Technical Specifications

This chapter describes the technical specifications for the Cisco Nexus 7000 Series switches and includes these sections:

Environmental Specifications for Cisco Nexus 7000 Series Switches

Table B-1 lists the environmental specifications for the Cisco Nexus 7000 Series switches.

Table B-1 Environmental Specifications for the Cisco Nexus 7000 Series Switches

Description		Cisco Nexus 7004	Cisco Nexus 7009	Cisco Nexus 7010	Cisco Nexus 7018
Temperature	Ambient operating	32 to 104ºF (0 to 40ºC)			
	Ambient nonoperating	–40 to 158ºF (–40 to 70ºC)			
Relative humidity	Ambient (noncondensing) operating	5 to 90% (45 to 50% recommended)			
	Ambient (noncondensing) nonoperating and storage	5 to 95%			
Altitude	Operating	–500 to 13,000 feet (152 to 4,000 meters)			
	Storage	–1,000 to 30,000 feet (–305 to 9,144 meters)			

Physical Specifications for the Cisco Nexus 7000 Series Chassis

The physical specifications differ for the Cisco Nexus 7000 Series chassis depending on the model that you are installing and the type of installation you are doing (you can front mount all models but you can optionally do a center mount of the Cisco Nexus 7004 and 7009 chassis). Table B-2 lists the physical specifications for each model and installation type.

Table B-2 Physical Specifications for Cisco Nexus 7000 Series Chassis

Chassis	Width[1]	Front Depth[2]	Rear Depth[3]	Height[4]
Cisco Nexus 7004 (all mounts)	17.3 inches (43.9 cm)	7 inches (17.8 cm)	24.0 inches (61.0 cm)	12.2 inches (30.9 cm) (7 RU)
Cisco Nexus 7009 (front mount)	17.3 inches (43.9 cm)	7 inches (17.8 cm)	24.0 inches (61.0 cm)	24.5 inches (62.2 cm) (14 RU)
Cisco Nexus 7009 (center mount)	17.3 inches (43.9 cm)	13 inches (33.0 cm)	18.0 inches (45.8 cm)	24.5 inches (62.2 cm) (14 RU)
Cisco Nexus 7010 (all mounts)	17.3 inches (43.9 cm)	7 inches (17.8 cm)	32.0 inches (81.3 cm)	36.75 inches (93.3 cm) (21.0 RU)
Cisco Nexus 7018 (all mounts	17.3 inches (43.9 cm)	7 inches (17.8 cm)	32.0 inches (81.3 cm)	43.75 inches (111.1 cm) (25.0 RU)

1. Width is the minimal clearance required between the two vertical mounting rails inside the rack or cabinet.
2. Front depth is the minimal clearance required between the front-mounting rails and the inside of the front of the rack or cabinet. For all switches, this includes 7 inches (17.8 cm) of space for cabling. For the Cisco Nexus 7009 center-mounted chassis, this distance also includes 6 inches of the chassis, which is offset to the front by the center-mount bracket.
3. Rear depth is the clearance required between the front-mounting rails and the inside of the rear of the rack or cabinet. For front mounted switches, this is the same as the depth of the chassis. For a center-mounted Cisco Nexus 7009 switch, this is 6 inches (15.2 cm) less than the depth of the chassis, which is offset to the front.
4. Height is the clearance required between the top of the bottom support bracket and the top of the chassis that you are installing. If you are installing another chassis above this chassis, its bottom-support brackets must be positioned above this clearance area.

The weights and quantities of the Cisco Nexus 7000 Series chassis are listed in the following tables:

- Cisco Nexus 7004 switch—see Table B-3 on page B-3
- Cisco Nexus 7009 switch —see Table B-4 on page B-3
- Cisco Nexus 7010 switch —see Table B-5 on page B-5
- Cisco Nexus 7018 switch —see Table B-6 on page B-6

The weights in these tables do not include the rack or cabinet that holds the chassis or the interface and power cables. For those weights, see the documentation provided by the manufacturers of those components.

Table B-3 Weights and Quantities for the Cisco Nexus 7004 Switch Components

Component	Weight per Unit	Quantity
Chassis	45.0 lb (20.0 kg)	
Supervisor modules	—	1 or 2 (must be same model)
Supervisor 2 (N7K-SUP2)	10.4 lb (4.7 kg)	
Supervisor 2 Enhanced (N7K-SUP2E)	11.7 lb (5.3 kg)	
F2 I/O Modules	—	1 or 2 (can mix I/O module types)
48-port 1- and 10-Gigabit Ethernet I/O module (N7K-F248XP-25 and N7K-F248XP-25E)	14.0 lb (6.4 kg)	
48-port 1- and 10-GBASE-T Ethernet I/O module (N7K-F248XT-25E)	14.0 lb (6.4 kg)	
F3 I/O module	—	
12-port 40-Gigabit Ethernet I/O module (N7K-F312FQ-25)	15.0 lb (6.8 kg)	
6-port 100-Gigabit Ethernet I/O module (N7K-F306CK-25)	16.0 lb (7.3 kg)	
M1 I/O Modules	—	
48-port 10/100/1000 Ethernet I/O module with XL option (N7K-M148GT-11L)	14.0 lb (6.4 kg)	
48-port 1-Gigabit Ethernet I/O module with XL option (N7K-M148GS-11L)	15.5 lb (7.0 kg)	
32-port 10-Gigabit Ethernet I/O module with XL option (N7K-M132XP-12L)	17.0 lb (7.7 kg)	
8-port 10-Gigabit Ethernet I/O module with XL option (N7K-M108X2-12L)	14.0 lb (6.4 kg)	
M2 I/O Modules	—	
24-port 10-Gigabit Ethernet I/O module with XL option (N7K-M224XP-23L)	16.5 lb (7.5 kg)	
6-port 40-Gigabit Ethernet I/O module with XL option (N7K-M206FQ-23L)	16.5 lb (7.5 kg)	
2-port 100-Gigabit Ethernet I/O module with XL option (N7K-M202CF-22L)	17.0 lb (7.7 kg)	
Service Modules	—	0 or 1+
NAM (N7K-SM-NAM-K9)	17.9-lbs. (8.1-kg)	
Fan tray (N7K-C7004-FAN)	25.0 lb (11.3 kg)	1
Power Supplies	—	1 to 4 (can mix power supply types)
3-kW AC power supply (N7K-AC-3KW)	11.0 lb (5.0 kg)	
3-kW DC power supply (N7K-DC-3KW)	11.0 lb (5.0 kg)	
Optional Components	—	—
Front door kit (N7K-C7004-FD-MB)	—	0 or 1
Air filter (N7K-C7004-AFLT)	—	0 or 1

Table B-4 Weights and Quantities for the Cisco Nexus 7009 Switch Components

Component	Weight per Unit	Quantity
Chassis	100 lb (45.0 kg)	1

Table B-4 Weights and Quantities for the Cisco Nexus 7009 Switch Components (continued)

Component	Weight per Unit	Quantity
Supervisor modules	—	1 or 2 (same type if using two modules)
Supervisor 1 (N7K-SUP1)	9.9 lb (4.5 kg)	
Supervisor 2 (N7K-SUP2)	10.4 lb (4.7 kg)	
Supervisor 2 Enhanced (N7K-SUP2E)	11.7 lb (5.3 kg)	
F1 I/O Modules	—	1 to 7 (can mix I/O module types)
32-port 1- and 10-Gigabit Ethernet I/O module (N7K-F132XP-15)	14.0 lb (6.4 kg)	
F2 I/O Modules	—	
48-port 1- and 10-Gigabit Ethernet I/O module (N7K-F248XP-25 and N7K-F248XP-25E)	14.0 lb (6.4 kg)	
48-port 1- and 10-GBASE-T Ethernet I/O module (N7K-F248XT-25E)	14.0 lb (6.4 kg)	
F3 I/O module	—	
12-port 40-Gigabit Ethernet I/O module (N7K-F312FQ-25)	15.0 lb (6.8 kg)	
6-port 100-Gigabit Ethernet I/O module (N7K-F306CK-25)	16.0 lb (7.3 kg)	
M1 I/O Modules	—	
48-port 10/100/1000 Ethernet I/O module (N7K-M148GT-11)	14.0 lb (6.4 kg)	
48-port 10/100/1000 Ethernet I/O module (N7K-M148GT-11L)	14.0 lb (6.4 kg)	
48-port 1-Gigabit Ethernet I/O module (N7K-M148GS-11)	15.5 lb (7.0 kg)	
48-port 1-Gigabit Ethernet I/O module with XL option (N7K-M148GS-11L)	15.5 lb (7.0 kg)	
32-port 10-Gigabit Ethernet I/O module (N7K-M132XP-12)	17.0 lb (7.7 kg)	
32-port 10-Gigabit Ethernet I/O module with XL option (N7K-M132XP-12L)	17.0 lb (7.7 kg)	
8-port 10-Gigabit Ethernet I/O module with XL option (N7K-M108X2-12L)	14.0 lb (6.4 kg)	
M2 I/O Modules	—	
24-port 10-Gigabit Ethernet I/O module with XL option (N7K-M224XP-23L)	16.5 lb (7.5 kg)	
6-port 40-Gigabit Ethernet I/O module with XL option (N7K-M206FQ-23L)	16.5 lb (7.5 kg)	
2-port 100-Gigabit Ethernet I/O module with XL option (N7K-M202CF-22L)	17.0 lb (7.7 kg)	
Service Modules	—	0 or 1+
NAM (N7K-SM-NAM-K9)	17.9-lbs. (8.1-kg)	
Fabric Modules	—	For F2 I/O, use 5. For F1, M1, and M2 I/O, use 3 to 5.
Fabric-2 module (N7K-C7009-FAB-2)	5.0 lb (2.27 kg)	
Fan tray (N7K-C7009-FAN)	25.0 lb (11.3 kg)	1
Power Supplies	—	1 or 2 (can mix power supply types)
6-kW AC power supply unit (N7K-AC-6.0KW)	18.0 lb (8.2 kg)	
7.5-kW AC power supply unit (N7K-AC-7.5KW-INT and N7K-AC-7.5KW-US)	26.0 lb (11.8 kg)	
6-kW DC power supply unit (N7K-DC-6.0KW)	21.0 lb (9.5 kg)	

Table B-4 Weights and Quantities for the Cisco Nexus 7009 Switch Components (continued)

Component	Weight per Unit	Quantity
DC Power Interface Unit	5.0 lb (2.3 kg)	0 to 2
Optional Components	—	—
Door and air frame (optional)	—	0 or 1

Table B-5 Weights and Quantities for the Cisco Nexus 7010 Switch Components

Component	Weight per Unit	Quantity
Chassis	200 lb (90.9 kg)	1
Supervisor Modules	—	1 or 2 (same type if using 2)
Supervisor1 (N7K-SUP1)	9.9 lb (4.5 kg)	
Supervisor2 (N7K-SUP2)	10.4 lb (4.7 kg)	
Supervisor2 Enhanced (N7K-SUP2E)	11.7 lb (5.3 kg)	
F1 I/O Modules	—	1 to 8 (can mix I/O module types)
32-port 1- and 10-Gigabit Ethernet I/O module (N7K-F132XP-15)	14.0 lb (6.4 kg)	
F2 I/O Modules	—	
48-port 1- and 10-Gigabit Ethernet I/O module (N7K-F248XP-25 and N7K-F248XP-25E)	14.0 lb (6.4 kg)	
48-port 1- and 10-GBASE-T Ethernet I/O module (N7K-F248XT-25E)	14.0 lb (6.4 kg)	
F3 I/O module	—	
12-port 40-Gigabit Ethernet I/O module (N7K-F312FQ-25)	15.0 lb (6.8 kg)	
6-port 100-Gigabit Ethernet I/O module (N7K-F306CK-25)	16.0 lb (7.3 kg)	
M1 I/O Modules	—	
48-port 10/100/1000 Ethernet I/O module (N7K-M148GT-11)	14.0 lb (6.4 kg)	
48-port 10/100/1000 Ethernet I/O module (N7K-M148GT-11L)	14.0 lb (6.4 kg)	
48-port 1-Gigabit Ethernet I/O module (N7K-M148GS-11)	15.5 lb (7.0 kg)	
48-port 1-Gigabit Ethernet I/O module with XL option (N7K-M148GS-11L)	15.5 lb (7.0 kg)	
32-port 10-Gigabit Ethernet I/O module (N7K-M132XP-12)	17.0 lb (7.7 kg)	
32-port 10-Gigabit Ethernet I/O module with XL option (N7K-M132XP-12L)	17.0 lb (7.7 kg)	
8-port 10-Gigabit Ethernet I/O module with XL option (N7K-M108X2-12L)	14.0 lb (6.4 kg)	
M2 I/O Modules	—	
24-port 10-Gigabit Ethernet I/O module with XL option (N7K-M224XP-23L)	16.5 lb (7.5 kg)	
6-port 40-Gigabit Ethernet I/O module with XL option (N7K-M206FQ-23L)	16.5 lb (7.5 kg)	
2-port 100-Gigabit Ethernet I/O module with XL option (N7K-M202CF-22L)	17.0 lb (7.7 kg)	
Service Modules	—	0 or 1+
NAM (N7K-SM-NAM-K9)	17.9-lbs. (8.1-kg)	

Table B-5 Weights and Quantities for the Cisco Nexus 7010 Switch Components (continued)

Component	Weight per Unit	Quantity
Fabric Modules	—	For F2 I/O, use 5. For F1, M1, and M2 I/O, use 3 to 5.
Fabric-1 module (N7K-C7010-FAB-1)	4.0 lb (1.8 kg)	
Fabric-2 module (N7K-C7010-FAB-2)	4.0 lb (1.8 kg)	
Fan Trays	—	—
System fan tray (N7K-C7010-FAN-S)	20.0 lb (9.1 kg)	2
Fabric fan tray (N7K-C7010-FAN-F)	5.0 lb (2.3 kg)	2
Power Supplies	—	2 to 3 (can mix power supply types)
6-kW AC power supply unit (N7K-AC-6.0KW)	18.0 lb (8.2 kg)	
7.5-kW AC power supply unit (N7K-AC-7.5KW-INT and N7K-AC-7.5KW-US)	26.0 lb (11.8 kg)	
6-kW DC power supply unit (N7K-DC-6.0KW)	21 lb (9.5 kg)	
DC Power Interface Unit	5 lb (2.3 kg)	0 to 2
Optional Components	—	—
Mid-frame doors and frame	—	0 or 1

Table B-6 Weights and Quantities for the Cisco Nexus 7018 Switch Components

Component	Weight per Unit	Quantity
Chassis	187 lb (85.0 kg)	1
Supervisor Modules	—	1 or 2 (same type if using 2)
Supervisor 1 (N7K-SUP1)	9.9 lb (4.5 kg)	
Supervisor 2 (N7K-SUP2)	10.4 lb (4.7 kg)	
Supervisor 2 Enhanced (N7K-SUP2E)	11.7 lb (5.3 kg)	

Table B-6 Weights and Quantities for the Cisco Nexus 7018 Switch Components (continued)

Component	Weight per Unit	Quantity
F1 I/O Modules	—	1 to 8 (can mix I/O module types)
32-port 1- and 10-Gigabit Ethernet I/O module (N7K-F132XP-15)	14.0 lb (6.4 kg)	
F2 I/O Modules	—	
48-port 1- and 10-Gigabit Ethernet I/O module (N7K-F248XP-25 and N7K-F248XP-25E)	14.0 lb (6.4 kg)	
48-port 1- and 10-GBASE-T Ethernet I/O module (N7K-F248XT-25E)	14.0 lb (6.4 kg)	
F3 I/O module	—	
12-port 40-Gigabit Ethernet I/O module (N7K-F312FQ-25)	15.0 lb (6.8 kg)	
6-port 100-Gigabit Ethernet I/O module (N7K-F306CK-25)	16.0 lb (7.3 kg)	
M1 I/O Modules	—	
48-port 10/100/1000 Ethernet I/O module (N7K-M148GT-11)	14.0 lb (6.4 kg)	
48-port 10/100/1000 Ethernet I/O module (N7K-M148GT-11L)	14.0 lb (6.4 kg)	
48-port 1-Gigabit Ethernet I/O module (N7K-M148GS-11)	15.5 lb (7.0 kg)	
48-port 1-Gigabit Ethernet I/O module with XL option (N7K-M148GS-11L)	15.5 lb (7.0 kg)	
32-port 10-Gigabit Ethernet I/O module (N7K-M132XP-12)	17.0 lb (7.7 kg)	
32-port 10-Gigabit Ethernet I/O module with XL option (N7K-M132XP-12L)	17.0 lb (7.7 kg)	
8-port 10-Gigabit Ethernet I/O module with XL option (N7K-M108X2-12L)	14.0 lb (6.4 kg)	
M2 I/O Modules	—	
24-port 10-Gigabit Ethernet I/O module with XL option (N7K-M224XP-23L)	16.5 lb (7.5 kg)	
6-port 40-Gigabit Ethernet I/O module with XL option (N7K-M206FQ-23L)	16.5 lb (7.5 kg)	
2-port 100-Gigabit Ethernet I/O module with XL option (N7K-M202CF-22L)	17.0 lb (7.7 kg)	
Service Modules	—	0 or 1+
NAM (N7K-SM-NAM-K9)	17.9-lbs. (8.1-kg)	
Fabric Modules	—	For F2 I/O, use 5. For F1, M1, and M2 I/O, use 3 to 5.
Fabric-1 module (N7K-C7018-FAB-1)	7.5 lb (3.4 kg)	
Fabric-2 module (N7K-C7018-FAB-2)	7.5 lb (3.4 kg)	
Fan trays (N7K-C7018-FAN)	25.8 lb (11.7 kg)	2
Power Supplies	—	2 to 4 (can mix power supply types)
6-kW AC power supply unit (N7K-AC-6.0KW)	18 lb (8.2 kg)	
7.5-kW AC power supply unit (N7K-AC-7.5KW-INT and N7K-AC-7.5KW-US)	26 lb (11.8 kg)	
6-kW DC power supply unit (N7K-DC-6.0KW)	21 lb (9.5 kg)	
DC Power Interface Unit	5 lb (2.3 kg)	0 to 2
Optional Components	—	—
Front door (optional)	25 lb (11.3 kg)	0 or 1

Power Specifications for Cisco Nexus 7000 Series Switches

The number of power supplies that a Cisco Nexus 7000 Series switch requires depends on the quantities and types of modules that you include in the switch chassis, the type of power supply units that you are using, and the power redundancy mode that you are using.

The following topics explain how to calculate the switch power requirements and the amount of power available for each type of power supply configuration mode:

Power Requirements for Switch Components

To determine the power requirements of the Cisco Nexus 7000 Series switches, add the power requirements of each of its components. For each component, multiply the number of its modules by its maximum or typical power requirement. To find the quantities and power requirements for each Cisco Nexus 7000 Series switch, see the following tables:

- Cisco Nexus 7004—see Table B-7
- Cisco Nexus 7009—see Table B-8 on page B-9
- Cisco Nexus 7010—see Table B-9 on page B-10
- Cisco Nexus 7018—see Table B-10 on page B-11

Table B-7 Power Requirements for the Cisco Nexus 7004 Switch

Component	Quantity	Maximum	Typical
Supervisor Modules	1 or 2 (same type if using 2)	—	—
Supervisor 2 (N7K-SUP2)		300 W	109 W
Supervisor 2 Enhanced (N7K-SUP2E)		300 W	147 W

Table B-7 Power Requirements for the Cisco Nexus 7004 Switch (continued)

Component	Quantity	Maximum	Typical
F2 I/O Modules	1 or 2	—	—
48-port 1- and 10-Gigabit Ethernet I/O module (N7K-F248XP-25 and N7K-F248XP-25E)		450 W	350 W
48-port 1- and 10-GBASE-T Ethernet I/O module (N7K-F248XT-25E)		550 W	420 W
F3 I/O Module		—	—
12-port 40-Gigabit Ethernet I/O module (N7K-F312FQ-25)		340 W	310 W
6-port 100-Gigabit Ethernet I/O module (N7K-F306CK-25)		360 W	340 W
M1 I/O Modules		—	—
48-port 10/100/1000 Ethernet I/O module with XL option (N7K-M148GT-11L)		400 W	358 W
48-port 1-Gigabit Ethernet I/O module with XL option (N7K-M148GS-11L)		400 W	358 W
32-port 10-Gigabit Ethernet I/O module with XL option (N7K-M132XP-12L)		750 W	611 W
8-port 10-Gigabit Ethernet I/O module with XL option (N7K-M108X2-12L)		650 W	520 W
M2 I/O Modules		—	—
24-port 10-Gigabit Ethernet I/O module with XL option (N7K-M224XP-23L)		795 W	720 W
6-port 40-Gigabit Ethernet I/O module with XL option (N7K-M206FQ-23L)		795 W	720 W
2-port 100-Gigabit Ethernet I/O module with XL option (N7K-M202CF-22L)		795 W	690 W
Fan Tray	1	650 W	185 W

Table B-8 Power Requirements for the Cisco Nexus 7009 Switch

Component	Quantity	Maximum	Typical
Supervisor Modules	1 or 2 (same type if using 2)	—	—
Supervisor 1 (N7K-SUP1)		210 W	190 W
Supervisor 2 (N7K-SUP2)		300 W	109 W
Supervisor 2 Enhanced (N7K-SUP2E)		300 W	147 W

Table B-8 Power Requirements for the Cisco Nexus 7009 Switch (continued)

Component	Quantity	Maximum	Typical
F1 I/O Modules	1 to 7	—	—
32-port 1- and 10-Gigabit Ethernet I/O module (N7K-F132XP-15)		385 W	283 W
F2 I/O Modules		—	—
48-port 1- and 10-Gigabit Ethernet I/O module (N7K-F248XP-25 and N7K-F248XP-25E)		450 W	350 W
48-port 1- and 10-GBASE-T Ethernet I/O module (N7K-F248XT-25E)		550 W	420 W
F3 I/O Module		—	—
12-port 40-Gigabit Ethernet I/O module (N7K-F312FQ-25)		340 W	310 W
6-port 100-Gigabit Ethernet I/O module (N7K-F306CK-25)		360 W	340W
M1 I/O Modules		—	—
48-port 10/100/1000 Ethernet I/O module (N7K-M148GT-11)		400 W	358 W
48-port 10/100/1000 Ethernet I/O module with XL option (N7K-M148GT-11L)		400 W	358 W
48-port 1-Gigabit Ethernet I/O module (N7K-M1148GS-11)		400 W	358 W
48-port 1-Gigabit Ethernet I/O module with XL option (N7K-M148GS-11L)		400 W	358 W
32-port 10-Gigabit Ethernet I/O module (N7K-M132XP-12)		750 W	611 W
32-port 10-Gigabit Ethernet I/O module with XL option (N7K-M132XP-12L)		750 W	611 W
8-port 10-Gigabit Ethernet I/O module with XL option (N7K-M108X2-12L)		650 W	520 W
M2 I/O Modules		—	—
24-port 10-Gigabit Ethernet I/O module with XL option (N7K-M224XP-23L)		795 W	720 W
6-port 40-Gigabit Ethernet I/O module with XL option (N7K-M206FQ-23L)		795 W	720 W
2-port 100-Gigabit Ethernet I/O module with XL option (N7K-M202CF-22L)		795 W	690 W
Fabric Modules		—	—
Fabric-2 module (N7K-C7009-FAB-2)	3 to 5	70 W	55 W
Fan Trays		—	—
All fan trays (total) (N7K-C7009-FAN)	—	650 W	190 W

Table B-9 Power Requirements for the Cisco Nexus 7010 Switch

Component	Quantity	Maximum	Typical
Supervisor Modules	1 or 2 (same type if using 2)	—	—
Supervisor 1 (N7K-SUP1)		210 W	190 W
Supervisor 2 (N7K-SUP2)		300 W	109 W
Supervisor 2 Enhanced (N7K-SUP2E)		300 W	147 W

Table B-9 Power Requirements for the Cisco Nexus 7010 Switch (continued)

Component	Quantity	Maximum	Typical
F1 I/O Modules	1 to 8 (can mix types)	—	—
32-port 1- and 10-Gigabit Ethernet I/O module (N7K-F132XP-15)		385 W	283 W
F2 I/O Modules		—	—
48-port 1- and 10-Gigabit Ethernet I/O module (N7K-F248XP-25 and N7K-F248XP-25E)		450 W	350 W
48-port 1- and 10-Gigabit Ethernet I/O module (N7K-F248XT-25E)		550 W	420 W
F3 I/O Module		—	—
12-port 40-Gigabit Ethernet I/O module (N7K-F312FQ-25)		340 W	310 W
6-port 100-Gigabit Ethernet I/O module (N7K-F306CK-25)		360 W	340W
M1 I/O Modules		—	—
48-port 10/100/1000 Ethernet I/O module (N7K-M148GT-11)		400 W	358 W
48-port 10/100/1000 Ethernet I/O module with XL option (N7K-M148GT-11L)		400 W	358 W
48-port 1-Gigabit Ethernet I/O module (N7K-M1148GS-11)		400 W	358 W
48-port 1-Gigabit Ethernet I/O module with XL option (N7K-M148GS-11L)		400 W	358 W
32-port 10-Gigabit Ethernet I/O module (N7K-M132XP-12)		750 W	611 W
32-port 10-Gigabit Ethernet I/O module with XL option (N7K-M132XP-12L)		750 W	611 W
8-port 10-Gigabit Ethernet I/O module with XL option (N7K-M108X2-12L)		650 W	520 W
M2 I/O Modules		—	—
24-port 10-Gigabit Ethernet I/O module with XL option (N7K-M224XP-23L)		795 W	720 W
6-port 40-Gigabit Ethernet I/O module with XL option (N7K-M206FQ-23L)		795 W	720 W
2-port 100-Gigabit Ethernet I/O module with XL option (N7K-M202CF-22L)		795 W	690 W
Fabric Modules	3 to 5 (same type)	—	—
Fabric-1 module (N7K-C7010-FAB-1)		60 W	55 W
Fabric-2 module (N7K-C7010-FAB-2)		80 W	60W
Fan Trays (N7K-C7010-FAN-F and N7K-C7010-FAN-S)		—	—
All fan trays (total)	—	2184 W	300 W

Table B-10 Power Requirements for the Cisco Nexus 7018 Switch

Component	Quantity	Maximum	Typical
Supervisor Modules	1 or 2 (same type if using 2)	—	—
Supervisor 1 (N7K-SUP1)		210 W	190 W
Supervisor 2 (N7K-SUP2)		300 W	109 W
Supervisor 2 Enhanced (N7K-SUP2E)		300 W	147 W

Table B-10 Power Requirements for the Cisco Nexus 7018 Switch (continued)

Component	Quantity	Maximum	Typical
F1 I/O Modules	1 to 16 (can mix types)	—	—
32-port 1- and 10-Gigabit Ethernet I/O module (N7K-F132XP-15)		385 W	283 W
F2 I/O Modules		—	—
48-port 1- and 10-Gigabit Ethernet I/O module (N7K-F248XP-25 and N7K-F248XP-25E)		450 W	350 W
48-port 1- and 10-GBASE-T Ethernet I/O module (N7K-F248XT-25E)		550 W	420 W
F3 I/O Module		—	—
12-port 40-Gigabit Ethernet I/O module (N7K-F312FQ-25)		340 W	310 W
6-port 100-Gigabit Ethernet I/O module (N7K-F306CK-25)		360 W	340W
M1 I/O Modules		—	—
48-port 10/100/1000 Ethernet I/O module (N7K-M148GT-11)		400 W	358 W
48-port 10/100/1000 Ethernet I/O module with XL option (N7K-M148GT-11L)		400 W	358 W
48-port 1-Gigabit Ethernet I/O module (N7K-M1148GS-11)		400 W	358 W
48-port 1-Gigabit Ethernet I/O module with XL option (N7K-M148GS-11L)		400 W	358 W
32-port 10-Gigabit Ethernet I/O module (N7K-M132XP-12)		750 W	611 W
32-port 10-Gigabit Ethernet I/O module with XL option (N7K-M132XP-12L)		750 W	611 W
8-port 10-Gigabit Ethernet I/O module with XL option (N7K-M108X2-12L)		650 W	520 W
M2 I/O Modules		—	—
24-port 10-Gigabit Ethernet I/O module with XL option (N7K-M224XP-23L)		795 W	720 W
6-port 40-Gigabit Ethernet I/O module with XL option (N7K-M206FQ-23L)		795 W	720 W
2-port 100-Gigabit Ethernet I/O module with XL option (N7K-M202CF-22L)		795 W	690 W
Fabric Modules	3 to 5 (same type)	—	—
Fabric-1 module (N7K-C7018-FAB-1)		100 W	90 W
Fabric-2 module (N7K-C7018-FAB-2)		150 W	110 W
Fan Trays (N7K-C7018-FAN)		—	—
All fan trays (total)	2	1433 W	569 W

Power Supply Configuration Modes

You can configure one of the following power modes to either use the combined power provided by the installed power supplies or to provide power redundancy when there is a power loss:

- Combined mode—Provides the maximum amount of available power by utilizing the combined power output from all installed power supplies for switch operations. This mode does not provide redundancy.
- Power-supply redundancy mode—Allows you to replace a power supply during switch operations. All power supplies are active. The available power is calculated as the least amount of power available from all but one of the power supply units (N+1). The reserve power is the amount of

power output by the power supply unit that can output the most power. For example, if three power supplies output 3 kW, 6 kW, and 6 kW, the available power is 9 kW (3 kW + 6 kW) and the reserve power is 6 kW.

- Input source redundancy mode—Takes power from two electrical grids so that if one grid goes down, the other grid can provide the power needed by the switch. For the Cisco Nexus 7004 chassis, each grid powers half of the power supplies. For the Cisco Nexus 7009, 7010, and 7018 chassis, each grid powers half of each power supply (grid A is connected to the Input 1 receptacle on each power supply and grid B is connected to the Input 2 receptacle on each power supply). The available power is the amount of power output by the portions of the power supplies that are connected to the same grid. For example, if three power supplies are connected to a 110-V grid and a 220-V grid, each power supply outputs 1.2 kW for the 110-V grid and 3.0 kW for the 220-V grid. The available power would be 3.6 kW (1.2 kW + 1.2 kW + 1.2 kW) and the reserve power would be 9.0 kW (3.0 kW + 3.0 kW + 3.0 kW).
- Full redundancy mode—Provides both power-supply redundancy and input-source redundancy. This mode allows you to replace a power supply without interrupting switch operations or continue powering the switch if one of two grids goes down. The available power is the lesser amount of output power for power supply redundancy or input source redundancy.

The amount of power available for use with your Cisco Nexus 7000 Series switch depends on the number of power supplies, input voltage used, and the power mode used. To determine the amount of available power for the power supplies, see the following tables:

- For the 3-kW AC power supplies, see Table B-11
- For the 6-kW AC power supplies, see Table B-12 on page B-14
- For the 7.5-kW AC power supplies, see Table B-13 on page B-15
- For the 3-kW DC power supplies, see Table B-14 on page B-15
- For the 6-kW DC power supplies, see Table B-15 on page B-16

Table B-11 Power Availability for 3-kW AC Power Supplies

Power Inputs	Combined Mode	Power Supply Redundancy Mode	Input Source Redundancy Mode	Full Redundancy Mode
Single input per power supply				
220-V input				
1 power supply	3000 W	—	—	—
2 power supplies	6000 W	3000 W	3000 W	3000 W
3 power supplies	9000 W	6000 W	3000 W	3000 W
4 power supplies	12,000 W	9000 W	6000 W	6000 W
110-V input				
1 power supply	1450 W	—	—	—
2 power supplies	2900 W	1450 W	1450 W	1450 W
3 power supplies	4350 W	2900 W	1450 W	1450 W
4 power supplies	5800 W	4350 W	2900 W	2900 W

Table B-12 Power Availability for 6-kW AC Power Supply Units

	Combined Mode	Power Supply Redundancy Mode	Input Source Redundancy Mode	Full Redundancy Mode
Dual inputs per power supply				
220-V and 220-V inputs				
1 power supply	6000 W	—	3000 W	—
2 power supplies	12,000 W	6000 W	6000 W	6000 W
3 power supplies	18,000 W	12,000 W	9000 W	9000 W
4 power supplies	24,000 W	18,000 W	12,000 W	12,000 W
220-V and 110-V inputs				
1 power supply	4200 W	—	1200 W	—
2 power supplies[1]	8400 W	4200 W	2400 W	2400 W
3 power supplies[1]	12,600 W	8400 W	3600 W	3600 W
4 power supplies[1]	16,800 W	12,600 W	4800 S	4800 W
110-V and 110-V inputs				
1 power supply	2400 W	—	1200 W	—
2 power supplies[1]	4800 W	2400 W	2400 W	2400 W
3 power supplies[1]	7200 W	4800 W	3600 W	3600 W
4 power supplies[1]	9600 W	7200 W	4800 W	4800 W
Single input per power supply				
220-V input				
1 power supply	3000 W	—	—	—
2 power supplies[1]	6000 W	3000 W	—	—
3 power supplies[1]	9000 W	6000 W	—	—
4 power supplies[1]	12,000 W	9000 W	—	—
110-V input				
1 power supply	1200 W	—	—	—
2 power supplies[1]	2400 W	1200 W	—	—
3 power supplies[1]	3600 W	2400 W	—	—
4 power supplies[1]	4800 W	3600 W	—	—

1. The Cisco Nexus 7018 switch uses up to four 6-kW power supplies, the Cisco Nexus 7010 switch uses up to three 6-kW power supplies, and the Cisco Nexus 7009 uses up to two 6-kW power supplies.

Table B-13 Power Availability for 7.5-kW AC Power Supplies

	Combined Mode	Power Supply Redundancy Mode	Input Source Redundancy Mode	Full Redundancy Mode
Dual inputs per power supply				
220-V and 220-V inputs				
1 power supply	7500 W	—	3750 W	—
2 power supplies[1]	15,000 W	7500 W	7500 W	7500 W
3 power supplies[1]	22,500 W	15,000 W	11,250 W	11,250 W
4 power supplies[1]	30,000 W	22,500 W	15,000 W	15,000 W
Single input per power supply				
220-V input				
1 power supply	3750 W	—	—	—
2 power supplies[1]	7500 W	3750 W	—	—
3 power supplies[1]	11,250 W	7500 W	—	—
4 power supplies[1]	15,000 W	11,250 W	—	—

1. The Cisco Nexus 7018 switch uses up to four 7.5kW power supplies, the Cisco Nexus 7010 switch uses up to three 7.5-kW power supplies, and the Cisco Nexus 7009 uses up to two 7.5-kW power supplies.

Table B-14 Power Availability for the 3-kW DC Power Supplies

Power Inputs	Combined Mode	Power Supply Redundancy Mode	Input Source Redundancy Mode	Full Redundancy Mode
Single input per power supply[1]				
1 power supply	3,000 W	—	—	—
2 power supplies	6,000 W	3,000 W	3,000 W	3,000 W
3 power supplies	9,000 W	6,000 W	3,000 W	3,000 W
4 power supplies	12,000 W	9,000 W	6,000 W	6,000 W

1. The Cisco Nexus 7004 uses up to four 3.0 kW DC power supplies.

Table B-15 Power Availability for 6.0-kW DC Power Supplies

Power Inputs	Combined Mode	Power Supply Redundancy Mode	Input Source Redundancy Mode	Full Redundancy Mode
Dual inputs per power supply				
1 power supply	6,000 W	—	3,000 W	—
2 power supplies[1]	12,000 W	6,000 W	6,000 W	6,000 W
3 power supplies[1]	18,000 W	12,000 W	9,000 W	9,000 W
4 power supplies[1]	24,000 W	18,000 W	12,000 W	12,000 W
Single input per power supply				
1 power supply	3,000 W	—	—	—
2 power supplies[1]	6,000 W	3,000 W	—	—
3 power supplies[1]	9,000 W	6,000 W	—	—
4 power supplies[1]	12,000 W	9,000 W	—	—

1. The Cisco Nexus 7018 switch uses up to four 6-kW power supplies, the Cisco Nexus 7010 switch uses up to three 6-kW power supplies, and the Cisco Nexus 7009 uses up to two 6-kW power supplies.

Power Supply Cable Specifications

For power supply cable specifications, see the following tables:

- Table B-16 for the 3-kW or 6-kW AC power supplies
- Table B-17 on page B-20 for the 7.5-kW AC power supplies
- Table B-18 on page B-21 for the 3-kW DC power supplies
- Table B-19 on page B-21 for the 6-kW DC power supplies

Table B-16 6-kW AC Power Supply Power Cords

Locale	Power Cord Part Number	Cord Set Rating	Power Cord Reference Illustration
Australia and New Zealand	CAB-AC-16A-AUS	16 A, 250 VAC	Figure B-1
Peoples Republic of China	CAB-AC-16A-CH	16 A, 250 VAC	Figure B-2
Continental Europe	CAB-AC-2500W-EU	16 A, 250 VAC	Figure B-3
International	CAB-AC-2500W-INT	16 A, 250 VAC	Figure B-4
Israel	CAB-AC-2500W-ISRL	16 A, 250 VAC	Figure B-5
Japan and North America (nonlocking) 200 to 240 VAC operation	CAB-AC-2500W-US1	16 A, 250 VAC	Figure B-6
Japan and North America (locking) 200 to 240 VAC operation	CAB-AC-C6K-TWLK	16 A, 250 VAC	Figure B-7

Table B-16 6-kW AC Power Supply Power Cords (continued)

Locale	Power Cord Part Number	Cord Set Rating	Power Cord Reference Illustration
Japan and North America 100 to 120 VAC operation	CAB-7513AC	16 A, 250 VAC	Figure B-8
Power distribution unit (PDU)	CAB-C19-CBN	16 A, 250 VAC	Figure B-9
Switzerland	CAB-ACS-16	16 A, 250 VAC	Figure B-10

Figure B-1 CAB-AC-16A-AUS Power Cord and Connectors for the 6-kW Power Supply

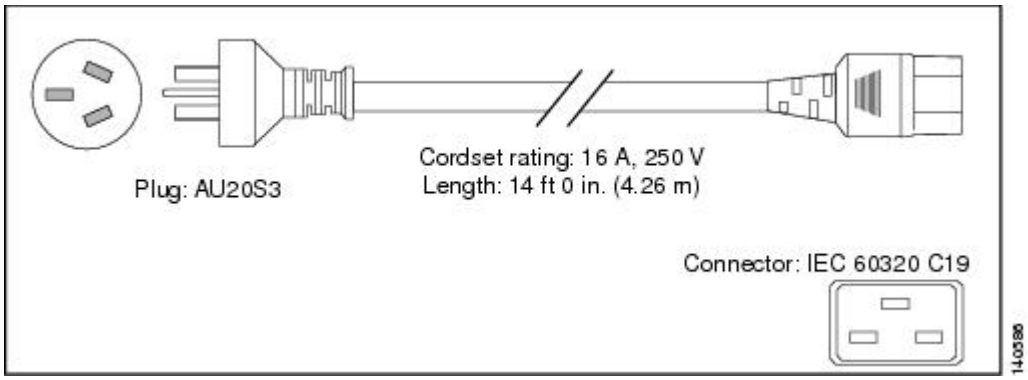


Figure B-2 CAB-AC-16A-CH Power Cord and Connectors for the 6-kW Power Supply

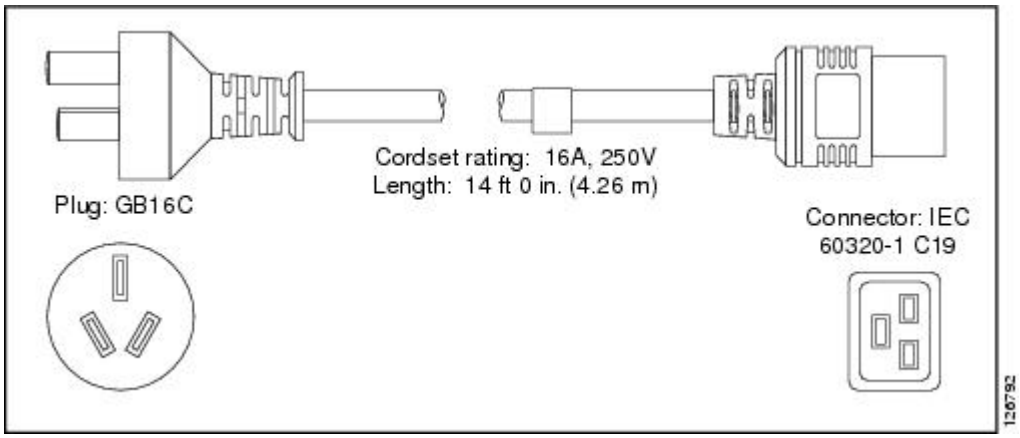


Figure B-3 CAB-AC-2500W-EU Power Cord and Connectors for the 6-kW Power Supply

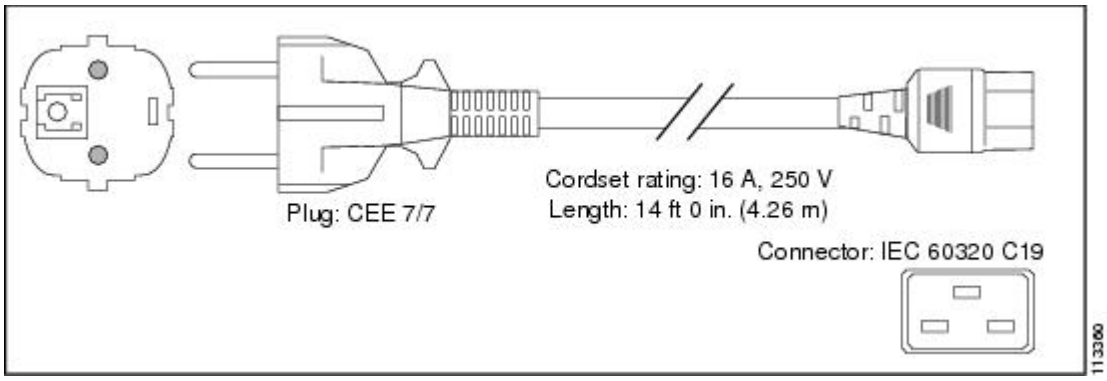


Figure B-4 CAB-AC-2500W-INT Power Cord and Connectors for the 6-kW Power Supply

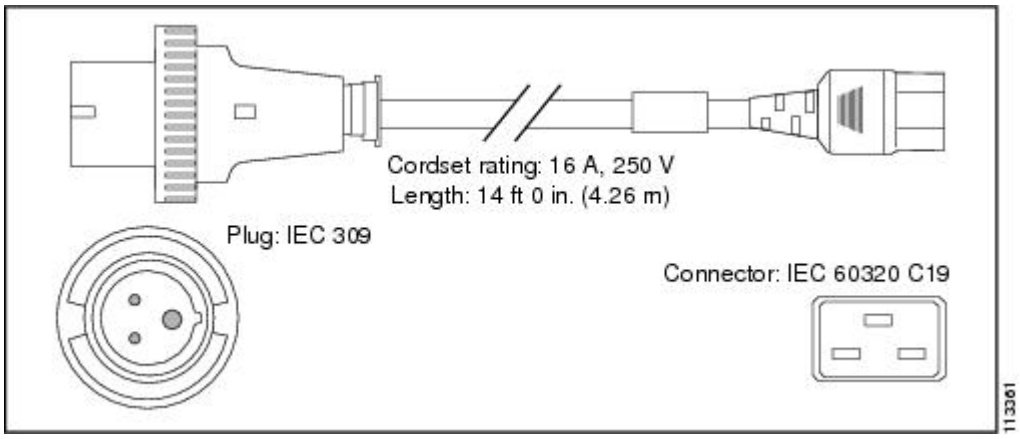


Figure B-5 CAB-AC-2500W-ISRL Power Cord and Connectors for the 6-kW Power Supply

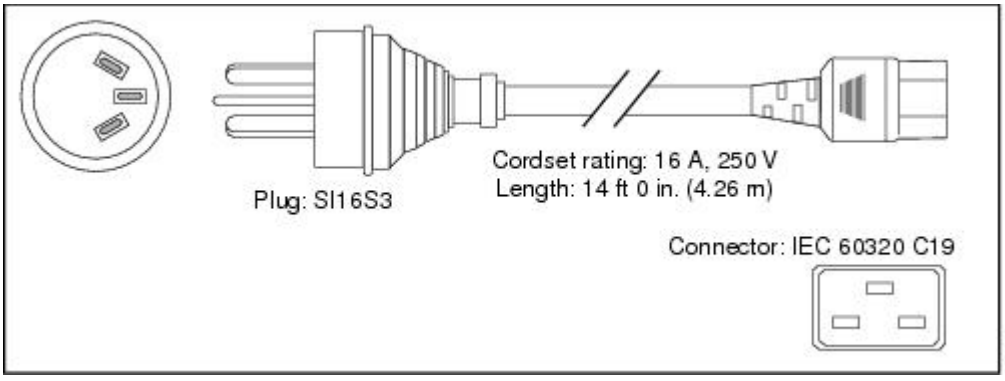


Figure B-6 CAB-AC-2500W-US1 Power Cord and Connectors for the 6-kW Power Supply

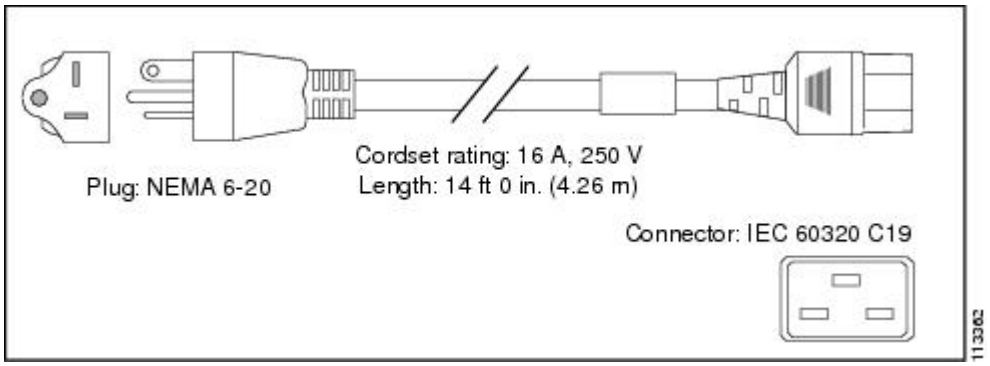


Figure B-7 CAB-AC-C6K-TWLK Power Cord and Connectors for the 6-kW Power Supply

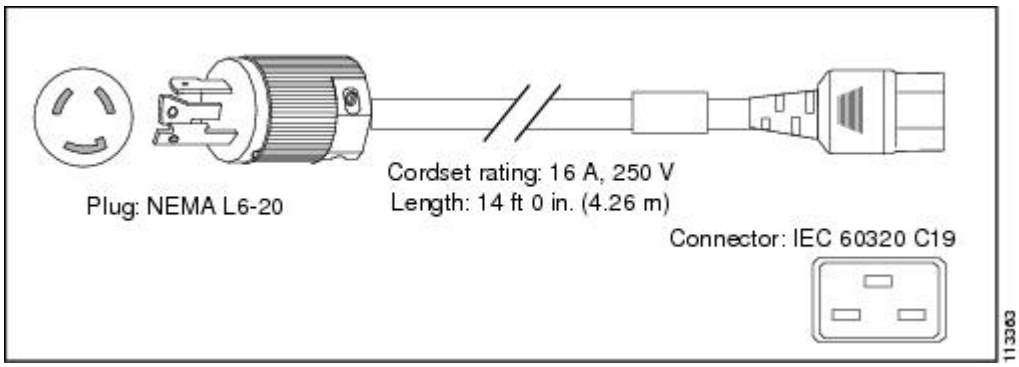


Figure B-8 CAB-7513AC Power Cord and Connectors for the 6-kW Power Supply

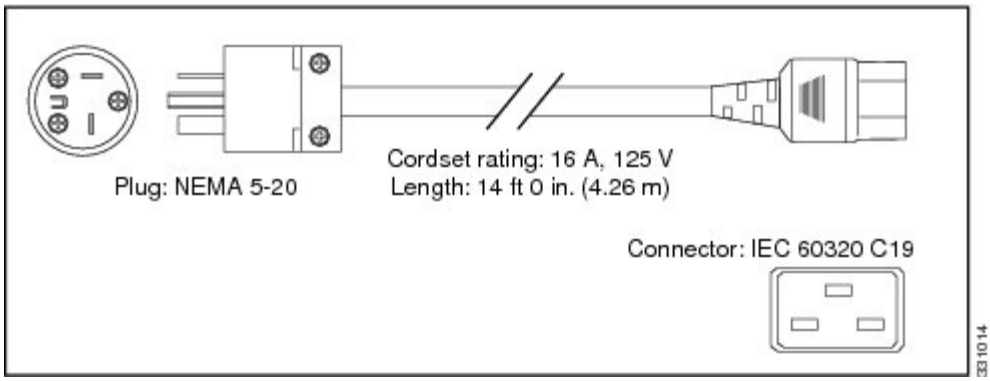


Figure B-9 CAB-C19-CBN Power Cord and Connectors for the 6-kW Power Supply

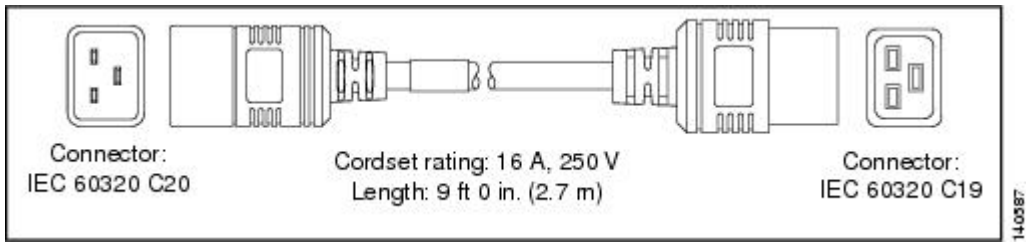


Figure B-10 CAB-ACS-16 Power Cord and Connectors for the 6-kW Power Supply

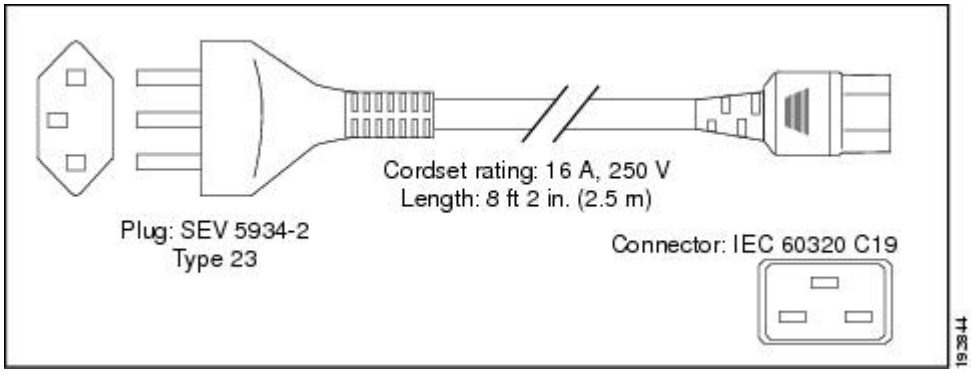


Table B-17 7.5-kW AC Power Supply Power Cords

Locale	Cord rating	Power cord reference illustration
Japan and North America	30 A, 250 VAC	Figure B-11
International	32 A, 250 VAC	Figure B-12

Figure B-11 NEMA L6-30 Power Connector for the 7.5-kW Power Supply

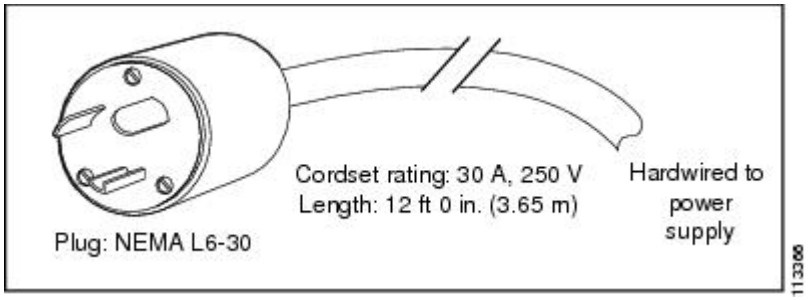


Figure B-12 IEC 603090 Power Connector for the 7.5-kW Power Supply

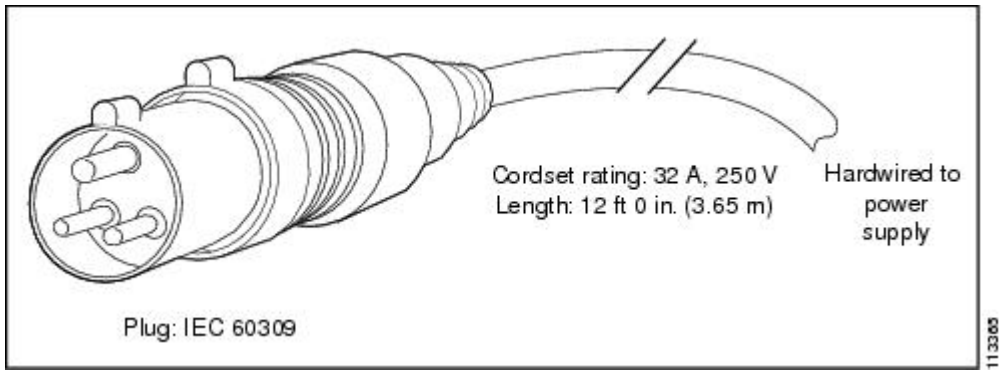


Table B-18 3-kW DC Power Supply Power Cord

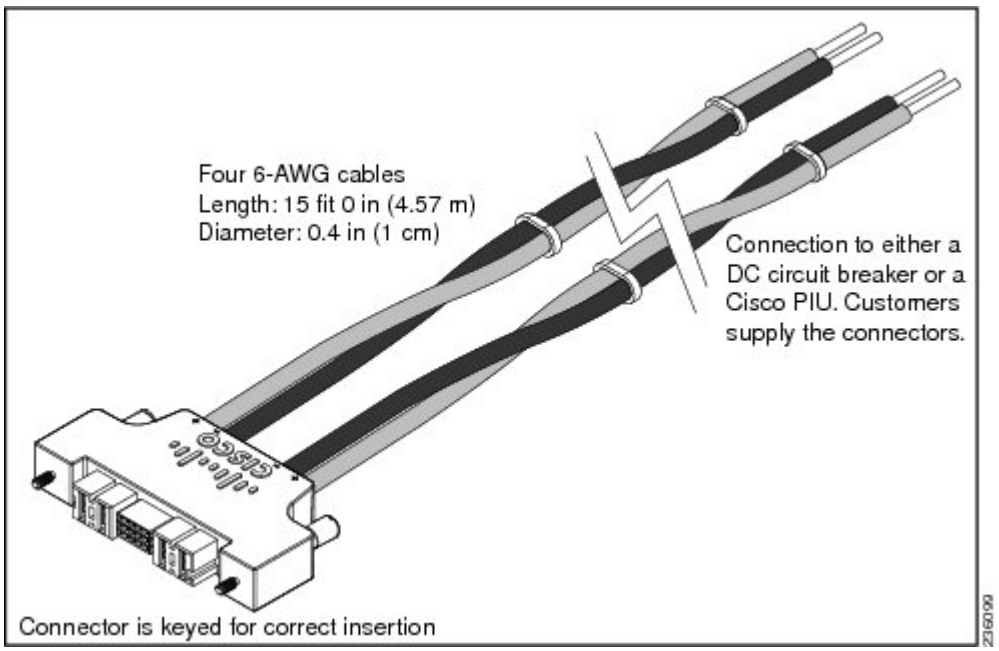
Locale	Part Number	Cord Rating	Power Cord Comments
All	—[1]	45A	6 AWG

1. Power cords used for the 3-kW DC power supply are supplied by the customer.

Table B-19 6-kW DC Power Supply Power Cord

Locale	Part Number	Cord Rating	Power Cord Reference Illustration
All	N7K-DC-CAB	40 A, 48V-48V	Figure B-13

Figure B-13 Power Connector for the 6.0-kW DC Power Supply Unit



Chassis Clearances

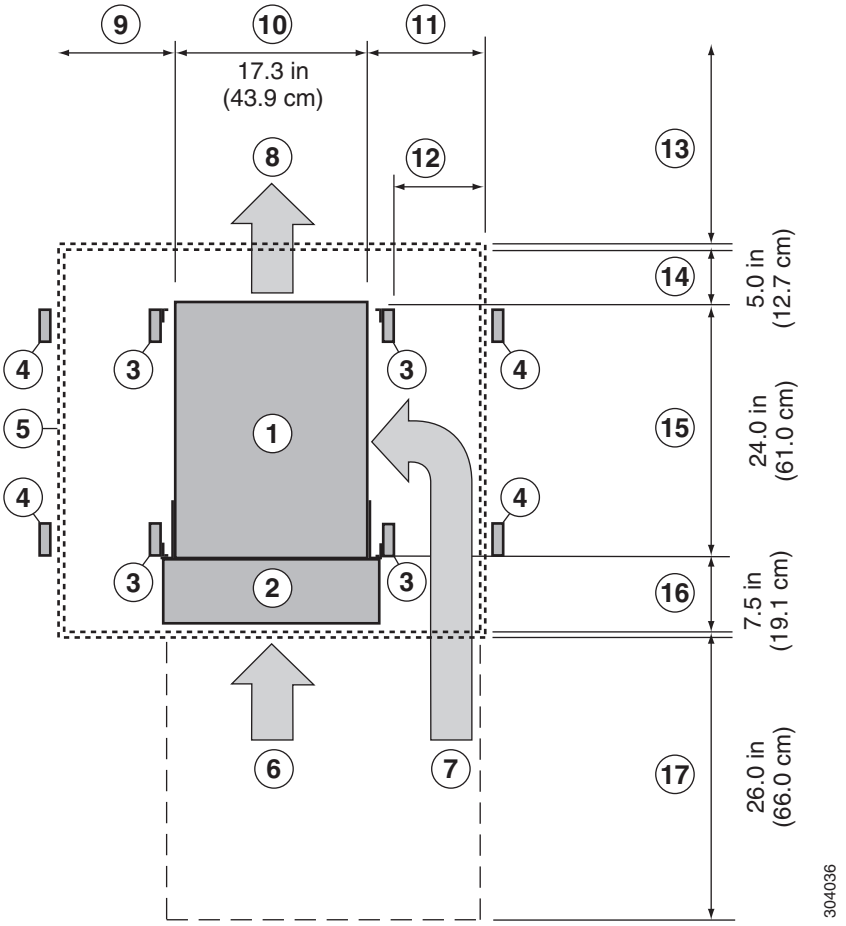
You must provide each Cisco Nexus 7000 Series switch with adequate clearance for installation, maintenance, cabling, and airflow. Installation clearance includes the cold aisle spacing required in front of the rack or cabinet to allow you to move the switch with a mechanical lift to its rack or cabinet. Maintenance clearance is the hot or cold aisle spacing required to replace supervisor, I/O, fabric, fan, and power supply modules. Cabling clearance provides the required space in front of the chassis (often within a cabinet) for cables to bend and connect to the chassis. Airflow clearance is typically the spacing on the left or right of the chassis for side-to-side airflow into and out of the chassis. If a chassis has front-to-back airflow, it uses the maintenance clearance for airflow instead of airflow clearance on the sides of the chassis.

This section includes the following topics:

Cisco Nexus 7004 Chassis Clearances

The Cisco Nexus 7004 chassis requires front clearance for cable management and maintenance, right side clearance for cooling air intake, and an unobstructed rear for exhausing air to the hot aisle behind the chassis. For the front, the cable management frames require 7.5 inches (19.1 cm) of clearance in front of the mounting rails and an additional 26 inches (66.0 cm) in front of the cable management frames or the cabinet door for maintenance. If you install the chassis with the optional center-mount bracket in place of the standard front-mount bracket, you must add 5.7 inches (14.4 cm) to the front clearance in front of the mounting rails on the rack. For cabinet installations, we recommend a right-side clearance of 11 inches (27.9 cm) between the switch and the inside of the cabinet. For rack installations, we recommend a right-side clearance of either 6 inches (15.2 cm) between racks or 11 inches (27.9 cm) between the chassis and a wall. The rear of the chassis must be unobstructed and open to the hot aisle in back of the switch for airflow exhaust. Figure B-14 shows the required clearances for chassis in a four-post rack with a front-mount installation. Figure B-15 on page B-24 shows the required clearances for a chassis in a two-post rack with a front-mount installation. Figure B-16 on page B-26 shows the required clearances for chassis with a center-mount installation.

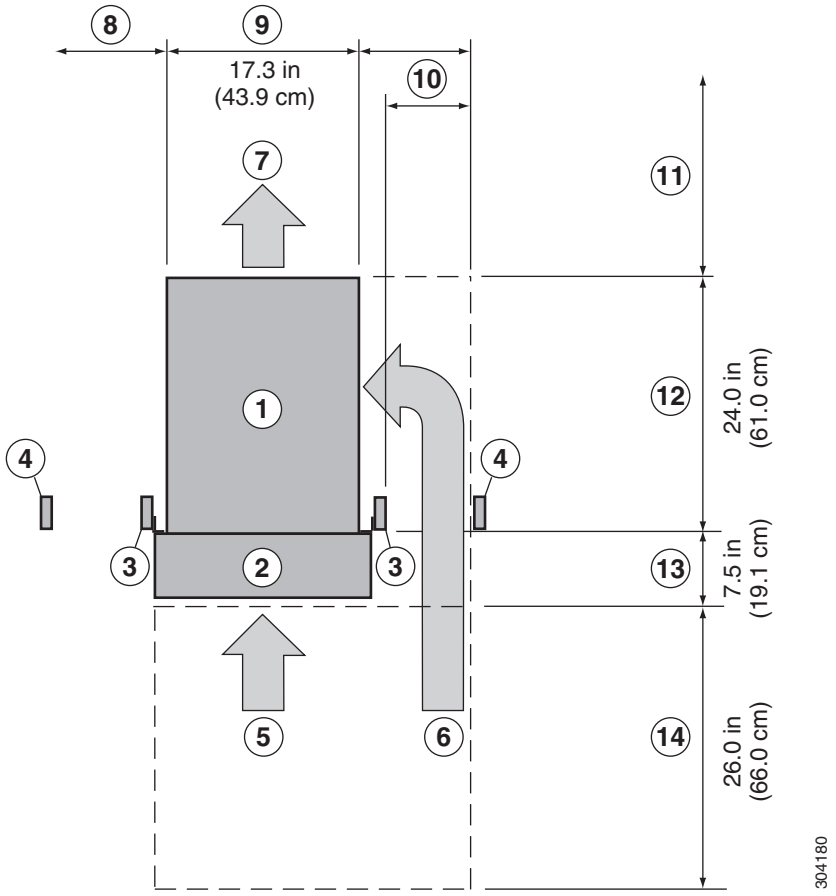
Figure B-14 Clearances Required for the Cisco Nexus 7004 in a Four-Post Rack with Front-Mount Brackets



1	Chassis	**10**	Chassis width
2	Cable management frames	**11**	Right side clearance recommended for cabinet installations: • Use 11 inches (27.9 cm).
3	Vertical rack-mount posts	**12**	Right side clearance recommended for open rack installations: • If next to another open rack, use 6 inches (15.2 cm) between racks. • If next to a wall, use 11 inches (27.9 cm) between the chassis and the wall.
4	Vertical rack-mount posts for neighboring rack	**13**	No rear clearance required but the rear must be open to the hot aisle to exhaust air
5	Inside of cabinet (no left side clearance required)	**14**	Airflow clearance required between the chassis and inside of cabinet (if a cabinet is used)
6	Air intake from cold aisle for power supplies	**15**	Chassis depth

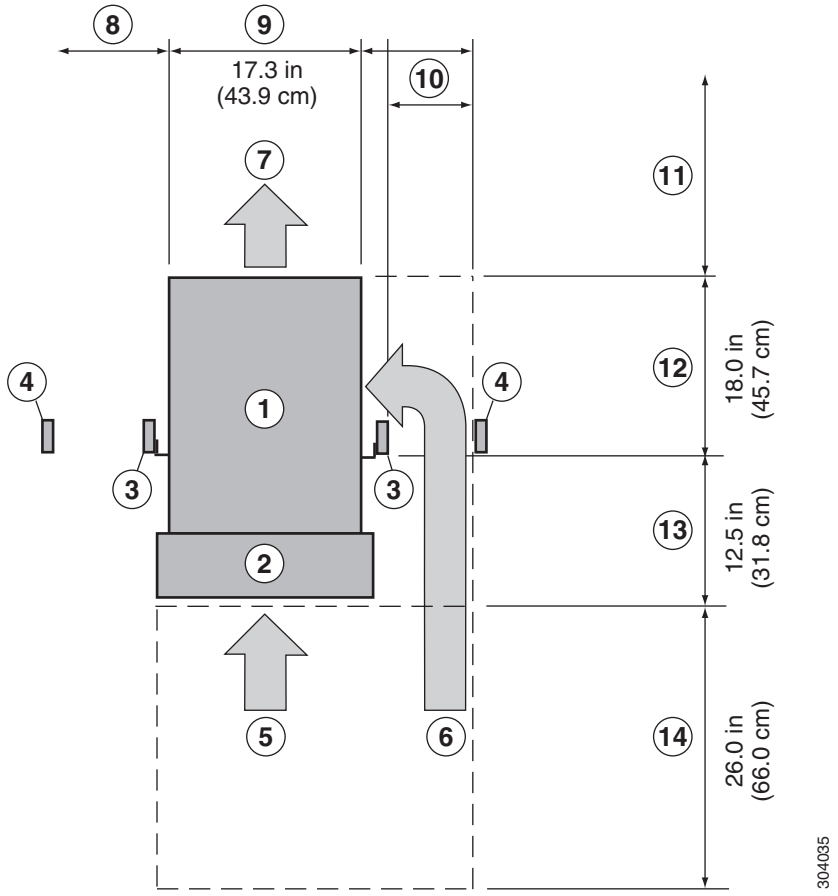
7	Air intake from cold aisle for the supervisor and I/O modules	**16**	Clearance required between the front of the chassis and the inside of the cabinet (if used) or the edge of the cold aisle (if no cabinet) for the cable management frames and the optional front doors
8	Air exhaust to hot aisle for all modules and power supplies	**17**	Front service clearance required for installing the chassis and replacing the modules
9	No left side clearance required (no airflow on left side)		

Figure B-15 Clearances Required for the Cisco Nexus 7004 in a Two-Post Rack with Front-Mount Brackets



1	Cisco Nexus 7004 chassis	**8**	No left side clearance required (no airflow on left side)
2	Cable management frames	**9**	• Chassis width.
3	Vertical rack-mount posts	**10**	Right side clearance recommended for open rack installations: • If next to another open rack, use 6 inches (15.2 cm) between racks. • If next to a wall, use 11 inches (27.9 cm) between the chassis and the wall.
4	Vertical rack-mount posts for neighboring racks	**11**	No rear clearance required but the rear must be open to the hot aisle to exhaust air
5	Air intake from cold aisle for power supplies	**12**	Chassis depth
6	Air intake from cold aisle for the supervisor and I/O modules	**13**	Clearance required between the front of the chassis and the inside of the cabinet for the cable management frames and the optional front door
7	Air exhaust to hot aisle for all modules and power supplies	**14**	Front clearance required for installing the chassis and replacing the modules

Figure B-16 Clearances Required for the Cisco Nexus 7004 in a Two-Post Rack with Center-Mount Brackets



1	Cisco Nexus 7004 chassis	**8**	No left side clearance required (no airflow on left side)
2	Cable management frames	**9**	Chassis width
3	Vertical rack-mount posts	**10**	Right side clearance recommended for open rack installations: • If next to another open rack, use 6 inches (15.2 cm) between racks. • If next to a wall, use 11 inches (27.9 cm) between chassis and wall.
4	Vertical rack-mount posts for neighboring rack	**11**	No rear clearance required but the rear must be open to the hot aisle to exhaust air

5	Air intake from cold aisle for power supplies	**12**	Distance from front of vertical rack-mount posts to rear of chassis
6	Air intake from cold aisle for the supervisor and I/O modules	**13**	Clearance required between the front of the chassis and the inside of the chassis for the cable management frames and the optional front doors
7	Air exhaust to hot aisle for all modules and power supplies	**14**	Front service clearance required for installing the chassis and replacing the modules

Cisco Nexus 7009 Chassis Clearances

The Cisco Nexus 7009 chassis has different clearance requirements for installations with four-post racks or cabinets, two-post racks with front-mount brackets, and two-post racks with center-mount brackets.

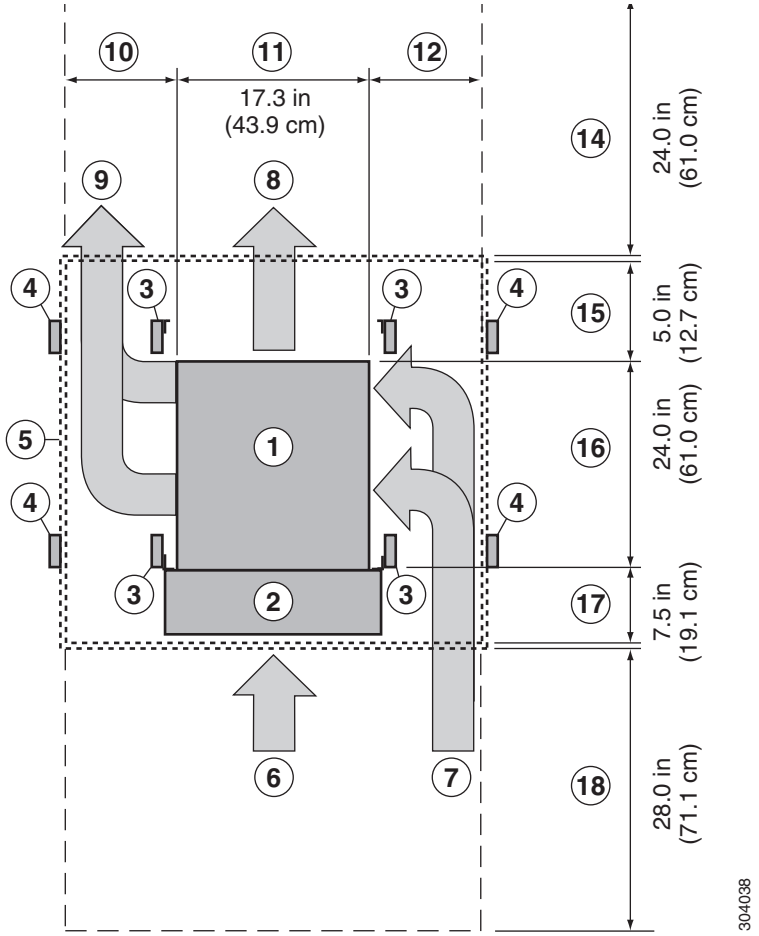
For four-post rack or cabinet installations, the chassis requires the following clearances (see Figure B-17):

- Front clearance requires both of the following:
  - Cabling area of 7.5 inches (19.1 cm) between the front of the chassis and the inside surface of the cabinet or rack (this area can include the optional cable management frames)
  - Maintenance area of 24 inches (61.1 cm) between the front of the rack or cabinet and the next object in the cold aisle.

Note You might need to increase the maintenance area to accommodate a wide mechanical lift used to move the chassis to or from the rack.

- Rear clearance includes both of the following:
  - Cabling area of 7 inches (17.8 cm) between the rear of the chassis and the inside surface of the cabinet or rack
  - Maintenance area of 24 inches (61.1 cm) between the rear of the rack or cabinet and the next object in the hot aisle
- Side clearance of 11 inches (27.9 cm) for air flow on each side of the chassis.

Figure B-17 Clearances Required for a Front-Mounted Cisco Nexus 7009 Chassis in a Four-Post Rack



1	Cisco Nexus 7009 chassis	**10**	Left side clearance required with an unobstructed opening to the hot aisle to exhaust air
2	Cable management frames	**11**	Chassis width
3	Vertical rack-mount post	**12**	Side clearance recommended for cabinet installations: • use 11 inches (27.9 cm)
4	Vertical rack-mount post for neighboring rack	**13**	Side clearance recommended for open rack installations: • If next to another open rack, use 6 inches (15.2 cm). • If next to a wall, use 11 inches (27.9 cm).
5	Nearest object or inside of cabinet	**14**	Rear service clearance required to replace fan trays and fabric modules
6	Air intake from cold aisle for the power supplies	**15**	Airflow clearance required between the chassis rear and inside of cabinet (if used)

7	Air intake from cold aisle for the supervisor, fabric, and I/O modules	**16**	Chassis depth
8	Air exhaust to hot aisle for power supplies	**17**	Clearance required between the front of the chassis and the inside of the cabinet (if used) or edge of cold aisle (if no cabinet) for the cable management frames and the optional front doors
9	Air exhaust to hot aisle for the supervisor, fabric, and I/O modules	**18**	Front clearance required for installing the chassis and replacing the modules

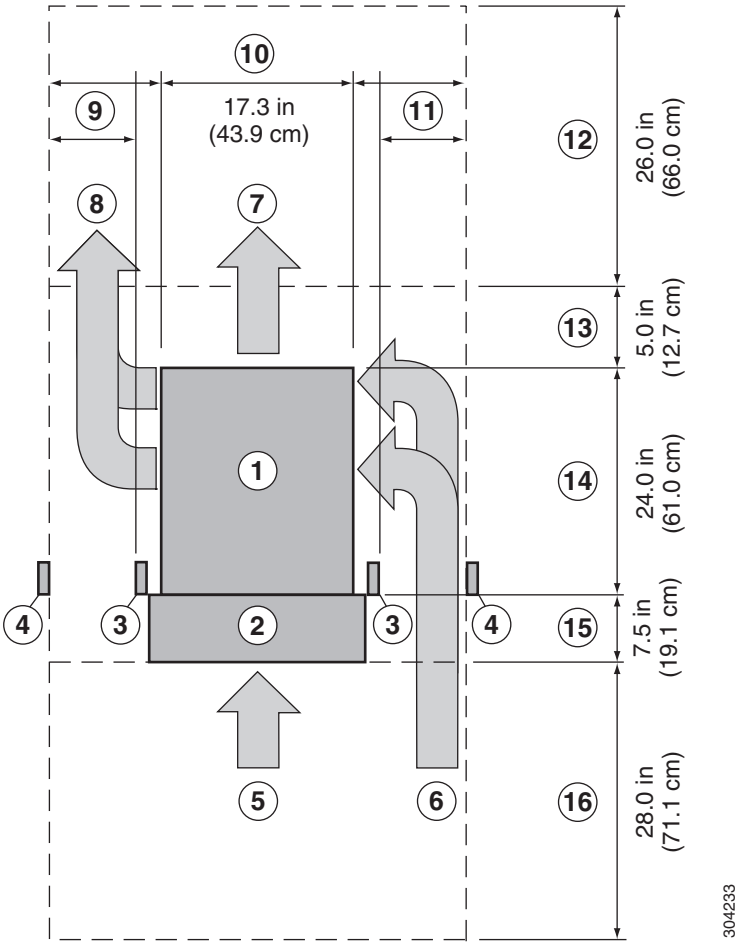
For two-post rack installations with front-mount brackets, the chassis requires the following clearances (see Figure B-18):

- Front clearance requires both of the following:
  - Cabling area of 7.5 inches (19.1 cm) between the front of the chassis and the cold aisle (this area can include the optional cable management frames)
  - Maintenance area of 28 inches (71.1 cm) in front of the cabling area for installing the chassis and replacing modules

Note You might need to increase the maintenance area to accommodate a wide mechanical lift used to move the chassis to or from the rack.

- Rear clearance requires 26 inches (66.0 cm) behind the chassis for cable management and for replacing modules and power supplies
- Side clearance recommendation depends on whether you use a rack or cabinet for the installation as follows:
  - For cabinet installations, we recommend that you use 11 inches (27.9 cm) for airflow on each side of the chassis.
  - For rack installations, we recommend 11 inches (27.9 cm) between the chassis and a wall or 6 inches (15.2 cm) between racks.

Figure B-18 Clearances Required for a Front-Mounted Cisco Nexus 7009 Chassis in a Two-Post Rack



1	Cisco Nexus 7009 chassis	**9**	Side clearance required for open rack installations: • If next to another open rack, use 6 inches (15.2 cm). • If next to a wall, use 11 inches (27.9 cm).
2	Cable management frames	**10**	Chassis width
3	Vertical rack-mount post	**11**	Side clearance required for open rack installations: • If next to another open rack, use 6 inches (15.2 cm). • If next to a wall, use 11 inches (27.9 cm).
4	Vertical rack-mount post for neighboring rack	**12**	Rear service clearance required to replace fan trays and fabric modules
5	Air intake from cold aisle for the power supplies	**13**	Airflow clearance required between the chassis and inside of cabinet (if used)

6	Air intake from cold aisle for the supervisor, fabric, and I/O modules	**14**	Chassis depth
7	Air exhaust to hot aisle for power supplies	**15**	Clearance required between the front of the chassis and edge of cold aisle for the cable management frames and the optional front doors
8	Air exhaust to hot aisle for the supervisor, fabric, and I/O modules	**16**	Front clearance required for installing the chassis and replacing the modules

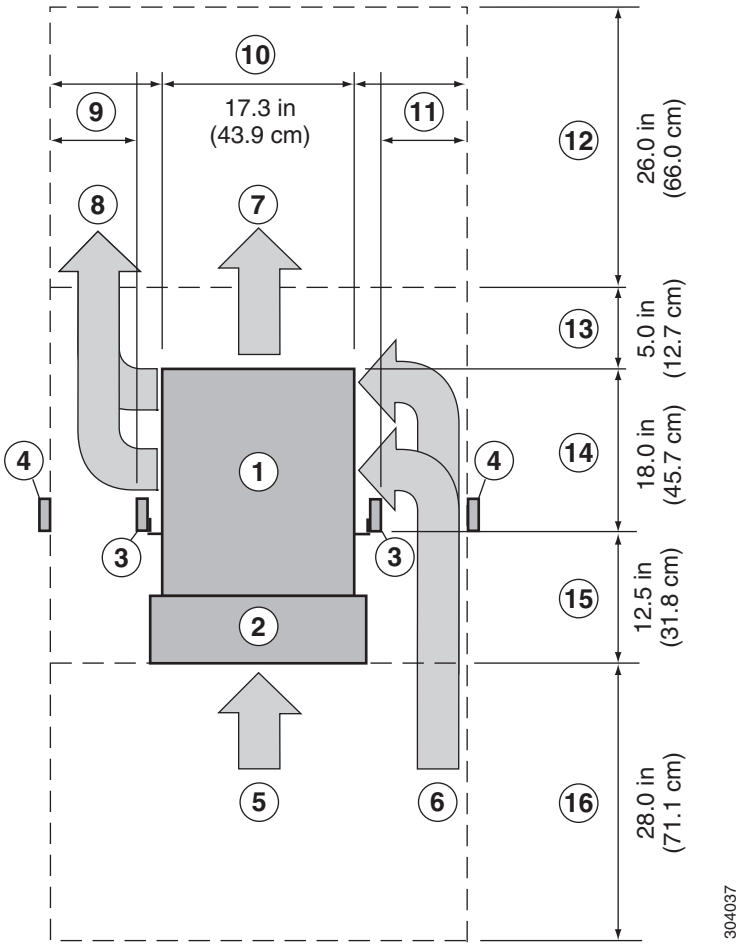
For two-post rack installations with center-mount brackets, the chassis requires the following clearances (see Figure B-19):

- Front clearance of 37 inches (94.0 cm) for both of the following:
  - Cabling area of 13.5 inches (34.3 cm) between the front of the posts (posts are 6 inches (15.2 cm) behind the front of the chassis)
  - Maintenance area of 26 inches (66.0 cm) in front of the cabling area for installing the chassis and replacing modules.

Note You might need to increase the maintenance area to accommodate a wide mechanical lift used to move the chassis to or from the rack.

- Rear clearance of 26 inches (66.0 cm) behind the chassis for cable management and for replacing the fan modules and power supplies.
- Side clearance of 11 inches (27.9 cm) for airflow on each side of the chassis.

Figure B-19 Clearances Required for a Center-Mounted Cisco Nexus 7009 Chassis in a Two-Post Rack



1	Cisco Nexus 7009 chassis	**9**	Right side clearance (for rack installations) recommended to input air from the cold aisle: • If next to another open rack, use 6 inches (15.2 cm). • If next to a wall, use 11 inches (27.9 cm).
2	Cable management frames	**10**	Chassis width
3	Vertical rack-mount posts	**11**	Right side clearance (for rack installations) recommended to input air from the cold aisle: • If next to another open rack, use 6 inches (15.2 cm). If next to a wall, use 11 inches (27.9 cm).
4	Vertical rack-mount post for neighboring rack	**12**	Rear service clearance required to replace fan trays and fabric modules
5	Air intake from cold aisle for power supplies	**13**	Airflow clearance required between the chassis and inside of cabinet (if used)

6	Air intake from cold aisle for the supervisor, fabric, and I/O modules	**14**	Chassis depth
7	Air exhaust to hot aisle for the power supplies	**15**	Clearance required between the front of the chassis and the front of the cable management frames and the optional front doors
8	Air exhaust to hot aisle for the supervisor, fabric, and I/O modules	**16**	Front service clearance required for installing the chassis and replacing the modules

Cisco Nexus 7010 Chassis Clearances

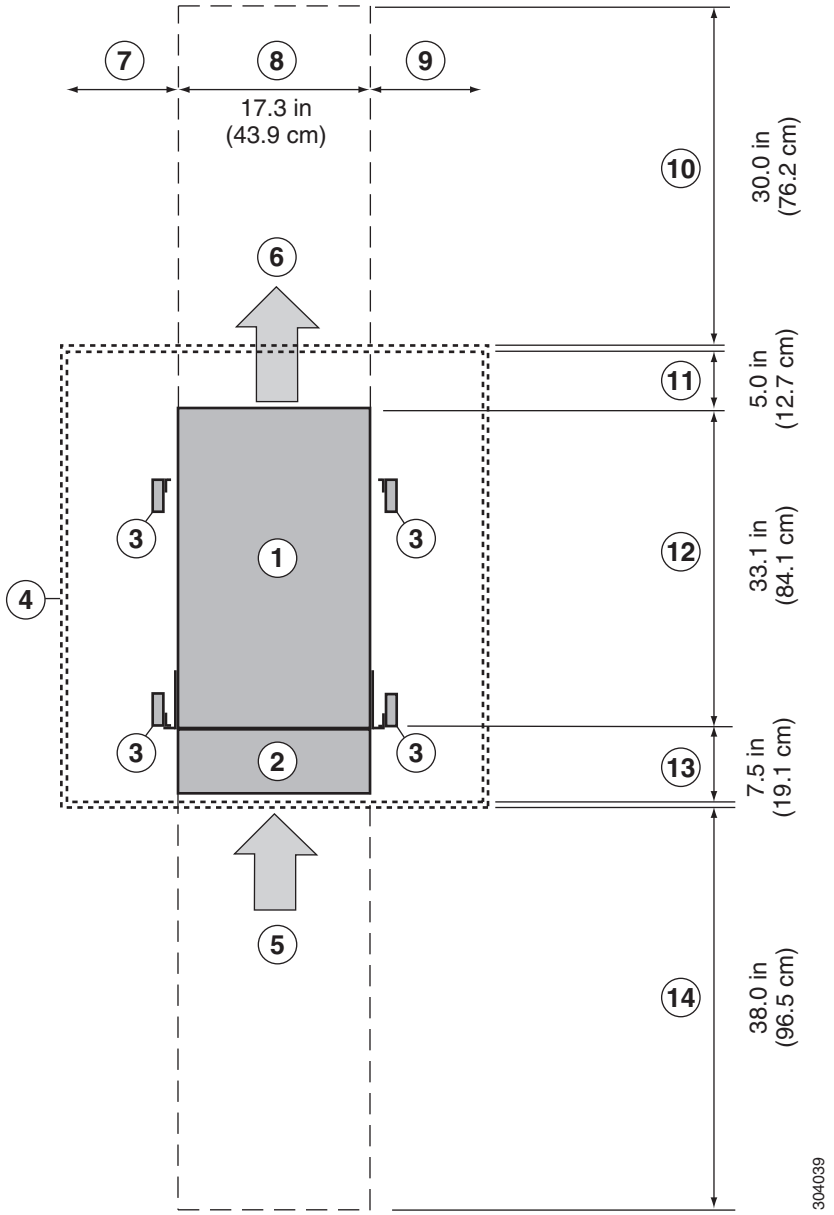
The Cisco Nexus 7010 chassis requires the following clearances (see Figure B-20):

- Front clearance of 45.5 inches (115.6 cm) for both of the following:
  - Cabling area of 7.5 inches (19.1 cm) between the front of the chassis and the inside of the cabinet or front of the rack
  - Maintenance area of 38 inches (96.5 cm) of cold-aisle passageway in front of the rack or cabinet

Note You might need to increase the maintenance area to accommodate a wide mechanical lift used to move the chassis to or from the rack.

- Rear clearance of 35 inches (88.9 cm) for both of the following:
  - Airflow area of 5 inches (12.7 cm) inside of the cabinet or rack
  - Maintenance area of 30 inches (76.2 cm) of hot-aisle passageway behind the rack or cabinet

Figure B-20 Clearances Required for the Cisco Nexus 7010 Switch



1	Cisco Nexus 7010 chassis	**8**	Chassis width
2	Cable management system	**9**	No right side clearance required (no airflow on right side)
3	Vertical rack-mount posts	**10**	Rear service clearance required to replace fan trays and fabric modules

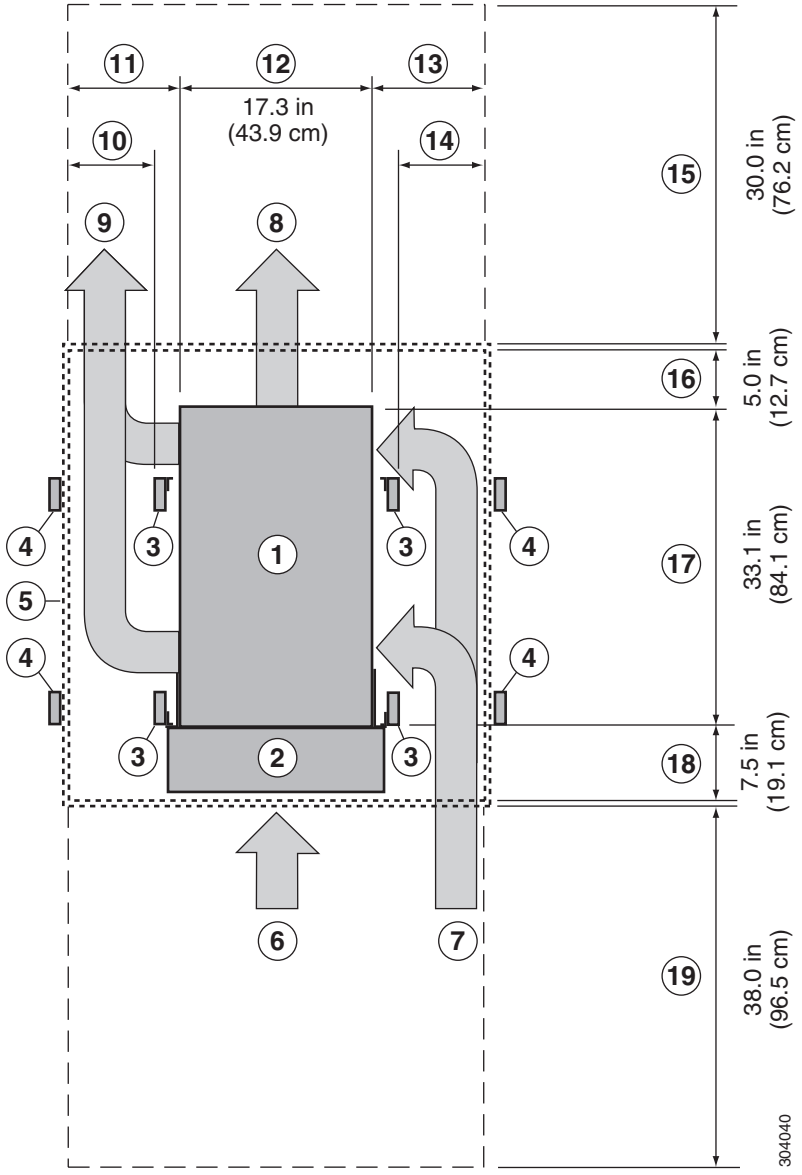
4	Inside of cabinet (no side clearance required)	**11**	Airflow clearance required between the chassis and inside of cabinet (if used)
5	Air intake from cold aisle for all modules and power supplies	**12**	Chassis depth, which includes the fan tray handles at the rear of the chassis
6	Air exhaust to hot aisle for all modules and power supplies	**13**	Clearance required between the front of the chassis and the inside of the cabinet (if used) or edge of the cold aisle (if no cabinet) for the cable management frames and the optional front doors
7	No left side clearance required (no airflow on left side)	**14**	Front service clearance required for installing the chassis and replacing the modules

Cisco Nexus 7018 Chassis Clearances

The Cisco Nexus 7018 chassis requires the following clearances (see Figure B-21):

- Front clearance of 45 inches (114.3 cm) for both of the following:
  - Cabling area of 7.5 inches (19.1 cm) between the front of the chassis and the inside of the cabinet or front of the rack
  - Maintenance area of 38 inches (96.5 cm) between the front of the rack or cabinet and the next rack, cabinet, or wall in the cold aisle (additional area might be needed for a larger mechanical lift used to move the chassis)
- Rear clearance of 35 inches (88.9 cm) for both of the following:
  - Airflow area of 5 inches (12.7 cm) inside a cabinet (if used)
  - Maintenance area of 30 inches (76.2 cm) of hot-aisle passageway behind the rack or cabinet
- Side clearance recommendation depends on whether a cabinet or rack is used:
  - For cabinet installations, use 11 inches (27.9 cm) between the chassis and inside of the cabinet.
  - For rack installations, use either 11” (27.9 cm) between the chassis and a wall or 6” (15.2 cm) between racks.

Figure B-21 Clearances Required for the Cisco Nexus 7018 Switch



1	Cisco Nexus 7018 chassis	**11**	Side clearance recommended for cabinet installations:: • Use 11 inches (27.9 cm)
2	Cable management frames	**12**	Chassis width
3	Vertical rack-mount post	**13**	Side clearance recommended for cabinet installations:: • Use 11 inches (27.9 cm)
4	Vertical rack-mount post for neighboring rack	**14**	Side clearance recommended for open rack installations: • If next to another open rack, use 6 inches (15.2 cm). If next to a wall, use 11 inches (27.9 cm)
5	Nearest object or inside of cabinet (side clearance required for airflow)	**15**	Rear service clearance required to replace fan trays and fabric modules
6	Air intake from cold aisle for the power supplies	**16**	Airflow clearance required between the chassis and inside of cabinet (cabinet installations only)
7	Air intake from cold aisle for the supervisor, fabric, and I/O modules	**17**	Chassis depth
8	Air exhaust to hot aisle for the power supplies	**18**	Clearance required between the front of the chassis and the inside of the cabinet (cabinet installations) or edge of the cold aisle (rack installations) for the cable management frames and the optional front door
9	Air exhaust to hot aisle for the supervisor, fabric, and I/O modules	**19**	Front service clearance required for installing the chassis and replacing the modules
10	Side clearance recommended for open rack installations: • If next to another open rack, use 6 inches (15.2 cm). • If next to a wall, use 11 inches (27.9 cm).		

Facility Cooling Requirements

The Cisco Nexus 7000 Series switches dissipate considerable power that generates much heat. The following is the heat dissipation requirement for these switches:

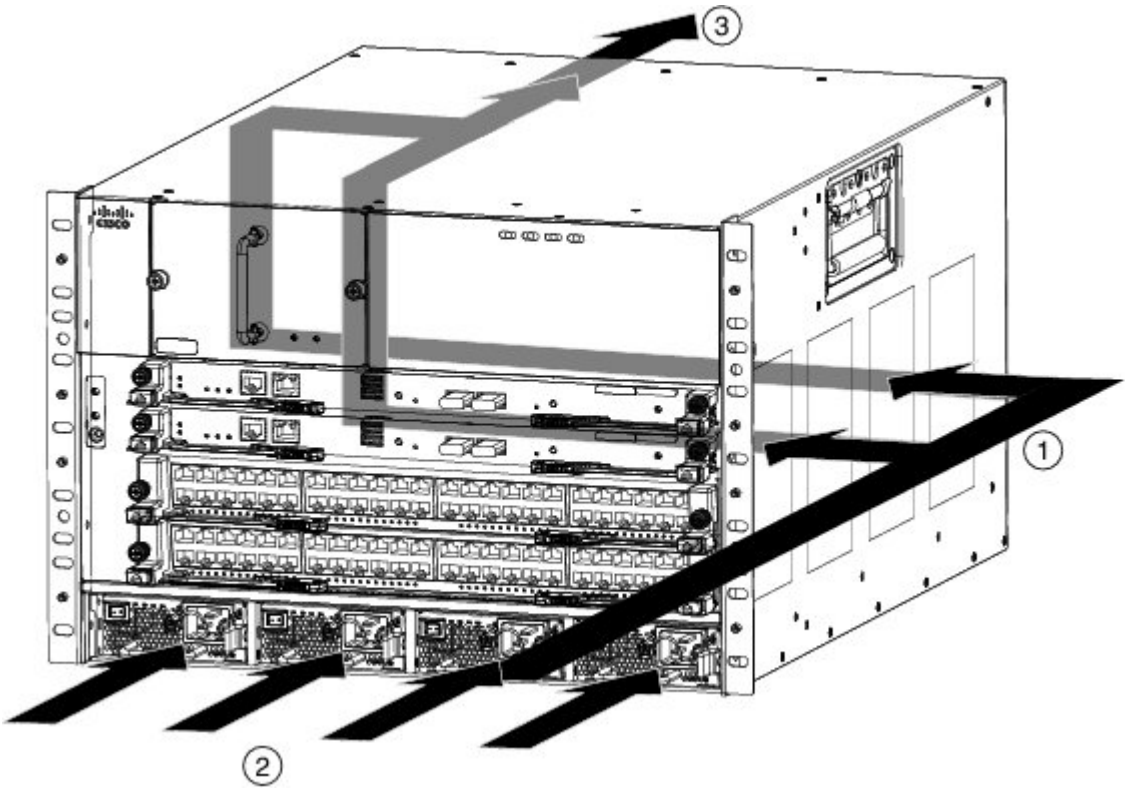
- Cisco Nexus 7004 dissipates up to 9737 BTUs per hour
- Cisco Nexus 7009 dissipates up to 28,101 BTUs per hour
- Cisco Nexus 7010 dissipates up to 35,162 BTUs per hour
- Cisco Nexus 7018 dissipates up to 51,195 BTUs per hour

Chassis Airflow

The Cisco Nexus 7000 Series switches are designed to work in a hot-aisle/cold-aisle environment using front-to-back, side-to-side, or side-to-back airflow. Each of these switches uses one of the following airflow directions:

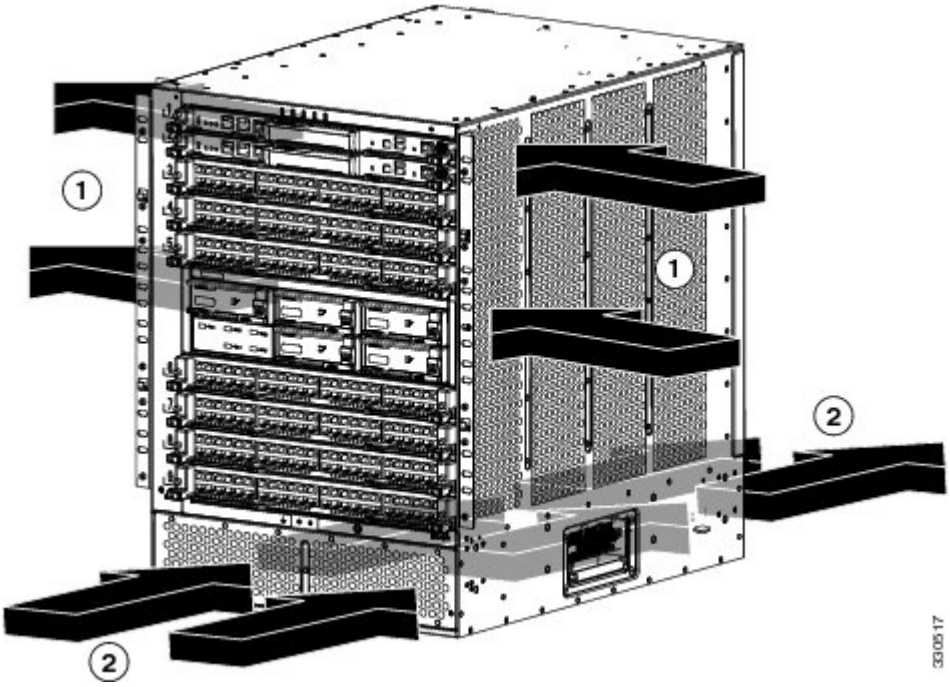
- The Cisco Nexus 7004 switch uses side-to-back airflow to cool its modules and front-to-back airflow to cool its power supplies as shown in Figure B-22. This switch requires right-side clearance for airflow into the chassis.
- The Cisco Nexus 7009 switch uses side-to-side airflow to cool its modules and front-to-back airflow to cool its power supplies as shown in Figure B-23. This switch requires right- and left-side clearance for airflow into and out of the chassis.
- The Cisco Nexus 7010 switch uses front-to-back airflow as shown in Figure B-24.
- The Cisco Nexus 7018 switch uses side-to-side airflow to cool its modules and front-to-back airflow to cool its power supply units as shown in Figure B-25. This switch requires right- and left-side clearance for airflow into and out of the chassis.

Figure B-22 Airflow for the Cisco Nexus 7004 Chassis



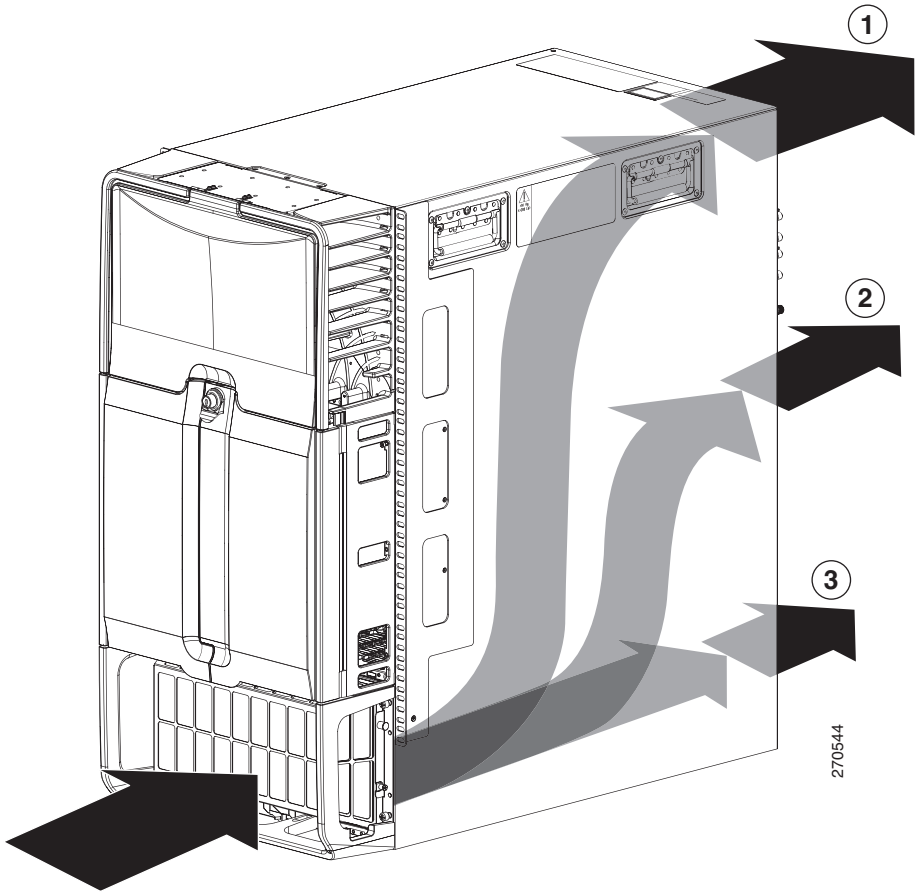
1	Right side-to-rear airflow for cooling supervisor and I/O modules	**3**	Exhaust out the rear to the hot aisle
2	Front-to-rear airflow for cooling power supplies		

Figure B-23 Airflow for the Cisco Nexus 7009 Chassis



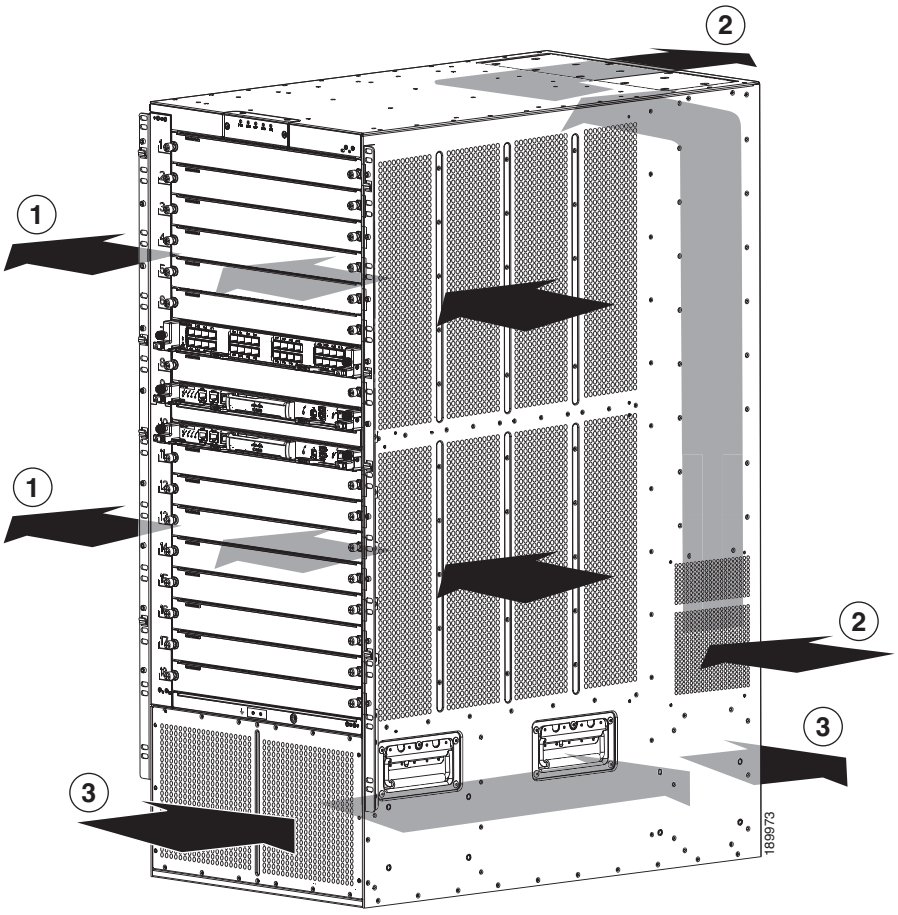
1	Airflow for cooling the supervisor, I/O modules, and fabric modules	2	Airflow for cooling the power supply units

Figure B-24 Airflow for the Cisco Nexus 7010 Chassis



1	Airflow for cooling the supervisor and I/O modules	**3**	Airflow for cooling the power supply units
2	Airflow for cooling the fabric modules		

Figure B-25 Airflow for the Cisco Nexus 7018 Chassis



1	Airflow for cooling the supervisor and I/O modules	**3**	Airflow for cooling the power supply units
2	Airflow for cooling the fabric modules		

For the Cisco Nexus 7004 switch, you can route cables on the left or right side without interferring with coolant airflow, which goes in on the right side. Be sure to otherwise leave the right side unblocked so that cool air can flow from the cold aisle in the front to the chassis.

To allow for the Cisco Nexus 7009 and 7018 switches to take in air from the cold aisle and floor on the right side, you should route cables on the left front side of the switch. If necessary, you can route cables on the upper right front side of the chassis, which leaves the lower right side open to cooling air from the cold aisle in front of the chassis. By having the cables on the left side and leaving the left rear side unobstructed, the exhaust is directed to the hot aisle in back.

For the clearances required on each side of the switch, see the "Chassis Clearances" section on page B-22.