status | Description |
|---|---|---|
| RJ-45 Ethernet port LED | LINK: Steady green | A 1000 Mbps link is present on the port. |
| | LINK: Flashing green | The port is receiving or sending data at 1000 Mbps. |
| | ACT: Steady yellow | A 10/100 Mbps link is present on the port. |
| | ACT: Flashing yellow | The port is receiving or sending data at 10/100 Mbps. |
| | Off | No link is present on the port. |

**NOTE:**

You can identify the speed of an RJ-45 Ethernet port by observing the color of its LEDs. A green LINK LED indicates a speed of 1000 Mbps, and a yellow ACT LED indicates a speed of 10/100 Mbps.

## Ports

**Table2-293 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| GIC-GT10L-G | 10-port 1000BASE-T Ethernet copper interface card | RJ45 | 10 | 10/100/1000 Mbps |

## Technical specifications

**Table2-294 Technical specifications**

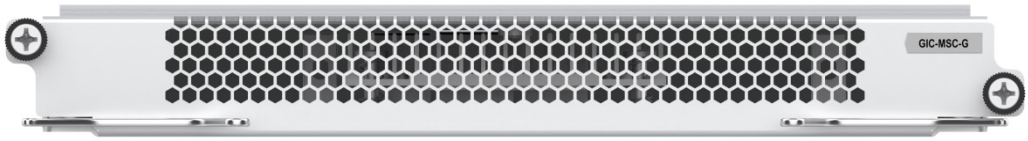
| Item | Description |
|---|---|
| Dimensions (H × W × | 22.3 × 190 × 154 mm (0.88 × 7.48 × 6.06 in) |

| Item | Description |
| --- | --- |
| D) | |
| Weight | 0.77 kg (1.70 lb) |
| Maximum power consumption | 20 W |
| Minimum power consumption | 17 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# GIC-MSC-G

## View

**Figure2-57 GIC-MSC-G view**




## Ports

**Table2-295 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
| --- | --- | --- | --- | --- |
| GIC-MSC-G | Network data multi-function service processing interface card | N/A | N/A | N/A |

## Technical specifications

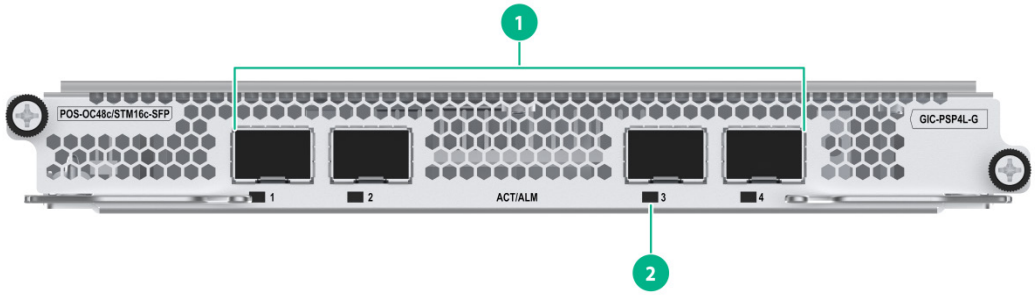
**Table2-296 Technical specifications**

| Item | Description |
| --- | --- |
| Dimensions (H × W × D) | 22.3 × 190 × 154 mm (0.88 × 7.48 × 6.06 in) |
| Weight | 0.70 kg (1.54 lb) |
| Maximum power consumption | 13 W |
| Minimum power consumption | 11 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# GIC-PSP4L-G

## View

**Figure2-58 GIC-PSP4L-G view**




| | |
|---|---|
| (1) OC-48c/STM-16c POS fiber ports (4 in total) | (2) Port LED. For the LED description, see Table2-297. |

## LEDs

**Table2-297 WAN port LED description**

| LED | Status | Description |
|---|---|---|
| WAN port LED (ACT/ALM) | Steady green | A link is present on the WAN port. |
| | Flashing green | The WAN port is receiving or sending data correctly. |
| | Steady yellow | A transceiver module has been installed in the WAN port, but an alarm has occurred. |
| | Off | No transceiver module is installed in the WAN port. |

## Ports

**Table2-298 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| GIC-PSP4L-G | 4-port OC-48c/STM-16c (2.5G) POS optical interface card | LC | 4 | 2.5 Gbps |

## Technical specifications

**Table2-299 Technical specifications**

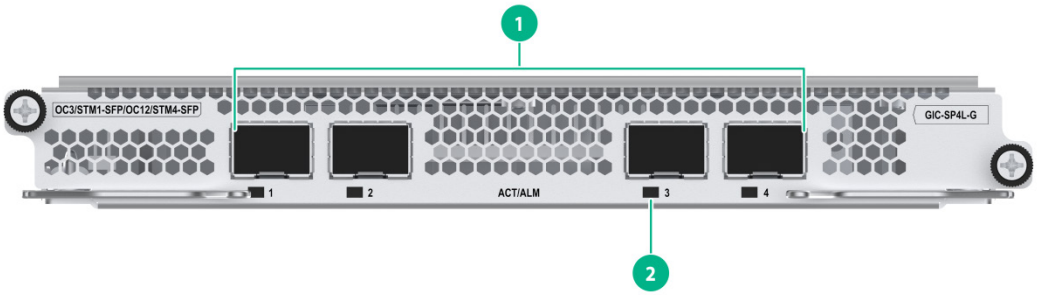
| Item | Description |
|---|---|
| Dimensions (H × W × D) | 22.3 × 190 × 154 mm (0.88 × 7.48 × 6.06 in) |
| Weight | 0.74 kg (1.63 lb) |
| Maximum power consumption | 20 W |

| | |
|---|---|
| Minimum power consumption | 16 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# GIC-SP4L-G

## View

**Figure2-59 GIC-SP4L-G view**




| | |
|---|---|
| (1) Four OC-3/STM-1c POS/ATM fiber ports or one OC-12c/STM-4c POS/ATM fiber port (only port 1 supports OC-12c/STM-4c) | (2) Port LED. For the LED description, see Table2-300. |

## LEDs

**Table2-300 WAN port LED description**

| LED | Status | Description |
|---|---|---|
| WAN port LED (ACT/ALM) | Steady green | A link is present on the WAN port. |
| | Flashing green | The WAN port is receiving or sending data correctly. |
| | Steady yellow | A transceiver module has been installed in the WAN port, but an alarm has occurred. |
| | Off | No transceiver module is installed in the WAN port. |

## Ports

**Table2-301 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| GIC-SP4L-G | 4-port OC-3c/STM-1c (155M) POS/ATM or 1-Port OC-12c/STM-4c (622M) POS/ATM optical interface card<br>The card does not support switching to ATM mode. | LC | 4 | 155 Mbps (OC-3/STM-1) |
| | | | 1 | 622 Mbps (OC-12/STM-4) |

**NOTE:**

You can change the speed of only port 1 to 622 Mbps. After the change, other ports are unavailable. For more information about the command used for changing the operating mode of the subcard, see *H3C CR16000-F Routers Command Reference*.

### Technical specifications

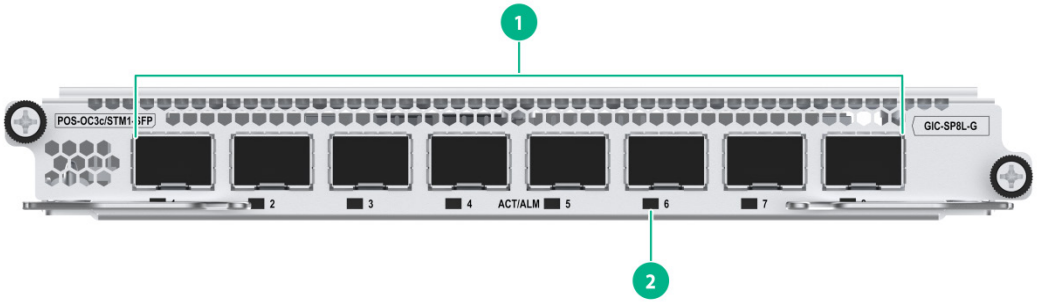
**Table2-302 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 22.3 × 190 × 154 mm (0.88 × 7.48 × 6.06 in) |
| Weight | 0.74 kg (1.63 lb) |
| Maximum power consumption | 20 W |
| Minimum power consumption | 16 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# GIC-SP8L-G

### View

**Figure2-60 GIC-SP8L-G view**




| | |
|---|---|
| (1) OC-3c/STM-1c POS fiber ports (8 in total) | (2) Port LED. For the LED description, see Table2-303. |

### LEDs

**Table2-303 WAN port LED description**

| LED | Status | Description |
|---|---|---|
| WAN port LED (ACT/ALM) | Steady green | A link is present on the WAN port. |
| | Flashing green | The WAN port is receiving or sending data correctly. |
| | Steady yellow | A transceiver module has been installed in the WAN port, but an alarm has occurred. |
| | Off | No transceiver module is installed in the WAN port. |

### Ports

**Table2-304 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| GIC-SP8L-G | 8-port OC-3c/STM-1c (155M) POS optical interface card | LC | 8 | 155 Mbps (OC-3/STM-1) |

### Technical specifications

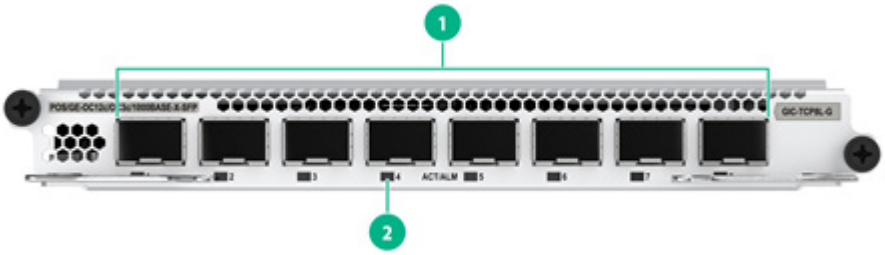
**Table2-305 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 22.3 × 190 × 154 mm (0.88 × 7.48 × 6.06 in) |
| Weight | 0.75 kg (1.65 lb) |
| Maximum power consumption | 24 W |
| Minimum power consumption | 16 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# GIC-TCP8L-G

### View

**Figure2-61 GIC-TCP8L-G view**




| | |
|---|---|
| (1) OC-3c/OC-12c POS/GE fiber ports (8 in total) | (2) Port LED. For the LED description, see Table2-306. |

### LEDs

**Table2-306 WAN port LED description**

| LED | Status | Description |
|---|---|---|
| WAN port LED (ACT/ALM) | Steady green | A link is present on the WAN port. |
| | Flashing green | The WAN port is receiving or sending data correctly. |
| | Steady yellow | A transceiver module has been installed in the |

| LED | Status | Description |
|---|---|---|
| | | WAN port, but an alarm has occurred. |
| | Off | No transceiver module is installed in the WAN port. |

### Ports

**Table2-307 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| GIC-TCP8L-G | 8-port OC-3c/OC-12c (622M/155M) POS/GE optical interface card | LC | 8 | 155 Mbps (OC-3/STM-1) |
| | | | | 622 Mbps (OC-12/STM-4) |
| | | | | 10/100/1000 Mbps |

### Technical specifications

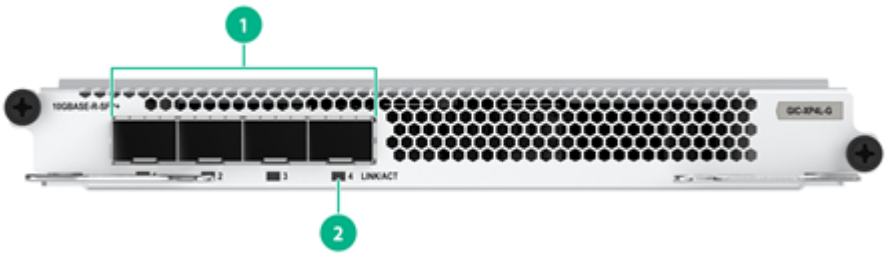
**Table2-308 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 22.3 × 190 × 154 mm (0.88 × 7.48 × 6.06 in) |
| Weight | 1.05 kg (2.31 lb) |
| Maximum power consumption | 24 W |
| Minimum power consumption | 16 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# GIC-XP4L-G

### View

**Figure2-62 GIC-XP4L-G view**




| | |
|---|---|
| (1) 10GBASE-R/W SFP+ fiber ports (4 in total) | (2) SFP+ port LED. For the LED description, see Table2-309. |

### LEDs

**Table2-309 SFP+ port LED description**

| LED | Status | Description |
|---|---|---|
| 10GE SFP+ port LED (LINK/ACT) | Flashing | The SFP+ port is receiving or sending data. |
| | On | A link is present on the SFP+ port. |
| | Off | No link is present on the SFP+ port. |

**NOTE:**

You can identify the speed of an SFP+ port by observing the color of its LED. Green indicates a speed of 10 Gbps, and yellow indicates a speed of 10/100/1000 Mbps.

### Ports

**Table2-310 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| GIC-XP4L-G | 4-port 10GBASE-R/W Ethernet optical interface card | LC | 4 | 10/100/1000 Mbps |
| | | | | 10 Gbps |

### Technical specifications

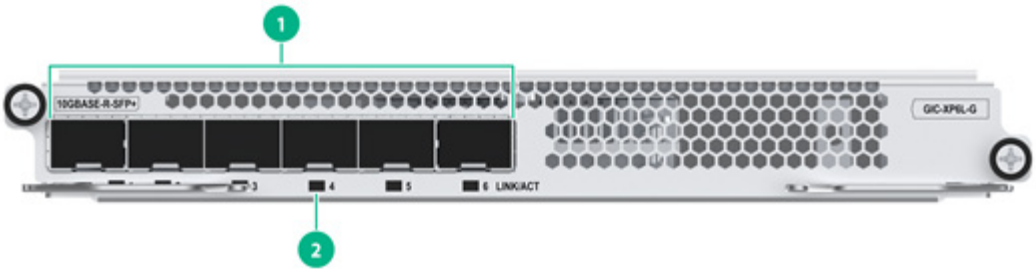
**Table2-311 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 22.3 × 190 × 154 mm (0.88 × 7.48 × 6.06 in) |
| Weight | 1.05 kg (2.31 lb) |
| Maximum power consumption | 23 W |
| Minimum power consumption | 15 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# GIC-XP6L-G

### View

**Figure2-63 GIC-XP6L-G view**




| | |
|---|---|
| (1) 10GBASE-R/W SFP+ fiber ports (6 in total) | (2) SFP+ port LED. For the LED description, see Table2-312. |

## LEDs

**Table2-312 SFP+ port LED description**

| LED | Status | Description |
|---|---|---|
| 10GE SFP+ port LED (LINK/ACT) | Flashing | The SFP+ port is receiving or sending data. |
| | On | A link is present on the SFP+ port. |
| | Off | No link is present on the SFP+ port. |

**NOTE:**

You can identify the speed of an SFP+ port by observing the color of its LED. Green indicates a speed of 10 Gbps, and yellow indicates a speed of 10/100/1000 Mbps.

## Ports

**Table2-313 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| GIC-XP6L-G | 6-port 10GBASE-R/W Ethernet optical interface card | LC | 6 | 10/100/1000 Mbps |
| | | | | 10 Gbps |

## Technical specifications

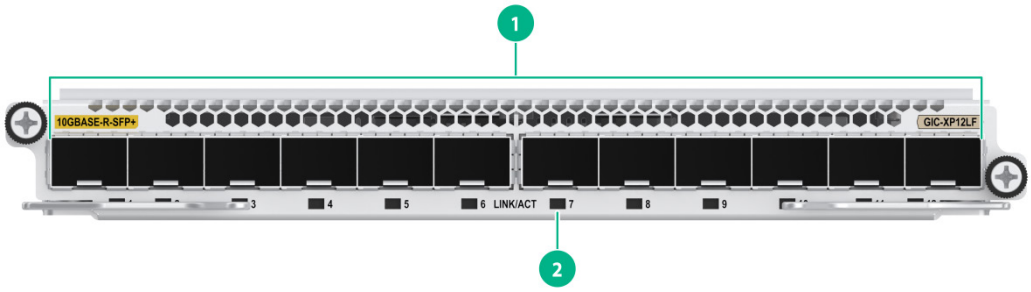
**Table2-314 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 22.3 × 190 × 154 mm (0.88 × 7.48 × 6.06 in) |
| Weight | 1.05 kg (2.31 lb) |
| Maximum power consumption | 24 W |
| Minimum power consumption | 15 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# GIC-XP12LF

## View

**Figure2-64 GIC-XP12LF view**




| | |
|---|---|
| (1) 10GBASE-R/W SFP+ fiber ports (12 in total) | (2) SFP+ port LED. For the LED description, see Table2-315. |

## LEDs

**Table2-315 SFP+ port LED description**

| LED | Status | Description |
|---|---|---|
| SFP+ port LED (LINK/ACT) | Flashing | The SFP+ port is receiving or sending data. |
| | On | A link is present on the SFP+ port. |
| | Off | No link is present on the SFP+ port. |

**NOTE:**

You can identify the speed of an SFP+ port by observing the color of its LED. Green indicates a speed of 25 Gbps, and yellow indicates a speed of 10 Gbps or 1000 Mbps.

## Ports

**Table2-316 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| GIC-XP12LF | 12-port 10GBASE-R flexible Ethernet optical interface card | LC | 12 | 1000 Mbps |
| | | | | 10 Gbps |
| | | | 4 | 25 Gbps |

**NOTE:**

You can change the speed of only ports 1 to 4 to 25 Gbps. When any of these ports operates at 25 Gbps, ports 11 and 12 are unavailable. Follow these restrictions and guidelines when you change the port speed:

- Ports 1 and 7 form a group. After you change port 1 to a 25GE interface, port 7 is unavailable.
- Ports 2 and 8 form a group. After you change port 2 to a 25GE interface, port 8 is unavailable.
- Ports 3 and 9 form a group. After you change port 3 to a 25GE interface, port 9 is unavailable.

- Ports 4 and 10 form a group. After you change port 4 to a 25GE interface, port 10 is unavailable.
- Ports 5 and 6 cannot be changed to 25GE interfaces, and they are not affected by any speed change of other ports.

For more information about the commands used for changing the speed of ports on the subcard, see *H3C CR16000-F Routers Command Reference*.

### Technical specifications

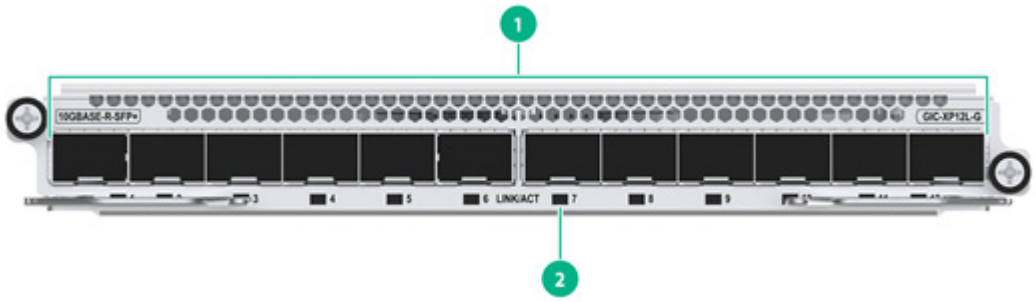
**Table2-317 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 22.3 × 190 × 154 mm (0.88 × 7.48 × 6.06 in) |
| Weight | 0.75 kg (1.65 lb) |
| Maximum power consumption | 46 W |
| Minimum power consumption | 24 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# GIC-XP12L-G

### View

**Figure2-65 GIC-XP12L-G view**




| | |
|---|---|
| (1) 10GBASE-R/W SFP+ fiber ports (12 in total) | (2) SFP+ port LED. For the LED description, see Table2-318. |

### LEDs

**Table2-318 SFP+ port LED description**

| LED | Status | Description |
|---|---|---|
| 10GE SFP+ port LED (LINK/ACT) | Flashing | The SFP+ port is receiving or sending data. |
| | On | A link is present on the SFP+ port. |
| | Off | No link is present on the SFP+ port. |

**NOTE:**

You can identify the speed of an SFP+ port by observing the color of its LED. Green indicates a speed of 10 Gbps, and yellow indicates a speed of 10/100/1000 Mbps.

### Ports

**Table2-319 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| GIC-XP12L-G | 12-port 10GBASE-R/W Ethernet optical interface card | LC | 12 | 10/100/1000 Mbps |
| | | | | 10 Gbps |

### Technical specifications

**Table2-320 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 22.3 × 190 × 154 mm (0.88 × 7.48 × 6.06 in) |
| Weight | 1.05 kg (2.31 lb) |
| Maximum power consumption | 28 W |
| Minimum power consumption | 15 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# MIC subcards

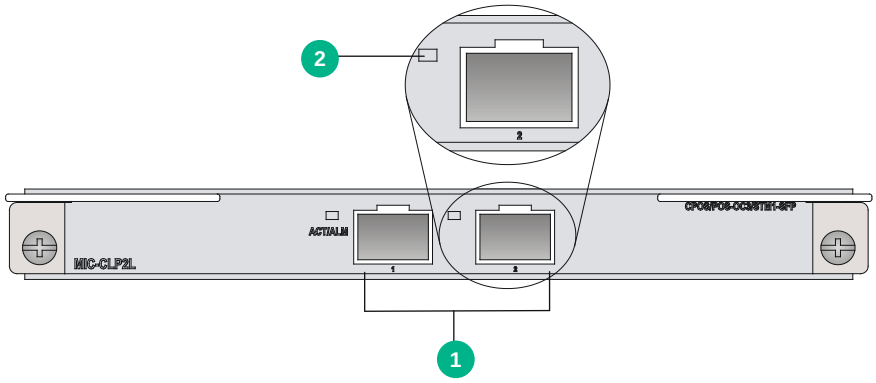
**IMPORTANT:**

- To use a MIC interface card, you must install it on a CMPE, SPE, or CSPEX base card. You cannot install it directly on the router.
- For the compatibility between MIC interface cards and CMPE, SPE, or CSPEX base cards, see the compatibility information for the base cards.
- A combo interface is a logical interface that contains an SFP port and an RJ-45 Ethernet port. Only one of them can be activated at a time.
- Some MIC subcards support changing the speed and operating mode. For more information, see *H3C CR16000-F Routers Configuration Guides*.

# MIC-CLP2L

### View

**Figure2-66 MIC-CLP2L view**




| | |
|---|---|
| (1) CPOS-OC3/STM1-SFP ports (2 in total) | (2) Port LED. For the LED description, see Table2-321. |

## LEDs

**Table2-321 WAN port LED description**

| LED | Status | Description |
|---|---|---|
| WAN port LED (ACT/ALM) | Flashing green | The port is up and is receiving or sending data correctly. |
| | Steady green | The port is up and no services are running on the port. |
| | Steady red | An alarm has occurred. |
| | Off | The port is down. |

## Ports

**Table2-322 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| MIC-CLP2L | 2-port OC-3/STM-1 CPOS optical interface card | LC | 2 | 155 Mbps (OC-3/STM-1) |

## Technical specifications

**Table2-323 Technical specifications**

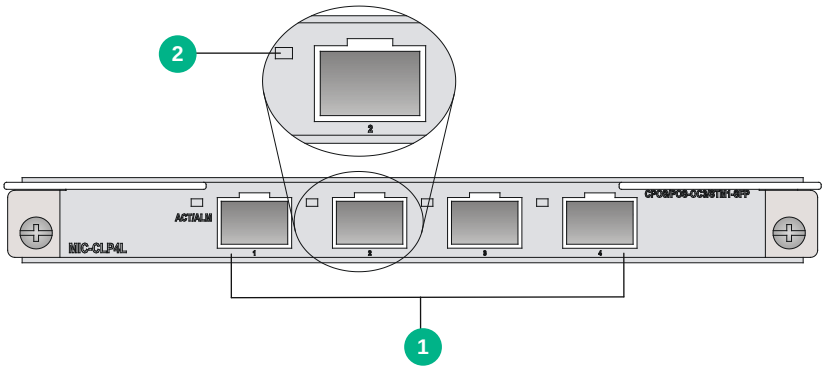
| Item | Description |
|---|---|
| Dimensions (H × W × D) | 18 × 171 × 157 mm (0.71 × 6.73 × 6.18 in) |
| Weight | 0.32 kg (0.71 lb) |
| Maximum power consumption | 10.9 W |
| Minimum power consumption | 9.8 W |

| Item | Description |
| --- | --- |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# MIC-CLP4L

## View

**Figure2-67 MIC-CLP4L view**




| | |
| --- | --- |
| (1) CPOS-OC3/STM1-SFP ports (4 in total) | (2) Port LED. For the LED description, see Table2-324. |

## LEDs

**Table2-324 WAN port LED description**

| LED | Status | Description |
| --- | --- | --- |
| WAN port LED (ACT/ALM) | Flashing green | The port is up and is receiving or sending data correctly. |
| | Steady green | The port is up and no services are running on the port. |
| | Steady red | An alarm has occurred. |
| | Off | The port is down. |

## Ports

**Table2-325 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
| --- | --- | --- | --- | --- |
| MIC-CLP4L | 4-port OC-3/STM-1 CPOS optical interface card | LC | 4 | 155 Mbps (OC-3/STM-1) |

## Technical specifications

**Table2-326 Technical specifications**

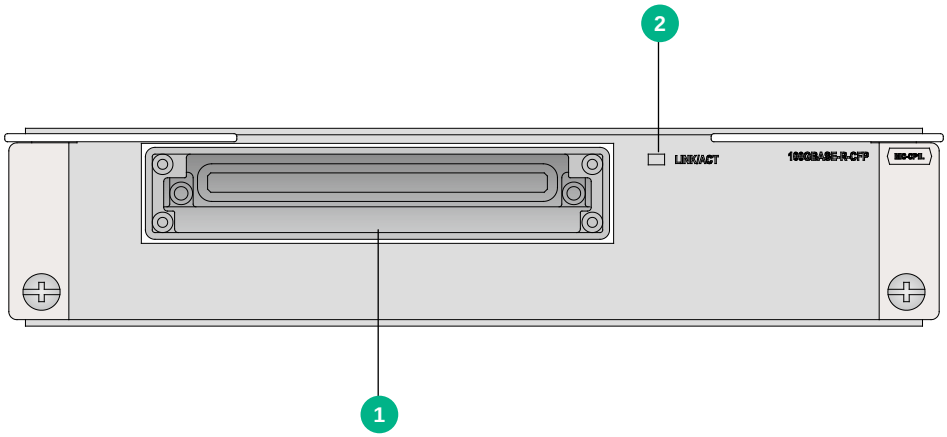
| Item | Description |
| --- | --- |
| Dimensions (H × W × | 18 × 171 × 157 mm (0.71 × 6.73 × 6.18 in) |

| Item | Description |
| --- | --- |
| D) | |
| Weight | 0.30 kg (0.66 lb) |
| Maximum power consumption | 12.9 W |
| Minimum power consumption | 9.8 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# MIC-CP1L

## View

**Figure2-68 MIC-CP1L view**




| | |
| --- | --- |
| (1) 100GBASE-R-CFP fiber port (1 in total) | (2) CFP port LED. For the LED description, see Table2-327 |

## LEDs

**Table2-327 CFP port LED description**

| LED | Status | Description |
| --- | --- | --- |
| CFP port LED | Flashing | The CFP port is sending or receiving data. |
| | Steady on | A link is present on the CFP port. |
| | Off | No link is present on the CFP port. |

## Ports

**Table2-328 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
| --- | --- | --- | --- | --- |
| MIC-CP1L | 1-port 100G optical | LC | 1 | 100 Gbps |

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| | interface card (CFP, LC) | | | |

### Technical specifications

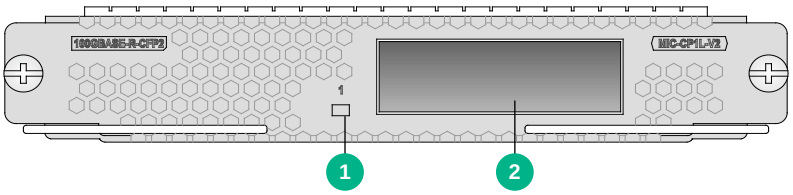
**Table2-329 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 37 × 171 × 157 mm (1.46 × 6.73 × 6.18 in) |
| Weight | 0.55 kg (1.21 lb) |
| Maximum power consumption | 11.8 W |
| Minimum power consumption | 3.3 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# MIC-CP1L-V2

### View

**Figure2-69 MIC-CP1L-V2 view**




(1) CFP2 port LED. For the LED description, see Table2-330.

(2) 100GBASE-R-CFP2 fiber port (1 in total)

### LEDs

**Table2-330 CFP2 port LED description**

| LED | Status | Description |
|---|---|---|
| CFP2 port LED | Flashing | The CFP2 port is sending or receiving data at 100 Gbps. |
| | Steady on | A 100 Gbps link is present on the CFP2 port. |
| | Off | No link is present on the CFP2 port. |

### Ports

**Table2-331 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| MIC-CP1L-V2 | 1-port 100G Ethernet optical interface card (CFP2, LC) | LC | 1 | 100 Gbps |

### Technical specifications

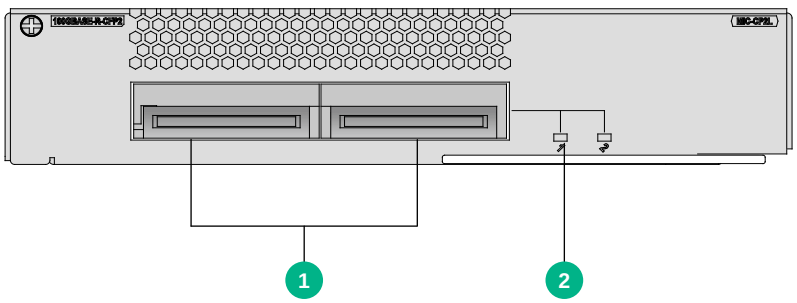
**Table2-332 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 23 × 137 × 119 mm (0.91 × 5.39 × 4.69 in) |
| Weight | 0.45 kg (0.99 lb) |
| Maximum power consumption | 8.7 W |
| Minimum power consumption | 6 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# MIC-CP2L

### View

**Figure2-70 MIC-CP2L view**




| | |
|---|---|
| (1) 100GBASE-R-CFP2 fiber ports (2 in total) (100G CFP2 modules supported) | (2) CFP2 port LED. For the LED description, see Table2-333. |

### LEDs

**Table2-333 CFP2 port LED description**

| LED | Status | Description |
|---|---|---|
| CFP2 port LED | Flashing | The CFP2 port is sending or receiving data at 100 Gbps. |
| | Steady on | A 100 Gbps link is present on the CFP2 port. |
| | Off | No link is present on the CFP2 port. |

### Ports

**Table2-334 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| MIC-CP2L | 2-port 100G Ethernet optical interface card (CFP2, LC) | LC | 2 | 100 Gbps |

### Technical specifications

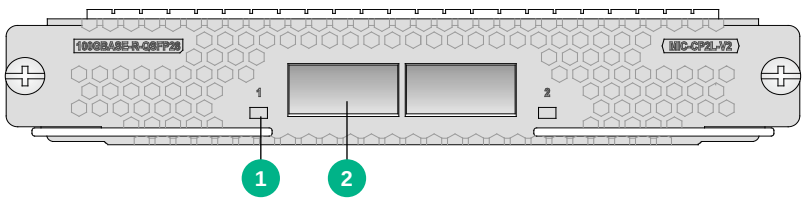
**Table2-335 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 38 × 179 × 149 mm (1.50 × 7.05 × 5.87 in) |
| Weight | 0.80 kg (1.76 lb) |
| Maximum power consumption | 18.1 W |
| Minimum power consumption | 8.6 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# MIC-CP2L-V2

### View

**Figure2-71 MIC-CP2L-V2 view**




(1) QSFP28 port LED. For the LED description, see Table2-336.

(2) 100GBASE-R-QSFP28 fiber ports (2 in total)

### LEDs

**Table2-336 QSFP28 port LED description**

| LED | Status | Description |
|---|---|---|
| QSFP28 port LED | Flashing | The QSFP28 port is sending or receiving data at 100 Gbps. |
| | Steady on | A 100 Gbps link is present on the QSFP28 port. |
| | Off | No link is present on the QSFP28 port. |

### Ports

**Table2-337 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| MIC-CP2L-V2 | 2-port 100G Ethernet optical interface card (QSFP28) | LC | 2 | 100 Gbps |

### Technical specifications

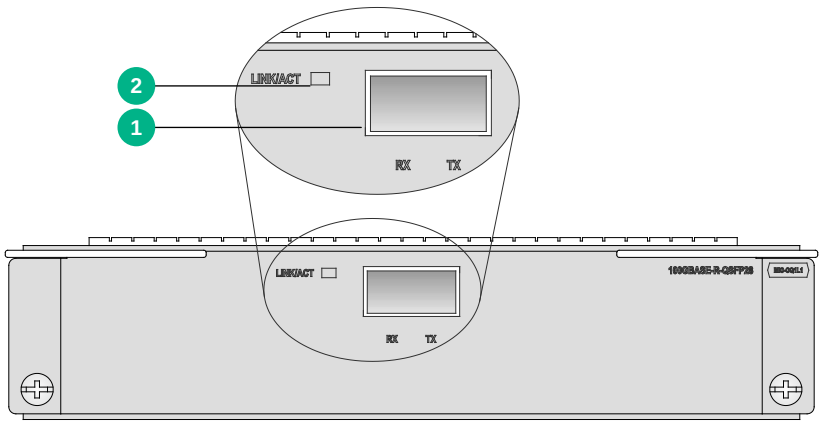
**Table2-338 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 23 × 137 × 119 mm (0.91 × 5.39 × 4.69 in) |
| Weight | 0.40 kg (0.88 lb) |
| Maximum power consumption | 15 W |
| Minimum power consumption | 9.3 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# MIC-CQ1L1

### View

**Figure2-72 MIC-CQ1L1 view**




| | |
|---|---|
| (1) 100GBASE-R-QSFP28 port (1 in total) | (2) QSFP28 port LED. For the LED description, see Table2-339 |

### LEDs

**Table2-339 QSFP28 port LED description**

| LED | Status | Description |
|---|---|---|
| QSFP28 port LED | Flashing | The QSFP28 port is sending or receiving data at 100 Gbps. |
| | Steady on | A 100 Gbps link is present on the QSFP28 port. |
| | Off | No link is present on the QSFP28 port. |

### Ports

**Table2-340 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| MIC-CQ1L1 | 1-port 100G Ethernet optical interface card | LC | 1 | 100 Gbps |
| | | | | 40 Gbps |

### Technical specifications

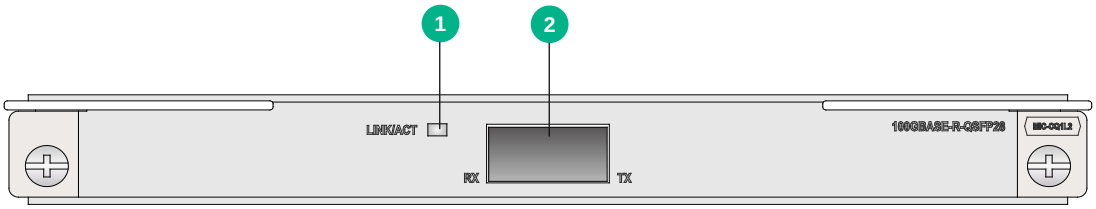
**Table2-341 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 37 × 171 × 157 mm (1.46 × 6.73 × 6.18 in) |
| Weight | 0.50 kg (1.10 lb) |
| Maximum power consumption | 15 W |
| Minimum power consumption | 9 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# MIC-CQ1L2

### View

**Figure2-73 MIC-CQ1L2 view**




| | |
|---|---|
| (1) QSFP28 port LED. For the LED description, see Table2-342. | (2) 100GBASE-R-QSFP28 fiber port (1 in total) |

### LEDs

**Table2-342 QSFP28 port LED description**

| LED | Status | Description |
|---|---|---|
| QSFP28 port LED | Flashing | The QSFP28 port is sending or receiving data at 100 Gbps. |
| | Steady on | A 100 Gbps link is present on the QSFP28 port. |
| | Off | No link is present on the QSFP28 port. |

## Ports

**Table2-343 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| MIC-CQ1L2 | 1-port 100G Ethernet optical interface card | LC | 1 | 100 Gbps |
| | | | | 40 Gbps |

## Technical specifications

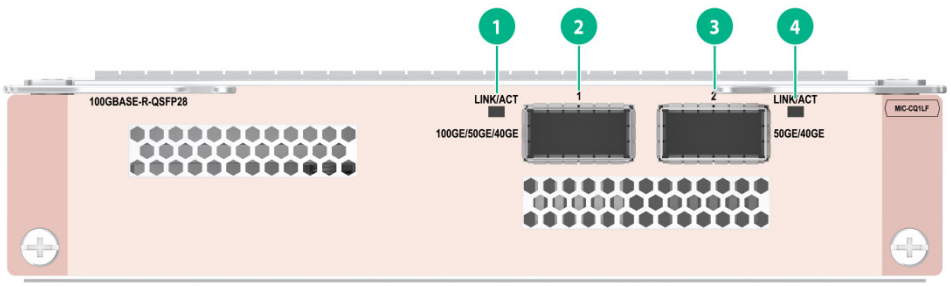
**Table2-344 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 18 × 171 × 157 mm (0.71 × 6.73 × 6.18 in) |
| Weight | 0.45 kg (0.99 lb) |
| Maximum power consumption | 15 W |
| Minimum power consumption | 9 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# MIC-CQ1LF

## View

**Figure2-74 MIC-CQ1LF view**




| | |
|---|---|
| (1) 100G/50G/40G fiber port LED. For the LED description, see Table2-345. | (2) 100G/50G/40G fiber port (1 in total) |
| (3) 50G/40G fiber port (1 in total) | (4) 50G/40G fiber port LED. For the LED description, |

see Table2-345.

### LEDs

**Table2-345 Fiber port LED description**

| LED | Status | Description |
|---|---|---|
| Fiber port LED | Flashing | The port is sending or receiving data. |
| | Steady on | A link is present on the port. |
| | Off | No link is present on the port. |

**NOTE:**

You can identify the speed of a port by observing the color of its LED. Green indicates a speed of 100 Gbps, and yellow indicates a speed of 50 Gbps or 40 Gbps.

### Ports

**Table2-346 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| MIC-CQ1LF | 2-port 50G/1-port 100G flexible Ethernet optical interface card (QSFP28,LC) | LC | 1 | 100 Gbps |
| | | | 2 | 50 Gbps |
| | | | | 40 Gbps |

**NOTE:**

You can change the speed of only port 1 to 100 Gbps. After the change, port 2 is unavailable. For more information about the commands used for changing the speed of ports on the subcard, see *H3C CR16000-F Routers Command Reference*.

### Technical specifications

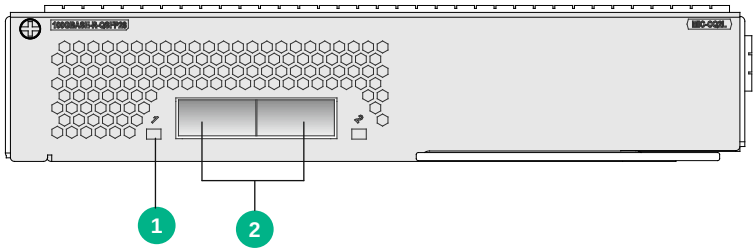
**Table2-347 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 36 × 171 × 157 mm (1.42 × 6.73 × 6.18 in) |
| Weight | 0.58 kg (1.28 lb) |
| Maximum power consumption | 27 W |
| Minimum power consumption | 21 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# MIC-CQ2L

### View

**Figure2-75 MIC-CQ2L view**




| | |
|---|---|
| (1) QSFP28 port LED. For the LED description, see Table2-348. | (2) 100GBASE-R-QSFP28 fiber ports (2 in total) |

## LEDs

**Table2-348 QSFP28 port LED description**

| LED | Status | Description |
|---|---|---|
| QSFP28 port LED | Flashing | The QSFP28 port is sending or receiving data at 100 Gbps. |
| | Steady on | A 100 Gbps link is present on the QSFP28 port. |
| | Off | No link is present on the QSFP28 port. |

## Ports

**Table2-349 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| MIC-CQ2L | 2-port 100G Ethernet optical interface card (QSFP28) | LC | 2 | 100 Gbps |
| | | | | 40 Gbps |

## Technical specifications

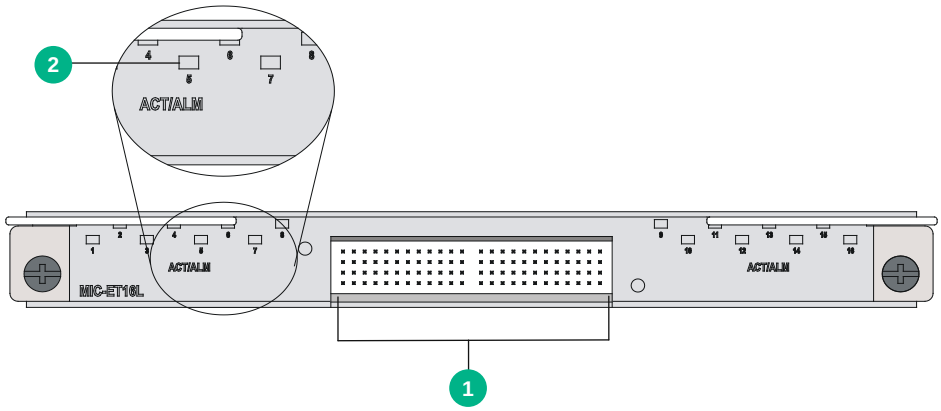
**Table2-350 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 38 × 179 × 149 mm (1.50 × 7.05 × 5.87 in) |
| Weight | 0.40 kg (0.88 lb) |
| Maximum power consumption | 16 W |
| Minimum power consumption | 8 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# MIC-ET16L

## View

**Figure2-76 MIC-ET16L view**




| | |
|---|---|
| (1) E1-HM96 copper ports (16 in total) | (2) Port LED. For the LED description, see Table2-351. |

## LED

**Table2-351 LED description**

| LED | Status | Description |
|---|---|---|
| ACT/ALM | Flashing green | The port is sending or receiving data. |
| | Steady green | A link is present, but the port is not receiving or sending data. |
| | Steady red | An alarm has occurred. |
| | Off | No link is present on the port. |

## Ports

**Table2-352 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| MIC-ET16L | 16-port E1 electrical interface card (HM96 male connector) | HM96 male | 16 | E1 |

## Technical specifications

**Table2-353 Technical specifications**

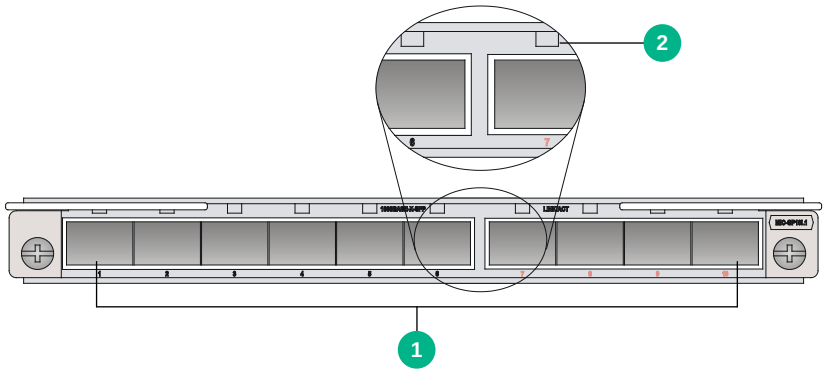
| Item | Description |
|---|---|
| Dimensions (H × W × D) | 18 × 171 × 157 mm (0.71 × 6.73 × 6.18 in) |
| Weight | 0.30 kg (0.66 lb) |
| Maximum power consumption | 8.7 W |
| Minimum power consumption | 8.6 W |

| Item | Description |
| --- | --- |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# MIC-GP10L1/MIC-GP10L2

## View

**Figure2-77 MIC-GP10L1 view**




| | |
| --- | --- |
| (1) 1000BASE-X-SFP fiber ports (10 in total) | (2) SFP port LED. For the LED description, see Table2-354. |

The views of the MIC-GP10L1 and MIC-GP10L2 are similar. This figure uses the MIC-GP10L1 as an example.

## LEDs

**Table2-354 GE SFP port LED description**

| LED | Status | Description |
| --- | --- | --- |
| GE SFP port LED (LINK/ACT) | Flashing green | The SFP port is sending or receiving data. |
| | Green | A link is present on the SFP port. |
| | Off | No link is present on the SFP port. |

## Ports

**Table2-355 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
| --- | --- | --- | --- | --- |
| MIC-GP10L1 | 10-port 1000BASE-X optical interface card (SFP, LC) | LC | 10 | 100 Mbps |
| | | | | 1000 Mbps |
| MIC-GP10L2 | 10-port 1000BASE-X Ethernet optical interface card (SFP, LC) | LC | 10 | 100 Mbps |
| | | | | 1000 Mbps |

## Technical specifications

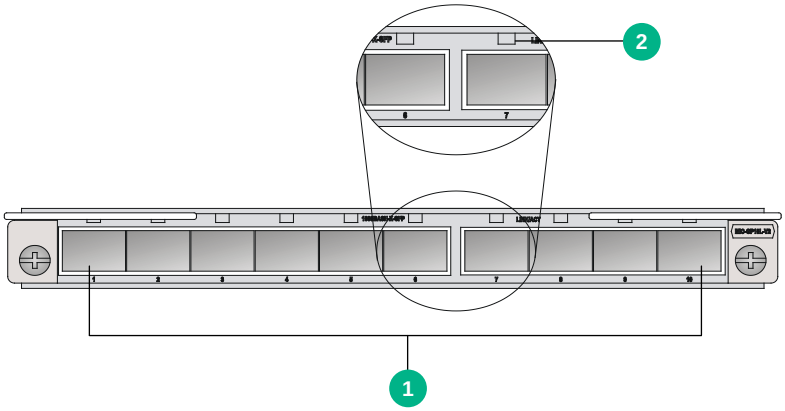
**Table2-356 Technical specifications**

| Item | Description |
| --- | --- |
| Dimensions (H × W × D) | 18 × 171 × 157 mm (0.71 × 6.73 × 6.18 in) |
| Weight | • MIC-GP10L1: 0.30 kg (0.66 lb)<br>• MIC-GP10L2: 0.48 kg (1.06 lb) |
| Maximum power consumption | • MIC-GP10L1: 7.9 W<br>• MIC-GP10L2: 30 W |
| Minimum power consumption | • MIC-GP10L1: 2.1 W<br>• MIC-GP10L2: 20 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# MIC-GP10LA/MIC-GP10L-V2

## View

**Figure2-78 MIC-GP10L-V2 view**




| | |
| --- | --- |
| (1) 1000BASE-X-SFP fiber ports (10 in total) | (2) SFP port LED. For the LED description, see Table2-357. |

The views of MIC-GP10LA and MIC-GP10L-V2 are similar. This figure uses the MIC-GP10L-V2 as an example.

## LEDs

**Table2-357 GE SFP port LED description**

| LED | Status | Description |
| --- | --- | --- |
| GE SFP port LED (LINK/ACT) | Flashing green | The SFP port is sending or receiving data. |
| | Green | A link is present on the SFP port. |
| | Off | No link is present on the SFP port. |

## Ports

**Table2-358 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| MIC-GP10LA | 10-port 1000BASE-X Ethernet optical interface card A (SFP, LC) | LC | 10 | 100 Mbps<br>1000 Mbps |
| MIC-GP10L-V2 | 10-port 1000BASE-X Ethernet optical interface card (SFP, LC) | LC | 10 | 100 Mbps<br>1000 Mbps |

### Technical specifications

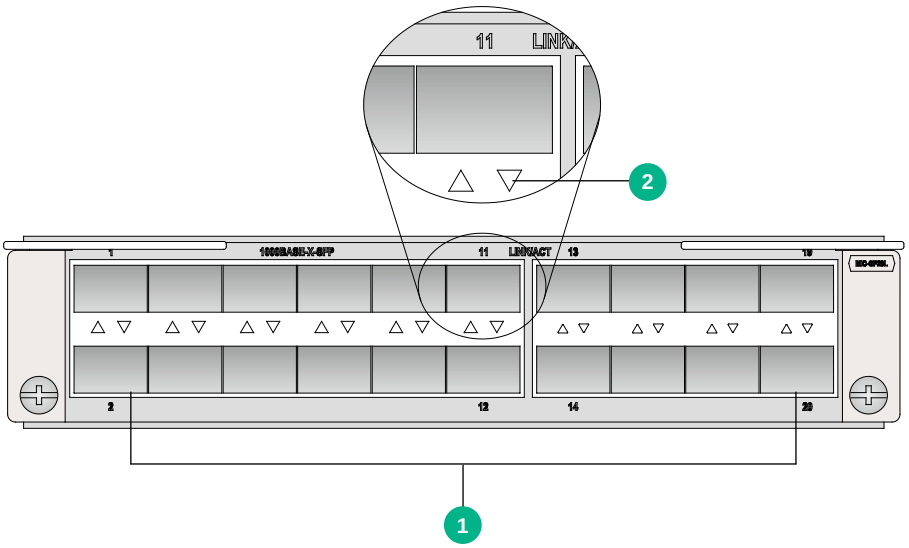
**Table2-359 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 18 × 171 × 157 mm (0.71 × 6.73 × 6.18 in) |
| Weight | 0.35 kg (0.77 lb) |
| Maximum power consumption | 9.4 W |
| Minimum power consumption | 9.3 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# MIC-GP20L

### View

**Figure2-79 MIC-GP20L view**




| | |
|---|---|
| (1) 1000BASE-X-SFP fiber ports (20 in total) | (2) SFP port LED. For the LED description, see Table2-360. |

### LEDs

**Table2-360 GE SFP port LED description**

| LED | Status | Description |
|---|---|---|
| GE SFP port LED (LINK/ACT) | Flashing green | The SFP port is sending or receiving data. |
| | Green | A link is present on the SFP port. |
| | Off | No link is present on the SFP port. |

## Ports

**Table2-361 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| MIC-GP20L | 20-port 1000BASE-X Ethernet optical interface card (SFP, LC) | LC | 20 | 100 Mbps |
| | | | | 1000 Mbps |

## Technical specifications

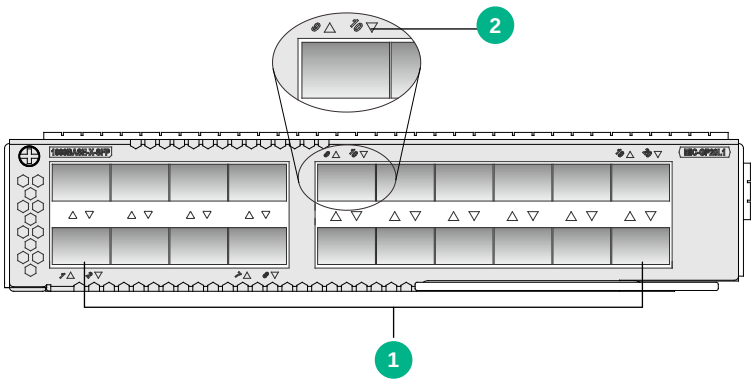
**Table2-362 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 37 × 171 × 157 mm (1.46 × 6.73 × 6.18 in) |
| Weight | 0.55 kg (1.21 lb) |
| Maximum power consumption | 23 W |
| Minimum power consumption | 7.6 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# MIC-GP20L1

## View

**Figure2-80 MIC-GP20L1 view**



| | |
|---|---|
| (1) 1000BASE-X-SFP fiber ports (20 in total) | (2) SFP port LED. For the LED description, see Table2-363. |

### LEDs

**Table2-363 GE SFP port LED description**

| LED | Status | Description |
|---|---|---|
| GE SFP port LED (LINK/ACT) | Flashing green | The SFP port is sending or receiving data. |
| | Green | A link is present on the SFP port. |
| | Off | No link is present on the SFP port. |

### Ports

**Table2-364 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| MIC-GP20L1 | 20-port 1000BASE-X Ethernet optical interface card (SFP, LC) | LC | 20 | 100 Mbps |
| | | | | 1000 Mbps |

### Technical specifications

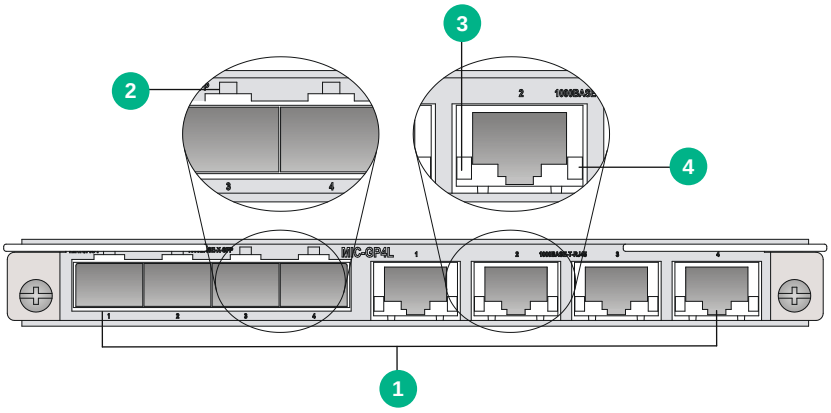
**Table2-365 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 38 × 179 × 149 mm (1.50 × 7.05 × 5.87 in) |
| Weight | 0.80 kg (1.76 lb) |
| Maximum power consumption | 18 W |
| Minimum power consumption | 7 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# MIC-GP4L

### View

**Table2-366 MIC-GP4L view**




| | |
|---|---|
| (1) Combo interfaces (4 in total) | (2) Combo fiber port LINK/ACT LED. For the LED description, see Table2-367. |
| (3) Combo copper LINK LED. For the LED description, see Table2-367. | (4) Combo copper ACT LED. For the LED description, see Table2-367. |

## LEDs

**Table2-367 Combo ports LED description**

| Port type | LED | Status | Description |
|---|---|---|---|
| Combo fiber port | LINK/ACT | Steady on | The port is up. |
| | | Flashing green | The port is receiving or sending data correctly. |
| | | Off | The port is down. |
| Combo copper port | LINK (Green) | Steady on | The port is up. |
| | | Off | The port is down. |
| | ACT (Orange) | Flashing green | The port is receiving or sending data correctly. |
| | | Off | The port is not receiving or sending data. |

## Ports

**Table2-368 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| MIC-GP4L | 4-port 1000BASE-X/1000BASE-T combo interface card | RJ45 | 4 | 10/100/1000 Mbps |
| | | LC | 4 | 100 Mbps |
| | | | | 1000 Mbps |

## Technical specifications

**Table2-369 Technical specifications**

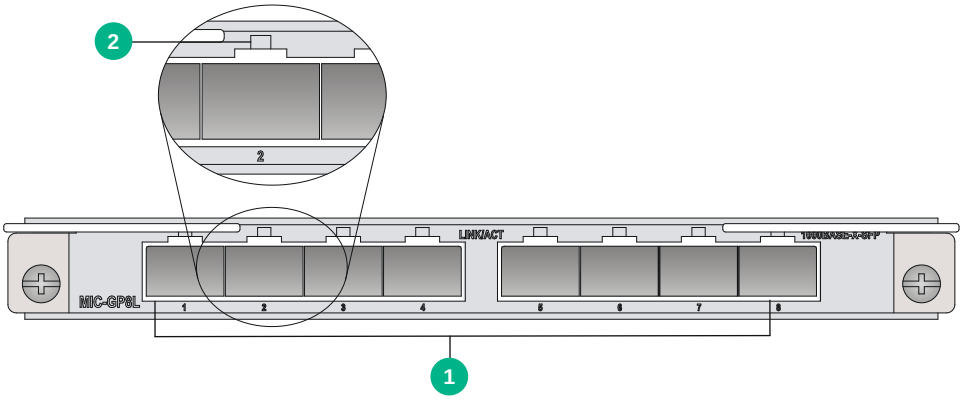
| Item | Description |
|---|---|

| Item | Description |
| --- | --- |
| Dimensions (H × W × D) | 18 × 171 × 157 mm (0.71 × 6.73 × 6.18 in) |
| Weight | 0.31 kg (0.68 lb) |
| Maximum power consumption | 5.5 W |
| Minimum power consumption | 0.8 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# MIC-GP8L

## View

**Figure2-81 MIC-GP8L view**




| | |
| --- | --- |
| (1) 1000BASE-X-SFP fiber ports (8 in total) | (2) SFP port LED. For the LED description, see Table2-370. |

## LEDs

**Table2-370 GE SFP port LED description**

| LED | Status | Description |
| --- | --- | --- |
| GE SFP port LED (LINK/ACT) | Flashing green | The SFP port is sending or receiving data. |
| | Green | A link is present on the SFP port. |
| | Off | No link is present on the SFP port. |

## Ports

**Table2-371 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
| --- | --- | --- | --- | --- |
| MIC-GP8L | 8-port 1000BASE-X optical | LC | 8 | 100 Mbps |

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| | interface card (SFP, LC) | | | 1000 Mbps |

### Technical specifications

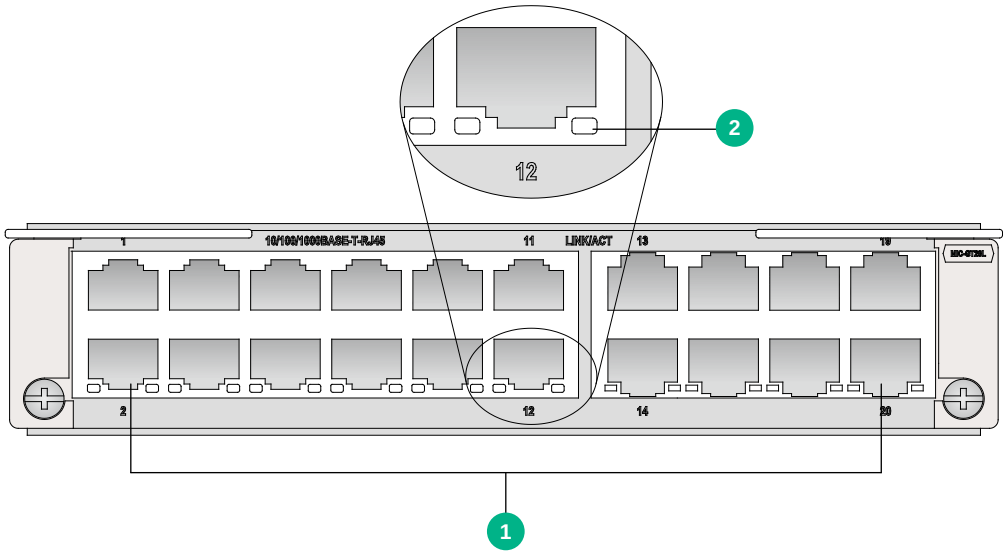
**Table2-372 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 18 × 171 × 157 mm (0.71 × 6.73 × 6.18 in) |
| Weight | 0.29 kg (0.64 lb) |
| Maximum power consumption | 4.7 W |
| Minimum power consumption | 0.6 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# MIC-GT20L/MIC-GT20L1/MIC-GT20LA

### View

**Figure2-82 MIC-GT20L view**




| | |
|---|---|
| (1) 10/100/1000BASE-T copper ports (20 in total) | (2) RJ-45 Ethernet port LED. For the description for the RJ-45 port LEDs on the MIC-GT20L and MIC-GT20LA, see Table2-373. For the description for the RJ-45 port LEDs on the MIC-GT20L1, see Table2-374. |

The views of the MIC-GT20L, MIC-GT20L1, and MIC-GT20LA are similar. This figure uses the MIC-GT20L as an example.

### LEDs

**Table2-373 RJ-45 Ethernet port LED description (1)**

| LED | Status | Description |
|---|---|---|
| RJ-45 Ethernet port LED | Flashing | The port is sending or receiving data. |
| | Steady on | A link is present on the port. |
| | Off | No link is present on the port. |

**Table2-374 RJ-45 Ethernet port LED description (2)**

| LED | Status | Description |
|---|---|---|
| RJ-45 Ethernet port LED | LINK: Steady green | A 1000 Mbps link is present on the port. |
| | LINK: Flashing green | The port is receiving or sending data at 1000 Mbps. |
| | ACT: Steady yellow | A 10/100 Mbps link is present on the port. |
| | ACT: Flashing yellow | The port is receiving or sending data at 10/100 Mbps. |
| | Off | No link is present on the port. |

**NOTE:**

You can identify the speed of an RJ-45 Ethernet port by observing the color of its LEDs. A green LINK LED indicates a speed of 1000 Mbps, and a yellow ACT LED indicates a speed of 10/100 Mbps.

## Ports

**Table2-375 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| MIC-GT20L | 20-port 1000BASE-X Ethernet electrical interface card (RJ45) | RJ-45 | 20 | 10/100/1000 Mbps |
| MIC-GT20L1 | 20-port 1000BASE-T Ethernet copper interface card (RJ45) | RJ-45 | 20 | 10/100/1000 Mbps |
| MIC-GT20LA | 20-port 1000BASE-X Ethernet electrical interface card A (RJ45) | RJ-45 | 20 | 10/100/1000 Mbps |

## Technical specifications

**Table2-376 Technical specifications**

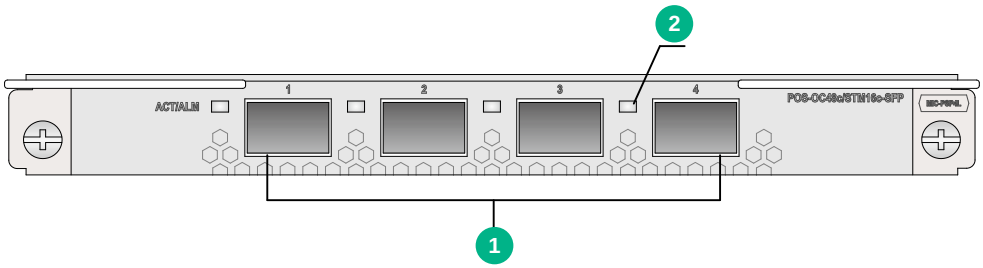
| Item | Description |
|---|---|
| Dimensions (H × W × D) | 37 × 171 × 157 mm (1.46 × 6.73 × 6.18 in) |
| Weight | • MIC-GT20L: 0.50 kg (1.10 lb)<br>• MIC-GT20LA: 0.84 kg (1.85 lb) |

| Item | Description |
| --- | --- |
| | • MIC-GT20L1: 0.40 kg (0.88 lb) |
| Maximum power consumption | • MIC-GT20L, MIC-GT20LA: 11.9 W<br>• MIC-GT20L1: 39 W |
| Minimum power consumption | • MIC-GT20L, MIC-GT20LA: 9.2 W<br>• MIC-GT20L1: 28 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# MIC-PSP4L

## View

**Figure2-83 MIC-PSP4L view**




| | |
| --- | --- |
| (1) OC-48c/STM-16c POS fiber ports (4 in total) | (2) Port LED. For the LED description, see Table2-377. |

## LEDs

**Table2-377 WAN port LED description**

| LED | Status | Description |
| --- | --- | --- |
| WAN port LED (ACT/ALM) | Flashing green | The port is up and is receiving or sending data correctly. |
| | Steady green | The port is up and no services are running on the port. |
| | Steady red | An alarm has occurred. |
| | Off | The port is down. |

## Ports

**Table2-378 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
| --- | --- | --- | --- | --- |
| MIC-PSP4L | 4-port OC-48c/STM-16c POS optical interface card (SFP, LC) | LC | 4 | 2.5 Gbps |

## Technical specifications

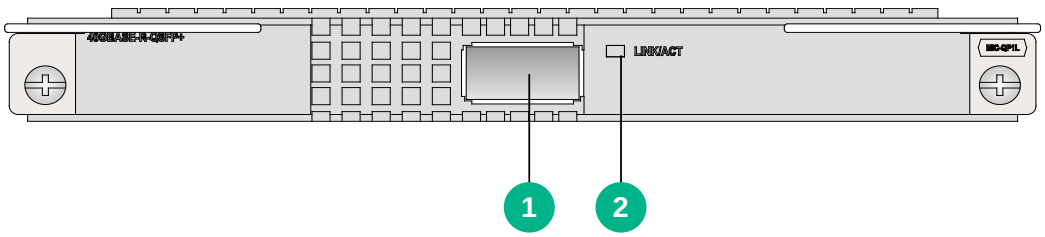
**Table2-379 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 18 × 171 × 157 mm (0.71 × 6.73 × 6.18 in) |
| Weight | 0.40 kg (0.88 lb) |
| Maximum power consumption | 33 W |
| Minimum power consumption | 29 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# MIC-QP1L

## View

**Figure2-84 MIC-QP1L view**




| | |
|---|---|
| (1) 40GBASE-R-QSFP+ fiber port (1 in total) | (2) QSFP+ port LED. For the LED description, see Table2-380. |

## LEDs

**Table2-380 QSFP+ port LED description**

| LED | Status | Description |
|---|---|---|
| QSFP+ port LED | Flashing | The QSFP+ port is sending or receiving data. |
| | Steady on | A link is present on the QSFP+ port. |
| | Off | No link is present on the QSFP+ port. |

## Ports

**Table2-381 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| MIC-QP1L | 1-port 40G Ethernet optical interface card (QSFP+, LC) | LC | 1 | 40 Gbps |
| | | | 4 (after | 10 Gbps |

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| | | | splitting) | |

**NOTE:**

You can execute a command to split the 40G port into four 10G breakout interfaces. For more information about the command, see *H3C CR16000-F Routers Command Reference*.

### Technical specifications

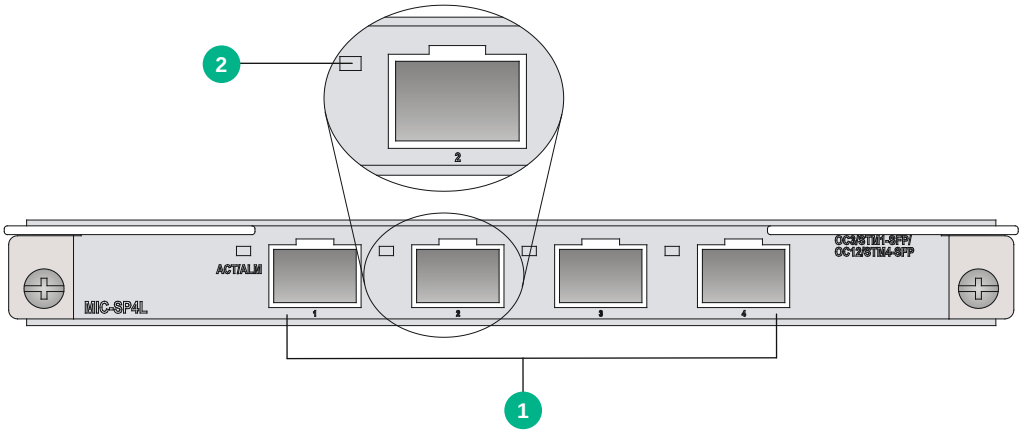
**Table2-382 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 18 × 171 × 157 mm (0.71 × 6.73 × 6.18 in) |
| Weight | 0.35 kg (0.77 lb) |
| Maximum power consumption | 7 W |
| Minimum power consumption | 3 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# MIC-SP4L

### View

**Figure2-85 MIC-SP4L view**




(1) OC-3c/STM-1c POS/ATM fiber ports (4 in total) or OC-12c/STM-4c POS/ATM fiber port (port 1)

(2) Port LED. For the LED description, see Table2-383.

### LEDs

**Table2-383 WAN port LED description**

| LED | Status | Description |
|---|---|---|

| LED | Status | Description |
|---|---|---|
| WAN port LED (ACT/ALM) | Flashing green | The port is up and is receiving or sending data correctly. |
| | Steady green | The port is up and no services are running on the port. |
| | Steady red | An alarm has occurred. |
| | Off | The port is down. |

### Ports

**Table2-384 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| MIC-SP4L | 4-port OC-3c/STM-1c POS/ATM or 1-port OC-12c/STM-4c POS/ATM optical interface card (SFP, LC) | LC | 4 | 155 Mbps (OC-3/STM-1) |
| | | | 1 | 622 Mbps (OC-12/STM-4) |

**NOTE:**

You can change the speed of only port 1 to 622 Mbps. After the change, other ports are unavailable. For more information about the command used for changing the operating mode of the subcard, see *H3C CR16000-F Routers Command Reference*.

### Technical specifications

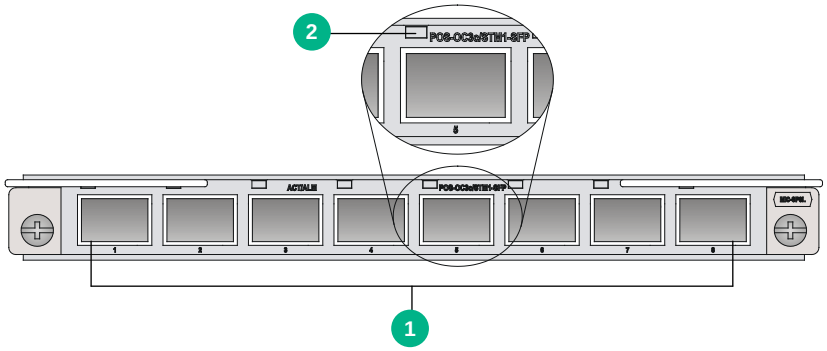
**Table2-385 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 18 × 171 × 157 mm (0.71 × 6.73 × 6.18 in) |
| Weight | 0.30 kg (0.66 lb) |
| Maximum power consumption | 13.5 W |
| Minimum power consumption | 9.6 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# MIC-SP8L

### View

**Figure2-86 MIC-SP8L view**




| | |
|---|---|
| (1) OC-3c/STM-1c POS fiber ports (8 in total) | (2) Port LED. For the LED description, see Table2-386. |

## LEDs

**Table2-386 WAN port LED description**

| LED | Status | Description |
|---|---|---|
| WAN port LED (ACT/ALM) | Flashing green | The port is up and is receiving or sending data correctly. |
| | Steady green | The port is up and no services are running on the port. |
| | Steady red | An alarm has occurred. |
| | Off | The port is down. |

## Ports

**Table2-387 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| MIC-SP8L | 8-port OC-3c/STM-1c POS optical interface card (SFP, LC) | LC | 8 | 155 Mbps (OC-3/STM-1) |

## Technical specifications

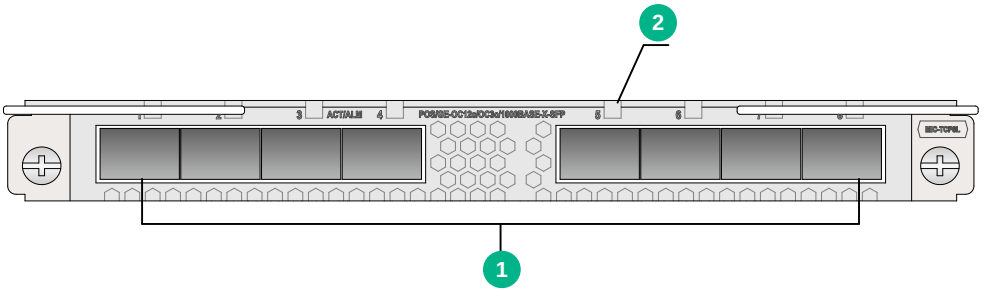
**Table2-388 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 18 × 171 × 157 mm (0.71 × 6.73 × 6.18 in) |
| Weight | 0.30 kg (0.66 lb) |
| Maximum power consumption | 16.3 W |
| Minimum power consumption | 14 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# MIC-TCP8L

## View

**Figure2-87 MIC-TCP8L view**




| | |
|---|---|
| (1) OC-3c/OC-12c POS/GE fiber ports (8 in total) | (2) Port LED. For the LED description, see Table2-389. |

## LEDs

**Table2-389 WAN port LED description**

| LED | Status | Description |
|---|---|---|
| WAN port LED (ACT/ALM) | Flashing green | The port is up and is receiving or sending data correctly. |
| | Steady green | The port is up and no services are running on the port. |
| | Steady red | An alarm has occurred. |
| | Off | The port is down. |

## Ports

**Table2-390 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| MIC-TCP8L | 8-port OC-3c/OC-12c POS/GE optical interface card (SFP, LC) | LC | 8 | 100 Mbps |
| | | | | 155 Mbps (OC-3/STM-1) |
| | | | | 622 Mbps (OC-12/STM-4) |
| | | | | 1000 Mbps |

## Technical specifications

**Table2-391 Technical specifications**

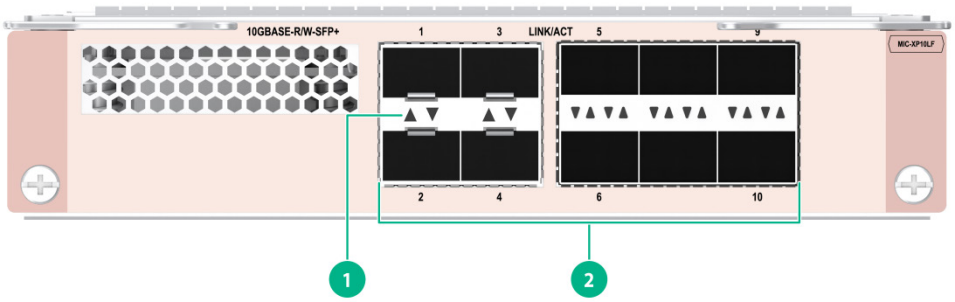
| Item | Description |
|---|---|
| Dimensions (H × W × | 18 × 171 × 157 mm (0.71 × 6.73 × 6.18 in) |

| Item | Description |
| --- | --- |
| D) | |
| Weight | 0.40 kg (0.88 lb) |
| Maximum power consumption | 30 W |
| Minimum power consumption | 28 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# MIC-XP10LF

## View

**Figure2-88 MIC-XP10LF view**




| | |
| --- | --- |
| (1) Port LED. For the LED description, see Table2-392. | (2) 25GBASE-R-SFP28 fiber ports (ports 1 to 4) or 10GBASE-R-SFP+ fiber ports |

## LEDs

**Table2-392 Port LED description**

| LED | Status | Description |
| --- | --- | --- |
| Port LED | Flashing | The port is receiving or sending data. |
| | Steady on | A link is present on the port. |
| | Off | No link is present on the port. |

**NOTE:**

You can identify the speed of a port by observing the color of its LED. Green indicates a speed of 25 Gbps, and yellow indicates a speed of 10 Gbps or 1000 Mbps.

## Ports

**Table2-393 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
| --- | --- | --- | --- | --- |

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| MIC-XP10LF | 10-port 10GBASE-R flexible Ethernet optical interface card (SFP+,LC) | LC | 10 | 1000 Mbps |
| | | | | 10 Gbps |
| | | | 4 | 25 Gbps |

**NOTE:**

You can change the speed of only ports 1 to 4 to 25 Gbps. Follow these restrictions and guidelines when you change the port speed:

- Ports 1 and 7 form a group. After you change port 1 to a 25GE interface, port 7 is unavailable.
- Ports 2 and 8 form a group. After you change port 2 to a 25GE interface, port 8 is unavailable.
- Ports 3 and 9 form a group. After you change port 3 to a 25GE interface, port 9 is unavailable.
- Ports 4 and 10 form a group. After you change port 4 to a 25GE interface, port 10 is unavailable.
- Ports 5 and 6 cannot be changed to 25GE interfaces, and they are not affected by any speed change of other ports.

For more information about the commands used for changing the speed of ports on the subcard, see *H3C CR16000-F Routers Command Reference*.

### Technical specifications

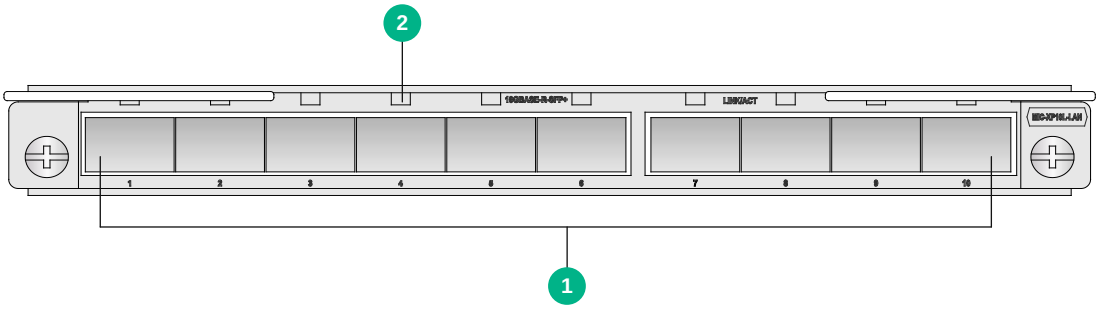
**Table2-394 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 36 × 171 × 157 mm (1.42 × 6.73 × 6.18 in) |
| Weight | 0.61 kg (1.34 lb) |
| Maximum power consumption | 37 W |
| Minimum power consumption | 30 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# MIC-XP10L-LAN

### View

**Figure2-89 MIC-XP10L-LAN view**



| | |
|---|---|
| (1) 10GBASE-R-SFP+ fiber ports or 1000BASE-X-SFP fiber ports (10 in total) | (2) SFP+ port LED. For the LED description, see Table2-395. |

### LEDs

**Table2-395 SFP+ port LED description**

| LED | Status | Description |
|---|---|---|
| SFP+ port LED | Flashing | The port is sending or receiving data. |
| | Steady on | A link is present on the port. |
| | Off | No link is present on the port. |

**NOTE:**

You can identify the speed of an SFP+ port by observing the color of its LED. Green indicates a speed of 10 Gbps, and yellow indicates a speed of 1000 Mbps.

### Ports

**Table2-396 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| MIC-XP10L-LAN | 10-port 10GBASE-R Ethernet optical interface card (SFP+, LC)-LAN | LC | 10 | 10 Gbps |
| | | | | 1000 Mbps |

### Technical specifications

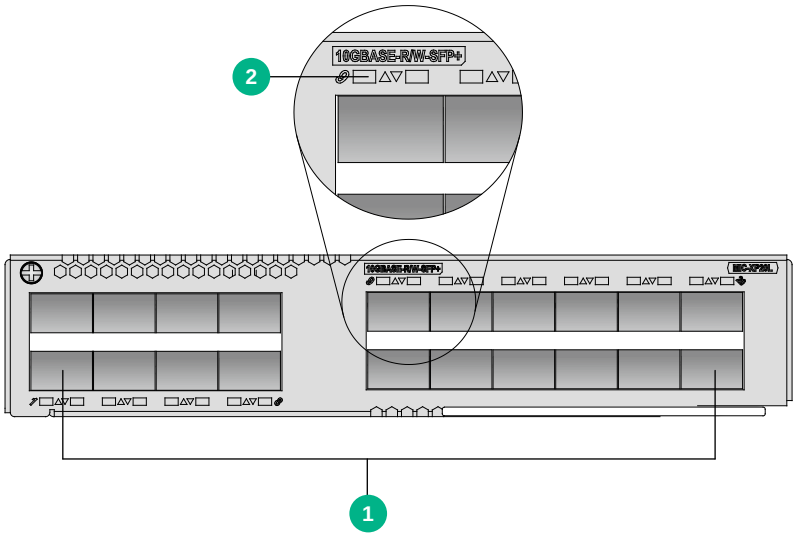
**Table2-397 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 18 × 171 × 157 mm (0.71 × 6.73 × 6.18 in) |
| Weight | 0.46 kg (1.01 lb) |
| Maximum power consumption | 20 W |
| Minimum power consumption | 12 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# MIC-XP20L/MIC-XP20LA

### View

**Figure2-90 MIC-XP20L view**




| | |
|---|---|
| (1) 10GBASE-R/W-SFP+ fiber ports (20 in total) (10GE SFP+ modules supported) | (2) SFP+ port LED. For the LED description, see Table2-398. |

The views of MIC-XP20L and MIC-XP20LA are similar. This figure uses the MIC-XP20L as an example.

## LEDs

**Table2-398 SFP+ port LED description**

| LED | Status | Description |
|---|---|---|
| SFP+ port LED | Flashing | The port is sending or receiving data. |
| | Steady on | A link is present on the port. |
| | Off | No link is present on the port. |

**NOTE:**

You can identify the speed of an SFP+ port by observing the color of its LED. Green indicates a speed of 10 Gbps, and yellow indicates a speed of 100/1000 Mbps.

## Ports

**Table2-399 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| MIC-XP20L | 20-port 10GBASE-R/W Ethernet optical interface card (SFP+, LC) | LC | 20 | 100 Mbps |
| | | | | 1000 Mbps |
| | | | | 10 Gbps |
| MIC-XP20LA | 20-port 10GBASE-R/W Ethernet optical interface card A (SFP+, LC) | LC | 20 | 100 Mbps |
| | | | | 1000 Mbps |
| | | | | 10 Gbps |

### Technical specifications

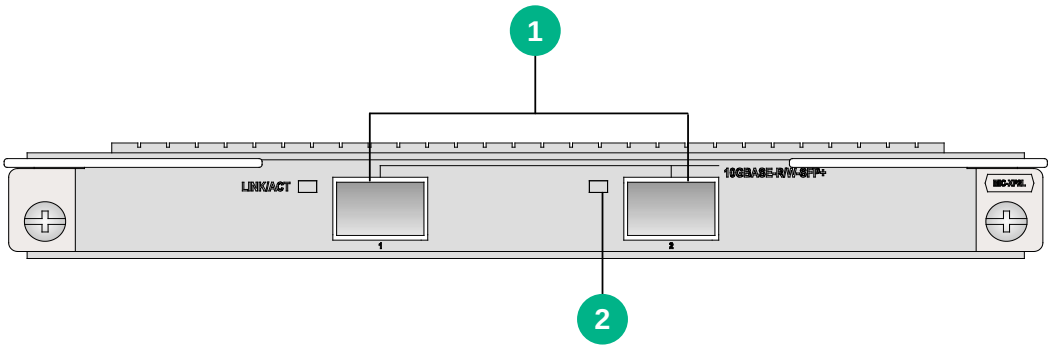
**Table2-400 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 38 × 179 × 149 mm (1.50 × 7.05 × 5.87 in) |
| Weight | 0.95 kg (2.09 lb) |
| Maximum power consumption | 53 W |
| Minimum power consumption | 38.3 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# MIC-XP2L

### View

**Figure2-91 MIC-XP2L view**




| | |
|---|---|
| (1) 10GBASE-R/W-SFP+ fiber ports (2 in total) | (2) SFP+ port LED. For the LED description, see Table2-401. |

### LEDs

**Table2-401 SFP+ port LED description**

| LED | Status | Description |
|---|---|---|
| SFP+ port LED | Flashing | The port is sending or receiving data. |
| | Steady on | A link is present on the port. |
| | Off | No link is present on the port. |

**NOTE:**

You can identify the speed of an SFP+ port by observing the color of its LED. Green indicates a speed of 10 Gbps, and yellow indicates a speed of 100/1000 Mbps.

### Ports

**Table2-402 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| MIC-XP2L | 2-port 10GBASE-R Ethernet optical interface card (SFP+, LC) | LC | 2 | 100 Mbps<br>1000 Mbps<br>10 Gbps |

### Technical specifications

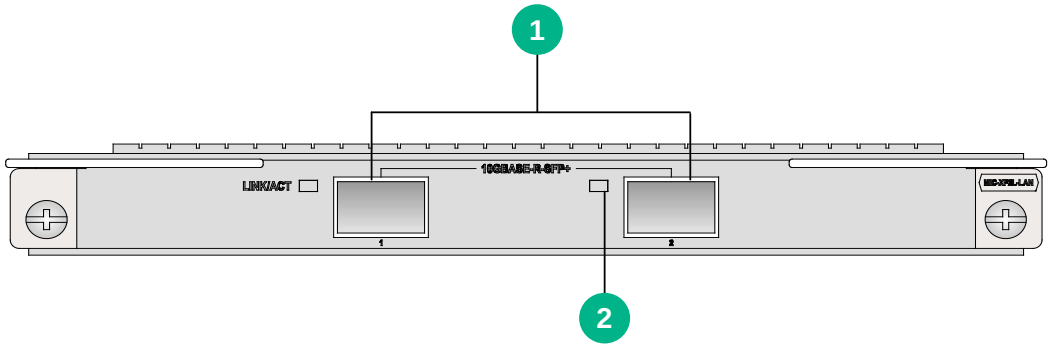
**Table2-403 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 18 × 171 × 157 mm (0.71 × 6.73 × 6.18 in) |
| Weight | 0.29 kg (0.64 lb) |
| Maximum power consumption | 13 W |
| Minimum power consumption | 10 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# MIC-XP2L-LAN

### View

**Figure2-92 MIC-XP2L-LAN view**




| | |
|---|---|
| (1) 10GBASE-R-SFP+ fiber ports (2 in total) | (2) SFP+ port LED. For the LED description, see Table2-404. |

### LEDs

**Table2-404 SFP+ port LED description**

| LED | Status | Description |
|---|---|---|
| SFP+ port LED | Flashing | The port is sending or receiving data. |

| LED | Status | Description |
|---|---|---|
| | Steady on | A link is present on the port. |
| | Off | No link is present on the port. |

**NOTE:**

You can identify the speed of an SFP+ port by observing the color of its LED. Green indicates a speed of 10 Gbps, and yellow indicates a speed of 100/1000 Mbps.

### Ports

**Table2-405 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| MIC-XP2L-LAN | 2-port 10GBASE-R Ethernet optical interface card (SFP+, LC)-LAN | LC | 2 | 100 Mbps |
| | | | | 1000 Mbps |
| | | | | 10 Gbps |

### Technical specifications

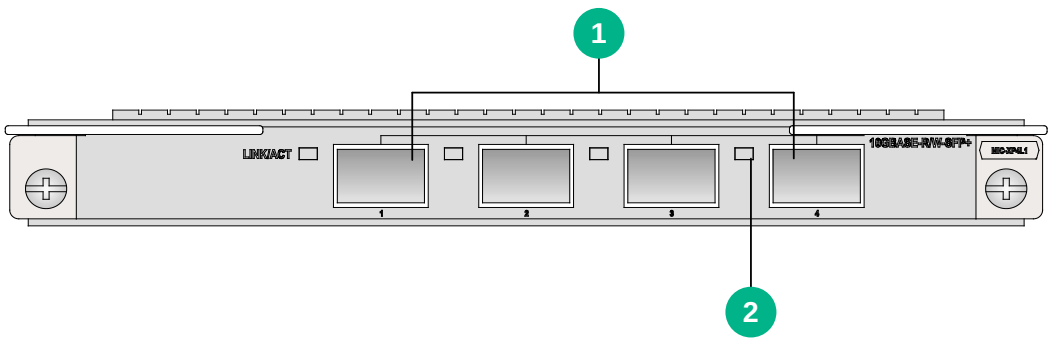
**Table2-406 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 18 × 171 × 157 mm (0.71 × 6.73 × 6.18 in) |
| Weight | 0.28 kg (0.62 lb) |
| Maximum power consumption | 9 W |
| Minimum power consumption | 6 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# MIC-XP4L1

### View

**Figure2-93 MIC-XP4L1 view**



| | |
|---|---|
| (1) 10GBASE-R/W-SFP+ fiber ports (4 in total) | (2) SFP+ port LED. For the LED description, see Table2-407. |

### LEDs

**Table2-407 SFP+ port LED description**

| LED | Status | Description |
|---|---|---|
| SFP+ port LED | Flashing | The port is sending or receiving data. |
| | Steady on | A link is present on the port. |
| | Off | No link is present on the port. |

**NOTE:**

You can identify the speed of an SFP+ port by observing the color of its LED. Green indicates a speed of 10 Gbps, and yellow indicates a speed of 100/1000 Mbps.

### Ports

**Table2-408 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| MIC-XP4L1 | 4-port 10GBASE-R/W Ethernet optical interface card 1 (SFP+, LC) | LC | 4 | 100 Mbps |
| | | | | 1000 Mbps |
| | | | | 10 Gbps |

### Technical specifications

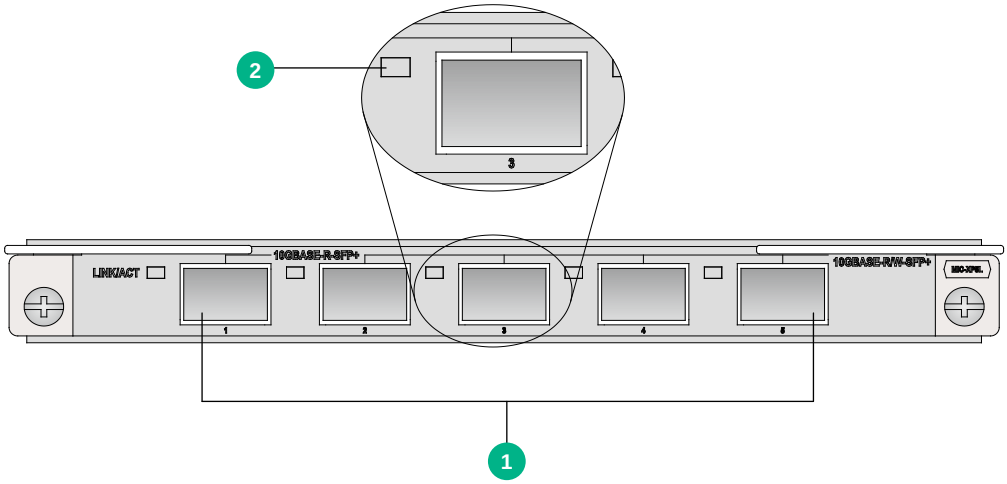
**Table2-409 MIC-XP4L1**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 18 × 171 × 157 mm (0.71 × 6.73 × 6.18 in) |
| Weight | 0.30 kg (0.66 lb) |
| Maximum power consumption | 13 W |
| Minimum power consumption | 11 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# MIC-XP5L

### View

**Figure2-94 MIC-XP5L view**




| | |
|---|---|
| (1) 10GBASE-R/W-SFP+ fiber ports (5 in total) | (2) SFP+ port LED. For the LED description, see Table2-410. |

## LEDs

**Table2-410 SFP+ port LED description**

| LED | Status | Description |
|---|---|---|
| SFP+ port LED | Flashing | The port is sending or receiving data. |
| | Steady on | A link is present on the port. |
| | Off | No link is present on the port. |

**NOTE:**

You can identify the speed of an SFP+ port by observing the color of its LED. Green indicates a speed of 10 Gbps, and yellow indicates a speed of 100/1000 Mbps.

## Ports

**Table2-411 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| MIC-XP5L | 5-port 10GBASE-R/W Ethernet optical interface card (SFP+, LC) | LC | 5 | 100 Mbps |
| | | | | 1000 Mbps |
| | | | | 10 Gbps |

## Technical specifications

**Table2-412 Technical specifications**

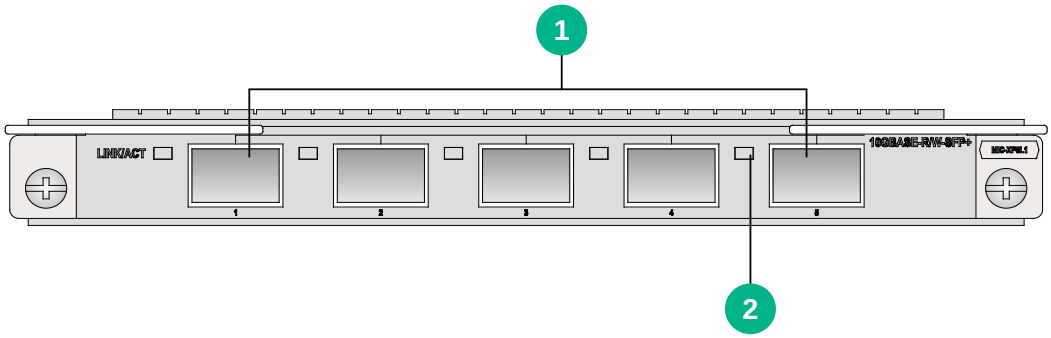
| Item | Description |
|---|---|
| Dimensions (H × W × D) | 18 × 171 × 157 mm (0.71 × 6.73 × 6.18 in) |

| Item | Description |
|---|---|
| Weight | 0.30 kg (0.66 lb) |
| Maximum power consumption | 14.2 W |
| Minimum power consumption | 10.4 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# MIC-XP5L1/MIC-XP5L2

## View

**Figure2-95 MIC-XP5L1 view**




| | |
|---|---|
| (1) 10GBASE-R/W-SFP+ fiber ports (5 in total) | (2) SFP+ port LED. For the LED description, see Table2-413. |

The views of the MIC-XP5L1 and MIC-XP5L2 are similar. This figure uses the MIC-XP5L1 as an example.

## LEDs

**Table2-413 SFP+ port LED description**

| LED | Status | Description |
|---|---|---|
| SFP+ port LED | Flashing | The port is sending or receiving data. |
| | Steady on | A link is present on the port. |
| | Off | No link is present on the port. |

**NOTE:**

You can identify the speed of an SFP+ port by observing the color of its LED. Green indicates a speed of 10 Gbps, and yellow indicates a speed of 100/1000 Mbps.

## Ports

**Table2-414 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| MIC-XP5L1 | 5-port 10GBASE-R/W Ethernet optical interface card (SFP+, LC) | LC | 5 | 100 Mbps |
| | | | | 1000 Mbps |
| | | | | 10 Gbps |
| MIC-XP5L2 | 5-port 10GBASE-R Ethernet optical interface card (SFP+, LC) | LC | 5 | 100 Mbps |
| | | | | 1000 Mbps |
| | | | | 10 Gbps |

### Technical specifications

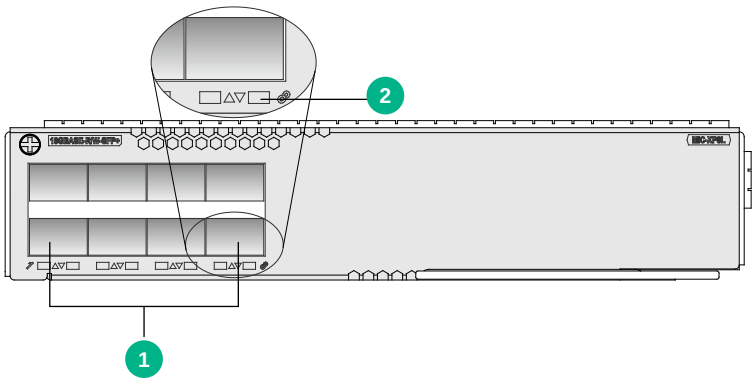
**Table2-415 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 18 × 171 × 157 mm (0.71 × 6.73 × 6.18 in) |
| Weight | 0.35 kg (0.77 lb) |
| Maximum power consumption | • MIC-XP5L1: 13 W<br>• MIC-XP5L2: 6.4 W |
| Minimum power consumption | • MIC-XP5L1: 11 W<br>• MIC-XP5L2: 2.3 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

## MIC-XP8L

### View

**Figure2-96 MIC-XP8L view**




| | |
|---|---|
| (1) 10GBASE-R/W-SFP+ fiber ports (8 in total) | (2) SFP+ port LED. For the LED description, see Table2-416. |

### LEDs

**Table2-416 SFP+ port LED description**

| LED | Status | Description |
|---|---|---|
| SFP+ port LED | Flashing | The port is sending or receiving data. |
| | Steady on | A link is present on the port. |
| | Off | No link is present on the port. |

**NOTE:**

You can identify the speed of an SFP+ port by observing the color of its LED. Green indicates a speed of 10 Gbps, and yellow indicates a speed of 1000 Mbps.

### Ports

**Table2-417 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| MIC-XP8L | 8-port 10GBASE-R/W Ethernet optical interface card (SFP+, LC) | LC | 8 | 10 Gbps |
| | | | | 1000 Mbps |

### Technical specifications

**Table2-418 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 38 × 179 × 149 mm (1.50 × 7.05 × 5.87 in) |
| Weight | 0.70 kg (1.54 lb) |
| Maximum power consumption | 22 W |
| Minimum power consumption | 16 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# NIC subcards

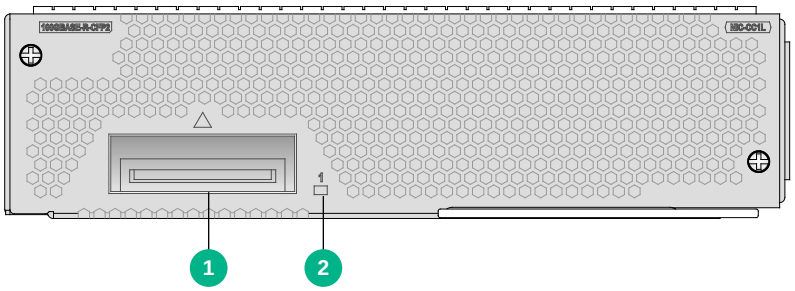
**IMPORTANT:**

- To use a NIC interface card, you must install it on a CMPE, SPE, or CSPEX base card. You cannot install it directly on the router.
- For the compatibility between NIC interface cards and CMPE, SPE, or CSPEX base cards, see the compatibility information for the base cards.
- Some NIC subcards support changing the speed and operating mode. For more information, see *H3C CR16000-F Routers Configuration Guides*.

## NIC-CC1L

## View

**Figure2-97 NIC-CC1L view**




| | |
|---|---|
| (1) 100GBASE-R-CFP2 fiber port (1 in total) | (2) CFP2 port LED. For the LED description, see Table2-419. |

## LEDs

**Table2-419 CFP2 port LED description**

| LED | Status | Description |
|---|---|---|
| CFP2 port LED | Flashing | The CFP2 port is sending or receiving data at 100 Gbps. |
| | Steady on | A 100 Gbps link is present on the CFP2 port. |
| | Off | No link is present on the CFP2 port. |

## Ports

**Table2-420 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| NIC-CC1L | 1-port 100G Ethernet optical interface card | LC | 1 | 100 Gbps |

## Technical specifications

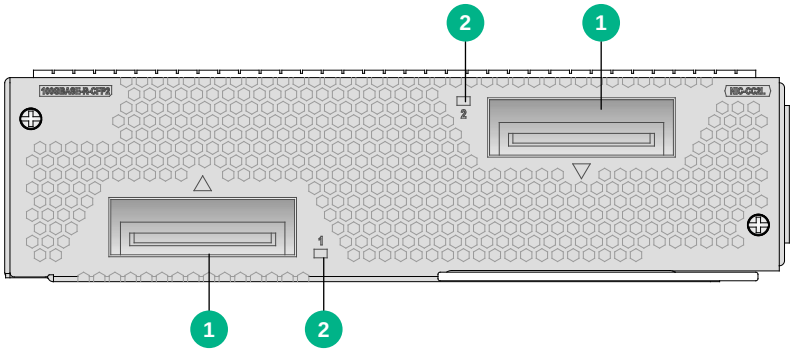
**Table2-421 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 47.5 × 179 × 118 mm (1.87 × 7.05 × 4.65 in) |
| Weight | 0.60 kg (1.32 lb) |
| Maximum power consumption | 9.7 W |
| Minimum power consumption | 9.6 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# NIC-CC2L

## View

**Figure2-98 NIC-CC2L view**




| | |
|---|---|
| (1) 100GBASE-R-CFP2 fiber ports (2 in total) | (2) CFP2 port LED. For the LED description, see Table2-422. |

## LEDs

**Table2-422 CFP2 port LED description**

| LED | Status | Description |
|---|---|---|
| CFP2 port LED | Flashing | The CFP2 port is sending or receiving data at 100 Gbps. |
| | Steady on | A 100 Gbps link is present on the CFP2 port. |
| | Off | No link is present on the CFP2 port. |

## Ports

**Table2-423 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| NIC-CC2L | 2-port 100G Ethernet optical interface card | LC | 2 | 100 Gbps |

## Technical specifications

**Table2-424 Technical specifications**

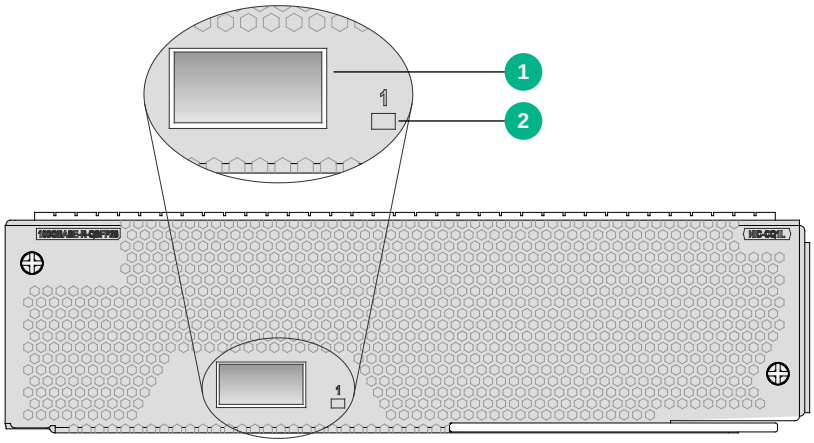
| Item | Description |
|---|---|
| Dimensions (H × W × D) | 47.5 × 179 × 118 mm (1.87 × 7.05 × 4.65 in) |
| Weight | 0.85 kg (1.87 lb) |
| Maximum power consumption | 21 W |
| Minimum power consumption | 19.2 W |

| Item | Description |
| --- | --- |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# NIC-CQ1L

## View

**Figure2-99 NIC-CQ1L view**




| | |
| --- | --- |
| (1) 100GBASE-R-QSFP28 fiber port (1 in total) | (2) QSFP28 port LED. For the LED description, see Table2-425. |

## LEDs

**Table2-425 QSFP28 port LED description**

| LED | Status | Description |
| --- | --- | --- |
| QSFP28 port LED | Flashing | The QSFP28 port is sending or receiving data at 100 Gbps. |
| | Steady on | A 100 Gbps link is present on the QSFP28 port. |
| | Off | No link is present on the QSFP28 port. |

## Ports

**Table2-426 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
| --- | --- | --- | --- | --- |
| NIC-CQ1L | 1-port 100G Ethernet optical interface card | LC | 1 | 100 Gbps |

## Technical specifications

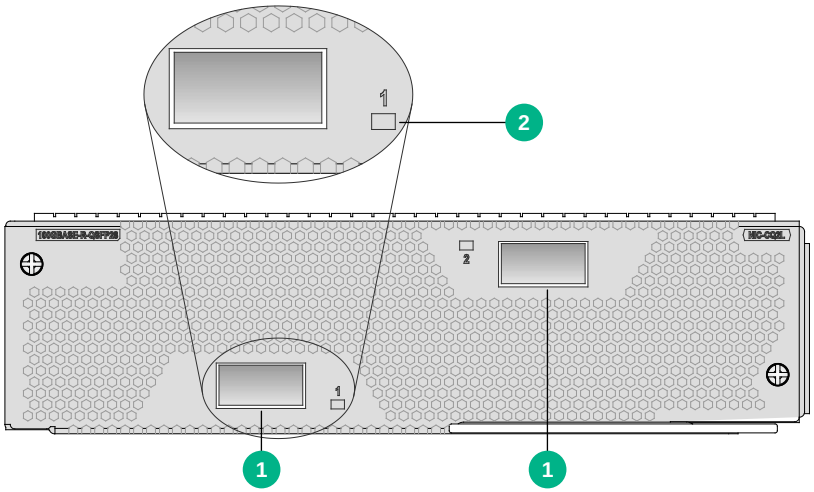
**Table2-427 Technical specifications**

| Item | Description |
| --- | --- |
| Dimensions (H × W × D) | 47.5 × 179 × 118 mm (1.87 × 7.05 × 4.65 in) |
| Weight | 0.35 kg (0.77 lb) |
| Maximum power consumption | 13 W |
| Minimum power consumption | 8 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# NIC-CQ2L/NIC-CQ2LA/NIC-CQ2LA-G

## View

**Figure2-100 NIC-CQ2L view**




| | |
| --- | --- |
| (1) 100GBASE-R-QSFP28 fiber ports (2 in total) | (2) QSFP28 port LED. For the LED description, see Table2-428. |

The views of NIC-CQ2L, NIC-CQ2LA, and NIC-CQ2LA-G are similar. This figure uses the NIC-CQ2L as an example.

## LEDs

**Table2-428 QSFP28 port LED description**

| LED | Status | Description |
| --- | --- | --- |
| QSFP28 port LED | Flashing | The QSFP28 port is sending or receiving data at 100 Gbps. |
| | Steady on | A 100 Gbps link is present on the QSFP28 port. |
| | Off | No link is present on the QSFP28 port. |

## Ports

**Table2-429 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| NIC-CQ2L | 2-port 100G Ethernet optical interface card | LC | 2 | 100 Gbps |
| NIC-CQ2LA | 2-port 100G Ethernet optical interface card A | LC | 2 | 100 Gbps |
| NIC-CQ2LA-G | 2-port 100G Ethernet optical interface card A | LC | 2 | 100 Gbps |

### Technical specifications

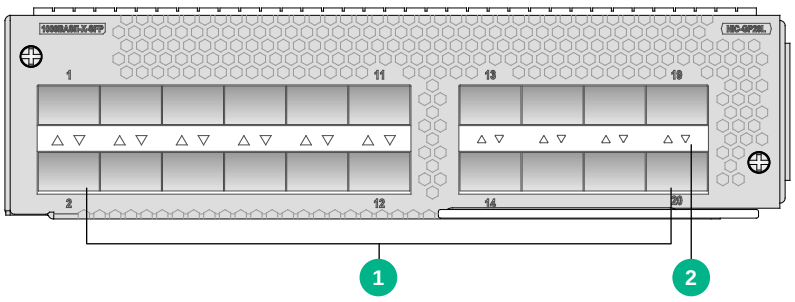
**Table2-430 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 47.5 × 179 × 118 mm (1.87 × 7.05 × 4.65 in) |
| Weight | • NIC-CQ2L: 0.35 kg (0.77 lb)<br>• NIC-CQ2LA, NIC-CQ2LA-G: 0.75 kg (1.65 lb) |
| Maximum power consumption | 26 W |
| Minimum power consumption | 16 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# NIC-GP20L

### View

**Figure2-101 NIC-GP20L view**




| | |
|---|---|
| (1) 1000BASE-X-SFP fiber ports (20 in total) | (2) SFP port LED. For the LED description, see Table2-431. |

### LEDs

**Table2-431 GE SFP port LED description**

| LED | Status | Description |
|---|---|---|
| GE SFP port LED | Flashing green | The SFP port is sending or receiving |

| LED | Status | Description |
|---|---|---|
| (LINK/ACT) | | data. |
| | Green | A link is present on the SFP port. |
| | Off | No link is present on the SFP port. |

### Ports

**Table2-432 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| NIC-GP20L | 20-port 1000BASE-X Ethernet optical interface card | LC | 20 | 100 Mbps |
| | | | | 1000 Mbps |

### Technical specifications

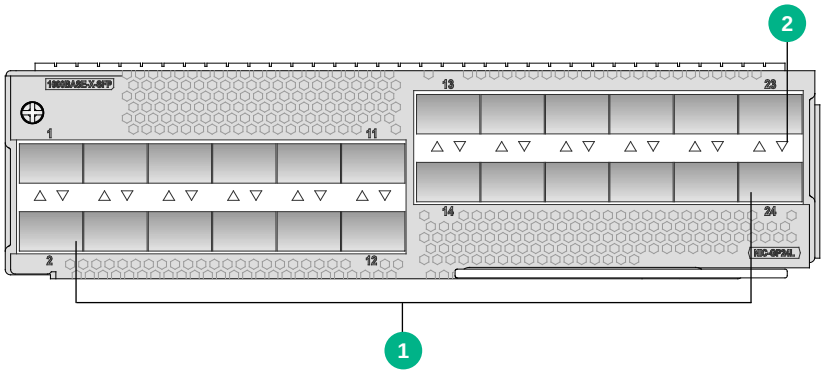
**Table2-433 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 47.5 × 179 × 118 mm (1.87 × 7.05 × 4.65 in) |
| Weight | 0.65 kg (1.43 lb) |
| Maximum power consumption | 13.8 W |
| Minimum power consumption | 12 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# NIC-GP24L

### View

**Figure2-102 NIC-GP24L view**




| | |
|---|---|
| (1) 1000BASE-X-SFP fiber ports (24 in total) | (2) SFP port LED. For the LED description, see Table2-434. |

### LEDs

**Table2-434 GE SFP port LED description**

| LED | Status | Description |
|---|---|---|
| GE SFP port LED (LINK/ACT) | Flashing green | The SFP port is sending or receiving data. |
| | Green | A link is present on the SFP port. |
| | Off | No link is present on the SFP port. |

### Ports

**Table2-435 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| NIC-GP24L | 24-port 1000BASE-X Ethernet optical interface card | LC | 24 | 100 Mbps |
| | | | | 1000 Mbps |

### Technical specifications

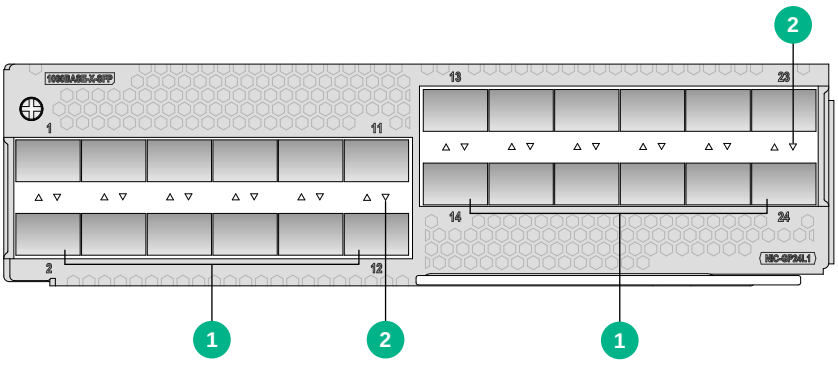
**Table2-436 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 47.5 × 179 × 118 mm (1.87 × 7.05 × 4.65 in) |
| Weight | 0.50 kg (1.10 lb) |
| Maximum power consumption | 28 W |
| Minimum power consumption | 20 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# NIC-GP24L1/NIC-GP24L1A/NIC-GP24L1A-G

### View

**Figure2-103 NIC-GP24L1 view**



| | |
|---|---|
| (1) 1000BASE-X-SFP fiber ports (24 in total) | (2) SFP port LED. For the LED description, see Table2-437. |

The views of the NIC-GP24L1, NIC-GP24L1A, and NIC-GP24L1A-G are similar. This figure uses the NIC-GP24L1 as an example.

### LEDs

**Table2-437 GE SFP port LED description**

| LED | Status | Description |
|---|---|---|
| GE SFP port LED (LINK/ACT) | Flashing green | The SFP port is sending or receiving data. |
| | Green | A link is present on the SFP port. |
| | Off | No link is present on the SFP port. |

### Ports

**Table2-438 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| NIC-GP24L1 | 24-port 1000BASE-X Ethernet optical interface card | LC | 24 | 100 Mbps |
| | | | | 1000 Mbps |
| NIC-GP24L1A | 24-port 1000BASE-X Ethernet optical interface card A | LC | 24 | 1000 Mbps |
| NIC-GP24L1A-G | 24-port 1000BASE-X Ethernet optical interface card A | LC | 24 | 1000 Mbps |

### Technical specifications

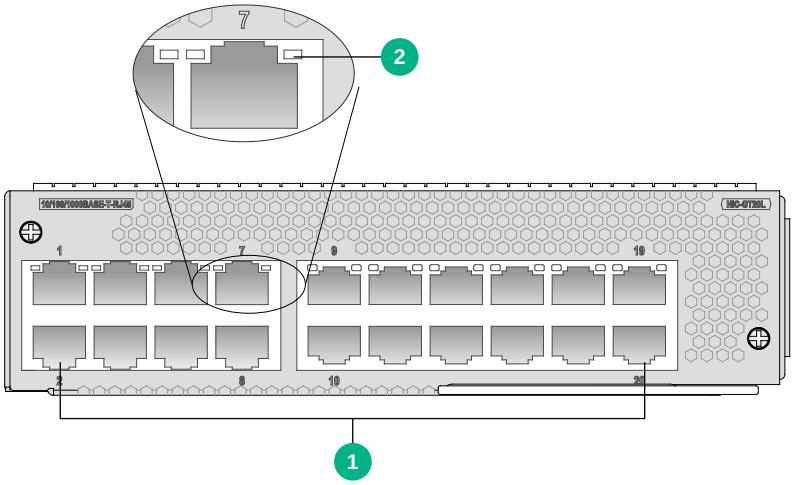
**Table2-439 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 47.5 × 179 × 118 mm (1.87 × 7.05 × 4.65 in) |
| Weight | 1.00 kg (2.20 lb) |
| Maximum power consumption | 47 W |
| Minimum power consumption | 41 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

## NIC-GT20L

### View

**Figure2-104 NIC-GT20L view**




| | |
|---|---|
| (1) 10/100/1000BASE-T copper ports (20 in total) | (2) RJ-45 Ethernet port LED. For the LED description, see Table2-440. |

## LEDs

**Table2-440 RJ-45 Ethernet port LED description**

| LED | Status | Description |
|---|---|---|
| RJ-45 Ethernet port LED | Flashing | The port is sending or receiving data. |
| | Steady on | A link is present on the port. |
| | Off | No link is present on the port. |

## Ports

**Table2-441 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| NIC-GT20L | 20-port 1000BASE-T Ethernet copper interface card | RJ-45 | 20 | 10/100/1000 Mbps |

## Technical specifications

**Table2-442 Technical specifications**

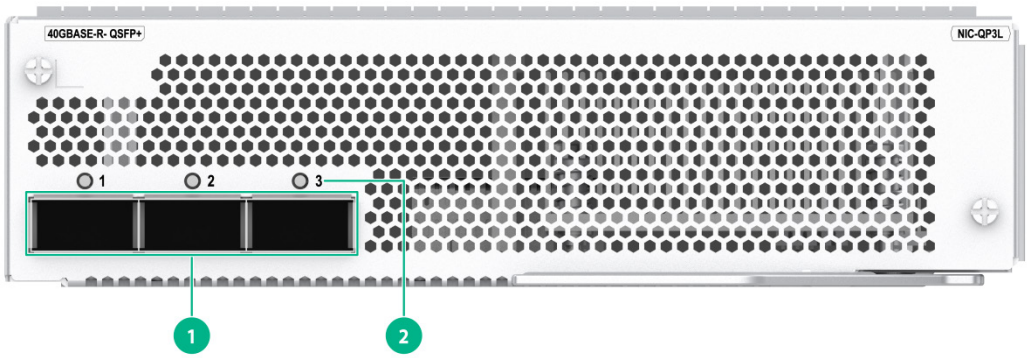
| Item | Description |
|---|---|
| Dimensions (H × W × D) | 47.5 × 179 × 118 mm (1.87 × 7.05 × 4.65 in) |
| Weight | 0.75 kg (1.65 lb) |
| Maximum power consumption | 16.5 W |
| Minimum power consumption | 14.6 W |

| Item | Description |
| --- | --- |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# NIC-QP3L

## View

**Figure2-105 NIC-QP3L view**




| | |
| --- | --- |
| (1) 40GBASE-R-QSFP+ fiber ports (3 in total) | (2) QSFP+ port LED. For the LED description, see Table2-443. |

## LEDs

**Table2-443 QSFP+ port LED description**

| LED | Status | Description |
| --- | --- | --- |
| QSFP+ port LED | Flashing | The port is sending or receiving data. |
| | Steady on | A link is present on the port. |
| | Off | No link is present on the port. |

## Ports

**Table2-444 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
| --- | --- | --- | --- | --- |
| NIC-QP3L | 3-port 40G Ethernet optical interface card (QSFP+,LC) | LC | 3 | 40 Gbps |

## Technical specifications

**Table2-445 Technical specifications**

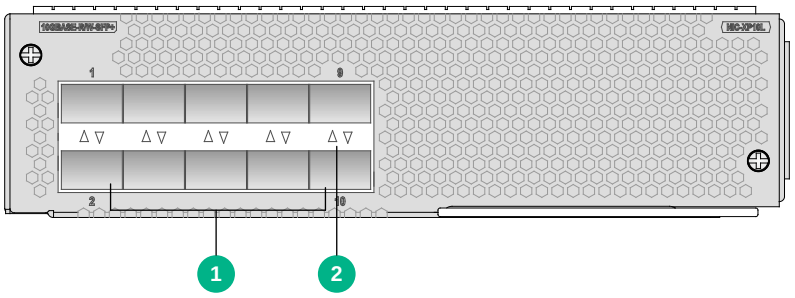
| Item | Description |
| --- | --- |
| Dimensions (H × W × D) | 47.5 × 179 × 118 mm (1.87 × 7.05 × 4.65 in) |

| Item | Description |
| --- | --- |
| Weight | 0.75 kg (1.65 lb) |
| Maximum power consumption | 34 W |
| Minimum power consumption | 33 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# NIC-XP10L

## View

**Figure2-106 NIC-XP10L view**




| | |
| --- | --- |
| (1) 10GBASE-R/W-SFP+ fiber ports (10 in total) | (2) SFP+ port LED. For the LED description, see Table2-446. |

## LEDs

**Table2-446 SFP+ port LED description**

| LED | Status | Description |
| --- | --- | --- |
| SFP+ port LED | Flashing | The port is sending or receiving data. |
| | Steady on | A link is present on the port. |
| | Off | No link is present on the port. |

**NOTE:**

You can identify the speed of an SFP+ port by observing the color of its LED. Green indicates a speed of 10 Gbps, and yellow indicates a speed of 1000 Mbps.

## Ports

**Table2-447 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
| --- | --- | --- | --- | --- |
| NIC-XP10L | 10-port 10GBASE-R/W | LC | 10 | 10 Gbps |

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| | Ethernet optical interface card | | | 1000 Mbps |

### Technical specifications

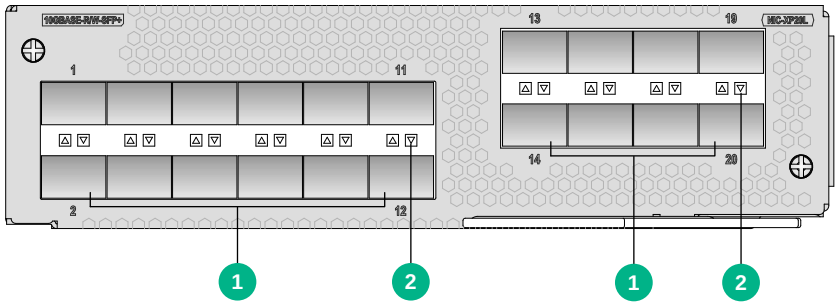
**Table2-448 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 47.5 × 179 × 118 mm (1.87 × 7.05 × 4.65 in) |
| Weight | 0.65 kg (1.43 lb) |
| Maximum power consumption | 27.4 W |
| Minimum power consumption | 26.9 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# NIC-XP20L

### View

**Figure2-107 NIC-XP20L view**




| | |
|---|---|
| (1) 10GBASE-R/W-SFP+ fiber ports (20 in total) | (2) SFP+ port LED. For the LED description, see Table2-449. |

### LEDs

**Table2-449 SFP+ port LED description**

| LED | Status | Description |
|---|---|---|
| SFP+ port LED | Flashing | The port is sending or receiving data. |
| | Steady on | A link is present on the port. |
| | Off | No link is present on the port. |

**NOTE:**

You can identify the speed of an SFP+ port by observing the color of its LED. Green indicates a speed of 10 Gbps, and yellow indicates a speed of 1000 Mbps.

### Ports

**Table2-450 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| NIC-XP20L | 20-port 10GBASE-R/W Ethernet optical interface card | LC | 20 | 10 Gbps |
| | | | | 1000 Mbps |

### Technical specifications

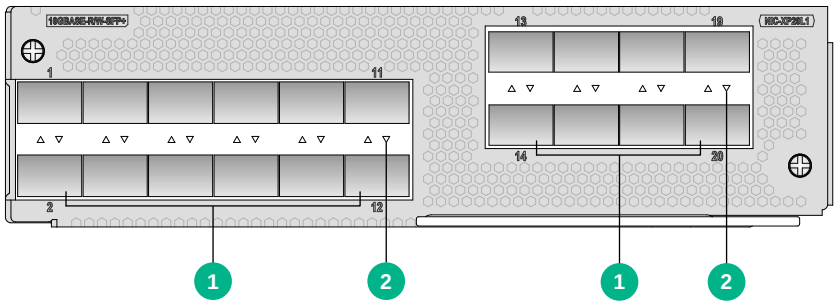
**Table2-451 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 47.5 × 179 × 118 mm (1.87 × 7.05 × 4.65 in) |
| Weight | 0.90 kg (1.98 lb) |
| Maximum power consumption | 58 W |
| Minimum power consumption | 39 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# NIC-XP20L1/NIC-XP20L1A/NIC-XP20L1A-G

### View

**Figure2-108 NIC-XP20L1 view**




| | |
|---|---|
| (1) 10GBASE-R/W-SFP+ fiber ports or 1000BASE-X-SFP fiber ports (20 in total) | (2) SFP+ port/SFP port LED. For the SFP+ port LED description, see Table2-452. For the SFP port LED description, see Table2-453 |

The views of the NIC-XP20L1, NIC-XP20L1A, and NIC-XP20L1A-G are similar. This figure uses the NIC-XP20L1 as an example.

### LEDs

**Table2-452 SFP+ port LED description**

| LED | Status | Description |
|---|---|---|
| SFP+ port LED | Flashing | The port is sending or receiving data. |
| | Steady on | A link is present on the port. |
| | Off | No link is present on the port. |

**NOTE:**

You can identify the speed of an SFP+ port by observing the color of its LED. Green indicates a speed of 10 Gbps, and yellow indicates a speed of 1000 Mbps.

**Table2-453 GE SFP port LED description**

| LED | Status | Description |
|---|---|---|
| GE SFP port LED (LINK/ACT) | Flashing green | The SFP port is sending or receiving data. |
| | Green | A link is present on the SFP port. |
| | Off | No link is present on the SFP port. |

## Ports

**Table2-454 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| NIC-XP20L1 | 20-port 10GBASE-R/W Ethernet optical interface card | LC | 20 | 10 Gbps |
| | | | | 1000 Mbps |
| NIC-XP20L1A | 20-port 10GBASE-R/W Ethernet optical interface card A | LC | 20 | 10 Gbps |
| | | | | 1000 Mbps |
| NIC-XP20L1A-G | 20-port 10GBASE-R/W Ethernet optical interface card A | LC | 20 | 10 Gbps |
| | | | | 1000 Mbps |

## Technical specifications

**Table2-455 Technical specifications**

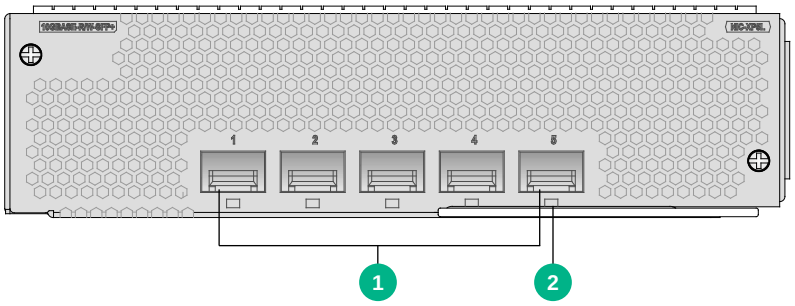
| Item | Description |
|---|---|
| Dimensions (H × W × D) | 47.5 × 179 × 118 mm (1.87 × 7.05 × 4.65 in) |
| Weight | • NIC-XP20L1: 1.00 kg (2.20 lb)<br>• NIC-XP20L1A, NIC-XP20L1A-G: 0.90 kg (1.98 lb) |
| Maximum power consumption | 60 W |
| Minimum power consumption | 50 W |

| Item | Description |
| --- | --- |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# NIC-XP5L

## View

**Figure2-109 NIC-XP5L view**




| | |
| --- | --- |
| (1) 10GBASE-R/W-SFP+ fiber ports (5 in total) | (2) SFP+ port LED. For the LED description, see Table2-456. |

## LEDs

**Table2-456 SFP+ port LED description**

| LED | Status | Description |
| --- | --- | --- |
| SFP+ port LED | Flashing | The port is sending or receiving data. |
| | Steady on | A link is present on the port. |
| | Off | No link is present on the port. |

**NOTE:**

You can identify the speed of an SFP+ port by observing the color of its LED. Green indicates a speed of 10 Gbps, and yellow indicates a speed of 100/1000 Mbps.

## Ports

**Table2-457 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
| --- | --- | --- | --- | --- |
| NIC-XP5L | 5-port 10GBASE-R/W Ethernet optical interface card | LC | 5 | 100 Mbps |
| | | | | 1000 Mbps |
| | | | | 10 Gbps |

## Technical specifications

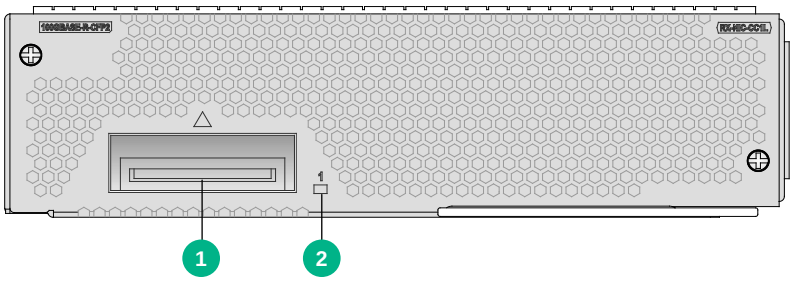
**Table2-458 Technical specifications**

| Item | Description |
| --- | --- |
| Dimensions (H × W × D) | 47.5 × 179 × 118 mm (1.87 × 7.05 × 4.65 in) |
| Weight | 0.60 kg (1.32 lb) |
| Maximum power consumption | 14.9 W |
| Minimum power consumption | 11 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# RX-NIC-CC1L

## View

**Figure2-110 RX-NIC-CC1L view**




| | |
| --- | --- |
| (1) 100GBASE-R-CFP2 fiber port (1 in total) | (2) CFP2 port LED. For the LED description, see Table2-459. |

## LEDs

**Table2-459 CFP2 port LED description**

| LED | Status | Description |
| --- | --- | --- |
| CFP2 port LED | Flashing | The CFP2 port is sending or receiving data at 100 Gbps. |
| | Steady on | A 100 Gbps link is present on the CFP2 port. |
| | Off | No link is present on the CFP2 port. |

## Ports

**Table2-460 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
| --- | --- | --- | --- | --- |
| RX-NIC-CC1L | 1-port 100G Ethernet optical interface card | LC | 1 | 100 Gbps |

## Technical specifications

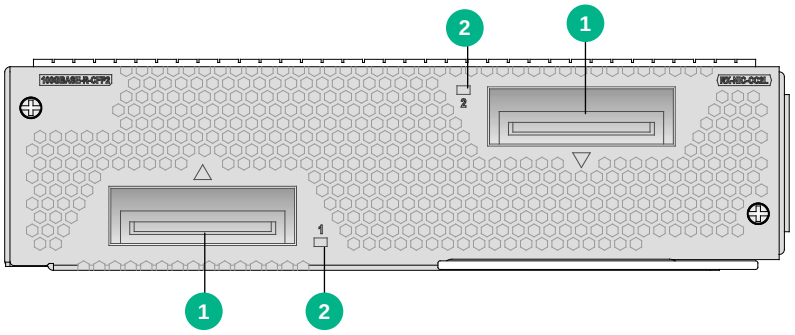
**Table2-461 Technical specifications**

| Item | Description |
| --- | --- |
| Dimensions (H × W × D) | 47.5 × 179 × 118 mm (1.87 × 7.05 × 4.65 in) |
| Weight | 0.60 kg (1.32 lb) |
| Maximum power consumption | 9.7 W |
| Minimum power consumption | 9.6 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# RX-NIC-CC2L

## View

**Figure2-111 RX-NIC-CC2L view**




| | |
| --- | --- |
| (1) 100GBASE-R-CFP2 fiber ports (2 in total) | (2) CFP2 port LED. For the LED description, see Table2-462. |

## LEDs

**Table2-462 CFP2 port LED description**

| LED | Status | Description |
| --- | --- | --- |
| CFP2 port LED | Flashing | The CFP2 port is sending or receiving data at 100 Gbps. |
| | Steady on | A 100 Gbps link is present on the CFP2 port. |
| | Off | No link is present on the CFP2 port. |

## Ports

**Table2-463 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
| --- | --- | --- | --- | --- |
| RX-NIC-CC2L | 2-port 100G Ethernet optical | LC | 2 | 100 Gbps |

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| | interface card | | | |

### Technical specifications

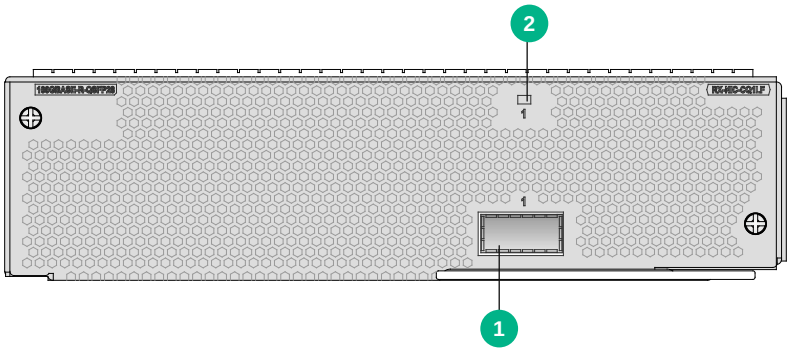
**Table2-464 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 47.5 × 179 × 118 mm (1.87 × 7.05 × 4.65 in) |
| Weight | 0.85 kg (1.87 lb) |
| Maximum power consumption | 21 W |
| Minimum power consumption | 19.2 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# RX-NIC-CQ1LF

### View

**Figure2-112 RX-NIC-CQ1LF view**




| | |
|---|---|
| (1) 100GBASE-R-QSFP28 port (1 in total) | (2) QSFP28 port LED. For the description, see Table2-465. |

### LEDs

**Table2-465 QSFP28 port LED description**

| LED | Status | Description |
|---|---|---|
| QSFP28 port LED | Flashing | The QSFP28 port is sending or receiving data at 100 Gbps. |
| | Steady on | A 100 Gbps link is present on the QSFP28 port. |
| | Off | No link is present on the QSFP28 port. |

**NOTE:**

You can identify the speed of a QSFP28 port by observing the color of its LED. Green indicates a speed of 100 Gbps, and yellow indicates a speed of 50 Gbps.

### Ports

**Table2-466 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| RX-NIC-CQ1LF | 1-port 100G flexible Ethernet optical interface card | LC | 1 | 100 Gbps |
| | | | | 50 Gbps |

### Technical specifications

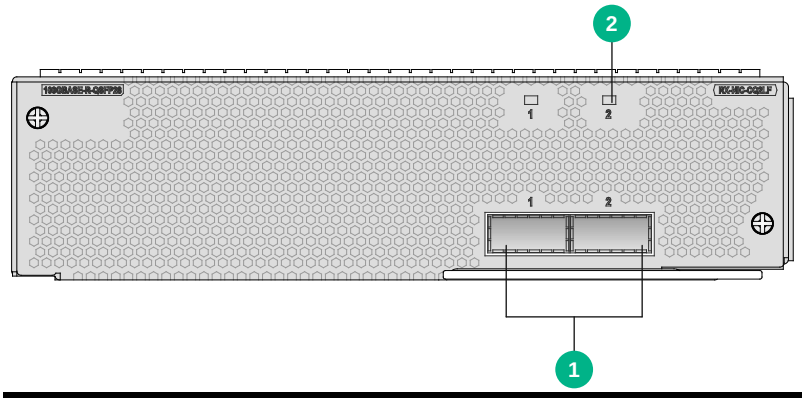
**Table2-467 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 47.5 × 179 × 118 mm (1.87 × 7.05 × 4.65 in) |
| Weight | 0.85 kg (1.87 lb) |
| Maximum power consumption | 53 W |
| Minimum power consumption | 35 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# RX-NIC-CQ2LF

### View

**Figure2-113 RX-NIC-CQ2LF view**




| | |
|---|---|
| (1) 100GBASE-R-QSFP28 fiber ports (2 in total). | (2) QSFP28 port LED. For the description, see Table2-468. |

### LEDs

**Table2-468 QSFP28 port LED description**

| LED | Status | Description |
|---|---|---|
| QSFP28 port LED | Flashing | The QSFP28 port is sending or receiving data at 100 Gbps. |
| | Steady on | A 100 Gbps link is present on the QSFP28 port. |
| | Off | No link is present on the QSFP28 port. |

**NOTE:**

You can identify the speed of a QSFP28 port by observing the color of its LED. Green indicates a speed of 100 Gbps, and yellow indicates a speed of 50 Gbps.

### Ports

**Table2-469 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| RX-NIC-CQ2LF | 2-port 100G flexible Ethernet optical interface card | LC | 2 | 100 Gbps |
| | | | | 50 Gbps |

### Technical specifications

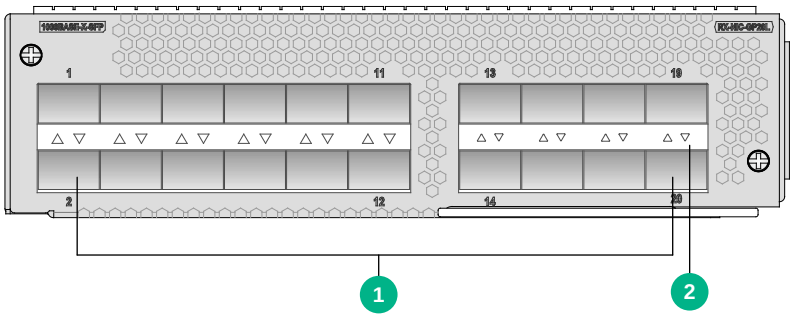
**Table2-470 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 47.5 × 179 × 118 mm (1.87 × 7.05 × 4.65 in) |
| Weight | 1.00 kg (2.20 lb) |
| Maximum power consumption | 61 W |
| Minimum power consumption | 38 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

## RX-NIC-GP20L

### View

**Figure2-114 RX-NIC-GP20L view**




| | |
|---|---|
| (1) 1000BASE-X-SFP fiber ports (20 in total) | (2) SFP port LED. For the LED description, see Table2-471. |

## LEDs

**Table2-471 GE SFP port LED description**

| LED | Status | Description |
|---|---|---|
| GE SFP port LED (LINK/ACT) | Flashing green | The SFP port is sending or receiving data. |
| | Green | A link is present on the SFP port. |
| | Off | No link is present on the SFP port. |

## Ports

**Table2-472 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| RX-NIC-GP20L | 20-port 1000BASE-X Ethernet optical interface card | LC | 20 | 100 Mbps |
| | | | | 1000 Mbps |

## Technical specifications

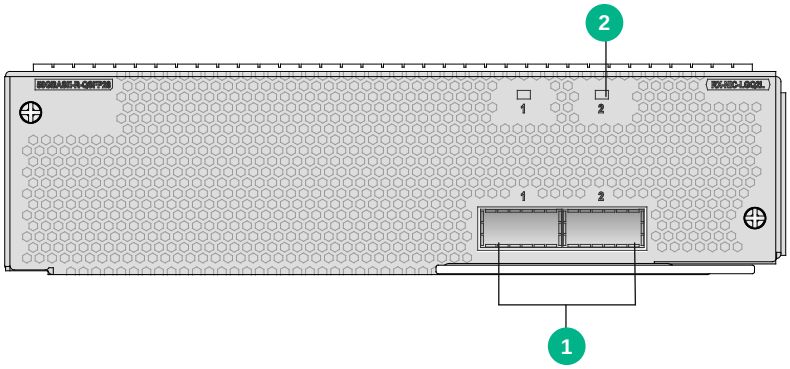
**Table2-473 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 47.5 × 179 × 118 mm (1.87 × 7.05 × 4.65 in) |
| Weight | 0.65 kg (1.43 lb) |
| Maximum power consumption | 13.8 W |
| Minimum power consumption | 12 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# RX-NIC-LGQ2L

## View

**Figure2-115 RX-NIC-LGQ2L view**




| | |
|---|---|
| (1) 50GBASE-R-QSFP28 fiber ports (2 in total) | (2) QSFP28 port LED. For the LED description, see Table2-474. |

## LEDs

**Table2-474 QSFP28 port LED description**

| LED | Status | Description |
|---|---|---|
| QSFP28 port LEDs | Flashing | The QSFP28 port is sending or receiving data at 100 Gbps. |
| | Steady on | A 100 Gbps link is present on the QSFP28 port. |
| | Off | No link is present on the QSFP28 port. |

## Ports

**Table2-475 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| RX-NIC-LGQ2L | 2-port 50G Ethernet optical interface card | LC | 2 | Standard Ethernet mode: 50 Gbps<br>Flexible Ethernet mode: 50 Gbps |

## Technical specifications

**Table2-476 Technical specifications**

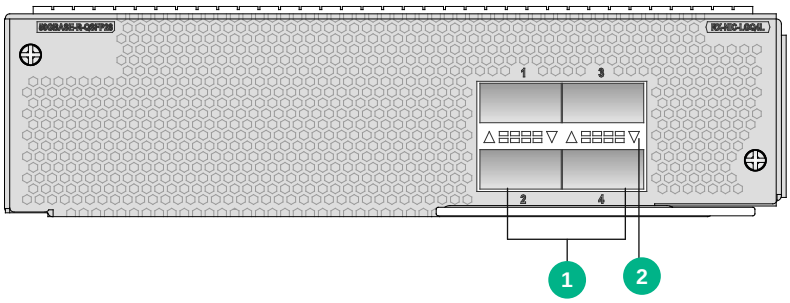
| Item | Description |
|---|---|
| Dimensions (H × W × D) | 47.5 × 179 × 118 mm (1.87 × 7.05 × 4.65 in) |
| Weight | 0.85 kg (1.87 lb) |
| Maximum power | 61 W |

| Item | Description |
| --- | --- |
| consumption | |
| Minimum power consumption | 38 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# RX-NIC-LGQ4L

## View

**Figure2-116 RX-NIC-LGQ4L view**




| | |
| --- | --- |
| (1) 50GBASE-R-QSFP28 fiber ports (4 in total) | (2) QSFP28 port LED. For the description, see Table2-477. |

## LEDs

**Table2-477 QSFP28 port LED description**

| LED | Status | Description |
| --- | --- | --- |
| QSFP28 port LED | Flashing | The QSFP28 port is sending or receiving data at 100 Gbps. |
| | Steady on | A 100 Gbps link is present on the QSFP28 port. |
| | Off | No link is present on the QSFP28 port. |

## Ports

**Table2-478 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
| --- | --- | --- | --- | --- |
| RX-NIC-LGQ4L | 4-port 50G Ethernet optical interface card | LC | 4 | Standard Ethernet mode: 50 Gbps<br>Flexible Ethernet mode: 50 Gbps |

## Technical specifications

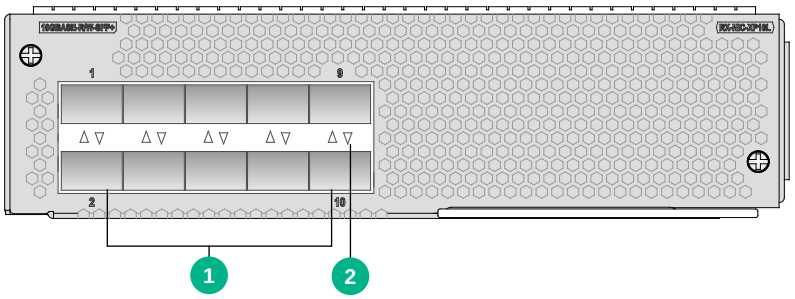
**Table2-479 Technical specifications**

| Item | Description |
| --- | --- |
| Dimensions (H × W × D) | 47.5 × 179 × 118 mm (1.87 × 7.05 × 4.65 in) |
| Weight | 0.90 kg (1.98 lb) |
| Maximum power consumption | 92 W |
| Minimum power consumption | 55 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# RX-NIC-XP10L

## View

**Figure2-117 RX-NIC-XP10L view**




| | |
| --- | --- |
| (1) 10GBASE-R/W-SFP+ fiber ports (10 in total) | (2) SFP+ port LED. For the LED description, see Table2-480. |

## LEDs

**Table2-480 SFP+ port LED description**

| LED | Status | Description |
| --- | --- | --- |
| SFP+ port LED | Flashing | The port is sending or receiving data. |
| | Steady on | A link is present on the port. |
| | Off | No link is present on the port. |

**NOTE:**

You can identify the speed of an SFP+ port by observing the color of its LED. Green indicates a speed of 10 Gbps, and yellow indicates a speed of 100/1000 Mbps.

## Ports

**Table2-481 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
| --- | --- | --- | --- | --- |

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| RX-NIC-XP10L | 10-port 10GBASE-R/W Ethernet optical interface card | LC | 10 | 100 Mbps |
| | | | | 1000 Mbps |
| | | | | 10 Gbps |

### Technical specifications

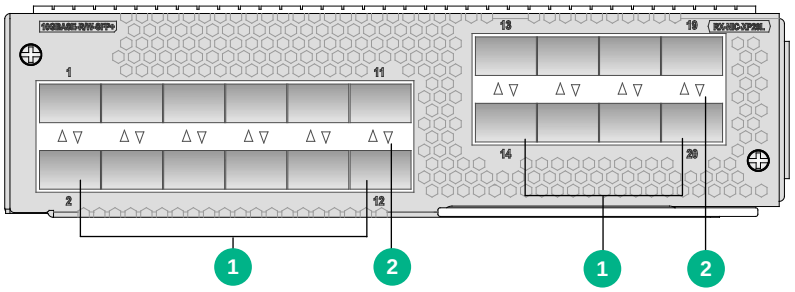
**Table2-482 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 47.5 × 179 × 118 mm (1.87 × 7.05 × 4.65 in) |
| Weight | 0.65 kg (1.43 lb) |
| Maximum power consumption | 27.4 W |
| Minimum power consumption | 26.9 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# RX-NIC-XP20L

### View

**Figure2-118 RX-NIC-XP20L view**




| | |
|---|---|
| (1) 10GBASE-R/W-SFP+ fiber ports (20 in total) | (2) SFP+ port LED. For the LED description, see Table2-483. |

### LEDs

**Table2-483 SFP+ port LED description**

| LED | Status | Description |
|---|---|---|
| SFP+ port LED | Flashing | The port is sending or receiving data. |
| | Steady on | A link is present on the port. |
| | Off | No link is present on the port. |

**NOTE:**

You can identify the speed of an SFP+ port by observing the color of its LED. Green indicates a speed of 10 Gbps, and yellow indicates a speed of 100/1000 Mbps.

### Ports

**Table2-484 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| RX-NIC-XP20L | 20-port 10GBASE-R/W Ethernet optical interface card | LC | 20 | 100 Mbps |
| | | | | 1000 Mbps |
| | | | | 10 Gbps |

### Technical specifications

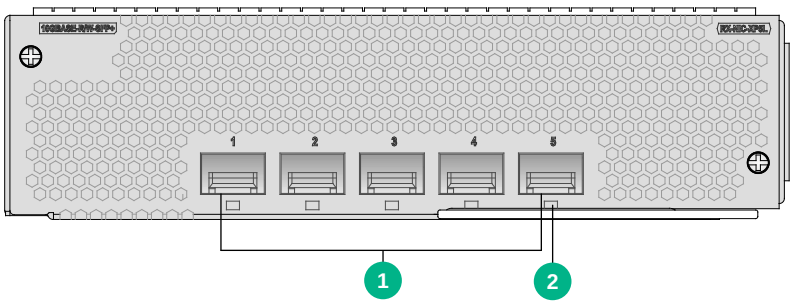
**Table2-485 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 47.5 × 179 × 118 mm (1.87 × 7.05 × 4.65 in) |
| Weight | 1.00 kg (2.20 lb) |
| Maximum power consumption | 58 W |
| Minimum power consumption | 39 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# RX-NIC-XP5L

### View

**Figure2-119 RX-NIC-XP5L view**




| | |
|---|---|
| (1) 10GBASE-R/W-SFP+ fiber ports (5 in total) | (2) SFP+ port LED. For the LED description, see Table2-486. |

### LEDs

**Table2-486 SFP+ port LED description**

| LED | Status | Description |
| --- | --- | --- |
| SFP+ port LED | Flashing | The port is sending or receiving data. |
| | Steady on | A link is present on the port. |
| | Off | No link is present on the port. |

**NOTE:**

You can identify the speed of an SFP+ port by observing the color of its LED. Green indicates a speed of 10 Gbps, and yellow indicates a speed of 100/1000 Mbps.

### Ports

**Table2-487 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
| --- | --- | --- | --- | --- |
| RX-NIC-XP5L | 5-port 10GBASE-R/W Ethernet optical interface card | LC | 5 | 100 Mbps |
| | | | | 1000 Mbps |
| | | | | 10 Gbps |

### Technical specifications

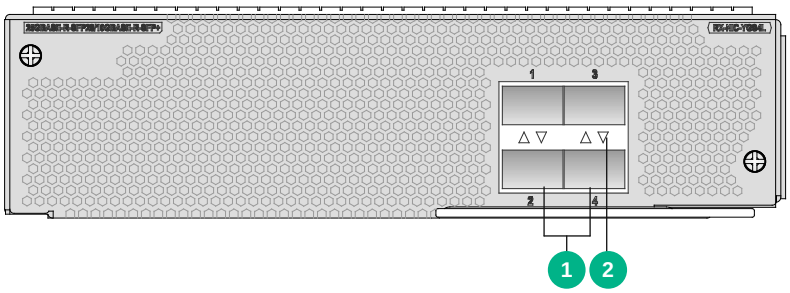
**Table2-488 Technical specifications**

| Item | Description |
| --- | --- |
| Dimensions (H × W × D) | 47.5 × 179 × 118 mm (1.87 × 7.05 × 4.65 in) |
| Weight | 0.60 kg (1.32 lb) |
| Maximum power consumption | 14.9 W |
| Minimum power consumption | 11 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# RX-NIC-YGS4L

### View

**Figure2-120 RX-NIC-YGS4L view**




| | |
|---|---|
| (1) 10GBASE-R-SFP+ ports or 25GBASE-R-SFP28 ports (4 in total) | (2) SFP28 port LED. For the LED description, see Table2-489. |

## LEDs

**Table2-489 SFP28 port LED description**

| LED | Status | Description |
|---|---|---|
| SFP28 port LED | Flashing | The port is sending or receiving data. |
| | Steady on | A link is present on the port. |
| | Off | No link is present on the port. |

**NOTE:**

You can identify the speed of a QSFP28 port by observing the color of its LED. Green indicates a speed of 25 Gbps, and yellow indicates a speed of 10 Gbps.

## Ports

**Table2-490 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| RX-NIC-YGS4L | 4-port 25G Ethernet optical interface card | LC | 4 | 10 Gbps |
| | | | | 25 Gbps |

## Technical specifications

**Table2-491 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 47.5 × 179 × 118 mm (1.87 × 7.05 × 4.65 in) |
| Weight | 0.80 kg (1.76 lb) |
| Maximum power consumption | 38 W |
| Minimum power consumption | 25 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# PIC subcards

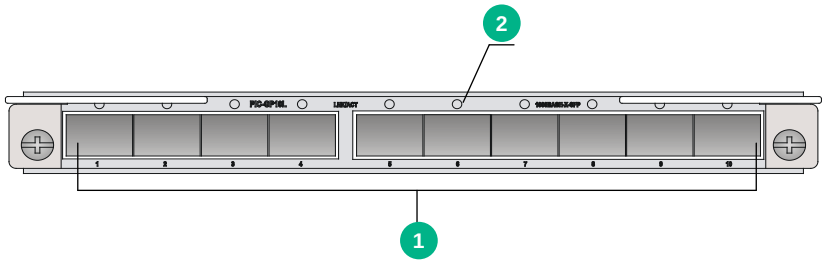
**IMPORTANT:**

- To use a PIC interface card, you must install it on a CMPE, SPE, or CSPEX base card. You cannot install it directly on the router.
- For the compatibility between PIC interface cards and CMPE, SPE, or CSPEX base cards, see the compatibility information for the base cards.

# PIC-GP10L

## View

**Figure2-121 PIC-GP10L view**




| | |
|---|---|
| (1) 1000BASE-X-SFP Ethernet fiber ports (10 in total) | (2) SFP port LED. For the LED description, see Table2-492. |

## LEDs

**Table2-492 GE SFP port LED description**

| LED | Status | Description |
|---|---|---|
| GE SFP port LED (LINK/ACT) | Flashing green | The SFP port is sending or receiving data. |
| | Green | A link is present on the SFP port. |
| | Off | No link is present on the SFP port. |

## Ports

**Table2-493 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| PIC-GP10L | 10-port 1000BASE-X optical interface card (SFP, LC) | LC | 10 | 100 Mbps |
| | | | | 1000 Mbps |

## Technical specifications

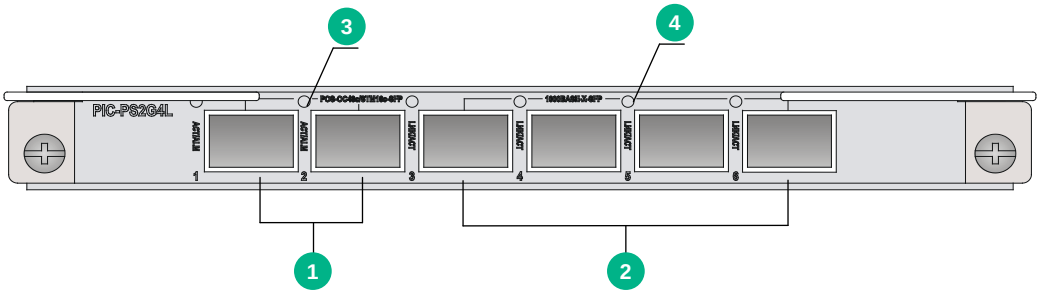
**Table2-494 Technical specifications**

| Item | Description |
| --- | --- |
| Dimensions (H × W × D) | 18 × 171 × 157 mm (0.71 × 6.73 × 6.18 in) |
| Weight | 0.45 kg (0.99 lb) |
| Maximum power consumption | 21 W |
| Minimum power consumption | 9.5 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# PIC-PS2G4L

## View

**Figure2-122 PIC-PS2G4L view**




| | |
| --- | --- |
| (1) OC48c/STM16c-SFP POS fiber ports (2 in total) | (2) 1000BASE-X-SFP GE fiber ports (4 in total) |
| (3) POS port LED. For the LED description, see Table2-495. | (4) GE port LED. For the LED description, see Table2-496. |

## LEDs

**Table2-495 WAN port LED description**

| LED | Status | Description |
| --- | --- | --- |
| WAN port LED (ACT/ALM) | Green | The port is up and is receiving or sending data correctly. |
| | Red | An alarm has occurred. |
| | Off | The port is down. |

**Table2-496 GE SFP port LED description**

| LED | Status | Description |
| --- | --- | --- |
| GE SFP port LED (LINK/ACT) | Flashing green | The SFP port is sending or receiving data. |
| | Green | A link is present on the SFP port. |
| | Off | No link is present on the SFP port. |

### Ports

**Table2-497 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| PIC-PS2G4L | 2-port OC-48c/STM-16c POS optical interface (SFP, LC) + 4-port 1000BASE-X optical interface card (SFP, LC) | LC | 2 | 2.5 Gbps (OC-48/STM-16) |
| | | | 4 | 100 Mbps |
| | | | | 1000 Mbps |

### Technical specifications

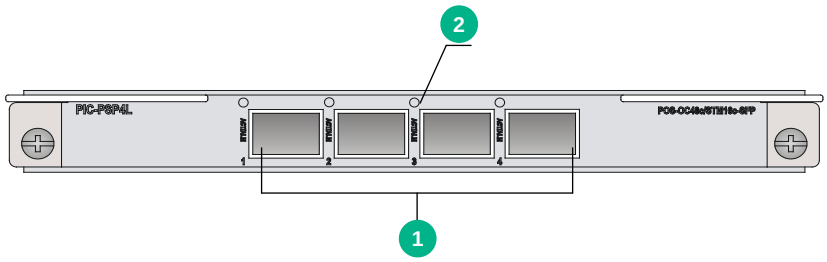
**Table2-498 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 18 × 171 × 157 mm (0.71 × 6.73 × 6.18 in) |
| Weight | 0.40 kg (0.88 lb) |
| Maximum power consumption | 16 W |
| Minimum power consumption | 9.3 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# PIC-PSP4L

### View

**Figure2-123 PIC-PSP4L view**




| | |
|---|---|
| (1) OC48c/STM16c-SFP POS fiber ports (4 in total) | (2) Port LED. For the LED description, see Table2-499. |

### LEDs

**Table2-499 WAN port LED description**

| LED | Status | Description |
|---|---|---|
| WAN port LED (ACT/ALM) | Green | The port is up and is receiving or sending data correctly. |
| | Red | An alarm has occurred. |

| LED | Status | Description |
| --- | --- | --- |
| | Off | The port is down. |

### Ports

**Table2-500 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
| --- | --- | --- | --- | --- |
| PIC-PSP4L | 4-port OC-48c/STM-16c POS optical interface card (SFP, LC) | LC | 4 | 2.5 Gbps (OC-48/STM-16) |

### Technical specifications

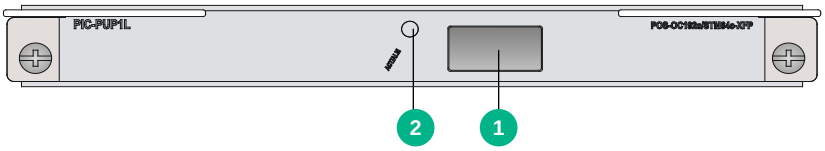
**Table2-501 Technical specifications**

| Item | Description |
| --- | --- |
| Dimensions (H × W × D) | 18 × 171 × 157 mm (0.71 × 6.73 × 6.18 in) |
| Weight | 0.40 kg (0.88 lb) |
| Maximum power consumption | 18 W |
| Minimum power consumption | 9.7 W |
| Operating temperature | 0°C to 45°C (32 °F to 113 °F) |

# PIC-PUP1L

### View

**Figure2-124 PIC-PUP1L view**




| | |
| --- | --- |
| (1) OC192c/STM64c-XFP POS fiber port (1 in total) | (2) Port LED. For the LED description, see Table2-502. |

### LEDs

**Table2-502 WAN port LED description**

| LED | Status | Description |
| --- | --- | --- |
| WAN port LED (ACT/ALM) | Green | The port is up and is receiving or sending data correctly. |
| | Red | An alarm has occurred. |

| LED | Status | Description |
|---|---|---|
| | Off | The port is down. |

### Ports

**Table2-503 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| PIC-PUP1L | 1-port OC-192c/STM-64c POS optical interface card (XFP, LC) | LC | 1 | 10 Gbps (OC-192/STM-64) |

### Technical specifications

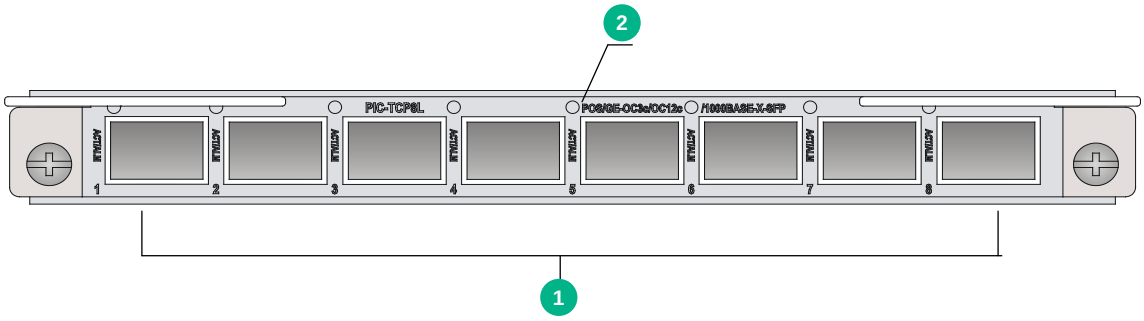
**Table2-504 PIC-PUP1L**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 18 × 171 × 157 mm (0.71 × 6.73 × 6.18 in) |
| Weight | 0.50 kg (1.10 lb) |
| Maximum power consumption | 19 W |
| Minimum power consumption | 14.3 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# PIC-TCP8L

### View

**Figure2-125 PIC-TCP8L view**




| | |
|---|---|
| (1) OC3c/OC12c/1000BASE-X-SFP POS/GE fiber ports (8 in total) | (2) Port LED. For the LED description, see Table2-505. |

### LEDs

**Table2-505 WAN port LED description**

| LED | Status | Description |
|---|---|---|
| WAN port LED (ACT/ALM) | Green | The port is up and is receiving or sending data correctly. |
| | Red | An alarm has occurred. |
| | Off | The port is down. |

### Ports

**Table2-506 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| PIC-TCP8L | 8-port OC-3c/OC-12c POS/GE optical interface card (SFP, LC) | LC | 8 | 100 Mbps |
| | | | | 155 Mbps (OC-3/STM-1) |
| | | | | 622 Mbps (OC-12/STM-4) |
| | | | | 1000 Mbps |

### Technical specifications

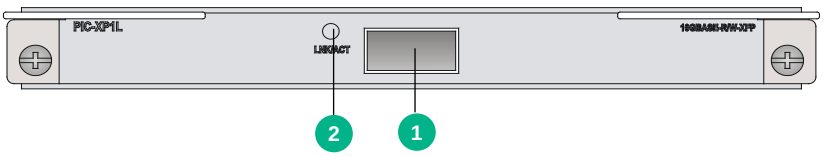
**Table2-507 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 18 × 171 × 157 mm (0.71 × 6.73 × 6.18 in) |
| Weight | 0.40 kg (0.88 lb) |
| Maximum power consumption | 17 W |
| Minimum power consumption | 9.7 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# PIC-XP1L

### View

**Figure2-126 PIC-XP1L view**




| | |
|---|---|
| (1) 10GBASE-R/W-XFP Ethernet fiber port (1 in total) | (2) XFP port LED. For the LED description, see Table2-508. |

### LEDs

**Table2-508 10GE XFP port LED description**

| LED | Status | Description |
|---|---|---|
| 10GE XFP port LED (LINK/ACT) | Flashing green | The XFP port is sending or receiving data. |
| | Green | A link is present on the XFP port. |
| | Off | No link is present on the XFP port. |

### Ports

**Table2-509 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| PIC-XP1L | 1-port 10GBASE-R/W Ethernet optical interface card (XFP, LC) | LC | 1 | 10 Gbps |

### Technical specifications

**Table2-510 Technical specifications**

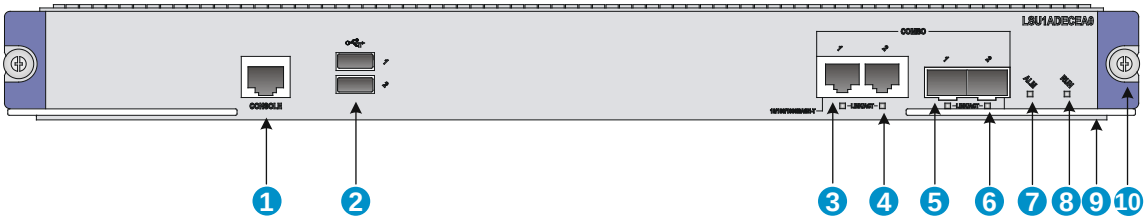
| Item | Description |
|---|---|
| Dimensions (H × W × D) | 18 × 171 × 157 mm (0.71 × 6.73 × 6.18 in) |
| Weight | 0.45 kg (0.99 lb) |
| Maximum power consumption | 23.7 W |
| Minimum power consumption | 12.5 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# OAA modules

## LSU1ADECEA0

### View

**Figure2-127 LSU1ADECEA0 view**



| | |
|---|---|
| (1) Console port (CONSOLE) | (2) USB port (reserved for future use) |
| (3) Combo copper port (10/100/1000BASE-T) | (4) Combo copper port LED (LINK/ACT) |
| (5) Combo fiber port (1000BASE-X) | (6) Combo fiber port LED (LINK/ACT) |
| (7) Alarm LED (ALM) | (8) System LED (RUN) |
| (9) Ejector lever | (10) Captive screw |

## LEDs

**Table2-511 LED description**

| LED | Mark | Status | Description |
|---|---|---|---|
| Alarm LED | ALM | Off | The system is operating correctly. |
| | | Steady red | A critical fault has occurred to the system and the fault must be handled immediately. |
| System LED | RUN | Off | No power is input or the service module has failed. |
| | | Steady green | The system is running incorrectly. |
| | | Slow flashing green (1 Hz) | The system is operating correctly. |
| | | Fast flashing green (8 Hz) | The system is loading software or has not started. |
| Combo interface LED | LINK/ACT | Off | No link is present. |
| | | Steady green | A link is present. |
| | | Flashing green | The interface is sending or receiving data. |

## Ports

**Table2-512 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| LSU1ADECEA0 | Application delivery service module | RJ-45 | 2 | 10/100/1000 Mbps |
| | | LC | 2 | 1000 Mbps |

## Technical specifications

**Table2-513 Technical specifications**

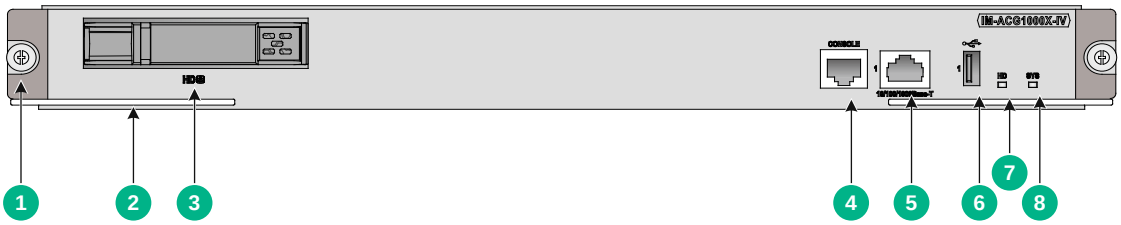
| Item | Description |
|---|---|
| Dimensions (H × W × D) | 40 × 399 × 352 mm (1.57 × 15.71 × 13.86 in) |
| Weight | 3.90 kg (8.60 lb) |
| Maximum power consumption | 150 W |
| Minimum power consumption | 109 W |
| Operating | 0°C to 45°C (32°F to 113°F) |

| Item | Description |
| --- | --- |
| temperature | |

# IM-ACG1000X-IV

## View

**Figure2-128 IM-ACG1000X-IV view**




| | |
| --- | --- |
| (1) Captive screw | (2) Ejector lever |
| (3) Drive slot | (4) Console port (CONSOLE) |
| (5) GE copper port (10/100/1000BASE-T) | (6) USB port |
| (7) Drive LED (HD) | (8) System LED (SYS) |

## LEDs

**Table2-514 LED description**

| LED | Mark | Status | Description |
| --- | --- | --- | --- |
| Drive LED | HD | Fast flashing green | Data is being read from or written to the drive. |
| | | Steady green | The drive is running correctly. |
| | | Off | The drive is absent. |
| System LED | SYS | Off | No power is input or the service module has failed. |
| | | Slow flashing green | The system is operating correctly. |
| | | Fast flashing green | The system is loading software. |

## Ports

**Table2-515 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
| --- | --- | --- | --- | --- |
| IM-ACG1000X-IV | Application control gateway module | RJ45 | 1 | 10/100/1000 Mbps |

## Technical specifications

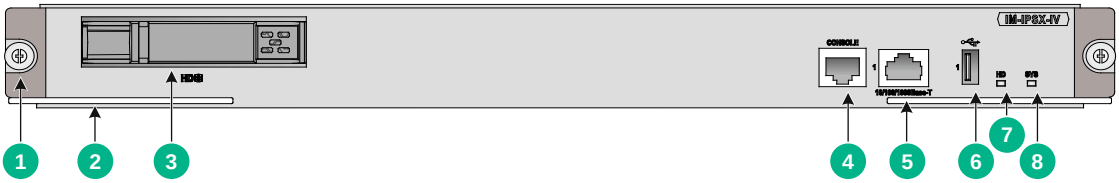
**Table2-516 Technical specifications**

| Item | Description |
| --- | --- |
| Dimensions (H × W × D) | 40 × 399 × 352 mm (1.57 × 15.71 × 13.86 in) |
| Weight | 4.80 kg (10.60 lb) |
| Maximum power consumption | 235 W |
| Minimum power consumption | 175 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# IM-IPSX-IV

## View

**Figure2-129 IM-IPSX-IV view**




| | |
| --- | --- |
| (1) Captive screw | (2) Ejector lever |
| (3) Drive slot | (4) Console port (CONSOLE) |
| (5) GE copper port (10/100/1000BASE-T) | (6) USB port |
| (7) Drive LED (HD) | (8) System LED (SYS) |

## LEDs

**Figure2-130 LED description**

| LED | Mark | Status | Description |
| --- | --- | --- | --- |
| Drive LED | HD | Fast flashing green | Data is being read from or written to the drive. |
| | | Steady green | The drive is running correctly. |
| | | Off | The drive is absent. |
| System LED | SYS | Off | No power is input or the service module has failed. |
| | | Slow flashing green | The system is operating correctly. |
| | | Fast flashing green | The system is loading software. |

## Ports

**Table2-517 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| IM-IPSX-IV | Intrusion prevention system module | RJ45 | 1 | 10/100/1000 Mbps |

### Technical specifications

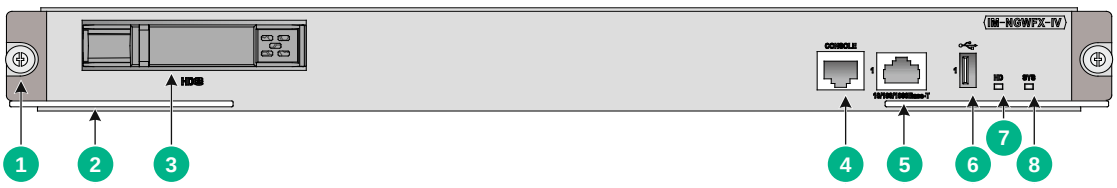
**Table2-518 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 40 × 399 × 352 mm (1.57 × 15.71 × 13.86 in) |
| Weight | 4.80 kg (10.58 lb) |
| Maximum power consumption | 235 W |
| Minimum power consumption | 175 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# IM-NGFWX-IV

### View

**Figure2-131 IM-NGFWX-IV view**




| | |
|---|---|
| (1) Captive screw | (2) Ejector lever |
| (3) Drive slot | (4) Console port (CONSOLE) |
| (5) GE copper port (10/100/1000BASE-T) | (6) USB port |
| (7) Drive LED (HD) | (8) System LED (SYS) |

### LEDs

**Table2-519 LED description**

| LED | Mark | Status | Description |
|---|---|---|---|
| Drive LED | HD | Fast flashing green | Data is being read from or written to the drive. |
| | | Steady green | The drive is running correctly. |
| | | Off | The drive is absent. |
| System LED | SYS | Off | No power is input or the service module has failed. |

| LED | Mark | Status | Description |
|---|---|---|---|
| | | Slow flashing green | The system is operating correctly. |
| | | Fast flashing green | The system is loading software. |

### Ports

**Table2-520 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| IM-NGFWX-IV | Firewall module | RJ45 | 1 | 10/100/1000 Mbps |

### Technical specifications

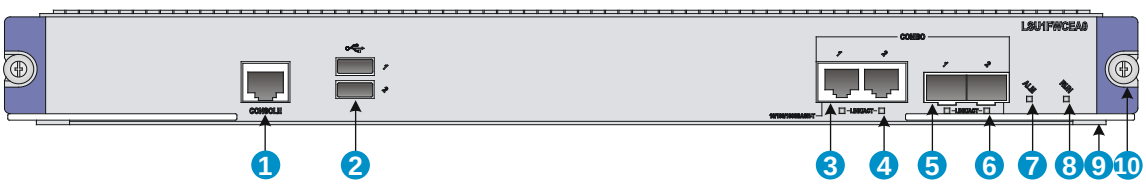
**Table2-521 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 40 × 399 × 352 mm (1.57 × 15.71 × 13.86 in) |
| Weight | 4.80 kg (10.58 lb) |
| Maximum power consumption | 235 W |
| Minimum power consumption | 175 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# LSU1FWCEA0

### View

**Figure2-132 LSU1FWCEA0 view**




| | |
|---|---|
| (1) Console port (CONSOLE) | (2) USB port (reserved for future use) |
| (3) Combo copper port (10/100/1000BASE-T) | (4) Combo copper port LED (LINK/ACT) |
| (5) Combo fiber port (1000BASE-X) | (6) Combo fiber port LED (LINK/ACT) |
| (7) Alarm LED (ALM) | (8) System LED (RUN) |
| (9) Ejector lever | (10) Captive screw |

### LEDs

**Table2-522 LED description**

| LED | Mark | Status | Description |
|---|---|---|---|
| Alarm LED | ALM | Off | The system is operating correctly. |
| | | Steady red | A critical fault has occurred to the system and the fault must be handled immediately. |
| System LED | RUN | Off | No power is input or the service module has failed. |
| | | Steady green | The system is running incorrectly. |
| | | Slow flashing green (1 Hz) | The system is operating correctly. |
| | | Fast flashing green (8 Hz) | The system is loading software or has not started. |
| Combo interface LED | LINK/ACT | Off | No link is present. |
| | | Steady green | A link is present. |
| | | Flashing green | The interface is sending or receiving data. |

## Ports

**Table2-523 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| LSU1FWCEA0 | Firewall module | RJ45 | 2 | 10/100/1000 Mbps |
| | | LC | 2 | 1000 Mbps |

## Technical specifications

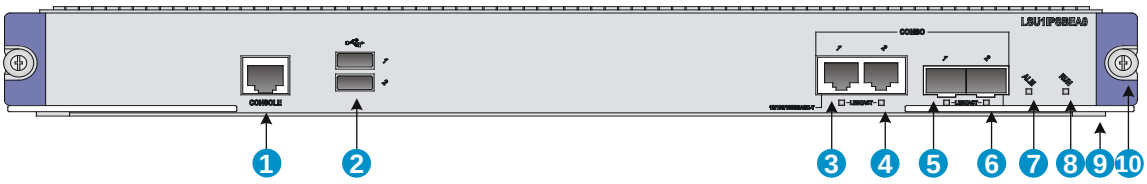
**Table2-524 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 40 × 399 × 352 mm (1.57 × 15.71 × 13.86 in) |
| Weight | 3.90 kg (8.60 lb) |
| Maximum power consumption | 150 W |
| Minimum power consumption | 109 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# LSU1IPSBEA0

## View

**Figure2-133 LSU1IPSBEA0 view**




| | |
|---|---|
| (1) Console port (CONSOLE) | (2) USB port (Control power supply of the external PFC power fail safeguard module) |
| (3) Combo copper port (10/100/1000BASE-T) | (4) Combo copper port LED (LINK/ACT) |
| (5) Combo fiber port (1000BASE-X) | (6) Combo fiber port LED (LINK/ACT) |
| (7) Alarm LED (ALM) | (8) System LED (RUN) |
| (9) Ejector lever | (10) Captive screw |

## LEDs

**Table2-525 LED description**

| LED | Mark | Status | Description |
|---|---|---|---|
| Alarm LED | ALM | Off | The system is operating correctly. |
| | | Steady red | A critical fault has occurred to the system and the fault must be handled immediately. |
| System LED | RUN | Off | No power is input or the service module has failed. |
| | | Steady green | The system is running incorrectly. |
| | | Slow flashing green (1 Hz) | The system is operating correctly. |
| | | Fast flashing green (8 Hz) | The system is loading software or has not started. |
| Combo interface LED | LINK/ACT | Off | No link is present. |
| | | Steady green | A link is present. |
| | | Flashing green | The interface is sending or receiving data. |

## Ports

**Table2-526 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| LSU1IPSBEA0 | Intrusion prevention system module | RJ45 | 2 | 10/100/1000 Mbps |
| | | LC | 2 | 1000 Mbps |

## Technical specifications

**Table2-527 Technical specifications**

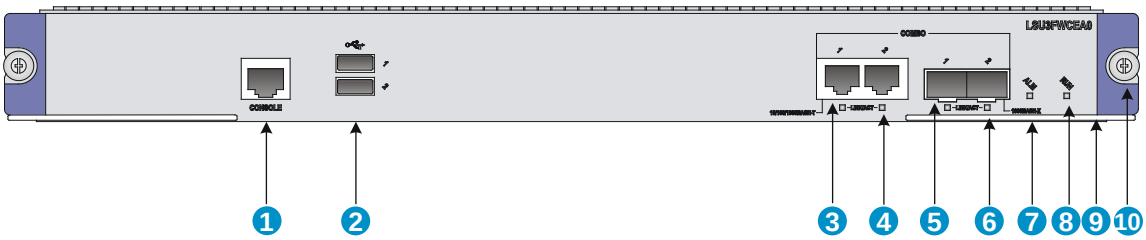
| Item | Description |
|---|---|

| Item | Description |
| --- | --- |
| Dimensions (H × W × D) | 40 × 399 × 352 mm (1.57 × 15.71 × 13.86 in) |
| Weight | 3.90 kg (8.60 lb) |
| Maximum power consumption | 150 W |
| Minimum power consumption | 109 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# LSU3FWCEA0

## View

**Figure2-134 LSU3FWCEA0 view**




| | |
| --- | --- |
| (1) Console port (CONSOLE) | (2) USB port (reserved for future use) |
| (3) Combo copper port (10/100/1000BASE-T) | (4) Combo copper port LED (LINK/ACT) |
| (5) Combo fiber port (1000BASE-X) | (6) Combo fiber port LED (LINK/ACT) |
| (7) Alarm LED (ALM) | (8) System LED (RUN) |
| (9) Ejector lever | (10) Captive screw |

## LEDs

**Table2-528 LED description**

| LED | Mark | Status | Description |
| --- | --- | --- | --- |
| Alarm LED | ALM | Off | The system is operating correctly. |
| | | Steady red | A critical fault has occurred to the system and the fault must be handled immediately. |
| System LED | RUN | Off | No power is input or the service module has failed. |
| | | Steady green | The system is running incorrectly. |
| | | Slow flashing green (1 Hz) | The system is operating correctly. |
| | | Fast flashing green (8 Hz) | The system is loading software or has not started. |
| Combo interface LED | LINK/ACT | Off | No link is present. |
| | | Steady green | A link is present. |

| LED | Mark | Status | Description |
|---|---|---|---|
| | | Flashing green | The interface is sending or receiving data. |

### Ports

**Table2-529 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| LSU3FWCEA0 | Firewall module | RJ-45 | 2 | 10/100/1000 Mbps |
| | | LC | 2 | 1000 Mbps |

### Technical specifications

**Table2-530 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 40 × 399 × 352 mm (1.57 × 15.71 × 13.86 in) |
| Weight | 3.90 kg (8.60 lb) |
| Maximum power consumption | 150 W |
| Minimum power consumption | 109 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# Configuration restrictions and guidelines

For adequate ventilation and cooling, install the IM-NGFWX-IV, IM-IPSX-IV, and IM-ACG1000X-IV cards in the following slots only when the other slots are not available.

- **CR16010-F router**—Slots 0, 8 and 9.
- **CR16014-F router**—Slots 0 and 13.

# Compatibility information

**Table2-531 Compatibility matrix between OAA cards and routers**

| Card model | CR16006-F, CR16010-F, CR16014-F | CR16010H-F (with five fabric modules), CR16018-F (with five fabric modules) | CR16010H-F (with four fabric modules), CR16018-F (with four fabric modules) | CR16010H-FA, CR16018-FA | CR16003E-F, CR16005E-F, CR16010E-F |
|---|---|---|---|---|---|
| IM-NGFWX-IV | Supported | Supported | Not supported | Not supported | Supported |

| Card model | CR16006-F, CR16010-F, CR16014-F | CR16010H-F (with five fabric modules), CR16018-F (with five fabric modules) | CR16010H-F (with four fabric modules), CR16018-F (with four fabric modules) | CR16010H-FA, CR16018-FA | CR16003E-F, CR16005E-F, CR16010E-F |
|---|---|---|---|---|---|
| LSU1FWCEA0 | Supported | Not supported | Not supported | Not supported | Not supported |
| LSU3FWCEA0 | Supported | Not supported | Not supported | Not supported | Not supported |
| IM-IPSX-IV | Supported | Supported | Not supported | Not supported | Not supported |
| LSU1IPSBEA0 | Supported | Not supported | Not supported | Not supported | Not supported |
| IM-ACG1000X-IV | Supported | Supported | Not supported | Not supported | Not supported |
| LSU1ADECEA0 | Supported | Not supported | Not supported | Not supported | Not supported |

# IM modules (Universal line processing unit)

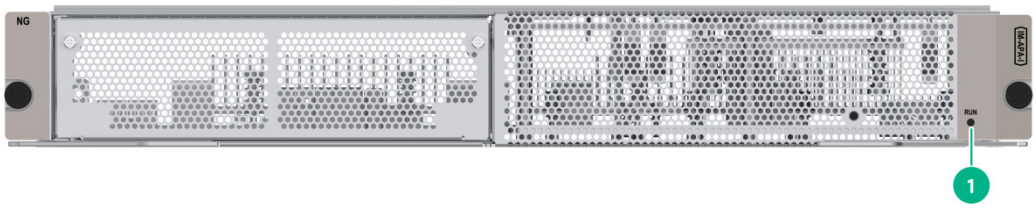
## IM-APA-I

**NOTE:**

The IM-APA-I provides one subcard slot. You can use it with an IM-SP-B subcard for double iBRAS packet processing rate.

### View

**Figure2-135 IM-APA-I view**




(1) Card status LED. For the LED description, see Table2-532.

### LED

**Table2-532 Card status LED description**

| LED | Status | Description |
|---|---|---|
| RUN (Green) | Steady on | The card is faulty. |
| | Off | The card is faulty or is not in position. |
| | Flashing (once per second) | The card is operating correctly. |
| | Fast flashing | The card is starting up. If the LED keeps fast flashing, card |

| LED | Status | Description |
| --- | --- | --- |
| | | registration has failed. |

### Ports

**Table2-533 Port specifications**

| Card model | Description |
| --- | --- |
| IM-APA-I | iBRAS application-aware line processing unit |

### Technical specifications

**Table2-534 Technical specifications**

| Item | Description |
| --- | --- |
| Dimensions (H × W × D) | 52.5 × 399 × 352 mm (2.07 × 15.71 × 13.86 in) |
| Weight | 3.12 kg (6.88 lb) |
| Maximum power consumption | 400 W |
| Power consumption (with typical configuration) | 260 W |
| Minimum power consumption | 248 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# IM-APA-I3

**NOTE:**

The IM-APA-I3 provides one subcard slot. You can use it with an IM-SP-B3 subcard for double iBRAS packet processing rate.

### View

**Figure2-136 IM-APA-I3 view**


(1) Card status LED. For the LED description, see Table2-535.

### LED

**Table2-535 Card status LED description**

| LED | Status | Description |
|---|---|---|
| RUN (Green) | Steady on | The card is faulty. |
| | Off | The card is faulty or is not in position. |
| | Flashing (once per second) | The card is operating correctly. |
| | Fast flashing (four times per second) | The card is starting up. If the LED keeps fast flashing, card registration has failed. |

### Ports

**Table2-536 Port specifications**

| Card model | Description |
|---|---|
| IM-APA-I3 | iBRAS application-aware line processing unit |

### Technical specifications

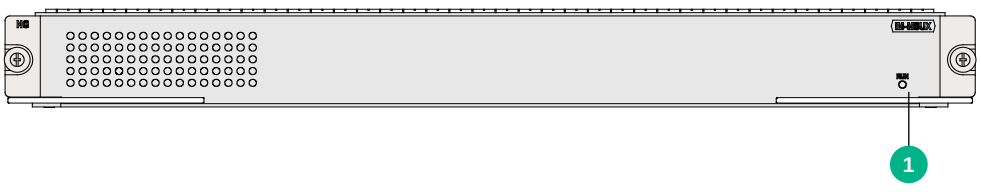
**Table2-537 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 52.5 × 399 × 361 mm (2.07 × 15.71 × 14.21 in) |
| Weight | 8.93 kg (19.69 lb) |
| Maximum power consumption | 516 W |
| Power consumption (with typical configuration) | 274 W |
| Minimum power consumption | 265 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# IM-MSUX (1 U)

### View

**Figure2-137 IM-MSUX (1 U) view**




(1) Card status LED. For the LED description, see Table2-538.

### LED

**Table2-538 Card status LED description**

| LED | Status | Description |
| --- | --- | --- |
| RUN (Green) | Steady on | The card is faulty. |
| | Off | The card is faulty or is not in position. |
| | Flashing (once per second) | The card is operating correctly. |
| | Fast flashing | The card is starting up. If the LED keeps fast flashing, card registration has failed. |

### Ports

**Table2-539 Port specifications**

| Card model | Description |
| --- | --- |
| IM-MSUX (1 U) | Universal line processing unit |

### Technical specifications

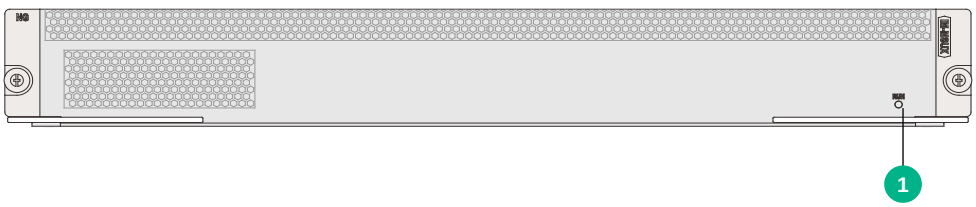
**Table2-540 Technical specifications**

| Item | Description |
| --- | --- |
| Dimensions (H × W × D) | 40 × 399 × 352 mm (1.57 × 15.71 × 13.86 in) |
| Weight | 4.95 kg (10.91 lb) |
| Maximum power consumption | 186 W |
| Power consumption (with typical configuration) | 175 W |
| Minimum power consumption | 158.2 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# IM-MSUX (1.2 U)

### View

**Figure2-138 IM-MSUX (1.2 U) view**




(1) Card status LED. For the LED description, see Table2-541.

### LEDs

**Table2-541 Card status LED description**

| LED | Status | Description |
|---|---|---|
| RUN (Green) | Steady on | The card is faulty. |
| | Off | The card is faulty or is not in position. |
| | Flashing (once per second) | The card is operating correctly. |
| | Fast flashing | The card is starting up. If the LED keeps fast flashing, card registration has failed. |

### Ports

**Table2-542 Port specifications**

| Card model | Description |
|---|---|
| IM-MSUX (1.2 U) | Universal line processing unit |

### Technical specifications

**Table2-543 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 52.5 × 399 × 352 mm (2.07 × 15.71 × 13.86 in) |
| Weight | 4.85 kg (10.69 lb) |
| Maximum power consumption | 186 W |
| Power consumption (with typical configuration) | 175 W |
| Minimum power consumption | 158.2 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

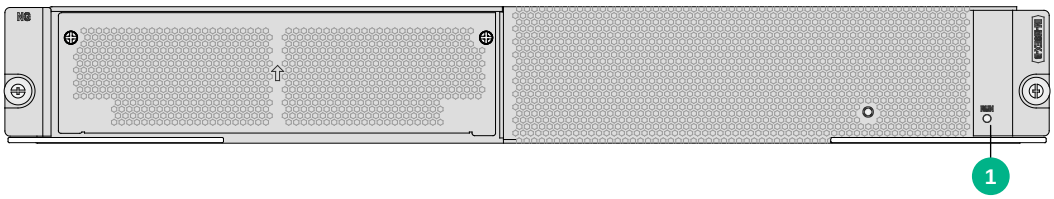
## IM-MSEX-B

**NOTE:**

The IM-MSEX-B provides one subcard slot. You can use it without a subcard, or use it with an IM-SP-B subcard for double CGN packet processing rate.

### View

**Figure2-139 IM-MSEX-B view**




(1) Card status LED. For the LED description, see Table2-544.

## LEDs

**Table2-544 Card status LED description**

| LED | Status | Description |
|---|---|---|
| RUN (Green) | Steady on | The card is faulty. |
| | Off | The card is faulty or is not in position. |
| | Flashing (once per second) | The card is operating correctly. |
| | Fast flashing | The card is starting up. If the LED keeps fast flashing, card registration has failed. |

## Ports

**Table2-545 Port specifications**

| Card model | Description |
|---|---|
| IM-MSEX-B | Service processing unit |

## Technical specifications

**Table2-546 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 52.5 × 399 × 352 mm (2.07 × 15.71 × 13.86 in) |
| Weight | 3.12 kg (6.88 lb) |
| Maximum power consumption | 400 W |
| Power consumption (with typical configuration) | 260 W |
| Minimum power consumption | 248 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# IM-MSEX-B3

**NOTE:**

The IM-MSEX-B3 provides one subcard slot. You can use it without a subcard, or use it with an IM-SP-B3 subcard for double CGN packet processing rate.

## View

**Figure2-140 IM-MSEX-B3 view**


(1) Card status LED. For the LED description, see Table2-547.

## LEDs

**Table2-547 Card status LED description**

| LED | Status | Description |
|---|---|---|
| RUN (Green) | Steady on | The card is faulty. |
| | Off | The card is faulty or is not in position. |
| | Flashing (once per second) | The card is operating correctly. |
| | Fast flashing (four times per second) | The card is starting up. If the LED keeps fast flashing, card registration has failed. |

## Ports

**Table2-548 Port specifications**

| Card model | Description |
|---|---|
| IM-MSEX-B3 | Service processing unit |

## Technical specifications

**Table2-549 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 52.5 × 399 × 361 mm (2.07 × 15.71 × 14.21 in) |
| Weight | 8.93 kg (19.69 lb) |
| Maximum power consumption | 516 W |
| Power consumption (with typical configuration) | 274 W |
| Minimum power consumption | 265 W |

| Item | Description |
| --- | --- |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

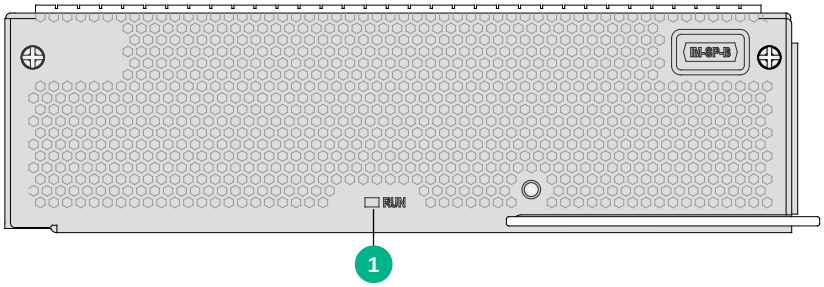
# IM-SP-B

**NOTE:**

The IM-SP-B subcard must be installed on an IM-APA-I or IM-MSEX-B for use. It occupies one subcard slot and does not provide ports.

## View

**Figure2-141 IM-SP-B view**




(1) Card status LED. For the LED description, see Table2-550.

## LEDs

**Table2-550 Card status LED description**

| LED | Status | Description |
| --- | --- | --- |
| RUN (Green) | Steady on | The card is faulty. |
| | Off | The card is faulty or is not in position. |
| | Flashing (once per second) | The card is operating correctly. |
| | Fast flashing | The card is starting up. If the LED keeps fast flashing, card registration has failed. |

## Ports

**Table2-551 Port specifications**

| Card model | Description |
| --- | --- |
| IM-SP-B | Universal expansion service processing module |

## Technical specifications

**Table2-552 Technical specifications**

| Item | Description |
| --- | --- |
| Dimensions (H × W × | 47.5 × 170 × 192 mm (1.87 × 6.69 × 7.56 in) |

| Item | Description |
| --- | --- |
| D) | |
| Weight | 1.20 kg (2.65 lb) |
| Maximum power consumption | 130 W |
| Minimum power consumption | 95 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

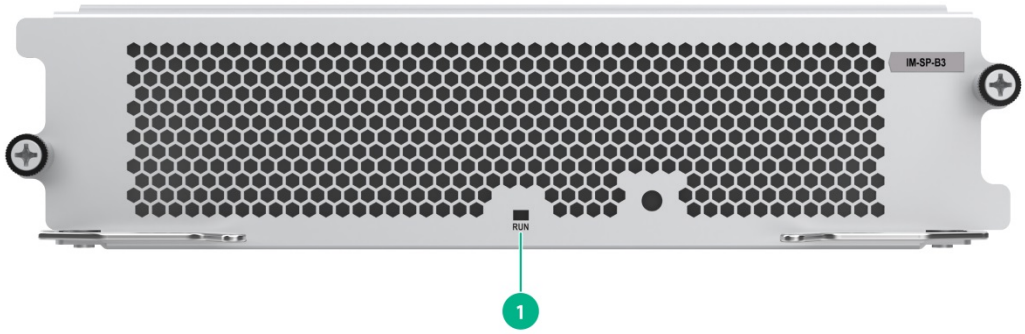
# IM-SP-B3

**NOTE:**

The IM-SP-B3 subcard must be installed on an IM-APA-I3 or IM-MSEX-B3 for use. It occupies one subcard slot and does not provide ports.

## View

**Figure2-142 IM-SP-B3 view**




(1) Card status LED. For the LED description, see Table2-553.

## LEDs

**Table2-553 Card status LED description**

| LED | Status | Description |
| --- | --- | --- |
| RUN (Green) | Steady on | The card is faulty. |
| | Off | The card is faulty or is not in position. |
| | Flashing (once per second) | The card is operating correctly. |
| | Fast flashing (four times per second) | The card is starting up. If the LED keeps fast flashing, card registration has failed. |

## Ports

**Table2-554 Port specifications**

| Card model | Description |
| --- | --- |

| Card model | Description |
| --- | --- |
| IM-SP-B3 | Universal expansion service processing module |

### Technical specifications

**Table2-555 Technical specifications**

| Item | Description |
| --- | --- |
| Dimensions (H × W × D) | 47.5 × 190 × 154 mm (1.87 × 7.48 × 6.06 in) |
| Weight | 1.26 kg (2.78 lb) |
| Maximum power consumption | 127 W |
| Minimum power consumption | 124 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# Configuration restrictions and guidelines

For adequate ventilation and cooling, install the IM-MSUX (1U) card in the following slots only when the other slots are not available:

- **CR16010-F router**—Slots 0, 8 and 9.
- **CR16014-F router**—Slots 0 and 13.

# Compatibility information

**Table2-556 Compatibility matrix between universal line processing units and routers**

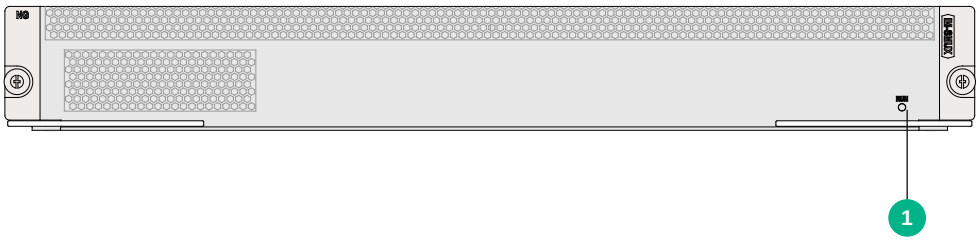
| Card model | CR16006-F, CR16010-F, CR16014-F | CR16010H-F (with five fabric modules), CR16018-F (with five fabric modules) | CR16010H-F (with four fabric modules), CR16018-F (with four fabric modules) | CR16010H-FA, CR16018-FA | CR16003E-F, CR16005E-F, CR16010E-F |
| --- | --- | --- | --- | --- | --- |
| IM-APA-I | Not supported | Supported | Supported | Not supported | Supported |
| IM-APA-I3 | Not supported | Supported | Supported | Not supported | Supported |
| IM-MSUX (1 U) | Supported | Supported | Not supported | Not supported | Supported |
| IM-MSUX (1.2 U) | Not supported | Supported | Supported | Not supported | Not supported |
| IM-MSEX-B | Not supported | Supported | Supported | Not supported | Supported |
| IM-MSEX-B3 | Not supported | Supported | Supported | Not supported | Supported |

# IM modules (Security monitor line processing unit)

## IM-SMUX

### View

**Figure2-143 IM-SMUX view**




(1) Card status LED. For the LED description, see Table2-557.

### LEDs

**Table2-557 Card status LED description**

| LED | Status | Description |
|---|---|---|
| RUN (Green) | Steady on | The card is faulty. |
| | Off | The card is faulty or is not in position. |
| | Flashing (about once per second) | The card is operating correctly. |
| | Fast flashing | The card is starting up. If the LED keeps fast flashing, card registration has failed. |

### Ports

**Table2-558 Port specifications**

| Card model | Description |
|---|---|
| IM-SMUX | Security monitor line processing unit |

### Technical specifications

**Table2-559 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 52.5 × 399 × 352 mm (2.07 × 15.71 × 13.86 in) |
| Weight | 4.85 kg (10.69 lb) |
| Maximum power consumption | 186 W |
| Power consumption (with typical configuration) | 175 W |

| Item | Description |
| --- | --- |
| Minimum power consumption | 159 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# Compatibility information

**Table2-560 Compatibility matrix between security monitor line processing units and routers**

| Card model | CR16006-F, CR16010-F, CR16014-F | CR16010H-F (with five fabric modules), CR16018-F (with five fabric modules) | CR16010H-F (with four fabric modules), CR16018-F (with four fabric modules) | CR16010H-FA, CR16018-FA | CR16003E-F, CR16005E-F, CR16010E-F |
| --- | --- | --- | --- | --- | --- |
| IM-SMUX | Not supported | Supported | Supported | Not supported | Not supported |

# IM modules (Network data encryption service processing unit)

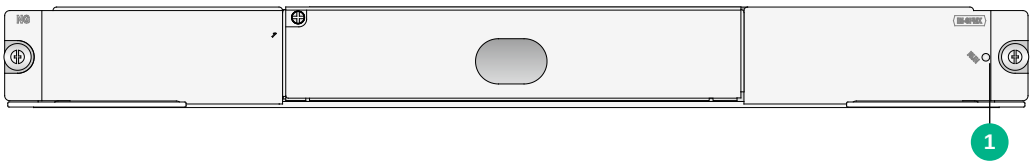
## IM-SFMX

**NOTE:**

The IM-SFMX provides one subcard slot. When used without a subcard, it uses non-SM algorithms to encrypt and decrypt network data. When used with an MIC-SM, it uses SM algorithms to encrypt and decrypt network data.

### View

**Figure2-144 IM-SFMX view**




(1) Card status LED. For the LED description, see Table2-561.

### LEDs

**Table2-561 Card status LED description**

| LED | Status | Description |
| --- | --- | --- |
| RUN (Green) | Steady on | The card is faulty. |

| LED | Status | Description |
|---|---|---|
| | Off | The card is faulty or is not in position. |
| | Flashing (about once per second) | The card is operating correctly. |
| | Fast flashing | The card is starting up. If the LED keeps fast flashing, card registration has failed. |

### Ports

**Table2-562 Port specifications**

| Card model | Description |
|---|---|
| IM-SFMX | Network data encryption service processing unit |

### Technical specifications

**Table2-563 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 40 × 399 × 355 mm (1.57 × 15.71 × 13.86 in) |
| Weight | 4.05 kg (8.93 lb) |
| Maximum power consumption | 165 W |
| Power consumption (with typical configuration) | 113 W |
| Minimum power consumption | 90 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

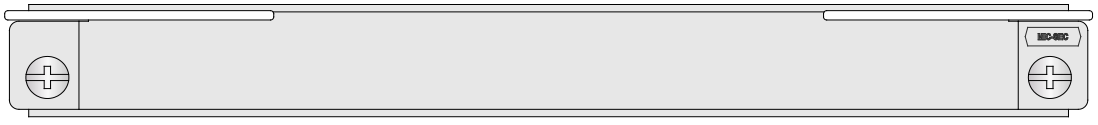
# MIC-SEC

**NOTE:**

The MIC-SEC must be installed on a card for use. It occupies one subcard slot. For more information, see the compatibility information between CMPE cards, SPE cards, or CSPEX cards between subcards.

### View

**Figure2-145 MIC-SEC view**



### Ports

**Table2-564 Port specifications**

| Card model | Description | Connector type | Port quantity | Port transmission speed |
|---|---|---|---|---|
| MIC-SEC | Network data encryption service processing interface card | N/A | N/A | N/A |

### Technical specifications

**Table2-565 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 18 × 171 × 157 mm (0.71 × 6.73 × 6.18 in) |
| Weight | 0.40 kg (0.88 lb) |
| Maximum power consumption | 31 W |
| Minimum power consumption | 29 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

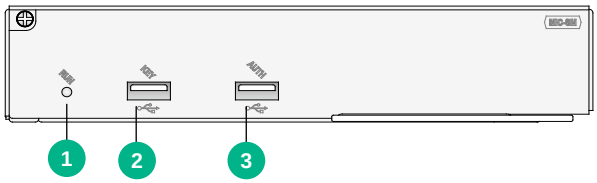
# MIC-SM

**NOTE:**

- The MIC-SM is not hot swappable.
- The MIC-SM must be installed on an IM-SFMX for use. It occupies one subcard slot.
- The MIC-SM is provided with six USB keys for you to obtain user roles to manage the card. To obtain a user role, first insert a USB key into USB port AUTH. For more information about the encryption card configuration, see *H3C CR16000-F Routers Configuration Guides*.

### View

**Figure2-146 MIC-SM view**




| | |
|---|---|
| (1) Card status LED. For the LED description, see Table2-566. | (2) USB port KEY (reserved for future use) |
| (3) USB port AUTH | |

### LEDs

**Table2-566 Card status LED description**

| LED | Status | Description |
| --- | --- | --- |
| RUN (Green) | Steady on | The card is faulty. |
| | Off | The card is faulty or is not in position. |
| | Flashing (about once per second) | The card is operating correctly. |
| | Fast flashing | The card is starting up. If the LED keeps fast flashing, card registration has failed. |

### Ports

**Table2-567 Port specifications**

| Card model | Description |
| --- | --- |
| MIC-SM | Network data encryption interface card |

### Technical specifications

**Table2-568 Technical specifications**

| Item | Description |
| --- | --- |
| Dimensions (H × W × D) | 37 × 179 × 149 mm (1.46 × 7.05 × 5.87 in) |
| Weight | 0.90 kg (1.98 lb) |
| Maximum power consumption | 40 W |
| Minimum power consumption | 25 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# Compatibility information

**Table2-569 Compatibility matrix between security monitor line processing units and routers**

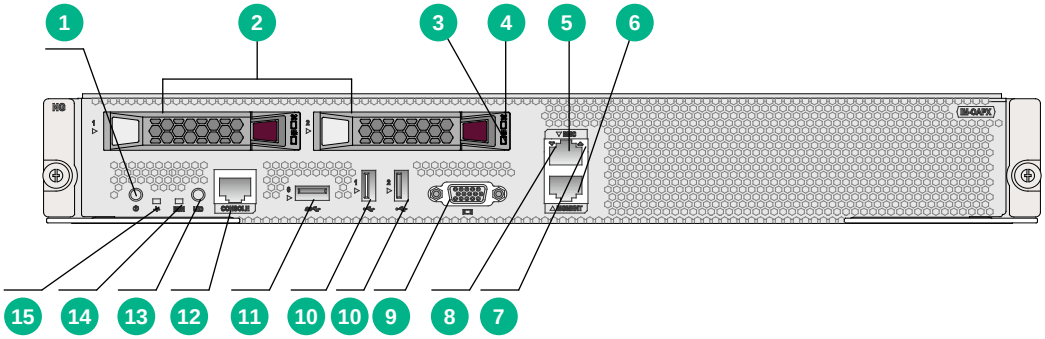
| Card model | CR16006-F, CR16010-F, CR16014-F | CR16010H-F (with five fabric modules), CR16018-F (with five fabric modules) | CR16010H-F (with four fabric modules), CR16018-F (with four fabric modules) | CR16010H-FA, CR16018-FA | CR16003E-F, CR16005E-F, CR16010E-F |
| --- | --- | --- | --- | --- | --- |
| IM-SFMX | Supported | Supported | Not supported | Not supported | Not supported |

# IM modules (Universal open application platform)

## IM-OAPX

## View

**Figure2-147 IM-OAPX view**




| No. | Description |
|---|---|
| (1) | Power on/standby button and system power LED |
| (2) | 2.5 in SATA drive slot |
| (3) | Drive Present/Active LED |
| (4) | Drive Fault/UID LED |
| (5) | BMC network port (1 Gb, RJ45) with default IP 192.168.1.2/24 |
| (6) | Shared network port, which can be used as the following:<br>• Ethernet port (1Gb, RJ45)<br>• BMC network port (1Gb, RJ45), with default IP automatically obtained through DHCP) |
| (7) | BMC network port status LED |
| (8) | Shared network port status LED |
| (9) | VGA connector |
| (10) | USB 2.0 port |
| (11) | USB 3.0 port |
| (12) | Console port |
| (13) | UID LED |
| (14) | RUN LED |
| (15) | Health LED |

## LEDs

**Table2-570 System power LED description**

| LED | Status | Description |
|---|---|---|
| Power on/standby button and system power LED | Steady green | The system has started up. |
| | Flashing green (1 Hz) | The system is starting up. |
| | Steady amber | The system is in standby mode. |
| | Off | The system is powered off. |

**Table2-571 Health LED description**

| LED | Status | Description |
|---|---|---|
| Health LED | Steady green | The system is operating correctly. |
| | Flashing green (4 Hz) | The BMC is currently resetting and initializing. |
| | Flashing yellow and green (1 Hz) | A minor alarm occurs in the system, including an alarm on an error monitored by BMC or an alarm on hardware. |
| | Flashing yellow (1 Hz) | A major alarm occurs in the system, including an alarm on an error monitored by BMC, an alarm on hardware or CPU. |

**Table2-572 RUN LED description**

| LED | Status | Description |
|---|---|---|
| RUN LED | Steady on | The card is faulty. |
| | Off | The card is faulty or is not in position. |
| | Flashing (1 Hz) | The card is operating correctly. |
| | Fast flashing | The card is starting up. If the LED keeps fast flashing, card registration has failed. |

**Table2-573 UID LED description**

| LED | Status | Description |
|---|---|---|
| UID LED | Steady blue | The UID LED is activated. You can activate the UID LED in the following methods:<br>• Press down the UID LED.<br>• Power on the UID LED from BMC. |
| | Flashing blue | • 1 Hz: The system is being remote managed by BMC or performing software update.<br>• 4Hz: BMC is restarting by pressing the UID button or LED for 8 seconds. |
| | Off | The UID LED is not activated. |

**Table2-574 Drive LED description**

| Fault/UID LED (orange/blue) | Present/Active LED (green) | Description |
|---|---|---|
| Flashing orange (0.5 Hz) | Steady green/flashing green (4 Hz) | A predictive alarm occurs on the drive. Replace the drive in time.* |
| Steady orange | Steady green/flashing green (4 Hz) | An error occurs on the drive. Replace the drive immediately. |
| Steady blue | Steady green/flashing green (4 Hz) | The drive is operating correctly and has been selected by the array management tool. |
| Off | Flashing (4 Hz) | The drive is present. Data is being read from or written to the drive, or the drive is being used for array migration or rebuilding. |

| Fault/UID LED (orange/blue) | Present/Active LED (green) | Description |
|---|---|---|
| Off | Steady on | The drive is present but no data being read from or written to the drive. |
| Off | Off | The drive is not installed properly. |

**Table2-575 BMC network port LED description**

| LED | Status | Description |
|---|---|---|
| BMC network port LED | Steady green | The network port is being activated. |
| | Flashing green (1 Hz) | The network port is receiving or sending data. |
| | Off | The network port is disconnected. |

**Table2-576 Shared network port LED description**

| LED | Status | Description |
|---|---|---|
| Shared network port LED | Steady green | The network port is being activated. |
| | Flashing green (1 Hz) | The network port is receiving or sending data. |
| | Off | The network port is disconnected. |

## Ports

**Table2-577 Port specifications**

| Card model | Description |
|---|---|
| IM-OAPX | Universal open application platform |

## Technical specifications

**Table2-578 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 52.5 × 399 × 352 mm (2.07 × 15.71 × 13.86 in) |
| Weight | 6.25 kg (13.78 lb) |
| Maximum power consumption | 320 W |
| Power consumption (with typical configuration) | 310 W |
| Minimum power consumption | 295 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |
| Processor | Intel Skylake Xeon CPU |

| Item | Description |
| --- | --- |
| | • A maximum power consumption of 205 W<br>• A maximum of 2.6 GHz CPU clock speed<br>• 38.5 MB cache |
| Memory | Support six DDR4 memory modules<br>• Single DIMM capacity: 32 GB<br>• Total memory capacity: 192 GB |
| Storage | Maximum storage capacity: 2 × 960 GB |
| Chipset | Intel C62x Lewisburg chipset compatible with LBG-T SKU |
| User port | • 2 × console ports<br>• 1 × BMC network port<br>• 1 × shared network port (used as an Ethernet port or a BMC network port)<br>• 1 × VGA connector<br>• 1 × USB port (USB 3.0)<br>• 2 × USB ports (USB 2.0) |

**Table2-579 Drive specifications**

| Model | Capacity | Interface type | Interface rate |
| --- | --- | --- | --- |
| UIS-SSD-960GB-SATA-6G-SFF-EV | 960 G | SATA | 6 Gbps |
| UN-SSD-960G-SATA-6G-SFF-EV-1 | 960 G | SATA | 6 Gbps |

# Configuration restrictions and guidelines

- To avoid data loss on drives, you must shut down the universal open application platform before performing the following operations:
  - Reboot or hot plug the universal open application platform.
  - Reboot or shut down the router.
- Do not install the universal open application platform in slot 6 of the CR16010-F router or slot 8 of the CR16014-F router.
- The console port on the panel of the universal open application platform is only for users. The internal console port of the universal open application platform is only for H3C Support to perform maintenance and updates. Operations without permission are not allowed. H3C will not be liable for any consequences caused thereby.
- The shared network interface can operate only at 1000 Mbps and can be connected only with a GE port.
- USB ports do not support extension cables.

# Compatibility information

**Table2-580 Compatibility matrix between the universal open application platform and routers**

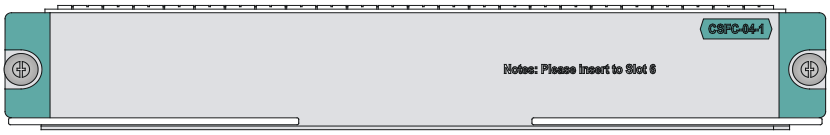
| Card model | CR16006-F | CR16010-F, CR16014-F | CR16010H-F (with five fabric modules), CR16018-F (with five fabric modules) | CR16010H-F (with four fabric modules), CR16018-F (with four fabric modules) | CR16010H-FA, CR16018-FA | CR16003E-F, CR16005E-F, CR16010E-F |
|---|---|---|---|---|---|---|
| IM-OAPX | Supported | Supported | Supported | Not supported | Not supported | Supported |

# Switching fabric modules

## CSFC-04-1/CSFC-04-2/CSFC-04-3/CSFC-04-4

### View

**Figure2-148 CSFC-04-1 view**




The views of CSFC-04-1, CSFC-04-2, CSFC-04-3, and CSFC-04-4 are similar. This figure uses the CSFC-04-1 as an example.

### Technical specifications

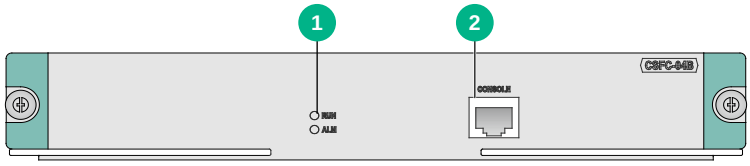
**Table2-581 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 40 × 256 × 298 mm (1.57 × 10.08 × 11.73 in) |
| Weight | 1.00 kg (2.20 lb) |
| Maximum power consumption | N/A |
| Minimum power consumption | N/A |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# CSFC-04B/CSFC-04D

## View

**Figure2-149 CSFC-04B view**




| | |
|---|---|
| (1) Switching fabric module status LED. For the LED description, see Table2-582. | (2) Console port |

The views of CSFC-04B and CSFC-04D are similar. This figure uses the CSFC-04B as an example.

## LEDs

**Table2-582 Switching fabric module status LED description**

| LED status | | Description |
|---|---|---|
| **RUN** | **ALM** | |
| Flashing (0.5 Hz) | Off | The switching fabric module is operating correctly. |
| Off | Steady on | The switching fabric module is faulty. |
| Flashing (0.5 Hz) | Steady on | The temperature of the switching fabric module has exceeded the upper limit or dropped below the lower limit. |
| Off | Off | The switching fabric module has not started up. |
| Steady on | Off | The switching fabric module is starting up. |

## Technical specifications

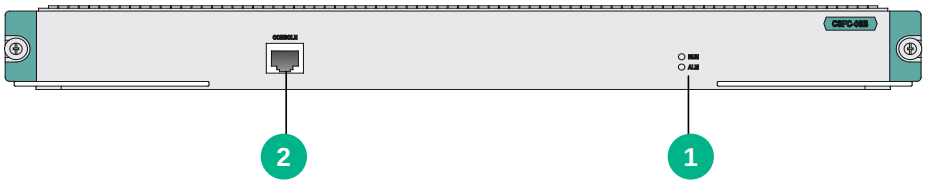
**Table2-583 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 40 × 256 × 298 mm (1.57 × 10.08 × 11.73 in) |
| Weight | • CSFC-04B: 1.75 kg (3.86 lb)<br>• CSFC-04D: 1.71 kg (3.77 lb) |
| Maximum power consumption | • CSFC-04B: 65 W<br>• CSFC-04D: 80 W |
| Power consumption (with typical configuration) | • CSFC-04B: 59 W<br>• CSFC-04D: 72 W |
| Minimum power consumption | • CSFC-04B: 48 W<br>• CSFC-04D: 60 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# CSFC-08B/CSFC-08D

## View

**Figure2-150 CSFC-08B view**




| | |
|---|---|
| (1) Console port | (2) Switching fabric module status LED. For the LED description, see Table2-584. |

The views of the CSFC-08B and CSFC-08D are similar. This figure uses the CSFC-08B as an example.

## LEDs

**Table2-584 Switching fabric module status LED description**

| LED status | | Description |
|---|---|---|
| RUN | ALM | |
| Flashing (0.5 Hz) | Off | The switching fabric module is operating correctly. |
| Off | Steady on | The switching fabric module is faulty. |
| Flashing (0.5 Hz) | Steady on | The temperature of the switching fabric module has exceeded the upper limit or dropped below the lower limit. |
| Off | Off | The switching fabric module has not started up. |
| Steady on | Off | The switching fabric module is starting up. |

## Technical specifications

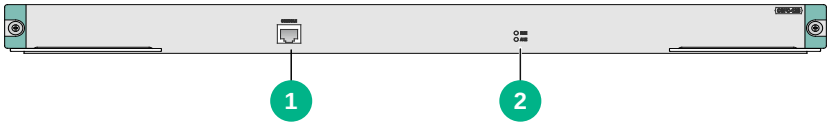
**Table2-585 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 40 × 426 × 298 mm (1.57 × 16.77 × 11.73 in) |
| Weight | • CSFC-08B: 2.50 kg (5.51 lb)<br>• CSFC-08D: 2.77 kg (6.11 lb) |
| Maximum power consumption | • CSFC-08B: 60 W<br>• CSFC-08D: 135 W |
| Power consumption (with typical configuration) | • CSFC-08B: 54 W<br>• CSFC-08D: 122 W |
| Minimum power consumption | • CSFC-08B: 44 W<br>• CSFC-08D: 101 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# CSFC-12B/CSFC-12D

## View

**Figure2-151 CSFC-12B view**




| | |
|---|---|
| (1) Console port | (2) Switching fabric module status LED. For the LED description, see Table2-586. |

The views of the CSFC-12B and CSFC-12D are similar. This figure uses the CSFC-12B as an example.

## LEDs

**Table2-586 Switching fabric module status LED description**

| LED status | | Description |
|---|---|---|
| RUN | ALM | |
| Flashing (0.5 Hz) | Off | The switching fabric module is operating correctly. |
| Off | Steady on | The switching fabric module is faulty. |
| Flashing (0.5 Hz) | Steady on | The temperature of the switching fabric module has exceeded the upper limit or dropped below the lower limit. |
| Off | Off | The switching fabric module has not started up. |
| Steady on | Off | The switching fabric module is starting up. |

## Technical specifications

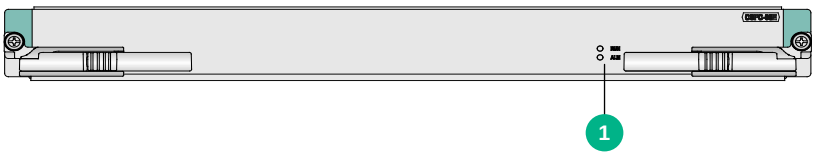
**Table2-587 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 40 × 602 × 298 mm (1.57 × 23.70 × 11.73 in) |
| Weight | • CSFC-12B: 3.89 kg (8.58 lb)<br>• CSFC-12D: 4.51 kg (9.94 lb) |
| Maximum power consumption | • CSFC-12B: 140 W<br>• CSFC-12D: 255 W |
| Power consumption (with typical configuration) | • CSFC-12B: 126 W<br>• CSFC-12D: 230 W |
| Minimum power consumption | • CSFC-12B: 107 W<br>• CSFC-12D: 195 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# CSFC-08E

## View

**Figure2-152 CSFC-08E view**




(1) Switching fabric module status LED. For the LED description, see Table2-588.

## LEDs

**Table2-588 Switching fabric module status LED description**

| LED status | | Description |
|---|---|---|
| RUN | ALM | |
| Flashing (0.5 Hz) | Off | The switching fabric module is operating correctly. |
| Off | Steady on | The switching fabric module is faulty. |
| Flashing (0.5 Hz) | Steady on | The temperature of the switching fabric module has exceeded the upper limit or dropped below the lower limit. |
| Off | Off | The switching fabric module has not started up. |
| Steady on | Off | The switching fabric module is starting up. |

## Technical specifications

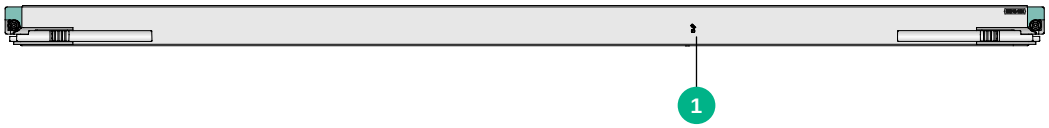
**Table2-589 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 40 × 426 × 298 mm (1.57 × 16.77 × 11.73 in) |
| Weight | 3.55 kg (7.83 lb) |
| Maximum power consumption | 140 W |
| Power consumption (with typical configuration) | 130 W |
| Minimum power consumption | 73 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# CSFC-08E1/CSFC-08E1A/CSFC-08T

## View

**Figure2-153 CSFC-08E1 view**




(1) Switching fabric module status LED. For the LED description, see Table2-590.

The views of the CSFC-08E1, CSFC-08E1A and CSFC-08T are similar. This figure uses the CSFC-08E1 as an example.

## LEDs

**Table2-590 Switching fabric module status LED description**

| RUN LED status | Description |
|---|---|
| Flashing (0.5 Hz) | The switching fabric module is operating correctly. |
| Flashing (8 Hz) | The switching fabric module is starting up. |
| Off | The switching fabric module has not started up. |

## Technical specifications

**Table2-591 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 40 × 562 × 298 mm (1.57 × 22.13 × 11.73 in) |
| Weight | • CSFC-08E1, CSFC-08E1A: 5.20 kg (11.46 lb)<br>• CSFC-08T: 5.15 kg (11.35 lb) |
| Maximum power consumption | • CSFC-08E1: 125 W<br>• CSFC-08E1A, CSFC-08T: 129 W |
| Power consumption (with typical configuration) | • CSFC-08E1: 112 W<br>• CSFC-08E1A, CSFC-08T: 116 W |
| Minimum power consumption | • CSFC-08E1: 75 W<br>• CSFC-08E1A, CSFC-08T: 100 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# CSFC-08E2A/CSFC-08E3A

## View

**Figure2-154 CSFC-08E2A view**


(1) Switching fabric module status LED. For the LED description, see Table2-592.

The views of the CSFC-08E2A and CSFC-08E3A are similar. This figure uses the CSFC-08E2A as an example.

## LEDs

**Table2-592 Switching fabric module status LED description**

| RUN LED status | Description |
|---|---|
| Flashing (0.5 Hz) | The switching fabric module is operating correctly. |
| Flashing (8 Hz) | The switching fabric module is starting up. |
| Off | The switching fabric module has not started up. |

## Technical specifications

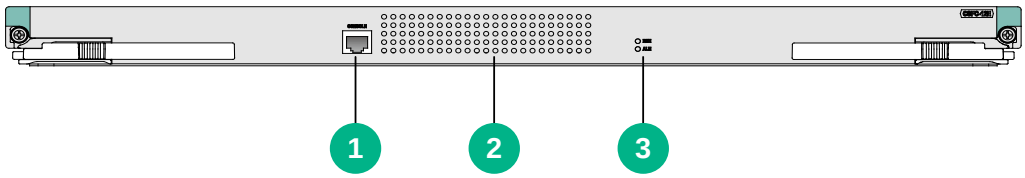
**Table2-593 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 40 × 562 × 298 mm (1.57 × 22.13 × 11.73 in) |
| Weight | 5.20 kg (11.46 lb) |
| Maximum power consumption | 220 W |
| Power consumption (with typical configuration) | 200 W |
| Minimum power consumption | 162 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# CSFC-12E

## View

**Figure2-155 CSFC-12E view**




| | |
|---|---|
| (1) Console port | (2) Air inlet vents |
| (3) Switching fabric module status LED. For the LED description, see Table2-594. | |

## LEDs

**Table2-594 Switching fabric module status LED description**

| LED status | | Description |
|---|---|---|
| RUN | ALM | |
| Flashing (0.5 Hz) | Off | The switching fabric module is operating correctly. |
| Off | Steady on | The switching fabric module is faulty. |
| Flashing (0.5 Hz) | Steady on | The temperature of the switching fabric module has exceeded the upper limit or dropped below the lower limit. |
| Off | Off | The switching fabric module has not started up. |
| Steady on | Off | The switching fabric module is starting up. |

## Technical specifications

**Table2-595 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 40 × 602 × 298 mm (1.57 × 23.70 × 11.73 in) |
| Weight | 5.30 kg (11.68 lb) |
| Maximum power consumption | 178 W |
| Power consumption (with typical configuration) | 161 W |
| Minimum power consumption | 146 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# CSFC-16T/CSFC-16T1/CSFC-16E/CSFC-16EA

## View

**Figure2-156 CSFC-16T1 view**


(1) Switching fabric module status LED. For the LED description, see Table2-596.

The views of the CSFC-16T, CSFC-16T1, CSFC-16E, and CSFC-16EA are similar. This figure uses the CSFC-16T1 as an example.

## LEDs

**Table2-596 Switching fabric module status LED description**

| RUN LED status | Description |
|---|---|
| Flashing (0.5 Hz) | The switching fabric module is operating correctly. |
| Flashing (8 Hz) | The switching fabric module is starting up. |
| Off | The switching fabric module has not started up. |

## Technical specifications

**Table2-597 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 40 × 961 × 298 mm (1.57 × 37.83 × 11.73 in) |
| Weight | • CSFC-16T: 10.25 kg (22.60 lb)<br>• CSFC-16T1: 10.35 kg (22.82 lb)<br>• CSFC-16E, CSFC-16EA: 10.50 kg (23.15 lb) |
| Maximum power consumption | • CSFC-16T: 402 W<br>• CSFC-16E: 248 W<br>• CSFC-16E: 248 W<br>• CSFC-16EA: 402W |
| Power consumption (with typical configuration) | • CSFC-16T: 361 W<br>• CSFC-16T1: 245 W<br>• CSFC-16E: 220 W<br>• CSFC-16EA: 361 W |
| Minimum power consumption | • CSFC-16T: 267 W<br>• CSFC-16T1: 210 W<br>• CSFC-16E: 159 W<br>• CSFC-16EA: 267 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# CSFC-16E2A/CSFC-16E3A

## View

**Figure2-157 CSFC-16E2A view**


(1) Switching fabric module status LED. For the LED description, see Table2-598.

The views of the CSFC-16E2A and CSFC-16E3A are similar. This figure uses the CSFC-16E2A as an example.

## LEDs

**Table2-598 Switching fabric module status LED description**

| RUN LED status | Description |
|---|---|
| Flashing (0.5 Hz) | The switching fabric module is operating correctly. |
| Flashing (8 Hz) | The switching fabric module is starting up. |
| Off | The switching fabric module has not started up. |

## Technical specifications

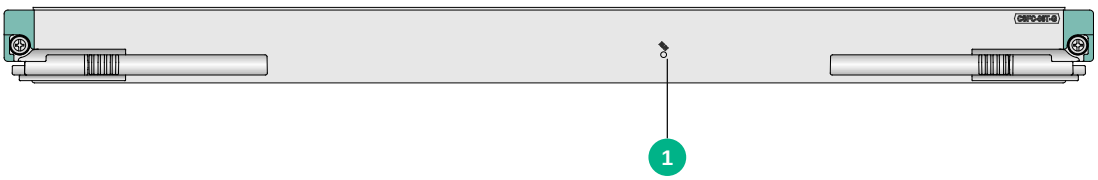
**Table2-599 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 40 × 961 × 298 mm (1.57 × 37.83 × 11.73 in) |
| Weight | 10.35 kg (22.82 lb) |
| Maximum power consumption | 600 W |
| Power consumption (with typical configuration) | 380 W |
| Minimum power consumption | 256 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# CSFC-08T-G

## View

**Figure2-158 CSFC-08T-G view**




(1) Switching fabric module status LED. For the LED description, see Table2-600.

## LEDs

**Table2-600 Switching fabric module status LED description**

| RUN LED status | Description |
|---|---|
| Flashing (0.5 Hz) | The switching fabric module is operating correctly. |
| Flashing (8 Hz) | The switching fabric module is starting up. |
| Off | The switching fabric module has not started up. |

## Technical specifications

**Table2-601 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 40 × 562 × 298 mm (1.57 × 22.13 × 11.73 in) |
| Weight | 5.30 kg (11.68 lb) |
| Maximum power consumption | 130 W |
| Power consumption (with typical configuration) | 110 W |
| Minimum power consumption | 100 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# CSFC-08T-G3

## View

**Figure2-159 CSFC-08T-G3 view**


(1) Switching fabric module status LED. For the LED description, see Table2-602.

## LEDs

**Table2-602 Switching fabric module status LED description**

| RUN LED status | Description |
|---|---|
| Flashing (0.5 Hz) | The switching fabric module is operating correctly. |
| Flashing (8 Hz) | The switching fabric module is starting up. |
| Off | The switching fabric module has not started up. |

## Technical specifications

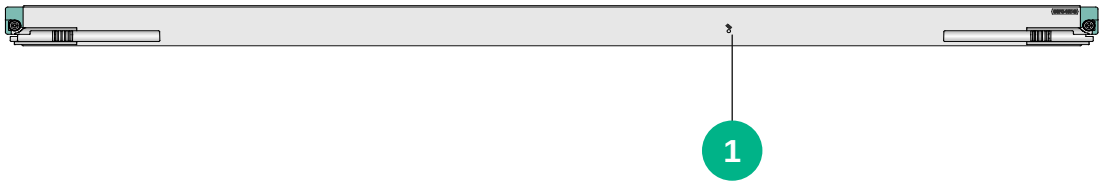
**Table2-603 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 40 × 562 × 298 mm (1.57 × 22.13 × 11.73 in) |
| Weight | 6.00 kg (13.23 lb) |
| Maximum power consumption | 220 W |
| Power consumption (with typical configuration) | 200 W |
| Minimum power consumption | 162 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# CSFC-16T-G

## View

**Figure2-160 CSFC-16T-G view**




(1) Switching fabric module status LED. For the LED description, see Table2-604.

## LEDs

**Table2-604 Switching fabric module status LED description**

| RUN LED status | Description |
|---|---|
| Flashing (0.5 Hz) | The switching fabric module is operating correctly. |
| Flashing (8 Hz) | The switching fabric module is starting up. |
| Off | The switching fabric module has not started up. |

## Technical specifications

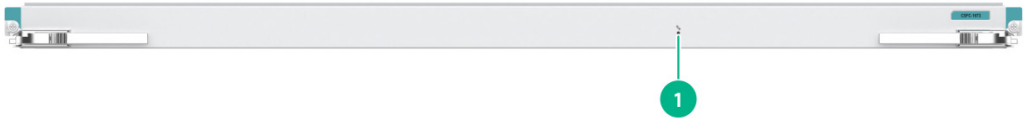
**Table2-605 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 40 × 961 × 298 mm (1.57 × 37.83 × 11.73 in) |
| Weight | 10.30 kg (22.71 lb) |
| Maximum power consumption | 120 W |
| Power consumption (with typical configuration) | 110 W |
| Minimum power consumption | 100 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# CSFC-16T3

## View

**Figure2-161 CSFC-16T3 view**




(1) Switching fabric module status LED. For the LED description, see Table2-606.

## LEDs

**Table2-606 Switching fabric module status LED description**

| RUN LED status | Description |
|---|---|
| Flashing (0.5 Hz) | The switching fabric module is operating correctly. |
| Flashing (8 Hz) | The switching fabric module is starting up. |
| Off | The switching fabric module has not started up. |

## Technical specifications

**Table2-607 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 40 × 961 × 298 mm (1.57 × 37.83 × 11.73 in) |
| Weight | 10.35 kg (22.82 lb) |
| Maximum power consumption | 600 W |
| Power consumption (with typical configuration) | 380 W |
| Minimum power consumption | 256 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# CSFC-10T-G/CSFC-10T-G3

## View

**Figure2-162 CSFC-10T-G view**


(1) Switching fabric module status LED. For the LED description, see Table2-608.

The views of the CSFC-10T-G and CSFC-10T-G3 are similar. This figure uses the CSFC-10T-G as an example.

## LEDs

**Table2-608 Switching fabric module status LED description**

| RUN LED status | Description |
|---|---|
| Flashing (0.5 Hz) | The switching fabric module is operating correctly. |
| Flashing (8 Hz) | The switching fabric module is starting up. |
| Off | The switching fabric module has not started up. |

## Technical specifications

**Table2-609 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 29 × 399.2 × 353.6 mm (1.14 × 15.72 × 13.92 in) |
| Weight | 3.65 kg (8.05 lb) |
| Maximum power consumption | 120 W |
| Power consumption (with typical configuration) | 81 W |
| Minimum power consumption | 72 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# CSFC-10E-G

## View

**Figure2-163 CSFC-10E-G view**


(1) Switching fabric module status LED. For the LED description, see Table2-610.

## LEDs

**Table2-610 Switching fabric module status LED description**

| RUN LED status | Description |
|---|---|
| Flashing (0.5 Hz) | The switching fabric module is operating correctly. |
| Flashing (8 Hz) | The switching fabric module is starting up. |
| Off | The switching fabric module has not started up. |

## Technical specifications

**Table2-611 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 29 × 399.2 × 353.6 mm (1.14 × 15.72 × 13.92 in) |
| Weight | 3.20 kg (7.05 lb) |
| Maximum power consumption | 30 W |
| Power consumption (with typical configuration) | 19 W |
| Minimum power consumption | 14 W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |

# Configuration restrictions and guidelines

- Do not install switching fabric modules of different types on the same router.
- If you use Type-B, Type-D, Type-E, Type-T, or Type-TG switching fabric modules for the router, a minimum of two are required. For a CR16010H-F (with five fabric modules) or CR16010H-FA router, you must install switching fabric modules in slots 10 and 12. Slot 11 can be used only when five switching fabric modules are required. For a CR16018-F (with five fabric modules) or CR16018-FA router, you must install switching fabric modules in slots 18 and 20. Slot 19 can be used only when five switching fabric modules are required. For other routers, slots 1, 3, and 4 take precedence over the other slots.

- The console port on a switching fabric module is only for H3C Support to perform maintenance and updates. Operations without permission are not allowed. H3C will not be liable for any consequences caused thereby.
- If Type-A switching fabric modules are used, use the four together and install each into the specified slot. Each Type-A switching fabric module has a mark specifying the slot for installation. For example, the CSFC-04-1 has the mark **Notes:Please insert to Slot 6**.
- After you change a Type-B or Type-D switching fabric module to a Type-A switching fabric module on the CR16006-F router, you must restart the router.

# Compatibility information

**Table2-612 Compatibility matrix between switching fabric modules and routers**

| Chassis model | Available switching fabric module model | Number |
|---|---|---|
| CR16006-F | Type-A: CSFC-04-1, CSFC-04-2, CSFC-04-3, CSFC-04-4 | 4 (1 for each switching fabric module model) |
| | • Type-B: CSFC-04B<br>• Type-D: CSFC-04D | 2 to 4 |
| CR16010-F | • Type-B: CSFC-08B<br>• Type-D: CSFC-08D<br>• Type-E: CSFC-08E | 2 to 4 |
| CR16010H-F (with five fabric modules) | • Type-E: CSFC-08E1<br>• Type-T: CSFC-08T<br>• Type-TG: CSFC-08T-G | 2 to 5 |
| CR16010H-F (with four fabric modules) | • Type-E: CSFC-08E1<br>• Type-T: CSFC-08T<br>• Type-TG: CSFC-08T-G, CSFC-08T-G3 | 2 to 4 |
| CR16010H-FA | Type-E: CSFC-08E1A, CSFC-08E2A, CSFC-08E3A | 2 to 5 |
| CR16014-F | • Type-B: CSFC-12B<br>• Type-D: CSFC-12D<br>• Type-E: CSFC-12E | 2 to 4 |
| CR16018-F (with five fabric modules) | • Type-E: CSFC-16E<br>• Type-T: CSFC-16T, CSFC-16T1, CSFC-16T3<br>• Type-TG: CSFC-16T-G | 2 to 5 |
| CR16018-F (with four fabric modules) | • Type-E: CSFC-16E<br>• Type-T: CSFC-16T, CSFC-16T3<br>• Type-TG: CSFC-16T-G | 2 to 4 |
| CR16018-FA | Type-E: CSFC-16EA, CSFC-16E2A, CSFC-16E3A | 2 to 5 |
| CR16010E-F | • Type-T: CSFC-10T-G, CSFC-10T-G3<br>• Type-E: CSFC-10E-G | 1 to 2 |

**Table2-613 Compatibility matrix between switching fabric modules and service modules (1)**

| Service module | Type-A switching fabric module | CSFC-04B | CSFC-04D | CSFC-08B | CSFC-08D |
|---|---|---|---|---|---|
| CSPC-GT48LA1 | Supported | Supported | Supported | Supported | Supported |
| CSPC-GE24L-E | Supported | Supported | Supported | Supported | Supported |

| Service module | Type-A switching fabric module | CSFC-04B | CSFC-04D | CSFC-08B | CSFC-08D |
|---|---|---|---|---|---|
| CSPC-GP24LA1 | Supported | Supported | Supported | Supported | Supported |
| CSPC-GP48LB | Supported | Supported | Supported | Supported | Supported |
| CSPC-GP24XP2LB | Supported | Supported | Supported | Supported | Supported |
| CSPC-GP24GE8XP2L-E | Supported | Supported | Supported | Supported | Supported |
| CSPC-GE16XP4L-E | Supported | Supported | Supported | Supported | Supported |
| CSPC-GP44XP4LCX | Not supported | Supported | Supported | Supported | Supported |
| CSPC-XP2LA1 | Supported | Supported | Supported | Supported | Supported |
| CSPC-XP4LB | Supported | Supported | Supported | Supported | Supported |
| CSPC-XP8LB | Supported | Supported | Supported | Supported | Supported |
| CSPC-XP12LAX | Not supported | Supported | Supported | Supported | Supported |
| CSPC-XP12LCX | Not supported | Supported | Supported | Supported | Supported |
| CSPC-XP24LAX | Not supported | Supported | Supported | Supported | Supported |
| CSPC-XP24LCX | Not supported | Supported | Supported | Supported | Supported |
| CSPC-XLP6LCX | Not supported | Supported | Supported | Supported | Supported |
| CSPC-CP1LCX | Not supported | Supported | Supported | Supported | Supported |
| CSPC-CP2LB | Not supported | Supported | Supported | Supported | Supported |
| CEPC-CP4RX | Not supported | Not supported | Not supported | Not supported | Not supported |
| CEPC-CP4RXA | Not supported | Not supported | Not supported | Not supported | Not supported |
| CEPC-CP4RX-L | Not supported | Not supported | Not supported | Not supported | Not supported |
| CEPC-CQ8L | Not supported | Not supported | Not supported | Not supported | Not supported |
| CEPC-CQ8LA | Not supported | Not supported | Not supported | Not supported | Not supported |
| CEPC-CQ8L1A | Not supported | Not supported | Not supported | Not supported | Not supported |
| CEPC-CQ8L3A | Not supported | Not supported | Not supported | Not supported | Not supported |
| CEPC-CQ16L1 | Not supported | Not supported | Not supported | Not supported | Not supported |
| CEPC-DQ2L1-G | Not supported | Not supported | Not supported | Not supported | Not supported |
| CEPC-XP4LX | Not supported | Supported | Supported | Supported | Supported |
| CEPC-XP24LX | Not supported | Not supported | Not supported | Not supported | Not supported |
| CEPC-XP48RX | Not supported | Not supported | Not supported | Not supported | Not supported |
| CSPEX-1204 | Supported | Supported | Supported | Supported | Supported |
| CSPEX-1104-E | Supported | Supported | Supported | Supported | Supported |
| CSPEX-1304X | Not supported | Supported | Supported | Supported | Supported |
| CSPEX-1404X | Not supported | Supported | Supported | Supported | Supported |
| CSPEX-1502X | Not supported | Not supported | Not supported | Not supported | Not supported |

| Service module | Type-A switching fabric module | CSFC-04B | CSFC-04D | CSFC-08B | CSFC-08D |
|---|---|---|---|---|---|
| CSPEX-1502XA | Not supported | Not supported | Not supported | Not supported | Not supported |
| CSPEX-1504X | Not supported | Supported | Supported | Supported | Supported |
| CSPEX-1504XA | Not supported | Not supported | Not supported | Not supported | Not supported |
| CSPEX-1602X | Not supported | Not supported | Not supported | Not supported | Not supported |
| CSPEX-1602XA | Not supported | Not supported | Not supported | Not supported | Not supported |
| CSPEX-1802X | Not supported | Not supported | Not supported | Not supported | Not supported |
| CSPEX-1802XA | Not supported | Not supported | Not supported | Not supported | Not supported |
| CSPEX-1804X | Not supported | Not supported | Not supported | Not supported | Not supported |
| CSPEX-1512X | Not supported | Not supported | Not supported | Not supported | Not supported |
| CSPEX-1612X | Not supported | Not supported | Not supported | Not supported | Not supported |
| CSPEX-1812X | Not supported | Not supported | Not supported | Not supported | Not supported |
| CSPEX-1812X-E | Not supported | Not supported | Not supported | Not supported | Not supported |
| CSPEX-2304X-G | Not supported | Supported | Supported | Supported | Supported |
| CSPEX-2304X-G2 | Not supported | Supported | Supported | Supported | Supported |
| CSPEX-2304X-LG | Not supported | Supported | Supported | Supported | Supported |
| CSPEX-2314X-G | Not supported | Not supported | Not supported | Not supported | Not supported |
| CSPEX-2314X-G1 | Not supported | Not supported | Not supported | Not supported | Not supported |
| CSPEX-2314X-G2 | Not supported | Not supported | Not supported | Not supported | Not supported |
| CSPEX-2612XA | Not supported | Not supported | Not supported | Not supported | Not supported |
| CSPEX-2612X3A | Not supported | Not supported | Not supported | Not supported | Not supported |
| CSPEX-2612X3-E | Not supported | Not supported | Not supported | Not supported | Not supported |
| CSPEX-2612X-E | Not supported | Not supported | Not supported | Not supported | Not supported |
| CMPE-1104 | Supported | Supported | Supported | Supported | Supported |
| RX-SPE200 | Not supported | Not supported | Not supported | Not supported | Not supported |
| RX-SPE200-E | Not supported | Not supported | Not supported | Not supported | Not supported |
| IM-NGFWX-IV | Not supported | Supported | Supported | Supported | Supported |
| LSU1FWCEA0 | Supported | Supported | Supported | Supported | Supported |
| LSU3FWCEA0 | Supported | Supported | Supported | Supported | Supported |
| IM-IPSX-IV | Not supported | Supported | Supported | Supported | Supported |
| LSU1IPSBEA0 | Supported | Supported | Supported | Supported | Supported |
| IM-ACG1000X-IV | Not supported | Supported | Supported | Supported | Supported |
| LSU1ADECEA0 | Supported | Supported | Supported | Supported | Supported |
| IM-APA-I | Not supported | Not supported | Not supported | Not supported | Not supported |
| IM-APA-I3 | Not supported | Not supported | Not supported | Not supported | Not supported |
| IM-MSUX (1U) | Not supported | Supported | Supported | Supported | Supported |

| Service module | Type-A switching fabric module | CSFC-04B | CSFC-04D | CSFC-08B | CSFC-08D |
|---|---|---|---|---|---|
| IM-MSUX (1.2U) | Not supported | Not supported | Not supported | Not supported | Not supported |
| IM-MSEX-B | Not supported | Not supported | Not supported | Not supported | Not supported |
| IM-MSEX-B3 | Not supported | Not supported | Not supported | Not supported | Not supported |
| IM-SMUX | Not supported | Supported | Supported | Supported | Supported |
| IM-SFMX | Not supported | Supported | Supported | Supported | Supported |
| IM-OAPX | Not supported | Supported | Supported | Supported | Supported |

**Table2-614 Compatibility matrix between switching fabric modules and service modules (2)**

| Service module | CSFC-12B<br>CSFC-12D | CSFC-08E | CSFC-08E1 | CSFC-08E1A | CSFC-08E2A |
|---|---|---|---|---|---|
| CSPC-GT48LA1 | Supported | Not supported | Not supported | Not supported | Not supported |
| CSPC-GE24L-E | Supported | Not supported | Not supported | Not supported | Not supported |
| CSPC-GP24LA1 | Supported | Not supported | Not supported | Not supported | Not supported |
| CSPC-GP48LB | Supported | Not supported | Not supported | Not supported | Not supported |
| CSPC-GP24XP2LB | Supported | Not supported | Not supported | Not supported | Not supported |
| CSPC-GP24GE8XP2L-E | Supported | Not supported | Not supported | Not supported | Not supported |
| CSPC-GE16XP4L-E | Supported | Not supported | Not supported | Not supported | Not supported |
| CSPC-GP44XP4LCX | Supported | Not supported | Not supported | Not supported | Not supported |
| CSPC-XP2LA1 | Supported | Not supported | Not supported | Not supported | Not supported |
| CSPC-XP4LB | Supported | Not supported | Not supported | Not supported | Not supported |
| CSPC-XP8LB | Supported | Not supported | Not supported | Not supported | Not supported |
| CSPC-XP12LAX | Supported | Not supported | Not supported | Not supported | Not supported |
| CSPC-XP12LCX | Supported | Not supported | Not supported | Not supported | Not supported |
| CSPC-XP24LAX | Supported | Not supported | Not supported | Not supported | Not supported |
| CSPC-XP24LCX | Supported | Not supported | Not supported | Not supported | Not supported |
| CSPC-XLP6LCX | Supported | Not supported | Not supported | Not supported | Not supported |
| CSPC-CP1LCX | Supported | Not supported | Not supported | Not supported | Not supported |
| CSPC-CP2LB | Supported | Not supported | Not supported | Not supported | Not supported |
| CEPC-CP4RX | Not supported | Supported | Supported | Not supported | Not supported |
| CEPC-CP4RXA | Not supported | Not supported | Not supported | Supported | Not supported |
| CEPC-CP4RX-L | Not supported | Supported | Supported | Not supported | Not supported |
| CEPC-CQ8L | Not supported | Not supported | Not supported | Not supported | Not supported |
| CEPC-CQ8LA | Not supported | Not supported | Not supported | Supported | Supported |

| Service module | CSFC-12B<br>CSFC-12D | CSFC-08E | CSFC-08E1 | CSFC-08E1A | CSFC-08E2A |
|---|---|---|---|---|---|
| CEPC-CQ8L1A | Not supported | Not supported | Not supported | Supported | Supported |
| CEPC-CQ8L3A | Not supported | Not supported | Not supported | Supported | Supported |
| CEPC-CQ16L1 | Not supported | Not supported | Not supported | Not supported | Not supported |
| CEPC-DQ2L1-G | Not supported | Not supported | Not supported | Not supported | Not supported |
| CEPC-XP4LX | Supported | Supported | Supported | Not supported | Not supported |
| CEPC-XP24LX | Not supported | Supported | Supported | Not supported | Not supported |
| CEPC-XP48RX | Not supported | Supported | Supported | Not supported | Not supported |
| CSPEX-1204 | Supported | Not supported | Not supported | Not supported | Not supported |
| CSPEX-1104-E | Supported | Not supported | Not supported | Not supported | Not supported |
| CSPEX-1304X | Supported | Supported | Supported | Not supported | Not supported |
| CSPEX-1404X | Supported | Supported | Supported | Not supported | Not supported |
| CSPEX-1502X | Not supported | Supported | Supported | Not supported | Not supported |
| CSPEX-1502XA | Not supported | Not supported | Not supported | Supported | Not supported |
| CSPEX-1504X | Supported | Supported | Supported | Not supported | Not supported |
| CSPEX-1504XA | Not supported | Not supported | Not supported | Supported | Not supported |
| CSPEX-1602X | Not supported | Supported | Supported | Not supported | Not supported |
| CSPEX-1602XA | Not supported | Not supported | Not supported | Supported | Not supported |
| CSPEX-1802X | Not supported | Not supported | Supported | Not supported | Not supported |
| CSPEX-1802XA | Not supported | Not supported | Supported | Supported | Supported |
| CSPEX-1804X | Not supported | Not supported | Supported | Not supported | Not supported |
| CSPEX-1512X | Not supported | Not supported | Supported | Not supported | Not supported |
| CSPEX-1612X | Not supported | Not supported | Supported | Not supported | Not supported |
| CSPEX-1812X | Not supported | Not supported | Supported | Not supported | Not supported |
| CSPEX-1812X-E | Not supported | Not supported | Supported | Not supported | Not supported |
| CSPEX-2304X-G | Not supported | Supported | Supported | Not supported | Not supported |
| CSPEX-2304X-G2 | Supported | Supported | Supported | Not supported | Not supported |
| CSPEX-2304X-LG | Not supported | Supported | Supported | Not supported | Not supported |
| CSPEX-2314X-G | Not supported | Not supported | Supported | Not supported | Not supported |
| CSPEX-2314X-G1 | Not supported | Not supported | Supported | Not supported | Not supported |
| CSPEX-2314X-G2 | Not supported | Not supported | Supported | Not supported | Not supported |
| CSPEX-2612XA | Not supported | Not supported | Not supported | Supported | Supported |
| CSPEX-2612X3A | Not supported | Not supported | Not supported | Supported | Supported |
| CSPEX-2612X3-E | Not supported | Not supported | Supported | Not supported | Not supported |
| CSPEX-2612X-E | Not supported | Not supported | Supported | Not supported | Not supported |
| CMPE-1104 | Supported | Not supported | Not supported | Not supported | Not supported |
| RX-SPE200 | Not supported | Not supported | Supported | Not supported | Not supported |

| Service module | CSFC-12B<br>CSFC-12D | CSFC-08E | CSFC-08E1 | CSFC-08E1A | CSFC-08E2A |
|---|---|---|---|---|---|
| RX-SPE200-E | Not supported | Not supported | Supported | Not supported | Not supported |
| IM-NGFWX-IV | Supported | Supported | Supported | Not supported | Not supported |
| LSU1FWCEA0 | Supported | Not supported | Not supported | Not supported | Not supported |
| LSU3FWCEA0 | Supported | Not supported | Not supported | Not supported | Not supported |
| IM-IPSX-IV | Supported | Supported | Supported | Not supported | Not supported |
| LSU1IPSBEA0 | Supported | Not supported | Not supported | Not supported | Not supported |
| IM-ACG1000X-IV | Supported | Supported | Supported | Not supported | Not supported |
| LSU1ADECEA0 | Supported | Not supported | Not supported | Not supported | Not supported |
| IM-APA-I | Not supported | Not supported | Supported | Not supported | Not supported |
| IM-APA-I3 | Not supported | Not supported | Supported | Not supported | Not supported |
| IM-MSUX (1U) | Supported | Supported | Supported | Not supported | Not supported |
| IM-MSUX (1.2U) | Not supported | Not supported | Supported | Not supported | Not supported |
| IM-MSEX-B | Not supported | Not supported | Supported | Not supported | Not supported |
| IM-MSEX-B3 | Not supported | Not supported | Supported | Not supported | Not supported |
| IM-SMUX | Supported | Supported | Supported | Not supported | Not supported |
| IM-SFMX | Supported | Supported | Supported | Not supported | Not supported |
| IM-OAPX | Supported | Supported | Supported | Not supported | Not supported |

**Table2-615 Compatibility matrix between switching fabric modules and service modules (3)**

| Service module | CSFC-08E3A | CSFC-16EA | CSFC-16E2A | CSFC-16E3A | CSFC-16E |
|---|---|---|---|---|---|
| CSPC-GT48LA1 | Not supported | Not supported | Not supported | Not supported | Not supported |
| CSPC-GE24L-E | Not supported | Not supported | Not supported | Not supported | Not supported |
| CSPC-GP24LA1 | Not supported | Not supported | Not supported | Not supported | Not supported |
| CSPC-GP48LB | Not supported | Not supported | Not supported | Not supported | Not supported |
| CSPC-GP24XP2LB | Not supported | Not supported | Not supported | Not supported | Not supported |
| CSPC-GP24GE8XP2L-E | Not supported | Not supported | Not supported | Not supported | Not supported |
| CSPC-GE16XP4L-E | Not supported | Not supported | Not supported | Not supported | Not supported |
| CSPC-GP44XP4LCX | Not supported | Not supported | Not supported | Not supported | Not supported |
| CSPC-XP2LA1 | Not supported | Not supported | Not supported | Not supported | Not supported |
| CSPC-XP4LB | Not supported | Not supported | Not supported | Not supported | Not supported |
| CSPC-XP8LB | Not supported | Not supported | Not supported | Not supported | Not supported |
| CSPC-XP12LAX | Not supported | Not supported | Not supported | Not supported | Not supported |
| CSPC-XP12LCX | Not supported | Not supported | Not supported | Not supported | Not supported |

| Service module | CSFC-08E3A | CSFC-16EA | CSFC-16E2A | CSFC-16E3A | CSFC-16E |
|---|---|---|---|---|---|
| CSPC-XP24LAX | Not supported | Not supported | Not supported | Not supported | Not supported |
| CSPC-XP24LCX | Not supported | Not supported | Not supported | Not supported | Not supported |
| CSPC-XLP6LCX | Not supported | Not supported | Not supported | Not supported | Not supported |
| CSPC-CP1LCX | Not supported | Not supported | Not supported | Not supported | Not supported |
| CSPC-CP2LB | Not supported | Not supported | Not supported | Not supported | Not supported |
| CEPC-CP4RX | Not supported | Not supported | Not supported | Not supported | Supported |
| CEPC-CP4RXA | Not supported | Supported | Not supported | Not supported | Not supported |
| CEPC-CP4RX-L | Not supported | Not supported | Not supported | Not supported | Supported |
| CEPC-CQ8L | Not supported | Not supported | Not supported | Not supported | Not supported |
| CEPC-CQ8LA | Not supported | Supported | Supported | Not supported | Not supported |
| CEPC-CQ8L1A | Not supported | Supported | Supported | Not supported | Not supported |
| CEPC-CQ8L3A | Supported | Supported | Supported | Supported | Not supported |
| CEPC-CQ16L1 | Not supported | Not supported | Not supported | Not supported | Not supported |
| CEPC-DQ2L1-G | Not supported | Not supported | Not supported | Not supported | Not supported |
| CEPC-XP4LX | Not supported | Not supported | Not supported | Not supported | Supported |
| CEPC-XP24LX | Not supported | Not supported | Not supported | Not supported | Supported |
| CEPC-XP48RX | Not supported | Not supported | Not supported | Not supported | Supported |
| CSPEX-1204 | Not supported | Not supported | Not supported | Not supported | Not supported |
| CSPEX-1104-E | Not supported | Not supported | Not supported | Not supported | Not supported |
| CSPEX-1304X | Not supported | Not supported | Not supported | Not supported | Supported |
| CSPEX-1404X | Not supported | Not supported | Not supported | Not supported | Supported |
| CSPEX-1502X | Not supported | Not supported | Not supported | Not supported | Supported |
| CSPEX-1502XA | Not supported | Supported | Not supported | Not supported | Not supported |
| CSPEX-1504X | Not supported | Not supported | Not supported | Not supported | Supported |
| CSPEX-1504XA | Not supported | Supported | Not supported | Not supported | Supported |
| CSPEX-1602X | Not supported | Not supported | Not supported | Not supported | Supported |
| CSPEX-1602XA | Not supported | Supported | Not supported | Not supported | Not supported |
| CSPEX-1802X | Not supported | Not supported | Not supported | Not supported | Supported |
| CSPEX-1802XA | Not supported | Supported | Supported | Not supported | Supported |
| CSPEX-1804X | Not supported | Not supported | Not supported | Not supported | Supported |
| CSPEX-1512X | Not supported | Not supported | Not supported | Not supported | Supported |
| CSPEX-1612X | Not supported | Not supported | Not supported | Not supported | Supported |
| CSPEX-1812X | Not supported | Not supported | Not supported | Not supported | Supported |
| CSPEX-1812X-E | Not supported | Not supported | Not supported | Not supported | Supported |
| CSPEX-2304X-G | Not supported | Not supported | Not supported | Not supported | Supported |
| CSPEX-2304X-G2 | Not supported | Not supported | Not supported | Not supported | Supported |

| Service module | CSFC-08E3A | CSFC-16EA | CSFC-16E2A | CSFC-16E3A | CSFC-16E |
|---|---|---|---|---|---|
| CSPEX-2304X-LG | Not supported | Not supported | Not supported | Not supported | Supported |
| CSPEX-2314X-G | Not supported | Not supported | Not supported | Not supported | Supported |
| CSPEX-2314X-G1 | Not supported | Not supported | Not supported | Not supported | Supported |
| CSPEX-2314X-G2 | Not supported | Not supported | Not supported | Not supported | Supported |
| CSPEX-2612XA | Not supported | Supported | Supported | Not supported | Not supported |
| CSPEX-2612X3A | Supported | Supported | Supported | Supported | Not supported |
| CSPEX-2612X3-E | Not supported | Not supported | Not supported | Not supported | Supported |
| CSPEX-2612X-E | Not supported | Not supported | Not supported | Not supported | Supported |
| CMPE-1104 | Not supported | Not supported | Not supported | Not supported | Not supported |
| RX-SPE200 | Not supported | Not supported | Not supported | Not supported | Supported |
| RX-SPE200-E | Not supported | Not supported | Not supported | Not supported | Supported |
| IM-NGFWX-IV | Not supported | Not supported | Not supported | Not supported | Supported |
| LSU1FWCEA0 | Not supported | Not supported | Not supported | Not supported | Not supported |
| LSU3FWCEA0 | Not supported | Not supported | Not supported | Not supported | Not supported |
| IM-IPSX-IV | Not supported | Not supported | Not supported | Not supported | Supported |
| LSU1IPSBEA0 | Not supported | Not supported | Not supported | Not supported | Not supported |
| IM-ACG1000X-IV | Not supported | Not supported | Not supported | Not supported | Supported |
| LSU1ADECEA0 | Not supported | Not supported | Not supported | Not supported | Not supported |
| IM-APA-I | Not supported | Not supported | Not supported | Not supported | Supported |
| IM-APA-I3 | Not supported | Not supported | Not supported | Not supported | Supported |
| IM-MSUX (1U) | Not supported | Not supported | Not supported | Not supported | Supported |
| IM-MSUX (1.2U) | Not supported | Not supported | Not supported | Not supported | Supported |
| IM-MSEX-B | Not supported | Not supported | Not supported | Not supported | Supported |
| IM-MSEX-B3 | Not supported | Not supported | Not supported | Not supported | Supported |
| IM-SMUX | Not supported | Not supported | Not supported | Not supported | Supported |
| IM-SFMX | Not supported | Not supported | Not supported | Not supported | Supported |
| IM-OAPX | Not supported | Not supported | Not supported | Not supported | Supported |

**Table2-616 Compatibility matrix between switching fabric modules and service modules (4)**

| Service module | CSFC-12E | CSFC-08T | CSFC-08T-G | CSFC-08T-G3 |
|---|---|---|---|---|
| CSPC-GT48LA1 | Not supported | Not supported | Not supported | Not supported |
| CSPC-GE24L-E | Not supported | Not supported | Not supported | Not supported |
| CSPC-GP24LA1 | Not supported | Not supported | Not supported | Not supported |
| CSPC-GP48LB | Not supported | Not supported | Not supported | Not supported |
| CSPC-GP24XP2LB | Not supported | Not supported | Not supported | Not supported |
| CSPC-GP24GE8X | Not supported | Not supported | Not supported | Not supported |

| Service module | CSFC-12E | CSFC-08T | CSFC-08T-G | CSFC-08T-G3 |
|---|---|---|---|---|
| P2L-E | | | | |
| CSPC-GE16XP4L-E | Not supported | Not supported | Not supported | Not supported |
| CSPC-GP44XP4LCX | Not supported | Not supported | Not supported | Not supported |
| CSPC-XP2LA1 | Not supported | Not supported | Not supported | Not supported |
| CSPC-XP4LB | Not supported | Not supported | Not supported | Not supported |
| CSPC-XP8LB | Not supported | Not supported | Not supported | Not supported |
| CSPC-XP12LAX | Not supported | Not supported | Not supported | Not supported |
| CSPC-XP12LCX | Not supported | Not supported | Not supported | Not supported |
| CSPC-XP24LAX | Not supported | Not supported | Not supported | Not supported |
| CSPC-XP24LCX | Not supported | Not supported | Not supported | Not supported |
| CSPC-XLP6LCX | Not supported | Not supported | Not supported | Not supported |
| CSPC-CP1LCX | Not supported | Not supported | Not supported | Not supported |
| CSPC-CP2LB | Not supported | Not supported | Not supported | Not supported |
| CEPC-CP4RX | Supported | Supported | Not supported | Not supported |
| CEPC-CP4RXA | Not supported | Not supported | Not supported | Not supported |
| CEPC-CP4RX-L | Supported | Supported | Not supported | Not supported |
| CEPC-CQ8L | Not supported | Supported | Not supported | Not supported |
| CEPC-CQ8LA | Not supported | Not supported | Not supported | Not supported |
| CEPC-CQ8L1A | Not supported | Not supported | Not supported | Not supported |
| CEPC-CQ8L3A | Not supported | Not supported | Not supported | Not supported |
| CEPC-CQ16L1 | Not supported | Supported | Not supported | Not supported |
| CEPC-DQ2L1-G | Not supported | Supported | Not supported | Not supported |
| CEPC-XP4LX | Supported | Supported | Supported | Not supported |
| CEPC-XP24LX | Supported | Supported | Not supported | Not supported |
| CEPC-XP48RX | Supported | Supported | Not supported | Not supported |
| CSPEX-1204 | Not supported | Not supported | Not supported | Not supported |
| CSPEX-1104-E | Not supported | Not supported | Not supported | Not supported |
| CSPEX-1304X | Supported | Supported | Supported | Not supported |
| CSPEX-1404X | Supported | Supported | Supported | Not supported |
| CSPEX-1502X | Supported | Supported | Not supported | Not supported |
| CSPEX-1502XA | Not supported | Not supported | Not supported | Not supported |
| CSPEX-1504X | Supported | Supported | Supported | Not supported |
| CSPEX-1504XA | Not supported | Not supported | Not supported | Not supported |
| CSPEX-1602X | Supported | Supported | Not supported | Not supported |
| CSPEX-1602XA | Not supported | Not supported | Not supported | Not supported |
| CSPEX-1802X | Not supported | Supported | Supported | Not supported |

| Service module | CSFC-12E | CSFC-08T | CSFC-08T-G | CSFC-08T-G3 |
|---|---|---|---|---|
| CSPEX-1802XA | Not supported | Supported | Supported | Not supported |
| CSPEX-1804X | Not supported | Supported | Supported | Not supported |
| CSPEX-1512X | Not supported | Supported | Supported | Not supported |
| CSPEX-1612X | Not supported | Supported | Supported | Not supported |
| CSPEX-1812X | Not supported | Supported | Supported | Not supported |
| CSPEX-1812X-E | Not supported | Supported | Supported | Not supported |
| CSPEX-2304X-G | Not supported | Supported | Supported | Supported |
| CSPEX-2304X-G2 | Supported | Supported | Supported | Not supported |
| CSPEX-2304X-LG | Not supported | Supported | Supported | Not supported |
| CSPEX-2314X-G | Not supported | Supported | Supported | Supported |
| CSPEX-2314X-G1 | Not supported | Supported | Supported | Supported |
| CSPEX-2314X-G2 | Not supported | Supported | Supported | Supported |
| CSPEX-2612XA | Not supported | Not supported | Not supported | Not supported |
| CSPEX-2612X3A | Not supported | Not supported | Not supported | Not supported |
| CSPEX-2612X3-E | Not supported | Supported | Not supported | Not supported |
| CSPEX-2612X-E | Not supported | Supported | Supported | Not supported |
| CMPE-1104 | Not supported | Not supported | Not supported | Not supported |
| RX-SPE200 | Not supported | Supported | Supported | Not supported |
| RX-SPE200-E | Not supported | Supported | Supported | Not supported |
| IM-NGFWX-IV | Supported | Supported | Supported | Not supported |
| LSU1FWCEA0 | Not supported | Not supported | Not supported | Not supported |
| LSU3FWCEA0 | Not supported | Not supported | Not supported | Not supported |
| IM-IPSX-IV | Supported | Supported | Supported | Not supported |
| LSU1IPSBEA0 | Not supported | Not supported | Not supported | Not supported |
| IM-ACG1000X-IV | Supported | Supported | Supported | Not supported |
| LSU1ADECEA0 | Not supported | Not supported | Not supported | Not supported |
| IM-APA-I | Not supported | Supported | Not supported | Not supported |
| IM-APA-I3 | Not supported | Supported | Not supported | Not supported |
| IM-MSUX (1U) | Supported | Supported | Supported | Not supported |
| IM-MSUX (1.2U) | Not supported | Supported | Not supported | Not supported |
| IM-MSEX-B | Not supported | Supported | Not supported | Not supported |
| IM-MSEX-B3 | Not supported | Supported | Not supported | Not supported |
| IM-SMUX | Supported | Supported | Supported | Not supported |
| IM-SFMX | Supported | Not supported | Not supported | Not supported |
| IM-OAPX | Supported | Supported | Supported | Not supported |

**Table2-617 Compatibility matrix between switching fabric modules and service modules (5)**

| Service module | CSFC-16T | CSFC-16T1 | CSFC-16T3 | CSFC-16T-G | CSFC-10T-G<br>CSFC-10T-G3<br>CSFC-10E-G |
|---|---|---|---|---|---|
| CSPC-GT48LA1 | Not supported | Not supported | Not supported | Not supported | Not supported |
| CSPC-GE24L-E | Not supported | Not supported | Not supported | Not supported | Not supported |
| CSPC-GP24LA1 | Not supported | Not supported | Not supported | Not supported | Not supported |
| CSPC-GP48LB | Not supported | Not supported | Not supported | Not supported | Not supported |
| CSPC-GP24XP2LB | Not supported | Not supported | Not supported | Not supported | Not supported |
| CSPC-GP24GE8XP2L-E | Not supported | Not supported | Not supported | Not supported | Not supported |
| CSPC-GE16XP4L-E | Not supported | Not supported | Not supported | Not supported | Not supported |
| CSPC-GP44XP4LCX | Not supported | Not supported | Not supported | Not supported | Not supported |
| CSPC-XP2LA1 | Not supported | Not supported | Not supported | Not supported | Not supported |
| CSPC-XP4LB | Not supported | Not supported | Not supported | Not supported | Not supported |
| CSPC-XP8LB | Not supported | Not supported | Not supported | Not supported | Not supported |
| CSPC-XP12LAX | Not supported | Not supported | Not supported | Not supported | Not supported |
| CSPC-XP12LCX | Not supported | Not supported | Not supported | Not supported | Not supported |
| CSPC-XP24LAX | Not supported | Not supported | Not supported | Not supported | Not supported |
| CSPC-XP24LCX | Not supported | Not supported | Not supported | Not supported | Not supported |
| CSPC-XLP6LCX | Not supported | Not supported | Not supported | Not supported | Not supported |
| CSPC-CP1LCX | Not supported | Not supported | Not supported | Not supported | Not supported |
| CSPC-CP2LB | Not supported | Not supported | Not supported | Not supported | Not supported |
| CEPC-CP4RX | Supported | Supported | Not supported | Not supported | Not supported |
| CEPC-CP4RXA | Not supported | Not supported | Not supported | Not supported | Not supported |
| CEPC-CP4RX-L | Supported | Supported | Not supported | Not supported | Not supported |
| CEPC-CQ8L | Not supported | Supported | Not supported | Not supported | Not supported |

| Service module | CSFC-16T | CSFC-16T1 | CSFC-16T3 | CSFC-16T-G | CSFC-10T-G<br>CSFC-10T-G3<br>CSFC-10E-G |
|---|---|---|---|---|---|
| CEPC-CQ8LA | Not supported | Not supported | Not supported | Not supported | Supported |
| CEPC-CQ8L1A | Not supported | Not supported | Not supported | Not supported | Not supported |
| CEPC-CQ8L3A | Not supported | Not supported | Not supported | Not supported | Not supported |
| CEPC-CQ16L1 | Not supported | Supported | Not supported | Not supported | Not supported |
| CEPC-DQ2L1-G | Not supported | Supported | Not supported | Not supported | Not supported |
| CEPC-XP4LX | Supported | Supported | Not supported | Supported | Supported |
| CEPC-XP24LX | Supported | Supported | Not supported | Not supported | Not supported |
| CEPC-XP48RX | Supported | Supported | Not supported | Not supported | Not supported |
| CSPEX-1204 | Not supported | Not supported | Not supported | Not supported | Not supported |
| CSPEX-1104-E | Not supported | Not supported | Not supported | Not supported | Not supported |
| CSPEX-1304X | Supported | Supported | Not supported | Supported | Supported |
| CSPEX-1404X | Supported | Supported | Not supported | Supported | Supported |
| CSPEX-1502X | Supported | Supported | Not supported | Not supported | Not supported |
| CSPEX-1502XA | Not supported | Not supported | Not supported | Not supported | Not supported |
| CSPEX-1504X | Supported | Supported | Not supported | Supported | Supported |
| CSPEX-1504XA | Not supported | Not supported | Not supported | Not supported | Not supported |
| CSPEX-1602X | Supported | Supported | Not supported | Not supported | Not supported |
| CSPEX-1602XA | Not supported | Not supported | Not supported | Not supported | Not supported |
| CSPEX-1802X | Supported | Supported | Not supported | Not supported | Supported |
| CSPEX-1802XA | Supported | Supported | Not supported | Not supported | Supported |
| CSPEX-1804X | Supported | Supported | Not supported | Supported | Not supported |
| CSPEX-1512X | Supported | Supported | Not supported | Supported | Not supported |
| CSPEX-1612X | Supported | Supported | Not supported | Supported | Not supported |
| CSPEX-1812X | Supported | Supported | Not supported | Supported | Not supported |
| CSPEX-1812X-E | Supported | Supported | Supported | Supported | Not supported |
| CSPEX-2304X-G | Supported | Supported | Not supported | Supported | Supported |
| CSPEX-2304X-G2 | Supported | Supported | Not supported | Supported | Supported |
| CSPEX-2304X-LG | Supported | Supported | Not supported | Supported | Supported |
| CSPEX-2314X-G | Supported | Supported | Not supported | Supported | Supported |

| Service module | CSFC-16T | CSFC-16T1 | CSFC-16T3 | CSFC-16T-G | CSFC-10T-G<br>CSFC-10T-G3<br>CSFC-10E-G |
|---|---|---|---|---|---|
| CSPEX-2314X-G1 | Supported | Supported | Not supported | Supported | Supported |
| CSPEX-2314X-G2 | Supported | Supported | Not supported | Supported | Supported |
| CSPEX-2612XA | Not supported | Not supported | Not supported | Not supported | Not supported |
| CSPEX-2612X3A | Supported | Supported | Not supported | Not supported | Not supported |
| CSPEX-2612X3-E | Supported | Supported | Supported | Not supported | Not supported |
| CSPEX-2612X-E | Supported | Supported | Not supported | Not supported | Supported |
| CMPE-1104 | Not supported | Not supported | Not supported | Not supported | Not supported |
| RX-SPE200 | Supported | Supported | Not supported | Supported | Supported |
| RX-SPE200-E | Supported | Supported | Not supported | Not supported | Not supported |
| IM-NGFWX-IV | Supported | Supported | Not supported | Supported | Supported |
| LSU1FWCEA0 | Not supported | Not supported | Not supported | Not supported | Not supported |
| LSU3FWCEA0 | Not supported | Not supported | Not supported | Not supported | Not supported |
| IM-IPSX-IV | Supported | Supported | Not supported | Supported | Not supported |
| LSU1IPSBEA0 | Not supported | Not supported | Not supported | Not supported | Not supported |
| IM-ACG1000X-IV | Supported | Supported | Not supported | Supported | Not supported |
| LSU1ADECEA0 | Not supported | Not supported | Not supported | Not supported | Not supported |
| IM-APA-I | Supported | Supported | Supported | Not supported | Not supported |
| IM-APA-I3 | Supported | Supported | Supported | Not supported | Not supported |
| IM-MSUX (1U) | Supported | Supported | Supported | Supported | Supported |
| IM-MSUX (1.2U) | Supported | Supported | Supported | Not supported | Not supported |
| IM-MSEX-B | Supported | Supported | Supported | Not supported | Not supported |
| IM-MSEX-B3 | Supported | Supported | Supported | Not supported | Not supported |
| IM-SMUX | Supported | Supported | Supported | Supported | Not supported |
| IM-SFMX | Not supported | Not supported | Not supported | Not supported | Not supported |
| IM-OAPX | Supported | Supported | Not supported | Supported | Supported |

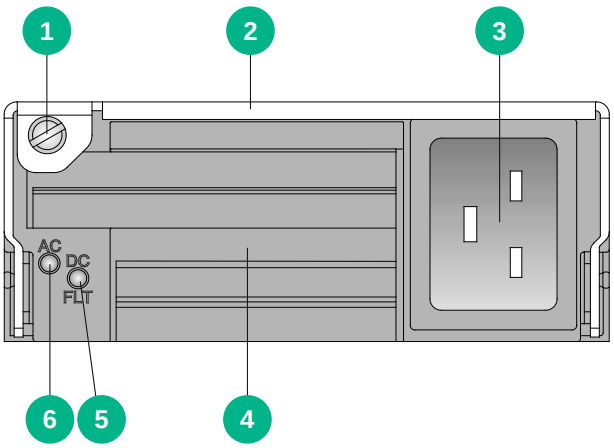
# Power supplies

The router supports the PSR1200B-12A, PSR1200B-12A1-F, LSUM1AC2500, PSR2500-12A, LSUM1DC2400, PSR2400-12D, PSR2400-D, PSR2500B-12AHD-F, PSR1600B-12A-B, PSR1600B-12A1-B, PSR2000-12D1-B, and PSR2000-12D-B power supplies.

# PSR1200B-12A

## View

**Figure2-164 PSR1200B-12A power supply view**




| | |
|---|---|
| (1) Captive screw | (2) Power supply handle |
| (3) Power input receptacle | (4) Air inlet vent |
| (5) Power output status LED | (6) Power input status LED |

## LEDs

**Table2-618 PSR1200B-12A LED description**

| LED mark | Status | Description |
|---|---|---|
| AC | Steady green | The power supply system is operating correctly. |
| | Off | No power input. |
| | | The input voltage is too low and the power supply has entered self-protection state. |
| DC | Steady green | Power output of the power supply system is normal. |
| | Steady red | Power output of the power supply system is abnormal. The power supply has an output short circuit, output overcurrent, output overvoltage, input undervoltage, or remote shutdown alarm and has entered self-protection state. |
| | Steady amber | An overtemperature alarm was triggered. |

## Technical specifications

**Table2-619 Technical specifications**

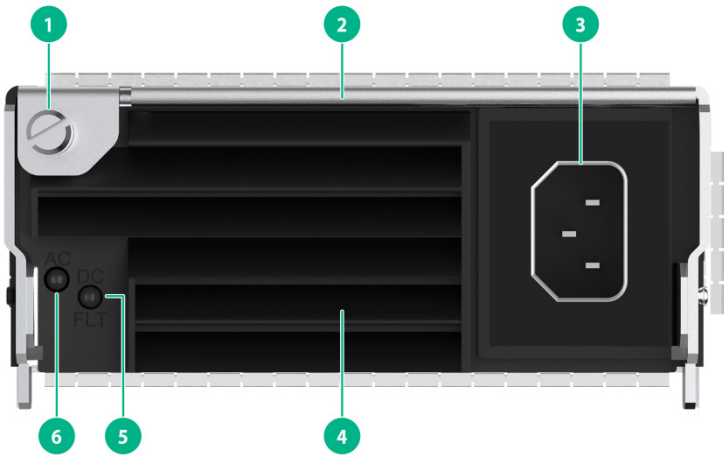
| Item | Description |
|---|---|
| Dimensions (H × W × D) | 41 × 102 × 410 mm (1.61 × 4.02 × 16.14 in) |
| Weight | 2.27 kg (5.00 lb) |
| Inputs | 1 |
| Rated input voltage range | 100 VAC to 240 VAC @ 50 Hz or 60 Hz |

| Item | Description |
| --- | --- |
| Input voltage range | 90 VAC to 290 VAC |
| Maximum input current | 16 A |
| Rated output voltage | 12 VDC |
| Rated output current | 100 A |
| Rated output power | 1200 W |
| Front-level circuit breaker/fuse | ≥ 20 A |
| Heat dissipation | Built-in fans |
| Power cable | Standard C19 cable (3*1.5mm²) |

# PSR1200B-12A1-F

## View

**Figure2-165 PSR1200B-12A1-F power supply view**




| | |
| --- | --- |
| (1) Captive screw | (2) Power supply handle |
| (3) Power input receptacle | (4) Air inlet vent |
| (5) Power output status LED | (6) Power input status LED |

## LEDs

**Table2-620 PSR1200B-12A1-F LED description**

| LED mark | Status | Description |
| --- | --- | --- |
| AC | Steady green | The power supply system is operating correctly. |
| | Off | No power input. |
| | | The input voltage is too low and the power supply has entered self-protection state. |
| DC | Steady green | Power output of the power supply system is normal. |

| LED mark | Status | Description |
| --- | --- | --- |
| | Steady red | Power output of the power supply system is abnormal. The power supply has an output short circuit, output overcurrent, output overvoltage, input undervoltage, or remote shutdown alarm and has entered self-protection state. |
| | Steady amber | An overtemperature alarm was triggered. |

## Technical specifications

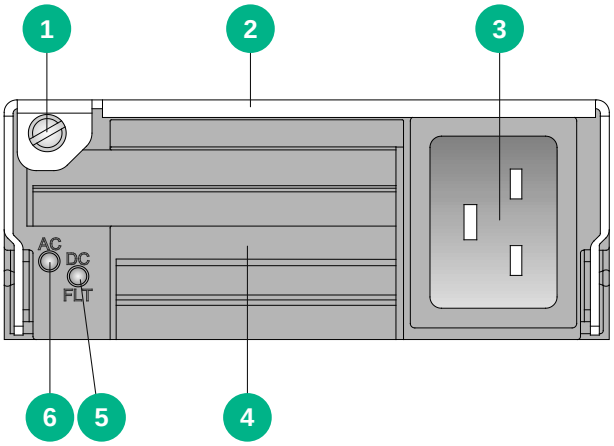
**Table2-621 Technical specifications**

| Item | Description |
| --- | --- |
| Dimensions (H × W × D) | 41 × 102 × 410 mm (1.61 × 4.02 × 16.14 in) |
| Weight | 2.27 kg (5.00 lb) |
| Inputs | 1 |
| Rated input voltage range | • 200 VAC to 240 VAC @ 50 Hz or 60 Hz<br>• 240 VDC |
| Input voltage range | • 180 VAC to 264 VAC<br>• 192 VDC to 320 VDC |
| Maximum input current | 10 A |
| Rated output voltage | 12 VDC |
| Rated output current | 100 A |
| Rated output power | 1200 W |
| Front-level circuit breaker/fuse | ≥ 20 A |
| Heat dissipation | Built-in fans |
| Power cable | Standard C13 cable (3*1.0mm²) |

# PSR2500-12A/LSUM1AC2500

## View

**Figure2-166 PSR2500-12A power supply view**




| | |
|---|---|
| (1) Captive screw | (2) Power supply handle |
| (3) Power input receptacle | (4) Air inlet vent |
| (5) Power output status LED | (6) Power input status LED |

The views of the PSR2500-12A and LSUM1AC2500 power supplies are similar. This figure uses the PSR2500-12A as an example.

## LEDs

**Table2-622 PSR2500-12A/LSUM1AC2500 LED description**

| LED mark | Status | Description |
|---|---|---|
| AC | Steady green | The power supply system is operating correctly. |
| | Off | No power input. |
| | | The input voltage is too low and the power supply has entered self-protection state. |
| DC | Steady green | Power output of the power supply system is normal. |
| | Steady red | Power output of the power supply system is abnormal. The power supply has an output short circuit, output overcurrent, output overvoltage, input undervoltage, or remote shutdown alarm and has entered self-protection state. |
| | Steady amber | An overtemperature alarm was triggered. |

## Technical specifications

**Table2-623 Technical specifications**

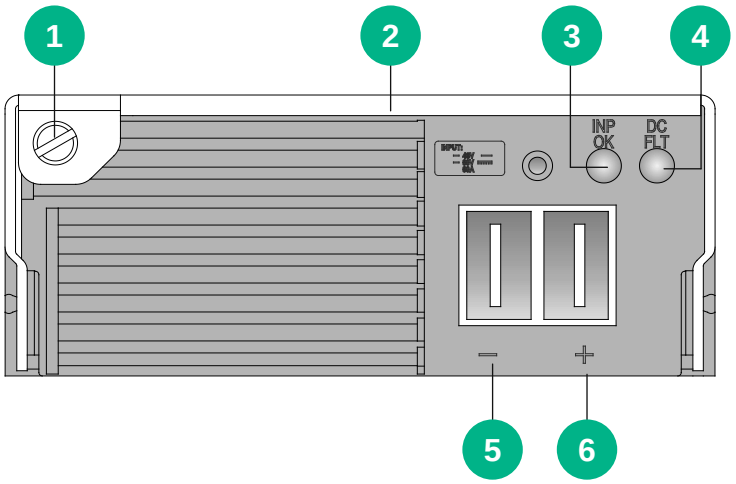
| Item | Description |
|---|---|
| Dimensions (H × W × D) | 41 × 102 × 410 mm (1.61 × 4.02 × 16.14 in) |
| Weight | 2.50 kg (5.51 lb) |
| Inputs | 1 |

| Item | Description |
| --- | --- |
| Rated input voltage range | • 100 VAC to 240 VAC @ 50 Hz or 60 Hz<br>• 240 VDC |
| Input voltage range | • 90 VAC to 264 VAC<br>• 190 VDC to 290 VDC |
| Maximum input current | 16 A |
| Rated output voltage | 12 VDC |
| Rated output current | • 100 A (100 VAC to 180 VAC input)<br>• 208 A (180 VAC to 240 VAC or 240 VDC input) |
| Rated output power | • 1200 W (100 VAC to 180 VAC input)<br>• 2500 W (180 VAC to 240 VAC or 240 VDC input) |
| Front-level circuit breaker/fuse | ≥ 20 A |
| Heat dissipation | Built-in fans |
| Power cable | Standard C19 cable (3*1.5mm²) |

# PSR2400-12D/LSUM1DC2400

## View

**Figure2-167 PSR2400-12D power supply view**




| | |
| --- | --- |
| (1) Captive screw | (2) Power supply handle |
| (3) Power input status LED | (4) Power output status LED |
| (5) DC input negative terminal (–) | (6) DC input positive terminal (+) |

The views of the PSR2400-12D and LSUM1DC2400 power supplies are similar. This figure uses the PSR2400-12D as an example.

## LEDs

**Table2-624 PSR2400-12D/LSUM1DC2400 LED description**

| LED mark | Status | Description |
|---|---|---|
| INP OK | Steady green | The power supply system is operating correctly. |
| | Off | No power input. |
| | | The input voltage is too low and the power supply has entered self-protection state. |
| DC/FLT | Steady green | Power output of the power supply system is normal. |
| | Steady red | Power output of the power supply system is abnormal. The power supply has an output short circuit, output overcurrent, output overvoltage, input undervoltage, or remote shutdown alarm and has entered self-protection state. |
| | Steady amber | An overtemperature alarm was triggered. |

## Technical specifications

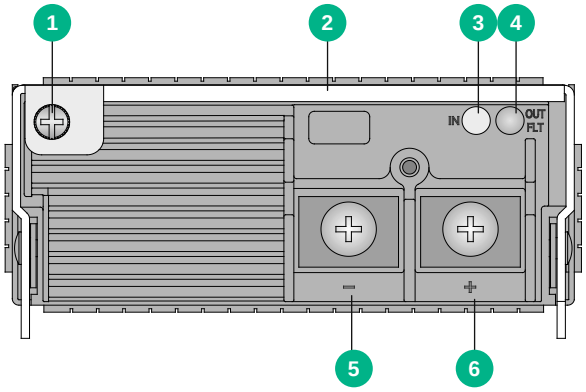
**Table2-625 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 41 × 102 × 410 mm (1.61 × 4.02 × 16.14 in) |
| Weight | 2.40 kg (5.29 lb) |
| Inputs | 1 |
| Rated input voltage range | –48 VDC to –60 VDC |
| Input voltage range | –36 VDC to –72 VDC |
| Maximum input current | 78 A |
| Rated output voltage | 12 VDC |
| Rated output current | 200 A |
| Rated output power | 2400 W |
| Front-level circuit breaker/fuse | ≥ 100 A |
| Heat dissipation | Built-in fans |
| Power cable | PWC01 2P cable |

# PSR2400-D

## View

**Figure2-168 PSR2400-D power supply view**




| | |
|---|---|
| (1) Captive screw | (2) Power supply handle |
| (3) Power input status LED | (4) Power output status LED |
| (5) DC input negative terminal (–) | (6) DC input positive terminal (+) |

## LEDs

**Table2-626 PSR2400-D LED description**

| LED mark | Status | Description |
|---|---|---|
| INP OK | Steady green | The power supply system is operating correctly. |
| | Off | No power input. |
| | | The input voltage is too low and the power supply has entered self-protection state. |
| DC/FLT | Steady green | Power output of the power supply system is normal. |
| | Steady red | Power output of the power supply system is abnormal. The power supply has an output short circuit, output overcurrent, output overvoltage, input undervoltage, or remote shutdown alarm and has entered self-protection state. |
| | Steady amber | An overtemperature alarm was triggered. |

## Technical specifications

**Table2-627 Technical specifications**

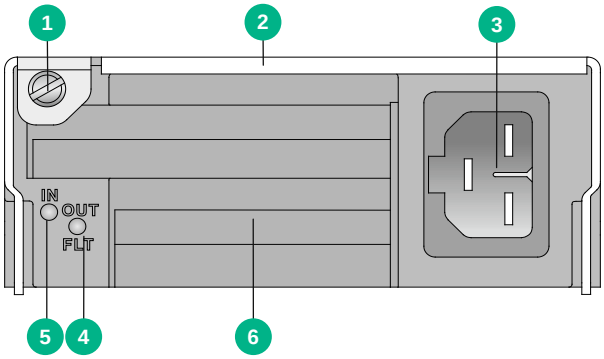
| Item | Description |
|---|---|
| Dimensions (H × W × D) | 41 × 102 × 410 mm (1.61 × 4.02 × 16.14 in) |
| Weight | 2.40 kg (5.29 lb) |
| Inputs | 1 |
| Rated input voltage range | –48 VDC to –60 VDC |
| Input voltage range | –36 VDC to –72 VDC |

| Item | Description |
| --- | --- |
| Maximum input current | 78 A |
| Rated output voltage | 12 VDC |
| Rated output current | 200 A |
| Rated output power | 2400 W |
| Front-level circuit breaker/fuse | ≥ 100 A |
| Heat dissipation | Built-in fans |
| Power cable | ST M5 cable |

# PSR2500B-12AHD-F

## View

**Figure2-169 PSR2500B-12AHD-F power supply view**




| | |
| --- | --- |
| (1) Captive screw | (2) Power supply handle |
| (3) Power input receptacle | (4) Power output status LED |
| (5) Power input status LED | (6) Air inlet vent |

## LEDs

**Table2-628 PSR2500B-12AHD-F LED description**

| LED mark | Status | Description |
| --- | --- | --- |
| IN | Steady green | The power supply system is operating correctly. |
| | Off | No power input. |
| | | The input voltage is too low and the power supply has entered self-protection state. |
| OUT | Steady green | Power output of the power supply system is normal. |
| | Steady red | Power output of the power supply system is abnormal. The power supply has an output short circuit, output overcurrent, output overvoltage, input undervoltage, or remote shutdown alarm and has entered self-protection state. |
| | Steady amber | An overtemperature alarm was triggered. |

### Technical specifications

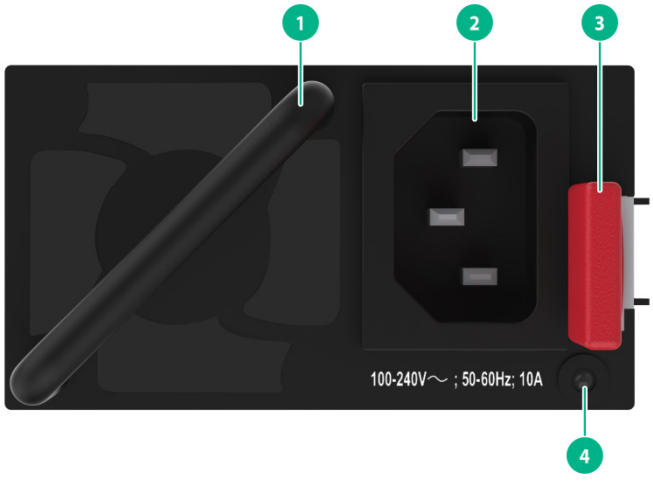
**Table2-629 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 41 × 102 × 410 mm (1.61 × 4.02 × 16.14 in) |
| Weight | 2.75 kg (6.06 lb) |
| Inputs | 1 |
| Rated input voltage range | • 100 VAC to 240 VAC @ 50 Hz or 60 Hz<br>• 240 VDC to 380 VDC |
| Input voltage range | • 90 VAC to 290 VAC<br>• 180 VDC to 400 VDC |
| Maximum input current | 16 A |
| Rated output voltage | 12 VDC |
| Rated output current | • 100 A (100 VAC to 180 VAC input)<br>• 208 A (180 VAC to 240 VAC or 240 VDC to 380 VDC input) |
| Rated output power | • 1200 W (100 VAC to 180 VAC input)<br>• 2500 W (180 VAC to 240 VAC or 240 VDC to 380 VDC input) |
| Front-level circuit breaker/fuse | ≥ 20 A |
| Heat dissipation | Built-in fans |
| Power cable | Standard HVDCB cable (3*1.5mm²) |

# PSR1600B-12A-B

### View

**Figure2-170 PSR1600B-12A-B power supply view**




| | |
|---|---|
| (1) Power supply handle | (2) Power input receptacle |
| (3) Latch | (4) Power status LED |

## LEDs

**Table2-630 PSR1600B-12A-B LED description**

| LED status | Description |
|---|---|
| Steady green | The power supply system is operating correctly. |
| Flashing green (once every two seconds) | The power supply has correct power input and is in standby state with 12 V standby output and without 12 V main output. |
| Flashing green (twice per second) | The power supply is upgrading software. |
| Steady yellow | The power supply is faulty and does not have power output. |
| Flashing yellow (once every two seconds) | The power supply is operating correctly, but an alarm has occurred (such as input undervoltage, output overcurrent, and overtemperature). |
| Flashing yellow (once per second) | The power supply does not have power input, but the backup power supplies have correct power input. |
| Off | No power input. |

## Technical specifications

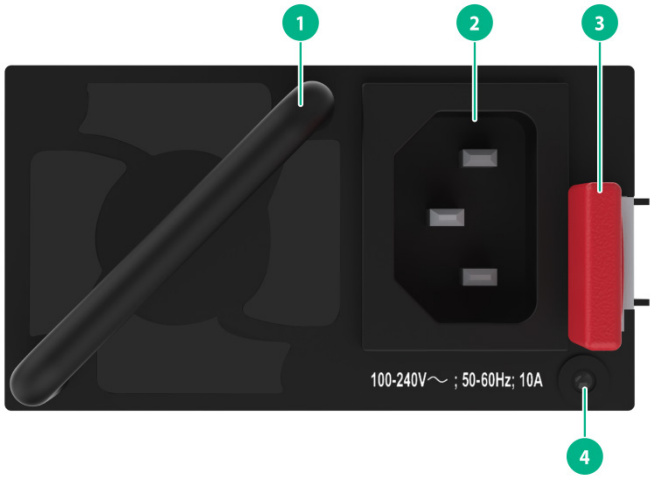
**Table2-631 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 40.2 × 73.5 × 225 mm (1.58 × 2.89 × 8.86 in) |
| Weight | 1.85 kg (4.08 lb) |
| Inputs | 1 |
| Rated input voltage range | • 100 VAC to 240 VAC @ 50 Hz or 60 Hz<br>• 240 VDC |
| Input voltage range | • 90 VAC to 305 VAC<br>• 180 VDC to 320 VDC |
| Maximum input current | 10 A |
| Rated output voltage | 12 VDC |
| Rated output current | • 65.5 A (100 to 175 VAC)<br>• 131 A (175 to 240 VAC or 240 VDC) |
| Rated output power | • 800 W (100 to 175 VAC)<br>• 1600 W (175 to 240 VAC or 240 VDC) |
| Front-level circuit breaker/fuse | ≥ 32 A |
| Heat dissipation | Built-in fans |
| Power cable | Standard C13 cable (3*1.0mm²) |

# PSR1600B-12A1-B

## View

**Figure2-171 PSR1600B-12A1-B power supply view**




| | |
|---|---|
| (1) Power supply handle | (2) Power input receptacle |
| (3) Latch | (4) Power status LED |

## LEDs

**Table2-632 PSR1600B-12A-B LED description**

| LED status | Description |
|---|---|
| Steady green | The power supply system is operating correctly. |
| Flashing green (once every two seconds) | The power supply has correct power input and is in standby state with 12 V standby output and without 12 V main output. |
| Flashing green (twice per second) | The power supply is upgrading software. |
| Steady yellow | The power supply is faulty and does not have power output. |
| Flashing yellow (once every two seconds) | The power supply is operating correctly, but an alarm has occurred (such as input undervoltage, output overcurrent, and overtemperature). |
| Flashing yellow (once per second) | The power supply does not have power input, but the backup power supplies have correct power input. |
| Off | No power input. |

## Technical specifications

**Table2-633 Technical specifications**

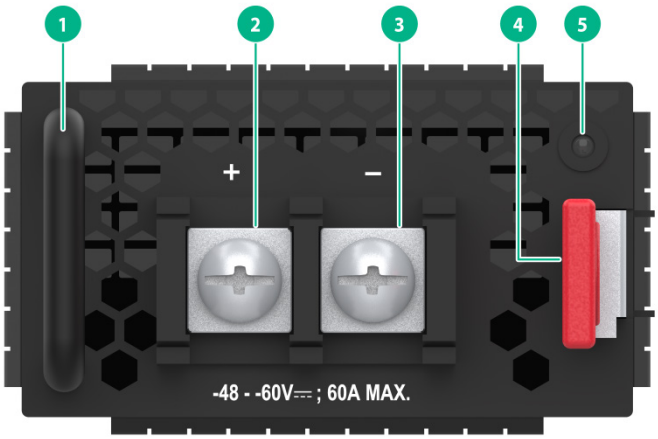
| Item | Description |
|---|---|
| Dimensions (H × W × D) | 40.2 × 73.5 × 225 mm (1.58 × 2.89 × 8.86 in) |
| Weight | 1.00 kg (2.20 lb) |

| Item | Description |
| --- | --- |
| Inputs | 1 |
| Rated input voltage range | • 100 VAC to 240 VAC @ 50 Hz or 60 Hz<br>• 240 VDC |
| Input voltage range | • 90 VAC to 305 VAC<br>• 180 VDC to 320 VDC |
| Maximum input current | 10 A |
| Rated output voltage | 12 VDC |
| Rated output current | • 65.5 A (100 to 175 VAC)<br>• 131 A (175 to 240 VAC or 240 VDC) |
| Rated output power | • 800 W (100 to 175 VAC)<br>• 1600 W (175 to 240 VAC or 240 VDC) |
| Front-level circuit breaker/fuse | ≥ 32 A |
| Heat dissipation | Built-in fans |
| Power cable | Standard C13 cable (3*1.0mm²) |

# PSR2000-12D-B

## View

**Figure2-172 PSR2000-12D-B power supply view**




| | |
| --- | --- |
| (1) Power supply handle | (2) DC input positive terminal (+) |
| (3) DC input negative terminal (–) | (4) Latch |
| (5) Power status LED | |

## LEDs

**Table2-634 PSR2000-12D-B LED description**

| LED status | Description |
| --- | --- |
| Steady green | The power supply system is operating correctly. |
| Flashing green | The power supply has correct power input and is in standby state with 12 V standby |

| LED status | Description |
| --- | --- |
| (once every two seconds) | output and without 12 V main output. |
| Flashing green (once per second) | The power supply is upgrading software. |
| Steady yellow | The power supply is faulty and does not have power output. |
| Flashing yellow (once every two seconds) | The power supply is operating correctly, but an alarm has occurred (such as input undervoltage, output overcurrent, and overtemperature). |
| Flashing yellow (once per second) | The power supply does not have power input, but the backup power supplies have correct power input. |
| Off | No power input. |

## Technical specifications

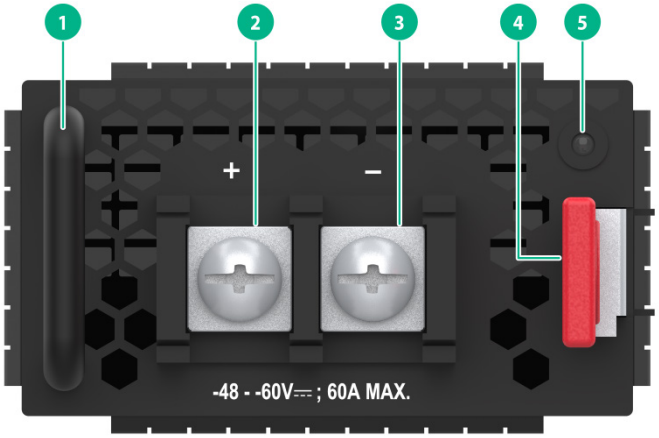
**Table2-635 Technical specifications**

| Item | Description |
| --- | --- |
| Dimensions (H × W × D) | 40.2 × 73.5 × 225 mm (1.58 × 2.89 × 8.86 in) |
| Weight | 1.50 kg (3.31 lb) |
| Inputs | 1 |
| Rated input voltage range | –48 VDC to –60 VDC |
| Input voltage range | –40 VDC to –72 VDC |
| Maximum input current | 60 A |
| Rated output voltage | 12 VDC |
| Rated output current | 167 A |
| Rated output power | 2000 W |
| Front-level circuit breaker/fuse | ≥ 100 A |
| Heat dissipation | Built-in fans |
| Power cable | External DC power cords (6 AWG) |

# PSR2000-12D1-B

## View

**Figure2-173 PSR2000-12D1-B power supply view**




| | |
|---|---|
| (1) Power supply handle | (2) DC input positive terminal (+) |
| (3) DC input negative terminal (–) | (4) Latch |
| (5) Power status LED | |

## LEDs

**Table2-636 PSR2000-12D-B LED description**

| LED status | Description |
|---|---|
| Steady green | The power supply system is operating correctly. |
| Flashing green (once every two seconds) | The power supply has correct power input and is in standby state with 12 V standby output and without 12 V main output. |
| Flashing green (once per second) | The power supply is upgrading software. |
| Steady yellow | The power supply is faulty and does not have power output. |
| Flashing yellow (once every two seconds) | The power supply is operating correctly, but an alarm has occurred (such as input undervoltage, output overcurrent, and overtemperature). |
| Flashing yellow (once per second) | The power supply does not have power input, but the backup power supplies have correct power input. |
| Off | No power input. |

## Technical specifications

**Table2-637 Technical specifications**

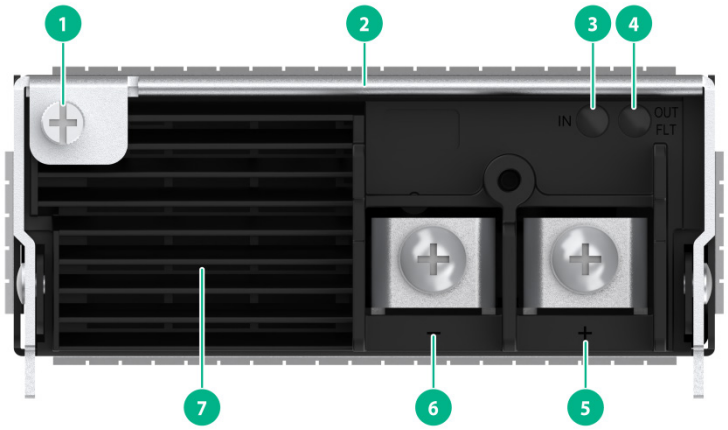
| Item | Description |
|---|---|
| Dimensions (H × W × D) | 40.2 × 73.5 × 225 mm (1.58 × 2.89 × 8.86 in) |
| Weight | 1.15 kg (2.54 lb) |

| Item | Description |
|---|---|
| Inputs | 1 |
| Rated input voltage range | –48 VDC to –60 VDC |
| Input voltage range | –40 VDC to –72 VDC |
| Maximum input current | 60 A |
| Rated output voltage | 12 VDC |
| Rated output current | 167 A |
| Rated output power | 2000 W |
| Front-level circuit breaker/fuse | ≥ 100 A |
| Heat dissipation | Built-in fans |
| Power cable | External DC power cords (6 AWG) |

# PSR2200-12D-F

## View

**Figure2-174 PSR2200-12D-F power supply view**




| | |
|---|---|
| (1) Captive screw | (2) Power supply handle |
| (3) Power input status LED | (4) Power output status LED |
| (5) DC input positive terminal (+) | (6) DC input negative terminal (–) |
| (7) Air inlet vent | |

## LEDs

**Table2-638 PSR2200-12D-F LED description**

| LED mark | Status | Description |
|---|---|---|
| INP OK | Steady green | The power supply system is operating correctly. |
| | Off | No power input. |
| | | The input voltage is too low and the power supply has entered |

| LED mark | Status | Description |
|---|---|---|
| | | self-protection state. |
| DC/FLT | Steady green | Power output of the power supply system is normal. |
| | Steady red | Power output of the power supply system is abnormal. The power supply has an output short circuit, output overcurrent, output overvoltage, input undervoltage, or remote shutdown alarm and has entered self-protection state. |
| | Steady amber | An overtemperature alarm was triggered. |

## Technical specifications

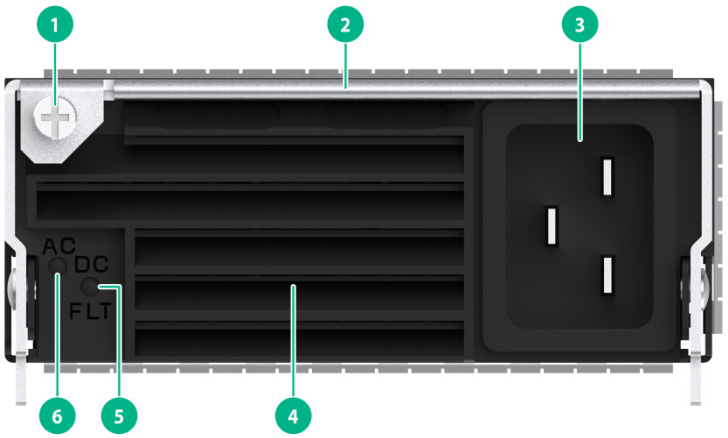
**Table2-639 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 41 × 102 × 410 mm (1.61 × 4.02 × 16.14 in) |
| Weight | 1.78 kg (3.92 lb) |
| Inputs | 1 |
| Rated input voltage range | –48 VDC to –60 VDC |
| Input voltage range | –38.4 VDC to –72 VDC |
| Maximum input current | 70 A |
| Rated output voltage | 12 VDC |
| Rated output current | 184 A |
| Rated output power | 2200 W |
| Front-level circuit breaker/fuse | ≥ 100 A |
| Heat dissipation | Built-in fans |
| Power cable | ST M5 cable |

# PSR2400-12A-F

## View

**Figure2-175 PSR2400-12A-F power supply view**




| | |
|---|---|
| (1) Captive screw | (2) Power supply handle |
| (3) Power input receptacle | (4) Air inlet vent |
| (5) Power output status LED | (6) Power input status LED |

## LEDs

**Table2-640 PSR2400-12A-F LED description**

| LED mark | Status | Description |
|---|---|---|
| AC | Steady green | The power supply system is operating correctly. |
| | Off | No power input. |
| | | The input voltage is too low and the power supply has entered self-protection state. |
| DC | Steady green | Power output of the power supply system is normal. |
| | Steady red | Power output of the power supply system is abnormal. The power supply has an output short circuit, output overcurrent, output overvoltage, input undervoltage, or remote shutdown alarm and has entered self-protection state. |
| | Steady amber | An overtemperature alarm was triggered. |

## Technical specifications

**Table2-641 Technical specifications**

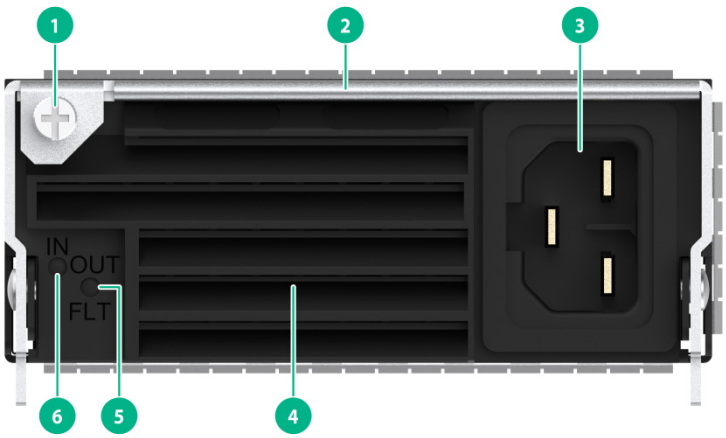
| Item | Description |
|---|---|
| Dimensions (H × W × D) | 41 × 102 × 410 mm (1.61 × 4.02 × 16.14 in) |
| Weight | 2.20 kg (4.85 lb) |
| Inputs | 1 |
| Rated input voltage range | • 100 VAC to 240 VAC @ 50 Hz or 60 Hz<br>• 240 VDC |

| Item | Description |
| --- | --- |
| Input voltage range | • 90 VAC to 290 VAC<br>• 180 VDC to 320 VDC |
| Maximum input current | 16 A |
| Rated output voltage | 12 VDC |
| Rated output current | • 100 A (100 VAC to 175 VAC input)<br>• 200 A (175 VAC to 240 VAC or 240 VDC input) |
| Rated output power | • 1200 W (100 VAC to 175 VAC input)<br>• 2400 W (175 VAC to 240 VAC or 240 VDC input) |
| Front-level circuit breaker/fuse | ≥ 32 A |
| Heat dissipation | Built-in fans |
| Power cable | Standard C19 cable (3*1.5mm²) |

# PSR2400-12AHD-F

## View

**Figure2-176 PSR2400-12AHD-F power supply view**




| | |
| --- | --- |
| (1) Captive screw | (2) Power supply handle |
| (3) Power input receptacle | (4) Air inlet vent |
| (5) Power output status LED | (6) Power input status LED |

## LEDs

**Table2-642 PSR2400-12AHD-F LED description**

| LED mark | Status | Description |
| --- | --- | --- |
| IN | Steady green | The power supply system is operating correctly. |
| | Off | No power input. |
| | | The input voltage is too low and the power supply has entered self-protection state. |

| LED mark | Status | Description |
|---|---|---|
| OUT | Steady green | Power output of the power supply system is normal. |
| | Steady red | Power output of the power supply system is abnormal. The power supply has an output short circuit, output overcurrent, output overvoltage, input undervoltage, or remote shutdown alarm and has entered self-protection state. |
| | Steady amber | An overtemperature alarm was triggered. |

### Technical specifications

**Table2-643 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 41 × 102 × 410 mm (1.61 × 4.02 × 16.14 in) |
| Weight | 2.20 kg (4.85 lb) |
| Inputs | 1 |
| Rated input voltage range | • 100 VAC to 240 VAC @ 50 Hz or 60 Hz<br>• 240 VDC to 380 VDC |
| Input voltage range | • 90 VAC to 290 VAC<br>• 180 VDC to 410 VDC |
| Maximum input current | 16 A |
| Rated output voltage | 12 VDC |
| Rated output current | • 100 A (100 VAC to 175 VAC input)<br>• 200 A (175 VAC to 240 VAC or 240 VDC to 380 VDC input) |
| Rated output power | • 1200 W (100 VAC to 175 VAC input)<br>• 2400 W (175 VAC to 240 VAC or 240 VDC to 380 VDC input) |
| Front-level circuit breaker/fuse | ≥ 32 A |
| Heat dissipation | Built-in fans |
| Power cable | Standard HVDCB cable (3*1.5mm²) |

# Configuration restrictions and guidelines

- As a best practice, make sure the rated current of a single circuit breaker is not less than 1.2 times the maximum input current of the power supply.
- You can select a certain number of power supplies according to the power supply conditions at the installation site and actual power consumption of your router. Make sure the total maximum output power of the installed power supplies is greater than the system power consumption. As a best practice, reserve 20% of the maximum output power.
- Do not install power supplies of different models on the same router.
- When the temperature of a power supply exceeds the upper limit or drops below the lower limit, the power supply shuts down automatically. When the temperature falls into the normal range, the power supply starts up automatically.

# Compatibility information

**Table2-644 Compatibility matrix between power supplies and routers (1)**

| Power supply model | CR16006-F | CR16010-F(one fan tray)/CR16010-F (dual fan trays) | CR16010H-F (with four fabric modules), CR16010H-F (with five fabric modules) | CR16010H-FA |
|---|---|---|---|---|
| PSR1200B-12A | ● | ● | ● | ● |
| PSR1200B-12A1-F | ● | ● | ● | ● |
| LSUM1AC2500 | ● | ● | ● | ● |
| PSR2500-12A | ● | ● | ● | ● |
| LSUM1DC2400 | ● | ● | ● | ● |
| PSR2400-12D | ● | ● | ● | ● |
| PSR2400-D | ● | ● | ● | ● |
| PSR2500B-12AHD-F | ● | ● | ● | ● |
| PSR1600B-12A-B | — | — | — | — |
| PSR1600B-12A1-B | — | — | — | — |
| PSR2000-12D-B | — | — | — | — |
| PSR2000-12D1-B | — | — | — | — |
| PSR2200-12D-F | — | — | ● | ● |
| PSR2400-12A-F | — | — | ● | ● |
| PSR2400-12AHD-F | — | — | ● | ● |

**Table2-645 Compatibility matrix between power supplies and routers (2)**

| Power supply model | CR16014-F | CR16018-F (with four fabric modules), CR16018-F (with five fabric modules) | CR16018-FA | CR16003E-F, CR16005E-F, CR16010E-F |
|---|---|---|---|---|
| PSR1200B-12A | ● | ● | ● | — |
| PSR1200B-12A1-F | ● | ● | ● | — |
| LSUM1AC2500 | ● | ● | ● | — |
| PSR2500-12A | ● | ● | ● | — |
| LSUM1DC2400 | ● | ● | ● | — |
| PSR2400-12D | ● | ● | ● | — |
| PSR2400-D | ● | ● | ● | — |
| PSR2500B-12AHD-F | ● | ● | ● | — |

| Power supply model | CR16014-F | CR16018-F (with four fabric modules), CR16018-F (with five fabric modules) | CR16018-FA | CR16003E-F, CR16005E-F, CR16010E-F |
|---|---|---|---|---|
| PSR1600B-12A-B | — | — | — | ● |
| PSR1600B-12A1-B | — | — | — | ● |
| PSR2000-12D-B | — | — | — | ● |
| PSR2000-12D1-B | — | — | — | ● |
| PSR2200-12D-F | — | ● | ● | — |
| PSR2400-12A-F | — | ● | ● | — |
| PSR2400-12AHD-F | — | ● | ● | — |

**NOTE:**

- "●" indicates that the power supply is compatible with the chassis.
- "—" indicates that the power supply is not compatible with the chassis.

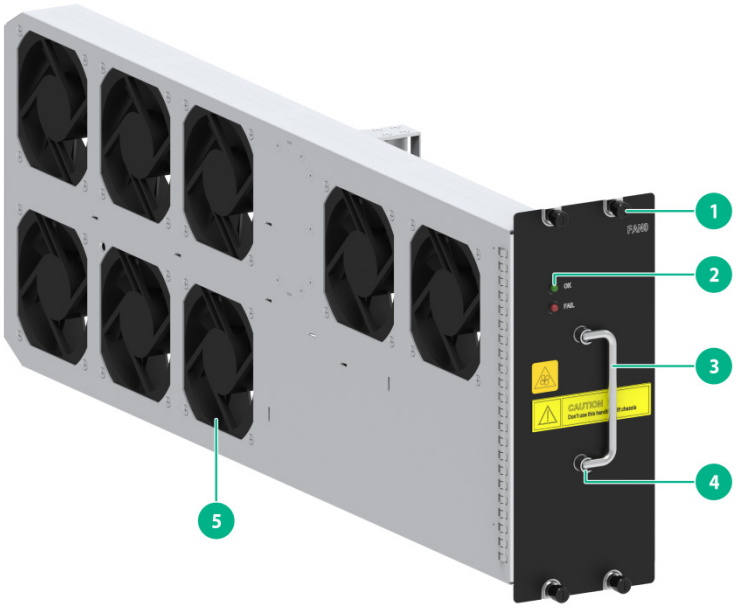
# Fan trays

The router came with fan trays installed. To replace a fan tray, make sure the new fan tray is compatible with the router.

# CR16006-F fan tray

## View

**Figure2-177 CR16006-F fan tray view**




| | |
|---|---|
| (1) Captive screw | (2) Status LED |
| (3) Fan tray handle | (4) Fan tray handle pivot |
| (5) Fan | |

## LEDs

**Table2-646 Fan tray LED description**

| LED status | | Description |
|---|---|---|
| OK | FAIL | |
| Steady on | Off | The fan tray is operating correctly. |
| Off | Steady on | The fan tray is faulty. |
| Off | Off | The fan tray is not powered on. |

## Technical specifications

**Table2-647 Technical specifications**

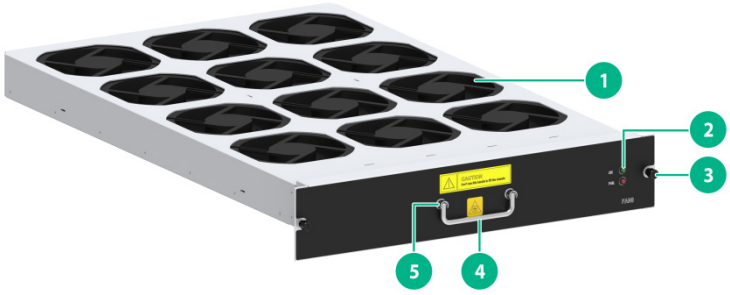
| Item | Description |
|---|---|
| Dimensions (H × W × D) | 106 × 255 × 643 mm (4.17 × 10.04 × 25.32 in) |
| Weight | 4.70 kg (10.36 lb) |
| Maximum power consumption | 240 W |
| Power consumption (with typical | 190 W |

| Item | Description |
| --- | --- |
| configuration) | |
| Minimum power consumption | 12 W |
| Number of fans | 8 |
| Fan diameter | 92 mm (3.62 in) |
| Max fan speed | 6000 RPM |
| Maximum air flow rate | 960 CFM (27.18 $m^3$/min) |

# CR16010-F (one fan tray) fan tray

## View

**Figure2-178 CR16010-F (one fan tray) fan tray view**




| | |
| --- | --- |
| (1) Fan | (2) Status LED |
| (3) Captive screw | (4) Fan tray handle |
| (5) Fan tray handle pivot | |

## LEDs

**Table2-648 Fan tray LED description**

| LED status | | Description |
| --- | --- | --- |
| OK | FAIL | |
| Steady on | Off | The fan tray is operating correctly. |
| Off | Steady on | The fan tray is faulty. |
| Off | Off | The fan tray is not powered on. |

## Technical specifications

**Table2-649 Technical specifications**

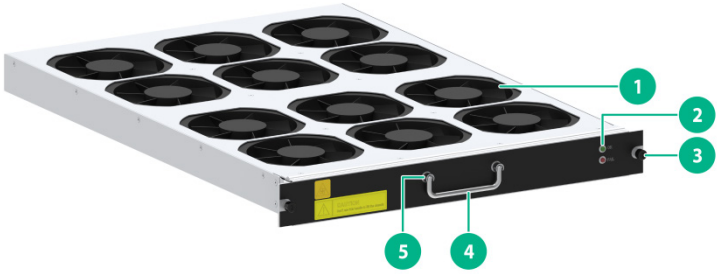
| Item | Description |
| --- | --- |
| Dimensions (H × W × D) | 80 × 440 × 654 mm (3.15 × 17.32 × 25.75 in) |
| Weight | 8.30 kg (18.30 lb) |
| Maximum power | 300 W |

| Item | Description |
|---|---|
| consumption | |
| Power consumption (with typical configuration) | 260 W |
| Minimum power consumption | 13 W |
| Number of fans | 12 |
| Fan diameter | 120 mm (4.72 in) |
| Max fan speed | 5200 RPM |
| Maximum air flow rate | 1152 CFM (32.62 $m^3$/min) |

# CR16010-F (dual fan trays) fan tray

## View

**Figure2-179 CR16010-F (dual fan trays) fan tray view**




| | |
|---|---|
| (1) Fan | (2) Status LED |
| (3) Captive screw | (4) Fan tray handle |
| (5) Fan tray handle pivot | |

## LEDs

**Table2-650 Fan tray LED description**

| LED status | | Description |
|---|---|---|
| OK | FAIL | |
| Steady on | Off | The fan tray is operating correctly. |
| Off | Steady on | The fan tray is faulty. |
| Off | Off | The fan tray is not powered on. |

## Technical specifications

The CR16010-F (dual fan trays) has two fan trays, which are the same in technical specifications. Table2-651 describes the technical specifications of a single CR16010-F (dual fan trays) fan tray.

**Table2-651 Technical specifications**

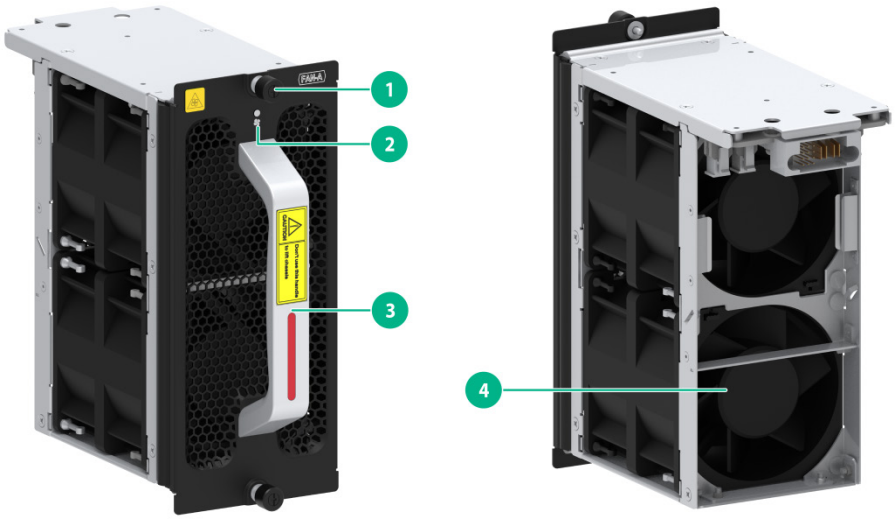
| Item | Description |
|---|---|
| Dimensions (H × W × D) | 49 × 440 × 654 mm (1.93 × 17.32 × 25.75 in) |
| Weight | 7.40 kg (16.31 lb) |
| Maximum power consumption | 320 W |
| Power consumption (with typical configuration) | 63 W |
| Minimum power consumption | 18 W |
| Number of fans | 12 |
| Fan diameter | 120 mm (4.72 in) |
| Max fan speed | 5200 RPM |
| Maximum air flow rate | 1152 CFM (32.62 $m^3$/min) |

# CR16010H-F/CR16010H-FA/CR16018-F/CR16018-FA fan trays

This section applies to the CR16010H-F (with five fabric modules), CR16010H-F (with four fabric modules), CR16010H-FA, CR16018-F (with five fabric modules), CR16018-F (with four fabric modules), and CR16018-FA routers.

## View

**Figure2-180 CR16010H-F (with five fabric modules) fan tray view**




| | |
|---|---|
| (1) Captive screw | (2) Status LED |
| (3) Fan tray handle | (4) Fan |

The views of the CR16010H-F (with five fabric modules), CR16010H-F (with four fabric modules), CR16010H-FA, CR16018-F (with five fabric modules), CR16018-F (with four fabric modules), and

CR16018-FA fan trays are similar. This figure uses the CR16010H-F (with five fabric modules) fan tray as an example.

## LEDs

**Table2-652 Fan tray LED description**

| RUN LED status | Description |
|---|---|
| Steady green | The fan tray is operating correctly. |
| Steady red | One or more fans in the fan tray have failed or the fan tray is not in position. |
| Off | The fan tray is not powered on. |

## Technical specifications

The CR16010H-F (with five fabric modules), CR16010H-F (with four fabric modules), and CR16010H-FA routers each have eight fan trays. The CR16018-F (with five fabric modules), CR16018-F (with four fabric modules), and CR16018-FA routers each have 15 fan trays. The fan trays have the same technical specifications. Table2-653 describes the technical specifications of a single CR16010H-F (with five fabric modules) fan tray.

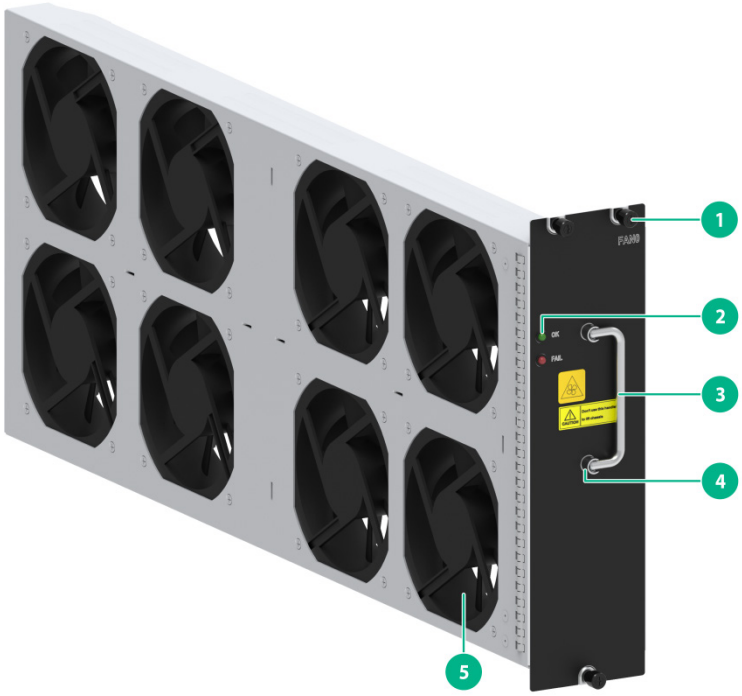
**Table2-653 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 191 × 81 × 159 mm (7.52 × 3.19 × 6.26 in) |
| Weight | 1.35 kg (2.98 lb) |
| Maximum power consumption | 143 W |
| Power consumption (with typical configuration) | 114 W |
| Minimum power consumption | 18 W |
| Number of fans | 2 |
| Fan diameter | 80 mm (3.15 in) |
| Max fan speed | 12800 RPM |
| Maximum air flow rate | 350 CFM (9.91 $m^3$/min) |

# CR16014-F fan tray

## View

**Figure2-181 CR16014-F fan tray view**




| | |
|---|---|
| (1) Captive screw | (2) Status LED |
| (3) Fan tray handle | (4) Fan tray handle pivot |
| (5) Fan | |

## LEDs

**Table2-654 Fan tray LED description**

| LED status | | Description |
|---|---|---|
| OK | FAIL | |
| Steady on | Off | The fan tray is operating correctly. |
| Off | Steady on | The fan tray is faulty. |
| Off | Off | The fan tray is not powered on. |

## Technical specifications

**Table2-655 Technical specifications**

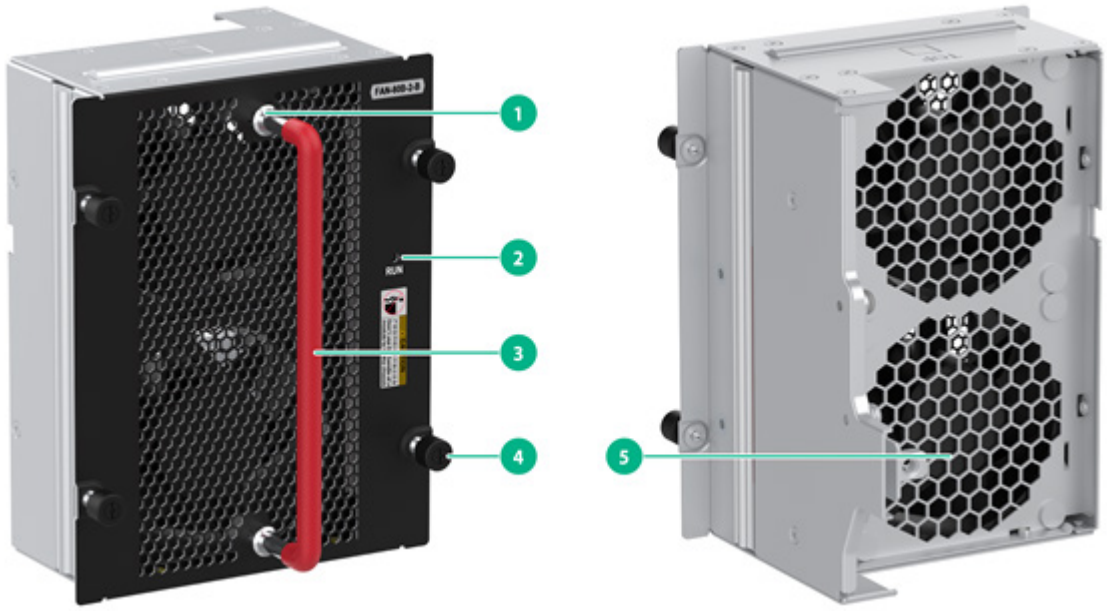
| Item | Description |
|---|---|
| Dimensions (H × W × D) | 84 × 301 × 646 mm (3.31 × 11.85 × 25.43 in) |
| Weight | • Upper fan tray: 4.49 kg (9.90 lb)<br>• Lower fan tray: 3.61 kg (7.96 lb) |
| Maximum power | • Upper fan tray: 190 W |

| Item | Description |
| --- | --- |
| consumption | • Lower fan tray: 110 W |
| Power consumption (with typical configuration) | • Upper fan tray: 160 W<br>• Lower fan tray: 100 W |
| Minimum power consumption | • Upper fan tray: 9 W<br>• Lower fan tray: 7 W |
| Number of fans | • Upper fan tray: 8<br>• Lower fan tray: 4 |
| Fan diameter | 120 mm (4.72 in) |
| Max fan speed | 5200 RPM |
| Maximum air flow rate | • Upper fan tray: 1040 CFM (29.45 $m^3$/min)<br>• Lower fan tray: 720 CFM (20.39 $m^3$/min) |

# CR16003E-F fan tray

## View

**Figure2-182 CR16003E-F fan tray view**




| | |
| --- | --- |
| (1) Fan tray handle pivot | (2) Status LED |
| (3) Fan tray handle | (4) Captive screw |
| (5) Fan | |

## LEDs

**Table2-656 Fan tray LED description**

| RUN LED status | Description |
| --- | --- |
| Steady green | The fan tray is operating correctly. |

| RUN LED status | Description |
| --- | --- |
| Steady red | One or more fans in the fan tray have failed or the fan tray is not in position. |
| Off | The fan tray is not powered on. |

## Technical specifications

The CR16003E-F has three fan trays, which are the same in technical specifications. Table2-657 describes the technical specifications of a single CR16003E-F fan tray. When the CR16003E-F is installed with the CSR05SRP051E3-G MPUs, it supports only two fan trays.

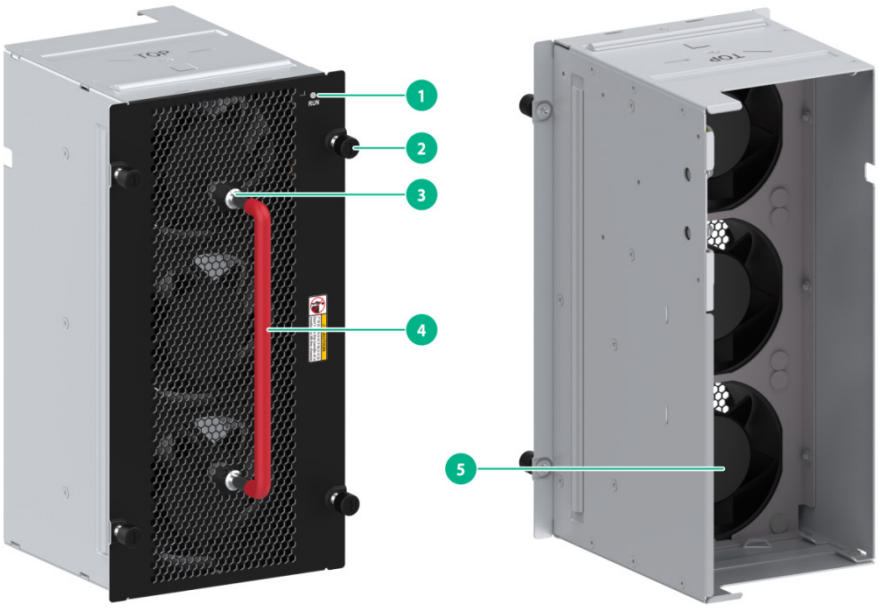
**Table2-657 Technical specifications**

| Item | Description |
| --- | --- |
| Dimensions (H × W × D) | 167 × 133 × 117 mm (6.57 × 5.24 × 4.61 in) |
| Weight | 1.30 kg (2.87 lb) |
| Maximum power consumption | 95 W |
| Power consumption (with typical configuration) | 18 W |
| Minimum power consumption | 4 W |
| Number of fans | 2 |
| Fan diameter | 80 mm (3.15 in) |
| Max fan speed | 13800 RPM |
| Maximum air flow rate | 135.15 CFM (3.83 $m^3$/min) |

# CR16005E-F fan tray

## View

**Figure2-183 CR16005E-F fan tray view**




| | |
|---|---|
| (1) Status LED | (2) Captive screw |
| (3) Fan tray handle pivot | (4) Fan tray handle |
| (5) Fan | |

## LEDs

**Table2-658 Fan tray LED description**

| RUN LED status | Description |
|---|---|
| Steady green | The fan tray is operating correctly. |
| Steady red | One or more fans in the fan tray have failed or the fan tray is not in position. |
| Off | The fan tray is not powered on. |

## Technical specifications

The CR16005E-F has two fan trays, which are the same in technical specifications. Table2-659 describes the technical specifications of a single CR16005E-F fan tray.

**Table2-659 Technical specifications**

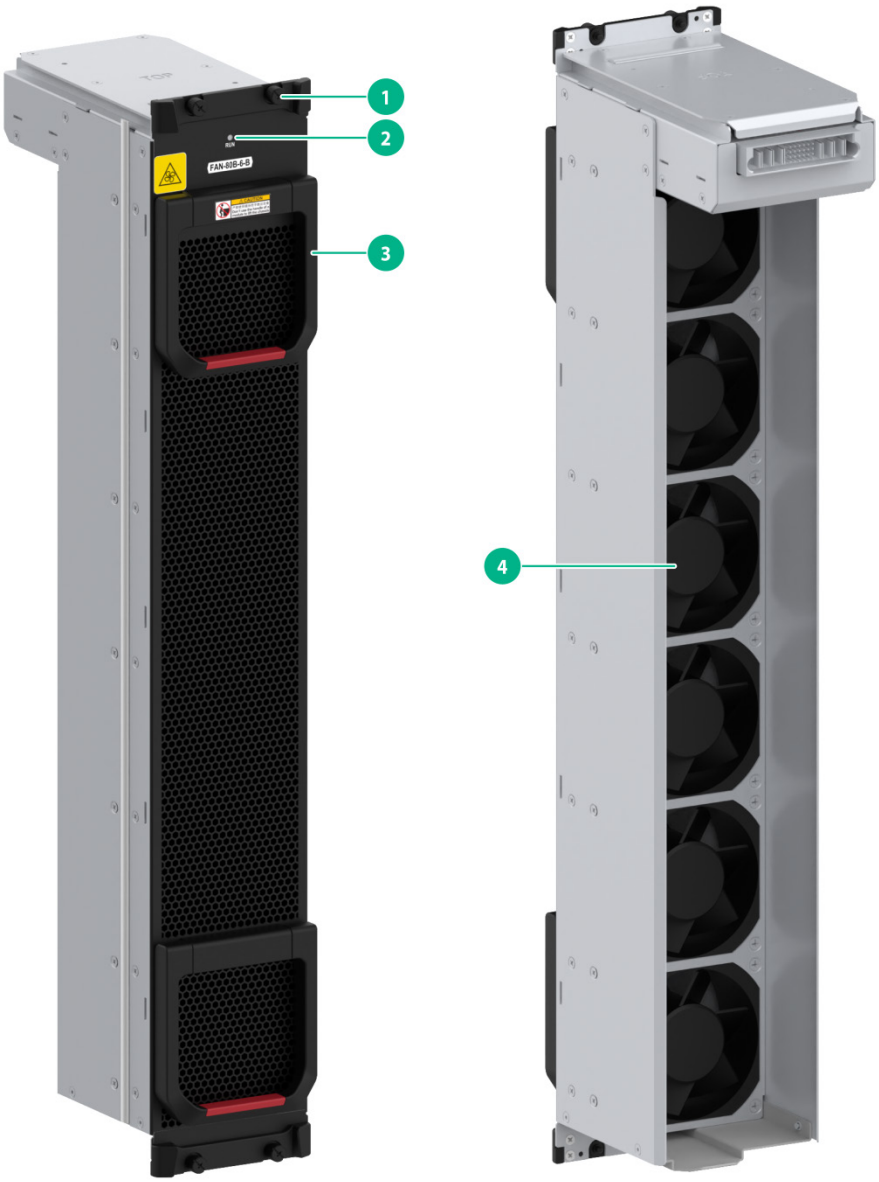
| Item | Description |
|---|---|
| Dimensions (H × W × D) | 247.5 × 111 × 105 mm (9.74 × 4.37 × 4.13 in) |
| Weight | 2.05 kg (4.52 lb) |
| Maximum power consumption | 142 W |
| Power consumption (with typical | 102 W |

| Item | Description |
| --- | --- |
| configuration) | |
| Minimum power consumption | 7 W |
| Number of fans | 3 |
| Fan diameter | 80 mm (3.15 in) |
| Max fan speed | 15200 RPM |
| Maximum air flow rate | 390 CFM (11.04 $m^3$/min) |

# CR16010E-F fan tray

## View

**Figure2-184 CR16010E-F fan tray view**




| | |
|---|---|
| (1) Captive screw | (2) Status LED |
| (3) Fan tray handle | (4) Fan |

## LEDs

**Table2-660 Fan tray LED description**

| RUN LED status | Description |
|---|---|
| Steady green | The fan tray is operating correctly. |
| Steady red | One or more fans in the fan tray have failed or the fan tray is not in position. |

| RUN LED status | Description |
|---|---|
| Off | The fan tray is not powered on. |

### Technical specifications

The CR16010E-F came with two fan trays installed. It supports a maximum of three fan trays, which are the same in technical specifications. Table2-661 describes the technical specifications of a single CR16010E-F fan tray.

**Table2-661 Technical specifications**

| Item | Description |
|---|---|
| Dimensions (H × W × D) | 571.5 × 93.2 × 162 mm (22.5 × 3.67 × 6.38 in) |
| Weight | 4.25 kg (9.37 lb) |
| Maximum power consumption | 284 W |
| Power consumption (with typical configuration) | 204 W |
| Minimum power consumption | 14 W |
| Number of fans | 6 |
| Fan diameter | 80 mm (3.15 in) |
| Max fan speed | 15200 RPM |
| Maximum air flow rate | 780 CFM (22.09 $m^3$/min) |

# Air filters

**CAUTION:**

Clean air filters periodically (once or more times every three months) to guarantee adequate ventilation and to avoid overtemperature.

To prevent dusts from entering the chassis, you can configure air filters for the router as needed and install them at the air intakes.

H3C CR16000-F air filters include the CR16006-F air filter, CR16010-F air filter, and CR16014-F air filter. Order air filters compatible with your router.

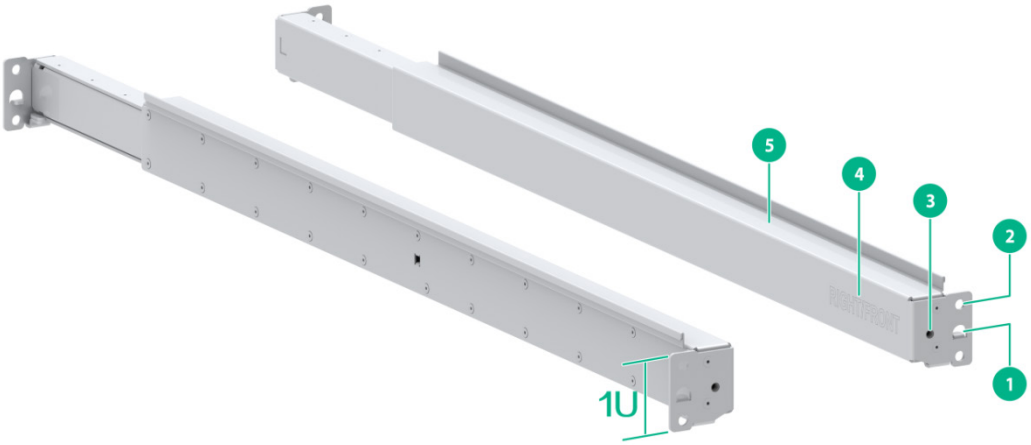
# Slide rails

Before rack-mounting the router, install slide rails on the rack.

# LSXM1BSR

## Views

**Figure2-185 LSXM1BSR slide rail view**




| | |
|---|---|
| (1) Positioning tongue | (2) Slide rail installation hole |
| (3) Front plate installation hole | (4) Sign |
| (5) Guide rail | |

**Figure2-186 Front plate**


| |
|---|
| (1) Installation hole |

## Technical specifications

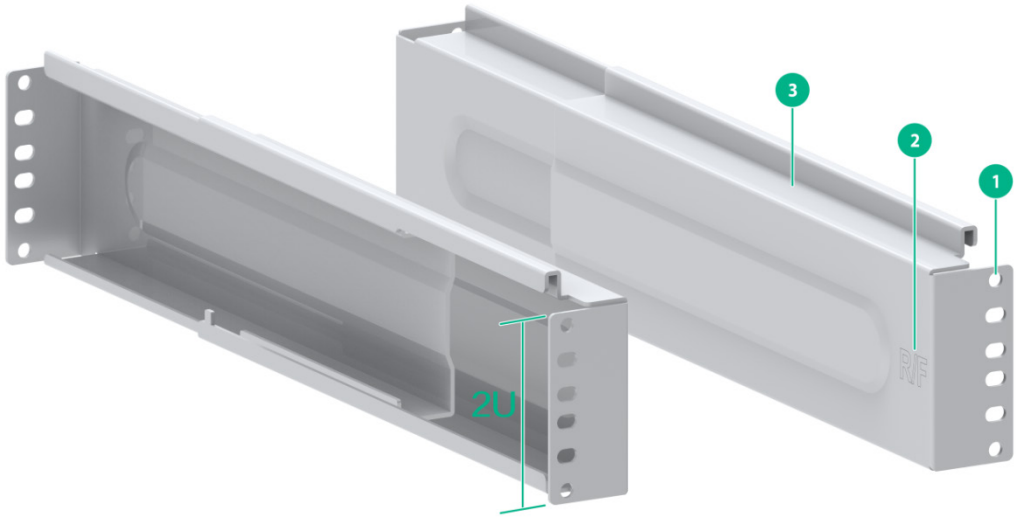
**Table2-662 Technical specifications**

| Item | Description |
|---|---|
| Maximum loading capacity | 650 kg (1432.98 lb) |
| Adjustment range | 630 to 900 mm (24.80 to 35.43 in) |
| Occupied rack space | 1 RU |

# LSTM1KSGD0

## Views

**Figure2-187 LSTM1KSGD0 slide rail view**




| | |
|---|---|
| (1) Installation hole | (2) Sign |
| (3) Guide rail | |

## Technical specifications

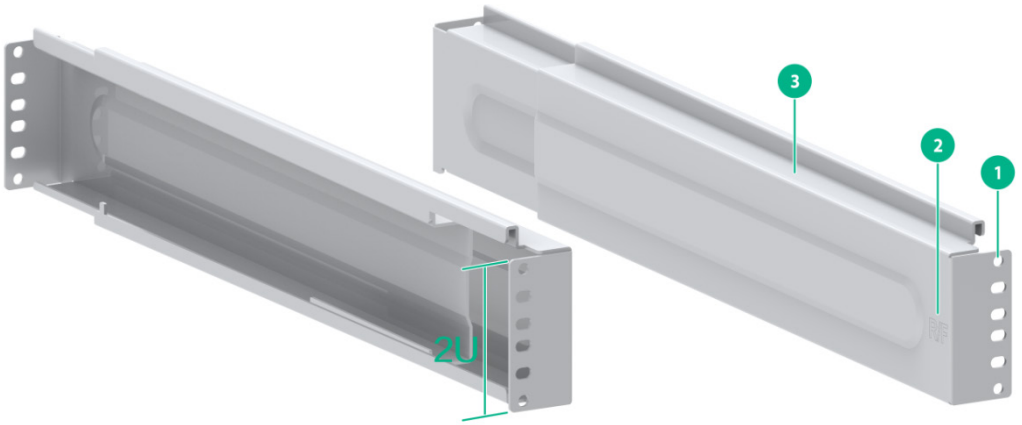
**Table2-663 Technical specifications**

| Item | Description |
|---|---|
| Maximum loading capacity | 280 kg (617.28 lb) |
| Adjustment range | 300 to 500 mm (11.81 to 19.69 in) |
| Occupied rack space | 2 RUs |

# LSTM2KSGD0

## Views

**Figure2-188 LSTM2KSGD0 slide rail view**




| | |
|---|---|
| (1) Installation hole | (2) Sign |

| |
|---|
| (3) Guide rail |

### Technical specifications

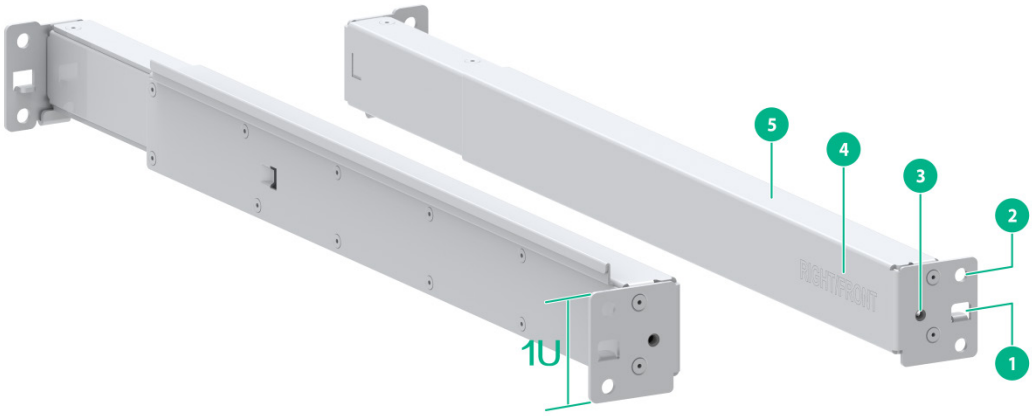
**Table2-664 Technical specifications**

| Item | Description |
|---|---|
| Maximum loading capacity | 400 kg (881.83 lb) |
| Adjustment range | 500 to 800 mm (19.69 to 31.50 in) |
| Occupied rack space | 2 RUs |

# RL-1U-A

### Views

**Figure2-189 RL-1U-A slide rail view**




| | |
|---|---|
| (1) Positioning tongue | (2) Slide rail installation hole |
| (3) Front plate installation hole | (4) Sign |
| (5) Guide rail | |

**Figure2-190 Front plate**


| |
|---|
| (1) Installation hole |

### Technical specifications

**Table2-665 Technical specifications**

| Item | Description |
| --- | --- |
| Maximum loading capacity | 200 kg (440.92 lb) |
| Adjustment range | 380 to 630 mm (14.96 to 24.80 in) |
| Occupied rack space | 1 RU |

# Configuration restrictions and guidelines

- Select slide rails for the router based on the chassis weight.
- To rack-mount a CR16018-F (with four fabric modules), CR16018-F (with five fabric modules), or CR16018-FA router, reserve a 2 RU space between the router (including slide rails) and the rack bottom.

# Compatibility information

**Table2-666 Chassis weights and applicable slide rails**

| Model | Chassis weight (fully configured) | Applicable slide rails |
| --- | --- | --- |
| CR16006-F | 76 kg (167.55 lb) | LSXM1BSR<br>LSTM1KSGD0<br>LSTM2KSGD0 |
| CR16010-F (one fan tray) | 120 kg (264.55 lb) | LSXM1BSR<br>LSTM1KSGD0<br>LSTM2KSGD0 |
| CR16010-F (dual fan trays) | 170 kg (374.78 lb) | LSXM1BSR<br>LSTM1KSGD0<br>LSTM2KSGD0 |
| SR8812-F | 95 kg (209.44 lb) | LSXM1BSR<br>LSTM1KSGD0<br>LSTM2KSGD0 |
| CR16010H-F (with four fabric modules), CR16010H-F (with five fabric modules), CR16010H-FA | 245 kg (540.12 lb) | LSXM1BSR<br>LSTM1KSGD0<br>LSTM2KSGD0 |
| CR16014-F | 174 kg (383.60 lb) | LSXM1BSR<br>LSTM1KSGD0<br>LSTM2KSGD0 |
| CR16018-F (with four fabric modules), CR16018-F (with five fabric modules), CR16018-FA | 440 kg (970.02 lb) | LSXM1BSR<br>LSTM2KSGD0 |
| CR16003E-F | 62.7 kg (138.23 lb) | LSXM1BSR |

| Model | Chassis weight (fully configured) | Applicable slide rails |
|---|---|---|
| | | RL-1U-A |
| CR16005E-F | 100 kg (220.46 lb) | LSXM1BSR<br>RL-1U-A |
| CR16010E-F | 200 kg (440.92 lb) | LSXM1BSR<br>RL-1U-A |

# DC power cords

DC power cords are used for connecting the DC power supplies of an SR8800-X router to the external DC power supply system.

**Table2-667 DC power cord specifications**

| DC power cord | Cable length | Description |
|---|---|---|
| 0404A0E1 | 3 m (9.84 ft) | Used for connecting the LSUM1DC2400/PSR2400-12D power supply |
| 0404A0H8 | 3 m (9.84 ft) | |
| 0404A0E2 | 15 m (49.21 ft) | |
| 0404A0H9 | 15 m (49.21 ft) | |
| 0404A1BE | 20 m (65.62 ft) | |
| 0404A1BF | 20 m (65.62 ft) | |
| 0404A0J5 | 30 m (98.43 ft) | |
| 0404A1BD | 40 m (131.23 ft) | |
| 0404A1M7 | 10 m (32.81 ft) | Used for connecting the PSR2400-D power supply |
| 0404A1M6 | 15 m (49.21 ft) | |
| 0404A1M5 | 20 m (65.62 ft) | |
| 0404A1MD | 30 m (98.43 ft) | |
| 0404A1X2 | 3 m (9.84 ft) | Used for connecting the PSR2000-12D-B/PSR2000-12D1-B power supply |
| 0404A1X3 | 15 m (49.21 ft) | |

# AC power cords

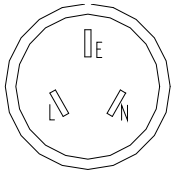
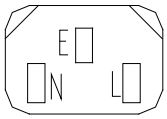
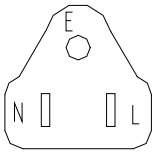
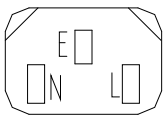
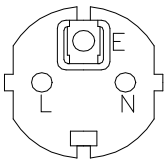
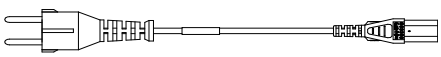
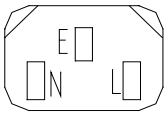
AC power cords are used for connecting the AC power supplies of a CR16000-F router to the external AC power supply system.

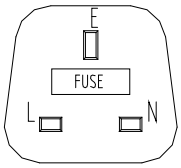
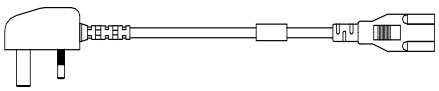
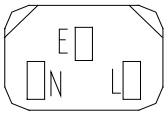
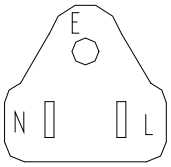
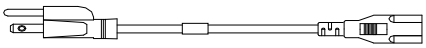
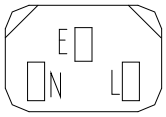
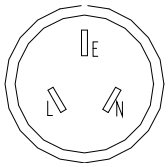
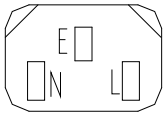
To select an AC power cord for an AC power supply, consider the following items:

- Power capacity of the power supply.
- Current-carrying capacity of the power cord.
- Region-and country-specific plug type.

The AC power supplies available for the router require a 16A or 10A AC power cord. Table2-668 and Table2-669 describe the region-and country-specific plug types for 10A and 16A AC power cords, respectively.

**Table2-668 10A AC power cords used in different countries or regions**

| | | | | | |
|---|---|---|---|---|---|
| 1 | Plug type | Code (Length) | Countries or regions where the type of power cords conforms to local safety regulations and can be used legally | Other countries or regions using this type of power cords | Countries or regions seldom using this type of power cords |
| | **I** type | 04041104: 3 m (9.8 ft) | Mainland China | N/A | N/A |
| | Plug outline | | Power cord outline | | Connector outline |
| |  | |  | |  |
| 2 | Plug type | Code (Length) | Countries or regions where the type of power cords conforms to local safety regulations and can be used legally | Other countries or regions using this type of power cords | Countries or regions seldom using this type of power cords |
| | **B** type | 04020728: 3 m (9.8 ft) | Canada and U.S.A | Mexico, Argentina, Brazil, Columbia, Venezuela, Thailand, Peru, Philippine, and A6 countries or regions | N/A |
| | Plug outline | | Power cord outline | | Connector outline |
| |  | |  | |  |
| 3 | Plug type | Code (Length) | Countries or regions where the type of power cords conforms to local safety regulations and can be used legally | Other countries or regions using this type of power cords | Countries or regions seldom using this type of power cords |
| | **F** type | 04041056: 3 m (9.8 ft) | Holland, Denmark, Sweden, Finland, Norway, Germany, France, Austria, Belgium, and Italy | Indonesia, Türkiye, Russia, and CIS | N/A |
| | Plug outline | | Power cord outline | | Connector outline |
| |  | |  | |  |
| 4 | Plug type | Code (Length) | Countries or regions where the type of power cords conforms to local safety | Other countries or regions using this type of power cords | Countries or regions seldom using this type of |

| | | | | | |
|---|---|---|---|---|---|
| | | | regulations and can be used legally | | power cords |
| | **G** type | 04040890: 3 m (9.8 ft) | United Kingdom | Malaysia, Hong Kong, and Egypt | N/A |
| | Connector outline | | Power cord outline | | Connector outline |
| |  | |  | |  |
| 5 | Plug type | Code (Length) | Countries or regions where the type of power cords conforms to local safety regulations and can be used legally | Other countries or regions using this type of power cords | Countries or regions seldom using this type of power cords |
| | **B** type | 04040887: 3 m (9.8 ft) | Japan | N/A | N/A |
| | Plug outline | | Power cord outline | | Connector outline |
| |  | |  | |  |
| 6 | Plug type | Code (Length) | Countries or regions where the type of power cords conforms to local safety regulations and can be used legally | Other countries or regions using this type of power cords | Countries or regions seldom using this type of power cords |
| | **I** type | 04040888: 3 m (9.8 ft) | Australia | N/A | N/A |
| | Plug outline | | Power cord outline | | Connector outline |
| |  | |  | |  |
| 7 | Plug type | Code (Length) | Countries or regions where the type of power cords conforms to local safety regulations and can be used legally | Other countries or regions using this type of power cords | Countries or regions seldom using this type of power cords |
| | **J** type | 04041119: 3 m (9.8 ft) | Switzerland | N/A | N/A |
| | Plug outline | | Power cord outline | | Connector outline |

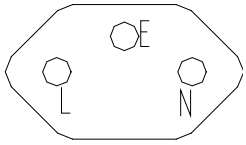
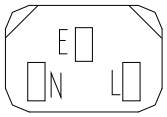
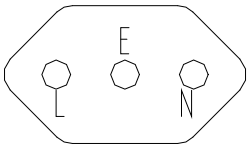
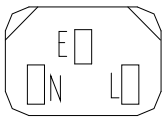
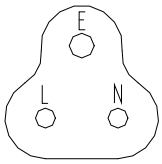
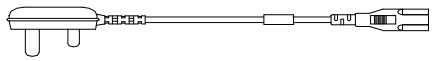
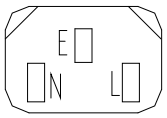
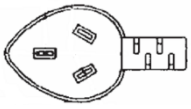
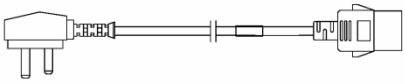
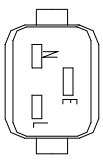
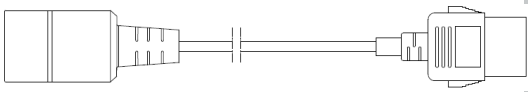
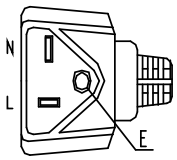
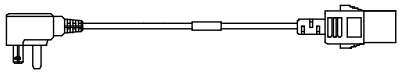
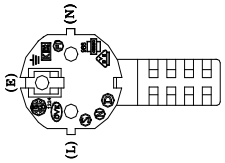
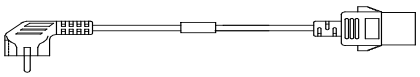
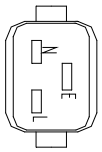
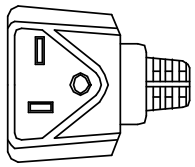
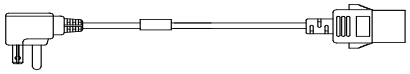
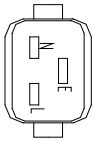
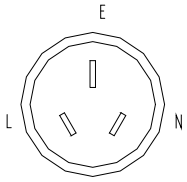
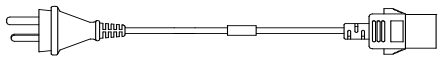
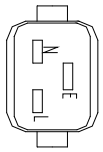
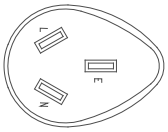
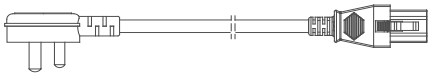
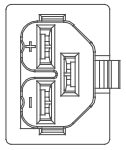
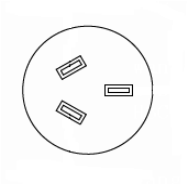
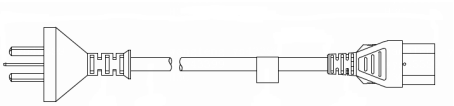
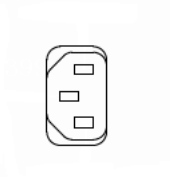
| | | | | | |
|---|---|---|---|---|---|
| |  | |  | |  |
| 8 | Plug type | Code (Length) | Countries or regions where the type of power cords conforms to local safety regulations and can be used legally | Other countries or regions using this type of power cords | Countries or regions seldom using this type of power cords |
| | **L** type | 04041120: 3 m (9.8 ft) | Italy | N/A | N/A |
| | Plug outline | | Power cord outline | | Connector outline |
| |  | |  | |  |
| 9 | Plug type | Code (Length) | Countries or regions where the type of power cords conforms to local safety regulations and can be used legally | Other countries or regions using this type of power cords | Countries or regions seldom using this type of power cords |
| | **D** type | 0404A0Q0: 3 m (9.8 ft) | India | N/A | N/A |
| | Plug outline | | Power cord outline | | Connector outline |
| |  | |  | |  |

**Table2-669 16A AC power cords used in different countries or regions**

| | | | | | |
|---|---|---|---|---|---|
| 1 | Plug type | Code (Length) | Countries or regions where the type of power cords conforms to local safety regulations and can be used legally | Other countries or regions using this type of power cords | Countries or regions seldom using this type of power cords |
| | **I** type | 04043396: 3 m (9.8 ft) | Mainland China | N/A | N/A |
| | Plug outline | | Power cord outline | | Connector outline |
| |  | |  | |  |
| 2 | Plug type | Code (Length) | Countries or regions where the type of | Other countries or regions using this type | Countries or regions seldom |

| | | | | | |
|---|---|---|---|---|---|
| | | | power cords conforms to local safety regulations and can be used legally | of power cords | using this type of power cords |
| | **C20** type | 0404A0C2: 3 m (9.8 ft) | Mainland China | N/A | N/A |
| | Plug outline | | Power cord outline | | Connector outline |
| |  | |  | |  |
| 3 | Plug type | Code (Length) | Countries or regions where the type of power cords conforms to local safety regulations and can be used legally | Other countries or regions using this type of power cords | Countries or regions seldom using this type of power cords |
| | **B** type | 0404A063: 3 m (9.8 ft) | Canada and U.S.A | Mexico, Argentina, Brazil, Columbia, Venezuela, Thailand, Peru, Philippine, and A6 countries or regions | N/A |
| | Plug outline | | Power cord outline | | Connector outline |
| |  | |  | |  |
| 4 | Plug type | Code (Length) | Countries or regions where the type of power cords conforms to local safety regulations and can be used legally | Other countries or regions using this type of power cords | Countries or regions seldom using this type of power cords |
| | **F** type | 0404A061: 3 m (9.8 ft) | Holland, Denmark, Sweden, Finland, Norway, Germany, France, Austria, Belgium, and Italy | Indonesia, Türkiye, Russia, and CIS | N/A |
| | Plug outline | | Power cord outline | | Connector outline |
| |  | |  | |  |
| 5 | Plug type | Code (Length) | Countries or regions where the type of | Other countries or regions using this type | Countries or regions seldom |

| | | | | | |
|---|---|---|---|---|---|
| | | | power cords conforms to local safety regulations and can be used legally | of power cords | using this type of power cords |
| | **B** type | 0404A062: 3 m (9.8 ft) | Japan | N/A | N/A |
| | Connector outline | | Power cord outline | | Connector outline |
| |  | |  | |  |
| 6 | Plug type | Code (Length) | Countries or regions where the type of power cords conforms to local safety regulations and can be used legally | Other countries or regions using this type of power cords | Countries or regions seldom using this type of power cords |
| | **I** type | 0404A01A: 3 m (9.8 ft) | Australia | N/A | N/A |
| | Plug outline | | Power cord outline | | Connector outline |
| |  | |  | |  |
| 7 | Plug type | Code (Length) | Countries or regions where the type of power cords conforms to local safety regulations and can be used legally | Other countries or regions using this type of power cords | Countries or regions seldom using this type of power cords |
| | **I** type | 0404A0RQ: 3 m (9.8 ft) | Mainland China | N/A | N/A |
| | Plug outline | | Power cord outline | | Connector outline |
| |  | |  | |  |
| 8 | Plug type | Code (Length) | Countries or regions where the type of power cords conforms to local safety regulations and can be used legally | Other countries or regions using this type of power cords | Countries or regions seldom using this type of power cords |
| | **I** type | 04041104: 3 m (9.8 ft) | Mainland China | N/A | N/A |
| | Plug outline | | Power cord outline | | Connector outline |

| | | | |
|---|---|---|---|
| |  |  |  |

# Contents

# 3 Cables

This chapter describes cables used for connecting network ports.

**Table3-1 Cable description**

| Cable | Ports connected | Application | Reference |
|---|---|---|---|
| Console cable | Console port at one end and 9-pin serial port at the other end | Connects the console port of the router to the console terminal. | See *H3C CR16000-F Router Series Installation Guide*. |
| USB console cable | USB console port at one end and USB port at the other end | Connects the USB console port of the router to the console terminal. | |
| Ethernet twisted pair cable | RJ-45 Ethernet ports | Connects RJ-45 Ethernet ports to transmit data. | About Ethernet twisted pair cables |
| E1 cable | E1-HM96 Ethernet copper ports | Connects E1-HM96 Ethernet copper ports to transmit data. | E1 cable |
| VGA cable | VGA connector | Connects the VGA connector to transmit video data. | VGA cable |
| Optical fiber | XFP/QSPF+/QSFP28/SFP28/CFP/ CFP2/SFP+/SFP ports | Connects the fiber ports to transmit data. | Optical fiber |

# Ethernet twisted pair cable

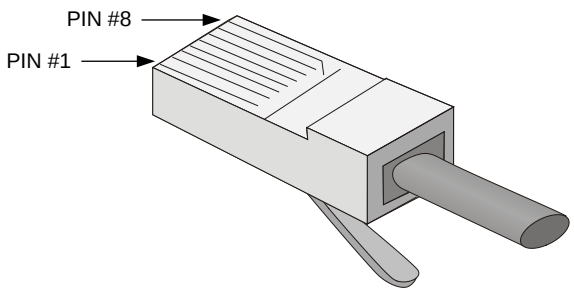
## About Ethernet twisted pair cables

An Ethernet twisted pair cable consists of four pairs of insulated wires twisted together. It mainly transmits analog signals and is advantageous in transmitting data over shorter distances. The maximum transmission distance is 100 m (328.08 ft).

### RJ-45 connector

An Ethernet twisted pair cable connects network devices through the RJ-45 connectors at the two ends. Figure3-2 shows the pinouts of an RJ-45 connector.

**Figure3-2 RJ-45 connector pinout diagram**




### Cable pinouts

EIA/TIA cabling specifications define two standards: 568A and 568B for cable pinouts.

- **Standard 568A**—pin 1: white/green stripe, pin 2: green solid, pin 3: white/orange stripe, pin 4: blue solid, pin 5: white/blue stripe, pin 6: orange solid, pin 7: white/brown stripe, pin 8: brown solid.
- **Standard 568B**—pin 1: white/orange stripe, pin 2: orange solid, pin 3: white/green stripe, pin 4: blue solid, pin 5: white/blue stripe, pin 6: green solid, pin 7: white/brown stripe, pin 8: brown solid.

# Cable type

## Based on performance

Ethernet cables can be classified into category 3, category 4, category 5, category 5e, category 6, category 6A, and category 7 cable based on performance.

**Table3-2 Ethernet cable description**

| Type | Description |
|---|---|
| Category 5 | Transmits data at a maximum speed of 100 Mbps, with a bandwidth of 100 MHz. |
| Category 5e | Transmits data at a maximum speed of 1000 Mbps, with a bandwidth of 100 MHz. |
| Category 6 | Transmits data at a speed higher than 1 Gbps, with a bandwidth of 250 MHz. |
| Category 6A | Transmits data at a speed higher than 10 Gbps, with a bandwidth of 500 MHz. |
| Category 7 | Transmits data at a speed higher than 10 Gbps, with a bandwidth of 600 MHz. |

**NOTE:**

The 10 Gbps RJ-45 Ethernet ports use category 6A or category 7 Ethernet twisted pair cables for connection. Other RJ-45 Ethernet ports use category 5 or higher Ethernet twisted pair cables for connection.

## Based on pinouts

Ethernet twisted pair cables can be classified into straight through and crossover cables based on their pinouts.

- **Straight-through**—The pinouts at both ends comply with standard 568B, as shown in Figure3-2.
- **Crossover**—The pinouts at one end comply with standard 568B, and those at the other end comply with standard 568A, as shown in Figure3-3.

**Figure3-3 Straight-through cable**

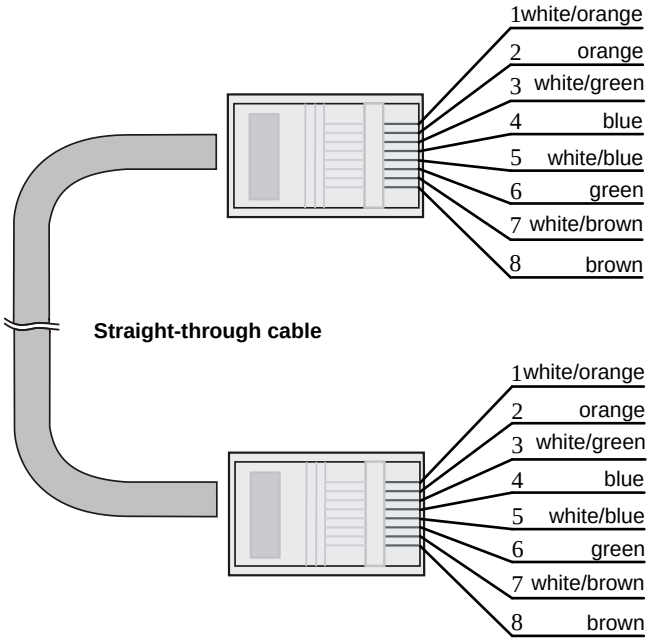
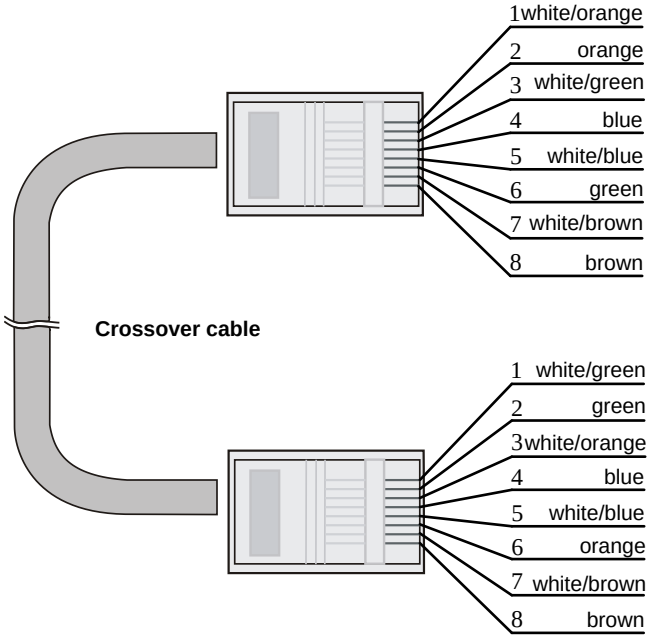



**Figure3-4 Crossover cable**




# Pin assignments

Select an Ethernet twisted pair cable according to the RJ-45 Ethernet interface type on your device. An RJ-45 Ethernet interface can be MDI (for routers and PCs) or MDIX (for routers). For the pinouts of RJ-45 Ethernet interfaces, see Table3-3 and Table3-4.

**Table3-3 RJ-45 MDI interface pinouts**

| Pin | 10BASE-T/100BASE-TX | | 1000BASE-T | |
|---|---|---|---|---|
| | Signal | Function | Signal | Function |
| 1 | Tx+ | Send data | BIDA+ | Bi-directional data cable A+ |
| 2 | Tx- | Send data | BIDA- | Bi-directional data cable A- |
| 3 | Rx+ | Receive data | BIDB+ | Bi-directional data cable B+ |
| 4 | Reserved | N/A | BIDC+ | Bi-directional data cable C+ |
| 5 | Reserved | N/A | BIDC- | Bi-directional data cable C- |
| 6 | Rx- | Receive data | BIDB- | Bi-directional data cable B- |
| 7 | Reserved | N/A | BIDD+ | Bi-directional data cable D+ |
| 8 | Reserved | N/A | BIDD- | Bi-directional data cable D- |

**Table3-4 RJ-45 MDI-X interface pinouts**

| Pin | 10BASE-T/100BASE-TX | | 1000BASE-T | |
|---|---|---|---|---|
| | Signal | Function | Signal | Function |
| 1 | Rx+ | Receive data | BIDB+ | Bi-directional data cable B+ |
| 2 | Rx- | Receive data | BIDB- | Bi-directional data cable B- |
| 3 | Tx+ | Send data | BIDA+ | Bi-directional data cable A+ |
| 4 | Reserved | N/A | BIDD+ | Bi-directional data cable D+ |
| 5 | Reserved | N/A | BIDD- | Bi-directional data cable D- |
| 6 | Tx- | Send data | BIDA- | Bi-directional data cable A- |
| 7 | Reserved | N/A | BIDC+ | Bi-directional data cable C+ |
| 8 | Reserved | N/A | BIDC- | Bi-directional data cable C- |

To ensure normal communication, the pins for sending data on one port should correspond to the pins for receiving data on the peer port. When both of the ports on the two devices are MDI or MDIX, a crossover Ethernet cable is needed. A cross-over cable connects devices of the same type. When one port is MDI and the other is MDIX, a straight-through Ethernet cable is needed. A straight-through cable connects devices of different types.

The RJ-45 Ethernet ports on the router support auto-MDI/MDIX. By default, auto-MDI/MDIX is enabled on a port.

# Making an Ethernet twisted pair cable

1. Cut the cable to length with the crimping pliers.
2. Strip off an appropriate length of the cable sheath. The length is typically that of the RJ-45 connector.
3. Untwist the pairs so that they can lie flat, and arrange the colored wires based on the wiring specifications.
4. Cut the top of the wires even with one another. Insert the wires into the RJ-45 end and make sure the wires extend to the front of the RJ-45 end and make good contact with the metal contacts in the RJ-45 end and in the correct order.
5. Crimp the RJ-45 connector with the crimping pliers until you hear a click.
6. Repeat the above steps with the other end of the cable.

7. Use a cable tester to verify the proper connectivity of the cable.

# E1 cable

You can use an E1 cable to connect E1-HM96 Ethernet copper ports.

**Figure3-5 E1 cable (1)**

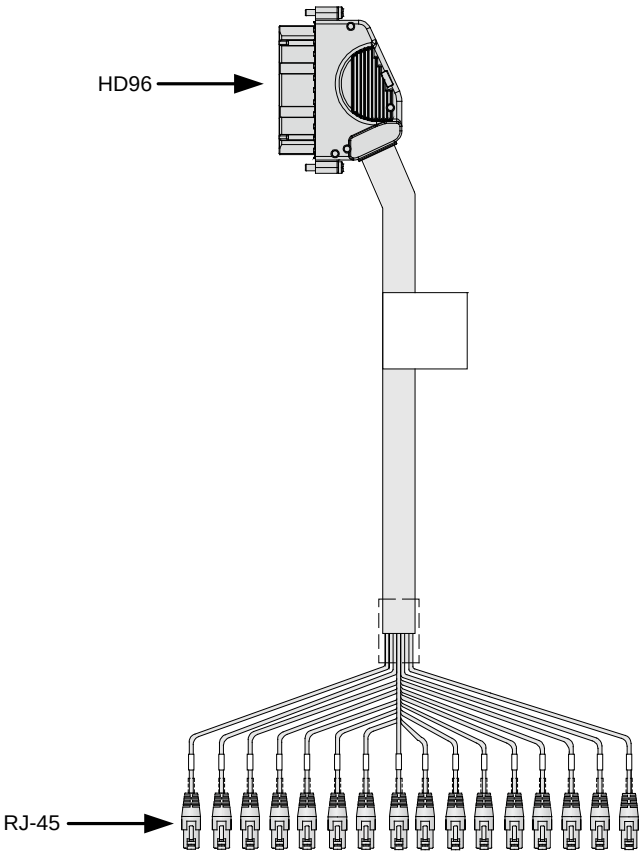


**Figure3-6 E1 cable (2)**

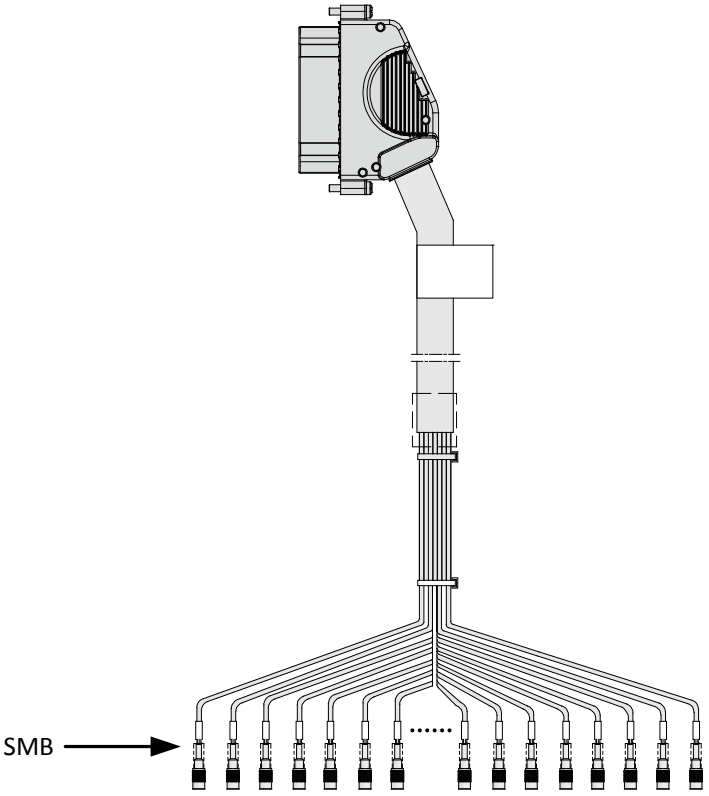
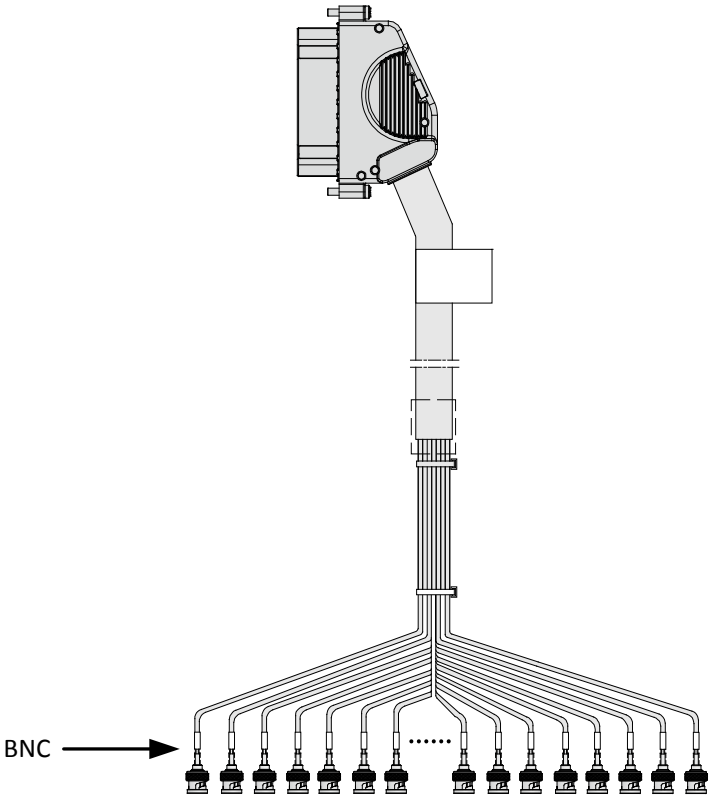



**Figure3-7 E1 cable (3)**



# VGA cable

You can use a VGA cable to connect the universal open application platform and PC (or terminal).

**Figure3-8 VGA cable**

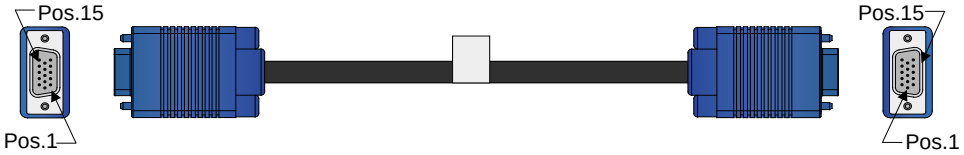



**Table3-5 Cable connections between the universal open application platform and VGA connectors on the PC (or terminal)**

| VGA | Signal |
|---|---|
| 1 | VGA_RED |
| 2 | VGA_GREEN |
| 3 | VGA_BIUE |
| 4 | VGA_CABLE_PRSNT |
| 5 | GND |
| 6 | RED GND |
| 7 | GREEN GND |
| 8 | BIUE GND |
| 9 | P5V |
| 10 | GND |
| 11 | NC |
| 12 | VGA_SW_DATX |
| 13 | VGA_HSYNC |
| 14 | VGA_VSYNC |
| 15 | VGA_SW_CLKX |

# Optical fiber

**CAUTION:**

Use the same types of transceiver modules, pigtail cords, patch cords, and fiber cables. If you use single-mode optical fibers, the transceiver modules, pigtail cords, patch cords, and fiber cables must be single-mode.

For information about restrictions and guidelines for fiber connection, see *H3C CR16000-F Router Series Installation Guide*.

# Optical fiber

Optical fibers are widely used in fiber-optic communications, which are advantageous for long-distance communications.

Optical fibers can be classified into the following types:

- **Single mode fiber**—It has a core size of 10 μm or smaller, and has a lower modal dispersion. It carries only a single ray of light. It is mostly used for communication over longer distances.
- **Multi-mode fiber**—It has a core size of 50 μm or 62.5 μm or higher, and has a higher modal dispersion than single-mode optical fiber. It is mostly used for communication over shorter distances.

**Table3-6 Allowed maximum tensile force and crush load**

| Period of force | Tensile load (N) | Crush load (N/mm) |
|---|---|---|
| Short period | 150 | 500 |
| Long term | 80 | 100 |

# Optical fiber cable

An optical fiber cable is a cable containing one or more optical fibers. Typically, the optical fiber elements are individually coated with plastic layers and contained in a protective tube. Optical fiber cables contain single-mode and multi-mode optical fiber cables.

# Patch cord

A fiber that has connectors at both ends is called a patch cord. A patch cord connects one optical device to another for signal routing. Patch cords contain single-mode and multi-mode patch cords.

- **Single-mode patch cord**—The jacket is yellow. It permits transmission over longer distances.
- **Multi-mode patch cord**—The jacket is orange. It permits transmission over shorter distances.

Patch cords are mainly classified into SC, LC, and FC based on interface type. The typical length of a patch cord can be 0.5 m (1.64 ft), 1 m (3.28 ft), 2 m (6.56 ft), 3 m (9.84 ft), 5 m (16.40 ft), and 10 m (32.81 ft).

# Pigtail cord

A pigtail cord is an optical fiber that has an optical connector on one end and a length of exposed fiber on the other. The end of the pigtail is fusion spliced to a fiber, connecting the fiber cable and transceiver.

Pigtail cords contain single-mode (yellow) and multi-mode (orange) pigtail cords. Based on interface type, pigtail cords can also be classified into three main types, SC, LC, and FC.

# Fiber connector

Fiber connectors are indispensable passive components in an optical fiber communication system. They allow the removable connection between optical channels, which makes the optical system debugging and maintenance more convenient and the transit dispatching of the system more flexible.

**Figure3-9 SC connector**

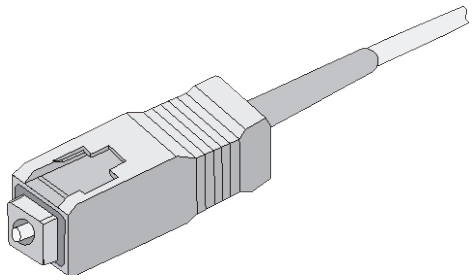


**Figure3-10 LC connector**