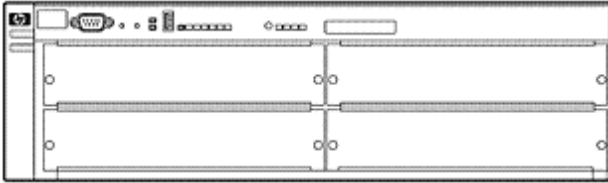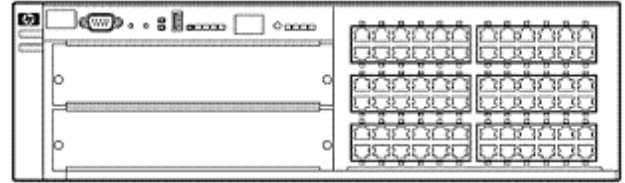## Overview
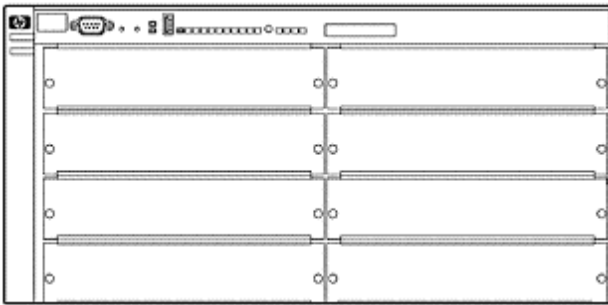


**HP 4204 vl Switch Chassis**



**HP 4202-72 vl Switch**



**HP 4208 vl Switch Chassis**
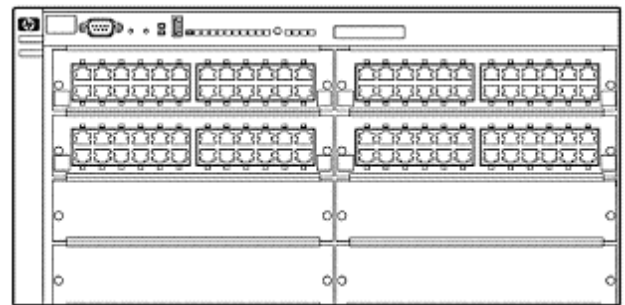


**HP 4208-96 vl Switch**
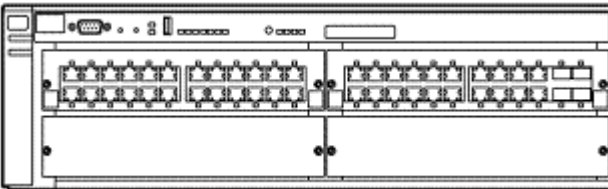


**HP 4204-44G-4SFP vl Switch**
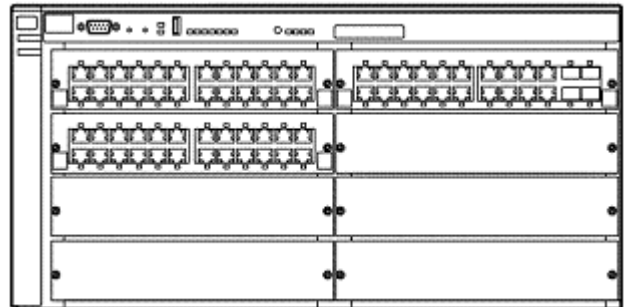


**HP 4208-68G-4SFP vl Switch**

## Models

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

Overview

## Key features

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

## Product 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

## Overview

- **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

### Layer 2 switching

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

### Layer 3 routing

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

### Security

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

### Convergence

- **IP multicast** (data-driven IGMPv3): automatically prevents flooding of IP multicast traffic
- **IEEE 802.1AB Link Layer Discovery Protocol** (LLDP): is an automated device discovery protocol for easy mapping by network management applications

## Overview

- **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**

- **Lifetime warranty**: for as long as you own the product with advance replacement and next-business-day delivery (available in most countries)*
- **Electronic and telephone support**: limited electronic and telephone support is available from HP; refer to: www.hp.com/networking/warranty for details on the support provided and the period during which support is available
- **Software releases**: refer to: www.hp.com/networking/warranty for details on the software releases provided and the period during which software releases are available for your product(s)

* Hardware warranty replacement for as long as you own the product, with next business day advance replacement (available in most countries) with a five-year hardware warranty replacement for the disk drive included with HP AllianceONE Services zl Module, HP Threat Management Services zl Module, HP PCM+ Agent with AllianceONE Services zl Module, and HP E-MSM765 zl Mobility Controller. For details, refer to the HP Software License, Warranty, and Support booklet at: www.hp.com/networking/warranty.

Configuration

## Build To Order:
**BTO is a standalone unit with no integration. BTO products ship standalone are not part of a CTO or Rack-Shippable solution.**

HP 4204 vl Switch Chassis      J8770A
- 4 Open Module ports
- 1 J4839A HP gl/xl/vl Switch Redundant Pwr Supply included
- 3U - Height

See Configuration Note:1

HP 4202-72 vl Switch      J8772B
- 2 Open Module ports
- 1 J4839A HP gl/xl/vl Switch Redundant Pwr Supply included
- 3U - Height

See Configuration Note:1

HP 4208 vl Switch Chassis      J8773A
- 8 Open Module ports
- 1 J4839A HP gl/xl/vl Switch Redundant Pwr Supply included
- 3U - Height

See Configuration Note:1

HP 4208-96 vl Switch      J8775B
- 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

See Configuration Note:1, 2

HP 4204-44G-4SFP vl Switch      J9064A
- 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

See Configuration Note:1, 2

HP 4208-68G-4SFP vl Switch      J9030A
- 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

See Configuration Note:1, 2

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

## Configuration

| | |
|---|---|
| HP X111 100M SFP LC FX Transceiver | J9054C |
| HP X122 1G SFP LC BX-D 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 Optical Media Converter | J8439A |
| HP X131 10G X2 SC SR Transceiver | J8436A |
| HP X131 10G X2 SC LR Transceiver | J8437A |
| HP X131 10G X2 SC LRM Transceiver | J9144A |

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

## Factory Racked Models

HP 4204 vl Switch Chassis                                                                J8770A
- 4 Open Module ports
- 1 J4839A HP gl/xl/vl Switch Redundant Pwr Supply included
- 3U - Height

HP 4202-72 vl Switch                                                                     J8772B
- 2 Open Module ports
- 1 J4839A HP gl/xl/vl Switch Redundant Pwr Supply included
- 3U - Height

HP 4208 vl Switch Chassis                                                                J8773A
- 8 Open Module ports
- 1 J4839A HP gl/xl/vl Switch Redundant Pwr Supply included
- 3U - Height

HP 4208-96 vl Switch                                                                     J8775B
- 8 total Module ports - 4 Open Module ports                                    See Configuration
- 4 J8765B HP 24-port 10/100-TX vl Module included                                   Note:1
- 1 J4839A HP gl/xl/vl Switch Redundant Pwr Supply included
- 5U - Height

HP 4204-44G-4SFP vl Switch                                                               J9064A
- 4 total Module ports - 2 Open Module ports                                    See Configuration
- 1 J8768A HP 24-port Gig-T vl Module included                                       Note:1
- 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

## Configuration

HP 4208-68G-4SFP vl Switch      J9030A
- 8 total Module ports - 5 Open Module ports    See Configuration
- 2 J8768A HP 24-port Gig-T vl Module included    Note:1
- 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 X122 1G SFP LC BX-D 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 Optical 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 |

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

HP 12-port 100FX MTRJ vl Module      J8763A

HP 24-port 10/100-TX vl Module      J8765B

## Configuration

| | |
|---|---|
| HP 24-port Gig-T vl Module | J8768A |

HP 4-port Mini-GBIC vl Module       J8776A
- min=0 \ max=4 SFP Transceivers      See Configuration Note:1

HP 20-port Gig-T / 4-port SFP vl Module     J9033A
- min=0 \ max=4 SFP Transceivers      See Configuration Note:1

HP 1-port 10GbE X2 vl Module       J8766A
- min=0 \ max=1 SFP Transceivers      See Configuration Note:1

Configuration Rules:

| Note 1 | The following Transceivers install into this switch: | |
|---|---|---|
| | HP X121 1G SFP LC SX Transceiver | J4858C |
| | HP X121 1G SFP LC LX Transceiver | J4859C |
| | HP X111 100M SFP LC FX Transceiver | J9054C |
| | HP X122 1G SFP LC BX-D Transceiver | J8177C |
| | HP X112 100M SFP LC BX-D Transceiver | J9099B |
| | HP X112 100M SFP LC BX-U Transceiver | J9100B |

## Transceivers

**SFP Transceivers**

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

## Internal Power Supplies

## Configuration

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

HP gl/xl/vl Switch Redundant Pwr Supply                                          J4839A

## Cables

### Multi-Mode Cables

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

## Switch Enclosure Options

### Software

HP IDM v3 Software w/500-user License                                           J9438A
HP IDM v3 additional 1000-user License                                          J9440A
HP IDM v3 Software w/Unltd-user License                                         J9439A

## Technical Specifications

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

## Technical Specifications

| | |
|---|---|
| **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** | HP PCM+; HP PCM (included); command-line interface; Web browser; configuration menu; out-of-band management (DB-9 serial port console); IEEE 802.3 Ethernet MIB; Repeater MIB; Ethernet Interface MIB |
| **Notes** | When using mini-GBICs with this product, mini-GBICs with revision "B" (product number ends with the letter "B", e.g., J4858B, J4859B) or later are required. When using mini-GBICs with this product, mini-GBICs with revision "B" or later (product number ends with the letter "B" or later, e.g., J4858B, J4859C) are required. |
| **Services** | 3-year, 4-hour onsite, 13x5 coverage for hardware (UE241E) <br> 3-year, 4-hour onsite, 24x7 coverage for hardware (UE242E) <br> 3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (UE243E) <br> 3-year, 24x7 SW phone support, software updates (UE263E) <br> Installation with minimum configuration, system-based pricing (U4827E) <br> Installation with HP-provided configuration, system-based pricing (U4831E) <br> 4-year, 4-hour onsite, 13x5 coverage for hardware (UR876E) <br> 4-year, 4-hour onsite, 24x7 coverage for hardware (UR877E) <br> 4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UR878E) <br> 4-year, 24x7 SW phone support, software updates (UR879E) <br> 5-year, 4-hour onsite, 13x5 coverage for hardware (UR880E) <br> 5-year, 4-hour onsite, 24x7 coverage for hardware (UR881E) <br> 5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UR882E) <br> 5-year, 24x7 SW phone support, software updates (UR883E) <br> 3 Yr 6 hr Call-to-Repair Onsite (UW347E) <br> 4 Yr 6 hr Call-to-Repair Onsite (UW348E) <br> 5 Yr 6 hr Call-to-Repair Onsite (UW349E) <br><br> Refer to the HP website at: www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office. |

| | | |
|---|---|---|
| **HP 4202-72 vl Switch** (J8772B) | **Ports** | 2 open module slots |
| | | 72 autosensing 10/100 ports (IEEE 802.3 Type 10Base-T, IEEE 802.3u Type 100Base-TX); Media Type: Auto-MDIX; Duplex: half or full |
| | | Supports a maximum of 120 autosensing 10/100 ports or 48 Gigabit ports or 8 mini-GBICs or 2 10-GbE ports, or a combination |

## Technical Specifications

| | | |
|---|---|---|
| **Power supplies** | 2 power supply slots<br>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 dissipation** | 2152 BTU/hr (2270 kJ/hr) |
| | **Voltage** | 100-127 / 200-240 VAC |
| | **Current** | 8.2 / 3.8 A |
| | **Maximum power rating** | 630 W |
| | **Frequency** | 50 / 60 Hz |
| | **Notes** | Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with 100% traffic, all ports plugged in, and all modules populated. |
| **Safety** | CSA 22.2 No. 950; UL 60950; EN 60950 | |
| **Emissions** | FCC Class A; VCCI Class A; EN 55022/CISPR 22 Class A; CISPR 22 Class A; EN 55024; IEC/EN 61000-3-2; IEC/EN 61000-3-3 | |
| **Immunity** | **EN** | EN 55024, CISPR 24 |
| | **ESD** | IEC 61000-4-2 |
| | **Radiated** | IEC 61000-4-3 |
| | **EFT/Burst** | IEC 61000-4-4 |
| | **Surge** | IEC 61000-4-5 |
| | **Conducted** | IEC 61000-4-6 |

## Technical Specifications

|  |  | 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 | HP PCM+; HP PCM (included); command-line interface; Web browser; configuration menu; out-of-band management (DB-9 serial port console); IEEE 802.3 Ethernet MIB; Repeater MIB; Ethernet Interface MIB | |
|  | Notes | When using mini-GBICs with this product, mini-GBICs with revision "B" (product number ends with the letter "B", e.g., J4858B, J4859B) or later are required. When using mini-GBICs with this product, mini-GBICs with revision "B" or later (product number ends with the letter "B" or later, e.g., J4858B, J4859C) are required. | |

**Services**

3-year, 4-hour onsite, 13x5 coverage for hardware (UE247E)
3-year, 4-hour onsite, 24x7 coverage for hardware (UE248E)
3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (UE249E)
3-year, 24x7 SW phone support, software updates (UE265E)
Installation with minimum configuration, system-based pricing (U4827E)
Installation with HP-provided configuration, system-based pricing (U4831E)
4-year, 4-hour onsite, 13x5 coverage for hardware (UR892E)
4-year, 4-hour onsite, 24x7 coverage for hardware (UR893E)
4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UR894E)
4-year, 24x7 SW phone support, software updates (UR895E)
5-year, 4-hour onsite, 13x5 coverage for hardware (UR896E)
5-year, 4-hour onsite, 24x7 coverage for hardware (UR897E)
5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UR898E)
5-year, 24x7 SW phone support, software updates (UR899E)
3 Yr 6 hr Call-to-Repair Onsite (UW353E)
4 Yr 6 hr Call-to-Repair Onsite (UW354E)
5 Yr 6 hr Call-to-Repair Onsite (UW355E)

Refer to the HP website at: www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.

**HP 4208 vl Switch Chassis**
(J8773A)

| | | |
|---|---|---|
| Ports | 8 open module slots | |
| | Supports a maximum of 192 autosensing 10/100 ports or 192 autosensing 10/100/1000 ports or 32 mini-GBICs or 4 10-GbE ports, or a combination | |
| Power supplies | 2 power supply slots includes: 1 x J4839A (HP gl/xl/vl Switch Redundant Power Supply) | |
| Physical characteristics | Dimensions | 15.3(d) x 17.4(w) x 8.75(h) in. (38.86 x 44.2 x 22.23 cm) (5U height) |
| | Weight | 26.85 lb. (12.18 kg), Fully loaded |

## Technical Specifications

| | | |
|---|---|---|
| **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: 63.1 dB; DIN 45635T.19 per ISO 7779 |
| **Electrical characteristics** | **Maximum heat dissipation** | 2152 BTU/hr (2270 kJ/hr) |
| | **Voltage** | 100-127 / 200-240 VAC |
| | **Current** | 8.2 / 3.8 A |
| | **Maximum power rating** | 630 W |
| | **Frequency** | 50 / 60 Hz |
| | **Notes** | Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with 100% traffic, all ports plugged in, and all modules populated. |
| **Safety** | | CSA 22.2 No. 950; UL 60950; EN 60950 |
| **Emissions** | | FCC Class A; VCCI Class A; EN 55022/CISPR 22 Class A; CISPR 22 Class A; EN 55024; IEC/EN 61000-3-2; IEC/EN 61000-3-3 |
| **Immunity** | **EN** | EN 55024, CISPR 24 |
| | **ESD** | IEC 61000-4-2 |
| | **Radiated** | IEC 61000-4-3 |
| | **EFT/Burst** | IEC 61000-4-4 |
| | **Surge** | IEC 61000-4-5 |
| | **Conducted** | IEC 61000-4-6 |
| | **Power frequency magnetic field** | IEC 61000-4-8 |
| | **Voltage dips and interruptions** | IEC 61000-4-11 |
| | **Harmonics** | EN 61000-3-2, IEC 61000-3-2 |
| | **Flicker** | EN 61000-3-3, IEC 61000-3-3 |

## Technical Specifications

| | |
|---|---|
| **Management** | HP PCM+; HP PCM (included); command-line interface; Web browser; configuration menu; out-of-band management (DB-9 serial port console); IEEE 802.3 Ethernet MIB; Repeater MIB; Ethernet Interface MIB |
| **Notes** | When using mini-GBICs with this product, mini-GBICs with revision "B" (product number ends with the letter "B", e.g., J4858B, J4859B) or later are required. When using mini-GBICs with this product, mini-GBICs with revision "B" or later (product number ends with the letter "B" or later, e.g., J4858B, J4859C) are required. |
| **Services** | 3-year, 4-hour onsite, 13x5 coverage for hardware (UE244E)<br>3-year, 4-hour onsite, 24x7 coverage for hardware (UE245E)<br>3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (UE246E)<br>3-year, 24x7 SW phone support, software updates (UF787E)<br>Installation with minimum configuration, system-based pricing (U4827E)<br>Installation with HP-provided configuration, system-based pricing (U4831E)<br>4-year, 4-hour onsite, 13x5 coverage for hardware (UR908E)<br>4-year, 4-hour onsite, 24x7 coverage for hardware (UR909E)<br>4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UR910E)<br>4-year, 24x7 SW phone support, software updates (UR911E)<br>5-year, 4-hour onsite, 13x5 coverage for hardware (UR912E)<br>5-year, 4-hour onsite, 24x7 coverage for hardware (UR913E)<br>5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UR914E)<br>5-year, 24x7 SW phone support, software updates (UR915E)<br>3 Yr 6 hr Call-to-Repair Onsite (UW350E)<br>4 Yr 6 hr Call-to-Repair Onsite (UW351E)<br>5 Yr 6 hr Call-to-Repair Onsite (UW352E)<br><br>Refer to the HP website at: www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office. |

| **HP 4208-96 vl Switch** (J8775B) | **Included accessories** | | 4 HP 24-port 10/100-TX vl Modules (J8765B) |
|---|---|---|---|
| | **Ports** | | 4 open module slots |
| | | | 96 autosensing 10/100 ports (IEEE 802.3 Type 10Base-T, IEEE 802.3u Type 100Base-TX); Media Type: Auto-MDIX; Duplex: half or full |
| | | | Supports a maximum of 192 autosensing 10/100 ports or 96 autosensing 10/100/1000 ports or 16 mini-GBICs or 4 10-GbE ports, or a combination |
| | **Power supplies** | | 2 power supply slots<br>includes: 1 x J4839A (HP gl/xl/vl Switch Redundant Power Supply) |
| | **Physical characteristics** | **Dimensions** | 15.3(d) x 17.4(w) x 8.75(h) in. (38.86 x 44.2 x 22.23 cm) (5U height) |
| | | **Weight** | 32.3 lb. (14.65 kg), Fully loaded |
| | **Memory and processor** | **Fabric** | Motorola PowerPC MPC8245 @ 330 MHz, 24 MB flash, 64 MB SDRAM; packet buffer size: 36 MB |

## Technical Specifications

| | | |
|---|---|---|
| **Mounting** | Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included); horizontal surface mounting only | |
| **Performance** | **Latency** | <6 µs (FIFO) |
| | **Throughput** | up to 48 million pps |
| | **Switch fabric speed** | 76.8 Gbps |
| **Environment** | **Operating temperature** | 32°F to 104°F (0°C to 40°C) |
| | **Operating relative humidity** | 15% to 95% @ 104°F (40°C), noncondensing |
| | **Nonoperating/Storage temperature** | -40°F to 158°F (-40°C to 70°C) |
| | **Nonoperating/Storage relative humidity** | 15% to 95% @ 149°F (65°C), noncondensing |
| | **Altitude** | up to 15,000 ft. (4.6 km) |
| | **Acoustic** | Power: 64.2 dB; DIN 45635T.19 per ISO 7779 |
| **Electrical characteristics** | **Maximum heat dissipation** | 2152 BTU/hr (2270 kJ/hr) |
| | **Voltage** | 100-127 / 200-240 VAC |
| | **Current** | 8.2 / 3.8 A |
| | **Maximum power rating** | 630 W |
| | **Frequency** | 50 / 60 Hz |
| | **Notes** | Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with 100% traffic, all ports plugged in, and all modules populated. |
| **Safety** | CSA 22.2 No. 950; UL 60950; EN 60950 | |
| **Emissions** | FCC Class A; VCCI Class A; EN 55022/CISPR 22 Class A; CISPR 22 Class A; EN 55024; IEC/EN 61000-3-2; IEC/EN 61000-3-3 | |
| **Immunity** | **EN** | EN 55024, CISPR 24 |
| | **ESD** | IEC 61000-4-2 |
| | **Radiated** | IEC 61000-4-3 |
| | **EFT/Burst** | IEC 61000-4-4 |
| | **Surge** | IEC 61000-4-5 |
| | **Conducted** | IEC 61000-4-6 |
| | **Power frequency magnetic field** | IEC 61000-4-8 |
| | **Voltage dips and interruptions** | IEC 61000-4-11 |
| | **Harmonics** | EN 61000-3-2, IEC 61000-3-2 |
| | **Flicker** | EN 61000-3-3, IEC 61000-3-3 |

## Technical Specifications

| | |
|---|---|
| **Management** | HP PCM+; HP PCM (included); command-line interface; Web browser; configuration menu; out-of-band management (DB-9 serial port console); IEEE 802.3 Ethernet MIB; Repeater MIB; Ethernet Interface MIB |
| **Notes** | When using mini-GBICs with this product, mini-GBICs with revision "B" (product number ends with the letter "B", e.g., J4858B, J4859B) or later are required. When using mini-GBICs with this product, mini-GBICs with revision "B" or later (product number ends with the letter "B" or later, e.g., J4858B, J4859C) are required. |
| **Services** | 3-year, 4-hour onsite, 13x5 coverage for hardware (UE244E)<br>3-year, 4-hour onsite, 24x7 coverage for hardware (UE245E)<br>3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (UE246E)<br>3-year, 24x7 SW phone support, software updates (UF787E)<br>Installation with minimum configuration, system-based pricing (U4827E)<br>Installation with HP-provided configuration, system-based pricing (U4831E)<br>4-year, 4-hour onsite, 13x5 coverage for hardware (UR908E)<br>4-year, 4-hour onsite, 24x7 coverage for hardware (UR909E)<br>4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UR910E)<br>4-year, 24x7 SW phone support, software updates (UR911E)<br>5-year, 4-hour onsite, 13x5 coverage for hardware (UR912E)<br>5-year, 4-hour onsite, 24x7 coverage for hardware (UR913E)<br>5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UR914E)<br>5-year, 24x7 SW phone support, software updates (UR915E)<br>3 Yr 6 hr Call-to-Repair Onsite (UW350E)<br>4 Yr 6 hr Call-to-Repair Onsite (UW351E)<br>5 Yr 6 hr Call-to-Repair Onsite (UW352E)<br><br>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 4204-44G-4SFP vl Switch** (J9064A) | **Included accessories** | 1 HP 24-port Gig-T vl Module (J8768A) |
| | | 1 HP 20-port Gig-T / 4-port SFP vl Module (J9033A) |
| | **Ports** | 2 open module slots |
| | | 44 autosensing 10/100/1000 ports (IEEE 802.3 Type 10Base-T, IEEE 802.3u Type 100Base-TX, IEEE 802.3ab Type 1000Base-T); Media Type: Auto-MDIX; Duplex: 10Base-T/100Base-TX: half or full; 1000Base-T: full only |
| | | 4 open mini-GBIC (SFP) slots |
| | | Supports a maximum of 48 autosensing 10/100 ports or 92 autosensing 10/100/1000 ports or 12 mini-GBICs or 2 10-GbE ports, or a combination |
| | **Power supplies** | 2 power supply slots<br>includes: 1 x J4839A (HP gl/xl/vl Switch Redundant Power Supply) |
| | **Physical characteristics** | **Dimensions** 15.3(d) x 17.4(w) x 5.25(h) in. (38.86 x 44.2 x 13.34 cm) (3U height) |
| | | **Weight** 24.45 lb. (11.09 kg), Fully loaded |

## Technical Specifications

| | | |
|---|---|---|
| **Memory and processor** | **Fabric** | Motorola PowerPC MPC8245 @ 330 MHz, 24 MB flash, 64 MB SDRAM; packet buffer size: 36 MB |
| **Mounting** | | Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included); horizontal surface mounting only |
| **Performance** | **Latency** | <6 µs (FIFO) |
| | **Throughput** | up to 24 million pps |
| | **Switch fabric speed** | 38.4 Gbps |
| **Environment** | **Operating temperature** | 32°F to 104°F (0°C to 40°C) |
| | **Operating relative humidity** | 15% to 95% @ 104°F (40°C), noncondensing |
| | **Nonoperating/Storage temperature** | -40°F to 158°F (-40°C to 70°C) |
| | **Nonoperating/Storage relative humidity** | 15% to 95% @ 149°F (65°C), noncondensing |
| | **Altitude** | up to 15,000 ft. (4.6 km) |
| | **Acoustic** | Power: 64.2 dB; DIN 45635T.19 per ISO 7779 |
| **Electrical characteristics** | **Maximum heat dissipation** | 2152 BTU/hr (2270 kJ/hr) |
| | **Voltage** | 100-127 / 200-240 VAC |
| | **Current** | 8.2 / 3.8 A |
| | **Maximum power rating** | 630 W |
| | **Frequency** | 50 / 60 Hz |
| | **Notes** | Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with 100% traffic, all ports plugged in, and all modules populated. |
| **Safety** | | CSA 22.2 No. 950; UL 60950; EN 60950 |
| **Emissions** | | FCC Class A; VCCI Class A; EN 55022/CISPR 22 Class A; CISPR 22 Class A; EN 55024; IEC/EN 61000-3-2; IEC/EN 61000-3-3 |
| **Immunity** | **EN** | EN 55024, CISPR 24 |
| | **ESD** | IEC 61000-4-2 |
| | **Radiated** | IEC 61000-4-3 |
| | **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 |

## Technical Specifications

| | |
|---|---|
| **Management** | HP PCM+; HP PCM (included); command-line interface; Web browser; configuration menu; out-of-band management (DB-9 serial port console); IEEE 802.3 Ethernet MIB; Repeater MIB; Ethernet Interface MIB |
| **Notes** | When using mini-GBICs with this product, mini-GBICs with revision "B" (product number ends with the letter "B", e.g., J4858B, J4859B) or later are required. When using mini-GBICs with this product, mini-GBICs with revision "B" or later (product number ends with the letter "B" or later, e.g., J4858B, J4859C) are required. |
| **Services** | 3-year, 4-hour onsite, 13x5 coverage for hardware (UE241E)<br>3-year, 4-hour onsite, 24x7 coverage for hardware (UE242E)<br>3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (UE243E)<br>3-year, 24x7 SW phone support, software updates (UE263E)<br>Installation with minimum configuration, system-based pricing (U4827E)<br>Installation with HP-provided configuration, system-based pricing (U4831E)<br>4-year, 4-hour onsite, 13x5 coverage for hardware (UR876E)<br>4-year, 4-hour onsite, 24x7 coverage for hardware (UR877E)<br>4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UR878E)<br>4-year, 24x7 SW phone support, software updates (UR879E)<br>5-year, 4-hour onsite, 13x5 coverage for hardware (UR880E)<br>5-year, 4-hour onsite, 24x7 coverage for hardware (UR881E)<br>5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UR882E)<br>5-year, 24x7 SW phone support, software updates (UR883E)<br>3 Yr 6 hr Call-to-Repair Onsite (UW347E)<br>4 Yr 6 hr Call-to-Repair Onsite (UW348E)<br>5 Yr 6 hr Call-to-Repair Onsite (UW349E)<br><br>Refer to the HP website at: www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office. |

| | | |
|---|---|---|
| **HP 4208-68G-4SFP vl Switch** (J9030A) | **Included accessories** | 2 HP 24-port Gig-T vl Modules (J8768A) |
| | | 1 HP 20-port Gig-T / 4-port SFP vl Module (J9033A) |
| | **Ports** | 5 open module slots |
| | | 68 autosensing 10/100/1000 ports (IEEE 802.3 Type 10Base-T, IEEE 802.3u Type 100Base-TX, IEEE 802.3ab Type 1000Base-T); Media Type: Auto-MDIX; Duplex: 10Base-T/100Base-TX: half or full; 1000Base-T: full only |
| | | 4 open mini-GBIC (SFP) slots |
| | | Supports a maximum of 120 autosensing 10/100 ports or 188 autosensing 10/100/1000 ports or 24 mini-GBICs or 4 10-GbE ports, or a combination |
| | **Power supplies** | 2 power supply slots<br>includes: 1 x J4839A (HP gl/xl/vl Switch Redundant Power Supply) |
| | **Physical characteristics** | **Dimensions** 15.3(d) x 17.4(w) x 8.75(h) in. (38.86 x 44.2 x 22.23 cm) (5U height) |
| | | **Weight** 30.88 lb. (14.01 kg), Fully loaded |

## Technical Specifications

| | | |
|---|---|---|
| **Memory and processor** | **Fabric** | Motorola PowerPC MPC8245 @ 330 MHz, 24 MB flash, 64 MB SDRAM; packet buffer size: 36 MB |
| **Mounting** | | Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included); horizontal surface mounting only |
| **Performance** | **Latency** | <6 μs (FIFO) |
| | **Throughput** | up to 48 million pps |
| | **Switch fabric speed** | 76.8 Gbps |
| **Environment** | **Operating temperature** | 32°F to 104°F (0°C to 40°C) |
| | **Operating relative humidity** | 15% to 95% @ 104°F (40°C), noncondensing |
| | **Nonoperating/Storage temperature** | -40°F to 158°F (-40°C to 70°C) |
| | **Nonoperating/Storage relative humidity** | 15% to 95% @ 149°F (65°C), noncondensing |
| | **Altitude** | up to 15,000 ft. (4.6 km) |
| | **Acoustic** | Power: 64.2 dB; DIN 45635T.19 per ISO 7779 |
| **Electrical characteristics** | **Maximum heat dissipation** | 2152 BTU/hr (2270 kJ/hr) |
| | **Voltage** | 100-127 / 200-240 VAC |
| | **Current** | 8.2 / 3.8 A |
| | **Maximum power rating** | 630 W |
| | **Frequency** | 50 / 60 Hz |
| | **Notes** | Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with 100% traffic, all ports plugged in, and all modules populated. |
| **Safety** | | CSA 22.2 No. 950; UL 60950; EN 60950 |
| **Emissions** | | FCC Class A; VCCI Class A; EN 55022/CISPR 22 Class A; CISPR 22 Class A; EN 55024; IEC/EN 61000-3-2; IEC/EN 61000-3-3 |
| **Immunity** | **EN** | EN 55024, CISPR 24 |
| | **ESD** | IEC 61000-4-2 |
| | **Radiated** | IEC 61000-4-3 |
| | **EFT/Burst** | IEC 61000-4-4 |
| | **Surge** | IEC 61000-4-5 |
| | **Conducted** | IEC 61000-4-6 |
| | **Power frequency magnetic field** | IEC 61000-4-8 |
| | **Voltage dips and interruptions** | IEC 61000-4-11 |
| | **Harmonics** | EN 61000-3-2, IEC 61000-3-2 |
| | **Flicker** | EN 61000-3-3, IEC 61000-3-3 |

## Technical Specifications

| | |
|---|---|
| **Management** | HP PCM+; HP PCM (included); command-line interface; Web browser; configuration menu; out-of-band management (DB-9 serial port console); IEEE 802.3 Ethernet MIB; Repeater MIB; Ethernet Interface MIB |
| **Notes** | When using mini-GBICs with this product, mini-GBICs with revision "B" (product number ends with the letter "B", e.g., J4858B, J4859B) or later are required. When using mini-GBICs with this product, mini-GBICs with revision "B" or later (product number ends with the letter "B" or later, e.g., J4858B, J4859C) are required. |
| **Services** | 3-year, 4-hour onsite, 13x5 coverage for hardware (UE244E)<br>3-year, 4-hour onsite, 24x7 coverage for hardware (UE245E)<br>3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (UE246E)<br>3-year, 24x7 SW phone support, software updates (UF787E)<br>Installation with minimum configuration, system-based pricing (U4827E)<br>Installation with HP-provided configuration, system-based pricing (U4831E)<br>4-year, 4-hour onsite, 13x5 coverage for hardware (UR908E)<br>4-year, 4-hour onsite, 24x7 coverage for hardware (UR909E)<br>4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UR910E)<br>4-year, 24x7 SW phone support, software updates (UR911E)<br>5-year, 4-hour onsite, 13x5 coverage for hardware (UR912E)<br>5-year, 4-hour onsite, 24x7 coverage for hardware (UR913E)<br>5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UR914E)<br>5-year, 24x7 SW phone support, software updates (UR915E)<br>3 Yr 6 hr Call-to-Repair Onsite (UW350E)<br>4 Yr 6 hr Call-to-Repair Onsite (UW351E)<br>5 Yr 6 hr Call-to-Repair Onsite (UW352E)<br><br>Refer to the HP website at: www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office. |
| **Standards and protocols** (applies to all products in series) | **Device management**<br>HTML and telnet management<br><br>**General protocols**<br>IEEE 802.1D MAC Bridges<br>IEEE 802.1p Priority<br>IEEE 802.1Q VLANs<br>IEEE 802.1s Multiple Spanning Trees<br>IEEE 802.1w Rapid Reconfiguration of Spanning Tree<br>IEEE 802.3ad Link Aggregation Control Protocol (LACP)<br>IEEE 802.3x Flow Control<br>RFC 768 UDP<br>RFC 783 TFTP Protocol (revision 2)<br>RFC 791 IP<br>RFC 792 ICMP<br>RFC 793 TCP<br>RFC 826 ARP<br>RFC 854 TELNET |

Technical Specifications

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 12-port 100FX MTRJ vl Module | J8763A |
| | HP 24-port 10/100-TX vl Module | J8765B |
| | HP 24-port Gig-T vl Module | J8768A |
| | HP 4-port Mini-GBIC vl Module | J8776A |
| | 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 X130 CX4 Optical Media Converter | J8439A |
| | HP X131 10G X2 SC SR Transceiver | J8436A |
| | HP X131 10G X2 CX4 Transceiver | J8440C |
| | HP X111 100M SFP LC FX Transceiver | J9054B |
| | 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 Pwr Supply | J4839A |
| **Software** | HP Identity Driven Manager 3.0 Software--500-User License | J9438A |
| | HP Identity Driven Manager 3.0 Software--Additional 1,000-User License | J9440A |
| | HP Identity Driven Manager 3.0 Software--Unlimited-User License | J9439A |

## Accessory Product Details

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

| | | |
|---|---|---|
| **HP 12-port 100FX MTRJ vl Module** (J8763A) | **Ports** | 12 MTRJ 100BASE-FX ports (IEEE 802.3u Type 100BASE-FX); 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** | 1.79 lb. (0.81 kg) |
| | **Cabling** | Cable type: 62.5/125 ìm or 50/125 ìm (core/cladding) diameter, graded-index, low metal content, multimode fiber optic, complying with ITU-T G.651 and ISO/IEC 793-2 Type A1b or A1a, respectively; Maximum distance: • 2 km (full duplex) or 412 m (half-duplex) |
| | **Services** | Refer to the HP website at: www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office. |
| **HP 24-port 10/100-TX vl Module** (J8765B) | **Ports** | 24 RJ-45 autosensing 10/100 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX); Media Type: Auto-MDIX; Duplex: half or full |
| | **Physical characteristics** Dimensions | 8.97(d) x 8.0(w) x 1.75(h) in. (22.78 x 20.32 x 4.45 cm) |
| | **Weight** | 1.43 lb. (0.65 kg) |
| | **Cabling** | Cable type: 100BASE-TX: Category 5 (or better), 100 Ù differential unshielded twisted pair (UTP) or shielded twisted pair (STP), complying with IEEE 802.3u 100BASE-TX; Maximum distance: • 100 meters |
| | **Services** | Refer to the HP website at: www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office. |

## Accessory Product Details

| | | | |
|---|---|---|---|
| **HP 24-port Gig-T vl Module** (J8768A) | **Ports** | | 24 RJ-45 autosensing 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T); Media Type: Auto-MDIX; Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only |
| | **Physical characteristics** | **Dimensions** | 8.97(d) x 8.0(w) x 1.75(h) in. (22.78 x 20.32 x 4.45 cm) |
| | | **Weight** | 1.23 lb. (0.56 kg) |
| | **Cabling** | | Cable type: 1000BASE-T: Category 5 (5E or better recommended), 100 Ù differential 4 pair unshielded twisted pair (UTP) or shielded twisted pair (STP) balanced, complying with IEEE 802.3ab 1000BASE-T |
| | **Services** | | Refer to the HP website at: www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office. |
| **HP 4-port Mini-GBIC vl Module** (J8776A) | **Ports** | | 4 open mini-GBIC (SFP) slots |
| | **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: Either single mode or multimode |
| | **Notes** | | When using mini-GBICs with this product, mini-GBICs with revision "B" or later (product number ends with the letter "B" or later, e.g. J4858B, J4859C) are required. The HP X111 100M SFP LC FX Transceiver (J9054B) is not supported in this module. |
| | **Services** | | Refer to the HP website at: www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office. |
| **HP 20-port Gig-T / 4-port SFP vl Module** (J9033A) | **Ports** | | 4 open mini-GBIC (SFP) slots 20 RJ-45 autosensing 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T); Media Type: Auto-MDIX; Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only |
| | **Physical characteristics** | **Dimensions** | 8.97(d) x 8.0(w) x 1.75(h) in. (22.78 x 20.32 x 4.45 cm) |
| | | **Weight** | 1.52 lb. (0.69 kg) |
| | **Cabling** | | Cable type: 1000BASE-T: Category 5 (5E or better recommended), 100 Ù differential 4 pair unshielded twisted pair (UTP) or shielded twisted pair (STP) balanced, complying with IEEE 802.3ab 1000BASE-T |
| | **Notes** | | When using mini-GBICs with this product, mini-GBICs with revision "B" or later (product number ends with the letter "B" or later, e.g. J4858B, J4859C) are required. |

## Accessory Product Details

|  | 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-port 10GbE X2 vl Module** (J8766A) | Ports | 1 open 10-GbE X2 transceiver slot | |
|---|---|---|---|
| | **Physical characteristics** | **Dimensions** | 8.97(d) x 8(w) x 1.75(h) in. (22.78 x 20.32 x 4.45 cm) |
| | | **Weight** | 1.00 lb. (0.45 kg) |
| | **Environment** | **Operating temperature** | 32°F to 104°F (0°C to 40°C) |
| | **Notes** | | Expected throughput is 2.5 to 7 Gbps, depending on packet size. Traffic from single MAC SA to single MAC DA will be at most 1 Gbps. The 4200vl chassis can support upto 4 modules. 2 10G ports can be trunked together, cannot include other port speeds.<br>Available January 1, 2008. |
| | **Services** | | Refer to the HP website at: www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office. |

| **HP X131 10G X2 SC ER Transceiver** (J8438A)<br><br>HP X131 10G X2 SC ER Transceiver: An X2 format 10-gigabit transceiver with SC connectors using ER technology. | Ports | 1 SC 10-GbE port (IEEE 802.3ae Type 10GBASE-ER); Duplex: full only | |
|---|---|---|---|
| | **Connectivity** | **Connector type** | SC |
| | | **Wavelength** | 1550 nm |
| | **Physical characteristics** | **Dimensions** | 3.48(d) x 1.42(w) x 0.43(h) in. (8.84 x 3.61 x 1.09 cm) |
| | | **Weight** | 0.35 lb. (0.16 kg) |
| | | **Transceiver form factor** | X2 |
| | **Environment** | **Operating temperature** | 32°F to 104°F (0°C to 40°C) |
| | | **Operating relative humidity** | 15% to 95%, noncondensing |
| | **Electrical characteristics** | **Power consumption typical** | 3 W |
| | | **Power consumption maximum** | 4.5 W |
| | **Cabling** | | Cable type::<br>Low metal content, single-mode fiber-optic, complying with ITU-T G.652 and ISO/IEC 793-2 Type B1; |
| | | **Cable length** | 2m to 30km (max 40km on engineered links) |
| | | **Fiber type** | Single Mode |
| | **Notes** | | Conditioning patch cord cables are not supported<br>For fiber patch cords, use Ultra Physical Contact (UPC) surface termination/polish. Angled Physical Contact (APC) is not recommended. |
| | **Services** | | Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office. |

## Accessory Product Details

| **HP X130 CX4 Optical Media Converter** (J8439A) | **Physical characteristics** | **Dimensions** | 2.83(d) x 0.98(w) x 0.59(h) in. (7.19 x 2.49 x 1.5 cm) |
|---|---|---|---|
| | | **Weight** | .06 lb. (0.03 kg) |
| An optical media converter that connects to CX4 ports, providing 10-Gigabit connectivity up to 300 m on multimode fiber. | **Cabling** | Maximum distance:<br>• 62.5 µm multimode cable @ 150 MHz*km = 1-50 m<br>• 50 µm multimode cable @ 500 MHz*km = 1-100 m<br>• 50 µm multimode cable @ 2000 MHz*km = 1-300 m | |
| | **Notes** | Duplex: full<br>The CX4 Media Converter connects directly to the CX4 port, and a 12-strand multimode ribbon cable is used between CX4 Media Converters.<br>The 12-strand multimode ribbon cable can have either 62.5 or 50 micron core diameters, terminated by standard Multiple Terminations Push-pull Latch (MTP) connectors in a crossover configuration. The ribbon cables are known as Multi-fiber Push (MPO).<br>Users should specify a "crossover" (often called "key up/key up") configuration for the ribbon cable. Also, specify female-female cables to connect to ProCurve 10-GbE CX4 Media Converters.<br>For a suggested vendor of MPO ribbon cables, please see the "Cabling" answers on the "ProCurve 10-GbE Transceivers" FAQs Web page. | |
| | **Services** | Refer to the HP website at: www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office. | |

| **HP X131 10G X2 SC SR Transceiver** (J8436A) | **Ports** | 1 SC 10-GbE port (IEEE 802.3ae Type 10GBASE-SR); Duplex: full only | |
|---|---|---|---|
| | **Connectivity** | **Connector type** | SC |
| HP X131 10G X2 SC SR Transceiver: An X2 format 10-gigabit transceiver with SC connectors using SR technology. | | **Wavelength** | 850 nm |
| | **Physical characteristics** | **Dimensions** | 3.48(d) x 1.42(w) x 0.43(h) in. (8.84 x 3.61 x 1.09 cm) |
| | | **Weight** | 0.35 lb. (0.16 kg) |
| | | **Transceiver form factor** | X2 |
| | **Environment** | **Operating temperature** | 32ºF to 158ºF (0ºC to 70ºC) |
| | | **Operating relative humidity** | 0% to 95%, noncondensing |
| | | **Nonoperating/Storage temperature** | -40ºF to 185ºF (-40ºC to 85ºC) |
| | | **Nonoperating/Storage relative humidity** | 0% to 95%, noncondensing |
| | | **Altitude** | up to 10,000 ft. (3 km) |
| | **Electrical characteristics** | **Power consumption typical** | 1.7 W |
| | | **Power consumption maximum** | 2.4 W |
| | **Cabling** | Cable type:: | |

## Accessory Product Details

62.5/125 µm or 50/125 µm (core/cladding) graded-index, low metal content, multimode fiber optic, complying with ITU-T G.651 and ISO/IEC 793-2 Type A1b or A1a, respectively;

Maximum distance:

- 2-26m with 62.5 µm multimode cable @ 160 MHz*km
- 2-33m with 62.5 µm multimode cable @ 200 MHz*km
- 2-66m with 50 µm multimode cable @ 400 MHz*km
- 2-82m with 50 µm multimode cable @ 500 MHz*km
- 2-300m with 50 µm multimode cable @ 2000 MHz*km

| | | |
|---|---|---|
| | **Cable length** | 2-300m |
| | **Fiber type** | Multi Mode |
| **Notes** | For fiber patch cords, use Ultra Physical Contact (UPC) surface termination/polish. Angled Physical Contact (APC) is not recommended. | |
| **Services** | Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office. | |

| **HP X131 10G X2 CX4 Transceiver** (J8440C)<br><br>HP X131 10G X2 CX4 Transceiver: An X2 format 10-gigabit CX4 transceiver. | **Ports** | 1 CX4 10-GbE port (IEEE 802.3ak Type 10GBASE-CX4); Duplex: full only | |
|---|---|---|---|
| | **Connectivity** | Connector type | CX4 |
| | **Physical characteristics** | Dimensions | 3.54(d) x 1.42(w) x 0.53(h) in. (8.99 x 3.61 x 1.35 cm) |
| | | Weight | 0.18 lb. (0.08 kg) |
| | | Transceiver form factor | X2 |
| | **Environment** | Operating temperature | 32ºF to 131ºF (0ºC to 55ºC) |
| | | Operating relative humidity | 15% to 95%, noncondensing |
| | | Nonoperating/Storage temperature | -40ºF to 185ºF (-40ºC to 85ºC) |
| | | Altitude | up to 10,000 ft. (3 km) |
| | **Electrical characteristics** | Power consumption typical | 1.0 W |
| | | Power consumption maximum | 3.3 W |
| | **Cabling** | Maximum distance:<br>• 15m with CX4 cables<br>• 300m with optical media converter and multimode fiber cable | |
| | **Notes** | Connector: CX4; Duplex: full<br>Use CX4 10-GbE cable (0.5-15 m) or HP X130 CX4 Optical Media Converter (J8439A).<br>For suggested vendors of CX4 cables, please see the "Cabling" answers on the "HP 10-GbE Transceivers" FAQs Web page.<br>Optical Media Converter (OMC) J8439A is not supported on the C version as the power supply for the OMC was removed in this design. | |

## Accessory Product Details

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| | **Services** | Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office. |

| | | |
|---|---|---|
| **HP X111 100M SFP LC FX Transceiver** (J9054B) | **Ports** | 1 LC 100BASE-FX port (IEEE 802.3u Type 100BASE-FX); Duplex: half or full |
| | **Physical characteristics** | Dimensions: 2.7(d) x 0.54(w) x 0.48(h) in. (6.86 x 1.38 x 1.22 cm)<br>Weight: 0.06 lb. (0.03 kg) |
| HP X111 100M SFP LC FX Transceiver: An SFP format 100-megabit transceiver with LC connectors using FX technology. | **Environment** | Operating temperature: 32ºF to 158ºF (0ºC to 70ºC)<br>Operating relative humidity: 5% to 95%<br>Nonoperating/Storage temperature: -40ºF to 185ºF (-40ºC to 85ºC)<br>Nonoperating/Storage relative humidity: 5% to 85%<br>Altitude: up to 10,000 ft. (3 km) |
| | **Cabling** | Type:<br><br>● 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;<br><br>Maximum distance:<br><br>● 2 km (full duplex) or 412 m (half duplex) |
| | **Notes** | Transmitter wavelength: 1310nm<br>Power consumption is 1.1 watt maximum.<br><br>For supported platforms and minimum software requirements to support this product, see the document titled "Support for the J9054B 100-FX SFP-LC Transceiver" on the "HP Mini-GBICs and SFPs" Manuals Web page. |
| | **Services** | Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office. |

| | | | |
|---|---|---|---|
| **HP X131 10G X2 SC LR Transceiver** (J8437A) | **Ports** | 1 SC 10-GbE port (IEEE 802.3ae Type 10GBASE-LR); Duplex: full only | |
| | **Connectivity** | Connector type | SC |
| An X2 form-factor transceiver that supports the 10-Gigabit LR standard, providing 10-Gigabit connectivity up to 10 km on single-mode fiber. | | Wavelength | 1310 nm |
| | **Physical characteristics** | Dimensions | 3.48(d) x 1.42(w) x 0.43(h) in. (8.84 x 3.61 x 1.09 cm) |
| | | Weight | 0.35 lb. (0.16 kg) |
| | | Transceiver form factor | X2 |
| | **Environment** | Operating temperature | 32ºF to 104ºF (0ºC to 40ºC) |
| | | Operating relative humidity | 15% to 95%, noncondensing |
| | | Nonoperating/Storage temperature | -40ºF to 185ºF (-40ºC to 85ºC) |
| | | Altitude | up to 10,000 ft. (3 km) |

## Accessory Product Details

| | | |
|---|---|---|
| **Electrical characteristics** | **Power consumption typical** | 2 W |
| | **Power consumption maximum** | 3 W |
| **Cabling** | Cable type:: Low metal content, single-mode fiber-optic, complying with ITU–T G.652 and ISO/IEC 793-2 Type B1; | |
| | Maximum distance: | |
| | • 10 km | |
| | **Cable length** | 2m to 10km with 9/125 ìm single-mode cable |
| | **Fiber type** | Single Mode |
| **Notes** | Conditioning patch cord cables are not supported For fiber patch cords, use Ultra Physical Contact (UPC) surface termination/polish. Angled Physical Contact (APC) is not recommended | |
| **Services** | Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office. | |

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**HP X131 10G X2 SC LRM Transceiver** (J9144A)

An X2 form-factor transceiver that supports the 10-Gigabit LRM standard, providing 10-Gigabit connectivity up to 220 m on legacy multimode fiber.

| | | |
|---|---|---|
| **Ports** | 1 SC 10-GbE port (IEEE 802.3aq Type 10GBASE-LRM); Duplex: full only | |
| **Physical characteristics** | **Dimensions** | 3.54(d) x 1.59(w) x 0.7(h) in. (9.0 x 4.05 x 1.78 cm) |
| | **Weight** | 0.35 lb. (0.16 kg) |
| | **Transceiver form factor** | X2 |
| **Environment** | **Operating temperature** | 32ºF to 158ºF (0ºC to 70ºC) |
| | **Operating relative humidity** | 0% to 95%, noncondensing |
| | **Nonoperating/Storage temperature** | -40ºF to 185ºF (-40ºC to 85ºC) |
| | **Altitude** | up to 10,000 ft. (3 km) |
| **Electrical characteristics** | **Power consumption typical** | 3.2 W |
| | **Power consumption maximum** | 4.2 W |
| **Cabling** | Cable type: 62.5/125 µm or 50/125 µm (core/cladding) diameter, graded-index, low metal content, multimode fiber optic, complying with ITU–T G.651 and ISO/IEC 793-2 Type A1b or A1a, respectively (a mode conditioning patch cord may be needed in some multimode fiber installations); | |
| | Maximum distance: • 0.5-220m with 62.5 µm multimode cable @ 160/500 MHz*km • 0.5-220m with 62.5 µm multimode cable @ 200/500 MHz*km • 0.5-100m with 50 µm multimode cable @ 400/400 MHz*km • 0.5-220m with 50 µm multimode cable @ 500/500 MHz*km | |

## Accessory Product Details

| | | |
|---|---|---|
| | • 0.5-220m with 50 µm multimode cable @ 1500/500 MHz*km | |
| | **Cable length** | .5m to 220m |
| | **Fiber type** | Multi Mode |
| **Notes** | Wavelength: 1310nm | |
| | For OM3 cable (50 ìm multimode @ 1500/500 MHz*km), a mode-conditioning patch cord is not required. Other multimode cables may require mode-conditioning patch cords to achieve the maximum distances listed above. For supported platforms and minimum software requirements to support this product, see the document titled "Support for the J9144A 10-GbE X2-SC LRM Optic" on the "HP 10-GbE Transceivers" Manuals Web page. Power Consumption: 4W Max | |
| **Services** | Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office. | |

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**HP X112 100M SFP LC BX-D Transceiver** (J9099B)

A small form-factor pluggable (SFP) 100-Megabit BX (bi-directional) "downstream" transceiver that provides 100 Mbps full-duplex connectivity up to 10 km on one strand of singlemode fiber. The J9099B connects to the J9100B "upstream" transceiver, or to any IEEE-standard 100BASE-BX10-U ("upstream") device.

| | | |
|---|---|---|
| **Ports** | 1 LC 100BASE-BX10 port (IEEE 802.3ah Type 100BASE-BX10-D); Duplex: full only | |
| **Physical characteristics** | **Dimensions** | 2.7(d) x 0.55(w) x 0.48(h) in. (6.86 x 1.39 x 1.22 cm) |
| | **Weight** | 0.04 lb. (0.03 kg) |
| **Environment** | **Operating temperature** | 32ºF to 158ºF (0ºC to 70ºC) |
| | **Operating relative humidity** | 0% to 95%, noncondensing |
| | **Nonoperating/Storage temperature** | -40ºF to 185ºF (-40ºC to 85ºC) |
| **Cabling** | Type: | |
| | Single-mode fiber optic, complying with ITU-T G.652; | |
| | Maximum distance: | |
| | • 0.5-10,000 m (single-mode fiber) | |
| **Notes** | Transmit wavelength: 1550 nm. Receive wavelength: 1310 nm. Power consumption is 1.1 watt maximum. For supported platforms and minimum software requirements to support this product, see the document titled "Support for the HP BX Transceivers" on the "HP Mini-GBICs and SFPs" Manuals Web page. The J9099B connects to the J9100B "upstream" transceiver, or to any IEEE-standard 100BASE-BX10-U ("upstream") device. (A 100-BX-D transceiver can only connect to a 100-BX-U product. You cannot connect two 100-BX-D transceivers together.) | |
| **Services** | Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office. | |

# QuickSpecs

HP 4200 vl Switch Series

## Accessory Product Details

**HP X112 100M SFP LC BX-U Transceiver** (J9100B)

A small form-factor pluggable (SFP) 100-Megabit BX (bi-directional) "upstream" transceiver that provides 100 Mbps full-duplex connectivity up to 10 km on one strand of singlemode fiber. The J9100B connects to the J9099B "downstream" transceiver, or to any IEEE-standard 100BASE-BX10-D ("downstream") device.

| | | |
|---|---|---|
| **Ports** | | 1 LC 100BASE-BX10 port (IEEE 802.3ah Type 100BASE-BX10-U); Duplex: full only |
| **Physical characteristics** | **Dimensions** | 2.7(d) x 0.55(w) x 0.48(h) in. (6.86 x 1.39 x 1.22 cm) |
| | **Weight** | 0.07 lb. (.03 kg) |
| **Environment** | **Operating temperature** | 32ºF to 158ºF (0ºC to 70ºC) |
| | **Operating relative humidity** | 0% to 95%, noncondensing |
| | **Nonoperating/Storage temperature** | -40ºF to 185ºF (-40ºC to 85ºC) |
| **Cabling** | | Type: |

Single-mode fiber optic, complying with ITU-T G.652;

Maximum distance:

- 0.5-10,000 m (single-mode fiber)

**Notes**
For supported platforms and minimum software requirements to support this product, see the document titled "Support for the HP BX Transceivers" on the "HP Mini-GBICs and SFPs" Manuals Web page.
The J9100B connects to the J9099B "downstream" transceiver, or to any IEEE-standard 100BASE-BX10- D ("downstream") device. (A 100-BX-U transceiver can only connect to a 100-BX-D product. You cannot connect two 100-BX-U transceivers together.)
Transmit wavelength: 1310 nm. Receive wavelength: 1550 nm.
Power consumption is 1.1 watts maximum.

**Services**
Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.

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**HP X121 1G SFP LC LH Transceiver** (J4860C)

A small form-factor pluggable (SFP) Gigabit LH transceiver that provides a full-duplex Gigabit solution up to 70 km on single-mode fiber.

**Ports**
1 LC 1000BASE-LH port (no IEEE standard exists for 1550 nm optics); Duplex: full only

**Physical characteristics**
Dimensions: 2.17(d) x 0.60(w) x 0.46(h) in. (5.5 x 1.53 x 1.18 cm)
Weight: 0.04 lb. (0.02 kg)

**Environment**
Operating temperature: -40°F to 185°F (-40°C to 85°C)
Operating relative humidity: 0% to 95% @ 77°F (25°C), noncondensing
Nonoperating/Storage temperature: -40°F to 185°F (-40°C to 85°C)
Altitude: up to 10,000 ft. (3 km)

**Cabling**
Cable type:

- Low metal content, single-mode fiber-optic, complying with ITU-T G.652 and ISO/IEC 793-2 Type B1;

Maximum distance:

- 10-70,000 m (single-mode fiber)

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## Accessory Product Details

| | Notes | Power consumption is 0.8 watts typical with 1 watt maximum at 100% utilization.<br>For distances less than 20 km, a 10 dB attenuator must be used.<br>For distances between 20 km and 40 km, a 5 dB attenuator must be used.<br>Attenuators can be purchased from most cable vendors. |
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| | Services | Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office. |

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| **HP X121 1G SFP LC SX Transceiver** (J4858C)<br><br>A small form-factor pluggable (SFP) Gigabit SX transceiver that provides a full-duplex Gigabit solution up to 550 m on multimode fiber. | **Ports** | 1 LC 1000BASE-SX port; Duplex: full only |
| | **Physical characteristics** | Dimensions: 2.24(d) x 0.54(w) x 0.48(h) in. (5.69 x 1.37 x 1.22 cm)<br>Weight: 0.04 lb. (0.02 kg)<br>Transceiver form factor: SFP |
| | **Environment** | Operating temperature: 32°F to 158°F (0°C to 70°C)<br>Operating relative humidity: 5% to 85%, noncondensing<br>Nonoperating/Storage temperature: -40°F to 203°F (-40°C to 85°C)<br>Altitude: up to 10,000 ft. (3 km) |
| | **Electrical characteristics** | Power consumption typical: 0.4 W<br>Power consumption maximum: 0.7 W |
| | **Cabling** | Type:<br><br>● 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;<br><br>Maximum distance:<br><br>● 2-220 m (62.5 µm core diameter, 160 MHz*km bandwidth<br>● 2-275 m (62.5 µm core diameter, 200 MHz*km bandwidth<br>● 2-500 m (50 µm core diameter, 400 MHz*km bandwidth)<br>● 2-550 m (50 µm core diameter, 500 MHz*km bandwidth)<br>Cable length: 2-550m<br>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. |

## Accessory Product Details

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| **HP X121 1G SFP LC LX Transceiver** (J4859C)<br><br>HP X121 1G SFP LC LX Transceiver: An SFP format gigabit transceiver with LC connectors using LX technology. | **Ports** | 1 LC 1000BASE-LX port (IEEE 802.3z Type 1000BASE-LX); Duplex: full only |
| | **Physical characteristics** | Dimensions: 2.24(d) x 0.54(w) x 0.486(h) in. (5.69 x 1.37 x 1.23 cm)<br>Weight:0.04 lb. (0.02 kg) |
| | **Environment** | Operating temperature: 32°F to 158°F (0°C to 70°C)<br>Operating relative humidity: 0% to 85%, noncondensing<br>Nonoperating/Storage temperature: -40°F to 212°F (-40°C to 100°C)<br>Altitude: up to 10,000 ft. (3 km) |
| | **Cabling** | Type: |

- Either single mode or multimode; 62.5/125 µm or 50/125 µm (core/cladding) diameter, graded-index, low metal content, multimode fiber optic, complying with ITU-T G.651 and ISO/IEC 793-2 Type A1b or A1a, respectively; Low metal content, single-mode fiber-optic, complying with ITU-T G.652 and ISO/IEC 793-2 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)

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| | **Notes** | A mode conditioning patch cord may be needed in some multimode fiber installations.<br>Wavelength: 1310nm<br>Power Consumption: < 500mW Typical |
| | **Services** | Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office. |

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| **HP X121 1G SFP RJ45 T Transceiver** (J8177C)<br><br>HP X121 1G SFP RJ45 T Transceiver: An SFP format gigabit transceiver with RJ45 connectors using 1000BaseT technology. | **Ports** | 1 RJ-45 1000BASE-T port (IEEE 802.3ab Type 1000BASE-T); Duplex: full only |
| | **Physical characteristics** | Dimensions: 2.71(d) x 0.54(w) x 0.55(h) in. (6.88 x 1.37 x 1.4 cm)<br>Weight: 0.06 lb. (0.03 kg) |
| | **Environment** | Operating temperature: 32°F to 158°F (0°C to 70°C); with 100 LFM airflow over the SFP module |
| | | Operating relative humidity: 0% to 95% @ 75°F (25°C), noncondensing |
| | | Nonoperating/Storage temperature: -40°F to 185°F (-40°C to 85°C) |
| | | Nonoperating/Storage relative humidity: 0% to 95% @ 77°F (25°C), noncondensing |
| | | Altitude: up to 10,000 ft. (3000 km) |
| | **Cabling** | Cable type:<br>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;<br><br>Maximum distance: |

## Accessory Product Details

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| | | ● 100 m |
| | **Notes** | Power consumption is nominally 1 watt.<br>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.<br>The J8177C Gigabit copper mini-GBIC is not supported on dual-personality ports.<br>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 software version K.12.21 or later. Use the "auto-100" port setting to enable 100 Mb operation.<br>Important: The earlier J8177B does not support 100 Mb operation. When used in the Switch gl 20-Port 10/100/1000 Module (J4908A), the J8177C mini-GBIC can be installed in either the upper or lower mini-GBIC<br>port, but will block access to the other port. |
| | **Services** | Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office. |

| **HP X122 1G SFP LC BX-D Transceiver** (J9142B)<br><br>A small form-factor pluggable (SFP) Gigabit-BX (bi-directional) "downstream" transceiver that provides a full-duplex Gigabit solution up to 10 km on one strand of single-mode fiber. The J9142B connects to the J9143B "upstream" transceiver, or to any IEEE-standard 1000BASE-BX10-U ("upstream") device. | **Ports** | 1 LC 1000BASE-BX10 port (IEEE 802.3ah Type 1000BASE-BX10-D); Duplex: full only |
|---|---|---|
| | **Physical characteristics** | **Dimensions** — 2.19(d) x 0.54(w) x 0.46(h) in. (5.57 x 1.37 x 1.18 cm) |
| | | **Weight** — 0.04 lb. (0.02 kg) |
| | **Environment** | **Operating temperature** — 32ºF to 158ºF (0ºC to 70ºC) |
| | | **Operating relative humidity** — 0% to 95%, non-condensing |
| | | **Non-operating/ Storage temperature** — −40ºF to 185ºF −40ºC to 85ºC) |
| | **Cabling** | Type:<br>Single-mode fiber optic, complying with ITU-T G.652;<br><br>Maximum distance:<br><br>● 0.5-10,000 m (single-mode fiber) |
| | **Notes** | Transmit wavelength: 1490 nm. Receive wavelength: 1310 nm.<br>Power consumption is 1 watt maximum.<br>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.<br>The J9142B connects to the J9143B "upstream" transceiver, or to any IEEE-standard 1000BASE-BX10-U ("upstream") device. (A 1000-BX-D transceiver can only connect to a 1000-BX-U product. You cannot connect two 1000-BX-D transceivers together.) |
| | **Services** | Refer to the HP website at: www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office. |

## Accessory Product Details

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| **HP X122 1G SFP LC BX-U Transceiver** (J9143B) | **Ports** | 1 LC 1000BASE-BX10 port (IEEE 802.3ah Type 1000BASE-BX10-U); Duplex: full only | |
| A small form-factor pluggable (SFP) Gigabit-BX (bi-directional) "upstream" transceiver that provides a full-duplex Gigabit solution up to 10 km on one strand of single-mode fiber. The J9143B connects to the J9142B "downstream" transceiver, or to any IEEE-standard 1000BASE-BX10-D ("downstream") device. | **Physical characteristics** | **Dimensions** | 2.19(d) x 0.54(w) x 0.46(h) in. (5.57 x 1.37 x 1.18 cm) |
| | | **Weight** | 0.04 lb. (0.02 kg) |
| | **Environment** | **Operating temperature** | 32ºF to 158ºF (0ºC to 70ºC) |
| | | **Operating relative humidity** | 0% to 95%, non-condensing |
| | | **Non-operating/ Storage temperature** | −40ºF to 185ºF −40ºC to 85ºC) |
| | **Cabling** | Type: Single-mode fiber optic, complying with ITU-T G.652; Maximum distance: | |

- 0.5-10,000 m (single-mode fiber)

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| | **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. |

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| **HP 0.5 m Multimode OM3 LC/LC Optical Cable** (AJ833A) | **Cabling** | **Cable type**: 50/125 µm (core/cladding) diameter, mulitimode fiber optic, with effective modal bandwidth of 2000 MHz/km as detailed in TIA-492AAAC for distances of up to 300 m |
| | | **Maximum distance**: 10Gbps Transfer Rate (Ethernet): 300m |
| | **Notes** | Cable Specs: Tight buffered duplex fiber optic multimode OM3 50/125 um fiber optic cable and Ethernet assembly with LC duplex connectors on one end and LC duplex connectors on other end. |

- Dimensions: Core diameter: 50 ± 3.0um Cladding diameter: 125 ± 2.0um Coating diameter: 245 ± 10um
- Optical glass: Bandwidth: For LED sources: 1500/500 MHz-km @850/1300nm.
- Optical glass: Bandwidth: For Laser sources: 2000/500 MHz-km @850/1300nm. VCSEL Laser sources: 600 / 600 meters @850/1300nm

## Accessory Product Details

for Gigabit Ethernet compliant links.
- CABLE: The cable is duplex zipcord graded index 50/125um multimode optical fiber and designed to work in both the 850 and 1300 nm wavelength windows.
- BULK CABLE & CABLE ASSEMBLY CONFIGURATION:
- Jacket Material: Riser Grade - Low Smoke Zero Halogen thermoplastic.
- Jacket Color: Aqua for OM3 multimode per TIA 598
- Boot Color: White
- Insertion Loss: less than 0.5 dB @ 850 with LED source, 0.003 dB/M added for lengths > 30 meters.
- Maximum Cable attenuation: 3.0 dB/km @ 850 nm, 1.0 dB/Km @ 1310 nm @ 23°C as tested in accordance with EIA 455-46.
- Weight: Air Packed Weight: 1 LB Net Weight: 0.454Kg

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| **Services** | Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office. |

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**HP 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

# QuickSpecs

## Accessory Product Details

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| | **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.

## Accessory Product Details

| **HP 5 m Multimode OM3 LC/LC Optical Cable** (AJ836A) | **Cabling** | **Cable type**: 50/125 µm core/cladding) diameter, mulitimode fiber optic, with effective modal bandwidth of 2000 MHz/km as detailed in TIA-492AAAC for distances of up to 300 m; |
|---|---|---|
| | | **Maximum distance**: 10Gbps Transfer Rate (Ethernet): 300m |
| | **Notes** | Cable Specs: This specification defines the detail requirements for a tight buffered duplex fiber optic multimode OM3 50/125 um fiber optic cable and Ethernet assembly with LC duplex connectors on one end and LC duplex connectors on other end. |

- Dimensions: Core diameter: 50 ± 3.0um Cladding diameter: 125 ± 2.0um Coating diameter: 245 ± 10um
- Optical Glass Bandwidth: For LED sources: 1500/500 MHz-km @850/1300nm.
- Optical Glass: For Laser sources: 2000/500 MHz-km @850/1300nm. VCSEL Laser sources: Shall achieve 600 / 600 meters @850/1300nm for Gigabit Ethernet compliant links.
- CABLE: The cable is duplex zipcord graded index 50/125um multimode optical fiber. The cable is designed to work in both the 850 and 1300 nm wavelength windows.
- BULK CABLE & CABLE ASSEMBLY CONFIGURATION:
- Jacket Material: Riser Grade - Low Smoke Zero Halogen thermoplastic.
- Jacket Color: Aqua for OM3 multimode per TIA 598
- Boot Color: White
- Insertion Loss: less than 0.5 dB @ 850 with LED source, 0.003 dB/M added for lengths > 30 meters.
- Maximum Cable attenuation: 3.0 dB/km @ 850 nm, 1.0 dB/Km @ 1310 nm @ 23°C as tested in accordance with EIA 455-46.
- Weight: Air Packed Weight: 1 LB Net Weight: 0.454Kg

| | **Services** | Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office. |
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# QuickSpecs

## Accessory Product Details

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| **HP 15 m Multimode OM3 LC/LC Optical Cable** (AJ837A) | **Cabling** | **Cable type**: <br> 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; <br><br> **Maximum distance**: <br> 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.

## Accessory Product Details

| HP 30 m Multimode OM3 LC/LC Optical Cable (AJ838A) | Cabling | **Cable type**: 50/125 μm (core/cladding) diameter, mulitimode fiber optic, with effective modal bandwidth of 2000 MHz/km as detailed in TIA-492AAAC for distances of up to 300 m; |
|---|---|---|
| | | **Maximum distance**: 10Gbps Transfer Rate (Ethernet): 300m |
| | Notes | Cable Specs: Tight buffered duplex fiber optic multimode OM3 50/125 um fiber optic cable and Ethernet assembly with LC duplex connectors on one end and LC duplex connectors on other end. |

- Dimensions: Core diameter: 50 ± 3.0um Cladding diameter: 125 ± 2.0um Coating diameter: 245 ± 10um
- Optical Glass Bandwidth: For LED sources: 1500/500 MHz-km @850/1300nm.
- Optical Glass: For Laser sources: 2000/500 MHz-km @850/1300nm. VCSEL Laser sources: Shall achieve 600 / 600 meters @850/1300nm for Gigabit Ethernet compliant links.
- CABLE: The cable is duplex zipcord graded index 50/125um multimode optical fiber. The cable is designed to work in both the 850 and 1300 nm wavelength windows.
- BULK CABLE & CABLE ASSEMBLY CONFIGURATION:
- Jacket Material: Riser Grade - Low Smoke Zero Halogen thermoplastic.
- Jacket Color: Aqua for OM3 multimode per TIA 598
- Boot Color: White
- Insertion Loss: less than 0.5 dB @ 850 with LED source, 0.003 dB/M added for lengths > 30 meters.
- Maximum Cable attenuation: 3.0 dB/km @ 850 nm, 1.0 dB/Km @ 1310 nm @ 23°C as tested in accordance with EIA 455-46.
- Weight: Air Packed Weight: 1 LB Net Weight: 0.454Kg

| | Services | Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office. |
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## Accessory Product Details

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| **HP 50 m Multimode OM3 LC/LC Optical Cable** (AJ839A) | **Cabling** | **Cable type**: 50/125 μm (core/cladding) diameter, mulitimode fiber optic, with effective modal bandwidth of 2000 MHz/km as detailed in TIA-492AAAC for distances of up to 300 m; |
| | | **Maximum distance**: 10Gbps Transfer Rate (Ethernet): 300m |
| | **Notes** | Cable Specs: Tight buffered duplex fiber optic multimode OM3 50/125 um fiber optic cable and Ethernet assembly with LC duplex connectors on one end and LC duplex connectors on other end. |

- Dimensions: Core diameter: 50 ± 3.0um Cladding diameter: 125 ± 2.0um Coating diameter: 245 ± 10um
- Optical Glass Bandwidth: For LED sources: 1500/500 MHz-km @850/1300nm.
- Optical Glass: For Laser sources: 2000/500 MHz-km @850/1300nm. VCSEL Laser sources: Shall achieve 600 / 600 meters @850/1300nm for Gigabit Ethernet compliant links.
- CABLE: The cable is duplex zipcord graded index 50/125um multimode optical fiber. The cable is designed to work in both the 850 and 1300 nm wavelength windows.
- BULK CABLE & CABLE ASSEMBLY CONFIGURATION:
- Jacket Material: Riser Grade - Low Smoke Zero Halogen thermoplastic.
- Jacket Color: Aqua for OM3 multimode per TIA 598
- Boot Color: White
- Insertion Loss: less than 0.5 dB @ 850 with LED source, 0.003 dB/M added for lengths > 30 meters.
- Maximum Cable attenuation: 3.0 dB/km @ 850 nm, 1.0 dB/Km @ 1310 nm @ 23°C as tested in accordance with EIA 455-46.
- Weight: Air Packed Weight: 1 LB Net Weight: 0.454Kg

**Services** Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.

## Accessory Product Details

| **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.<br><br>• Core Diameter: 50um ±3um, Cladding diameter: 125um ±2um; Coating diameter: 245 ± 10um<br>• Bandwidth: 3000 MHz-km @ 850nm (Laser)<br>• Jacket Color: Blue<br>• Jacket Material: Riser Grade – Low Smoke Zero Halogen (LSZH) thermoplastic<br>• Boot Color: White<br>• 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.<br>• Insertion Loss: Less than 0.5dB @ 850nm with LED source, 0.003dB/m added for lengths >30m<br>• 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.<br><br>• Core diameter: 50um ±3um, Cladding diameter: 125um ±2um; Coating diameter: 245 ± 10um<br>• Bandwidth: 3000 MHz-km @ 850nm (Laser)<br>• Jacket Color: Blue<br>• Jacket Material: Riser Grade – Low Smoke Zero Halogen (LSZH) thermoplastic<br>• Boot Color: White<br>• 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.<br>• Insertion Loss: Less than 0.5dB @ 850nm with LED source, 0.003dB/m added for lengths >30m<br>• 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. |

## Accessory Product Details

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| **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.<br><br>• Core diameter: 50um ±3um, Cladding diameter: 125um ±2um; Coating diameter: 245 ± 10um<br>• Bandwidth: 3000 MHz-km @ 850nm (Laser)<br>• Jacket Color: Blue<br>• Jacket Material: Riser Grade – Low Smoke Zero Halogen (LSZH) thermoplastic<br>• Boot Color: White<br>• 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.<br>• Insertion Loss: Less than 0.5dB @ 850nm with LED source, 0.003dB/m added for lengths >30m<br>• 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.<br><br>• Core diameter: 50um ±3um, Cladding diameter: 125um ±2um; Coating diameter: 245 ± 10um<br>• Bandwidth: 3000 MHz-km @ 850nm (Laser)<br>• Jacket Color: Blue<br>• Jacket Material: Riser Grade – Low Smoke Zero Halogen (LSZH) thermoplastic<br>• Boot Color: White<br>• 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.<br>• Insertion Loss: Less than 0.5dB @ 850nm with LED source, 0.003dB/m added for lengths >30m<br>• 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. |

## Accessory Product Details

**HP Premier Flex LC/LC Multi-mode OM4 2 fiber 30m Cable** (QK736A)

**Notes**

Cable Specs: Graded-index, "bendable" fiber optic multimode OM3+ 50/125um duplex cable and Ethernet assembly with LC duplex connectors on each end.

• Core diameter: 50um ±3um, Cladding diameter: 125um ±2um; Coating diameter: 245 ± 10um
• Bandwidth: 3000 MHz-km @ 850nm (Laser)
• Jacket Color: Blue
• Jacket Material: Riser Grade – Low Smoke Zero Halogen (LSZH) thermoplastic
• Boot Color: White
• Outer Jacket Print: HP PremierFlex OM3+ Fiber Optic Cable, 50/125um, Type OFNR (UL), LSZH, cUL, OFN FT4, ROHS. Cable also has a longitudinal white stripe that runs the entire length of the cable.
• Insertion Loss: Less than 0.5dB @ 850nm with LED source, 0.003dB/m added for lengths >30m
• Maximum Cable Attenuation: 3.0 dB/km @ 850nm, 1.0 dB/km @ 1310nm @ 23°C as tested in accordance with EIA 455-45

**Services**

Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.

**HP Premier Flex LC/LC Multi-mode OM4 2 fiber 50m Cable** (QK737A)

**Notes**

Cable Specs: Graded-index, "bendable" fiber optic multimode OM3+ 50/125um duplex cable and Ethernet assembly with LC duplex connectors on each end.

• Core diameter: 50um ±3um, Cladding diameter: 125um ±2um; Coating diameter: 245 ± 10um
• Bandwidth: 3000 MHz-km @ 850nm (Laser)
• Jacket Color: Blue
• Jacket Material: Riser Grade – Low Smoke Zero Halogen (LSZH) thermoplastic
• Boot Color: White
• Outer Jacket Print: HP PremierFlex OM3+ Fiber Optic Cable, 50/125um, Type OFNR (UL), LSZH, cUL, OFN FT4, ROHS. Cable also has a longitudinal white stripe that runs the entire length of the cable.
• Insertion Loss: Less than 0.5dB @ 850nm with LED source, 0.003dB/m added for lengths >30m
• Maximum Cable Attenuation: 3.0 dB/km @ 850nm, 1.0 dB/km @ 1310nm @ 23°C as tested in accordance with EIA 455-45

**Services**

Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.

## Accessory Product Details

| HP gl/xl/vl Switch Redundant Power Supply (J4839A) | Physical characteristics | Dimensions | 7.9(d) x 6.3(w) x 5.0(h) in. (20.07 x 16.0 x 12.7 cm) |
|---|---|---|---|
| | | Weight | 5.55 lb. (2.5 kg) |
| | Electrical characteristics | Voltage | 100-127/200-240 VAC |
| | | Current | 8.2/3.8 A |
| | | Frequency | 50/60 Hz |
| | Notes | | For additional RPS specification information, see the data sheet for the product in which the RPS is being installed. |
| | Services | | Refer to the HP website at: www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office. |

**HP Identity Driven Manager 3.0 Software-- 500-User License** (J9438A)

**Identity Driven Manager 3.0 software and license for managing up to 500 users.**

**RADIUS server support**
Microsoft Network Policy Server on Windows Server 2008 (32-bit)
Microsoft Internet Authentication Service (IAS) on Windows Server 2003 (32-bit)
FreeRADIUS supplied with Red Hat Enterprise Linux (4.7 and 5.2)
RADIUS on the Network Access Controller 800
FreeRADIUS supplied with SuSE Linux Enterprise Server (9.3 and 10.2)

**Features**
Intuitive Explorer-style interface
OpenView NNM integration
Application of policies by user identity

- Auto VLAN assignment
- Auto set quality of service by user
- Auto set bandwidth assignment by user

Rule-based access rights deployment

Dynamic rights assignment based on:

- Time
- Location
- User system

Auto-discovery of:

- RADIUS servers
- Realms
- Users

**Notes**
Additional specifications

- Supports environments with up to 10,000 users.
- Supports up to 10 RADIUS servers with HP Identity Driven Manager agents installed.

Requires the HP PCM Plus 3.0 or greater network management platform.

## Accessory Product Details

|  |  |  |
|---|---|---|
|  |  | ● Please see HP PCM Plus 3.0 for hardware and software system requirements. |
|  | **Services** | 3-Year, 9x5 SW phone support, software updates (UQ124E)<br>3-year, 24x7 SW phone support, software updates (UQ125E)<br><br>Refer to the HP website at www.hp.com/networking/services for details on the<br>service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office. |

| **HP Identity Driven Manager 3.0 Software-- Additional 1,000-User License** (J9440A) | **License to add support for managing an additional 1,000 users with the Identity Driven Manager 3.0 product.** |
|---|---|
|  | **RADIUS server support** — |
|  | **Features** — |
|  | **Notes** — Additional specifications<br><br>● Supports environments with up to 10,000 users.<br>● Supports up to 10 RADIUS servers with HP Identity Driven Manager agents installed.<br><br>Requires the HP PCM Plus 3.0 or greater network management platform.<br><br>● Please see HP PCM Plus 3.0 for hardware and software system requirements. Requires the HP Identity Driven Manager 3.0 base product (J9438A).<br><br>Multiple licenses for additional 1,000 users can be added to the base HP Identity Driven Manager product to support larger numbers of users. |
|  | **Services** 3-year, 24x7 SW phone support, software updates (UQ119E)<br>3-Year, 9x5 SW phone support, software updates (UQ118E)<br><br>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 Details

| HP Identity Driven Manager 3.0 Software-- Unlimited-User License (J9439A) | **Identity Driven Manager 3.0 software and license for managing an unlimited number of users.** | |
|---|---|---|
| | **RADIUS server support** | Microsoft Network Policy Server on Windows Server 2008 (32-bit)<br>Microsoft Internet Authentication Service (IAS) on Windows Server 2003 (32-bit)<br>FreeRADIUS supplied with Red Hat Enterprise Linux (4.7 and 5.2)<br>RADIUS on the Network Access Controller 800<br>FreeRADIUS supplied with SuSE Linux Enterprise Server (9.3 and 10.2) |
| | **Features** | Intuitive Explorer-style interface<br>OpenView NNM integration<br>Application of policies by user identity<br><br>● Auto VLAN assignment<br>● Auto set quality of service by user<br>● Auto set bandwidth assignment by user<br><br>Rule-based access rights deployment<br><br>Dynamic rights assignment based on:<br><br>● Time<br>● Location<br>● User system<br><br>Auto-discovery of:<br><br>● RADIUS servers<br>● Realms<br>● Users |
| | **Notes** | Additional specifications<br><br>● Supports environments with up to 10,000 users.<br>● Supports up to 10 RADIUS servers with HP Identity Driven Manager agents installed.<br><br>Requires the HP PCM Plus 3.0 or greater network management platform.<br><br>Please see HP PCM Plus 3.0 for hardware and software system requirements. |
| | **Services** | 3-year, 24x7 SW phone support, software updates (UQ133E)<br>3-Year, 9x5 SW phone support, software updates (UQ132E)<br><br>Refer to the HP website at www.hp.com/networking/services for details on the<br>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 Details

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