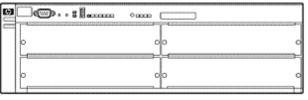
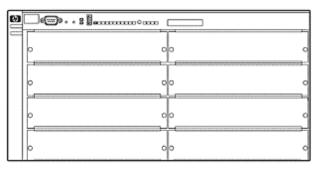
Overview

HP 4200 vl Switch Series

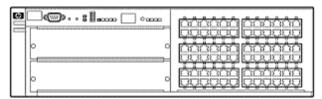


HP 4204 vl Switch Chassis

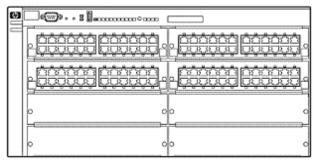


HP 4208 vl Switch Chassis

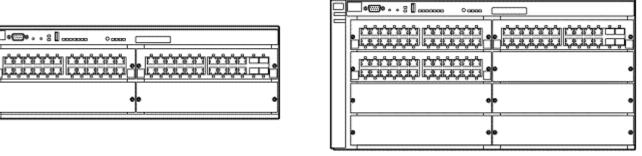
HP 4204-44G-4SFP vl Switch



HP 4202-72 vl Switch



HP 4208-96 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	A0606f

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
- o 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 4 Open Module ports 1 J4839A HP gl/xl/vl Switch Redundant Pwr Supply included 3U - Height 	J8770A See Configuration Note:2
 HP 4202-72 vl Switch 2 Open Module ports 1 J4839A HP gl/xl/vl Switch Redundant Pwr Supply included 3U - Height 	J8772B See Configuration Note:2
 HP 4208 vl Switch Chassis 8 Open Module ports 1 J4839A HP gl/xl/vl Switch Redundant Pwr Supply included 3U - Height 	J8773A See Configuration Note:2
HP 4208-96 vl Switch • 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	J8775B See Configuration Note:2
HP 4204-44G-4SFP vl Switch 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	J9064A See Configuration Note:1, 2
HP 4208-68G-4SFP vl Switch 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 	J9030A See Configuration Note:1, 2

Configuration Rules:



HP 4200 vl Switch Series

Configuration

No. 4	where the first state we are a state of the	
Note 1	The following Transceivers install into this switch:	140505
	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 9	Switch Chassis	J8770A
• 40	ipen Module ports	See Configuration
	4839A HP gl/xl/vl Switch Redundant Pwr Supply included	Note:2
	- Height	
HP 4202-72	l vl Switch	J8772B
• 20	ipen Module ports	See Configuration
• 1 J4	4839A HP gl/xl/vl Switch Redundant Pwr Supply included	Note:2
• 3U	- Height	

HP 4208 vl Switch Chassis

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

HP 4208-96 vl Switch

- 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

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

J8775B See Configuration Note:2

J8773A See Configuration

Note:2



Retired

QuickSpecs

HP 4200 vl Switch Series

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

- 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:

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



J9030A See Configuration Note:1,2

Retired

QuickSpecs

Configuration

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

HP 12-port 100	DFX MTRJ vl Module	J8763A
HP 24-port 10/	/100-TX vl Module	J8765B
HP 24-port Gig	-T vl Module	J8768A
-	-GBIC vl Module) \ max=4 SFP Transceivers	J8776A See Configuration Note:1
	-T / 4-port SFP vl Module) \ max=4 SFP Transceivers	J9033A See Configuration Note:1
•	bE X2 vl Module) \ max=1 SFP Transceivers	J8766A See Configuration Note:1
Configuration F	Rules:	
Note 1	The following Transceivers install into this switch: HP X121 1G SFP LC SX Transceiver HP X121 1G SFP LC LX Transceiver HP X111 100M SFP LC FX Transceiver HP X121 1G SFP RJ45 T Transceiver	J4858C J4859C J9054C J8177C

	3700740
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 HP X121 1G SFP LC LX Transceiver	J4858C 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



J4839A See Configuration Note:2

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

Configuration Rules

Note 2

Localization required. (See Localization Menu for list.)

Cables

Multi-Mode Cables

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



Technical Specifications

HP 4204 vl Switch	Ports	4 open module slots	
Chassis (J8770A)		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 2 power supply slots includes: 1 x J4839A (HP gl/xl/vl Switch Redundant Power Supply)	
	Power supplies		
	Physical characteristics		
		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 included); horizontal surfa	19 in. telco rack or equipment cabinet (hardware ice 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 6095	60; EN 60950
	Emissions	FCC Class A; VCCI Class A; E 55024; IEC/EN 61000-3-2;	:N 55022/CISPR 22 Class A; CISPR 22 Class A; EN ; 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

reenned Speenred			
		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	browser; configuration m	nent Center; command-line interface; Web Ienu; out-of-band management (DB-9 serial port Irnet 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	 J4859C) are required. 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 (UR876E) 4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UR878E) 4-year, 4-hour onsite, 13x5 coverage for hardware, 24x7 software phone (UR878E) 4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UR878E) 5-year, 4-hour onsite, 24x7 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 (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 	
		sales office.	
HP 4202-72 vl Switch	Ports	2 open module slots	
(J8772B)		100Base-TX); Media Type	orts (IEEE 802.3 Type 10Base-T, IEEE 802.3u Type e: Auto-MDIX; Duplex: half or full
		or 8 mini-GBICs or 2 10-G	120 autosensing 10/100 ports or 48 Gigabit ports bE 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



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	2152 BTU/hr (2270 kJ/hr)	
	dissipation		
	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 6095	0; 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,		



HP 4200 vl Switch Series

		J4859C) are required.	
	Services	3-year, 4-hour onsite, 24> 3-year, 4-hour onsite, 24> support (UE249E) 3-year, 24x7 SW phone su Installation with minimum Installation with HP-provi (U4831E) 4-year, 4-hour onsite, 13> 4-year, 4-hour onsite, 24> 4-year, 4-hour onsite, 24> (UR894E) 4-year, 24x7 SW phone su 5-year, 4-hour onsite, 24> 5-year, 24x7 SW phone su 3 Yr 6 hr Call-to-Repair Or 4 Yr 6 hr Call-to-Repair Or 5 Yr 6 hr Call-to-Repair Or Refer to the HP website at the service-level descripti	nsite (UW354E)
H P 4208 vl Switch Chassis (J8773A)	Ports	8 open module slots	02
			92 autosensing 10/100 ports or 192 autosensing 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 included); horizontal surfa	d 19 in. telco rack or equipment cabinet (hardware ace 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)



lions		
	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 6095	0; EN 60950
Emissions	FCC Class A; VCCI Class A; E 55024; IEC/EN 61000-3-2;	N 55022/CISPR 22 Class A; CISPR 22 Class A; EN 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	browser; configuration me	ent Center; command-line interface; Web nu; out-of-band management (DB-9 serial port net 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 a 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, 24x 3-year, 4-hour onsite, 24x support (UE246E) 3-year, 24x7 SW phone sup Installation with minimum Installation with HP-provid (U4831E) 4-year, 4-hour onsite, 13x 4-year, 4-hour onsite, 24x 4-year, 4-hour onsite, 24x (UR910E) 4-year, 24x7 SW phone sup	5 coverage for hardware (UE244E) 7 coverage for hardware (UE245E) 7 coverage for hardware, 24x7 software phone oport, software updates (UF787E) configuration, system-based pricing (U4827E) led configuration, system-based pricing 5 coverage for hardware (UR908E) 7 coverage for hardware (UR909E) 7 coverage for hardware, 24x7 software phone oport, software updates (UR911E) 5 coverage for hardware (UR912E)
		-



Technical Specifica	tions			
		5-year, 4-hour onsite, 24x (UR914E)	nsite (UW351E)	
		the service-level descripti	:: www.hp.com/networking/services for details on ons and product numbers. For details about es in your area, please contact your local HP	
HP 4208-96 vl Switch	Included accessories	4 HP 24-port 10/100-TX v	l Modules (J8765B)	
(J8775B)	Ports	4 open module slots		
			orts (IEEE 802.3 Type 10Base-T, IEEE 802.3u Type : Auto-MDIX; Duplex: half or full	
			92 autosensing 10/100 ports or 96 autosensing mini-GBICs or 4 10-GbE ports, or a combination	
	Power supplies	2 power supply slots includes: 1 x J4839A (HP g	ıl/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	



Technical Specifications

ations		
		plugged in, and all modules populated.
Safety	CSA 22.2 No. 950; UL 6	
Emissions	FCC Class A; VCCI Class	A; EN 55022/CISPR 22 Class A; CISPR 22 Class A; EN 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	browser; configuration	gement Center; command-line interface; Web n menu; out-of-band management (DB-9 serial port thernet MIB; Repeater MIB; Ethernet Interface MIB
Notes		s with this product, mini-GBICs with revision "B" with the letter "B", e.g., J4858B, J4859B) or later are
		s with this product, mini-GBICs with revision "B" or ends with the letter "B" or later, e.g., J4858B,
Services	3-year, 4-hour onsite, 3-year, 4-hour onsite, support (UE246E) 3-year, 24x7 SW phon Installation with minin Installation with HP-pr (U4831E) 4-year, 4-hour onsite, 4-year, 4-hour onsite, 4-year, 4-hour onsite, (UR910E)	 13x5 coverage for hardware (UE244E) 24x7 coverage for hardware (UE245E) 24x7 coverage for hardware, 24x7 software phone e support, software updates (UF787E) num configuration, system-based pricing (U4827E) rovided configuration, system-based pricing 13x5 coverage for hardware (UR908E) 24x7 coverage for hardware (UR909E) 24x7 coverage for hardware, 24x7 software phone e support, software updates (UR911E)
	5-year, 4-hour onsite, 5-year, 4-hour onsite, 5-year, 4-hour onsite, (UR914E) 5-year, 24x7 SW phon 3 Yr 6 hr Call-to-Repai 4 Yr 6 hr Call-to-Repai 5 Yr 6 hr Call-to-Repai Refer to the HP websit the service-level descr	13x5 coverage for hardware (UR912E) 24x7 coverage for hardware (UR913E) 24x7 coverage for hardware, 24x7 software phone e support, software updates (UR915E) r Onsite (UW350E) r Onsite (UW351E)

(III)

sales office.

			. (
HP 4204-44G-4SFP vl Switch (J9064A)	Included accessories	1 HP 24-port Gig-T vl Mod	
JWILCII (J9004A)	. .	1 HP 20-port Gig-T / 4-por	t SFP vl Module (J9033A)
	Ports	2 open module slots	
		802.3u Type 100Base-TX,	000 ports (IEEE 802.3 Type 10Base-T, IEEE IEEE 802.3ab Type 1000Base-T); Media Type: :e-T/100Base-TX: half or full; 1000Base-T: full
		4 open mini-GBIC (SFP) slo	its
		••	8 autosensing 10/100 ports or 92 autosensing mini-GBICs or 2 10-GbE ports, or a combination
	Power supplies	2 power supply slots includes: 1 x J4839A (HP g	l/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 included); horizontal surfa	l 19 in. telco rack or equipment cabinet (hardware nce 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 6095	50; EN 60950
	Emissions	FCC Class A; VCCI Class A; E 55024; IEC/EN 61000-3-2;	EN 55022/CISPR 22 Class A; CISPR 22 Class A; EN ; IEC/EN 61000-3-3
	Immunity	EN	EN 55024, CISPR 24
		ESD	IEC 61000-4-2
		Radiated	IEC 61000-4-3



		FFT/Durat	
		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	browser; configuration r	ement Center; command-line interface; Web menu; out-of-band management (DB-9 serial port iernet MIB; Repeater MIB; Ethernet Interface MIB
	Notes	(product number ends w required. When using mini-GBICs v	with this product, mini-GBICs with revision "B" vith the letter "B", e.g., J4858B, J4859B) or later are with this product, mini-GBICs with revision "B" or nds with the letter "B" or later, e.g., J4858B,
	Services	3-year, 4-hour onsite, 1 3-year, 4-hour onsite, 2 3-year, 4-hour onsite, 2 support (UE243E) 3-year, 24x7 SW phone Installation with minimu Installation with HP-pro (U4831E) 4-year, 4-hour onsite, 1 4-year, 4-hour onsite, 2 4-year, 4-hour onsite, 2 (UR878E) 4-year, 24x7 SW phone 5-year, 4-hour onsite, 2 5-year, 4-hour onsite, 2 (UR882E) 5-year, 24x7 SW phone 3 Yr 6 hr Call-to-Repair (4 Yr 6 hr Call-to-Repair (Onsite (UW348E)
		the service-level descrip	at: www.hp.com/networking/services for details on otions and product numbers. For details about imes in your area, please contact your local HP
HP 4208-68G-4SFP vl	Included accessories	2 HP 24-port Gig-T vl Mo	odules (J8768A)
Switch (J9030A)		1 HP 20-port Gig-T / 4-p	oort SFP vl Module (J9033A)
	Ports	5 open module slots	
		802.3u Type 100Base-T	/1000 ports (IEEE 802.3 Type 10Base-T, IEEE X, IEEE 802.3ab Type 1000Base-T); Media Type: ase-T/100Base-TX: half or full; 1000Base-T: full



HP 4200 vl Switch Series

Supports a maximum of 120 autosensing 10/100 ports or 188 autosensing 10/100/1000 ports or 24 mini-GB(S or 4 10-GbE ports, or a combination 2 power supplies Physical characteristics Dimensions 15.3(d) x17.4(w) x8.75(h) in. (38.86 x 44.2 x 22.23 cm) (SU height) Weight 30.88 lb. (14.01 kg), Fully loaded Fabric Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included); horizontal surface mounting only Performance Latency Gperating temperature Switch fabric speed Operating temperature Switch fabric speed Nonoperating/Storage relative humidity Nonoperating/Storage relative humidity Autitude Maximum heat dissipation dissipation Frequency Sol 25% @ 104°F (40°C to 40°C) Operating relative Nonoperating/Storage relative humidity Nonoperating/Storage relative humidity Autitude Sol 217/200-240 VAC Current Acoustic Sol 217/200-240 VAC Current Sol 25% @ 149°F (65°C), noncondensing Frequency Sol 25% @ 149°F (65°C), noncondensing relative humidity Sol 2152 FU/hr (2270 kJ/hr) dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with 100% traffic, all ports plugged in, and all modules populated. Sol 24. IEC/EN 61000-3-3 Immunity EN Sol 24. IEC/EN 61000-3-3 Immunity EN Sol 24. IEC/EN 61000-3-3 Immunity EN Sol 24. IEC/EN 61000-3-2. IEC/EN 61000-3-3 Immunity EN Sol 24. IEC/EN 61000-3-3 Immunity EN Sol 24. IEC/EN 61000-3-3 Immunity EN Sol 24. IEC/EN 61000-3-3 Immunity EN Sol 24. IEC/EN 61000-3-3 Immunity EN Sol		4 open mini-GBIC (SFP) slots			
includes: 1 x J4839A (HP gl/xl/Vi Switch Redundant Power Supply) Physical characteristics Dimensions Dis.3(d) x 17.4(w) x 8.75(h) in. (38.86 x 44.2 x 22.23 cm) (201 height) Weight 30.88 lb. (14.01 kg), Fully loaded Memory and processor Fabric Houring Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included); horizontal surface mounting Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included); horizontal surface mounting Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included); horizontal surface mounting Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included); horizontal surface mounting Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included); horizontal surface mounting Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included); horizontal surface mounting Values Value		Supports a maximum of 120 autosensing 10/100 ports or 188 autosensing			
Physical characteristics Dimensions 15.3(d) x 17.4(w) x 8.75(h) in. (38.86 x 44.2 x 22.23 cm) (SU 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 relative numbing Nonoperating/Storage -40°F to 158°F (-40°C to 70°C) remerature 15% to 95% @ 104°F (65°C), noncondensing relative humidity Nonoperating/Storage -40°F to 158°F (-40°C to 70°C) relative humidity 15% to 95% @ 149°F (65°C), noncondensing relative humidity Altitude up to 15,000 ft. (4.6 km) Accustic Power: 64.2 dB; DIN 45635T.19 per IS0 7779 Electrical characteristics Maximum heat dissipation are the worst-case theoretical maximum heat dissipation Voltage 100-127 / 200-240 VAC Current 8.2/ 3.8 A Maximu power rating and maximum heat dissipation are the worst-case thecoretical maximum numbers provided for planni	Power supplies				
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 monuting only Performance Latency <6 µs (FIFO)	Physical characteristics	-	15.3(d) x 17.4(w) x 8.75(h) in. (38.86 x 44.2 x		
Mounting Mounts in an EIA-standarl 19 in. telCo rack or equipment cabinet (hardware included); horizontal surface mounting only Performance Latency < 6 µs (FFO)		Weight	-		
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 15% to 95% @ 104°F (40°C), noncondensing humidity 7, 40°F to 158°F (-40°C to 70°C) temperature 15% to 95% @ 149°F (65°C), noncondensing relative humidity 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) dissipation 2152 BTU/hr (2270 kJ/hr) Voltage 010-127 / 200-240 VAC Current 8.2 / 3.8 A Maximum power rating and maximum heat dissipation 433 A Maximum power rating and maximum heat dissipation 433 A 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 60955 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 61000-4-2 Radiated IEC 61000-4-3 EFT7/Burst IEC 61000-4-5 Conducted For Jance IEC 61000-4-5 Power frequency BC 61000-4-6 Power frequency BC 61000-4-11	Memory and processor	Fabric			
InvarianceThroughputup to 48 million ppsSwitch fabric speed76.8 GbpsSwitch fabric speed32°F to 104°F (0°C to 40°C)Operating temperature15% to 95% @ 104°F (40°C), noncondensing humidityNonoperating/Storage relative humidity-40°F to 158°F (-40°C to 70°C)Nonoperating/Storage relative humidity15% to 95% @ 149°F (65°C), noncondensingAltitudeup to 15,000 ft. (4.6 km) AcousticAcousticPower: 64.2 dB; DIN 45635T.19 per ISO 7779Electrical characteristicsMaximum heat disipationVoltage100-127 / 200-240 VACCurrent8.2 / 3.8 AMaximum power rating disipation630 WFrequency50 / 60 HzNotesMaximum numbers provided for planning the disipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with 100% traffic, all ports plugged in, and all modules populated.SafetyCSA 22.2 No. 950; UL G095: EV G0950EmissionsFCC Class A; VCCI Class A; EV 55022/CISPR 22 Class A; CISPR 22 Class A; EN 55024; IEC/EN 61000-3-2; IEC/EN 61000-3-2; IEC/EN 61000-3-3ImmunityENEN 55024, CISPR 24EFT/BurstIEC 61000-4-2RadiatedIEC 61000-4-4SurgeIEC 61000-4-6Power frequency magnetic fieldIEC 61000-4-6Power frequency magnetic fieldIEC 61000-4-1	Mounting				
Switch fabric speed76.8 GbpsEnvironmentOperating temperature32°F to 104°F (0°C to 40°C)Operating relative humidity15% to 95% @ 104°F (40°C), noncondensing humidityNonoperating/Storage relative humidity-40°F to 158°F (-40°C to 70°C)Nonoperating/Storage relative humidity-40°F to 158°F (-40°C to 70°C)Altitudeup to 15,000 ft. (4.6 km)AccousticPower: 64.2 dB; DIN 45635T.19 per ISO 7779Electrical characteristicsMaximum heat dissipationVoltage100-127 / 200-240 VACCurrent8.2 / 3.8 AMaximum power rating Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infastructure with 100% traffic, all ports plugged in, and all modules populated.SafetyCSA 22.2 No. 950; UL 6095:EmissionsFCC Class A; VCCI Class A; EN 55022/CISPR 22 Class A; CISPR 22 Class A; EN s5024; IEC/FN 61000-3-3ImmunityENEN 5024, CISPR 24ESDIEC 61000-4-3EFT/BurstIEC 61000-4-6Power frequency magnetic fieldIEC 61000-4-8Power frequency magnetic fieldIEC 61000-4-11	Performance	Latency	<6 μs (FIFO)		
EnvironmentOperating temperature Operating relative humidity32°F to 104°F (0°C to 40°C)Operating relative humidity15% to 95% @ 104°F (40°C), noncondensing 40°F to 158°F (-40°C to 70°C)Nonoperating/Storage relative humidity-40°F to 158°F (-40°C to 70°C)Nonoperating/Storage relative humidity15% to 95% @ 149°F (65°C), noncondensing relative humidityAltitudeup to 15,000 ft. (4.6 km) AcousticAcousticPower: 64.2 dB; DIN 45635T.19 per ISO 7779Electrical characteristicsMaximum heat dissipationVoltage100-127 / 200-240 VAC CurrentEurency50 / 60 HzNotesMaximum 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.SafetyCSA 22.2 No. 950; UL 6095:EmissionsFCC Class A; VCCI Class A; EN 55022/CISPR 22 Class A; CISPR 22 Class A; EN S5024; IEC/EN 61000-3-3ImmunityENEN 5024, CISPR 24ESDIEC 61000-4-3EFT/BurstIEC 61000-4-3EFT/BurstIEC 61000-4-6Power frequency magnetic fieldIEC 61000-4-8Power frequency magnetic fieldIEC 61000-4-11		Throughput	up to 48 million pps		
AnticiantOperating relative humidity15% to 95% @ 104°F (40°C), noncondensingNonoperating/Storage temperature-40°F to 158°F (-40°C to 70°C)Nonoperating/Storage relative humidity-40°F to 158°F (-40°C to 70°C)Altitudeup to 15,000 ft. (4.6 km)AcousticPower: 64.2 dB; DIN 45635T.19 per ISO 7779Electrical characteristicsMaximum heat dissipation2152 BTU/hr (2270 kJ/hr)Voltage100-127 / 200-240 VACCurrent8.2 / 3.8 AMaximum power rating 630 W630 WFrequency50 / 60 HzNotesMaximum 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.SafetyCSA 22.2 No. 950; UL 60950; EN 60950EmissionsFCC Class A; VCCI Class A; EN 55022/CISPR 22 Class A; CISPR 22 Class A; EN 55024; IEC/EN 61000-3-3ImmunityENEN S5024, CISPR 24ESDIEC 61000-4-2RadiatedIEC 61000-4-3EFT/BurstIEC 61000-4-5ConductedIEC 61000-4-6Power frequency magnetic fieldIEC 61000-4-11		Switch fabric speed	76.8 Gbps		
humidityAnonoperating/Storage temperature-40°F to 158°F (-40°C to 70°C)Nonoperating/Storage temperature-40°F to 158°F (-40°C to 70°C)Nonoperating/Storage relative humidity15% to 95% @ 149°F (65°C), noncondensingAltitude Acousticup to 15,000 ft. (4.6 km)AcousticPower: 64.2 dB; DIN 45635T.19 per ISO 7779Electrical characteristicsMaximum heat dissipation2152 BTU/hr (2270 kJ/hr)Voltage100-127 / 200-240 VACCurrent8.2 / 3.8 AMaximum power rating dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with 100% traffic, all ports plugged in, and all modules populated.SafetyCSA 22.2 No. 950; UL 6095; UE 60950EmissionsFCC Class A; VCCI Class A; EN 55022/CISPR 22 Class A; CISPR 22 Class A; EN 55024; IEC/EN 61000-3-2; IEC/EN 61000-3-3ImmunityENEN 55024, CISPR 24ESDIEC 61000-4-3EFT/BurstIEC 61000-4-3EFT/BurstIEC 61000-4-6Power frequency magnetic fieldIEC 61000-4-1Voltage dips andIEC 61000-4-1	Environment	Operating temperature	32°F to 104°F (0°C to 40°C)		
Feedrice feed of the second			15% to 95% @ 104°F (40°C), noncondensing		
relative humidity Ititude up to 15,000 ft. (4.6 km) Acoustic Power: 64.2 dB; DIN 45635T.19 per ISO 7779 Electrical characteristics Maximum heat 2152 BTU/hr (2270 kJ/hr) dissipation 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 6095∪ EN 60950 Emissions FCC Class A; VCCI Class A; EN 55022/CISPR 22 Class A; CISPR 22 Class A; EN 55024; IEC/EN 61000-3-3 Immunity EN EN 55024, CISPR 24 ESD IEC 61000-4-2 Radiated IEC 61000-4-3 EFT/Burst IEC 61000-4-4 Surge IEC 61000-4-6 Power frequency IEC 61000-4-6 Power frequency IEC 61000-4-11			-40°F to 158°F (-40°C to 70°C)		
AcousticPower: 64.2 dB; DIN 45635T.19 per IS0 7779Electrical characteristicsMaximum heat dissipation2152 BTU/hr (2270 kJ/hr)Voltage100-127 / 200-240 VACCurrent8.2 / 3.8 AMaximum power rating630 WFrequency50 / 60 HzNotesMaximum 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.SafetyCSA 22.2 No. 950; UL 6095EmissionsFCC Class A; VCCI Class A; VSCI SPR 22 Class A; CISPR 22 Class A; EN S5024; IEC/EN 61000-3-3ImmunityENEN 55024, CISPR 24ESDIEC 61000-4-3ETF/BurstIEC 61000-4-3ETF/BurstIEC 61000-4-3SurgeIEC 61000-4-6Power frequency magnetic fieldIEC 61000-4-8Voltage dips andIEC 61000-4-1			15% to 95% @ 149°F (65°C), noncondensing		
Electrical characteristicsMaximum heat dissipation2152 BTU/hr (2270 kJ/hr)Voltage100-127 / 200-240 VACCurrent8.2 / 3.8 AMaximum power rating630 WFrequency50 / 60 HzNotesMaximum 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.SafetyCSA 22.2 No. 950; UL 60950/ED SEmissionsFCC Class A; VCCI Class A; EV 5022/CISPR 22 Class A; CISPR 22 Class A; EN 55024; IEC/EN 61000-3-3ImmunityENEN 55024, CISPR 24ESDIEC 61000-4-2RadiatedIEC 61000-4-2SurgeIEC 61000-4-3ETF/BurstIEC 61000-4-3SurgeIEC 61000-4-6Power frequency magnetic fieldIEC 61000-4-8Voltage dips andIEC 61000-4-11		Altitude	up to 15,000 ft. (4.6 km)		
dissipation 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 Immunity EN EN 55024, CISPR 22 Class A; CISPR 22 Class A; EN 55024; IEC/EN 61000-3-3 Igen EN 55024, CISPR 24 ESD IEC 61000-4-2 Radiated IEC 61000-4-3 EFT/Burst 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 IEC 61000-4-11		Acoustic	Power: 64.2 dB; DIN 45635T.19 per ISO 7779		
Current8.2 / 3.8 ÅMaximum power rating630 WFrequency50 / 60 HzNotesMaximum 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.SafetyCSA 22.2 No. 950; UL 60950; EN 60950EmissionsFCC Class A; VCCI Class A; EN 55022/CISPR 22 Class A; CISPR 22 Class A; EN 55024; IEC/EN 61000-3-3ImmunityENEN 55024, CISPR 24ESDIEC 61000-4-2RadiatedIEC 61000-4-3EFT/BurstIEC 61000-4-4SurgeIEC 61000-4-5ConductedIEC 61000-4-6Power frequency magnetic fieldIEC 61000-4-8Voltage dips andIEC 61000-4-11	Electrical characteristics		2152 BTU/hr (2270 kJ/hr)		
Maximum power rating630 WFrequency50 / 60 HzNotesMaximum 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.SafetyCSA 22.2 No. 950; UL 60950; EN 60950EmissionsFCC Class A; VCCI Class A; EN 55022/CISPR 22 Class A; CISPR 22 Class A; EN 55024; IEC/EN 61000-3-2; IEC/EN 61000-3-3ImmunityENEN 55024, CISPR 24ESDIEC 61000-4-2RadiatedIEC 61000-4-3EFT/BurstIEC 61000-4-4SurgeIEC 61000-4-5ConductedIEC 61000-4-6Power frequency magnetic fieldIEC 61000-4-1Voltage dips andIEC 61000-4-11		Voltage	100-127 / 200-240 VAC		
Frequency50 / 60 HzNotesMaximum 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.SafetyCSA 22.2 No. 950; UL 6095∪; EN 60950EmissionsFCC Class A; VCCI Class A; EN 55022/CISPR 22 Class A; CISPR 22 Class A; EN 55024; IEC/EN 61000-3-2;ImmunityENESDEC 61000-4-2RadiatedIEC 61000-4-3EFT/BurstIEC 61000-4-3EFT/BurstIEC 61000-4-5ConductedIEC 61000-4-6Power frequency magnetic fieldIEC 61000-4-8Voltage dips andIEC 61000-4-11		Current	8.2 / 3.8 A		
NotesMaximum 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.SafetyCSA 22.2 No. 950; UL 60950; EN 60950EmissionsFCC Class A; VCCI Class A; EN 55022/CISPR 22 Class A; CISPR 22 Class A; EN 55024; IEC/EN 61000-3-2; IEC/EN 61000-3-3ImmunityENEN 55024, CISPR 24ESDIEC 61000-4-2RadiatedIEC 61000-4-3EFT/BurstIEC 61000-4-3EFT/BurstIEC 61000-4-4SurgeIEC 61000-4-6Power frequency magnetic fieldIEC 61000-4-1Voltage dips andIEC 61000-4-11		Maximum power rating	630 W		
SafetyCSA 22.2 No. 950; UL 60950; EN 60950EmissionsFCC Class A; VCCI Class A; EN 55022/CISPR 22 Class A; CISPR 22 Class A; EN 55024; IEC/EN 61000-3-2; IEC/EN 61000-3-3ImmunityENEN 55024, CISPR 24ESDIEC 61000-4-2RadiatedIEC 61000-4-3EFT/BurstIEC 61000-4-3EFT/BurstIEC 61000-4-5ConductedIEC 61000-4-6Power frequency magnetic fieldIEC 61000-4-8Voltage dips andIEC 61000-4-11		Frequency	50 / 60 Hz		
EmissionsFCC Class A; VCCI Class A; EN 55022/CISPR 22 Class A; CISPR 22 Class A; EN 55024; IEC/EN 61000-3-2; IEC/EN 61000-3-3ImmunityENEN 55024, CISPR 24ESDIEC 61000-4-2RadiatedIEC 61000-4-3EFT/BurstIEC 61000-4-3GonductedIEC 61000-4-4Power frequency magnetic fieldIEC 61000-4-8Voltage dips andIEC 61000-4-11		Notes	dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with 100% traffic, all ports		
55024; IEC/EN 61000-3-2; IEC/EN 61000-3-3ImmunityENENEN 55024, CISPR 24ESDIEC 61000-4-2RadiatedIEC 61000-4-3EFT/BurstIEC 61000-4-4SurgeIEC 61000-4-5ConductedIEC 61000-4-6Power frequency magnetic fieldIEC 61000-4-8Voltage dips andIEC 61000-4-11	Safety	CSA 22.2 No. 950; UL 6095	0; EN 60950		
ESDIEC 61000-4-2RadiatedIEC 61000-4-3EFT/BurstIEC 61000-4-4SurgeIEC 61000-4-5ConductedIEC 61000-4-6Power frequency magnetic fieldIEC 61000-4-8Voltage dips andIEC 61000-4-11	Emissions		, , ,		
RadiatedIEC 61000-4-3EFT/BurstIEC 61000-4-4SurgeIEC 61000-4-5ConductedIEC 61000-4-6Power frequency magnetic fieldIEC 61000-4-8Voltage dips andIEC 61000-4-11	Immunity	EN	EN 55024, CISPR 24		
EFT/BurstIEC 61000-4-4SurgeIEC 61000-4-5ConductedIEC 61000-4-6Power frequency magnetic fieldIEC 61000-4-8Voltage dips andIEC 61000-4-11		ESD	IEC 61000-4-2		
SurgeIEC 61000-4-5ConductedIEC 61000-4-6Power frequencyIEC 61000-4-8magnetic fieldIEC 61000-4-11		Radiated	IEC 61000-4-3		
ConductedIEC 61000-4-6Power frequencyIEC 61000-4-8magnetic fieldIEC 61000-4-11		EFT/Burst	IEC 61000-4-4		
Power frequencyIEC 61000-4-8magnetic fieldIEC 61000-4-11		Surge	IEC 61000-4-5		
magnetic field Voltage dips and IEC 61000-4-11		Conducted	IEC 61000-4-6		
			IEC 61000-4-8		



Ľ	0115		
		Harmonics	EN 61000-3-2, IEC 61000-3-2
		Flicker	EN 61000-3-3, IEC 61000-3-3
	Management	browser; configuration me	ent Center; command-line interface; Web nu; out-of-band management (DB-9 serial port net MIB; Repeater MIB; Ethernet Interface MIB
	Notes	(product number ends with required. When using mini-GBICs wit	h this product, mini-GBICs with revision "B" a the letter "B", e.g., J4858B, J4859B) or later are h this product, mini-GBICs with revision "B" or s with the letter "B" or later, e.g., J4858B,
	Services		
	Standards and protocols (applies to all products in series)	sales office. Device management HTML and telnet managem	lent
	5011057	General protocols IEEE 802.1D MAC Bridges IEEE 802.1p Priority IEEE 802.1Q VLANs IEEE 802.1s Multiple Spann IEEE 802.3w Rapid Reconfi IEEE 802.3ad Link Aggrega IEEE 802.3x Flow Control RFC 768 UDP RFC 783 TFTP Protocol (rev RFC 791 IP RFC 792 ICMP RFC 793 TCP RFC 826 ARP	guration of Spanning Tree tion Control Protocol (LACP)



Technical Specifications

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		ing 10/100 ports (IEEE 802.3 Type 10BASE-T, IEEE ASE-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	the service-level de	bsite at: www.hp.com/networking/services for details or escriptions and product numbers. For details about nse times in your area, please contact your local HP	
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 or 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, IE 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: fu 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 differentia pair unshielded twisted pair (UTP) or shielded twisted pair (STP) balanc complying with IEEE 802.3ab 1000BASE-T		
	Notes		BICs with this product, mini-GBICs with revision "B" or ber ends with the letter "B" or later, e.g. J4858B, ed.	
	Services	Refer to the HP we	bsite at: www.hp.com/networking/services for details on	



Accessory Product Details

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	Ports	1 open 10-GbE X2 transceiver slot		
Module (J8766A)	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 togethe cannot include other port speeds. Available January 1, 2008.		
	Services	the service-level descripti	: www.hp.com/networking/services for details or ons and product numbers. For details about es in your area, please contact your local HP	
HP X131 10G X2 SC ER	Ports	1 SC 10-GbE port (IEEE 80	2.3ae Type 10GBASE-ER); Duplex: full only	
Transceiver (J8438A)	Connectivity	Connector type	SC	
		Wavelength	1550 nm	
HP X131 10G X2 SC ER Transceiver: An X2 format 10-gigabit transceiver	Physical characteristics	Dimensions	3.48(d) x 1.42(w) x 0.43(h) in. (8.84 x 3.61 x 1.09 cm)	
with SC connectors using		Weight	0.35 lb. (0.16 kg)	
ER		Transceiver form factor	Х2	
technology.	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.6 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 o 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	Ports	1 SC 10-GbE port (IEEE 80)	2.3ae Type 10GBASE-SR); Duplex: full only	
Transceiver (J8436A)	Connectivity	Connector type	SC	
		Wavelength	850 nm	



Transceiver: 1.09 cm) 10-gigabit transceiver with SC connectors using SR technology. Weight 0.35 lb. (0.16 kg) Environment Operating temperature Nonoperating relative 0.32 lb. (0.16 kg) Weight 0.35 lb. (0.16 kg) Nonoperating relative 0% to 95%, noncondensing humidity Nonoperating/Storage -40% to 158% (0% to 70%) Operating relative humidity 0% to 95%, noncondensing Nonoperating/Storage -40% to 185% (-40% to 85%) Electrical characteristics Power consumption typical Power consumption 1.7 W Typical 2.5/125 µm or 50/125 µm (core/clading) graded-index, low metal content, multimode fiber optic, complying with ITU-T G.651 and ISO/I 793-2 Type A1b or A1a, respectively; Maximum distance: 2-32m with 62.5 µm multimode cable @ 400 MHz*km 2-33m with 62.5 µm multimode cable @ 400 MHz*km 2-300m with 50 µm multimode cable @ 400 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode ca	Accessory i roudet b	etaits		
with SC connectors using SR technology. Environment Transceiver form factor X2 Derating relative Numperating/Storage relative humidity 0% to 95%, noncondensing Numitity 29F to 158*F (-40°C to 85°C) Nonoperating/Storage relative humidity -40°F to 185*F (-40°C to 85°C) Nonoperating/Storage relative humidity 0% to 95%, noncondensing Attitude up to 10,000 ft. (3 km) Electrical characteristics Power consumption typical Power consumption 2.4 W maximum Cabling Cabling Cabling		-	Dimensions	3.48(d) x 1.42(w) x 0.43(h) in. (8.84 x 3.61 x 1.09 cm)
SR technology. Environment Operating temperature 32° to 158°F (0°C to 70°C) Operating relative 0% to 95%, noncondensing Nonoperating/Storage -40°F to 185°F (-40°C to 85°C) Nonoperating/Storage -40°F to 185°F (-40°C to 85°C) Nonoperating/Storage -40°F to 185°F (-40°C to 85°C) Electrical characteristics Power consumption 1.7 W Nonoperating/Storage 0% to 95%, noncondensing 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 6.651 and ISO/I 793-2 Type A1 b 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 2-33m with 50 µm multimode cable @ 200 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km			Weight	0.35 lb. (0.16 kg)
Environment Operating remperature Nonoperating /Storage temperature 32% to 15% (OCC to 7% C) % to 95%, noncondensing humidity Nonoperating /Storage temperature -40% to 185% (-40% C to 85% C) Nonoperating /Storage temperature -40% to 95%, noncondensing relative humidity Altitude up to 10,000 ft. (3 km) Electrical characteristics Power consumption typical 1.7 W Power consumption 2.4 W maximum Cabling Cabling 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 6.651 and ISO/I 793-2 Type Alt to A1a, respectively; Maximum distance: 2-36m with 62.5 µm multimode cable @ 160 MHz*km 2-36m with 50 µm multimode cable @ 400 MHz*km 2-30m with 50 µm multimode cable @ 400 MHz*km 2-30m with 50 µm multimode cable @ 500 MHz*km 2-230m with 50 µm multimode cable @ 500 MHz*km 2-230m with 50 µm multimode cable @ 500 MHz*km 2-230m with 50 µm multimode cable @ 500 MHz*km 2-300m with 50 µm multimode cable @ 500 MHz*km 2-300m with 50 µm multimode cable @ 500 MHz*km 2-300m with 50 µm multimode cable @ 500 MHz*km 2-300m with 50 µm multimode cable @ 500 MHz*km 2-300m with 50 µm multimode cable @ 500 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz			Transceiver form factor	X2
humidity -40°F to 185°F (-40°C to 85°C) Nonoperating/Storage -40°F to 185°F (-40°C to 85°C) Itemperature Nonoperating/Storage 0% to 95%, noncondensing Relevance Relevance 0% to 95%, noncondensing Itelevance Power consumption 1.7 W Typical Power consumption 1.7 W Power consumption 2.4 W maximum Cabling Cable type:: 62.5/125 µm or 50/125 µm (core/cladding) graded-index, low metal content, multimode fiber optic, complying with 17U-1 6.651 and 150/t 793-22 Type A1 bo 74 a, respectively; Maximum distance: 2-26m with 62.5 µm multimode cable @ 160 MHz*km 2-30m with 50 µm multimode cable @ 200 MHz*km 2-30m with 50 µm multimode cable @ 200 MHz*km 2-30m with 50 µm multimode cable @ 200 MHz*km 2-30m with 50 µm multimode cable @ 200 MHz*km 2-300m K150 µm multimode cable @ 200 MHz*km 2-300m K150 µm multimode cable @ 500 MHz*km 2-300m K164 Services Refer to the HP website at www.hp.com/networking/services for deat the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local H sales office. Physical Characteristics Ports 1 CX4 10-GbE port (IEEE 802.3ak Type 10GBASE-CX4); Duplex: full on Connector type CA	SR LECHHOLOGY.	Environment	Operating temperature	32ºF to 158ºF (0ºC to 70ºC)
temperature 0% to 95%, noncondensing Nonoperating/Storage 0% to 95%, noncondensing Relative humidity Altitude up to 10,000 ft. (3 km) Electrical characteristics Power consumption 1.7 W Ypical Power consumption 2.4 W maximum 62.5/125 µm or 50/125 µm (core/cladding) graded-index, low metal content, multimode fiber optic, complying with TU-T G.651 and ISO/t 793-2 Type A1b or A1a, respectively; Maximum distance: • 2-26m with 62.5 µm multimode cable @ 160 MHz*km • 2-26m with 62.5 µm multimode cable @ 400 MHz*km • • 2-26m with 62.5 µm multimode cable @ 200 MHz*km • • 2-26m with 50 µm multimode cable @ 200 MHz*km • • 2-26m with 50 µm multimode cable @ 200 MHz*km • • 2-26m with 50 µm multimode cable @ 200 MHz*km • • 2-300m with 50 µm multimode cable @ 200 MHz*km • • 2-300m with 50 µm multimode cable @ 200 MHz*km • • 2-300m with 50 µm multimode cable @ 200 MHz*km • • 2-300m with 50 µm multimode cable @ 200 MHz*km • • 2-300m with 50 µm multimode cable @ 200 MHz*km • •				0% to 95%, noncondensing
relative humidity up to 10,000 ft. (3 km) Electrical characteristics Power consumption 1.7 W ypical Power consumption 2.4 W maximum Cabling Cable type: 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/I 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 @ 400 MHz*km • • 2-300m int b50 µm multimode cable @ 2000 MHz*km • • 2-300m with 50 µm multimode cable @ 2000 MHz*km • • 2-300m with 50 µm multimode cable @ 2000 MHz*km • • 2-300m with 50 µm multimode cable @ 2000 MHz*km • • 2-300m with 50 µm multimode cable @ 160 MHz*km • • 2-300m with 50 µm multimode cable @ 2000 MHz*km • • 2-300m with 50 µm multimode cable @ 2000 MHz*km • • 2-300m with 50 µm multimode cable @ 2000 MHz*km • • 2-300m with 50 µm multimode cable @ 2000 MHz*km • • 2-300m with 50 µm multimode cable @ 2000 MHz*km				-40ºF to 185ºF (-40ºC to 85ºC)
Electrical characteristics Power consumption 1.7 W Yprical Power consumption 2.4 W Power consumption 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/I 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 2-32m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 100 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 100 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2				0% to 95%, noncondensing
typical Power consumption maximum 2.4 W maximum 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/I 793-2 Type A1b or A1a, respectively; Maximum distance: 2-26m with 62.5 µm multimode cable @ 160 MHz*km 2-36m with 50 µm multimode cable @ 200 MHz*km 2-66m with 50 µm multimode cable @ 200 MHz*km 2-66m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm			Altitude	up to 10,000 ft. (3 km)
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/1 793-2 Type A1b or A1a, respectively; Maximum distance: 2-250m with 62.5 µm multimode cable @ 160 MHz*km 2-33m with 62.5 µm multimode cable @ 160 MHz*km 2-33m with 62.5 µm multimode cable @ 200 MHz*km 2-300m with 50 µm multimode cable @ 200 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km		Electrical characteristics	-	1.7 W
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/I 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 2-82m with 50 µm multimode cable @ 200 MHz*km 2-82m with 50 µm multimode cable @ 200 MHz*km 2-82m with 50 µm multimode cable @ 200 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 90 µm multimode cable @ 2000 MHz*km 2-300m with 90 µm multimode			-	2.4 W
 2-26m with 62.5 µm multimode cable @ 160 MHz*km 2-33m with 62.5 µm multimode cable @ 200 MHz*km 2-30 with 50 µm multimode cable @ 400 MHz*km 2-66m with 50 µm multimode cable @ 500 MHz*km 2-300m with 50 µm multimode cable @ 500 MHz*km 2-300m with 50 µm multimode cable @ 500 MHz*km 2-300m with 50 µm multimode cable @ 500 MHz*km 2-300m with 50 µm multimode cable @ 500 MHz*km 2-300m with 50 µm multimode cable @ 500 MHz*km 2-300m with 50 µm multimode cable @ 500 MHz*km 2-300m with 50 µm multimode cable @ 500 MHz*km 2-300m with 50 µm multimode cable @ 500 MHz*km 2-300m with 50 µm multimode cable @ 500 MHz*km 2-300m with 50 µm multimode cable @ 500 MHz*km 2-300m with 50 µm multimode cable @ 500 MHz*km 2-300m with 50 µm multimode cable @ 500 MHz*km 2-300m with 50 µm multimode cable @ 500 MHz*km 2-300m with 50 µm multimode cable @ 500 MHz*km 2-300m with 50 µm multimode cable @ 500 MHz*km 2-300m with 50 µm multimode cable @ 500 MHz*km 2-300m with 50 µm multimode cable @ 500 MHz*km 2-300m with 50 µm multimode cable @ 500 MHz*km 2-300m with 50 µm multimode cable @ 500 MHz*km 2-300m with 50 µm multimode cable @ 500 MHz*km 2-300m with 50 µm multimode cable @ 500 MHz*km 2-300m with 50 µm multimode cable @ 500 MHz*km 2-300m with 50 µm multimode cable @ 500 MHz*km 2-300m with 50 µm multimode cable @ 500 MHz*km 2-300m with 50 µm multimode cable @ 500 MHz*km 2-300m with 50 µm multimode cable @ 500 MHz*km 2-300m with 50 µm multimode cable @ 500 MHz*km 2-300m with 50 µm multimode cable @ 500 MHz*km 2-300m with 50 µm multimode cable @ 500 MLz*km 2-300m moltimode match match and pradict numbers. For		Cabling	62.5/125 μm or 50/125 μr content, multimode fiber of	optic, complying with ITU-T G.651 and ISO/IEC
 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 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 2000 MHz*km 2-300m with 50 µm multimode cable @ 200 MLz*km Services and response tures of the Prost ords, use Ultra Physical Contact (UPC) surface the service-level descriptions and product numbers. For details about services and response tures in your area, please contact your local HI sales office. 			Maximum distance:	
Fiber typeMulti ModeNotesFor fiber patch cords, use Ultra Physical Contact (UPC) surface termination/polish. Angled Physical Contact (APC) is not recommended ServicesServicesRefer to the HP website at www.hp.com/networking/services for deta the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HI sales office.HP X131 10G X2 CX4 Transceiver (J8440C)Ports1 CX4 10-GbE port (IEEE 802.3ak Type 10GBASE-CX4); Duplex: full on Connector typeHP X131 10G X2 CX4 Transceiver: An X2 format 10-gigabit CX4 transceiver.Ports1 CX4 10-GbE port (IEEE 802.3ak Type 10GBASE-CX4); Duplex: full on Connector typeWeight0.18 lb. (0.08 kg)HP X131 10G X2 CX4 Transceiver.Transceiver form factorKeight0.18 lb. (0.08 kg)HP X131 10G X2 CX4 Transceiver.Transceiver form factorKeight0.18 lb. (0.08 kg)HP X131 10G X2 CX4 Transceiver.Transceiver form factorKeight0.18 lb. (0.08 kg)HP X131 10G X2 CX4 Transceiver.Transceiver form factorKeight0.18 lb. (0.08 kg)HP X131 10G X2 CX4 Transceiver.Transceiver form factorKeight0.18 lb. (0.08 kg)HP X131 10G X2 CX4 Transceiver.Transceiver form factorKeight0.18 lb. (0.08 kg)HP X131 10G X2 CX4 Transceiver.Transceiver form factorKeight0.18 lb. (0.08 kg)HP X131 10G X2 CX4 Transceiver.Transceiver form factorKeight0.18 lb. (0.08 kg)HP X131 10G X2 C			 2-33m with 62.5 2-66m with 50 µr 2-82m with 50 µr 	µm multimode cable @ 200 MHz*km n multimode cable @ 400 MHz*km n multimode cable @ 500 MHz*km
NotesFor fiber patch cords, use Ultra Physical Contact (UPC) surface termination/polish. Angled Physical Contact (APC) is not recommended Refer to the HP website at www.hp.com/networking/services for details about services and product numbers. For details about services and response times in your area, please contact your local HI sales office.HP X131 10G X2 CX4 Transceiver (J8440C)Ports1 CX4 10-GbE port (IEEE 802.3ak Type 10GBASE-CX4); Duplex: full on ConnectivityHP X131 10G X2 CX4 Transceiver: An X2 format 10-gigabit CX4 transceiver.Ports1 CX4 10-GbE port (IEEE 802.3ak Type 10GBASE-CX4); Duplex: full on 1.35 cm)HP X131 10G X2 CX4 Transceiver: An X2 format 10-gigabit CX4 transceiver.Ports1 CX4 10-GbE port (IEEE 802.3ak Type 10GBASE-CX4); Duplex: full on 0.18 lb. (0.08 kg)HP X131 10G X2 CX4 Transceiver.Ports1 Cx4 10-GbE port (IEEE 802.3ak Type 10GBASE-CX4); Duplex: full on 0.18 lb. (0.08 kg)HP X131 10G X2 CX4 Transceiver.Ports1 Cx4 10-GbE port (IEEE 802.3ak Type 10GBASE-CX4); Duplex: full on 0.18 lb. (0.08 kg)HP X131 10G X2 CX4 Transceiver.Ports1 Cx4 10-GbE port (IEEE 802.3ak Type 10GBASE-CX4); Duplex: full on 0.18 lb. (0.08 kg)HP X131 10G X2 CX4 Transceiver.Ports1 Cx4 10-GbE port (IEEE 802.3ak Type 10GBASE-CX4); Duplex: full on 0.18 lb. (0.08 kg)HP X131 10G X2 CX4 Transceiver.Ports1 Cx4 10-GbE port (IEEE 802.3ak Type 10GBASE-CX4); Duplex: full on 1.35 cm)HP X131 10G X2 CX4 Transceiver.Ports1 Cx4 10-GbE port (IEEE 802.3ak Type 10GBASE-CX4); Duplex: full on 1.35 cm)HP X131 10G X2 CX4 Transceiver.Ports1 Cmenton<			Cable length	2-300m
ServicesRefer to the HP website at www.hp.com/networking/services for details about services and response times in your area, please contact your local HI sales office.HP X131 10G X2 CX4 Transceiver (J8440C)Ports Connectivity1 CX4 10-GbE port (IEEE 802.3ak Type 10GBASE-CX4); Duplex: full on Connector typeHP X131 10G X2 CX4 Transceiver (J8440C)Ports Connectivity1 CX4 10-GbE port (IEEE 802.3ak Type 10GBASE-CX4); Duplex: full on 1.35 cm)HP X131 10G X2 CX4 Transceiver: An X2 format 10-gigabit CX4 transceiver.Ports Connectivity1 CX4 10-GbE port (IEEE 802.3ak Type 10GBASE-CX4); Duplex: full on 0.18 lb. (0.08 kg)HP X131 10G X2 CX4 Transceiver.Ports Connectivity1 CX4 10-GbE port (IEEE 802.3ak Type 10GBASE-CX4); Duplex: full on 0.18 lb. (0.08 kg)HP X131 10G X2 CX4 Transceiver: An X2 format 10-gigabit CX4 transceiver.Ports Connectivity1 CX4 10-GbE port (IEEE 802.3ak Type 10GBASE-CX4); Duplex: full on 0.18 lb. (0.08 kg)HP X131 10G X2 CX4 Transceiver.Ports Connectivity1 CX4 10-GbE port (IEEE 802.3ak Type 10GBASE-CX4); Duplex: full on 0.18 lb. (0.08 kg)HP X131 10G X2 CX4 Transceiver.Ports Connectivity1 Connector type Transceiver form factor X2HP X131 10G X2 CX4 Transceiver.Ports Transceiver form factor Dimensions3.54(d) x 1.42(w) x 0.53(h) in. (8.99 x 3.61 1.35 cm)HP X131 10G X2 CX4 Transceiver.Ports Transceiver form factor Dimensions3.54(d) x 1.42(w) x 0.53(h) in. (8.99 x 3.61 1.35 cm)HP X131 10G X2 CX4 Transceiver.Ports Transceiver form factor DimensionsX2 X2 Y2 Y2 Y2 Y2<			Fiber type	Multi Mode
the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HI sales office.HP X131 10G X2 CX4 Transceiver (J8440C)Ports Connectivity1 CX4 10-GbE port (IEEE 802.3ak Type 10GBASE-CX4); Duplex: full on Connector typeHP X131 10G X2 CX4 Transceiver: An X2 format 10-gigabit CX4 transceiver.Ports Connector typeCX4 Dimensions3.54(d) x 1.42(w) x 0.53(h) in. (8.99 x 3.61 1.35 cm)Weight Transceiver form factor 0-grating temperature Mumidity0.18 lb. (0.08 kg) TransceiverTransceiver form factor 15% to 95%, noncondensing humidity		Notes		
Transceiver (J8440C)ConnectivityConnector typeCX4HP X131 10G X2 CX4 Transceiver: An X2 format 10-gigabit CX4 transceiver.Physical characteristicsDimensions3.54(d) x 1.42(w) x 0.53(h) in. (8.99 x 3.61 1.35 cm)Weight0.18 lb. (0.08 kg)1.35 cmTransceiver form factorX2EnvironmentOperating temperature humidity32°F to 131°F (0°C to 55°C)Operating relative humidity15% to 95%, noncondensing		Services	the service-level descripti services and response tim	ons and product numbers. For details about
HP X131 10G X2 CX4 Transceiver: An X2 format 10-gigabit CX4 transceiver.Physical characteristicsDimensions3.54(d) x 1.42(w) x 0.53(h) in. (8.99 x 3.61 			•	
HP X131 10G X2 CX4 1.35 cm) Transceiver: An X2 format Weight 0.18 lb. (0.08 kg) 10-gigabit CX4 Transceiver form factor X2 transceiver. Operating temperature 32°F to 131°F (0°C to 55°C) Operating relative 15% to 95%, noncondensing humidity Nonoperating/Storage -40°F to 185°F (-40°C to 85°C)	I Fansceiver (J8440C)	=	••	
10-gigabit CX4 Weight 0.18 lb. (0.08 kg) transceiver. Transceiver form factor X2 Environment Operating temperature 32°F to 131°F (0°C to 55°C) Operating relative 15% to 95%, noncondensing humidity Nonoperating/Storage -40°F to 185°F (-40°C to 85°C)		-		3.54(d) x 1.42(w) x 0.53(h) in. (8.99 x 3.61 x 1.35 cm)
transceiver. Transceiver form factor X2 Environment Operating temperature 32°F to 131°F (0°C to 55°C) Operating relative 15% to 95%, noncondensing humidity Nonoperating/Storage -40°F to 185°F (-40°C to 85°C)			-	0.18 lb. (0.08 kg)
Operating relative humidity15% to 95%, noncondensing -40°F to 185°F (-40°C to 85°C)			Transceiver form factor	X2
humidity Nonoperating/Storage -40°F to 185°F (-40°C to 85°C)		Environment	Operating temperature	32ºF to 131ºF (0ºC to 55ºC)
				15% to 95%, noncondensing
				-40ºF to 185ºF (-40ºC to 85ºC)



HP 4200 vl Switch Series

		Altitude	up to 10,000 ft. (3 km)
	Electrical characteristics	Power consumption	1.0 W
		typical	
		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	the service-level descripti	www.hp.com/networking/services for details on ons and product numbers. For details about es in your area, please contact your local HP
HP X111 100M SFP LC FX	Ports	1 LC 100BASE-FX port (IEE	E 802.3u Type 100BASE-FX); Duplex: half or full
Transceiver (J9054C)	Physical characteristics		(w) x 0.48(h) in. (6.86 x 1.38 x 1.22 cm)
HP X111 100M SFP LC FX Transceiver: An SFP format 100-megabit transceiver with LC connectors using FX	Environment	Operating temperature: 32°F to 158°F (0°C to 70°C) Operating relative humidity: 5% to 95% Nonoperating/Storage temperature: -40°F to 185°F (-40°C to 85°C) Nonoperating/Storage relative humidity: 5% to 85% Altitude: up to 10,000 ft. (3 km)	
technology.	Cabling	Туре:	
		index, low metal	50/125 μm (core/cladding) diameter, graded- content, multimode fiber optic, complying with ISO/IEC 793-2 Type A1b or A1a, respectively;
		Maximum distance:	
		• 2 km (full duplex)) or 412 m (half duplex)
	Notes	Transmitter wavelength: Power consumption is 1.1	
	Services	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. 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	Ports	•	2.3ae Type 10GBASE-LR); Duplex: full only
Transceiver (J8437A)	Connectivity	Connector type	SC
An X2 form-factor	Physical characteristics	Wavelength Dimensions	1310 nm 3.48(d) x 1.42(w) x 0.43(h) in. (8.84 x 3.61 x
transceiver that supports the 10-Gigabit LR	r nysicat characteristics		1.09 cm)
standard, providing 10-		Weight	0.35 lb. (0.16 kg)
Gigabit connectivity up to 10 km on single-mode		Transceiver form factor	X2
io kin on single-moue	Environment	Operating temperature	32ºF to 104ºF (0ºC to 40ºC)



Accessory Product D	etails		
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 and ISO/IEC 793-2 Type B [*]	-mode fiber-optic, complying with ITU-T G.652 1;
		Maximum distance:	
		• 10 km	
		Cable length	2m to 10km with 9/125 ìm single-mode cable
		Fiber type	Single Mode
	Notes	•	ables are not supported Ultra Physical Contact (UPC) surface d Physical Contact (APC) is not recommended
	Services	the service-level descripti	www.hp.com/networking/services for details on ons and product numbers. For details about es in your area, please contact your local HP
HP X131 10G X2 SC LRM	Ports	1 SC 10-GbE port (IEEE 802.3aq Type 10GBASE-LRM); Duplex: full only	
Transceiver (J9144A)	Physical characteristics	Dimensions	3.54(d) x 1.59(w) x 0.7(h) in. (9.0 x 4.05 x 1.78 cm)
An X2 form-factor		Weight	0.35 lb. (0.16 kg)
transceiver that supports the 10-Gigabit LRM		Transceiver form factor	X2
standard, providing 10-	Environment	Operating temperature	32ºF to 158ºF (0ºC to 70ºC)
Gigabit connectivity up to 220 m on legacy multimode fiber.		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	metal content, multimode ISO/IEC 793-2 Type A1b or	m (core/cladding) diameter, graded-index, low fiber optic, complying with ITU-T G.651 and r A1a, respectively (a mode conditioning patch me multimode fiber installations);
		Maximum distance:	

Maximum distance:

 \bullet 0.5-220m with 62.5 μm multimode cable @ 160/500 MHz*km



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



HP X112 100M SFP LC BX- U Transceiver (J9100B)		1 LC 100BASE-BX10 port (full only	IEEE 802.3ah Type 100BASE-BX10-U); Duplex:
	Physical characteristics	Dimensions	2.7(d) x 0.55(w) x 0.48(h) in. (6.86 x 1.39 x 1.22
A small form-factor pluggable (SFP) 100-		M-1-1-	cm)
Megabit BX (bi-	• • • • • • •	Weight	0.07 lb. (.03 kg)
directional) "upstream"	Environment	Operating temperature	32°F to 158°F (0°C to 70°C)
transceiver that provides 100 Mbps full-duplex		Operating relative humidity	0% to 95%, noncondensing
connectivity up to 10 km on one strand of		Nonoperating/Storage temperature	-40ºF to 185ºF (-40ºC to 85ºC)
singlemode fiber. The J9100B connects to the	Cabling	Туре:	
J9099B "downstream" transceiver, or to any IEEE-standard 100BASE-		Single-mode fiber optic, c	omplying with ITU-T G.652;
BX10-D ("downstream")		Maximum distance:	
device.		• 0.5-10,000 m (sir	ngle-mode fiber)
	Notes	this product, see the docu on the "HP Mini-GBICs and The J9100B connects to th IEEE-standard 100BASE-B transceiver can only connective two 100-BX-U transceiver	0 nm. Receive wavelength: 1550 nm.
	Services	the service-level descripti	www.hp.com/networking/services for details on ons and product numbers. For details about es in your area, please contact your local HP
HP X121 1G SFP LC LH Transceiver (J4860C)	Ports	1 LC 1000BASE-LH port (n Duplex: full only	o IEEE standard exists for 1550 nm optics);
A small form-factor	Physical characteristics		D(w) x 0.46(h) in. (5.5 x 1.53 x 1.18 cm)
pluggable (SFP) Gigabit LH	Environment		40°F to 185°F (-40°C to 85°C)
transceiver that provides a			ty: 0% to 95% @ 77°F (25°C), noncondensing
full-duplex Gigabit			nperature: -40°F to 185°F (-40°C to 85°C)
solution up to 70 km on		Altitude: up to 10,000 ft. (3 km)
single-mode fiber.	Cabling	Cable type:	
		• Low metal conter G.652 and ISO/IE	nt, single-mode fiber-optic, complying with ITU-T C 793-2 Type B1;
		Maximum distance:	
		• 10-70,000 m (sin	gle-mode fiber)
	Notes	Power consumption is 0.8 utilization.	watts typical with 1 watt maximum at 100%



	Services	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. 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	Ports	1 LC 1000BASE-SX port; Duplex: full only
Transceiver (J4858C)	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)
A small form-factor pluggable (SFP) Gigabit SX	Environment	Transceiver form factor: SFP Operating temperature: 32°F to 158°F (0°C to 70°C)
transceiver that provides a		Operating relative humidity: 5% to 85%, noncondensing
full-duplex Gigabit solution		Nonoperating/Storage temperature: -40°F to 203°F (-40°C to 85°C)
up to 550 m on multimode		Altitude: up to 10,000 ft. (3 km) Power consumption typical: 0.4 W
fiber.		Power consumption typicat: 0.4 W Power consumption maximum: 0.7 W
	Cabling	Туре:
		 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	Ports	1 LC 1000BASE-LX port (IEEE 802.3z Type 1000BASE-LX); Duplex: full only
Transceiver (J4859C)	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)
HP X121 1G SFP LC LX	Environment	Operating temperature: 32°F to 158°F (0°C to 70°C)
Transceiver: An SFP format		Operating relative humidity: 0% to 85%, noncondensing
gigabit transceiver with LC		Nonoperating/Storage temperature: -40°F to 212°F (-40°C to 100°C) Altitude: up to 10,000 ft. (3 km)
connectors using LX technology.	Cabling	Туре:
		 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



Accessory Product Details

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 Tupical
	Services	Power Consumption: < 500mW Typical 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)	Ports	1 RJ-45 1000BASE-T port (IEEE 802.3ab Type 1000BASE-T); Duplex: full only
HP X121 1G SFP RJ45 T	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)
Transceiver: An SFP format	Environment	Operating temperature: 32°F to 158°F (0°C to 70°C); with 100 LFM airflow over the SFP module
gigabit transceiver with RJ45 connectors using		Operating relative humidity: 0% to 95% @ 75°F (25°C), noncondensing
1000BaseT technology.		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



Accessory Product D	etails		
		enable 100 Mb operation. Important: The earlier J81 used in the Switch gl 20-F	177B does not support 100 Mb operation. When Port 10/100/1000 Module (J4908A), the J8177C J in either the upper or lower mini-GBIC
	Services	on the service-level descr	t www.hp.com/networking/services for details iptions and product numbers. For details about nes in your area, please contact your local HP
HP X122 1G SFP LC BX-D Transceiver (J9142B)	Ports	1 LC 1000BASE-BX10 por Duplex: full only	t (IEEE 802.3ah Type 1000BASE-BX10-D);
A small form-factor	Physical characteristics	Dimensions	2.19(d) x 0.54(w) x 0.46(h) in. (5.57 x 1.37 x 1.18 cm)
pluggable (SFP) Gigabit- BX (bi-directional)		Weight	0.04 lb. (0.02 kg)
"downstream" transceiver	Environment	Operating temperature	32ºF to 158ºF (0ºC to 70ºC)
that provides a full- duplex Gigabit solution up		Operating relative humidity	0% to 95%, non-condensing
to 10 km on one strand of single-mode fiber. The		Non-operating/ Storage temperature	–40ºF to 185ºF –40ºC to 85ºC)
J9142B connects to the J9143B "upstream"	Cabling	Type: Single-mode fiber optic, c	complying with ITU-T G.652;
transceiver, or to any IEEE-standard 1000BASE- BX10-U ("upstream") device.		Maximum distance:	
		• 0.5-10,000 m (si	ngle-mode fiber)
	Notes	Power consumption is 1 w For supported platforms a this product, see the docu on the "HP Mini-GBICs and	90 nm. Receive wavelength: 1310 nm. vatt maximum. and minimum software requirements to support iment titled "Support for the HP BX Transceivers" I SFPs" Manuals Web page. he J9143B "upstream" transceiver, or to any
			-BX10-U ("upstream") device. (A 1000-BX-D ect to a 1000-BX-U product. You cannot connect ers together.)
	Services	on the service-level descr	t: www.hp.com/networking/services for details iptions and product numbers. For details about nes in your area, please contact your local HP
HP X122 1G SFP LC BX-U Transceiver (J9143B)	Ports	1 LC 1000BASE-BX10 por Duplex: full only	t (IEEE 802.3ah Type 1000BASE-BX10-U);
A small form-factor	Physical characteristics	Dimensions	2.19(d) x 0.54(w) x 0.46(h) in. (5.57 x 1.37 x 1.18 cm)
pluggable (SFP) Gigabit-		Weight	0.04 lb. (0.02 kg)
BX (bi-directional) "upstream" transceiver	Environment	Operating temperature	32ºF to 158ºF (0ºC to 70ºC)
that provides a full- duplex Gigabit solution up		Operating relative humidity	0% to 95%, non-condensing
to 10 km on one strand of		Non-operating/	–40ºF to 185ºF –40ºC to 85ºC)



Accessory Product D	letails		
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 :	
	Notes	Maximum distance: 10Gbps Transfer Rate (Ethernet): 300m 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. 	



Retired

QuickSpecs

Accessory Product Details			
		• 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.



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
	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.
		 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
	Notes	Maximum distance : 10Gbps Transfer Rate (Ethernet): 300m 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.
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;
	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.
Accessory Product D	vetails	 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



Accessory Product D	letails	
		distances of up to 300 m;
	Notes	Maximum distance : 10Gbps Transfer Rate (Ethernet): 300m 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



Accessory Product L		
		 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 0M3+ Fiber Optic Cable, 50/125um, Type 0FNR (UL), LSZH, cUL, 0FN 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 0M3+ Fiber Optic Cable, 50/125um, Type 0FNR (UL), LSZH, cUL, 0FN FT4, ROHS. Cable also has a longitudinal



Accessory Product Details				
		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 0M3+ Fiber Optic Cable, 50/125um, Type 0FNR (UL), LSZH, cUL, 0FN 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 Notes Multi-mode OM4 2 fiber 30m Cable (QK736A)		Cable Specs: Graded-index, "bendable" fiber optic multimode OM3+ 50/125um duplex cable and Ethernet assembly with LC duplex connectors on each end.		
		diameter: 245 ± 10um • Bandwidth: 3000 MHz-k • Jacket Color: Blue	um, Cladding diameter: 125um ±2um; Coating m @ 850nm (Laser) ade – Low Smoke Zero Halogen (LSZH)	
		thermoplastic	aue – Low Smoke Zero Halogen (LSZH)	
		 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 		
	Comilana	@ 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, 50/125t Type OFNR (UL), LSZH, cUL, OFN FT4, ROHS. Cable also has a longitudi white stripe that runs the entire length of the cable. Insertion Loss: Less than 0.5dB @ 850nm with LED source, 0.003dB, added for lengths >30m Maximum Cable Attenuation: 3.0 dB/km @ 850nm, 1.0 dB/km @ 13⁻¹ @ 23°C as tested in accordance with EIA 455-45 		
	Services	Refer to the HP website at www.hp.com/networking/services for details 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	Physical characteristics	Dimensions	7.9(d) x 6.3(w) x 5.0(h) in. (20.07 x 16.0 x 12.7 cm)	
(J4839A)		Weight	5.55 lb. (2.5 kg)	
	Electrical characteristics	-	100-127/200-240 VAC	
		Current	8.2/3.8 A	



	Frequency	50/60 Hz
Notes		specification information, see the data sheet for the ne RPS is being installed.
Services	on the service-leve	bsite at: www.hp.com/networking/services for details el descriptions and product numbers. For details about nse times in your area, please contact your local HP



Summary of Changes

Date	Version History	Action	Description of Change:
15-Dec-2014	From Version 20 to	Changed	Mentions of HP PCM+ and HP PCM were changed IMC -
	21		Intelligent Management Center
01-Dec-2014	From Version 19 to 20	Changed	Warranty and support updated
06-0ct-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.
04-0ct-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.
22-0ct-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

© Copyright 2014 Hewlett-Packard Development Company, L.P. The information contained herein is subject to change without notice. The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein.

