



Technical Specifications

This appendix provides technical specifications and includes the following sections:

- [Switch Specifications, page B-1](#)
- [Power Specifications for the Cisco MDS 9250i Switch, page B-2](#)
- [SFP+ Transceiver Specifications, page B-3](#)



Note

Specifications for cables and connectors are provided in [Appendix C, “Cable and Port Specifications.”](#)

Switch Specifications

The Cisco MDS 9250i switch supports hot-swappable fan modules that provide 200 linear feet per minute (LFM) per minute of airflow with 300 W of power dissipation.

[Table B-1](#) lists the environmental specifications for the Cisco MDS 9250i switch.

Table B-1 *Environmental Specifications for the Cisco MDS 9250i switch*

Description	Specification
Temperature, certified for operation	32 to 104°F (0 to 40°C)
Temperature, ambient nonoperating and storage	-40 to 158°F (-40 to 70°C)
Humidity (RH), ambient (noncondensing) operating	10 to 90%
Humidity (RH), ambient (noncondensing) nonoperating and storage	5 to 95%
Altitude, certified for operation	-197 to 6500 ft (-60 to 2000 m)
Altitude, designed and tested for operation	-200 to 10000 ft (-60 to 3000 m)

Table B-2 lists the physical specifications for the Cisco MDS 9250i switch.

Table B-2 Physical Specifications for the Cisco MDS 9250i switch

Description	Specification
Dimensions (HxWxD)	3.84 x 17.22 x 21.4 in. (9.75 x 43.74 x 54.36 cm); 2RU
Weight	22.4 lb (10.2 kg) Chassis configured with three power supply modules and two fan modules
Front-to-back airflow	278 LFM

Power Specifications for the Cisco MDS 9250i Switch

This section includes the following topics:

- [General Power Supply Specifications, page B-2](#)
- [Power Supply Requirements and Heat Dissipation Specifications, page B-3](#)
- [AC Power Consumption, page B-3](#)
- [Connection Guidelines for AC-Powered Systems, page B-3](#)

General Power Supply Specifications

Table B-3 lists the specifications for the Cisco MDS 9250i switch AC input power supply.

Table B-3 Cisco MDS 9250i switch AC Input Power Supply Specifications

AC Input Power Supply	Specification
AC input voltage	Minimum = 85 VAC Nominal = 100 to 240 VAC Maximum = 264 VAC
AC input current rating (maximum)	4.7 A at 85 VAC 3.6 A at 110 VAC 1.8 A at 220 VAC
AC input frequency	Minimum = 47 Hz Nominal = 50 to 60 Hz Maximum = 63 Hz
Power supply output capacity	300 W
Power supply output voltage	12 V +/- 6% up to 25 A
Output holdup time	20ms when input > 100 VAC

AC Power Consumption

Table B-5 shows the typical AC power consumption for the Cisco MDS 9250i Multiservice switch.

Table B-4 Typical AC Power Consumption for the Cisco MDS 9250i Multiservice Switch

	AC Volt (V)	AC Power (W)
Typical Value ¹	220	319
	110	333
Worst Value ²	220	406
	11	425

¹Typical Value is at 25 C ambient temperature, 0% voltage margin, fully-populated with SFPs, and 50% traffic load.

²Worst Value is at 55C ambient temperature , 5% voltage margin, fully-populated with SFPs, and 100% traffic load.

Connection Guidelines for AC-Powered Systems

For connecting the Cisco MDS 9250i switch switch AC power supplies to the site power source, follow these basic guidelines:

- Each power supply should have its own dedicated branch circuit.
- For international, circuits should be sized according to local and national codes.

The AC power receptacles used to plug in the chassis must be the grounding type. The grounding conductors that connect to the receptacles should connect to protective earth ground at the service equipment.

SFP+ Transceiver Specifications

The Cisco MDS 9250i switch is compatible with SFP+ transceivers and cables that have LC connectors. The wavelength of each transceiver must match the transceiver on the other end of the cable, and the cable must not exceed the stipulated cable length for reliable communications.

Cisco SFP+ transceivers provide the uplink interfaces, laser transmit (TX) and laser receive (RX), and support 850 to 1610 nm nominal wavelengths, depending upon the transceiver.

Use only Cisco SFP+ transceivers on the Cisco MDS 9250i switches. Each Cisco SFP+ transceiver is encoded with model information that enables the switch to verify that the SFP+ transceiver meets the requirements for the switch.

This section provides the following topics:

- [Cisco Fibre Channel SFP+ Transceivers, page B-3](#)

Cisco Fibre Channel SFP+ Transceivers

Table B-5 lists the Cisco 1- Gbps, 8-Gbps, 10-Gbps, and 16-Gbps SFP+ Fibre Channel transceivers.

Table B-5 Cisco 8-Gbps and 16-Gbps SFP+ Fibre Channel Transceivers

Transceiver Module Product Number	Description	Type
DS-SFP-FC16G-SW	4/8/16-Gbps Fibre Channel SW, SFP+, LC	Short wavelength
DS-SFP-FC16G-SW	4/8/16-Gbps Fibre Channel LW, SFP+, LC	Long wavelength
DS-SFP-FC8G-SW	2/4/8-Gbps Fibre Channel SW, SFP+, LC	Short wavelength
DS-SFP-FC8G-LW	2/4/8-Gbps Fibre Channel LW, SFP+, LC	Long wavelength

General Specifications for Cisco 16-Gbps Fibre Channel SFP+ Transceivers

Table B-6 provides the general specifications for Cisco 16-Gbps Fibre Channel SFP+ transceivers.

Table B-6 General Specifications for Cisco 16-Gbps Fibre Channel SFP+ Transceivers

SFP+	Wavelength (nanometer)	Fiber Type	Core Size (micron)	Baud Rate (GBd)	Cable Distance (meter)
DS-SFP-FC16G-SW	850	MMF	62.5	14025	150 m
DS-SFP-FC16G-LW	1310	SMF	G.652	14025	6.2 miles (10 km)

Environmental and Power Requirements for Cisco 16-Gbps Fibre Channel SFP+ Transceivers

Table B-7 provides the power specification for the Cisco 16-Gbps Fibre Channel SFP+ transceivers.

Table B-7 Power Requirements Specification for Cisco 16-Gbps Fibre Channel SFP+ Transceivers

SFP+	Average Transmit Power (dBm)		Average Receive Power (dBm)		Fiber Loss Budget (dBm)		
	Maximum	Minimum	Maximum	Minimum			
DS-SFP-FC16G-SW	-1.3	-9 (4 Gbps) -8.2 (8 Gbps) -7.8 (16 Gbps)	0	–	12	12	12
DS-SFP-FC16G-LW	1.3	-9 (4 Gbps) -8.2 (8 Gbps) -7.8 (16 Gbps)	0	–	12	12	12

Table B-8 provides the environment specification for the Cisco 16-Gbps Fibre Channel SFP+ transceivers.

Table B-8 Environmental Specifications for Cisco 16-Gbps Fibre Channel SFP+ Transceivers

SFP+	Operating		Storage	
	Maximum	Minimum	Maximum	Minimum
DS-SFP-FC16G-SW	40°C	0°C	85°C	-40°C
DS-SFP-FC16G-LW	40°C	0°C	85°C	-40°C

For information about safety, regulatory, and standards compliance, refer to the *Regulatory Compliance and Safety Information for the Cisco MDS 9000 Family*.

General Specifications for Cisco 10-Gbps Fibre Channel SFP+ Transceivers

Table B-9 provides the general specifications for Cisco 10-Gbps Fibre Channel SFP+ transceivers.

Table B-9 General Specifications for Cisco 10-Gbps Fibre Channel SFP+ Transceivers

SFP+	Wavelength (nanometer)	Fiber Type	Core Size (micron)	Baud Rate (GBd)	Cable Distance (meter)
DS-SFP-FC10G-SW	850	MMF	62.5 (OM1)	10.518	33m (104 ft)
			50 (OM3)	10.518	82m (269 ft)
			50 (OM3)	10.518	300m (984 ft)
DS-SFP-FC10G-LW	1310	SMF	9.0	10.518	10 km (6.2 miles)

Environmental and Power Requirements for Cisco 10-Gbps Fibre Channel SFP+ Transceivers

Table B-10 provides the power specification for the Cisco 10-Gbps Fibre Channel SFP+ transceivers.

Table B-10 Power Requirements Specification for Cisco 10-Gbps Fibre Channel SFP+ Transceivers

SFP+	Average Transmit Power (dBm)		Average Receive Power (dBm)		Fiber Loss Budget (dBm)
	Maximum	Minimum	Maximum	Minimum	
DS-SFP-FC10G-SW	-1.3	-7.3	-1.0	-9.9	7.3
DS-SFP-FC10G-LW	0.5	-8.2	-1.0	-9.9	7.4

Table B-11 provides the environment specification for the Cisco 10-Gbps Fibre Channel SFP+ transceivers.

Table B-11 Environmental Specifications for Cisco 10-Gbps Fibre Channel SFP+ Transceivers

SFP+	Operating		Storage	
	Maximum	Minimum	Maximum	Minimum
DS-SFP-FC10G-SW	40°C	0°C	85°C	-40°C
DS-SFP-FC10-LW	40°C	0°C	85°C	-40°C

For information about safety, regulatory, and standards compliance, refer to the *Regulatory Compliance and Safety Information for the Cisco MDS 9000 Family*.

General Specifications for Cisco 8-Gbps Fibre Channel SFP+ Transceivers

Table B-12 provides the general specifications for Cisco Fibre Channel SFP+ transceivers.

Table B-12 General Specifications for Cisco 8-Gbps Fibre Channel SFP+ Transceivers

SFP+	Wavelength (nanometer)	Fiber Type	Core Size (micon)	Baud Rate (GBd)	Cable Distance (meter)
DS-SFP-FC8G-SW	850	MMF	62.5	8.5	150 m (492 ft)
DS-SFP-FC8G-LW	1310	SMF	9.0	8.5	6.2 miles (10 km)

Environmental and Power Requirements for Cisco 8-Gbps Fibre Channel SFP+ Transceivers

Table B-13 provides the power specification for the Cisco 8-Gbps Fibre Channel SFP+ transceivers.

Table B-13 Power Requirements Specification for Cisco 8-Gbps Fibre Channel SFP+ Transceivers

SFP	Average Transmit Power (dBm)		Average Receive Power (dBm)		Fiber Loss Budget (dBm)		
	Maximum	Minimum	Maximum	Minimum			
DS-SFP-FC8G-SW	-1.3	-10 (2 Gbps) -9 (4 Gbps) -8.2 (8 Gbps)	0	–	62.5 microns	50.0 microns [OM2]	50.0 microns [OM3]
					2.10 (2 Gbps) 1.78 (4 Gbps) 1.58 (8 Gbps)	2.62 (2 Gbps) 2.06 (4 Gbps) 1.68 (8 Gbps)	3.31 (2 Gbps) 2.88 (4 Gbps) 2.04 (8 Gbps)
DS-SFP-FC8G-LW	-3 (2 Gbps) -1 (4 Gbps) +0.5 (8 Gbps)	-11.7 (2 Gbps) -8.4 (4 Gbps) -8.4 (8 Gbps)	-3 (2 Gbps) -1 (4 Gbps) +0.5 (8 Gbps)	–	7.8 (2 Gbps) 7.8 (4 Gbps) 6.4 (8 Gbps)		

Table B-14 provides the environment specification for the Cisco 8-Gbps Fibre Channel SFP+ transceivers.

Table B-14 Environmental Specifications for Cisco 8-Gbps Fibre Channel SFP+ Transceivers

SFP+	Operating		Storage	
	Maximum	Minimum	Maximum	Minimum
DS-SFP-FC8G-SW	40°C	0°C	85°C	-40°C
DS-SFP-FC8G-LW	40°C	0°C	85°C	-40°C

For information about safety, regulatory, and standards compliance, refer to the *Regulatory Compliance and Safety Information for the Cisco MDS 9000 Family*.

Maximum Environmental and Electrical Ratings for Cisco Fibre Channel SFP+ Transceivers

Table B-15 provides the maximum environmental and electrical ratings for Cisco Fibre Channel SFP+ transceivers.

Table B-15 Maximum Environmental and Electrical Ratings for Cisco Fibre Channel SFP+ Transceivers

Parameter ¹	Symbol	Min.	Max. ²	Unit	Notes
Storage temperature	T _S	-40	85	°C	1
Case temperature	T _C	0	70	°C	1, 2
Relative humidity	RH	5	95	%	1

1. Do not operate outside the recommended operating conditions. Device reliability may be affected and damage to the device may occur over an extended period of time.
2. Absolute maximum ratings are those values beyond which damage to the device may occur if these limits are exceeded for other than a short period of time.

For information about safety, regulatory, and standards compliance, refer to the *Regulatory Compliance and Safety Information for the Cisco MDS 9000 Family*.

