



Cisco CRS-1 Carrier Routing System Fabric Card Chassis Specifications

This appendix contains tables that list the specifications for the main components of the Fabric Card Chassis.



Note

For a complete list of cards supported in the Cisco CRS 16-slot line card chassis, go to the Cisco Carrier Routing System Data Sheets at http://www.cisco.com/en/US/products/ps5763/products_data_sheets_list.html.

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FCC Specifications

Below table lists the system specifications for the FCC.

Table 1: Fabric Card Chassis System Specifications

Description	Value
Chassis Dimensions	
Height	80 in. (203.2 cm) as shipped 84 in. (213.4 cm) as installed
Width	23.6 in. (60.0 cm) 26.1 in. (66.3 cm) with PDU and brackets

Description	Value
Depth	35 in. (89.0 cm) without doors and other cosmetics 41 in. (104.1 cm) with front and rear doors
Floor space requirement	Chassis: 6 sq ft (0.56 sq m) Aisle spacing to install chassis (front): 48 in. (122 cm) Aisle spacing to service FRUs (front): 36 in. (91 cm) Aisle spacing to service FRUs (rear): 36 in. (91 cm)
Chassis Weight	
Chassis shipping weight	1175 lb (532 kg) FCC with shipping crate and pallet
Chassis with power shelves only, no power modules	849 lb (385 kg)
Chassis with power shelves, power modules, alarm module	970 lb (440 kg)
Chassis, fully loaded with cards, without cosmetics	1585 lb (719 kg)
Chassis, fully loaded with cards and cosmetics (doors, panels, grilles, and so on)	1629 lb (739 kg)
Chassis, fully loaded with cards and cosmetics (doors, panels, grilles, and so on), AC Wye PDU, and brackets	1689 lb (766 kg)
Chassis, fully loaded with cards and cosmetics (doors, panels, grilles, and so on), AC Delta PDU, and brackets	1715 lb (778 kg)
Floor Loading	
Chassis footprint	6.72 sq. ft (6243 sq. cm), with cosmetics and doors
Floor contact area	4.72 sq. ft (4385 sq. cm)
Maximum floor loading	Without cosmetics and doors: 1585 lb/4.72 sq. ft = 335 lb/sq. ft 719 kg/4385 sq. cm = 0.164 kg/sq. cm With cosmetics and doors: 1695 lb/4.72 sq. ft = 359 lb/sq. ft 769 kg/4385 sq. cm = 0.175 kg/sq. cm

Description	Value
Supported Cards and Modules	8 or 24 Switch fabric cards (SFCs) 8 or 24 Optical Interface Modules (OIMs) 2 Integrated Shelf Controller Gigabit Ethernet (SCGE)
Chassis Cooling	2 fan trays, push-pull configuration
Chassis airflow	Up to 2050 cubic ft (58,050 liters) per minute
Power shelf airflow	100 to 140 cubic ft (2832 to 3964 liters) per minute
AC power cord length	167 in. (4.25 m)

Fixed Configuration Power Specifications

Below table lists the fixed configuration power specifications for the Cisco Carrier Routing System FCC.

Table 2: Fabric Card Chassis Fixed Configuration Power Specifications

Description	Value
Power shelves	2 AC or 2 DC power shelves (Cannot mix AC and DC power shelves.)
DC power shelf	4 power entry modules (PEMs) per shelf
AC power shelf	6 PEMs per shelf
Maximum Input Power	
Fixed configuration DC, chassis fully loaded	9474 W (9.5 kW) 95% efficiency
Fixed configuration AC, chassis fully loaded	11,063 W (11.1 kW) 88% efficiency
Maximum Output Power	
Chassis fully loaded (DC)	9000 W (9.0 kW)
Chassis fully loaded (AC)	10,00 W (10.0 kW)
Power Redundancy (2N)	
DC	2N: Requires 4 "A" battery plant feeds and 4 "B" battery plant feeds (up to 8 total)
AC, 3-phase	2N: Requires two independent 3-phase AC sources

Description	Value
DC Input	
Nominal input voltage	–48 VDC North America–60 VDC European CommunityRange: –42 VDC to –75 VDC
Input current	49 A max at –48 VDC 39 A max at –60 VDC 56 A maximum at –42 VDC (low voltage extreme)
AC Input, Delta 3-phase	3W + PE (3 wire + protective earthing ¹)
Nominal input voltage	3-phase 200 to 240 VAC, phase-to-phase (range 180 to 264 VAC, phase-to-phase)
Nominal line frequency	50 or 60 Hz (range 47 to 63 Hz)
Recommended AC service	60 A
AC Input, Wye 3-phase	3W + N + PE (3 wire + neutral + protective earthing ¹)
Nominal input voltage	3-phase 200-240/346-415 VAC(range 180 to 264 VAC, phase-to-neutral)(range 311 to 456 VAC, phase-to-phase)
Nominal line frequency	50 or 60 Hz (range 47 to 63 Hz)
Recommended AC service	40 A (North America)32 A (International)

¹ Protective earthing conductor (ground wire).

Modular Configuration Power Specifications

Below table lists the modular configuration power specifications for the Cisco Carrier Routing System FCC.

Table 3: Fabric Card Chassis Modular Configuration Power Specifications

Description	Value
Power shelves	2 AC or 2 DC power shelves (Cannot mix AC and DC power shelves.)
DC power shelf	Supports up to 6 DC power modules (PMs) 4 PMs are shipped per shelf (although the shelf appears to accommodate 8, two are blank slots that cannot be used)

AC power shelf	Supports up to 6 DC power modules (PMs) 3 PMs are shipped per shelf
Maximum Input Power	
Modular configuration, DC, chassis fully loaded	11,111 watts (11.1 kW) 90% efficiency
Modular configuration, AC, chassis fully loaded	10,870 watts (10.9 kW) 92% efficiency
Maximum Output Power	
Chassis fully loaded (DC)	9000 W (9.0 kW)
Chassis fully loaded (AC)	10,00 W (10.0 kW)
Power Redundancy (2N)	
DC	2N: up to 6 "A" battery plant feeds and up to 6 "B" battery plant feeds required
AC	2N: up to 6 "A" AC single-phase power sources and up to 6 "B" AC single-phase power sources required
DC Input	
Nominal input voltage	–48 VDC North America–60 VDC European CommunityRange: –40 VDC to –72 VDC
Input current	36 A max at –48 VDC 31 A max at –60 VDC 50 A at –40 VDC (maximum)
AC input	Single-phase
Nominal input voltage	200 to 240 VAC (range 180 to 264 VAC)
Nominal line frequency	50 or 60 Hz (range 47 to 63 Hz)
Recommended AC service	20 A (North America) dedicated branch circuit16 A (International) dedicated branch circuit

Fabric Card Chassis Environmental Specifications

The following table lists the environmental specifications for the fabric chassis.

Table 4: Fabric Card Chassis Environmental Specifications

Description	Value
Temperature	Operating, nominal: 41° to 104°F (5° to 40°C) Operating, short-term: 23° to 122°F (-5° to 50°C) ² Nonoperating: -40° to 158°F (-40° to 70°C)
Humidity	Operating: 5 to 85% noncondensing Nonoperating: 5 to 90% noncondensing, short-term operation
Altitude-	-197 to 5906 ft (-60 to 1800 m) at 122°F (50°C), short-term Up to 13,123 ft (4000 m) at 104°F (40°C) or below
Heat dissipation	32,324 BTU per hour—(maximum) fixed configuration DC ³ 38,773 BTU per hour—(maximum) fixed configuration AC ⁴ 37,911 BTU per hour—(maximum) modular configuration DC ⁵ 37,086 BTU per hour—(maximum) modular configuration AC ⁶
Air exhaust temperature	129°F (54°C)—At room temperatures of 95 to 102°F (35 to 39°C) 149°F (65°C)—Maximum exhaust temperature on a fully loaded system during worst-case operating conditions (50°C and 6000 ft altitude) Note Air temperature rise is 15°C on a fully loaded system with fans running at maximum speed (5150 RPM). At room temperatures below 95°F (35°C), exhausted air is 66.2°F (19°C) higher than room temperature. At temperatures above 102°F (39°C), exhausted air is 59°F (15°C) higher than room temperature.
Air velocity (at exhaust)	1400 ft per minute (426.7 m per minute) at normal, room temperature, low fan speed (4000 RPM) 1800 ft per minute (548.6 m per minute) at high temperature or altitude, high fan speed (5150 RPM) Note Software controls the speed of the fans based on measurements from the chassis thermal sensors.

Description	Value
Sound power level (fixed configuration power)	Fan speed 3500 RPM, temperature 80°F (27°C): 78.2 dB—fixed configuration DC 83.0 dB—fixed configuration AC Fan speed 5150 RPM, temperature 104°F (40°C): 87.4 dB—fixed configuration DC 88 dB—fixed configuration AC
Sound power level (modular configuration power)	Fan speed 3500 RPM, temperature 80°F (27°C): 77.3 dB—modular configuration power Fan speed 5150 RPM, temperature 104°F (40°C): 87.0 dB—modular configuration power
Shock and vibration	Designed and tested to meet the NEBS shock and vibration standards defined in GR-63-CORE (Issue 2, April 2002).

- ² Short-term refers to a period of not more than 96 consecutive hours and a total of not more than 15 days in 1 year. This refers to a total of 360 hours in any given year, but no more than 15 occurrences during that 1-year period.
- ³ Heat dissipation from the fixed configuration DC power system based on maximum output power capacity at 95% efficiency.
- ⁴ Heat dissipation from the fixed configuration AC power system based on maximum output power capacity at 88% efficiency.
- ⁵ Heat dissipation from the modular configuration DC power system based on maximum output power capacity at 90% efficiency.
- ⁶ Heat dissipation from the modular configuration AC power system based on maximum output power capacity at 92% efficiency. Depending on the hardware deployed at your site, your system may not consume or be capable of consuming the maximum power supplied by the power system.

Regulatory, Compliance, and Safety Specifications

For information about the regulatory, compliance, and safety standards to which the Cisco CRS-1 system conforms, see *Regulatory Compliance and Safety Information for the Cisco CRS Carrier Routing System*.

