



Hardware Specifications

Firepower 7000 and 8000 Series devices are delivered on a variety of platforms to meet the needs of your organization.

Rack and Cabinet Mounting Options

You can mount Firepower devices in racks and server cabinets. The appliance comes with a rack-mounting kit except for the Firepower 7010, 7020, 7030, and 7050. For information on mounting the appliance in a rack, refer to the instructions delivered with the rack-mounting kit.

The Firepower 7010, 7020, 7030, and 7050 require a tray and rack-mounting kit, available separately. You can purchase rack and cabinet mounting kits for other appliances separately.

Firepower 7000 Series Devices

All Firepower 7000 Series devices have an LCD panel on the front of the appliance where you can view and, if enabled, configure your appliance. See the following sections for information:

- [Firepower 7010, 7020, 7030, and 7050, page 7-1](#)
- [Firepower 7110 and 7120, page 7-6](#)
- [Firepower 7115, 7125, and AMP7150, page 7-13](#)

Firepower 7010, 7020, 7030, and 7050

The Firepower 7010, 7020, 7030, and 7050 devices, also called the 70xx Family, are 1U appliances, one-half the width of the rack tray and delivered with eight copper interfaces, each with configurable bypass capability. See the *Regulatory Compliance and Safety Information for FirePOWER and FireSIGHT Appliances* document for safety considerations for Firepower 70xx Family appliances.

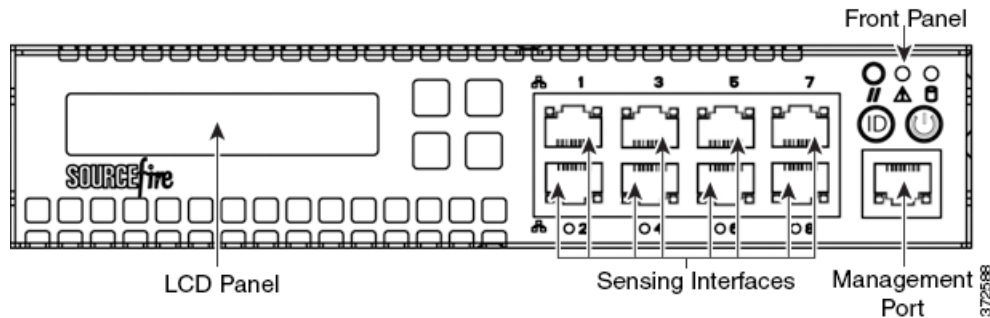
See the following sections for more information:

- [Firepower 70xx Family Front View, page 7-2](#)
- [Firepower 70xx Family Rear View, page 7-5](#)
- [Firepower 70xx Family Physical and Environmental Parameters, page 7-5](#)

Firepower 70xx Family Front View

The front of the chassis contains the LCD panel, sensing interfaces, front panel, and management interface.

Figure 7-1 Firepower 70xx Family (Chassis: CHRY-1U-AC; NEME-1U-AC) Front View



The following table describes the features on the front of the appliance.

Table 7-1 Firepower 70xx Family System Components: Front View

Feature	Description
LCD panel	Operates in multiple modes to configure the device, display error messages, and view system status. For more information, see Using the LCD Panel on a Firepower Device, page 6-1 .
Sensing interfaces	Contain the sensing interfaces that connect to the network. For information, see Sensing Interfaces, page 7-4 .
10/100/1000 Ethernet management interface	Provides for an out-of-band management network connection. The management interface is used for maintenance and configuration purposes only and is not intended to carry service traffic.
Front panel	Houses LEDs that display the system's operating state, as well as various controls, such as the power button. For more information, see Table 7-11 Firepower 7110 and 7120 Front Panel Components, page 7-8 .

Figure 7-2 Firepower 70xx Family Front Panel

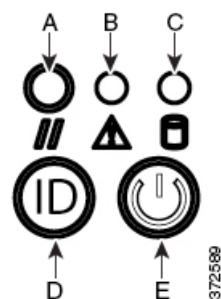


Table 7-2 Front Panel Components

A	Reset button	D	System ID button
B	System status LED	E	Power button and LED
C	Hard drive activity LED		

The front panel of the chassis houses LEDs, which display the system's operating state. The following table describes the LEDs on the front panel.

Table 7-3 Firepower 70xx Family Front Panel LEDs

LED	Description
Reset button	Allows you to reboot the appliance without disconnecting it from the power supply.
System status	Indicates the system status: <ul style="list-style-type: none"> • A green light indicates the system is powered up and operating normally, or powered down and attached to AC power. • An amber light indicates a system fault. See Table 7-4 on page 7-3 for more information.
Hard drive activity	Indicates the hard drive status: <ul style="list-style-type: none"> • A blinking green light indicates the fixed disk drive is active. • If the light is off, there is no drive activity or the system is powered off.
System ID	When pressed, the ID button displays a blue light, and a blue light is visible at the rear of the chassis.
Power button and LED	Indicates whether the appliance has power: <ul style="list-style-type: none"> • A green light indicates that the appliance has power and the system is on. • No light indicates the system is shut down or does not have power.

The following table describes the conditions under which the system status LEDs might be lit.

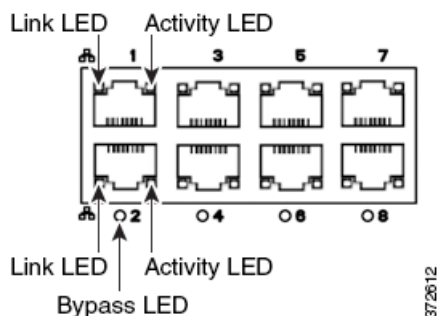
Table 7-4 Firepower 70xx Family System Status

Condition	Description
Critical	Any critical or non-recoverable threshold crossing associated with the following events: <ul style="list-style-type: none"> • temperature, voltage, or fan critical threshold crossing • power subsystem failure • system inability to power up due to incorrectly installed processors or processor incompatibility • critical event logging errors, including System Memory Uncorrectable ECC error and fatal/uncorrectable bus errors, such as PCI SERR and PERR
Non-critical	A non-critical condition is a threshold crossing associated with the following events: <ul style="list-style-type: none"> • temperature, voltage, or fan non-critical threshold crossing • Set Fault Indication command from system BIOS; the BIOS may use the command to indicate additional, non-critical status such as system memory or CPU configuration changes
Degraded	A degraded condition is associated with the following events: <ul style="list-style-type: none"> • one or more processors are disabled by Fault Resilient Boot (FRB) or BIOS • some system memory disabled or mapped out by BIOS • one of the power supplies unplugged or not functional

Sensing Interfaces

The Firepower 70xx Family appliances are delivered with eight copper interfaces, each with configurable bypass capability.

Figure 7-3 Eight-Port 1000BASE-T Copper Interfaces



Use the following table to understand the activity and link LEDs on the copper interfaces.

Table 7-5 Firepower 70xx Family Copper Link/Activity LEDs

Status	Description
Both LEDs off	The interface does not have link.
Link amber	The speed of the traffic on the interface is 10Mb or 100Mb.
Link green	The speed of the traffic on the interface is 1Gb.
Activity blinking green	The interface has link and is passing traffic.

Use the following table to understand bypass LEDs on the copper interfaces.

Table 7-6 Firepower 70xx Family Copper Bypass LEDs

Status	Description
Off	The interface pair is not in bypass mode or has no power.
Steady green	The interface pair is ready to enter bypass mode.
Steady amber	The interface pair has been placed in bypass mode intentionally, or has entered bypass mode gracefully, and is not inspecting traffic.
Blinking amber	The interface pair has unexpectedly entered bypass mode; that is, it has failed open.

The 10/100/1000 management interface is located on the front of the appliance. The following table describes the LEDs associated with the management interface.

Table 7-7 Firepower 70xx Family Management Interface LEDs

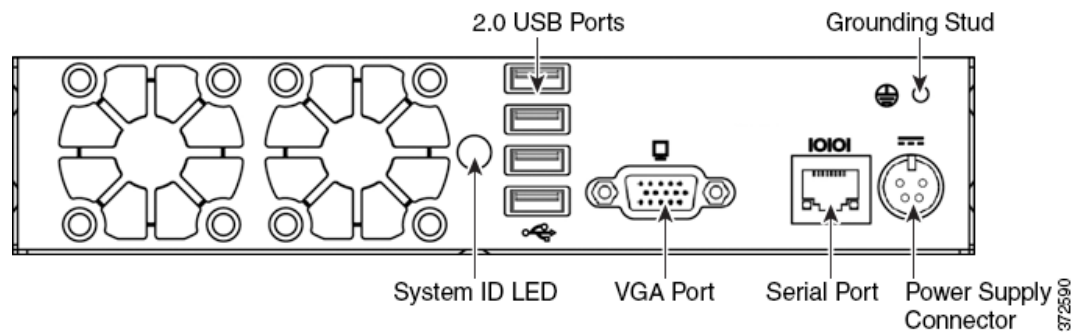
LED	Description	
Left (link)	7010/20/30	Indicates whether the link is up. If the light is on, the link is up. If the light is off, there is no link.
	7050	For 10Mbps links, the link light does not illuminate. Link status is shared with the right (activity) LED.

Table 7-7 Firepower 70xx Family Management Interface LEDs (continued)

LED	Description	
Right (activity)	7010/20/30	Indicates activity on the port. If the light is blinking, there is activity. If the light is off, there is no activity.
	7050	For 10Mbps links, if the light is on, there is link and activity. If the light is off, there is no link or activity.

Firepower 70xx Family Rear View

The rear of the chassis contains the system ID LED, connection ports, grounding stud, and power supply connector.

Figure 7-4 Firepower 70xx Family (Chassis: CHRY-1U-AC) Rear View

The following table describes the features that appear on the rear of the appliance.

Table 7-8 Firepower 70xx Family System Components: Rear View

Feature	Description
System ID LED	Helps identify a system installed in a high-density rack with other similar systems. The blue LED indicates that the ID button is pressed.
2.0 USB ports VGA port Serial port	Allows you to attach a monitor and keyboard to the device to establish a direct workstation-to-appliance connection.
Grounding stud	Allows you to connect the appliance to the common bonding network. See the Power Requirements for Firepower Devices, page A-1 for more information.
12V Power supply connector	Provides a power connection to the device through an AC power source.

Firepower 70xx Family Physical and Environmental Parameters

The following table describes the physical attributes and the environmental parameters for the appliance.

Table 7-9 Firepower 70xx Family Physical and Environmental Parameters

Parameter	Description	
Form factor	1U, half rack width	
Dimensions (D x W x H)	Single chassis: 12.49 in. x 7.89 in. x 1.66 in. (31.74 cm x 20.04 cm x 4.21 cm) 2-Chassis Tray: 25.05 in. x 17.24 in. x 1.73 in. (63.62 cm x 43.8 cm x 4.44 cm)	
Chassis weight maximum installed	Chassis: 7 lbs (3.17 kg) Single chassis and power supply in tray: 17.7 lbs (8.03 kg) Double chassis and power supplies in single tray: 24.7 lbs (11.2 kg)	
Copper 1000BASE-T	Gigabit copper Ethernet bypass-capable interfaces in a paired configuration Cable and distance: Cat5E at 50 m	
Power supply	200 W AC power supply Voltage: 100 VAC to 240 VAC nominal (90 VAC to 264 VAC maximum) Current: 2A maximum over the full range Frequency range: 50/60 Hz nominal (47 Hz to 63 Hz maximum)	
Operating temperature	7010/20/30	32°F to 104°F (0°C to 40°C)
	7050	23°F to 104°F (-5°C to 40°C)
Non-operating temperature	7010/20/30	-4°F to 158°F (-20°C to 70°C)
	7050	14°F to 140°F (-10°C to 60°C)
Operating humidity	7010/20/30	5% to 95%, non-condensing Operation beyond these limits is not guaranteed and not recommended.
	7050	5% to 85%, non-condensing Operation beyond these limits is not guaranteed and not recommended.
Non-operating humidity	7010/20/30	0% to 95%, non-condensing
	7050	0% to 85%, non-condensing
Store the unit below the maximum non-condensing relative humidity. Acclimate below maximum operating humidity at least 48 hours prior to placing the unit in service.		
Altitude	0 ft (sea level) to 5905 ft (0 m to 1800 m)	
Cooling requirements	682 BTU/hour You must provide sufficient cooling to maintain the appliance within its required operating temperature range. Failure to do this may cause a malfunction or damage to the appliance.	
Acoustic noise	53 dBA when idle. 62 dBA at full processor load	
Operating shock	No errors with half a sine wave shock of 5G (with 11 ms duration)	
Airflow	20 ft ³ (0.57 m ³) per minute Airflow through the appliance enters at the front and sides and exits at the rear.	

Firepower 7110 and 7120

The Firepower 7110 and 7120 devices, part of the 71xx Family, are 1U appliances, and are delivered with eight copper or eight fiber interfaces, each with configurable bypass capability. See the *Regulatory Compliance and Safety Information for FirePOWER and FireSIGHT Appliances* document for safety considerations for 71xx Family appliances.

See the following sections for more information:

- [Firepower 7110 and 7120 Chassis Front View, page 7-7](#)
- [Firepower 7110 and 7120 Chassis Rear View, page 7-11](#)
- [Firepower 7110 and 7120 Physical and Environmental Parameters, page 7-12](#)

Firepower 7110 and 7120 Chassis Front View

The front of the chassis contains the LCD panel, USB port, front panel, and either copper or fiber sensing interfaces.

Figure 7-5 Firepower 7110 and 7120 with Copper Interfaces (Chassis: GERY-1U-8-C-AC)

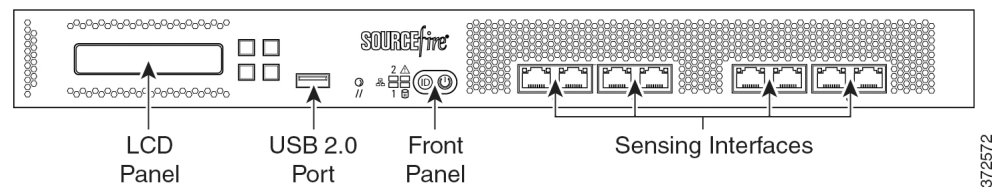
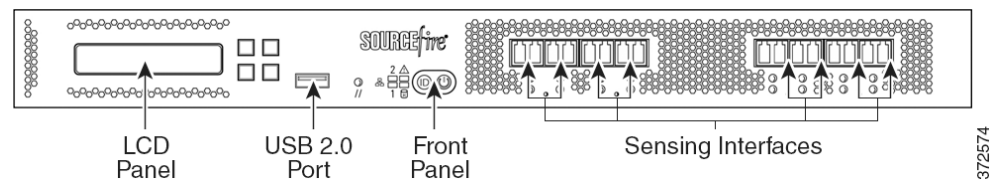


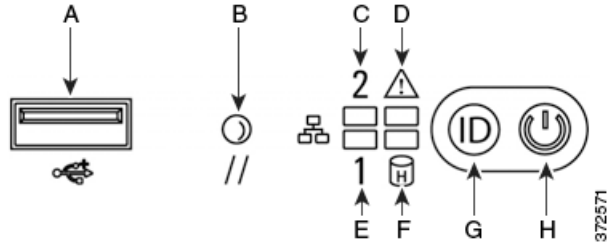
Figure 7-6 Firepower 7110 and 7120 with Fiber Interfaces (Chassis: GERY-1U-8-FM-AC)



The following table describes the features on the front of the appliance.

Table 7-10 Firepower 7110 and 7120 System Components: Front View

Feature	Description
LCD panel	Operates in multiple modes to configure the device, display error messages, and view system status. For more information, see Using the LCD Panel on a Firepower Device, page 6-1 .
Front panel USB 2.0 port	Allows you to attach a keyboard to the device.
Front panel	Houses LEDs that display the system's operating state, as well as various controls, such as the power button. For more information, see Figure 7-7 Firepower 7110 and 7120 Front Panel, page 7-8 .
Sensing interfaces	Contain the sensing interfaces that connect to the network. For more information, see Firepower 7110 and 7120 Sensing Interfaces, page 7-9 .

Figure 7-7 Firepower 7110 and 7120 Front Panel**Table 7-11 Firepower 7110 and 7120 Front Panel Components**

A	USB 2.0 connector	E	NIC1 activity LED
B	Reset button	F	Hard drive activity LED
C	NIC2 activity LED	G	ID button
D	System status LED	H	Power button and LED


The front panel of the chassis houses LEDs, which display the system's operating state. The following table describes the LEDs on the front panel.

Table 7-12 Firepower 7110 and 7120 Front Panel LEDs

LED	Description
NIC activity (1 and 2)	Indicates whether there is any network activity: <ul style="list-style-type: none"> A green light indicates there is network activity. No light indicates there is no network activity.
System status	Indicates the system status: <ul style="list-style-type: none"> No light indicates the system is operating normally, or is powered off. A red light indicates a system error. See the Table 7-13 Firepower 7110 and 7120 System Status, page 7-9 for more information.
Reset button	Allows you to reboot the appliance without disconnecting it from the power supply.
Hard drive activity	Indicates the hard drive status: <ul style="list-style-type: none"> A blinking green light indicates the fixed disk drive is active. An amber light indicates a fixed disk drive fault. If the light is off, there is no drive activity or the system is powered off.
System ID	Helps identify a system installed in a high-density rack with other similar systems: <ul style="list-style-type: none"> A blue light indicates the ID button is pressed and a blue light is on at the rear of the appliance. No light indicates the ID button is not pressed.
Power button and LED	Indicates whether the appliance has power: <ul style="list-style-type: none"> A green light indicates that the appliance has power and the system is on. A blinking green light indicates that the appliance has power and is shut down. If the light is off, the system does not have power.

The following table describes the conditions under which the system status LEDs might be lit.

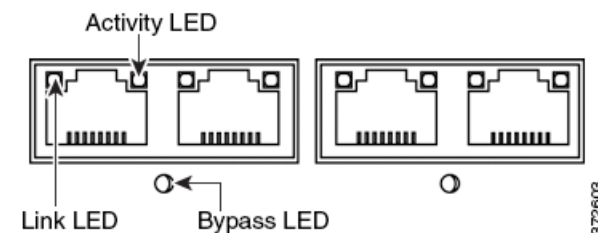
Table 7-13 Firepower 7110 and 7120 System Status

Condition	Description
Critical	Any critical or non-recoverable threshold crossing associated with the following events: <ul style="list-style-type: none"> temperature, voltage, or fan critical threshold crossing power subsystem failure system inability to power up due to incorrectly installed processors or processor incompatibility critical event logging errors, including System Memory Uncorrectable ECC error and fatal/uncorrectable bus errors, such as PCI SERR and PERR
Non-critical	A non-critical condition is a threshold crossing associated with the following events: <ul style="list-style-type: none"> temperature, voltage, or fan non-critical threshold crossing chassis intrusion Set fault indication command from system BIOS; the BIOS may use the command to indicate additional non-critical status such as system memory or CPU configuration changes
Degraded	Any degraded condition is associated with the following events: <ul style="list-style-type: none"> one or more processors are disabled by Fault Resilient Boot (FRB) or BIOS some system memory disabled or mapped out by BIOS one of the power supplies unplugged or not functional <p>Tip If you observe a degraded condition indication, check your power supply connections first. Power down the device, disconnect both power cords, reconnect the power cords to reseal them, then restart the device.</p> <p>Caution  To power down safely, use the procedure in the Managing Devices chapter in the <i>Firepower Management Center Configuration Guide</i>, or the <code>system shutdown</code> command from the CLI.</p>

Firepower 7110 and 7120 Sensing Interfaces

The Firepower 7110 and 7120 devices are delivered with eight-port copper or eight-port fiber interfaces, each with configurable bypass capability.

Figure 7-8 Eight-Port 1000BASE-T Copper Interfaces



Use the following table to understand the activity and link LEDs on the copper interfaces.

Table 7-14 Firepower 7110 and 7120 Copper Link/Activity LEDs

Status	Description
Both LEDs off	The interface does not have link.
Link amber	The speed of the traffic on the interface is 10Mb or 100Mb.
Link green	The speed of the traffic on the interface is 1Gb.
Activity blinking green	The interface has link and is passing traffic.

Use the following table to understand the bypass LED on the copper interfaces.

Table 7-15 Firepower 7110 and 7120 Copper Bypass LED

Status	Description
Off	The interface pair is not in bypass mode or has no power.
Steady green	The interface pair is ready to enter bypass mode.
Steady amber	The interface pair has been placed in bypass mode and is not inspecting traffic.
Blinking amber	The interface pair is in bypass mode; that is, it has failed open.

Figure 7-9 Eight-Port 100BASE-SX Fiber Configurable Bypass Interfaces



Use the following table to understand the link and activity LEDs on the fiber interfaces.

Table 7-16 Firepower 7110 and 7120 Fiber Link/Activity LEDs

Status	Description
Top (activity)	For an inline interface: the light is on when the interface has activity. If dark, there is no activity. For a passive interface: the light is non-functional.
Bottom (link)	For an inline or passive interface: the light is on when the interface has link. If dark, there is no link.

Use the following table to understand the activity and link LEDs on the fiber interfaces.

Table 7-17 Firepower 7110 and 7120 Fiber Bypass LEDs

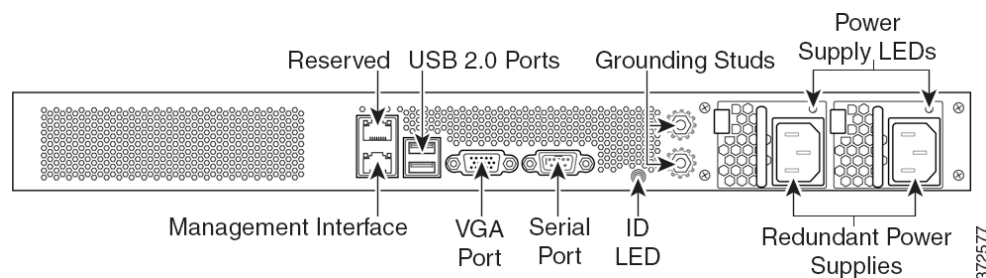
Status	Description
Off	The interface pair is not in bypass mode or has no power.
Steady green	The interface pair is ready to enter bypass mode.

Table 7-17 Firepower 7110 and 7120 Fiber Bypass LEDs (continued)

Status	Description
Steady amber	The interface pair has been placed in bypass mode and is not inspecting traffic.
Blinking amber	The interface pair is in bypass mode; that is, it has failed open.

Firepower 7110 and 7120 Chassis Rear View

The rear of the chassis contains the management interface, connection ports, grounding studs, and power supplies.

Figure 7-10 Firepower 7110 and 7120 (Chassis: GERY-1U-8-C-AC or GERY-1U-8-FM-AC) Rear View

The following table describes the features that appear on the rear of the appliance.

Table 7-18 Firepower 7110 and 7120 System Components: Rear View

Features	Description
VGA port USB port	Allows you to attach a monitor, keyboard, and mouse to the device to establish a direct workstation-to-appliance connection.
10/100/1000 Ethernet management interface	Provides for an out-of-band management network connection. The management interface is used for maintenance and configuration purposes only and is not intended to carry service traffic.
System ID LED	Helps identify a system installed in a high-density rack with other similar systems. The blue light indicates that the ID button is pressed.
Grounding studs	Allows you to connect the appliance to the Common Bonding Network. See the Power Requirements for Firepower Devices, page A-1 for more information.
Redundant power supplies	Provides power to the device through an AC power source. Looking at the rear of the chassis, power supply #1 is on the left and power supply #2 is on the right. The power supplies are hot-swappable.
Power supply LEDs	Indicates the status of the power supply. See Table 7-20 Firepower 7110 and 7120 Power Supply LED, page 7-12 .

The 10/100/1000 management interface is located on the rear of the appliance. The following table describes the LEDs associated with the management interface.

Table 7-19 Firepower 7110 and 7120 Management Interface LEDs

LED	Description
Left (activity)	Indicates activity on the port: <ul style="list-style-type: none"> • A blinking light indicates activity. • No light indicates there is no activity.
Right (link)	Indicates whether the link is up: <ul style="list-style-type: none"> • A light indicates the link is up. • No light indicates there is no link.

The power supply modules are located on the rear of the appliance. The following table describes the LED associated with the power supply.

Table 7-20 Firepower 7110 and 7120 Power Supply LED

LED	Description
Off	The power cord is not plugged in.
Red	No power supplied to this module. or A power supply critical event, such as module failure, a blown fuse, or a fan failure; the power supply shuts down.
Blinking red	A power supply warning event, such as high temperature or a slow fan; the power supply continues to operate.
Blinking green	AC input is present; volts on standby, the power supply is switched off.
Green	The power supply is plugged in and on.

Firepower 7110 and 7120 Physical and Environmental Parameters

The following table describes the physical attributes and the environmental parameters for the appliance.

Table 7-21 Firepower 7110 and 7120 Physical and Environmental Parameters

Parameter	Description
Form factor	1U
Dimensions (D x W x H)	21.6 in. x 19.0 in. x 1.73 in. (54.9 cm x 48.3 cm x 4.4 cm)
Weight maximum installed	27.5 lbs (12.5 kg)
Copper 1000BASE-T	Gigabit copper Ethernet bypass-capable interfaces in a paired configuration Cable and distance: Cat5E at 50 m
Fiber 1000BASE-SX	Fiber bypass-capable interfaces with LC connectors Cable and distance: SX is multimode fiber (850 nm) at 550 m (standard)

Table 7-21 Firepower 7110 and 7120 Physical and Environmental Parameters (continued)

Parameter	Description
Power supply	450 W dual redundant (1+1) AC power supplies Voltage: 100 VAC to 240 VAC nominal (85 VAC to 264 VAC maximum) Current: 3A maximum for 90 VAC to 132 VAC, per supply 1.5A maximum for 187 VAC to 264 VAC, per supply Frequency range: 47 Hz to 63 Hz Note The power supplies are hot-swappable.
Operating temperature	41°F to 104°F (5°C to 40°C)
Non-operating temperature	-29°F to 158°F (-20°C to 70°C)
Operating humidity	5% to 85% non-condensing
Non-operating humidity	5% to 90%, non-condensing with a maximum wet bulb of 82°F (28°C) at temperatures from 77°F to 95°F (25°C to 35°C) Store the unit below 95% non-condensing relative humidity. Acclimate below maximum operating humidity at least 48 hours before placing the unit in service.
Altitude	0ft (sea level) to 5905 ft (0 m to 1800 m)
Cooling requirements	900 BTU/hour You must provide sufficient cooling to maintain the appliance within its required operating temperature range. Failure to do this may cause a malfunction or damage to the appliance.
Acoustic noise	64 dBA at full processor load, normal fan operation Meets GR-63-CORE 4.6 Acoustic Noise
Operating shock	Complies with Bellecore GR-63-CORE standards
Airflow	140 ft ³ (3.9 m ³) per minute Airflow through the appliance enters at the front and exits at the rear with no side ventilation.

Firepower 7115, 7125, and AMP7150

The Firepower 7115, 7125, and AMP7150 devices, part of the 71xx Family, are delivered with four-port copper interfaces with configurable bypass capability, and eight hot-swappable small form-factor pluggable (SFP) ports without bypass capability. To ensure compatibility, use only Cisco SFP transceivers.



Note

The Firepower AMP7150 has many of the same form factors as the Firepower 7115 and 7125, but has been optimized to take advantage of the Firepower System's AMP for Networks capabilities.

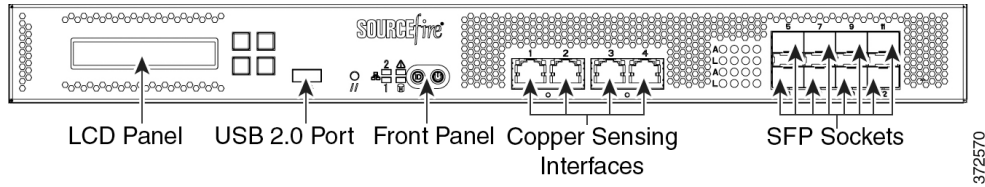
See the following sections for more information:

- [Firepower 7115, 7125, and AMP7150 Chassis Front View, page 7-14](#)
- [Firepower 7115, 7125, and AMP7150 Chassis Rear View, page 7-18](#)
- [Firepower 7115, 7125, and AMP7150 Physical and Environmental Parameters, page 7-20](#)

Firepower 7115, 7125, and AMP7150 Chassis Front View

The front of the chassis contains the LCD panel, USB port, front panel, copper sensing interfaces, and SFP sockets.

Figure 7-11 Firepower 7115, 7125, and AMP7150 (Chassis: GERY-1U-8-4C8S-AC) Front View



The following table describes the features on the front of the appliance.

Table 7-22 Firepower 7115, 7125, and AMP7150 System Components: Front View

Feature	Description
LCD panel	Operates in multiple modes to configure the device, display error messages, and view system status. For more information, see Using the LCD Panel on a Firepower Device, page 6-1 .
Front panel USB 2.0 port	Allows you to attach a keyboard to the device.
Front panel	Houses LEDs that display the system’s operating state, as well as various controls, such as the power button. For more information, see Figure 7-12 Firepower 7115, 7125, and AMP7150 Front Panel, page 7-14 .
Sensing interfaces	Contain the sensing interfaces that connect to the network. For more information, see Firepower 7115, 7125, and AMP7150 Sensing Interfaces, page 7-16 .

Figure 7-12 Firepower 7115, 7125, and AMP7150 Front Panel

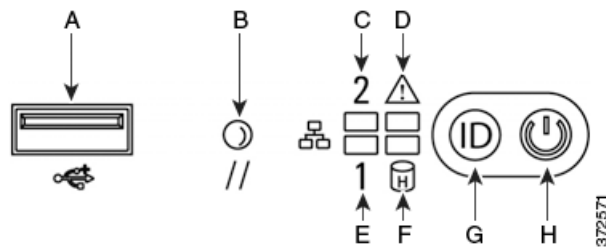


Table 7-23 Firepower 7115, 7125, and AMP7150 Front Panel Components

A	USB 2.0 connector	E	NIC1 activity LED
B	Reset button	F	Hard drive activity LED
C	NIC2 activity LED	G	ID button
D	System status LED	H	Power button and LED


The front panel of the chassis houses LEDs, which display the system’s operating state. The following table describes the LEDs on the front panel.

Table 7-24 Firepower 7115, 7125, and AMP7150 Front Panel LEDs

LED	Description
NIC activity (1 and 2)	Indicates whether there is any network activity: <ul style="list-style-type: none"> • A green light indicates there is network activity. • No light indicates there is no network activity.
System status	Indicates the system status: <ul style="list-style-type: none"> • No light indicates the system is operating normally, or is powered off. • A red light indicates a system error. See the Table 7-25 Firepower 7115, 7125, and AMP7150 System Status, page 7-16 for more information.
Reset button	Allows you to reboot the appliance without disconnecting it from the power supply.
Hard drive activity	Indicates the hard drive status: <ul style="list-style-type: none"> • A blinking green light indicates the fixed disk drive is active. • An amber light indicates a fixed disk drive fault. • If the light is off, there is no drive activity or the system is powered off.
System ID	Helps identify a system installed in a high-density rack with other similar systems: <ul style="list-style-type: none"> • A blue light indicates the ID button is pressed and a blue light is on at the rear of the appliance. • No light indicates the ID button is not pressed.
Power button and LED	Indicates whether the appliance has power: <ul style="list-style-type: none"> • A green light indicates that the appliance has power and the system is on. • A blinking green light indicates that the appliance has power and is shut down. • No light indicates the system does not have power.

The following table describes the conditions under which the system status LEDs might be lit.

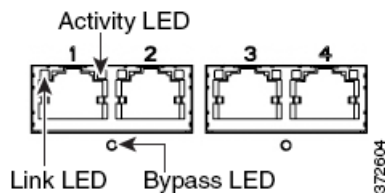
Table 7-25 Firepower 7115, 7125, and AMP7150 System Status

Condition	Description
Critical	<p>Any critical or non-recoverable threshold crossing associated with the following events:</p> <ul style="list-style-type: none"> temperature, voltage, or fan critical threshold crossing power subsystem failure system inability to power up due to incorrectly installed processors or processor incompatibility critical event logging errors, including System Memory Uncorrectable ECC error and fatal/uncorrectable bus errors, such as PCI SERR and PERR
Non-critical	<p>A non-critical condition is a threshold crossing associated with the following events:</p> <ul style="list-style-type: none"> temperature, voltage, or fan non-critical threshold crossing chassis intrusion Set Fault Indication command from system BIOS; the BIOS may use the command to indicate additional non-critical status such as system memory or CPU configuration changes
Degraded	<p>Any degraded condition is associated with the following events:</p> <ul style="list-style-type: none"> one or more processors are disabled by Fault Resilient Boot (FRB) or BIOS some system memory disabled or mapped out by BIOS one of the power supplies unplugged or not functional <p>Tip If you observe a degraded condition indication, check your power supply connections first. Power down the device, disconnect both power cords, reconnect the power cords to reseal them, then restart the device.</p> <p>Caution  To power down safely, use the procedure in the Managing Devices chapter in the <i>Firepower Management Center Configuration Guide</i>, or the <code>system shutdown</code> command from the CLI.</p>

Firepower 7115, 7125, and AMP7150 Sensing Interfaces

The Firepower 7115, 7125, and AMP7150 devices are delivered with four-port copper interfaces with configurable bypass capability, and eight hot-swappable small form-factor pluggable (SFP) ports without bypass capability.

Figure 7-13 Four 1000BASE-T Copper Interfaces



Use the following table to understand the link and activity LEDs on copper interfaces.

Table 7-26 Firepower 7115, 7125, and AMP7150 Copper Link/Activity LEDs

Status	Description
Both LEDs off	The interface does not have link.
Link amber	The speed of the traffic on the interface is 10Mb or 100Mb.
Link green	The speed of the traffic on the interface is 1Gb.
Activity blinking green	The interface has link and is passing traffic.

Use the following table to understand the bypass LED on copper interfaces.

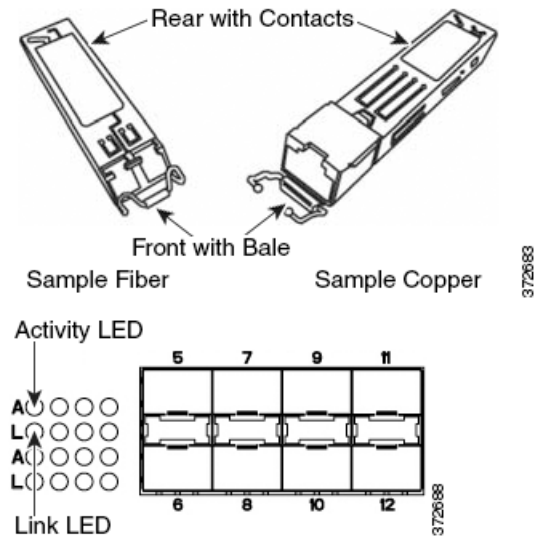
Table 7-27 Firepower 7115, 7125, and AMP7150 Copper Bypass LED

Status	Description
Off	The interface pair is not in bypass mode or has no power.
Steady green	The interface pair is ready to enter bypass mode.
Steady amber	The interface pair has been placed in bypass mode and is not inspecting traffic.
Blinking amber	The interface pair is in bypass mode; that is, it has failed open.

SFP Interfaces

You can install up to eight hot-swappable Cisco SFP transceivers, available in 1G copper, 1G short range fiber, or 1G long range fiber. SFP transceivers do not have bypass capability and should not be used in intrusion prevention deployments. See [Using SFP Transceivers in 3D71x5 and AMP7150 Devices, page B-1](#) for more information.

Figure 7-14 Sample SFP Transceivers



Use the following table to understand the fiber LEDs.

Table 7-28 Firepower 7115, 7125, and AMP7150 SFP Socket Activity/Link LEDs

Status	Description
Top (activity)	For an inline interface: the light is on when the interface has activity. If dark, there is no activity. For a passive interface: the light is non-functional.
Bottom (link)	For an inline or passive interface: the light is on when the interface has link. If dark, there is no link.

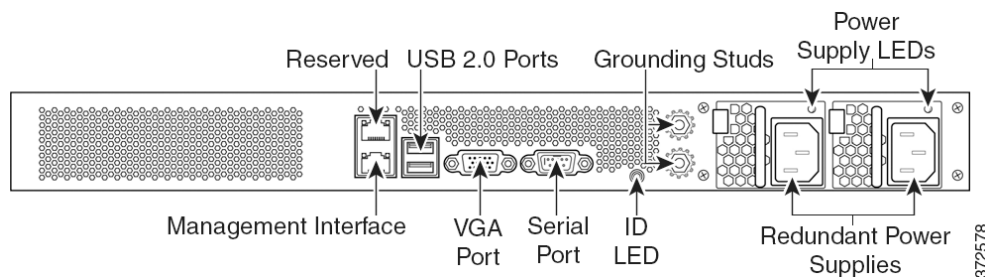
Use the following table to understand the specifications of the SFP optical transceivers.

Table 7-29 Firepower 7115, 7125, and AMP7150 SFP Optical Parameters

Parameter	1000BASE-SX	1000BASE-LX
Optical connectors	LC duplex	LC duplex
Bit rate	1000Mbps	1000Mbps
Baud rate/encoding/tolerance	1250Mbps 8b/10b encoding	1250Mbps 8b/10b encoding
Optical interface	Multimode	Single mode only
Operating distances	656 ft (200 m) for 62.5 μ m/125 μ m fiber 1640 ft (500 m) for 50 μ m/125 μ m fiber	6.2 miles (10 km) for 9 μ m/125 μ m fiber
Transmitter wavelength	770-860 nm (850 nm typical)	1270-1355 nm (1310 nm typical)
Maximum average launch power	0 dBm	-3 dBm
Minimum average launch power	-9.5 dBm	-11.5 dBm
Maximum average power at receiver	0 dBm	-3 dBm
Receiver sensitivity	-17 dBm	-19 dBm

Firepower 7115, 7125, and AMP7150 Chassis Rear View

The rear of the chassis contains the management interface, connection ports, grounding studs, and power supplies.

Figure 7-15 Firepower 7115, 7125, and AMP7150 (Chassis: GERY-1U-8-4C8S-AC) Rear View

The following table describes the features that appear on the rear of the appliance.

Table 7-30 Firepower 7115, 7125 and AMP7150 System Components: Rear View

Features	Description
VGA port USB port	Allows you to attach a monitor, keyboard, and mouse to the device to establish a direct workstation-to-appliance connection.
10/100/1000 Ethernet management interface	Provides for an out-of-band management network connection. The management interface is used for maintenance and configuration purposed only and is not intended to carry service traffic.
System ID LED	Helps identify a system installed in a high-density rack with other similar systems. The blue light indicates that the ID button is pressed.
Grounding studs	Allows you to connect the appliance to the Common Bonding Network. See the Power Requirements for Firepower Devices, page A-1 for more information.
Redundant power supplies	Provides power to the device through an AC power source. Looking at the rear of the chassis, power supply #1 is on the left and power supply #2 is on the right. Note The power supplies are hot-swappable.
Power supply LEDs	Indicates the status of the power supply. See Table 7-32 Firepower 7115, 7125, and AMP7150 Power Supply LED, page 7-19 .

The 10/100/1000 management interface is located on the rear of the appliance. The following table describes the LEDs associated with the management interface.

Table 7-31 Firepower 7115, 7125, and AMP7150 Management Interface LEDs

LED	Description
Left (activity)	Indicates activity on the port: <ul style="list-style-type: none"> • A blinking light indicates activity. • No light indicates there is no activity.
Right (link)	Indicates whether the link is up: <ul style="list-style-type: none"> • A light indicates the link is up. • No light indicates there is no link.

The power supply modules are located on the rear of the appliance. The following table describes the LED associated with the power supply.

Table 7-32 Firepower 7115, 7125, and AMP7150 Power Supply LED

LED	Description
Off	The power cord is not plugged in.
Red	No power supplied to this module. or A power supply critical event, such as module failure, a blown fuse, or a fan failure; the power supply shuts down.
Blinking red	A power supply warning event, such as high temperature or a slow fan; the power supply continues to operate.

Table 7-32 Firepower 7115, 7125, and AMP7150 Power Supply LED (continued)

LED	Description
Blinking green	AC input is present; volts on standby, the power supply is switched off.
Green	The power supply is plugged in and on.

Firepower 7115, 7125, and AMP7150 Physical and Environmental Parameters

The following table describes the physical attributes and the environmental parameters for the appliance.

Table 7-33 Firepower 7115, 7125, and AMP7150 Physical and Environmental Parameters

Parameter	Description
Form factor	1U
Dimensions (D x W x H)	21.6 in. x 19.0 in. x 1.73 in. (54.9 cm x 48.3 cm x 4.4 cm)
Weight maximum installed	29.0 lbs (13.2 kg)
Copper 1000BASE-T	Gigabit copper Ethernet bypass-capable interfaces in a paired configuration Cable and distance: Cat5E at 50 m
Copper 1000BASE-T SFP	Gigabit copper Ethernet non-bypass capable interfaces in a paired configuration Cable and distance: Cat5E at 50 m
Fiber 1000BASE-SX SFP	Fiber non-bypass capable interfaces with LC connectors Cable and distance: SX is multimode fiber (850 nm) at 550 m (standard) 656 ft (200 m) for 62.5 μ m/125 μ m fiber 1640 ft (500 m) for 50 μ m/125 μ m fiber
Fiber 1000BASE-LX SFP	Fiber non-bypass capable interfaces with LC connectors Cable and distance: LX is single mode fiber (1310 nm) at 10 km for 9 μ m/125 μ m fiber (standard)
Power supply	450 W dual redundant (1+1) AC power supplies Voltage: 100 VAC to 240 VAC nominal (85 VAC to 264 VAC maximum) Current: 3A maximum for 90 VAC to 132 VAC, per supply 1.5A maximum for 187 VAC to 264 VAC, per supply Frequency range: 47 Hz to 63 Hz Note The power supplies are hot-swappable.
Operating temperature	41°F to 104°F (5°C to 40°C)
Non-operating temperature	-29°F to 158°F (-20°C to 70°C)
Operating humidity	5% to 85% non-condensing
Non-operating humidity	5% to 90%, non-condensing with a maximum wet bulb of 82°F (28°C) at temperatures from 77°F to 95°F (25°C to 35°C) Store the unit below 95% non-condensing relative humidity. Acclimate below maximum operating humidity at least 48 hours before placing the unit in service.
Altitude	0ft (sea level) to 5905 ft (0 m to 1800 m)

Table 7-33 Firepower 7115, 7125, and AMP7150 Physical and Environmental Parameters (continued)

Parameter	Description
Cooling requirements	900 BTU/hour You must provide sufficient cooling to maintain the appliance within its required operating temperature range. Failure to do this may cause a malfunction or damage to the appliance.
Acoustic noise	64 dBA at full processor load, normal fan operation Meets GR-63-CORE 4.6 Acoustic Noise
Operating shock	Complies with Bellecore GR-63-CORE standards
Airflow	140 ft ³ (3.9 m ³) per minute Airflow through the appliance enters at the front and exits at the rear with no side ventilation.

Firepower 8000 Series Devices

The Firepower 8000 Series devices use network modules (NetMods) that contain either copper or fiber sensing interfaces. The devices can be shipped fully assembled or you can install the modules. Assemble your device before installing the Firepower System. See the assembly instructions shipped with your modules.

Some 8000 Series devices can be stacked to increase the capability of the system. For each stacking kit, you replace a NetMod with a stacking module and cable the devices together using the 8000 Series stacking cable. See [Using Devices in a Stacked Configuration, page 4-13](#) for more information.

The Firepower 8000 Series device can be delivered on a variety of chassis:

- AMP8050 is a 1U chassis and can contain up to three modules.
- Firepower 8120, 8130, 8140, and AMP8150, also known as the 81xx Family, is a 1U chassis and can contain up to three modules. For the Firepower 8140 only, you can add a stacking kit for a total 2U configuration.
- Firepower 8250, part of the 82xx Family, is a 2U chassis and can contain up to seven modules. You can add up to three stacking kits for a total 8U configuration.
- Firepower 8260, part of the 82xx Family, is a 4U configuration with two 2U chassis. The primary chassis contains one stacking module and up to six sensing modules. The secondary chassis contains one stacking module. You can add up to two stacking kits for a total 8U configuration.
- Firepower 8270, part of the 82xx Family, is a 6U configuration with three 2U chassis. The primary chassis contains two stacking modules and up to five sensing modules. Each secondary chassis contains one stacking module. You can add one stacking kit for a total 8U configuration.
- Firepower 8290, part of the 82xx Family, is an 8U configuration with four 2U chassis. The primary chassis contains three stacking modules and up to four sensing modules. Each secondary chassis contains one stacking module. This model is fully configured and does not accept a stacking kit.
- Firepower 8350 and AMP8350, part of the 83xx Family, is a 2U chassis and can contain up to seven modules. You can add up to three stacking kits for a total 8U configuration.
- Firepower 8360 and AMP8360, part of the 83xx Family, is a 4U configuration with two 2U chassis. The primary chassis contains one stacking module and up to six sensing modules. The secondary chassis contains one stacking module. You can add up to two stacking kits for a total 8U configuration.

- Firepower 8370 and AMP8370, part of the 83xx Family, is a 6U configuration with three 2U chassis. The primary chassis contains two stacking modules and up to five sensing modules. Each secondary chassis contains one stacking module. You can add one stacking kit for a total 8U configuration.
- Firepower 8390 and AMP8390, part of the 83xx Family, is an 8U configuration with four 2U chassis. The primary chassis contains three stacking modules and up to four sensing modules. Each secondary chassis contains one stacking module. This model is fully configured and does not accept a stacking kit.

**Note**

The AMP models have many of the same form factors as their Firepower counterparts, but have been optimized to take advantage of the Firepower System's network-based advanced malware protection (AMP) capabilities.

See the following sections for more information:

- [Firepower 8000 Series Chassis Front View](#), page 7-22
- [Firepower 8000 Series Chassis Rear View](#), page 7-26
- [Firepower 8000 Series Physical and Environmental Parameters](#), page 7-29
- [Firepower 8000 Series Modules](#), page 7-32

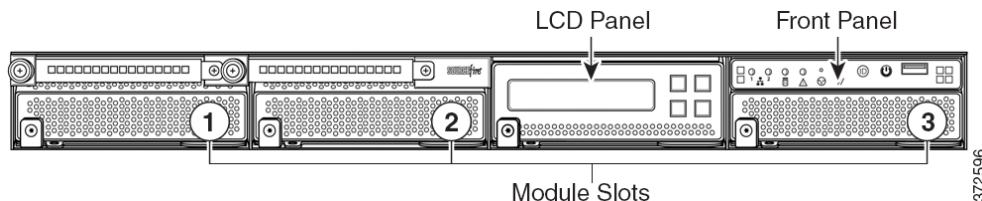
Firepower 8000 Series Chassis Front View

The Firepower 8000 Series chassis can be in the AMP8x50, 81xx Family, the 82xx Family, or the 83xx Family. See the *Regulatory Compliance and Safety Information for FirePOWER and FireSIGHT Appliances* document for safety considerations for AMP8x50, 81xx Family, 82xx Family, and 83xx Family appliances.

AMP8x50 and Firepower 81xx Family Chassis Front View

The front view of the chassis contains the LCD panel, front panel, and three module slots.

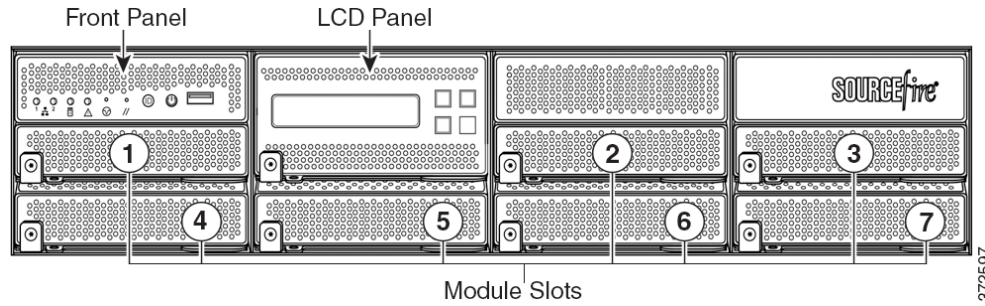
Figure 7-16 AMP8x50 and Firepower 81xx Family (Chassis: CHAS-1U-AC/DC) Front View



Firepower 82xx Family and Firepower and AMP 83xx Family Chassis Front View

The front view of the chassis contains the LCD panel, front panel, and seven module slots.

Figure 7-17 Firepower 82xx Family (Chassis: CHAS-2U-AC/DC) and Firepower and AMP 83xx Family (PG35-2U-AC/DC) Front View



The following table describes the features on the front of the appliance.

Table 7-34 Firepower 8000 Series System Components: Front View

Feature	Description
Module slots	Contain the modules. For information on available modules, see Firepower 8000 Series Modules, page 7-32 .
LCD panel	Operates in multiple modes to configure the device, display error messages, and view system status. For more information, see Using the LCD Panel on a Firepower Device, page 6-1 .
Front panel controls	Houses LEDs that display the system’s operating state, as well as various controls, such as the power button. For more information, see Figure 7-19 Firepower 82xx Family and Firepower and AMP 83xx Family Front Panel, page 7-24 .
Front panel USB port	The USB 2.0 port allows you to attach a keyboard to the device.

See the following sections for more information:

- [Firepower 8000 Series Front Panel, page 7-23](#)
- [Firepower 8000 Series Chassis Rear View, page 7-26](#)

Firepower 8000 Series Front Panel

The front panel for the Firepower and AMP 81xx Family, 82xx Family, and 83xx Family contain the same components.

Figure 7-18 Firepower 81xx Family Front Panel

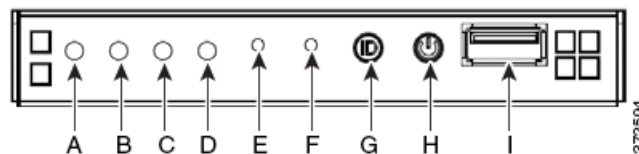
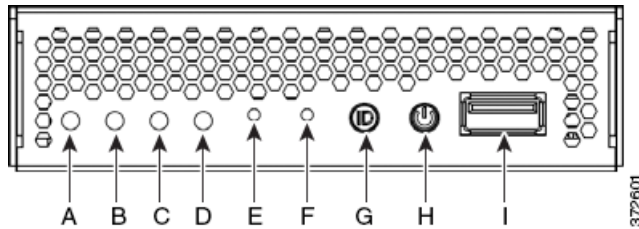


Figure 7-19 Firepower 82xx Family and Firepower and AMP 83xx Family Front Panel**Table 7-35** Firepower 8000 Series Front Panel Components

A	NIC activity LED	F	Reset button
B	Reserved	G	ID button
C	Hard drive activity LED	H	Power button and LED
D	System status LED	I	USB 2.0 connector
E	Non-maskable interrupt button		

The front panel of the chassis houses LEDs, which display the system's operating state. The following table describes the LEDs on the front panel

Table 7-36 Firepower 8000 Series Front Panel LEDs


LED	Description
NIC activity	Indicates whether there is any network activity: <ul style="list-style-type: none"> Green indicates there is network activity. If the light is off, there is no network activity.
Hard drive activity	Indicates the hard drive status: <ul style="list-style-type: none"> Blinking green indicates the fixed disk drive is active. Amber indicates a fixed disk drive fault. If the light is off, there is no drive activity or the system is powered off.
System status	Indicates the system status: <ul style="list-style-type: none"> Green indicates the system is operating normally. Blinking green indicates the system is operating in a degraded condition. Blinking amber indicates the system is in a non-critical condition. Amber indicates the system is in a critical or non-recoverable condition, or the system is starting up. If the light is off, the system is starting up or off. <p>Note The amber status light takes precedence over the green status light. When the amber light is on or blinking, the green light is off.</p> <p>See Table 7-37 on page 7-25 for more information.</p>

Table 7-36 Firepower 8000 Series Front Panel LEDs (continued)

LED	Description
System ID	Helps identify a system installed in a high-density rack with other similar systems: <ul style="list-style-type: none"> • A blue light indicates the ID button is pressed and a blue light is on at the rear of the appliance. • No light indicates the ID button is not pressed.
Power button and LED	Indicates whether the system has power: <ul style="list-style-type: none"> • Green indicates that the system has power. • If the light is off, the system does not have power.

The following table describes the conditions under which the system status LEDs might be lit.

Table 7-37 Firepower 8000 Series System Status

Condition	Description
Critical	Any critical or non-recoverable threshold crossing associated with the following events: <ul style="list-style-type: none"> • temperature, voltage, or fan critical threshold crossing • power subsystem failure • system inability to power up due to incorrectly installed processors or processor incompatibility • critical event logging errors, including System Memory Uncorrectable ECC error and fatal/uncorrectable bus errors, such as PCI SERR and PERR
Non-critical	A non-critical condition is a threshold crossing associated with the following events: <ul style="list-style-type: none"> • temperature, voltage, or fan non-critical threshold crossing • chassis intrusion • Set Fault Indication command from system BIOS; the BIOS may use the command to indicate additional, non-critical status such as system memory or CPU configuration changes
Degraded	A degraded condition is associated with the following events: <ul style="list-style-type: none"> • one or more processors are disabled by Fault Resilient Boot (FRB) or BIOS • some system memory disabled or mapped out by BIOS • one of the power supplies unplugged or not functional <p>Tip If you observe a degraded condition indication, check your power supply connections first. Power down the device, disconnect both power cords, reconnect the power cords to reseat them, and then restart the device.</p> <p> Caution To power down safely, use the procedure in the Managing Devices chapter in the <i>Firepower Management Center Configuration Guide</i>, or the <code>system shutdown</code> command from the CLI.</p>

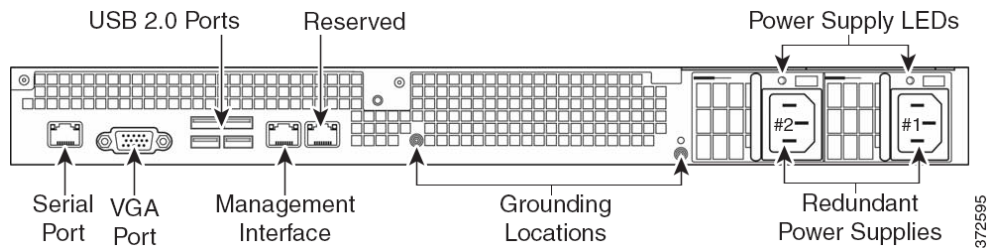
Firepower 8000 Series Chassis Rear View

The Firepower 8000 Series chassis can be in the 81xx Family, 82xx Family, or 83xx Family.

AMP8x50 and Firepower 81xx Family Chassis Rear View

The rear view of the chassis contains connection ports, the management interface, and the power supplies.

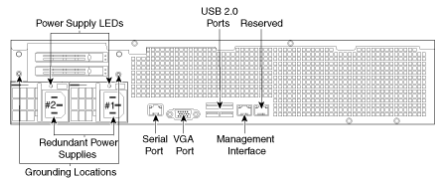
Figure 7-20 AMP8x50 and Firepower 81xx Family (Chassis: CHAS-1U-AC/DC) Rear View



Firepower 82xx Family Chassis Rear View

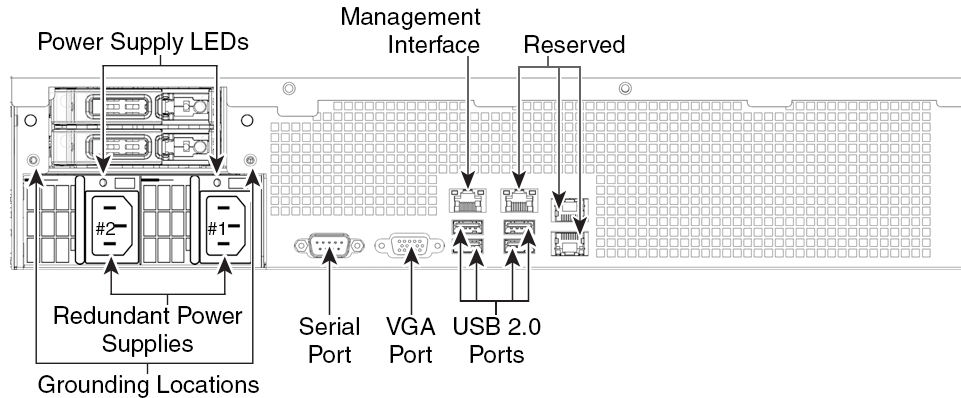
The rear view of the chassis contains power supplies, connection ports, and the management interface.

Figure 7-21 Firepower 82xx Family (Chassis: CHAS-2U-AC/DC) Rear View



Firepower and AMP 83xx Family Chassis Rear View

The rear view of the chassis contains power supplies, connection ports, and the management interface.

Figure 7-22 Firepower and AMP 83xx Family (Chassis: PG35-2U-AC/DC) Rear View

The following table describes the features that appear on the rear of the appliance.

Table 7-38 Firepower 8000 Series System Components: Rear View

Feature	Description
VGA port USB 2.0 ports	Allows you to attach a monitor, keyboard, and mouse to the device, as an alternative to using the serial port, to establish a direct workstation-to-appliance connection.
RJ45 serial port (81xx Family and 82xx Family)	Allows you to establish a direct workstation-to-appliance connection (using an RJ45 to DB-9 adapter) for direct access to all of the management services on the device. The RJ45 serial port is used for maintenance and configuration purposes only and is not intended to carry service traffic.
RS232 serial port (83xx Family)	Allows you to establish a direct workstation-to-appliance connection for direct access to all of the management services on the device. The RJ232 serial port is used for maintenance and configuration purposes only and is not intended to carry service traffic.
10/100/1000 Ethernet management interface	Provides for an out-of-band management network connection. The management interface is used for maintenance and configuration purposes only and is not intended to carry service traffic.
Redundant power supplies	Provides power to the device through an AC power source. Looking at the rear of the chassis, power supply #1 is on the right and power supply #2 is on the left.
Grounding locations	Allows you to connect the appliance to the Common Bonding Network. See the Power Requirements for Firepower Devices, page A-1 for more information.

The 10/100/1000 management interface is located on the rear of the appliance. The following table describes the LEDs associated with the management interface.

Table 7-39 Firepower 8000 Series Management Interface LEDs

LED	Description
Left (activity)	Indicates activity on the port: <ul style="list-style-type: none"> • A blinking light indicates activity. • No light indicates there is no activity.
Right (link)	Indicates whether the link is up: <ul style="list-style-type: none"> • A light indicates the link is up. • No light indicates there is no link.

The power supply modules are located on the rear of the appliance. The following table describes the LEDs associated with the management interface.

Table 7-40 Firepower 8000 Series Power Supply LEDs

LED	Description
Off	The power supply is not plugged in.
Amber	No power supplied to this module. or A power supply critical event such as module failure, a blown fuse, or a fan failure; the power supply shuts down.
Blinking amber	A power supply warning event, such as high temperature or a slow fan; the power supply continues to operate.
Blinking green	AC input is present; volts on standby, the power supply is switched off.
Green	The power supply is plugged in and on.

The following table lists the signals on a typical DB-9 serial connector and the corresponding pins on the device's RJ45 serial connectors. You can use this table to construct an adapter for serial connections.

Table 7-41 Firepower 8000 Series RJ45 to DB-9 Adapter Pin-Out

DB-9 Pin	Signal	Description	RJ45 Pin
1	DCD/DSR	Data carrier detect/data set ready	7
2	RD	Receive data	6
3	TD	Transmit data	3
4	DTR	Data terminal ready	2
5	GND	Ground	4 & 5
6		No connection	
7	RTS	Request to send	1
8	CTS	Clear to send	8
9		No connection	

Firepower 8000 Series Physical and Environmental Parameters

The following table describes the physical attributes and environmental parameters for AMP8x50 and 81xx Family devices.

Table 7-42 AMP8x50 and 81xx Family Physical and Environmental Parameters

Parameter	Description
Form factor	1U
Dimensions (D x W x H)	28.7 in. x 17.2 in. x 1.73 in. (72.8 cm x 43.3 cm x 4.4 cm)
Weight maximum installed	43.5 lbs (19.8 kg)
Copper 1000BASE-T configurable bypass NetMod	Quad-port Gigabit copper Ethernet configurable bypass interfaces in a paired configuration Cable and distance: Cat5E at 50 m
Fiber 10GBASE configurable bypass MMSR or SMLR NetMod	Dual-port fiber configurable bypass interfaces with LC connectors Cable and distance: LR is single-mode at 5000 m (available) SR is multimode fiber (850 nm) at 550 m (standard)
Fiber 1000BASE-SX configurable bypass NetMod	Quad-port fiber configurable bypass interfaces 1000BASE-SX with LC connectors Cable and distance: SX is multimode fiber (850 nm) at 550 m (standard)
Copper 1000BASE-T non-bypass NetMod	Quad-port Gigabit copper Ethernet non-bypass interfaces in a paired configuration Cable and distance: Cat5E at 50 m
Fiber 10GBASE non-bypass MMSR or SMLR NetMod	Quad-port fiber non-bypass interfaces with LC connectors Cable and distance: LR is single-mode at 5000 m (available) SR is multimode fiber (850 nm) at 550 m (standard)
Fiber 1000BASE-SX non-bypass NetMod	Quad-port fiber non-bypass interfaces 1000BASE-SX with LC connectors Cable and distance: SX is multimode fiber (850 nm) at 550 m (standard)
Power supply	Dual 650 W redundant power supplies designed for AC or DC. AC Voltage: 100 VAC to 240 VAC nominal (85 VAC to 264 VAC maximum) AC Current: 5.2A maximum over the full range, per supply 2.6A maximum for 187 VAC to 264 VAC, per supply AC Frequency range: 47 Hz to 63 Hz DC Voltage: -48 VDC nominal referenced to RTN -40 VDC to -72 VDC maximum DC Current: 11A maximum, per supply Note The power supplies are hot-swappable.
Operating temperature	50°F to 95°F (10°C to 35°C)
Non-operating temperature	-29°F to 158°F (-20°C to 70°C)
Operating humidity	5% to 85% non-condensing
Non-operating humidity	5% to 90%, non-condensing with a maximum wet bulb of 82°F (28°C) at temperatures from 77°F to 95°F (25°C to 35°C)
Altitude	0ft (sea level) to 6000 ft (0 to 1800 m)

Table 7-42 AMP8x50 and 81xx Family Physical and Environmental Parameters (continued)

Parameter	Description
Cooling requirements	1725 BTU/hour You must provide sufficient cooling to maintain the appliance within its required operating temperature range. Failure to do this may cause a malfunction or damage to the appliance.
Acoustic noise	Max normal operating noise is 87.6 dB LWAd (high temperature). Typical normal operating noise is 80 dB LWAd.
Operating shock	No errors with half a sine wave shock of 2G (with 11 ms duration)
Airflow	160 ft ³ (4.5 m ³) per minute Restriction of the airflow such as blocking the front or back or enclosing the unit in a cabinet without sufficient clearance may cause the unit to overheat, even if the ambient temperature is in the operating range. Airflow through the appliance enters at the front and exits at the rear. The minimum recommended clearance in the front and back is 7.9 in. (20 cm). This minimum can only be used if you can ensure a supply of low temperature air at the front of the appliance.

The following table describes the physical attributes and environmental parameters for Firepower 82xx Family and the Firepower and AMP 83xx Family devices.

Table 7-43 Firepower 82xx Family and Firepower and AMP 83xx Family Physical and Environmental Parameters

Parameter	Description
Form factor	2U
Dimensions (D x W x H)	29.0 in. x 17.2 in. x 3.48 in. (73.5 cm x 43.3 cm x 88.2 cm)
Weight maximum installed	82xx Family: 58 lbs (25.3 kg) 83xx Family: 67 lbs (30.5 kg)
Copper 1000BASE-T configurable bypass NetMod	Quad-port Gigabit copper Ethernet configurable bypass interfaces in a paired configuration Cable and distance: Cat5E at 50 m
Fiber 10GBASE MMSR or SMLR configurable bypass NetMod	Dual-port fiber configurable bypass interfaces with LC connectors Cable and distance: LR is single-mode at 5000 m (available) SR is multimode fiber (850 nm) at 550 m (standard)
Fiber 1000BASE-SX configurable bypass NetMod	Quad-port fiber configurable bypass interfaces 1000BASE-SX with LC connectors Cable and distance: SX is multimode fiber (850 nm) at 550 m (standard)
Fiber 40GBASE-SR4 configurable bypass NetMod	Dual-port fiber configurable bypass interfaces with OTP/MTP connectors Cable and distance: OM3: 100 m at 850 nm Multimode OM4: 150 m at 850 nm Multimode
Copper 1000BASE-T non-bypass NetMod	Quad-port Gigabit copper Ethernet non-bypass interfaces in a paired configuration Cable and distance: Cat5E at 50 m

Table 7-43 Firepower 82xx Family and Firepower and AMP 83xx Family Physical and Environmental Parameters

Parameter	Description	
Fiber 10GBASE non-bypass MMSR or SMLR NetMod	Quad-port fiber non-bypass interfaces with LC connectors Cable and distance: LR is single-mode at 5000 m (available) SR is multimode fiber (850 nm) at 550 m (standard)	
Fiber 1000BASE-SX non-bypass NetMod	Quad-port fiber non-bypass interfaces 1000BASE-SX with LC connectors Cable and distance: SX is multimode fiber (850 nm) at 550 m (standard)	
Power supply	82xx Family:	Dual 750 W redundant power supplies designed for AC or DC. AC Voltage: 100 VAC to 240 VAC nominal (85 VAC to 264 VAC maximum) AC Current: 8A maximum over the full range, per supply 4A maximum for 187 VAC to 264 VAC, per supply AC Frequency range: 47 Hz to 63 Hz DC Voltage: -48 VDC nominal referenced to RTN -40 VDC to -72 VDC maximum DC Current: 18A maximum, per supply Note The power supplies are hot-swappable.
	83xx Family:	Dual 1000 W redundant power supplies designed for AC or DC. AC Voltage: 100 VAC to 240 VAC nominal (85 VAC to 264 VAC maximum) AC Current: 11A maximum over the full range, per supply 5.5A maximum for 187 VAC to 264 VAC, per supply AC Frequency range: 47 Hz to 63 Hz DC Voltage: -48 VDC nominal referenced to RTN -40 VDC to -72 VDC maximum DC Current: 25A maximum, per supply Note The power supplies are hot-swappable.
Operating temperature	82xx Family:	50°F to 95°F (10°C to 35°C)
	83xx Family:	41°F to 104°F (5°C to 40°C)
Non-operating temperature	-29°F to 158°F (-20°C to 70°C)	
Operating humidity	5% to 85% non-condensing	
Non-operating humidity	5% to 90%, non-condensing with a maximum wet bulb of 82°F (28°C) at temperatures from 77°F to 95°F (25°C to 35°C)	
Altitude	0 ft (sea level) to 6000 ft (0 to 1800 m)	

Table 7-43 Firepower 82xx Family and Firepower and AMP 83xx Family Physical and Environmental Parameters

Parameter	Description
Cooling requirements	up to 2900 BTU/hour You must provide sufficient cooling to maintain the appliance within its required operating temperature range. Failure to do this may cause a malfunction or damage to the appliance.
Acoustic noise	Max normal operating noise is 81.6 dB LWAd (high temperature). Typical normal operating noise is 81.4 dB LWAd.
Operating shock	No errors with half a sine wave shock of 2G (with 11 ms duration)
Airflow	Front to back, 210 ft ³ (6 m ³) per minute Restriction of the airflow such as blocking the front or back or enclosing the unit in a cabinet without sufficient clearance may cause the unit to overheat, even if the ambient temperature is in the operating range. Airflow through the appliance enters at the front and exits at the rear. The minimum recommended clearance in the front and back is 7.9 in. (20cm). This minimum can only be used if you can ensure a supply of low temperature air at the front of the appliance.

Firepower 8000 Series Modules

The sensing interfaces for the Firepower 8000 Series appliances can be delivered with copper or fiber interfaces.



Caution

Modules are **not** hot-swappable. See [Inserting and Removing Firepower 8000 Series Modules, page C-1](#) for more information.

The following modules contain configurable bypass sensing interfaces:

- a quad-port 1000BASE-T copper interface with configurable bypass capability. See [Quad-Port 1000BASE-T Copper Configurable Bypass NetMod, page 7-33](#).
- a quad-port 1000BASE-SX fiber interface with configurable bypass capability. See [Quad-Port 1000BASE-SX Fiber Configurable Bypass NetMod, page 7-33](#) for more information.
- a dual-port 10GBASE (MMSR or SMLR) fiber interface with configurable bypass capability. See [Dual-Port 10GBASE \(MMSR or SMLR\) Fiber Configurable Bypass NetMod, page 7-35](#) for more information.
- a dual-port 40GBASE-SR4 fiber interface with configurable bypass capability (2U devices only). See [Dual-Port 40GBASE-SR4 Fiber Configurable Bypass NetMod, page 7-36](#) for more information.

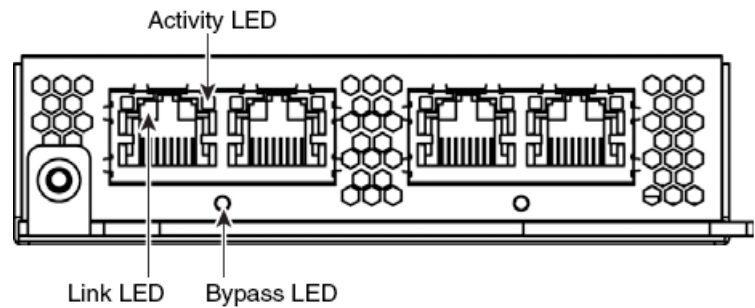
The following modules contain non-bypass sensing interfaces:

- a quad-port 1000BASE-T copper interface without bypass capability. See [Quad-Port 1000BASE-T Copper Non-Bypass NetMod, page 7-38](#) for more information.
- a quad-port 1000BASE-SX fiber interface without bypass capability. See [Quad-Port 1000BASE-SX Fiber Non-Bypass NetMod, page 7-39](#) for more information.
- a quad-port 10GBASE (MMSR or SMLR) fiber interface without bypass capability. See [Quad-Port 10GBASE \(MMSR or SMLR\) Fiber Non-Bypass NetMod, page 7-39](#) for more information.

In addition, you can use a stacking module to connect two Firepower 8140, up to four Firepower 8250, or up to four Firepower or AMP 8350 devices to combine their processing power and increase throughput. See [Stacking Module, page 7-41](#) for more information.

Quad-Port 1000BASE-T Copper Configurable Bypass NetMod

The quad-port 1000BASE-T copper configurable bypass NetMod contains four copper ports and link, activity, and bypass LEDs.



Use the following table to understand the link and activity LEDs on copper interfaces.

Table 7-44 Copper Link/Activity LEDs

Status	Description
Both LEDs off	The interface does not have link and is not in bypass mode.
Link amber	The speed of the traffic on the interface is 10Mb or 100Mb.
Link green	The speed of the traffic on the interface is 1Gb.
Activity blinking green	The interface has link and is passing traffic.

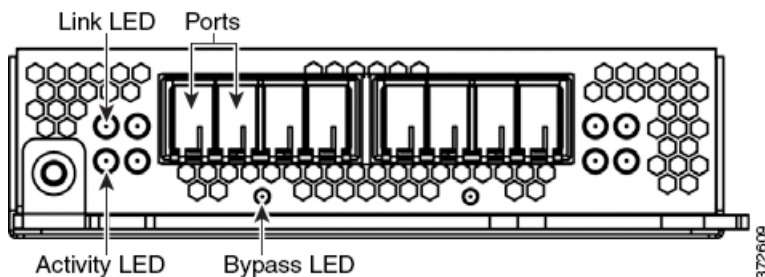
Use the following table to understand the bypass LEDs on copper interfaces.

Table 7-45 Copper Bypass LEDs

Status	Description
Off	The interface does not have link and is not in bypass mode.
Steady green	The interface has link and is passing traffic.
Steady amber	The interface has been intentionally brought down.
Blinking amber	The interface is in bypass mode; that is, it has failed open.

Quad-Port 1000BASE-SX Fiber Configurable Bypass NetMod

The quad-port 1000BASE-SX fiber configurable bypass NetMod contains four fiber ports and link, activity, and bypass LEDs.



Use the following table to understand link and activity LEDs of the fiber interfaces.

Table 7-46 Fiber Link/Activity LEDs

Status	Description
Top	For an inline or passive interface: <ul style="list-style-type: none"> • A blinking light indicates the interface has activity. • No light indicates there is no activity.
Bottom	For an inline interface: <ul style="list-style-type: none"> • A light indicates the interface has activity. • No light indicates there is no activity. For a passive interface, the light is always on.

Use the following table to understand bypass LEDs on the fiber interfaces.

Table 7-47 Fiber Bypass LEDs

Status	Description
Off	The interface does not have link and is not in bypass mode.
Steady green	The interface has link and is passing traffic.
Steady amber	The interface has been intentionally brought down.
Blinking amber	The interface is in bypass mode; that is, it has failed open.

Use the following table to understand the optical specifications of the fiber interfaces.

Table 7-48 1000BASE-SX NetMod Optical Parameters

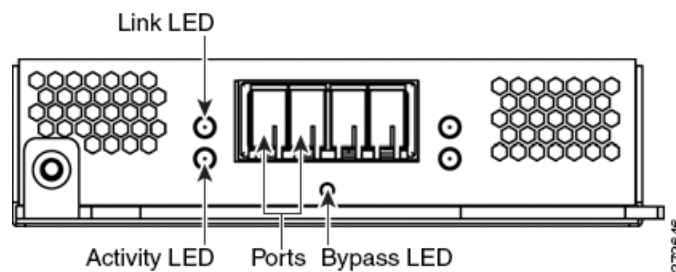
Parameter	1000BASE-SX
Optical connectors	LC duplex
Bit rate	1000Mbps
Baud rate/encoding/tolerance	1250Mbps 8b/10b encoding
Optical interface	Multimode
Operating distances	656 ft (200 m) for 62.5 μm/125 μm fiber 1640 ft (500 m) for 50 μm/125 μm fiber
Transmitter wavelength	770-860 nm (850 nm typical)

Table 7-48 1000BASE-SX NetMod Optical Parameters (continued)

Parameter	1000BASE-SX
Maximum average launch power	0 dBm
Minimum average launch power	-9.5 dBm
Maximum average power at receiver	0 dBm
Receiver sensitivity	-17 dBm

Dual-Port 10GBASE (MMSR or SMLR) Fiber Configurable Bypass NetMod

The dual-port 10GBASE (MMSR or SMLR) fiber configurable bypass NetMod contains two fiber ports and link, activity, and bypass LEDs.



Use the following table to understand link and activity LEDs of the fiber interfaces.

Table 7-49 Fiber Link/Activity LEDs

Status	Description
Top	For an inline or passive interface: <ul style="list-style-type: none"> A blinking light indicates the interface has activity. No light indicates there is no activity.
Bottom	For an inline interface: <ul style="list-style-type: none"> A light indicates the interface has activity. No light indicates there is no activity. For a passive interface, the light is always on.

Use the following tables to understand the bypass LEDs on the fiber interfaces.

Table 7-50 Fiber Bypass LEDs

Status	Description
Off	The interface does not have link and is not in bypass mode.
Steady green	The interface has link and is passing traffic.
Steady amber	The interface has been intentionally brought down.
Blinking amber	The interface is in bypass mode; that is, it has failed open.

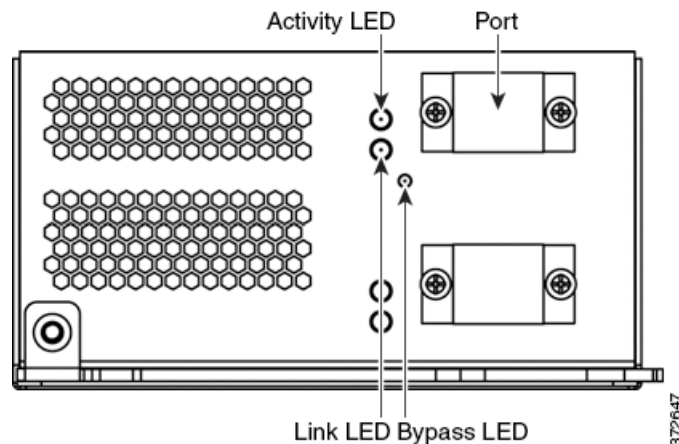
Use the following table to understand the optical parameters of the fiber interfaces.

Table 7-51 10GBASE MMSR and SMLR NetMod Optical Parameters

Parameter	10GBASE MMSR	10GBASE SMLR
Optical connectors	LC duplex	LC duplex
Bit rate	10.000Gbps	10.000Gbps
Baud rate/encoding/tolerance	10.3125Gbps 64/66b encoding +/- 100 ppm	10.3125Gbps 64/166b encoding +/- 100 ppm
Optical interface	Multimode	Single mode only
Operating distance	840-860 nm (850 nm typical) 85 ft (26 m) to 108 ft (33 m) for 62.5 µm/125 µm fiber (modal BW 160 to 200 respectively) 216 ft (66 m) to 269 ft (82 m) for 50 µm/125 µm fiber (modal BW 400 to 500 respectively) Distances to 980 ft (300 m) are available with higher quality (OM3) fiber. Minimum distances (all): 6ft (2 m)	1270-1355 nm (1310 nm typical) 6 ft to 6.2 miles (2 m to 10 km) for 9 µm/125 µm fiber
Transmitter wavelength	840-860 nm (850 nm typical)	1270-1355 nm (1310 nm typical)
Maximum average launch power	-1 dBm	-0.5 dBm
Minimum average launch power	-7.3 dBm	-8.2 dBm
Maximum average power at receiver	-1 dBm	-0.5 dBm
Receiver sensitivity	-9.9 dBm	-14.4 dBm

Dual-Port 40GBASE-SR4 Fiber Configurable Bypass NetMod

The dual-port 40GBASE-SR4 fiber configurable bypass NetMod contains two fiber ports and link, activity, and bypass LEDs.



You can use the 40G NetMod in the following 8000 Series models:

- Firepower 8270 and 8290
- Firepower and AMP 8360, 8370 and 8390
- Firepower 8250 and 8260 (must be 40G-capable)
- Firepower and AMP 8350 (must be 40G-capable)



Caution

If you attempt to create a 40G interface on a device that is not 40G-capable, the 40G interface screen on its managing Firepower Management Center web interface displays red. A 40G-capable 8250 displays “8250-40G” on the LCD Panel and a 40G-capable 8350 displays “8350-40G” on the LCD Panel. See [Firepower 8000 Series Modules, page 4-8](#) for placement information.

Use the following table to understand link and activity LEDs of the fiber interfaces.

Table 7-52 Fiber Link/Activity LEDs

Status	Description
Top (activity)	The light flashes when the interface has activity. If dark, there is no activity.
Bottom (link)	The light is on when the interface has link. If dark, there is no link.

Use the following table to understand bypass LED of the fiber interfaces.

Table 7-53 Fiber Bypass LED

Status	Description
Off	The interface pair does not have link and is not in bypass mode, or has no power.
Steady green	The interface pair has link and is passing traffic.
Steady amber	The interface has been intentionally brought down.
Blinking amber	The interface is in bypass mode; that is, it has failed open.

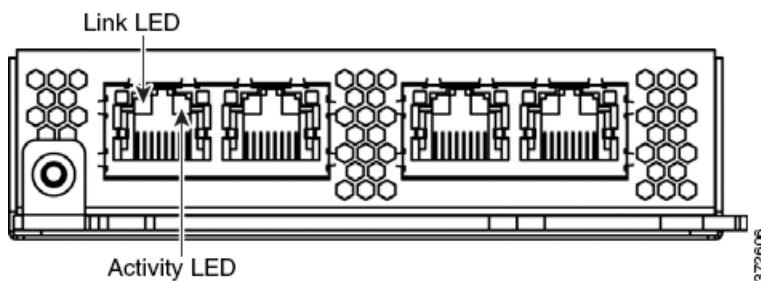
Use the following table to understand optical parameters of the fiber interfaces.

Table 7-54 40GBASE-SR4 NetMod Optical Parameters

Parameter	40GBASE-SR4
Optical connectors	OTP/MTP single row twelve fiber positions. Only the outer eight fibers are used.
Bit rate	40.000Gbps
Baud rate/encoding/tolerance	10.3125Gbps 64/66b encoding +/- 100 ppm
Optical interface	Multimode
Operating distances	320 ft (100 m) for 50 μm/125 μm fiber (OM3) Minimum distance: 2 ft (0.5 m) 40G optics are carried on eight fiber cables utilizing MPO connectors.
Transmitter wavelength	840-860 nm (850 nm typical)
Maximum average launch power	2.4 dBm
Minimum average launch power	-7.8 dBm
Maximum average power at receiver	2.4 dBm
Receiver sensitivity	-9.5 dBm

Quad-Port 1000BASE-T Copper Non-Bypass NetMod

The quad-port 1000BASE-T copper non-bypass NetMod contains four copper ports, and link and activity LEDs.



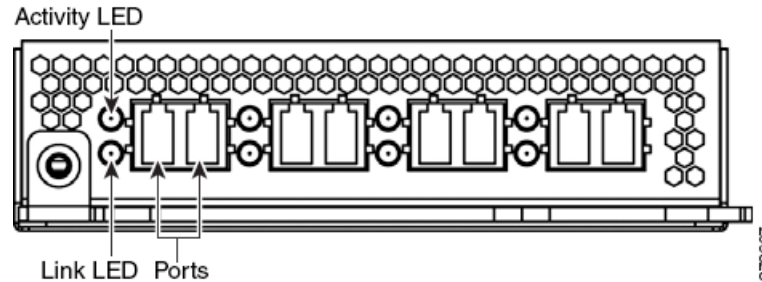
Use the following table to understand copper LEDs.

Table 7-55 Non-Bypass Copper Link/Activity LEDs

Status	Description
Both LEDs Off	The interface does not have link.
Link Amber	The speed of the traffic on the interface is 10Mb or 100Mb.
Link Green	The speed of the traffic on the interface is 1Gb.
Activity Blinking Green	The interface has link and is passing traffic.

Quad-Port 1000BASE-SX Fiber Non-Bypass NetMod

The quad-port 1000BASE-SX fiber non-bypass NetMod contains four fiber ports, and link and activity LEDs.



Use the following table to understand the link and activity LEDs on the fiber interfaces.

Table 7-56 Non-Bypass Fiber Link/Activity LEDs

Status	Description
Top (Activity)	For an inline or passive interface: the light flashes when the interface has activity. If dark, there is no activity.
Bottom (Link)	For an inline interface: the light is on when the interface has link. If dark, there is no link. For a passive interface: the light is always on.

Use the following table to understand the optical parameters of the fiber interfaces.

Table 7-57 1000BASE-SX NetMod Optical Parameters

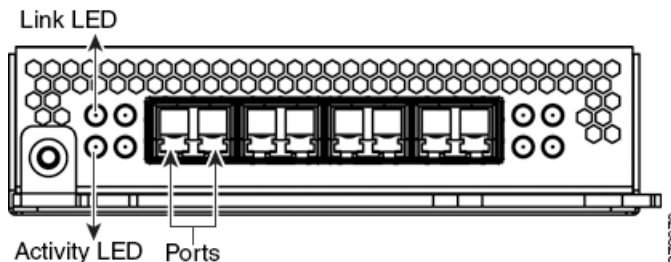
Parameter	1000BASE-SX
Optical connectors	LC duplex
Bit rate	1000Mbps
Baud rate/encoding/tolerance	1250Mbps 8b/10b encoding
Optical interface	Multimode
Operating distances	656 ft (200 m) for 62.5 μ m/125 μ m fiber 1640 ft (500 m) for 50 μ m/125 μ m fiber
Transmitter wavelength	770-860 nm (850 nm typical)
Maximum average launch power	0 dBm
Minimum average launch power	-9.5 dBm
Maximum average power at receiver	0 dBm
Receiver sensitivity	-17 dBm

Quad-Port 10GBASE (MMSR or SMLR) Fiber Non-Bypass NetMod

The quad-port 10GBASE (MMSR or SMLR) fiber non-bypass NetMod contains four fiber ports, and link and activity LEDs.

Caution

The quad-port 10GBASE non-bypass NetMod contains non-removable SFPs. Any attempt to remove the SFP may damage the module.



Use the following table to understand the link and activity LEDs on fiber interfaces.

Table 7-58 Fiber Link/Activity LEDs

Status	Description
Top	For an inline or passive interface: the light flashes when the interface has activity. If dark, there is no activity.
Bottom	For an inline interface: the light is on when the interface has link. If dark, there is no link. For a passive interface: the light is always on.

Use the following table to understand the optical parameters of the fiber interfaces.

Table 7-59 10GBASE MMSR and SMLR NetMod Optical Parameters

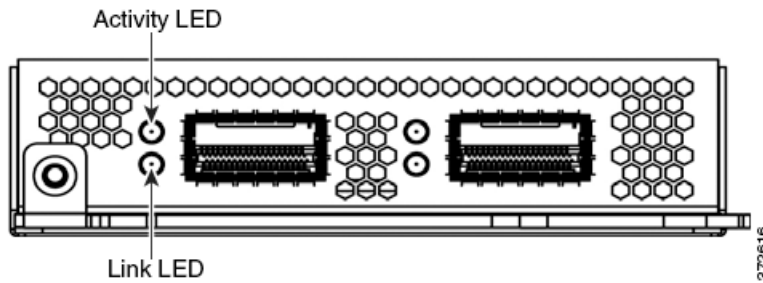
Parameter	10GBASE MMSR	10GBASE SMLR
Optical connectors	LC duplex	LC duplex
Bit rate	10.000Gbps	10.000Gbps
Baud rate/ encoding/tolerance	10.3125Gbps 64/66b encoding +/- 100 ppm	10.3125Gbps 64/66b encoding +/- 100 ppm
Optical interface	Multimode	Single mode only
Operating distance	840-860 nm (850 nm typical) 85 ft (26 m) to 108 ft (33 m) for 62.5 μm/125 μm fiber (modal BW 160 to 200 respectively) 216 ft (66 m) to 269 ft (82 m) for 50 μm/125 μm fiber (modal BW 400 to 500 respectively) Distances to 980 ft (300 m) are available with higher quality (OM3) fiber. Minimum distances (all): 6ft (2 m)	1270-1355 nm (1310 nm typical) 6 ft to 6.2 miles (2 m to 10 km) for 9 μm/125 μm fiber

Table 7-59 10GBASE MMSR and SMLR NetMod Optical Parameters (continued)

Parameter	10GBASE MMSR	10GBASE SMLR
Transmitter wavelength	840-860 nm (850 nm typical)	1270-1355 nm (1310 nm typical)
Maximum average launch power	-1 dBm	-0.5 dBm
Minimum average launch power	-7.3 dBm	-8.2 dBm
Maximum average power at receiver	-1 dBm	-0.5 dBm
Receiver sensitivity	-9.9 dBm	-14.4 dBm

Stacking Module

The stacking module contains two connection ports for the 8000 Series stacking cable, and activity and link LEDs.



You can use the stacking module optionally in the following 8000 Series models:

- Firepower 8140 and 8250
- Firepower and AMP 8350

The stacking module is included in the following 8000 Series stacked configurations:

- Firepower 8260, 8270, and 8290
- Firepower and AMP 8360, 8370, and 8390

You can use the following table to understand the stacking LEDs.

Table 7-60 Stacking LEDs

Status	Description
Top	Indicates activity on the interface: <ul style="list-style-type: none"> • A blinking light indicates there is activity on the interface. • No light indicates there is no activity.
Bottom	Indicates whether the interface has link: <ul style="list-style-type: none"> • A light indicates the interface has link. • No light indicates there is no link.

