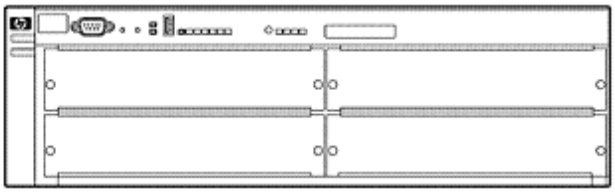
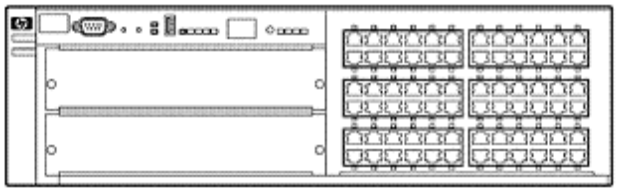
Overview

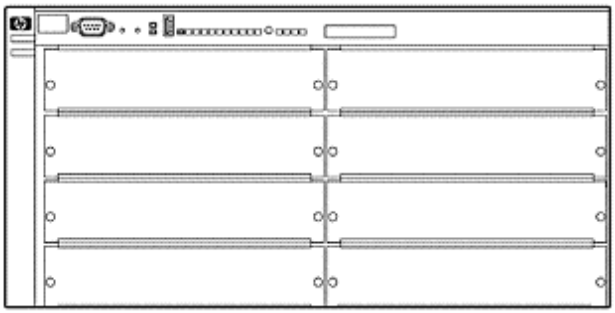
HP 4200 vl Switch Series



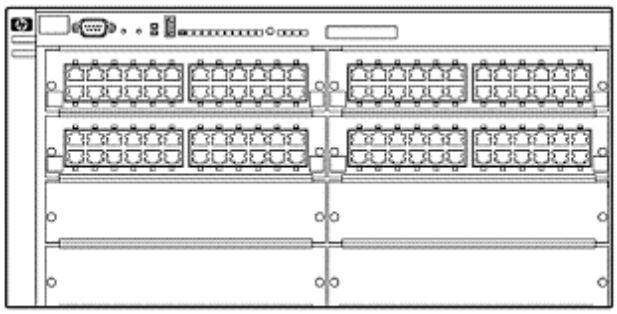
HP 4204 vl Switch Chassis



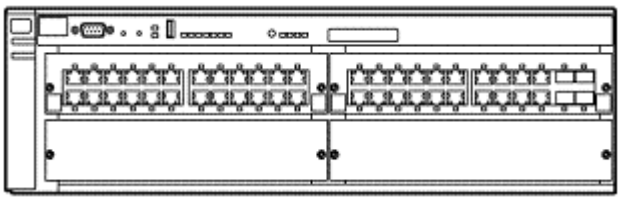
HP 4202-72 vl Switch



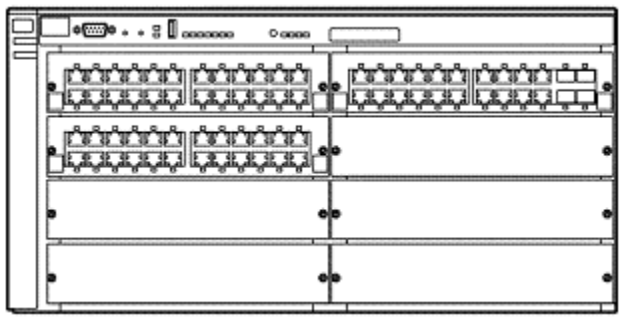
HP 4208 vl Switch Chassis



HP 4208-96 vl Switch



HP 4204-44G-4SFP vl Switch



HP 4208-68G-4SFP vl Switch

Models

HP 4204 vl Switch Chassis	J8770A
HP 4202-72 vl Switch	J8772B
HP 4208 vl Switch Chassis	J8773A
HP 4208-96 vl Switch	J8775B
HP 4204-44G-4SFP vl Switch	J9064A
HP 4208-68G-4SFP vl Switch	J9030A

Key features

- Access layer
- Layer 2 plus Static IP routing
- Scalable 10/100/1000 connectivity
- 10-GbE uplinks

Product overview

Overview

The HP 4200 vl Switch Series consists of modular chassis that provide a flexible, cost-effective LAN solution as an alternative to stackables. These switches offer a proven chassis form factor with high quality and reliability in 10/100, 10/100/1000, and 10-Gigabit scalable solutions that integrate easily into any network.

Features and Benefits

Quality of Service (QoS)

- **Traffic prioritization** (IEEE 802.1p): allows real-time traffic classification into eight priority levels mapped to eight queues
- **Class of Service** (CoS): sets the IEEE 802.1p priority tag based on IP address, IP Type of Service (ToS), Layer 3 protocol, TCP/UDP port number, source port, and DiffServ
- **Layer 4 prioritization**: enables prioritization based on TCP/UDP port numbers

Management

- **Uni-Directional Link Detection** (UDLD): monitors cable between two switches and shuts down the ports on both ends if the cable is broken, turning the bi-directional link into uni-directional; this prevents network problems such as loops

Connectivity

- **Auto-MDIX**: automatically adjusts for straight-through or crossover cables on all 10/100 and 10/100/1000 ports

Performance

- **Architecture**: up to 76.8 Gbps crossbar switching fabric provides wire-speed intra- and inter-module switching with up to 48 million pps throughput built on HP custom-designed ASIC technology

Resiliency and high availability

- **IEEE 802.3ad Link Aggregation Control Protocol** (LACP) and HP port trunking: support up to 60 trunks, each with up to 8 links (ports) per trunk
- **IEEE 802.1s Multiple Spanning Tree Protocol**: provides high link availability in multiple VLAN environments by allowing multiple spanning trees; encompasses IEEE 802.1D Spanning Tree Protocol and IEEE 802.1w Rapid Spanning Tree Protocol
- **Hot-swappable modules**: permit modules and mini-GBICs to be added or swapped without interrupting the network
- **Optional redundant power supply**: provides uninterrupted power; allows hot-swapping of one of the two supplies when installed

Manageability

- **sFlow** (RFC 3176): wire-speed traffic accounting and monitoring
- **RMON and XRMON**: provide advanced monitoring and reporting capabilities for statistics, history, alarms, and events
- **Dual flash images**: provides independent primary and secondary operating system files for backup while upgrading
- **Multiple configuration files**: allows a configuration file to be stored to flash image
- **Friendly port names**: allow assignment of descriptive names to ports
- **Stacking capability**: single IP address management for a virtual stack of up to 16 switches, including the HP 2500 Series, 2510 Series, 2600 Series, 2800 Series, 2810 Series, 2900 Series, 3400 cl Series, 3500 yl Series, 4200 vl Series, 6108, 6200 yl, and 6400 cl Series Switches
- **Find-Fix-Inform**: finds and fixes common network problems automatically, then informs administrator
- **Software updates**: free downloads from the Web
- **Troubleshooting**: ingress and egress port monitoring enable network problem solving

Overview

Layer 2 switching

- **VLAN support and tagging**: supports IEEE 802.1Q (4,094 VLAN IDs) and 256 VLANs simultaneously
- **GARP VLAN Registration Protocol** (GVRP): allows automatic learning and dynamic assignment of VLANs

Layer 3 routing

- **Basic IP routing**: enables automatic routing to the connected VLANs and up to 16 static routes, including one default route, in IP networks

Security

- **Multiple user authentication methods**:
  - IEEE 802.1X: industry-standard method of user authentication using an IEEE 802.1X supplicant on the client in conjunction with a RADIUS server
  - Web-based authentication: similar to IEEE 802.1X, it provides a browser-based environment to authenticate clients that do not support the IEEE 802.1X supplicant
  - MAC-based authentication: client is authenticated with the RADIUS server based on the client's MAC address
- **Authentication flexibility**:
  - Multiple IEEE 802.1X users per port: provides authentication of up to eight IEEE 802.1X users per port; prevents user "piggybacking" on another user's IEEE 802.1X authentication
- **Dynamic ARP protection**: blocks ARP broadcasts from unauthorized hosts, preventing eavesdropping or theft of network data
- **Port security**: allows access only to specified MAC addresses, which can be learned or specified by the administrator
- **MAC address lockout**: prevents particular configured MAC addresses from connecting to the network
- **Secure File Transfer Protocol** (FTP): allows secure file transfer to and from the switch; protects against unwanted file downloads or unauthorized copying of switch configuration file
- **RADIUS/TACACS+**: eases switch management security administration by using a password authentication server
- **Source-port filtering**: allows only specified ports to communicate with each other
- **Secure Shell** (SSHv2): encrypts all transmitted data for secure, remote command-line interface (CLI) access over IP networks
- **Secure Sockets Layer** (SSL): encrypts all HTTP traffic, allowing secure access to the browser-based management GUI in the switch
- **Switch management logon security**: can require either RADIUS or TACACS+ authentication for secure switch CLI logon
- **Custom banner**: displays security policy when users log in to the switch
- **STP BPDU port protection**: blocks Bridge Protocol Data Units (BPDUs) on ports that do not require BPDUs, preventing forged BPDU attacks

Convergence

- **IP multicast** (data-driven IGMPv3): automatically prevents flooding of IP multicast traffic
- **IEEE 802.1AB Link Layer Discovery Protocol** (LLDP): is an automated device discovery protocol for easy mapping by network management applications
- **LLDP-MED** (Media Endpoint Discovery): is a standard extension of LLDP that stores values for parameters such as QoS and VLAN to automatically configure network devices such as IP phones

Warranty and support

- **Limited Lifetime Warranty v2.0**
  advance hardware replacement with next-business-day delivery (available in most countries). See www.hp.com/networking/warrantysummary for duration details.
- **Electronic and telephone support (for Limited Lifetime Warranty 2.0)**
  limited 24x7 telephone support is available from HP for the first 3 years; limited electronic and business hours telephone

Overview

support is available from HP for the entire warranty period; to reach our support centers, refer to www.hp.com/networking/contact-support; for details on the duration of support provided with your product purchase, refer to www.hp.com/networking/warrantysummary

- **Software releases**
to find software for your product, refer to www.hp.com/networking/support; for details on the software releases available with your product purchase, refer to www.hp.com/networking/warrantysummary

Configuration

Build To Order:

BTO is a standalone unit with no integration. BTO products ship standalone are not part of a CTO or Rack-Shippable solution.

HP 4204 vl Switch Chassis — J8770A — See Configuration Note:2

- 4 Open Module ports
- 1 J4839A HP gl/xl/vl Switch Redundant Pwr Supply included
- 3U - Height

HP 4202-72 vl Switch — J8772B — See Configuration Note:2

- 2 Open Module ports
- 1 J4839A HP gl/xl/vl Switch Redundant Pwr Supply included
- 3U - Height

HP 4208 vl Switch Chassis — J8773A — See Configuration Note:2

- 8 Open Module ports
- 1 J4839A HP gl/xl/vl Switch Redundant Pwr Supply included
- 3U - Height

HP 4208-96 vl Switch — J8775B — See Configuration Note:2

- 8 total Module ports - 4 Open Module ports
- 4 J8765B HP 24-port 10/100-TX vl Module included
- 1 J4839A HP gl/xl/vl Switch Redundant Pwr Supply included
- 5U - Height

HP 4204-44G-4SFP vl Switch — J9064A — See Configuration Note:1, 2

- 4 total Module ports - 2 Open Module ports
- 1 J8768A HP 24-port Gig-T vl Module included
- 1 J9033A HP 20-port Gig-T / 4-port SFP vl Module included
- 4 open mini-GBIC (SFP) slots
- min=0 \ max=4 SFP Transceivers
- 1 J4839A HP gl/xl/vl Switch Redundant Pwr Supply included
- 3U - Height

HP 4208-68G-4SFP vl Switch — J9030A — See Configuration Note:1, 2

- 8 total Module ports - 5 Open Module ports
- 2 J8768A HP 24-port Gig-T vl Module included
- 1 J9033A HP 20-port Gig-T / 4-port SFP vl Module included
- 4 open mini-GBIC (SFP) slots
- min=0 \ max=4 SFP Transceivers
- 1 J4839A HP gl/xl/vl Switch Redundant Pwr Supply included
- 5U - Height

Configuration Rules:

Configuration

Note 1	The following Transceivers install into this switch:	
	HP X121 1G SFP LC SX Transceiver	J4858C
	HP X121 1G SFP LC LX Transceiver	J4859C
	HP X111 100M SFP LC FX Transceiver	J9054C
	HP X121 1G SFP RJ45 T Transceiver	J8177C
	HP X112 100M SFP LC BX-D Transceiver	J9099B
	HP X112 100M SFP LC BX-U Transceiver	J9100B
	HP X121 1G SFP LC LH Transceiver	J4860C
	HP X122 1G SFP LC BX-D Transceiver	J9142B
	HP X122 1G SFP LC BX-U Transceiver	J9143A
	HP X131 10G X2 SC ER Transceiver	J8438A
	HP X130 CX4 Media Converter	J8439A
	HP X131 10G X2 SC SR Transceiver	J8436A
	HP X131 10G X2 SC LR Transceiver	J8437A
	HP X131 10G X2 SC LRM Transceiver	J9144A
Note 2	Localization required. (See Localization Menu for list.)	

Factory Racked Models

HP 4204 vl Switch Chassis — J8770A — See Configuration Note:2

- 4 Open Module ports
- 1 J4839A HP gl/xl/vl Switch Redundant Pwr Supply included
- 3U - Height

HP 4202-72 vl Switch — J8772B — See Configuration Note:2

- 2 Open Module ports
- 1 J4839A HP gl/xl/vl Switch Redundant Pwr Supply included
- 3U - Height

HP 4208 vl Switch Chassis — J8773A — See Configuration Note:2

- 8 Open Module ports
- 1 J4839A HP gl/xl/vl Switch Redundant Pwr Supply included
- 3U - Height

HP 4208-96 vl Switch — J8775B — See Configuration Note:2

- 8 total Module ports - 4 Open Module ports
- 4 J8765B HP 24-port 10/100-TX vl Module included
- 1 J4839A HP gl/xl/vl Switch Redundant Pwr Supply included
- 5U - Height

HP 4204-44G-4SFP vl Switch — J9064A — See Configuration Note:1,2

- 4 total Module ports - 2 Open Module ports
- 1 J8768A HP 24-port Gig-T vl Module included

Configuration

- 1 J9033A HP 20-port Gig-T / 4-port SFP vl Module included
- 4 open mini-GBIC (SFP) slots
- min=0 \ max=4 SFP Transceivers
- 1 J4839A HP gl/xl/vl Switch Redundant Pwr Supply included
- 3U - Height

HP 4208-68G-4SFP vl Switch — J9030A

- 8 total Module ports - 5 Open Module ports — See Configuration Note:1,2
- 2 J8768A HP 24-port Gig-T vl Module included
- 1 J9033A HP 20-port Gig-T / 4-port SFP vl Module included
- 4 open mini-GBIC (SFP) slots
- min=0 \ max=4 SFP Transceivers
- 1 J4839A HP gl/xl/vl Switch Redundant Pwr Supply included
- 5U - Height

Configuration Rules:

Note 1 The following Transceivers install into this switch:

HP X121 1G SFP LC SX Transceiver	J4858C
HP X121 1G SFP LC LX Transceiver	J4859C
HP X111 100M SFP LC FX Transceiver	J9054C
HP X121 1G SFP RJ45 T Transceiver	J8177C
HP X112 100M SFP LC BX-D Transceiver	J9099B
HP X112 100M SFP LC BX-U Transceiver	J9100B
HP X121 1G SFP LC LH Transceiver	J4860C
HP X122 1G SFP LC BX-D Transceiver	J9142B
HP X122 1G SFP LC BX-U Transceiver	J9143A
HP X131 10G X2 SC ER Transceiver	J8438A
HP X130 CX4 Media Converter	J8439A
HP X131 10G X2 SC SR Transceiver	J8436A
HP X131 10G X2 SC LR Transceiver	J8437A
HP X131 10G X2 SC LRM Transceiver	J9144A

Note 2 Localization required. (See Localization Menu for list.)

Enter the following menu selections as integrated to the CTO Model X server above if order is factory built.

Modules

J8770A Only System (std 0 // max=4) User Selection (min 0 / max=4) per Chassis

J8772B Only System (std 0 // max=2) User Selection (min 0 / max=2) per Chassis

J8773B Only System (std 0 // max=8) User Selection (min 0 / max=8) per Chassis

J8775B Only System (std 4 // max=8) User Selection (min 0 / max=4) per Chassis

J9064A Only System (std 2 // max=4) User Selection (min 0 / max=2) per Chassis

Configuration

J9030A Only System (std 3 // max=8) User Selection (min 0 / max=5) per Chassis

HP 12-port 100FX MTRJ vl Module	J8763A
HP 24-port 10/100-TX vl Module	J8765B
HP 24-port Gig-T vl Module	J8768A
HP 4-port Mini-GBIC vl Module	J8776A
• min=0 \ max=4 SFP Transceivers	See Configuration Note:1
HP 20-port Gig-T / 4-port SFP vl Module	J9033A
• min=0 \ max=4 SFP Transceivers	See Configuration Note:1
HP 1-port 10GbE X2 vl Module	J8766A
• min=0 \ max=1 SFP Transceivers	See Configuration Note:1

Configuration Rules:

Note 1	The following Transceivers install into this switch:	
	HP X121 1G SFP LC SX Transceiver	J4858C
	HP X121 1G SFP LC LX Transceiver	J4859C
	HP X111 100M SFP LC FX Transceiver	J9054C
	HP X121 1G SFP RJ45 T Transceiver	J8177C
	HP X112 100M SFP LC BX-D Transceiver	J9099B
	HP X112 100M SFP LC BX-U Transceiver	J9100B

Transceivers

SFP Transceivers

HP X121 1G SFP LC SX Transceiver	J4858C
HP X121 1G SFP LC LX Transceiver	J4859C
HP X111 100M SFP LC FX Transceiver	J9054C
HP X121 1G SFP LC LH Transceiver	J4860C
HP X121 1G SFP RJ45 T Transceiver	J8177C
HP X122 1G SFP LC BX-D Transceiver	J9142B
HP X122 1G SFP LC BX-U Transceiver	J9143B
HP X112 100M SFP LC BX-D Transceiver	J9099B
HP X112 100M SFP LC BX-U Transceiver	J9100B
HP X131 10G X2 SC ER Transceiver	J8438A
HP X131 10G X2 SC SR Transceiver	J8436A
HP X131 10G X2 SC LR Transceiver	J8437A
HP X131 10G X2 SC LRM Transceiver	J9144A

Configuration

Internal Power Supplies

System (std 1 // max=2) User Selection (min 0 / max=1) per Chassis

HP gl/xl/vl Switch Redundant Pwr Supply	J4839A See Configuration Note:2

Configuration Rules

Note 2 Localization required. (See Localization Menu for list.)

Cables

Multi-Mode Cables

HP .5m Multi-mode OM3 LC/LC FC Cable	AJ833A
HP 1m Multi-mode OM3 LC/LC FC Cable	AJ834A
HP 2 m Multimode OM3 LC/LC FC Cable	AJ835A
HP 5 m Multimode OM3 LC/LC FC Cable	AJ836A
HP 15 m Multimode OM3 LC/LC FC Cable	AJ837A
HP 30 m Multimode OM3 LC/LC FC Cable	AJ838A
HP 50 m Multimode OM3 LC/LC FC Cable	AJ839A
HP Premier Flex LC/LC OM4 2f 1m Cbl	QK732A
HP Premier Flex LC/LC OM4 2f 2m Cbl	QK733A
HP Premier Flex LC/LC OM4 2f 5m Cbl	QK734A
HP Premier Flex LC/LC OM4 2f 15m Cbl	QK735A
HP Premier Flex LC/LC OM4 2f 30m Cbl	QK736A
HP Premier Flex LC/LC OM4 2f 50m Cbl	QK737A

Technical Specifications

HP 4204 vl Switch Chassis (J8770A)	**Ports**	4 open module slots Supports a maximum of 96 autosensing 10/100 ports or 96 autosensing 10/100/1000 ports or 16 mini-GBICs or 4 10-GbE ports, or a combination	
	Power supplies	2 power supply slots includes: 1 x J4839A (HP gl/xl/vl Switch Redundant Power Supply)	
	Physical characteristics	**Dimensions**	15.3(d) x 17.4(w) x 5.25(h) in. (38.86 x 44.2 x 13.34 cm) (3U height)
		Weight	20.75 lb. (9.41 kg), Fully loaded
	Memory and processor	**Fabric**	Motorola PowerPC MPC8245 @ 330 MHz, 24 MB flash, 64 MB SDRAM; packet buffer size: 36 MB
	Mounting	Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included); horizontal surface mounting only	
	Performance	**Latency**	<6 µs (FIFO)
		Throughput	Up to 24 million pps
		Switch fabric speed	38.4 Gbps
	Environment	**Operating temperature**	32°F to 104°F (0°C to 40°C)
		Operating relative humidity	15% to 95% @ 104°F (40°C), noncondensing
		Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)
		Nonoperating/Storage relative humidity	15% to 95% @ 149°F (65°C), noncondensing
		Altitude	up to 15,000 ft. (4.6 km)
		Acoustic	Power: 64.2 dB; DIN 45635T.19 per ISO 7779
	Electrical characteristics	**Maximum heat dissipation**	2152 BTU/hr (2270 kJ/hr)
		Voltage	100-127 / 200-240 VAC
		Current	8.2 / 3.8 A
		Maximum power rating	630 W
		Frequency	50 / 60 Hz
		Notes	Maximum power rating and maximum heat dissipation are he worst-case theoretical maximum numbers provided for planning the infrastructure with 100% traffic, all ports plugged in, and all modules populated.
	Safety	CSA 22.2 No. 950; UL 60950; EN 60950	
	Emissions	FCC Class A; VCCI Class A; EN 55022/CISPR 22 Class A; CISPR 22 Class A; EN 55024; IEC/EN 61000-3-2; IEC/EN 61000-3-3	
	Immunity	**EN**	EN 55024, CISPR 24
		ESD	IEC 61000-4-2
		Radiated	IEC 61000-4-3
		EFT/Burst	IEC 61000-4-4
		Surge	IEC 61000-4-5
		Conducted	IEC 61000-4-6
		Power frequency magnetic field	IEC 61000-4-8

Technical Specifications

		Voltage dips and interruptions	IEC 61000-4-11
		Harmonics	EN 61000-3-2, IEC 61000-3-2
		Flicker	EN 61000-3-3, IEC 61000-3-3
	Management		IMC - Intelligent Management Center; command-line interface; Web browser; configuration menu; out-of-band management (DB-9 serial port console); IEEE 802.3 Ethernet MIB; Repeater MIB; Ethernet Interface MIB
	Notes		When using mini-GBICs with this product, mini-GBICs with revision "B" (product number ends with the letter "B", e.g., J4858B, J4859B) or later are required. When using mini-GBICs with this product, mini-GBICs with revision "B" or later (product number ends with the letter "B" or later, e.g., J4858B, J4859C) are required.
	Services		3-year, 4-hour onsite, 13x5 coverage for hardware (UE241E) 3-year, 4-hour onsite, 24x7 coverage for hardware (UE242E) 3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (UE243E) 3-year, 24x7 SW phone support, software updates (UE263E) Installation with minimum configuration, system-based pricing (U4827E) Installation with HP-provided configuration, system-based pricing (U4831E) 4-year, 4-hour onsite, 13x5 coverage for hardware (UR876E) 4-year, 4-hour onsite, 24x7 coverage for hardware (UR877E) 4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UR878E) 4-year, 24x7 SW phone support, software updates (UR879E) 5-year, 4-hour onsite, 13x5 coverage for hardware (UR880E) 5-year, 4-hour onsite, 24x7 coverage for hardware (UR881E) 5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UR882E) 5-year, 24x7 SW phone support, software updates (UR883E) 3 Yr 6 hr Call-to-Repair Onsite (UW347E) 4 Yr 6 hr Call-to-Repair Onsite (UW348E) 5 Yr 6 hr Call-to-Repair Onsite (UW349E) Refer to the HP website at: www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.
HP 4202-72 vl Switch (J8772B)	**Ports**		2 open module slots 72 autosensing 10/100 ports (IEEE 802.3 Type 10Base-T, IEEE 802.3u Type 100Base-TX); Media Type: Auto-MDIX; Duplex: half or full Supports a maximum of 120 autosensing 10/100 ports or 48 Gigabit ports or 8 mini-GBICs or 2 10-GbE ports, or a combination
	Power supplies		2 power supply slots includes: 1 x J4839A (HP gl/xl/vl Switch Redundant Power Supply)
	Physical characteristics	**Dimensions**	15.3(d) x 17.4(w) x 5.25(h) in. (38.86 x 44.2 x 13.34 cm) (3U height)
		Weight	23.81 lb. (10.8 kg), Fully loaded
	Memory and processor	**Fabric**	Motorola PowerPC MPC8245 @ 330 MHz, 24 MB flash, 64 MB SDRAM; packet buffer size: 36 MB

Technical Specifications

Mounting	Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included); horizontal surface mounting only	
Performance	**Latency**	<6 µs (FIFO)
	Throughput	up to 22.4 million pps
	Switch fabric speed	33.6 Gbps
Environment	**Operating temperature**	32°F to 104°F (0°C to 40°C)
	Operating relative humidity	15% to 95% @ 104°F (40°C), noncondensing
	Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)
	Nonoperating/Storage relative humidity	15% to 95% @ 149°F (65°C), noncondensing
	Altitude	up to 15,000 ft. (4.6 km)
	Acoustic	Power: 64.2 dB; DIN 45635T.19 per ISO 7779
Electrical characteristics	**Maximum heat dissipation**	2152 BTU/hr (2270 kJ/hr)
	Voltage	100-127 / 200-240 VAC
	Current	8.2 / 3.8 A
	Maximum power rating	630 W
	Frequency	50 / 60 Hz
	Notes	Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with 100% traffic, all ports plugged in, and all modules populated.
Safety	CSA 22.2 No. 950; UL 60950; EN 60950	
Emissions	FCC Class A; VCCI Class A; EN 55022/CISPR 22 Class A; CISPR 22 Class A; EN 55024; IEC/EN 61000-3-2; IEC/EN 61000-3-3	
Immunity	**EN**	EN 55024, CISPR 24
	ESD	IEC 61000-4-2
	Radiated	IEC 61000-4-3
	EFT/Burst	IEC 61000-4-4
	Surge	IEC 61000-4-5
	Conducted	IEC 61000-4-6
	Power frequency magnetic field	IEC 61000-4-8
	Voltage dips and interruptions	IEC 61000-4-11
	Harmonics	EN 61000-3-2, IEC 61000-3-2
	Flicker	EN 61000-3-3, IEC 61000-3-3
Management	IMC - Intelligent Management Center; command-line interface; Web browser; configuration menu; out-of-band management (DB-9 serial port console); IEEE 802.3 Ethernet MIB; Repeater MIB; Ethernet Interface MIB	
Notes	When using mini-GBICs with this product, mini-GBICs with revision "B" (product number ends with the letter "B", e.g., J4858B, J4859B) or later are required. When using mini-GBICs with this product, mini-GBICs with revision "B" or later (product number ends with the letter "B" or later, e.g., J4858B,	

Technical Specifications

		J4859C) are required.	
	Services	3-year, 4-hour onsite, 13x5 coverage for hardware (UE247E) 3-year, 4-hour onsite, 24x7 coverage for hardware (UE248E) 3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (UE249E) 3-year, 24x7 SW phone support, software updates (UE265E) Installation with minimum configuration, system-based pricing (U4827E) Installation with HP-provided configuration, system-based pricing (U4831E) 4-year, 4-hour onsite, 13x5 coverage for hardware (UR892E) 4-year, 4-hour onsite, 24x7 coverage for hardware (UR893E) 4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UR894E) 4-year, 24x7 SW phone support, software updates (UR895E) 5-year, 4-hour onsite, 13x5 coverage for hardware (UR896E) 5-year, 4-hour onsite, 24x7 coverage for hardware (UR897E) 5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UR898E) 5-year, 24x7 SW phone support, software updates (UR899E) 3 Yr 6 hr Call-to-Repair Onsite (UW353E) 4 Yr 6 hr Call-to-Repair Onsite (UW354E) 5 Yr 6 hr Call-to-Repair Onsite (UW355E) Refer to the HP website at: www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	
HP 4208 vl Switch Chassis (J8773A)	**Ports**	8 open module slots Supports a maximum of 192 autosensing 10/100 ports or 192 autosensing 10/100/1000 ports or 32 mini-GBICs or 4 10-GbE ports, or a combination	
	Power supplies	2 power supply slots includes: 1 x J4839A (HP gl/xl/vl Switch Redundant Power Supply)	
	Physical characteristics	**Dimensions**	15.3(d) x 17.4(w) x 8.75(h) in. (38.86 x 44.2 x 22.23 cm) (5U height)
		Weight	26.85 lb. (12.18 kg), Fully loaded
	Memory and processor	**Fabric**	Motorola PowerPC MPC8245 @ 330 MHz, 24 MB flash, 64 MB SDRAM; packet buffer size: 36 MB
	Mounting	Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included); horizontal surface mounting only	
	Performance	**Latency**	<6 µs (FIFO)
		Throughput	up to 48 million pps
		Switch fabric speed	76.8 Gbps
	Environment	**Operating temperature**	32°F to 104°F (0°C to 40°C)
		Operating relative humidity	15% to 95% @ 104°F (40°C), noncondensing
		Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)
		Nonoperating/Storage relative humidity	15% to 95% @ 149°F (65°C), noncondensing
		Altitude	up to 15,000 ft. (4.6 km)

Technical Specifications

	Acoustic	Power: 63.1 dB; DIN 45635T.19 per ISO 7779
Electrical characteristics	**Maximum heat dissipation**	2152 BTU/hr (2270 kJ/hr)
	Voltage	100-127 / 200-240 VAC
	Current	8.2 / 3.8 A
	Maximum power rating	630 W
	Frequency	50 / 60 Hz
	Notes	Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with 100% traffic, all ports plugged in, and all modules populated.
Safety	CSA 22.2 No. 950; UL 60950; EN 60950	
Emissions	FCC Class A; VCCI Class A; EN 55022/CISPR 22 Class A; CISPR 22 Class A; EN 55024; IEC/EN 61000-3-2; IEC/EN 61000-3-3	
Immunity	**EN**	EN 55024, CISPR 24
	ESD	IEC 61000-4-2
	Radiated	IEC 61000-4-3
	EFT/Burst	IEC 61000-4-4
	Surge	IEC 61000-4-5
	Conducted	IEC 61000-4-6
	Power frequency magnetic field	IEC 61000-4-8
	Voltage dips and interruptions	IEC 61000-4-11
	Harmonics	EN 61000-3-2, IEC 61000-3-2
	Flicker	EN 61000-3-3, IEC 61000-3-3
Management	IMC - Intelligent Management Center; command-line interface; Web browser; configuration menu; out-of-band management (DB-9 serial port console); IEEE 802.3 Ethernet MIB; Repeater MIB; Ethernet Interface MIB	
Notes	When using mini-GBICs with this product, mini-GBICs with revision "B" (product number ends with the letter "B", e.g., J4858B, J4859B) or later are required. When using mini-GBICs with this product, mini-GBICs with revision "B" or later (product number ends with the letter "B" or later, e.g., J4858B, J4859C) are required.	
Services	3-year, 4-hour onsite, 13x5 coverage for hardware (UE244E) 3-year, 4-hour onsite, 24x7 coverage for hardware (UE245E) 3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (UE246E) 3-year, 24x7 SW phone support, software updates (UF787E) Installation with minimum configuration, system-based pricing (U4827E) Installation with HP-provided configuration, system-based pricing (U4831E) 4-year, 4-hour onsite, 13x5 coverage for hardware (UR908E) 4-year, 4-hour onsite, 24x7 coverage for hardware (UR909E) 4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UR910E) 4-year, 24x7 SW phone support, software updates (UR911E) 5-year, 4-hour onsite, 13x5 coverage for hardware (UR912E)	

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		5-year, 4-hour onsite, 24x7 coverage for hardware (UR913E) 5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UR914E) 5-year, 24x7 SW phone support, software updates (UR915E) 3 Yr 6 hr Call-to-Repair Onsite (UW350E) 4 Yr 6 hr Call-to-Repair Onsite (UW351E) 5 Yr 6 hr Call-to-Repair Onsite (UW352E) Refer to the HP website at: www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	
HP 4208-96 vl Switch (J8775B)	**Included accessories**	4 HP 24-port 10/100-TX vl Modules (J8765B)	
	Ports	4 open module slots	
		96 autosensing 10/100 ports (IEEE 802.3 Type 10Base-T, IEEE 802.3u Type 100Base-TX); Media Type: Auto-MDIX; Duplex: half or full	
		Supports a maximum of 192 autosensing 10/100 ports or 96 autosensing 10/100/1000 ports or 16 mini-GBICs or 4 10-GbE ports, or a combination	
	Power supplies	2 power supply slots includes: 1 x J4839A (HP gl/xl/vl Switch Redundant Power Supply)	
	Physical characteristics	**Dimensions**	15.3(d) x 17.4(w) x 8.75(h) in. (38.86 x 44.2 x 22.23 cm) (5U height)
		Weight	32.3 lb. (14.65 kg), Fully loaded
	Memory and processor	**Fabric**	Motorola PowerPC MPC8245 @ 330 MHz, 24 MB flash, 64 MB SDRAM; packet buffer size: 36 MB
	Mounting	Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included); horizontal surface mounting only	
	Performance	**Latency**	<6 µs (FIFO)
		Throughput	up to 48 million pps
		Switch fabric speed	76.8 Gbps
	Environment	**Operating temperature**	32°F to 104°F (0°C to 40°C)
		Operating relative humidity	15% to 95% @ 104°F (40°C), noncondensing
		Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)
		Nonoperating/Storage relative humidity	15% to 95% @ 149°F (65°C), noncondensing
		Altitude	up to 15,000 ft. (4.6 km)
		Acoustic	Power: 64.2 dB; DIN 45635T.19 per ISO 7779
	Electrical characteristics	**Maximum heat dissipation**	2152 BTU/hr (2270 kJ/hr)
		Voltage	100-127 / 200-240 VAC
		Current	8.2 / 3.8 A
		Maximum power rating	630 W
		Frequency	50 / 60 Hz
		Notes	Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with 100% traffic, all ports

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		plugged in, and all modules populated.
Safety	CSA 22.2 No. 950; UL 60950; EN 60950	
Emissions	FCC Class A; VCCI Class A; EN 55022/CISPR 22 Class A; CISPR 22 Class A; EN 55024; IEC/EN 61000-3-2; IEC/EN 61000-3-3	
Immunity	**EN**	EN 55024, CISPR 24
	ESD	IEC 61000-4-2
	Radiated	IEC 61000-4-3
	EFT/Burst	IEC 61000-4-4
	Surge	IEC 61000-4-5
	Conducted	IEC 61000-4-6
	Power frequency magnetic field	IEC 61000-4-8
	Voltage dips and interruptions	IEC 61000-4-11
	Harmonics	EN 61000-3-2, IEC 61000-3-2
	Flicker	EN 61000-3-3, IEC 61000-3-3
Management	IMC - Intelligent Management Center; command-line interface; Web browser; configuration menu; out-of-band management (DB-9 serial port console); IEEE 802.3 Ethernet MIB; Repeater MIB; Ethernet Interface MIB	
Notes	When using mini-GBICs with this product, mini-GBICs with revision "B" (product number ends with the letter "B", e.g., J4858B, J4859B) or later are required. When using mini-GBICs with this product, mini-GBICs with revision "B" or later (product number ends with the letter "B" or later, e.g., J4858B, J4859C) are required.	
Services	3-year, 4-hour onsite, 13x5 coverage for hardware (UE244E) 3-year, 4-hour onsite, 24x7 coverage for hardware (UE245E) 3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (UE246E) 3-year, 24x7 SW phone support, software updates (UF787E) Installation with minimum configuration, system-based pricing (U4827E) Installation with HP-provided configuration, system-based pricing (U4831E) 4-year, 4-hour onsite, 13x5 coverage for hardware (UR908E) 4-year, 4-hour onsite, 24x7 coverage for hardware (UR909E) 4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UR910E) 4-year, 24x7 SW phone support, software updates (UR911E) 5-year, 4-hour onsite, 13x5 coverage for hardware (UR912E) 5-year, 4-hour onsite, 24x7 coverage for hardware (UR913E) 5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UR914E) 5-year, 24x7 SW phone support, software updates (UR915E) 3 Yr 6 hr Call-to-Repair Onsite (UW350E) 4 Yr 6 hr Call-to-Repair Onsite (UW351E) 5 Yr 6 hr Call-to-Repair Onsite (UW352E) Refer to the HP website at: www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	

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HP 4204-44G-4SFP vl Switch (J9064A)	**Included accessories**	1 HP 24-port Gig-T vl Module (J8768A) 1 HP 20-port Gig-T / 4-port SFP vl Module (J9033A)	
	Ports	2 open module slots 44 autosensing 10/100/1000 ports (IEEE 802.3 Type 10Base-T, IEEE 802.3u Type 100Base-TX, IEEE 802.3ab Type 1000Base-T); Media Type: Auto-MDIX; Duplex: 10Base-T/100Base-TX: half or full; 1000Base-T: full only 4 open mini-GBIC (SFP) slots Supports a maximum of 48 autosensing 10/100 ports or 92 autosensing 10/100/1000 ports or 12 mini-GBICs or 2 10-GbE ports, or a combination	
	Power supplies	2 power supply slots includes: 1 x J4839A (HP gl/xl/vl Switch Redundant Power Supply)	
	Physical characteristics	**Dimensions**	15.3(d) x 17.4(w) x 5.25(h) in. (38.86 x 44.2 x 13.34 cm) (3U height)
		Weight	24.45 lb. (11.09 kg), Fully loaded
	Memory and processor	**Fabric**	Motorola PowerPC MPC8245 @ 330 MHz, 24 MB flash, 64 MB SDRAM; packet buffer size: 36 MB
	Mounting	Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included); horizontal surface mounting only	
	Performance	**Latency**	<6 µs (FIFO)
		Throughput	up to 24 million pps
		Switch fabric speed	38.4 Gbps
	Environment	**Operating temperature**	32°F to 104°F (0°C to 40°C)
		Operating relative humidity	15% to 95% @ 104°F (40°C), noncondensing
		Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)
		Nonoperating/Storage relative humidity	15% to 95% @ 149°F (65°C), noncondensing
		Altitude	up to 15,000 ft. (4.6 km)
		Acoustic	Power: 64.2 dB; DIN 45635T.19 per ISO 7779
	Electrical characteristics	**Maximum heat dissipation**	2152 BTU/hr (2270 kJ/hr)
		Voltage	100-127 / 200-240 VAC
		Current	8.2 / 3.8 A
		Maximum power rating	630 W
		Frequency	50 / 60 Hz
		Notes	Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with 100% traffic, all ports plugged in, and all modules populated.
	Safety	CSA 22.2 No. 950; UL 60950; EN 60950	
	Emissions	FCC Class A; VCCI Class A; EN 55022/CISPR 22 Class A; CISPR 22 Class A; EN 55024; IEC/EN 61000-3-2; IEC/EN 61000-3-3	
	Immunity	**EN**	EN 55024, CISPR 24
		ESD	IEC 61000-4-2
		Radiated	IEC 61000-4-3

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	EFT/Burst	IEC 61000-4-4
	Surge	IEC 61000-4-5
	Conducted	IEC 61000-4-6
	Power frequency magnetic field	IEC 61000-4-8
	Voltage dips and interruptions	IEC 61000-4-11
	Harmonics	EN 61000-3-2, IEC 61000-3-2
	Flicker	EN 61000-3-3, IEC 61000-3-3
	Management	IMC - Intelligent Management Center; command-line interface; Web browser; configuration menu; out-of-band management (DB-9 serial port console); IEEE 802.3 Ethernet MIB; Repeater MIB; Ethernet Interface MIB
	Notes	When using mini-GBICs with this product, mini-GBICs with revision "B" (product number ends with the letter "B", e.g., J4858B, J4859B) or later are required. When using mini-GBICs with this product, mini-GBICs with revision "B" or later (product number ends with the letter "B" or later, e.g., J4858B, J4859C) are required.
	Services	3-year, 4-hour onsite, 13x5 coverage for hardware (UE241E) 3-year, 4-hour onsite, 24x7 coverage for hardware (UE242E) 3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (UE243E) 3-year, 24x7 SW phone support, software updates (UE263E) Installation with minimum configuration, system-based pricing (U4827E) Installation with HP-provided configuration, system-based pricing (U4831E) 4-year, 4-hour onsite, 13x5 coverage for hardware (UR876E) 4-year, 4-hour onsite, 24x7 coverage for hardware (UR877E) 4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UR878E) 4-year, 24x7 SW phone support, software updates (UR879E) 5-year, 4-hour onsite, 13x5 coverage for hardware (UR880E) 5-year, 4-hour onsite, 24x7 coverage for hardware (UR881E) 5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UR882E) 5-year, 24x7 SW phone support, software updates (UR883E) 3 Yr 6 hr Call-to-Repair Onsite (UW347E) 4 Yr 6 hr Call-to-Repair Onsite (UW348E) 5 Yr 6 hr Call-to-Repair Onsite (UW349E) Refer to the HP website at: www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.
HP 4208-68G-4SFP vl Switch (J9030A)	**Included accessories**	2 HP 24-port Gig-T vl Modules (J8768A) 1 HP 20-port Gig-T / 4-port SFP vl Module (J9033A)
	Ports	5 open module slots 68 autosensing 10/100/1000 ports (IEEE 802.3 Type 10Base-T, IEEE 802.3u Type 100Base-TX, IEEE 802.3ab Type 1000Base-T); Media Type: Auto-MDIX; Duplex: 10Base-T/100Base-TX: half or full; 1000Base-T: full only

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	4 open mini-GBIC (SFP) slots	
	Supports a maximum of 120 autosensing 10/100 ports or 188 autosensing 10/100/1000 ports or 24 mini-GBICs or 4 10-GbE ports, or a combination	
Power supplies	2 power supply slots includes: 1 x J4839A (HP gl/xl/vl Switch Redundant Power Supply)	
Physical characteristics	**Dimensions**	15.3(d) x 17.4(w) x 8.75(h) in. (38.86 x 44.2 x 22.23 cm) (5U height)
	Weight	30.88 lb. (14.01 kg), Fully loaded
Memory and processor	**Fabric**	Motorola PowerPC MPC8245 @ 330 MHz, 24 MB flash, 64 MB SDRAM; packet buffer size: 36 MB
Mounting	Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included); horizontal surface mounting only	
Performance	**Latency**	<6 µs (FIFO)
	Throughput	up to 48 million pps
	Switch fabric speed	76.8 Gbps
Environment	**Operating temperature**	32°F to 104°F (0°C to 40°C)
	Operating relative humidity	15% to 95% @ 104°F (40°C), noncondensing
	Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)
	Nonoperating/Storage relative humidity	15% to 95% @ 149°F (65°C), noncondensing
	Altitude	up to 15,000 ft. (4.6 km)
	Acoustic	Power: 64.2 dB; DIN 45635T.19 per ISO 7779
Electrical characteristics	**Maximum heat dissipation**	2152 BTU/hr (2270 kJ/hr)
	Voltage	100-127 / 200-240 VAC
	Current	8.2 / 3.8 A
	Maximum power rating	630 W
	Frequency	50 / 60 Hz
	Notes	Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with 100% traffic, all ports plugged in, and all modules populated.
Safety	CSA 22.2 No. 950; UL 60950; EN 60950	
Emissions	FCC Class A; VCCI Class A; EN 55022/CISPR 22 Class A; CISPR 22 Class A; EN 55024; IEC/EN 61000-3-2; IEC/EN 61000-3-3	
Immunity	**EN**	EN 55024, CISPR 24
	ESD	IEC 61000-4-2
	Radiated	IEC 61000-4-3
	EFT/Burst	IEC 61000-4-4
	Surge	IEC 61000-4-5
	Conducted	IEC 61000-4-6
	Power frequency magnetic field	IEC 61000-4-8
	Voltage dips and interruptions	IEC 61000-4-11

Technical Specifications

	Harmonics	EN 61000-3-2, IEC 61000-3-2
	Flicker	EN 61000-3-3, IEC 61000-3-3
Management	IMC - Intelligent Management Center; command-line interface; Web browser; configuration menu; out-of-band management (DB-9 serial port console); IEEE 802.3 Ethernet MIB; Repeater MIB; Ethernet Interface MIB	
Notes	When using mini-GBICs with this product, mini-GBICs with revision "B" (product number ends with the letter "B", e.g., J4858B, J4859B) or later are required. When using mini-GBICs with this product, mini-GBICs with revision "B" or later (product number ends with the letter "B" or later, e.g., J4858B, J4859C) are required.	
Services	3-year, 4-hour onsite, 13x5 coverage for hardware (UE244E) 3-year, 4-hour onsite, 24x7 coverage for hardware (UE245E) 3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (UE246E) 3-year, 24x7 SW phone support, software updates (UF787E) Installation with minimum configuration, system-based pricing (U4827E) Installation with HP-provided configuration, system-based pricing (U4831E) 4-year, 4-hour onsite, 13x5 coverage for hardware (UR908E) 4-year, 4-hour onsite, 24x7 coverage for hardware (UR909E) 4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UR910E) 4-year, 24x7 SW phone support, software updates (UR911E) 5-year, 4-hour onsite, 13x5 coverage for hardware (UR912E) 5-year, 4-hour onsite, 24x7 coverage for hardware (UR913E) 5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UR914E) 5-year, 24x7 SW phone support, software updates (UR915E) 3 Yr 6 hr Call-to-Repair Onsite (UW350E) 4 Yr 6 hr Call-to-Repair Onsite (UW351E) 5 Yr 6 hr Call-to-Repair Onsite (UW352E) Refer to the HP website at: www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	
Standards and protocols (applies to all products in series)	**Device management** HTML and telnet management **General protocols** IEEE 802.1D MAC Bridges IEEE 802.1p Priority IEEE 802.1Q VLANs IEEE 802.1s Multiple Spanning Trees IEEE 802.1w Rapid Reconfiguration of Spanning Tree IEEE 802.3ad Link Aggregation Control Protocol (LACP) IEEE 802.3x Flow Control RFC 768 UDP RFC 783 TFTP Protocol (revision 2) RFC 791 IP RFC 792 ICMP RFC 793 TCP RFC 826 ARP	

RFC 854 TELNET
RFC 1542 BOOTP Extensions
RFC 2030 Simple Network Time Protocol (SNTP) v4
RFC 3046 DHCP Relay Agent Information Option

IP multicast
RFC 3376 IGMPv3

MIBs
RFC 1213 MIB II
RFC 1493 Bridge MIB
RFC 2613 SMON MIB
RFC 2618 RADIUS Client MIB
RFC 2665 Ethernet-Like-MIB
RFC 2668 802.3 MAU MIB
RFC 2737 Entity MIB (Version 2)

Network management
IEEE 802.1AB Link Layer Discovery Protocol (LLDP)
RFC 1757 RMON 4 groups: Stats, History, Alarms and Events
RFC 2819 Four groups of RMON: 1 (statistics), 2 (history), 3 (alarm) and 9 (events)
RFC 3164 BSD syslog Protocol
RFC 3176 sFlow
ANSI/TIA-1057 LLDP Media Endpoint Discovery (LLDP-MED)
SNMPv1/v2c/v3
XRMON

QoS/CoS
RFC 2474 DiffServ Precedence, including 8 queues/port
RFC 2597 DiffServ Assured Forwarding (AF)
RFC 2598 DiffServ Expedited Forwarding (EF)

Security
IEEE 802.1X Port Based Network Access Control
RFC 2138 RADIUS Authentication
Secure Sockets Layer (SSL)
SSHv2 Secure Shell

Accessories

HP 4200 vl Switch Series accessories

Modules	HP 24-port 10/100-TX vl Module	J8765B
	HP 24-port Gig-T vl Module	J8768A
	HP 20-port Gig-T / 4-port SFP vl Module	J9033A
	HP 1-port 10GbE X2 vl Module	J8766A
Transceivers	HP X131 10G X2 SC ER Transceiver	J8438A
	HP X131 10G X2 SC SR Transceiver	J8436A
	HP X131 10G X2 CX4 Transceiver	J8440C
	HP X111 100M SFP LC FX Transceiver	J9054C
	HP X131 10G X2 SC LR Transceiver	J8437A
	HP X131 10G X2 SC LRM Transceiver	J9144A
	HP X112 100M SFP LC BX-D Transceiver	J9099B
	HP X112 100M SFP LC BX-U Transceiver	J9100B
	HP X121 1G SFP LC LH Transceiver	J4860C
	HP X121 1G SFP LC SX Transceiver	J4858C
	HP X121 1G SFP LC LX Transceiver	J4859C
	HP X121 1G SFP RJ45 T Transceiver	J8177C
	HP X122 1G SFP LC BX-D Transceiver	J9142B
	HP X122 1G SFP LC BX-U Transceiver	J9143B
Cables	NEW HP 0.5 m Multimode OM3 LC/LC Optical Cable	AJ833A
	NEW HP 1 m Multimode OM3 LC/LC Optical Cable	AJ834A
	NEW HP 2 m Multimode OM3 LC/LC Optical Cable	AJ835A
	NEW HP 5 m Multimode OM3 LC/LC Optical Cable	AJ836A
	NEW HP 15 m Multimode OM3 LC/LC Optical Cable	AJ837A
	NEW HP 30 m Multimode OM3 LC/LC Optical Cable	AJ838A
	NEW HP 50 m Multimode OM3 LC/LC Optical Cable	AJ839A
	NEW HP Premier Flex LC/LC Multi-mode OM4 2 fiber 1m Cable	QK732A
	NEW HP Premier Flex LC/LC Multi-mode OM4 2 fiber 2m Cable	QK733A
	NEW HP Premier Flex LC/LC Multi-mode OM4 2 fiber 5m Cable	QK734A
	NEW HP Premier Flex LC/LC Multi-mode OM4 2 fiber 15m Cable	QK735A
	NEW HP Premier Flex LC/LC Multi-mode OM4 2 fiber 30m Cable	QK736A
	NEW HP Premier Flex LC/LC Multi-mode OM4 2 fiber 50m Cable	QK737A
EPS/RPS	HP gl/xl/vl Switch Redundant Power Supply	J4839A

Accessory Product Details

NOTE: Details are not available for all accessories. The following specifications were available at the time of publication.

HP 24-port 10/100-TX vl Module (J8765B)	**Ports**	24 RJ-45 autosensing 10/100 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX); Media Type: Auto-MDIX; Duplex: half or full	
	Physical characteristics	**Dimensions**	8.97(d) x 8.0(w) x 1.75(h) in. (22.78 x 20.32 x 4.45 cm)
		Weight	1.43 lb. (0.65 kg)
	Cabling	Cable type: 100BASE-TX: Category 5 (or better), 100 Ù differential unshielded twisted pair (UTP) or shielded twisted pair (STP), complying with IEEE 802.3u 100BASE-TX; Maximum distance: • 100 meters	
	Services	Refer to the HP website at: www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	
HP 24-port Gig-T vl Module (J8768A)	**Ports**	24 RJ-45 autosensing 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T); Media Type: Auto-MDIX; Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only	
	Physical characteristics	**Dimensions**	8.97(d) x 8.0(w) x 1.75(h) in. (22.78 x 20.32 x 4.45 cm)
		Weight	1.23 lb. (0.56 kg)
	Cabling	Cable type: 1000BASE-T: Category 5 (5E or better recommended), 100 Ù differential 4 pair unshielded twisted pair (UTP) or shielded twisted pair (STP) balanced, complying with IEEE 802.3ab 1000BASE-T	
	Services	Refer to the HP website at: www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	
HP 20-port Gig-T / 4-port SFP vl Module (J9033A)	**Ports**	4 open mini-GBIC (SFP) slots 20 RJ-45 autosensing 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T); Media Type: Auto-MDIX; Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only	
	Physical characteristics	**Dimensions**	8.97(d) x 8.0(w) x 1.75(h) in. (22.78 x 20.32 x 4.45 cm)
		Weight	1.52 lb. (0.69 kg)
	Cabling	Cable type: 1000BASE-T: Category 5 (5E or better recommended), 100 Ù differential 4 pair unshielded twisted pair (UTP) or shielded twisted pair (STP) balanced, complying with IEEE 802.3ab 1000BASE-T	
	Notes	When using mini-GBICs with this product, mini-GBICs with revision "B" or later (product number ends with the letter "B" or later, e.g. J4858B, J4859C) are required.	
	Services	Refer to the HP website at: www.hp.com/networking/services for details on	

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		the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	
HP 1-port 10GbE X2 vl Module (J8766A)	**Ports**	1 open 10-GbE X2 transceiver slot	
	Physical characteristics	**Dimensions**	8.97(d) x 8(w) x 1.75(h) in. (22.78 x 20.32 x 4.45 cm)
		Weight	1.00 lb. (0.45 kg)
	Environment	**Operating temperature**	32°F to 104°F (0°C to 40°C)
	Notes	Expected throughput is 2.5 to 7 Gbps, depending on packet size. Traffic from single MAC SA to single MAC DA will be at most 1 Gbps. The 4200vl chassis can support upto 4 modules. 2 10G ports can be trunked together, cannot include other port speeds. Available January 1, 2008.	
	Services	Refer to the HP website at: www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	
HP X131 10G X2 SC ER Transceiver (J8438A) HP X131 10G X2 SC ER Transceiver: An X2 format 10-gigabit transceiver with SC connectors using ER technology.	**Ports**	1 SC 10-GbE port (IEEE 802.3ae Type 10GBASE-ER); Duplex: full only	
	Connectivity	**Connector type**	SC
		Wavelength	1550 nm
	Physical characteristics	**Dimensions**	3.48(d) x 1.42(w) x 0.43(h) in. (8.84 x 3.61 x 1.09 cm)
		Weight	0.35 lb. (0.16 kg)
		Transceiver form factor	X2
	Environment	**Operating temperature**	32ºF to 104ºF (0ºC to 40ºC)
		Operating relative humidity	15% to 95%, noncondensing
	Electrical characteristics	**Power consumption typical**	3 W
		Power consumption maximum	4.5 W
	Cabling	Cable type:: Low metal content, single-mode fiber-optic, complying with ITU-T G.652 and ISO/IEC 793-2 Type B1;	
		Cable length	2m to 30km (max 40km on engineered links)
		Fiber type	Single Mode
	Notes	Conditioning patch cord cables are not supported For fiber patch cords, use Ultra Physical Contact (UPC) surface termination/polish. Angled Physical Contact (APC) is not recommended.	
	Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	
HP X131 10G X2 SC SR Transceiver (J8436A)	**Ports**	1 SC 10-GbE port (IEEE 802.3ae Type 10GBASE-SR); Duplex: full only	
	Connectivity	**Connector type**	SC
		Wavelength	850 nm

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HP X131 10G X2 SC SR Transceiver: An X2 format 10-gigabit transceiver with SC connectors using SR technology.	**Physical characteristics**	**Dimensions**	3.48(d) x 1.42(w) x 0.43(h) in. (8.84 x 3.61 x 1.09 cm)
		Weight	0.35 lb. (0.16 kg)
		Transceiver form factor	X2
	Environment	**Operating temperature**	32ºF to 158ºF (0ºC to 70ºC)
		Operating relative humidity	0% to 95%, noncondensing
		Nonoperating/Storage temperature	-40ºF to 185ºF (-40ºC to 85ºC)
		Nonoperating/Storage relative humidity	0% to 95%, noncondensing
		Altitude	up to 10,000 ft. (3 km)
	Electrical characteristics	**Power consumption typical**	1.7 W
		Power consumption maximum	2.4 W
	Cabling	Cable type:: 62.5/125 µm or 50/125 µm (core/cladding) graded-index, low metal content, multimode fiber optic, complying with ITU-T G.651 and ISO/IEC 793-2 Type A1b or A1a, respectively; Maximum distance: • 2-26m with 62.5 µm multimode cable @ 160 MHz*km • 2-33m with 62.5 µm multimode cable @ 200 MHz*km • 2-66m with 50 µm multimode cable @ 400 MHz*km • 2-82m with 50 µm multimode cable @ 500 MHz*km • 2-300m with 50 µm multimode cable @ 2000 MHz*km	
		Cable length	2-300m
		Fiber type	Multi Mode
	Notes	For fiber patch cords, use Ultra Physical Contact (UPC) surface termination/polish. Angled Physical Contact (APC) is not recommended.	
	Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	
HP X131 10G X2 CX4 Transceiver (J8440C) HP X131 10G X2 CX4 Transceiver: An X2 format 10-gigabit CX4 transceiver.	**Ports**	1 CX4 10-GbE port (IEEE 802.3ak Type 10GBASE-CX4); Duplex: full only	
	Connectivity	**Connector type**	CX4
	Physical characteristics	**Dimensions**	3.54(d) x 1.42(w) x 0.53(h) in. (8.99 x 3.61 x 1.35 cm)
		Weight	0.18 lb. (0.08 kg)
		Transceiver form factor	X2
	Environment	**Operating temperature**	32ºF to 131ºF (0ºC to 55ºC)
		Operating relative humidity	15% to 95%, noncondensing
		Nonoperating/Storage temperature	-40ºF to 185ºF (-40ºC to 85ºC)

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		Altitude	up to 10,000 ft. (3 km)
	Electrical characteristics	**Power consumption typical**	1.0 W
		Power consumption maximum	3.3 W
	Cabling	Maximum distance: • 15m with CX4 cables • 300m with optical media converter and multimode fiber cable	
	Notes	Connector: CX4; Duplex: full	
	Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	
HP X111 100M SFP LC FX Transceiver (J9054C) HP X111 100M SFP LC FX Transceiver: An SFP format 100-megabit transceiver with LC connectors using FX technology.	**Ports**	1 LC 100BASE-FX port (IEEE 802.3u Type 100BASE-FX); Duplex: half or full	
	Physical characteristics	Dimensions: 2.7(d) x 0.54(w) x 0.48(h) in. (6.86 x 1.38 x 1.22 cm) Weight: 0.06 lb. (0.03 kg)	
	Environment	Operating temperature: 32ºF to 158ºF (0ºC to 70ºC) Operating relative humidity: 5% to 95% Nonoperating/Storage temperature: -40ºF to 185ºF (-40ºC to 85ºC) Nonoperating/Storage relative humidity: 5% to 85% Altitude: up to 10,000 ft. (3 km)	
	Cabling	Type: • 62.5/125 µm or 50/125 µm (core/cladding) diameter, graded-index, low metal content, multimode fiber optic, complying with ITU-T G.651 and ISO/IEC 793-2 Type A1b or A1a, respectively; Maximum distance: • 2 km (full duplex) or 412 m (half duplex)	
	Notes	Transmitter wavelength: 1310nm Power consumption is 1.1 watt maximum. For supported platforms and minimum software requirements to support this product, see the document titled "Support for the J9054C 100-FX SFP-LC Transceiver" on the "HP Mini-GBICs and SFPs" Manuals Web page.	
	Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	
HP X131 10G X2 SC LR Transceiver (J8437A) An X2 form-factor transceiver that supports the 10-Gigabit LR standard, providing 10-Gigabit connectivity up to 10 km on single-mode	**Ports**	1 SC 10-GbE port (IEEE 802.3ae Type 10GBASE-LR); Duplex: full only	
	Connectivity	**Connector type**	SC
		Wavelength	1310 nm
	Physical characteristics	**Dimensions**	3.48(d) x 1.42(w) x 0.43(h) in. (8.84 x 3.61 x 1.09 cm)
		Weight	0.35 lb. (0.16 kg)
		Transceiver form factor	X2
	Environment	**Operating temperature**	32ºF to 104ºF (0ºC to 40ºC)

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fiber.		**Operating relative humidity**	15% to 95%, noncondensing
		Nonoperating/Storage temperature	-40ºF to 185ºF (-40ºC to 85ºC)
		Altitude	up to 10,000 ft. (3 km)
	Electrical characteristics	**Power consumption typical**	2 W
		Power consumption maximum	3 W
	Cabling	Cable type:: Low metal content, single-mode fiber-optic, complying with ITU-T G.652 and ISO/IEC 793-2 Type B1; Maximum distance: • 10 km	
		Cable length	2m to 10km with 9/125 ìm single-mode cable
		Fiber type	Single Mode
	Notes	Conditioning patch cord cables are not supported For fiber patch cords, use Ultra Physical Contact (UPC) surface termination/polish. Angled Physical Contact (APC) is not recommended	
	Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	
HP X131 10G X2 SC LRM Transceiver (J9144A) An X2 form-factor transceiver that supports the 10-Gigabit LRM standard, providing 10-Gigabit connectivity up to 220 m on legacy multimode fiber.	**Ports**	1 SC 10-GbE port (IEEE 802.3aq Type 10GBASE-LRM); Duplex: full only	
	Physical characteristics	**Dimensions**	3.54(d) x 1.59(w) x 0.7(h) in. (9.0 x 4.05 x 1.78 cm)
		Weight	0.35 lb. (0.16 kg)
		Transceiver form factor	X2
	Environment	**Operating temperature**	32ºF to 158ºF (0ºC to 70ºC)
		Operating relative humidity	0% to 95%, noncondensing
		Nonoperating/Storage temperature	-40ºF to 185ºF (-40ºC to 85ºC)
		Altitude	up to 10,000 ft. (3 km)
	Electrical characteristics	**Power consumption typical**	3.2 W
		Power consumption maximum	4.2 W
	Cabling	Cable type: 62.5/125 µm or 50/125 µm (core/cladding) diameter, graded-index, low metal content, multimode fiber optic, complying with ITU-T G.651 and ISO/IEC 793-2 Type A1b or A1a, respectively (a mode conditioning patch cord may be needed in some multimode fiber installations); Maximum distance: • 0.5-220m with 62.5 µm multimode cable @ 160/500 MHz*km	

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		• 0.5-220m with 62.5 µm multimode cable @ 200/500 MHz*km • 0.5-100m with 50 µm multimode cable @ 400/400 MHz*km • 0.5-220m with 50 µm multimode cable @ 500/500 MHz*km • 0.5-220m with 50 µm multimode cable @ 1500/500 MHz*km	
		Cable length	.5m to 220m
		Fiber type	Multi Mode
	Notes	Wavelength: 1310nm For OM3 cable (50 ìm multimode @ 1500/500 MHz*km), a mode-conditioning patch cord is not required. Other multimode cables may require mode-conditioning patch cords to achieve the maximum distances listed above. For supported platforms and minimum software requirements to support this product, see the document titled "Support for the J9144A 10-GbE X2-SC LRM Optic" on the "HP 10-GbE Transceivers" Manuals Web page. Power Consumption: 4W Max	
	Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	
HP X112 100M SFP LC BX-D Transceiver (J9099B) A small form-factor pluggable (SFP) 100-Megabit BX (bi-directional) "downstream" transceiver that provides 100 Mbps full-duplex connectivity up to 10 km on one strand of singlemode fiber. The J9099B connects to the J9100B "upstream" transceiver, or to any IEEE-standard 100BASE-BX10-U ("upstream") device.	**Ports**	1 LC 100BASE-BX10 port (IEEE 802.3ah Type 100BASE-BX10-D); Duplex: full only	
	Physical characteristics	**Dimensions**	2.7(d) x 0.55(w) x 0.48(h) in. (6.86 x 1.39 x 1.22 cm)
		Weight	0.04 lb. (0.03 kg)
	Environment	**Operating temperature**	32ºF to 158ºF (0ºC to 70ºC)
		Operating relative humidity	0% to 95%, noncondensing
		Nonoperating/Storage temperature	-40ºF to 185ºF (-40ºC to 85ºC)
	Cabling	Type: Single-mode fiber optic, complying with ITU-T G.652; Maximum distance: • 0.5-10,000 m (single-mode fiber)	
	Notes	Transmit wavelength: 1550 nm. Receive wavelength: 1310 nm. Power consumption is 1.1 watt maximum. For supported platforms and minimum software requirements to support this product, see the document titled "Support for the HP BX Transceivers" on the "HP Mini-GBICs and SFPs" Manuals Web page. The J9099B connects to the J9100B "upstream" transceiver, or to any IEEE-standard 100BASE-BX10-U ("upstream") device. (A 100-BX-D transceiver can only connect to a 100-BX-U product. You cannot connect two 100-BX-D transceivers together.)	
	Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	

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HP X112 100M SFP LC BX-U Transceiver (J9100B) A small form-factor pluggable (SFP) 100-Megabit BX (bi-directional) "upstream" transceiver that provides 100 Mbps full-duplex connectivity up to 10 km on one strand of singlemode fiber. The J9100B connects to the J9099B "downstream" transceiver, or to any IEEE-standard 100BASE-BX10-D ("downstream") device.	**Ports**	1 LC 100BASE-BX10 port (IEEE 802.3ah Type 100BASE-BX10-U); Duplex: full only	
	Physical characteristics	**Dimensions**	2.7(d) x 0.55(w) x 0.48(h) in. (6.86 x 1.39 x 1.22 cm)
		Weight	0.07 lb. (.03 kg)
	Environment	**Operating temperature**	32ºF to 158ºF (0ºC to 70ºC)
		Operating relative humidity	0% to 95%, noncondensing
		Nonoperating/Storage temperature	-40ºF to 185ºF (-40ºC to 85ºC)
	Cabling	Type: Single-mode fiber optic, complying with ITU-T G.652; Maximum distance: • 0.5-10,000 m (single-mode fiber)	
	Notes	For supported platforms and minimum software requirements to support this product, see the document titled "Support for the HP BX Transceivers" on the "HP Mini-GBICs and SFPs" Manuals Web page. The J9100B connects to the J9099B "downstream" transceiver, or to any IEEE-standard 100BASE-BX10- D ("downstream") device. (A 100-BX-U transceiver can only connect to a 100-BX-D product. You cannot connect two 100-BX-U transceivers together.) Transmit wavelength: 1310 nm. Receive wavelength: 1550 nm. Power consumption is 1.1 watts maximum.	
	Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	
HP X121 1G SFP LC LH Transceiver (J4860C) A small form-factor pluggable (SFP) Gigabit LH transceiver that provides a full-duplex Gigabit solution up to 70 km on single-mode fiber.	**Ports**	1 LC 1000BASE-LH port (no IEEE standard exists for 1550 nm optics); Duplex: full only	
	Physical characteristics	Dimensions: 2.17(d) x 0.60(w) x 0.46(h) in. (5.5 x 1.53 x 1.18 cm) Weight: 0.04 lb. (0.02 kg)	
	Environment	Operating temperature: -40°F to 185°F (-40°C to 85°C) Operating relative humidity: 0% to 95% @ 77°F (25°C), noncondensing Nonoperating/Storage temperature: -40°F to 185°F (-40°C to 85°C) Altitude: up to 10,000 ft. (3 km)	
	Cabling	Cable type: • Low metal content, single-mode fiber-optic, complying with ITU-T G.652 and ISO/IEC 793-2 Type B1; Maximum distance: • 10-70,000 m (single-mode fiber)	
	Notes	Power consumption is 0.8 watts typical with 1 watt maximum at 100% utilization.	

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		For distances less than 20 km, a 10 dB attenuator must be used. For distances between 20 km and 40 km, a 5 dB attenuator must be used. Attenuators can be purchased from most cable vendors.
	Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.
HP X121 1G SFP LC SX Transceiver (J4858C) A small form-factor pluggable (SFP) Gigabit SX transceiver that provides a full-duplex Gigabit solution up to 550 m on multimode fiber.	**Ports**	1 LC 1000BASE-SX port; Duplex: full only
	Physical characteristics	Dimensions: 2.24(d) x 0.54(w) x 0.48(h) in. (5.69 x 1.37 x 1.22 cm) Weight: 0.04 lb. (0.02 kg) Transceiver form factor: SFP
	Environment	Operating temperature: 32°F to 158°F (0°C to 70°C) Operating relative humidity: 5% to 85%, noncondensing Nonoperating/Storage temperature: -40°F to 203°F (-40°C to 85°C) Altitude: up to 10,000 ft. (3 km)
	Electrical characteristics	Power consumption typical: 0.4 W Power consumption maximum: 0.7 W
	Cabling	Type: • 62.5/125 µm or 50/125 µm (core/cladding) diameter, graded-index, low metal content, multimode fiber optic, complying with ITU-T G.651 and ISO/IEC 793-2 Type A1b or A1a, respectively; Maximum distance: • 2-220 m (62.5 µm core diameter, 160 MHz*km bandwidth • 2-275 m (62.5 µm core diameter, 200 MHz*km bandwidth • 2-500 m (50 µm core diameter, 400 MHz*km bandwidth) • 2-550 m (50 µm core diameter, 500 MHz*km bandwidth) Cable length: 2-550m Fiber type: Multi Mode
	Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.
HP X121 1G SFP LC LX Transceiver (J4859C) HP X121 1G SFP LC LX Transceiver: An SFP format gigabit transceiver with LC connectors using LX technology.	**Ports**	1 LC 1000BASE-LX port (IEEE 802.3z Type 1000BASE-LX); Duplex: full only
	Physical characteristics	Dimensions: 2.24(d) x 0.54(w) x 0.486(h) in. (5.69 x 1.37 x 1.23 cm) Weight:0.04 lb. (0.02 kg)
	Environment	Operating temperature: 32°F to 158°F (0°C to 70°C) Operating relative humidity: 0% to 85%, noncondensing Nonoperating/Storage temperature: -40°F to 212°F (-40°C to 100°C) Altitude: up to 10,000 ft. (3 km)
	Cabling	Type: • Either single mode or multimode; 62.5/125 µm or 50/125 µm (core/cladding) diameter, graded-index, low metal content, multimode fiber optic, complying with ITU-T G.651 and ISO/IEC 793-2 Type A1b or A1a, respectively; Low metal content, single-mode fiber-optic, complying with ITU-T G.652 and ISO/IEC 793-2

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		Type B1; Maximum distance: • 2-550 m (multimode 62.5 µm core diameter, 500 MHz*km bandwidth) • 2-550 m (multimode 50 µm core diameter, 400 MHz*km bandwidth) • 2-550 m (multimode 50 µm core diameter, 500 MHz*km bandwidth) • 2-10,000 m (single-mode fiber)
	Notes	A mode conditioning patch cord may be needed in some multimode fiber installations. Wavelength: 1310nm Power Consumption: < 500mW Typical
	Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.
HP X121 1G SFP RJ45 T Transceiver (J8177C) HP X121 1G SFP RJ45 T Transceiver: An SFP format gigabit transceiver with RJ45 connectors using 1000BaseT technology.	**Ports**	1 RJ-45 1000BASE-T port (IEEE 802.3ab Type 1000BASE-T); Duplex: full only
	Physical characteristics	Dimensions: 2.71(d) x 0.54(w) x 0.55(h) in. (6.88 x 1.37 x 1.4 cm) Weight: 0.06 lb. (0.03 kg)
	Environment	Operating temperature: 32°F to 158°F (0°C to 70°C); with 100 LFM airflow over the SFP module Operating relative humidity: 0% to 95% @ 75°F (25°C), noncondensing Nonoperating/Storage temperature: -40°F to 185°F (-40°C to 85°C) Nonoperating/Storage relative humidity: 0% to 95% @ 77°F (25°C), noncondensing Altitude: up to 10,000 ft. (3000 km)
	Cabling	Cable type: 1000BASE-T: Category 5 (5E or better recommended), 100 Ù differential 4-pair unshielded twisted pair (UTP) or shielded twisted pair (STP) balanced, complying with IEEE 802.3ab 1000BASE-T; Maximum distance: • 100 m
	Notes	Power consumption is nominally 1 watt. For supported platforms and minimum software requirements to support this product, see the document titled "Support for the J8177C 1000Base-T Mini-GBIC" on the "HP Mini-GBICs and SFPs" Manuals Web page. The J8177C Gigabit copper mini-GBIC is not supported on dual-personality ports. The J8177C is capable of 100 Mb operation. This is supported on only the HP E8200zl, E5400zl, and HP E6200-24G-mGBIC yl Switches using

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		software version K.12.21 or later. Use the "auto-100" port setting to enable 100 Mb operation. Important: The earlier J8177B does not support 100 Mb operation. When used in the Switch gl 20-Port 10/100/1000 Module (J4908A), the J8177C mini-GBIC can be installed in either the upper or lower mini-GBIC port, but will block access to the other port.	
	Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	
HP X122 1G SFP LC BX-D Transceiver (J9142B) A small form-factor pluggable (SFP) Gigabit-BX (bi-directional) "downstream" transceiver that provides a full-duplex Gigabit solution up to 10 km on one strand of single-mode fiber. The J9142B connects to the J9143B "upstream" transceiver, or to any IEEE-standard 1000BASE-BX10-U ("upstream") device.	**Ports**	1 LC 1000BASE-BX10 port (IEEE 802.3ah Type 1000BASE-BX10-D); Duplex: full only	
	Physical characteristics	**Dimensions**	2.19(d) x 0.54(w) x 0.46(h) in. (5.57 x 1.37 x 1.18 cm)
		Weight	0.04 lb. (0.02 kg)
	Environment	**Operating temperature**	32ºF to 158ºF (0ºC to 70ºC)
		Operating relative humidity	0% to 95%, non-condensing
		Non-operating/ Storage temperature	–40ºF to 185ºF –40ºC to 85ºC)
	Cabling	Type: Single-mode fiber optic, complying with ITU-T G.652; Maximum distance: • 0.5-10,000 m (single-mode fiber)	
	Notes	Transmit wavelength: 1490 nm. Receive wavelength: 1310 nm. Power consumption is 1 watt maximum. For supported platforms and minimum software requirements to support this product, see the document titled "Support for the HP BX Transceivers" on the "HP Mini-GBICs and SFPs" Manuals Web page. The J9142B connects to the J9143B "upstream" transceiver, or to any IEEE-standard 1000BASE-BX10-U ("upstream") device. (A 1000-BX-D transceiver can only connect to a 1000-BX-U product. You cannot connect two 1000-BX-D transceivers together.)	
	Services	Refer to the HP website at: www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	
HP X122 1G SFP LC BX-U Transceiver (J9143B) A small form-factor pluggable (SFP) Gigabit-BX (bi-directional) "upstream" transceiver that provides a full-duplex Gigabit solution up to 10 km on one strand of	**Ports**	1 LC 1000BASE-BX10 port (IEEE 802.3ah Type 1000BASE-BX10-U); Duplex: full only	
	Physical characteristics	**Dimensions**	2.19(d) x 0.54(w) x 0.46(h) in. (5.57 x 1.37 x 1.18 cm)
		Weight	0.04 lb. (0.02 kg)
	Environment	**Operating temperature**	32ºF to 158ºF (0ºC to 70ºC)
		Operating relative humidity	0% to 95%, non-condensing
		Non-operating/	–40ºF to 185ºF –40ºC to 85ºC)

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single-mode fiber. The J9143B connects to the J9142B "downstream" transceiver, or to any IEEE-standard 1000BASE-BX10-D ("downstream") device.	**Cabling**	**Storage temperature** Type: Single-mode fiber optic, complying with ITU-T G.652; Maximum distance: • 0.5-10,000 m (single-mode fiber)
	Notes	Transmit wavelength: 1310 nm. Receive wavelength: 1490 nm. For supported platforms and minimum software requirements to support this product, see the document titled "Support for the HP BX Transceivers" on the "HP Mini-GBICs and SFPs" Manuals Web page. The J9143B connects to the J9142B "downstream" transceiver, or to any IEEE-standard 1000BASE-BX10-D ("downstream") device. (A 1000-BX-U transceiver can only connect to a 1000-BX-D product. You cannot connect two 1000-BX-U transceivers together.) Power consumption is 1 watt maximum.
	Services	Refer to the HP website at: www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.
HP 0.5 m Multimode OM3 LC/LC Optical Cable (AJ833A)	**Cabling**	**Cable type**: 50/125 µm (core/cladding) diameter, mulitimode fiber optic, with effective modal bandwidth of 2000 MHz/km as detailed in TIA-492AAAC for distances of up to 300 m **Maximum distance**: 10Gbps Transfer Rate (Ethernet): 300m
	Notes	Cable Specs: Tight buffered duplex fiber optic multimode OM3 50/125 um fiber optic cable and Ethernet assembly with LC duplex connectors on one end and LC duplex connectors on other end. • Dimensions: Core diameter: 50 ± 3.0um Cladding diameter: 125 ± 2.0um Coating diameter: 245 ± 10um • Optical glass: Bandwidth: For LED sources: 1500/500 MHz-km @850/1300nm. • Optical glass: Bandwidth: For Laser sources: 2000/500 MHz-km @850/1300nm. VCSEL Laser sources: 600 / 600 meters @850/1300nm for Gigabit Ethernet compliant links. • CABLE: The cable is duplex zipcord graded index 50/125um multimode optical fiber and designed to work in both the 850 and 1300 nm wavelength windows. • BULK CABLE & CABLE ASSEMBLY CONFIGURATION: • Jacket Material: Riser Grade - Low Smoke Zero Halogen thermoplastic. • Jacket Color: Aqua for OM3 multimode per TIA 598 • Boot Color: White • Insertion Loss: less than 0.5 dB @ 850 with LED source, 0.003 dB/M added for lengths > 30 meters. • Maximum Cable attenuation: 3.0 dB/km @ 850 nm, 1.0 dB/Km @ 1310 nm @ 23°C as tested in accordance with EIA 455-46.

		• Weight: Air Packed Weight: 1 LB Net Weight: 0.454Kg
	Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.
HP 1 m Multimode OM3 LC/LC Optical Cable (AJ834A)	**Cabling**	**Cable type**: 50/125 µm (core/cladding) diameter, mulitimode fiber optic, with effective modal bandwidth of 2000 MHz/km as detailed in TIA-492AAAC for distances of up to 300 m **Maximum distance**: 10Gbps Transfer Rate (Ethernet): 300m
	Notes	Cable Specs: Tight buffered duplex fiber optic multimode OM3 50/125 um fiber optic cable and Ethernet assembly with LC duplex connectors on one end and LC duplex connectors on other end. • Dimensions: Core diameter: 50 ± 3.0um Cladding diameter: 125 ± 2.0um Coating diameter: 245 ± 10um • Optical Glass Bandwidth: For LED sources: 1500/500 MHz-km @850/1300nm. • Optical Glass: For Laser sources: 2000/500 MHz-km @850/1300nm. VCSEL Laser sources: Shall achieve 600 / 600 meters @850/1300nm for Gigabit Ethernet compliant links. • CABLE: The cable is duplex zipcord graded index 50/125um multimode optical fiber. The cable is designed to work in both the 850 and 1300 nm wavelength windows. • BULK CABLE & CABLE ASSEMBLY CONFIGURATION: • Jacket Material: Riser Grade - Low Smoke Zero Halogen thermoplastic. • Jacket Color: Aqua for OM3 multimode per TIA 598 • Boot Color: White • Insertion Loss: less than 0.5 dB @ 850 with LED source, 0.003 dB/M added for lengths > 30 meters. • Maximum Cable attenuation: 3.0 dB/km @ 850 nm, 1.0 dB/Km @ 1310 nm @ 23°C as tested in accordance with EIA 455-46. • Weight: Air Packed Weight: 1 LB Net Weight: 0.454Kg
	Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.
HP 2 m Multimode OM3 LC/LC Optical Cable (AJ835A)	**Cabling**	**Cable type**: 50/125 µm (core/cladding) diameter, mulitimode fiber optic, with effective modal bandwidth of 2000 MHz/km as detailed in TIA-492AAAC for distances of up to 300 m; **Maximum distance**: 10Gbps Transfer Rate (Ethernet): 300m
	Notes	Cable Specs: Tight buffered duplex fiber optic multimode OM3 50/125 um fiber optic cable and Ethernet assembly with LC duplex connectors on one

		end and LC duplex connectors on other end. • Dimensions: Core diameter: 50 ± 3.0um Cladding diameter: 125 ± 2.0um Coating diameter: 245 ± 10um • Optical Glass Bandwidth: For LED sources: 1500/500 MHz-km @850/1300nm. • Optical Glass: For Laser sources: 2000/500 MHz-km @850/1300nm. VCSEL Laser sources: Shall achieve 600 / 600 meters @850/1300nm for Gigabit Ethernet compliant links. • CABLE: The cable is duplex zipcord graded index 50/125um multimode optical fiber. The cable is designed to work in both the 850 and 1300 nm wavelength windows. • BULK CABLE & CABLE ASSEMBLY CONFIGURATION: • Jacket Material: Riser Grade - Low Smoke Zero Halogen thermoplastic. • Jacket Color: Aqua for OM3 multimode per TIA 598 • Boot Color: White • Insertion Loss: less than 0.5 dB @ 850 with LED source, 0.003 dB/M added for lengths > 30 meters. • Maximum Cable attenuation: 3.0 dB/km @ 850 nm, 1.0 dB/Km @ 1310 nm @ 23°C as tested in accordance with EIA 455-46. • Weight: Air Packed Weight: 1 LB Net Weight: 0.454Kg
	Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.
HP 5 m Multimode OM3 LC/LC Optical Cable (AJ836A)	**Cabling**	**Cable type**: 50/125 µm core/cladding) diameter, mulitimode fiber optic, with effective modal bandwidth of 2000 MHz/km as detailed in TIA-492AAAC for distances of up to 300 m; **Maximum distance**: 10Gbps Transfer Rate (Ethernet): 300m
	Notes	Cable Specs: This specification defines the detail requirements for a tight buffered duplex fiber optic multimode OM3 50/125 um fiber optic cable and Ethernet assembly with LC duplex connectors on one end and LC duplex connectors on other end. • Dimensions: Core diameter: 50 ± 3.0um Cladding diameter: 125 ± 2.0um Coating diameter: 245 ± 10um • Optical Glass Bandwidth: For LED sources: 1500/500 MHz-km @850/1300nm. • Optical Glass: For Laser sources: 2000/500 MHz-km @850/1300nm. VCSEL Laser sources: Shall achieve 600 / 600 meters @850/1300nm for Gigabit Ethernet compliant links. • CABLE: The cable is duplex zipcord graded index 50/125um multimode optical fiber. The cable is designed to work in both the 850 and 1300 nm wavelength windows. • BULK CABLE & CABLE ASSEMBLY CONFIGURATION: • Jacket Material: Riser Grade - Low Smoke Zero Halogen thermoplastic.

		• Jacket Color: Aqua for OM3 multimode per TIA 598 • Boot Color: White • Insertion Loss: less than 0.5 dB @ 850 with LED source, 0.003 dB/M added for lengths > 30 meters. • Maximum Cable attenuation: 3.0 dB/km @ 850 nm, 1.0 dB/Km @ 1310 nm @ 23°C as tested in accordance with EIA 455-46. • Weight: Air Packed Weight: 1 LB Net Weight: 0.454Kg
	Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.
HP 15 m Multimode OM3 LC/LC Optical Cable (AJ837A)	**Cabling**	**Cable type**: 50/125 µm (core/cladding) diameter, mulitimode fiber optic, with effective modal bandwidth of 2000 MHz/km as detailed in TIA-492AAAC for distances of up to 300 m; **Maximum distance**: 10Gbps Transfer Rate (Ethernet): 300m
	Notes	Cable Specs: Tight buffered duplex fiber optic multimode OM3 50/125 um fiber optic cable and Ethernet assembly with LC duplex connectors on one end and LC duplex connectors on other end. • Dimensions: Core diameter: 50 ± 3.0um Cladding diameter: 125 ± 2.0um Coating diameter: 245 ± 10um • Optical Glass Bandwidth: For LED sources: 1500/500 MHz-km @850/1300nm. • Optical Glass: For Laser sources: 2000/500 MHz-km @850/1300nm. VCSEL Laser sources: Shall achieve 600 / 600 meters @850/1300nm for Gigabit Ethernet compliant links. • CABLE: The cable is duplex zipcord graded index 50/125um multimode optical fiber. The cable is designed to work in both the 850 and 1300 nm wavelength windows. • BULK CABLE & CABLE ASSEMBLY CONFIGURATION: • Jacket Material: Riser Grade - Low Smoke Zero Halogen thermoplastic. • Jacket Color: Aqua for OM3 multimode per TIA 598 • Boot Color: White • Insertion Loss: less than 0.5 dB @ 850 with LED source, 0.003 dB/M added for lengths > 30 meters. • Maximum Cable attenuation: 3.0 dB/km @ 850 nm, 1.0 dB/Km @ 1310 nm @ 23°C as tested in accordance with EIA 455-46. • Weight: Air Packed Weight: 1 LB Net Weight: 0.454Kg
	Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.
HP 30 m Multimode OM3 LC/LC Optical Cable (AJ838A)	**Cabling**	**Cable type**: 50/125 µm (core/cladding) diameter, mulitimode fiber optic, with effective modal bandwidth of 2000 MHz/km as detailed in TIA-492AAAC for

		distances of up to 300 m; **Maximum distance**: 10Gbps Transfer Rate (Ethernet): 300m
	Notes	Cable Specs: Tight buffered duplex fiber optic multimode OM3 50/125 um fiber optic cable and Ethernet assembly with LC duplex connectors on one end and LC duplex connectors on other end. • Dimensions: Core diameter: 50 ± 3.0um Cladding diameter: 125 ± 2.0um Coating diameter: 245 ± 10um • Optical Glass Bandwidth: For LED sources: 1500/500 MHz-km @850/1300nm. • Optical Glass: For Laser sources: 2000/500 MHz-km @850/1300nm. VCSEL Laser sources: Shall achieve 600 / 600 meters @850/1300nm for Gigabit Ethernet compliant links. • CABLE: The cable is duplex zipcord graded index 50/125um multimode optical fiber. The cable is designed to work in both the 850 and 1300 nm wavelength windows. • BULK CABLE & CABLE ASSEMBLY CONFIGURATION: • Jacket Material: Riser Grade - Low Smoke Zero Halogen thermoplastic. • Jacket Color: Aqua for OM3 multimode per TIA 598 • Boot Color: White • Insertion Loss: less than 0.5 dB @ 850 with LED source, 0.003 dB/M added for lengths > 30 meters. • Maximum Cable attenuation: 3.0 dB/km @ 850 nm, 1.0 dB/Km @ 1310 nm @ 23°C as tested in accordance with EIA 455-46. • Weight: Air Packed Weight: 1 LB Net Weight: 0.454Kg
	Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.
HP 50 m Multimode OM3 LC/LC Optical Cable (AJ839A)	**Cabling**	**Cable type**: 50/125 µm (core/cladding) diameter, mulitimode fiber optic, with effective modal bandwidth of 2000 MHz/km as detailed in TIA-492AAAC for distances of up to 300 m; **Maximum distance**: 10Gbps Transfer Rate (Ethernet): 300m
	Notes	Cable Specs: Tight buffered duplex fiber optic multimode OM3 50/125 um fiber optic cable and Ethernet assembly with LC duplex connectors on one end and LC duplex connectors on other end. • Dimensions: Core diameter: 50 ± 3.0um Cladding diameter: 125 ± 2.0um Coating diameter: 245 ± 10um • Optical Glass Bandwidth: For LED sources: 1500/500 MHz-km @850/1300nm. • Optical Glass: For Laser sources: 2000/500 MHz-km @850/1300nm. VCSEL Laser sources: Shall achieve 600 / 600 meters @850/1300nm for Gigabit Ethernet compliant links. • CABLE: The cable is duplex zipcord graded index 50/125um

		multimode optical fiber. The cable is designed to work in both the 850 and 1300 nm wavelength windows. • BULK CABLE & CABLE ASSEMBLY CONFIGURATION: • Jacket Material: Riser Grade - Low Smoke Zero Halogen thermoplastic. • Jacket Color: Aqua for OM3 multimode per TIA 598 • Boot Color: White • Insertion Loss: less than 0.5 dB @ 850 with LED source, 0.003 dB/M added for lengths > 30 meters. • Maximum Cable attenuation: 3.0 dB/km @ 850 nm, 1.0 dB/Km @ 1310 nm @ 23°C as tested in accordance with EIA 455-46. • Weight: Air Packed Weight: 1 LB Net Weight: 0.454Kg
	Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.
HP Premier Flex LC/LC Multi-mode OM4 2 fiber 1m Cable (QK732A)	**Notes**	Cable Specs: Graded-index, "bendable" fiber optic multimode OM3+ 50/125um duplex cable and Ethernet assembly with LC duplex connectors on each end. • Core Diameter: 50um ±3um, Cladding diameter: 125um ±2um; Coating diameter: 245 ± 10um • Bandwidth: 3000 MHz-km @ 850nm (Laser) • Jacket Color: Blue • Jacket Material: Riser Grade – Low Smoke Zero Halogen (LSZH) thermoplastic • Boot Color: White • Outer Jacket Print: HP PremierFlex OM3+ Fiber Optic Cable, 50/125um, Type OFNR (UL), LSZH, cUL, OFN FT4, ROHS. Cable also has a longitudinal white stripe that runs the entire length of the cable. • Insertion Loss: Less than 0.5dB @ 850nm with LED source, 0.003dB/m added for lengths >30m • Maximum Cable Attenuation: 3.0 dB/km @ 850nm, 1.0 dB/km @ 1310nm @ 23°C as tested in accordance with EIA 455-45
	Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.
HP Premier Flex LC/LC Multi-mode OM4 2 fiber 2m Cable (QK733A)	**Notes**	Cable Specs: Graded-index, "bendable" fiber optic multimode OM3+ 50/125um duplex cable and Ethernet assembly with LC duplex connectors on each end. • Core diameter: 50um ±3um, Cladding diameter: 125um ±2um; Coating diameter: 245 ± 10um • Bandwidth: 3000 MHz-km @ 850nm (Laser) • Jacket Color: Blue • Jacket Material: Riser Grade – Low Smoke Zero Halogen (LSZH) thermoplastic • Boot Color: White • Outer Jacket Print: HP PremierFlex OM3+ Fiber Optic Cable, 50/125um, Type OFNR (UL), LSZH, cUL, OFN FT4, ROHS. Cable also has a longitudinal

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		white stripe that runs the entire length of the cable. • Insertion Loss: Less than 0.5dB @ 850nm with LED source, 0.003dB/m added for lengths >30m • Maximum Cable Attenuation: 3.0 dB/km @ 850nm, 1.0 dB/km @ 1310nm @ 23°C as tested in accordance with EIA 455-45
	Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.
HP Premier Flex LC/LC Multi-mode OM4 2 fiber 5m Cable (QK734A)	**Notes**	Cable Specs: Graded-index, "bendable" fiber optic multimode OM3+ 50/125um duplex cable and Ethernet assembly with LC duplex connectors on each end. • Core diameter: 50um ±3um, Cladding diameter: 125um ±2um; Coating diameter: 245 ± 10um • Bandwidth: 3000 MHz-km @ 850nm (Laser) • Jacket Color: Blue • Jacket Material: Riser Grade – Low Smoke Zero Halogen (LSZH) thermoplastic • Boot Color: White • Outer Jacket Print: HP PremierFlex OM3+ Fiber Optic Cable, 50/125um, Type OFNR (UL), LSZH, cUL, OFN FT4, ROHS. Cable also has a longitudinal white stripe that runs the entire length of the cable. • Insertion Loss: Less than 0.5dB @ 850nm with LED source, 0.003dB/m added for lengths >30m • Maximum Cable Attenuation: 3.0 dB/km @ 850nm, 1.0 dB/km @ 1310nm @ 23°C as tested in accordance with EIA 455-45
	Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.
HP Premier Flex LC/LC Multi-mode OM4 2 fiber 15m Cable (QK735A)	**Notes**	Cable Specs: Graded-index, "bendable" fiber optic multimode OM3+ 50/125um duplex cable and Ethernet assembly with LC duplex connectors on each end. • Core diameter: 50um ±3um, Cladding diameter: 125um ±2um; Coating diameter: 245 ± 10um • Bandwidth: 3000 MHz-km @ 850nm (Laser) • Jacket Color: Blue • Jacket Material: Riser Grade – Low Smoke Zero Halogen (LSZH) thermoplastic • Boot Color: White • Outer Jacket Print: HP PremierFlex OM3+ Fiber Optic Cable, 50/125um, Type OFNR (UL), LSZH, cUL, OFN FT4, ROHS. Cable also has a longitudinal white stripe that runs the entire length of the cable. • Insertion Loss: Less than 0.5dB @ 850nm with LED source, 0.003dB/m added for lengths >30m • Maximum Cable Attenuation: 3.0 dB/km @ 850nm, 1.0 dB/km @ 1310nm @ 23°C as tested in accordance with EIA 455-45
	Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP

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		sales office.	
HP Premier Flex LC/LC Multi-mode OM4 2 fiber 30m Cable (QK736A)	**Notes**	Cable Specs: Graded-index, "bendable" fiber optic multimode OM3+ 50/125um duplex cable and Ethernet assembly with LC duplex connectors on each end. • Core diameter: 50um ±3um, Cladding diameter: 125um ±2um; Coating diameter: 245 ± 10um • Bandwidth: 3000 MHz-km @ 850nm (Laser) • Jacket Color: Blue • Jacket Material: Riser Grade – Low Smoke Zero Halogen (LSZH) thermoplastic • Boot Color: White • Outer Jacket Print: HP PremierFlex OM3+ Fiber Optic Cable, 50/125um, Type OFNR (UL), LSZH, cUL, OFN FT4, ROHS. Cable also has a longitudinal white stripe that runs the entire length of the cable. • Insertion Loss: Less than 0.5dB @ 850nm with LED source, 0.003dB/m added for lengths >30m • Maximum Cable Attenuation: 3.0 dB/km @ 850nm, 1.0 dB/km @ 1310nm @ 23°C as tested in accordance with EIA 455-45	
	Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	
HP Premier Flex LC/LC Multi-mode OM4 2 fiber 50m Cable (QK737A)	**Notes**	Cable Specs: Graded-index, "bendable" fiber optic multimode OM3+ 50/125um duplex cable and Ethernet assembly with LC duplex connectors on each end. • Core diameter: 50um ±3um, Cladding diameter: 125um ±2um; Coating diameter: 245 ± 10um • Bandwidth: 3000 MHz-km @ 850nm (Laser) • Jacket Color: Blue • Jacket Material: Riser Grade – Low Smoke Zero Halogen (LSZH) thermoplastic • Boot Color: White • Outer Jacket Print: HP PremierFlex OM3+ Fiber Optic Cable, 50/125um, Type OFNR (UL), LSZH, cUL, OFN FT4, ROHS. Cable also has a longitudinal white stripe that runs the entire length of the cable. • Insertion Loss: Less than 0.5dB @ 850nm with LED source, 0.003dB/m added for lengths >30m • Maximum Cable Attenuation: 3.0 dB/km @ 850nm, 1.0 dB/km @ 1310nm @ 23°C as tested in accordance with EIA 455-45	
	Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	
HP gl/xl/vl Switch Redundant Power Supply (J4839A)	**Physical characteristics**	**Dimensions**	7.9(d) x 6.3(w) x 5.0(h) in. (20.07 x 16.0 x 12.7 cm)
		Weight	5.55 lb. (2.5 kg)
	Electrical characteristics	**Voltage**	100-127/200-240 VAC
		Current	8.2/3.8 A

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	Frequency	50/60 Hz
Notes	For additional RPS specification information, see the data sheet for the product in which the RPS is being installed.	
Services	Refer to the HP website at: www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	

Summary of Changes

Date	Version History	Action	Description of Change:
15-Dec-2014	From Version 20 to 21	Changed	Mentions of HP PCM+ and HP PCM were changed IMC - Intelligent Management Center
01-Dec-2014	From Version 19 to 20	Changed	Warranty and support updated
06-Oct-2014	From Version 18 to 19	Changed	Accessories were updated
03-July-2014	From Version 17 to 18	Changed	Configuration menu updated.
05-Nov-2013	From Version 16 to 17	Added	Configuration was added.
06-Sep-2013	From Version 15 to 16	Changed	Updated the number of power supply slots to two in each model.
10-Jun-2013	From Version 14 to 15	Added	OM4 cables were added.
07-Nov-2011	From Version 13 to 14	Changed	The product name was updated throughout the document.
04-Oct-2011	From Version 12 to 13	Changed	Accessories and Accessory Product Details were revised.
29-Sep-2011	From Version 10 to 12	Added	Accessory Product Details was added.
15-Apr-2011	From Version 9 to 10	Removed	Removed the remaining mentions of ProCurve from the QS.
22-Oct-2010	From Version 8 to 9	Changed	The QuickSpec was completely rewritten, including changing the title.
20-Aug-2009	From Version 7 to 8	Changed	Updated the Accessories section, reordering the section. Also updated the warranty note.
08-Jun-2009	From Version 6 to 7	Changed	Updated the Accessories section, adding several software options.
30-Apr-2009	From Version 5 to 6	Changed	Updated the note in the Electrical Characteristics section of Technical Specifications.
11-Mar-2009	From Version 4 to 5	Changed	Changes were made throughout the QuickSpec. Note the title has changed.
13-Dec-2007	From Version 3 to 4	Changed	Changes were made throughout the QuickSpec.
16-Jul-2006	From Version 2 to 3	Changed	Two models were added, and two others were removed.
18-Aug-2006	From Version 1 to 2	Changed	Changes were made throughout QuickSpec.

Summary of Changes

To learn more, visit: www.hp.com/networking