Technical Specifications

This appendix describes the technical specifications for the Cisco Nexus Fabric Extenders (FEXs) and includes the following sections:

Note Specifications for cables and connectors are provided in Appendix C, "Cable and Port Specifications."

Power Specifications

This section describes the power specifications for the Cisco Nexus Fabric Extenders.

The power supplies connect directly to the system through connectors attached to the baseboard through cables. One connector is on the baseboard for each power supply. AC input is through an IEC connector mounted on the power supply port side exhaust panel. Table B-1 lists the specifications for the FEX power supplies.

Table B-1   Power Specifications for the Cisco Nexus Fabric Extender

Cisco Nexus Fabric Extender	Power Supply			
	N2K-PAC-200W	N2200-PAC-400W (Blue) / N2200-PAC-400W-B (Red)	N2200-PDC-400W (Blue) / N2200-PDC-350W-B	NXA-PHV-500W (Blue) / NXA-PHV-500W-B (Red)
FEXs	Cisco Nexus 2148T	Cisco Nexus 2332TQ, 2348TQ, 2348TQ-E, and 2348UPQ, Cisco Nexus 2248TP-E, 2248TP, 2232PP, 2224TP, 2248PQ, 2232TM, 2232TM-E	Cisco Nexus 2332TQ, 2348TQ, 2348TQ-E, and 2348UPQ, Cisco Nexus 2248TP-E, 2248TP, 2232PP, 2224TP, 2248PQ, 2232TM, 2232TM-E **Note** The 2232TM and 2232TM-E do not support the N2200-PDC-350 W-B	Cisco Nexus 2332TQ, 2348TQ, and 2348UPQ, Cisco Nexus 2248TP-E, 2248TP, 2232PP, 2232TM, 2232TM-E
Typical and Maximum Input Operating Power	165 W	190W @ 30m, 250W maximum (Cisco Nexus 2332TQ) 280W @ 30m, 350W maximum (Cisco Nexus 2348TQ and 2348TQ-E) 125W, 200W maximum (Cisco Nexus 2348UPQ) 110W, 130W maximum (Cisco Nexus 2248TP-E and 2248TP) 270W (Cisco Nexus 2232PP) 85W, 100W maximum (Cisco Nexus 2224TP) 350W, 386W maximum (Cisco Nexus 2232TM)		
Maximum Output Power	200 W	400 W	400W, 350 W	500W
Input Voltage	90 to 264 VAC	90 to 264 VAC	–40 to –72 VDC	192 to 400 VDC, 90 to 295 VAC
Frequency	50 to 60 Hz	50 to 60 Hz	N/A	50 to 60 Hz

Table B-1   *Power Specifications for the Cisco Nexus Fabric Extender (continued)*

Cisco Nexus Fabric Extender	Power Supply			
	N2K-PAC-200W	N2200-PAC-400W (Blue) N2200-PAC-400W-B (Red)	N2200-PDC-400W (Blue) N2200-PDC-350W-B	NXA-PHV-500W (Blue) NXA-PHV-500W-B (Red)
Input Current	1.5 A/2.2 A* (typical/maximum) * The Input currents listed for 110 V; divide by two for 220 V	Cisco Nexus 2332TQ: 1.4 A/2.3 A* (typical/maximum) Cisco Nexus 2348TQ and 2348TQ-E: 2.5 A/3.2 A* (typical/maximum) Cisco Nexus 2348UPQ: 1.2 A/1.8 A* (typical/maximum) Cisco Nexus 2248TP-E and 2248TP: 1.0 A/1.2 A* (typical/maximum) Cisco Nexus 2232PP: 2.5 A* (typical) Cisco Nexus 2224TP: 0.7 A/0.9 A* (typical/maximum) Cisco Nexus 2232TM 3.2 A/3.5 A* (typical/maximum) * Input currents listed for 110 V; divide by two for 220 V	Cisco Nexus 2332TQ: 3.8 A/6.2 A* (typical/maximum) Cisco Nexus 2348TQ and 2348TQ-E: 7.0 A/8.7 A* (typical/maximum) Cisco Nexus 2348UPQ: 3.1 A/5.0 A* (typical/maximum) Cisco Nexus 2248TP-E and 2248TP: 2.8 A/3.3 A* (typical/maximum) Cisco Nexus 2232PP: 7.0 A* (typical) Cisco Nexus 2224TP: 2.1 A/2.5 A* (typical/maximum) Cisco Nexus 2232TM 8.8 A/9.6 A* (typical/maximum) * Input currents listed for -40 VDC	Cisco Nexus 2332TQ: 0.6 A/1.1 A* (typical/maximum) Cisco Nexus 2348TQ: 1.2 A/1.5 A* (typical/maximum) Cisco Nexus 2348UPQ: 0.5 A/0.8 A* (typical/maximum) Cisco Nexus 2248TP-E and 2248TP: 0.5 A/0.6 A* (typical/maximum) Cisco Nexus 2232PP: 1.2 A* (typical) Cisco Nexus 2224TP: 0.4 A/0.4 A* (typical/maximum) Cisco Nexus 2232TM 1.4A/1.6 A* (typical/maximum) * Input currents listed for 240 VDC and 277 VAC; divide by 1.6 for 380 VDC
Efficiency	84% typical	88% to 92% (50% to 100% load)	85% to 88% (50% to 100% load)	91% to 94% (50% to 100% load)
RoHS Compliance	RoHS-5 compliant	RoHS-6 compliant	RoHS-6 compliant	RoHS-6 compliant
Hot Swappable	Yes	Yes	Yes	Yes

Table B-1   Power Specifications for the Cisco Nexus Fabric Extender (continued)

Cisco Nexus Fabric Extender	Power Supply			
	N2K-PAC-200W	N2200-PAC-400W (Blue) N2200-PAC-400W-B (Red)	N2200-PDC-400W (Blue) N2200-PDC-350W-B	NXA-PHV-500W (Blue) NXA-PHV-500W-B (Red)
Heat Dissipation	560/680 BTU/hr (typical/maximum)	Cisco Nexus 2332TQ: 510/850 BTU/hour (typical/maximum) Cisco Nexus 2348TQ and 2348TQ-E: 952/1190 BTU/hour (typical/maximum) Cisco Nexus 2348UPQ: 425/680 BTU/hour (typical/maximum) Cisco Nexus 2248TP-E and 2248TP: 374/442 BTU/hour (typical/maximum) Cisco Nexus 2232PP: 918BTU/hour (typical) Cisco Nexus 2224TP: 289/340 BTU/hour (typical/maximum) Cisco Nexus 2232TM: 1190/1312 BTU/hour (typical/maximum)		
Power Cord Rating	3 A@100 Vin, 1.5 A@240 Vin	6 A@100 Vin, 3 A@240 Vin	15A@-48Vin, 8A@-60Vin	4A @ 240Vin and 277Vin, 3A@ 380 Vin
Cubic Inches	51 in^3	39 in^3	39 in^3	39 in^3
Power Density	3.9 W/in^3	10.2 W/in^3	10.2 W/in^3	10.2 W/in^3
Operating Temperature	50°C	50°C	50°C	50°C
Cooling	Internal fans to cool the supply	Internal fans to cool the supply	Internal fans to cool the supply	Internal fans to cool the supply
Input connector	AC connector in the power supply face	AC connector in the power supply face	DC connector in the power supply face	HVAC + HVDC connector in the power supply face
Output connector	DC output connector in the back	DC output connector in the back	DC output connector in the back	DC output connector in the back
Supply Indicators	Supply Health: Green indicates the power supply is operational and red indicates a fault. AC good indicator: Solid green indicates that AC is present and is within the supply specifications.	Supply Health: Green indicates the power supply is operational and amber indicates a fault. AC good indicator: Solid green indicates that AC is present and is within the supply specifications.	Supply Health: Green indicates the power supply is operational and amber indicates a fault.	Supply Health: Green indicates the power supply is operational and amber indicates a fault.

Environmental Specifications

Table B-2 lists the environmental specifications for a FEX.

Table B-2   Environmental Specifications for the Cisco Nexus Fabric Extender

Description	Specification
Temperature, operating	32 to 104°F (0 to 40°C); 32 to 131°F (0 to 55°C) for the Cisco Nexus 2348TQ, 2348TQ-E, and 2348UPQ
Temperature, nonoperating	–4 to 158°F (–20 to 70°C); –40 to 158°F (–40 to 70°C) for the Cisco Nexus 2348TQ, 2348TQ-E, and 2348UPQ
Humidity (RH), noncondensing	5 to 95%
Altitude	0 to 10000 ft (0 to 3000 m)

The Cisco Nexus 2332TQ, 2348TQ, 2348TQ-E, 2348UPQ, 2232PP, 2232TM, and 2248TP-ETP FEXs can operate in a horizontal or vertical rack mount configuration.

Physical Specifications

Table B-3 lists the dimensions and weights for the Cisco Nexus Fabric Extenders.

Table B-3   Physical Specifications for Installing the Cisco Nexus Fabric Extender

Cisco Nexus Fabric Extender	Dimensions (Height x Width x Depth)[1]		Weight[2]
	Inches	Centimeters	
Cisco Nexus 2332TQ chassis	1.72 x 17.3 x 14.05 in.	4.37 x 43.94 x 35.69 cm	15.0 lb (6.8 kg)
Power supply Fan tray	— —	— —	2.2 lb (1.0 kg) 1.4 lb (0.6 kg)
Cisco Nexus 2348TQ chassis	1.72 x 17.3 x 17.07 in.	4.37 x 43.94 x 43.36 cm	17.0 lb (7.7 kg)
Power supply Fan tray	— —	— —	2.2 lb (1.0 kg) 1.4 lb (0.6 kg)
Cisco Nexus 2348TQ-E chassis	1.72 x 17.3 x 17.07 in.	4.37 x 43.94 x 43.36 cm	17.0 lb (7.7 kg)
Power supply Fan tray	— —	— —	2.2 lb (1.0 kg) 1.4 lb (0.6 kg)
Cisco Nexus 2348UPQ chassis	1.72 x 17.3 x 14.05 in.	4.37 x 43.94 x 35.69 cm	15.5 lb (7.0 kg)
Power supply Fan tray	— —	— —	2.2 lb (1.0 kg) 1.4 lb (0.6 kg)
Cisco Nexus 2248TP-E chassis	1.72 x 17.3 x 17.7 in.	4.37 x 43.94 x 44.96 cm	17.7 lb (8.03 kg)
Power supply Fan tray	— —	— —	2.2 lb (1.0 kg) 1.4 lb (0.6 kg)
Cisco Nexus 2248TP chassis	1.72 x 17.3 x 17.7 in.	4.37 x 43.94 x 44.96 cm	17.7 lb (8.03 kg)

Table B-3   Physical Specifications for Installing the Cisco Nexus Fabric Extender

| Cisco Nexus Fabric Extender | Dimensions (Height x Width x Depth)[1] | | Weight[2] |
	Inches	Centimeters	
Power supply Fan tray	— —	— —	2.2 lb (1.0 kg) 1.4 lb (0.6 kg)
Cisco Nexus 2248PQ chassis	1.72 x 17.3 x 17.7 in.	4.37 x 43.94 x 44.96 cm	17.5 lb (8.0 kg)
Power supply Fan tray	— —	— —	2.2 lb (1.0 kg) 1.8 lb (0.8 kg)
Cisco Nexus 2232PP chassis	1.72 x 17.3 x 17.7 in.	4.37 x 43.94 x 44.96 cm	18.3 lb (8.3 kg)
Power supply Fan tray	— —	— —	2.2 lb (1.0 kg) 1.8 lb (0.8 kg)
Cisco Nexus 2224TP chassis	1.72 x 17.3 x 17.7 in.	4.37 x 43.94 x 44.96 cm	16.6 lb (1.0 kg)
Power supply Fan tray	— —	— —	2.2 lb (1.0 kg) 1.4 lb (0.6 kg)
Cisco Nexus 2148T chassis	1.72 x 17.3 x 20.0 in.	4.37 x 43.94 x 50.8 cm	18.0 lb (8.2 kg)
Power supply Fan tray	— —	— —	1.5 lb (0.7 kg) 1.5 lb (0.7 kg)
Cisco Nexus 2232TM chassis	1.72 x 17.3 x 17.7 in.	4.37 x 43.94 x 44.96 cm	18.5 lb (8.4 kg)
Power supply Fan tray	— —	— —	2.2 lb (1.0 kg) 1.8 lb (0.8 kg)

1. Dimensions are presented for only the chassis rack size and service clearance requirements.

2. Combine the chassis, power supply, and fan tray weights for the overall weight of the switch to be installed. Remember to double the power supply weights if there are two power supplies installed in the FEX.

Transceiver Specifications

For information about Cisco transceiver modules, refer to the *Cisco Transceiver Modules Datasheet*.

Airflow Optimization Accessories

This section describes the airflow optimization accessories for the Cisco Nexus FEX.

For the details of the Cisco Nexus airflow extension sleeve and the Cisco Nexus airflow vent, see Table B-4.

Table B-4   Airflow Optimization Accessories

Accessories	Airflow Extension Sleeve	Airflow Vent
PID	NXA-AIRFLOW-SLV (2200 Series) NXA-AIRFLOW-SLV-E (2300 Series)	NXA-ACC-KIT-BAV (applies to all models except the Cisco Nexus 2348UPQ)
Name	Cisco Nexus Airflow Extension Sleeve	Cisco Nexus Airflow Vent

Table B-4   *Airflow Optimization Accessories*

Accessories	Airflow Extension Sleeve	Airflow Vent
Description	Optimizes airflow in port side exhaust airflow deployments (port side exhaust) for alignment of port in back of rack and extension of power supply side of chassis to port side exhaust of rack with airflow sleeve	Optimizes airflow in port side intake top of rack deployments (port side intake). Airflow vent consists of metallic cover to place on the upper exhaust of the FEX port side and mounting rails with snap on holes for airflow vent.
Dimensions (height x width x depth)	1.72" (1RU) x 17.3" x 8.5"(fully retracted)* or 12.9"(fully extended)* *Adjustable depth for the FEX, between 26 and 30 inches	Vent cover is part of the mounting hardware kit and its size is meaningless to overall form factor of the chassis: 0.42" x 17.53" x 2.56"
Weight	5.7 lbs or 2.6 kg	0.42 lbs or 0.19 kg