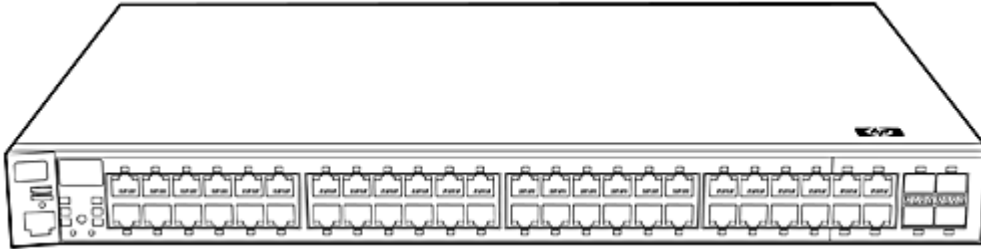
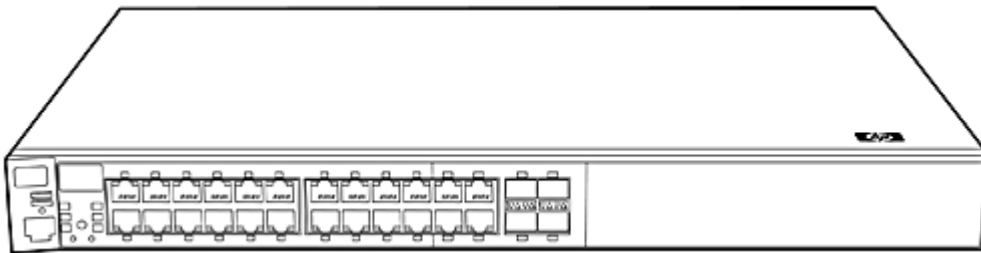


### Overview



HP 2810-48G Switch



HP 2810-24G Switch

### Models

HP 2810-24G Switch

J9021A

HP 2810-48G Switch

J9022A

### Key features

- Managed Layer 2 feature set with 24 or 48 Gb ports
- sFlow, source port filtering, enhanced security
- Optional redundant power supply
- Four dual-personality mini-GBIC slots
- Industry-leading warranty

### Product overview

The HP 2810 Switch Series consists of two switches: the 24-port HP 2810-24G Switch with 20 10/100/1000 ports, and the 48-port HP 2810-48G Switch with 44 10/100/1000 ports. Each switch also has four dual-personality ports for RJ-45 10/100/1000 or mini-GBIC fiber Gigabit connectivity. Ideal for high-performance and secure 10/100/1000 connectivity, the 2810 switch series offers access security and advanced prioritization and traffic-monitoring capabilities. The series is cost-effective and easy to use, with a shallow, 1U form factor that provides operational flexibility for use in smaller wiring closets.

### Features and benefits

#### Quality of Service (QoS)

- **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



### Overview

- **Traffic prioritization** (IEEE 802.1p): allows real-time traffic classification with support for eight priority levels mapped to four queues

### Connectivity

- **Dual-personality functionality**: four 10/100/1000 ports or SFP slots for optional fiber connectivity such as Gigabit-SX, -LX, and -LH, or 100-FX

### Resiliency and high availability

- **IEEE 802.3ad Link Aggregation Protocol (LACP) and HP port trunking**: support up to 24 trunks, each with up to 8 links (ports) per trunk
- **IEEE 802.1s Multiple Spanning Tree**: provides high link availability in multiple VLAN environments by allowing multiple spanning trees; provides legacy support for IEEE 802.1d and IEEE 802.1w
- **Optional redundant power supply**: provides uninterrupted power (provided by HP 600 RPS/EPS)

### Manageability

- **sFlow** (RFC 3176): wire-speed traffic accounting and monitoring
- **RMON** (remote monitoring): provides 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
- **Troubleshooting**: ingress/egress port monitoring enables network problem-solving
- **Single IP Address Management**: single IP address management for a virtual stack of up to 16 switches
- **Multiple configuration files**: allow multiple configuration files to be stored to a flash image

### Layer 2 switching

- **VLAN support and tagging**: supports IEEE 802.1Q (4,094 VLAN IDs) and 256 VLANs simultaneously
- **GARP VLAN Registration Protocol**: allows automatic learning and dynamic assignment of VLANs
- **Jumbo packet support**: supports up to 9220-byte frame size to improve the performance of large data transfers

### Security

- **Port security**: allows access only to specified MAC addresses, which can be learned or specified by the administrator
- **Protected ports**: provides increased security by allowing specified ports to be isolated from all other ports on the switch; the protected port or ports can communicate only with the uplink or shared resources
- **MAC address lockout**: prevents particular configured MAC addresses from connecting to the network
- **Multiple user authentication methods**:
  - IEEE 802.1X: is an 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
- **Switch management logon security**: can require either RADIUS or TACACS+ authentication for secure switch CLI logon
- **Multiple IEEE 802.1X users per port**: provides authentication of up to two IEEE 802.1X users per port; prevents user "piggybacking" on another user's IEEE 802.1X authentication
- **STP BPDU port protection**: blocks Bridge Protocol Data Units (BPDUs) on ports that do not require BPDUs, preventing forged BPDU attacks
- **Secure FTP**: allows secure file transfer to and from the switch; protects against unwanted file downloads or unauthorized copying of a 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**: encrypts all transmitted data for secure remote CLI access over IP networks



### Overview

- **Secure Sockets Layer (SSL)**: encrypts all HTTP traffic, allowing secure access to the browser-based management GUI in the switch

### Convergence

- **IP multicast snooping and data-driven IGMP**: automatically prevent flooding of IP multicast traffic
- **IEEE 802.1AB Link Layer Discovery Protocol (LLDP)**: is an automated device discovery protocol that provides easy mapping of network management applications
- **Per-port broadcast throttling**: selectively configures broadcast control on heavy traffic port uplinks
- **Software updates**: free downloads from the Web

### Ease of use

- **Locator LED (switch)**: allows users to set the locator LED on a specific switch to either turn on, blink, or turn off; simplifies troubleshooting by making it easy to locate a particular switch within a rack of similar switches
- **Friendly port names**: allow assignment of descriptive names to ports
- **Find-Fix-and-Inform**: finds and fixes common network problems automatically, then informs administrator
- **HP/IEEE Auto-MDIX**: automatically adjusts for straight-through or crossover cables on all RJ-45 ports

### 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](http://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](http://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 warranties replacement for as long as you own the product, with next business day advance replacement (available in most countries). The disk drive included with HP Alliance One Advanced Services and Services zI Modules, HP Threat Management Services zI Module, HP AllianceOne Ext zI Mod w/Rvrbd Stlhd, HP MSM765zI Mobility Controller and HP Surv Brch Com zI Mod pwrby Msft Lync has a five-year hardware warranty. For details, refer to the Software license and hardware warranty statements at [www.hp.com/networking/warranty](http://www.hp.com/networking/warranty).



### Technical Specifications

HP 2810-24G Switch (J9021A)	Ports	20 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 dual-personality ports; each port can be used as either an RJ-45 10/100/1000 port or an open mini-GBIC slot (for use with mini-GBIC transceivers)	
	Physical characteristics	Dimensions	12.7(d) x 17.4(w) x 1.7(h) in. (32.26 x 44.2 x 4.32 cm) (1U height)
		Weight	7.21 lb. (3.27 kg)
Memory and processor	Processor	MIPS @ 264 MHz, 16 MB flash, 64 MB SDRAM; packet buffer size: 0.75 MB	
Mounting	Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included); horizontal surface mounting only		
Performance	Latency	< 5.6 $\mu$ s (FIFO 64-byte packets)	
	Throughput	up to 35.7 million pps	
	Switching capacity	48 Gbps	
	MAC address table size	8000 entries	
Environment	Operating temperature	32°F to 113°F (0°C to 45°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 10,000 ft. (3 km)	
	Acoustic	Power: 40.3 dB	
Electrical characteristics	Maximum heat dissipation	164 BTU/hr (173 kJ/hr)	
	Voltage	100-127/200-240 VAC	
	Current	1.0 A	
	Maximum power rating	48 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 fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated.	
Safety	cUL (CSA 22.2 No. 60950); EN 60950/IEC 60950; NOM-019-SCFI-1994; UL 60950		
Emissions	FCC Class A; VCCI Class A; EN 55022/CISPR 22 Class A; IEC/EN 61000-3-2; IEC/EN 61000-3-3		
Immunity	EN	EN 55024, CISPR 24	
	ESD	IEC 61000-4-2; 4 kV CD, 8 kV AD	



### Technical Specifications

	<b>Radiated</b>	IEC 61000-4-3; 3 V/m
	<b>EFT/Burst</b>	IEC 61000-4-4; 1.0 kV (power line), 0.5 kV (signal line)
	<b>Surge</b>	IEC 61000-4-5; 1 kV/2 kV AC
	<b>Conducted</b>	IEC 61000-4-6; 3 V
	<b>Power frequency magnetic field</b>	IEC 61000-4-8; 1 A/m, 50 or 60 Hz
	<b>Voltage dips and interruptions</b>	IEC 61000-4-11; >95% reduction, 0.5 period; 30% reduction, 25 periods
	<b>Harmonics</b>	EN 61000-3-2, IEC 61000-3-2
	<b>Flicker</b>	EN 61000-3-3, IEC 61000-3-3
<b>Management</b>	HP PCM+; HP PCM; command-line interface; Web browser; configuration menu; out-of-band management	
<b>Notes</b>	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.	
<b>Services</b>	<p>3-year, 4-hour onsite, 13x5 coverage for hardware (U2855E) 3-year, 4-hour onsite, 24x7 coverage for hardware (U2856E) 3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 SW phone support and SW updates (U6304E) 3-year, 24x7 SW phone support, software updates (UE262E) 1-year, post-warranty, 4-hour onsite, 13x5 coverage for hardware (HR889E) 1-year, post-warranty, 4-hour onsite, 24x7 coverage for hardware (HR890E) 1-year, post-warranty, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (HR891E) Installation with minimum configuration, system-based pricing (U4826E) Installation with HP-provided configuration, system-based pricing (U4830E) 4-year, 4-hour onsite, 13x5 coverage for hardware (UR868E) 4-year, 4-hour onsite, 24x7 coverage for hardware (UR869E) 4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UR870E) 4-year, 24x7 SW phone support, software updates (UR871E) 5-year, 4-hour onsite, 13x5 coverage for hardware (UR872E) 5-year, 4-hour onsite, 24x7 coverage for hardware (UR873E) 5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UR874E) 5-year, 24x7 SW phone support, software updates (UR875E) 3 Yr 6 hr Call-to-Repair Onsite (UW356E) 4 Yr 6 hr Call-to-Repair Onsite (UW357E) 5 Yr 6 hr Call-to-Repair Onsite (UW358E) 1-year, 6 hour Call-To-Repair Onsite for hardware (HR893E) 1-year, 24x7 software phone support, software updates (HR892E) 1-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HS610E) 1-year, 24x7 software phone support, software updates + 4 hour hardware exchange (HS611E) 3-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HS612E) 3-year, 24x7 software phone support, software updates + 4 hour Hardware</p>	



### Technical Specifications

Exchange (HS613E)  
 4-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HS614E)  
 4-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (HS615E)  
 5-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HS616E)  
 5-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (HS617E)

Refer to the HP website at: [www.hp.com/networking/services](http://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.

<b>HP 2810-48G Switch</b> (J9022A)	<b>Ports</b>	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 dual-personality ports; each port can be used as either an RJ-45 10/100/1000 port or an open mini-GBIC slot (for use with mini-GBIC transceivers)
	<b>Physical characteristics</b>	<b>Dimensions</b> 12.7(d) x 17.4(w) x 1.7(h) in. (32.26 x 44.2 x 4.32 cm) (1U height)  <b>Weight</b> 8.6 lb. (3.9 kg)
	<b>Memory and processor</b>	<b>Processor</b> MIPS @ 264 MHz, 16 MB flash, 64 MB SDRAM; packet buffer size: 1.5 MB
	<b>Mounting</b>	Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included); horizontal surface mounting only
	<b>Performance</b>	<b>Latency</b> < 5.4 $\mu$ s (FIFO 64-byte packets) <b>Throughput</b> up to 71.4 million pps <b>Switching capacity</b> 96 Gbps <b>MAC address table size</b> 8000 entries
	<b>Environment</b>	<b>Operating temperature</b> 32°F to 113°F (0°C to 45°C) <b>Operating relative humidity</b> 15% to 95% @ 104°F (40°C), noncondensing <b>Nonoperating/Storage temperature</b> -40°F to 158°F (-40°C to 70°C) <b>Nonoperating/Storage relative humidity</b> 15% to 95% @ 149°F (65°C), noncondensing <b>Altitude</b> up to 10,000 ft. (3 km) <b>Acoustic</b> Power: 40.5 dB
	<b>Electrical characteristics</b>	<b>Maximum heat dissipation</b> 341 BTU/hr (360 kJ/hr) <b>Voltage</b> 100-127/200-240 VAC <b>Current</b> 1.5 A <b>Maximum power rating</b> 92 W



### Technical Specifications

	<b>Frequency</b>	50/60 Hz
	<b>Notes</b>	Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated.
<b>Safety</b>	cUL (CSA 22.2 No. 60950); EN 60950/IEC 60950; NOM-019-SCFI-1994; UL 60950	
<b>Emissions</b>	FCC Class A; VCCI Class A; EN 55022/CISPR 22 Class A; IEC/EN 61000-3-2; IEC/EN 61000-3-3	
<b>Immunity</b>	<b>EN</b>	EN 55024, CISPR 24
	<b>ESD</b>	IEC 61000-4-2; 4 kV CD, 8 kV AD
	<b>Radiated</b>	IEC 61000-4-3; 3 V/m
	<b>EFT/Burst</b>	IEC 61000-4-4; 1.0 kV (power line), 0.5 kV (signal line)
	<b>Surge</b>	IEC 61000-4-5; 1 kV/2 kV AC
	<b>Conducted</b>	IEC 61000-4-6; 3 V
	<b>Power frequency magnetic field</b>	IEC 61000-4-8; 1 A/m, 50 or 60 Hz
	<b>Voltage dips and interruptions</b>	IEC 61000-4-11; >95% reduction, 0.5 period; 30% reduction, 25 periods
	<b>Harmonics</b>	EN 61000-3-2, IEC 61000-3-2
	<b>Flicker</b>	EN 61000-3-3, IEC 61000-3-3
<b>Management</b>	HP PCM+; HP PCM; command-line interface; Web browser; configuration menu; out-of-band management	
<b>Notes</b>	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.	
<b>Services</b>	<p>3-year, 4-hour onsite, 13x5 coverage for hardware (H4496E)</p> <p>3-year, 4-hour onsite, 24x7 coverage for hardware (H2893E)</p> <p>3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 SW phone support and SW updates (U6319E)</p> <p>3-year, 24x7 SW phone support, software updates (UE264E)</p> <p>1-year, post-warranty, 4-hour onsite, 13x5 coverage for hardware (HR894E)</p> <p>1-year, post-warranty, 4-hour onsite, 24x7 coverage for hardware (HR895E)</p> <p>Installation with minimum configuration, system-based pricing (U4826E)</p> <p>Installation with HP-provided configuration, system-based pricing (U4830E)</p> <p>4-year, 4-hour onsite, 13x5 coverage for hardware (UR884E)</p> <p>4-year, 4-hour onsite, 24x7 coverage for hardware (UR885E)</p> <p>4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UR886E)</p> <p>4-year, 24x7 SW phone support, software updates (UR887E)</p> <p>5-year, 4-hour onsite, 13x5 coverage for hardware (UR888E)</p> <p>5-year, 4-hour onsite, 24x7 coverage for hardware (UR889E)</p> <p>5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UR890E)</p>	



### Technical Specifications

5-year, 24x7 SW phone support, software updates (UR891E)  
3 Yr 6 hr Call-to-Repair Onsite (UW365E)  
4 Yr 6 hr Call-to-Repair Onsite (UW366E)  
5 Yr 6 hr Call-to-Repair Onsite (UW367E)  
1-year, 6 hour Call-To-Repair Onsite for hardware (HR898E)  
1-year, 24x7 software phone support, software updates (HR897E)  
1-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support and software updates (HR896E)  
1-year, 24x7 software phone support, software updates + 4 hour hardware exchange (HS618E)  
1-year, 24x7 software phone support, software updates + 4 hour hardware exchange (HS619E)  
3-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HS620E)  
3-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (HS621E)  
3-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (HS621E)  
4-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HS622E)  
4-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (HS623E)  
5-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HS624E)  
5-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (HS625E)

Refer to the HP website at: [www.hp.com/networking/services](http://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.

<b>Standards and protocols</b>	<b>Device Management</b>	HTML and telnet management
	<b>General Protocols</b>	IEEE 802.1D MAC Bridges IEEE 802.1p Priority IEEE 802.1Q VLANs IEEE 802.1s Multiple Spanning Trees IEEE 802.1w Rapid Reconfiguration of Spanning Tree IEEE 802.3ad Link Aggregation Control Protocol (LACP) IEEE 802.3x Flow Control RFC 768 UDP RFC 783 TFTP Protocol (revision 2) RFC 792 ICMP RFC 793 TCP RFC 826 ARP RFC 854 TELNET RFC 951 BOOTP RFC 1542 BOOTP Extensions RFC 2030 Simple Network Time Protocol (SNTP) v4





### Technical Specifications

<b>IP Multicast</b>	RFC 3376 IGMPv3
<b>MIBs</b>	RFC 1213 MIB II RFC 1493 Bridge MIB RFC 1573 SNMP MIB II RFC 2021 RMONv2 MIB RFC 2096 IP Forwarding Table MIB RFC 2613 SMON MIB RFC 2618 RADIUS Client MIB RFC 2620 RADIUS Accounting MIB RFC 2665 Ethernet-Like-MIB RFC 2668 802.3 MAU MIB RFC 2674 802.1p and IEEE 802.1Q Bridge MIB RFC 2737 Entity MIB (Version 2) RFC 2863 The Interfaces Group MIB RFC 3418 MIB for SNMPv3
<b>Network Management</b>	IEEE 802.1AB Link Layer Discovery Protocol (LLDP) RFC 2819 Four groups of RMON: 1 (statistics), 2 (history), 3 (alarm) and 9 (events) RFC 3176 sFlow SNMPv1/v2c/v3
<b>Security</b>	IEEE 802.1X Port Based Network Access Control RFC 1492 TACACS+ RFC 2138 RADIUS Authentication RFC 2866 RADIUS Accounting Secure Sockets Layer (SSL) SSHv2 Secure Shell



### Accessories

HP E2810 Switch Series accessories	<b>Transceivers</b>	
	HP X111 100M SFP LC FX Transceiver	J9054C
	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 X122 1G SFP LC BX-D Transceiver	J9142B
	HP X122 1G SFP LC BX-U Transceiver	J9143B
	<b>Cables</b>	
	HP 0.5 m Multimode OM3 LC/LC Optical Cable	AJ833A
	HP 1 m Multimode OM3 LC/LC Optical Cable	AJ834A
	HP 2 m Multimode OM3 LC/LC Optical Cable	AJ835A
	HP 5 m Multimode OM3 LC/LC Optical Cable	AJ836A
	HP 15 m Multimode OM3 LC/LC Optical Cable	AJ837A
	HP 30 m Multimode OM3 LC/LC Optical Cable	AJ838A
	HP 50 m Multimode OM3 LC/LC Optical Cable	AJ839A
	NEW HP 0.5 m PremierFlex OM3+ LC/LC Optical Cable	BK837A
	NEW HP 1 m PremierFlex OM3+ LC/LC Optical Cable	BK838A
	NEW HP 2 m PremierFlex OM3+ LC/LC Optical Cable	BK839A
	NEW HP 5 m PremierFlex OM3+ LC/LC Optical Cable	BK840A
	NEW HP 15 m PremierFlex OM3+ LC/LC Optical Cable	BK841A
	NEW HP 30 m PremierFlex OM3+ LC/LC Optical Cable	BK842A
	NEW HP 50 m PremierFlex OM3+ LC/LC Optical Cable	BK843A
	<b>Power Supply</b>	
	HP 600 Redundant and External Power Supply	J8168A
	<b>Mounting Kit</b>	
	HP X410 1U Universal 4-Post Rack Mounting Kit	J9583A



## Accessory Product Details

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

<p><b>HP X111 100M SFP LC FX Transceiver (J9054C)</b></p>	<p><b>Physical characteristics</b></p>	<p>1 LC 100BASE-FX port (IEEE 802.3u Type 100BASE-FX); Duplex: half or full</p> <p>Dimensions: 2.7(d) x 0.54(w) x 0.48(h) in. (6.86 x 1.38 x 1.22 cm)</p> <p>Weight: 0.06 lb. (0.03 kg)</p>
<p><b>HP X111 100M SFP LC FX Transceiver: An SFP format 100-megabit transceiver with LC connectors using FX technology.</b></p>	<p><b>Environment</b></p>	<p>Operating temperature: 32°F to 158°F (0°C to 70°C)</p> <p>Operating relative humidity: 5% to 95%</p> <p>Nonoperating/Storage temperature: -40°F to 185°F (-40°C to 85°C)</p> <p>Nonoperating/Storage relative humidity: 5% to 85%</p> <p>Altitude: up to 10,000 ft. (3 km)</p>
	<p><b>Cabling</b></p>	<p>Cable type:</p> <p>62.5/125 <math>\mu</math>m or 50/125 <math>\mu</math>m (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:</p> <ul style="list-style-type: none"> <li>• 2 km (full duplex) or 412 m (half duplex)</li> </ul>
	<p><b>Notes</b></p>	<p>Transmitter wavelength: 1310nm</p> <p>Power consumption is 1.1 watt maximum.</p> <p>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 "ProCurve Mini-GBICs and SFPs" Manuals Web page.</p>
	<p><b>Services</b></p>	<p>Refer to the HP website at <a href="http://www.hp.com/networking/services">www.hp.com/networking/services</a> 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.</p>

<p><b>HP X112 100M SFP LC BX-D Transceiver (J9099B)</b></p>	<p><b>Ports</b></p>	<p>1 LC 100BASE-BX10 port (IEEE 802.3ah Type 100BASE-BX10-D); Duplex: full only</p>
<p>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.</p>	<p><b>Physical characteristics</b></p>	<p><b>Dimensions</b> 2.7(d) x 0.55(w) x 0.48(h) in. (6.86 x 1.39 x 1.22 cm)</p> <p><b>Weight</b> 0.04 lb. (0.03 kg)</p>
	<p><b>Environment</b></p>	<p><b>Operating temperature</b> 32°F to 158°F (0°C to 70°C)</p> <p><b>Operating relative humidity</b> 0% to 95%, noncondensing</p> <p><b>Nonoperating/Storage temperature</b> -40°F to 185°F (-40°C to 85°C)</p>
	<p><b>Cabling</b></p>	<p>Type:</p> <p>Single-mode fiber optic, complying with ITU-T G.652;</p> <p>Maximum distance:</p> <ul style="list-style-type: none"> <li>• 0.5-10,000 m (single-mode fiber)</li> </ul>
	<p><b>Notes</b></p>	<p>Transmit wavelength: 1550 nm. Receive wavelength: 1310 nm.</p> <p>Power consumption is 1.1 watt maximum.</p> <p>For supported platforms and minimum software requirements to support this product, see the document titled "Support for the HP BX Transceivers" on the</p>



### Accessory Product Details

"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](http://www.hp.com/networking/services) for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.

#### HP X112 100M SFP LC BX-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

32°F to 158°F (0°C to 70°C)

##### Operating relative humidity

0% to 95%, noncondensing

##### Nonoperating/Storage temperature

-40°F to 185°F (-40°C to 85°C)

#### 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](http://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

<b>HP X121 1G SFP LC LH Transceiver (J4860C)</b>	<b>Ports</b>	1 LC 1000BASE-LH port (no IEEE standard exists for 1550 nm optics); Duplex: full only
A small form-factor pluggable (SFP) Gigabit LH transceiver that provides a full-duplex Gigabit solution up to 70 km on single-mode fiber.	<b>Physical characteristics</b>	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)
	<b>Environment</b>	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)
	<b>Cabling</b>	Cable type: <ul style="list-style-type: none"><li>• Low metal content, single-mode fiber-optic, complying with ITU-T G.652 and ISO/IEC 793-2 Type B1;</li></ul> Maximum distance: <ul style="list-style-type: none"><li>• 10-70,000 m (single-mode fiber)</li></ul>
	<b>Notes</b>	Power consumption is 0.8 watts typical with 1 watt maximum at 100% utilization. For distances less than 20 km, a 10 dB attenuator must be used. For distances between 20 km and 40 km, a 5 dB attenuator must be used. Attenuators can be purchased from most cable vendors.
	<b>Services</b>	Refer to the HP website at <a href="http://www.hp.com/networking/services">www.hp.com/networking/services</a> 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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<b>HP X121 1G SFP LC SX Transceiver (J4858C)</b>	<b>Ports</b>	1 LC 1000BASE-SX port; Duplex: full only
A small form-factor pluggable (SFP) Gigabit SX transceiver that provides a full-duplex Gigabit solution up to 550 m on multimode fiber.	<b>Physical characteristics</b>	Dimensions: 2.24(d) x 0.54(w) x 0.48(h) in. (5.69 x 1.37 x 1.22 cm) Weight: 0.04 lb. (0.02 kg) Transceiver form factor: SFP
	<b>Environment</b>	Operating temperature: 32°F to 158°F (0°C to 70°C) Operating relative humidity: 5% to 85%, noncondensing Nonoperating/Storage temperature: -40°F to 203°F (-40°C to 85°C) Altitude: up to 10,000 ft. (3 km)
	<b>Electrical characteristics</b>	Power consumption typical: 0.4 W Power consumption maximum: 0.7 W
	<b>Cabling</b>	Type: <ul style="list-style-type: none"><li>• 62.5/125 <math>\mu\text{m}</math> or 50/125 <math>\mu\text{m}</math> (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;</li></ul> Maximum distance: <ul style="list-style-type: none"><li>• 2-220 m (62.5 <math>\mu\text{m}</math> core diameter, 160 MHz*km bandwidth)</li><li>• 2-275 m (62.5 <math>\mu\text{m}</math> core diameter, 200 MHz*km bandwidth)</li><li>• 2-500 m (50 <math>\mu\text{m}</math> core diameter, 400 MHz*km bandwidth)</li><li>• 2-550 m (50 <math>\mu\text{m}</math> core diameter, 500 MHz*km bandwidth)</li></ul> Cable length: 2-550m Fiber type: Multi Mode



### Accessory Product Details

#### Services

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

#### HP X121 1G SFP LC LX Transceiver (J4859C)

#### Ports

1 LC 1000BASE-LX port (IEEE 802.3z Type 1000BASE-LX); Duplex: full only

#### Physical characteristics

Dimensions: 2.24(d) x 0.54(w) x 0.486(h) in. (5.69 x 1.37 x 1.23 cm)

Weight: 0.04 lb. (0.02 kg)

HP X121 1G SFP LC LX Transceiver: An SFP format gigabit transceiver with LC connectors using LX technology.

#### Environment

Operating temperature: 32°F to 158°F (0°C to 70°C)

Operating relative humidity: 0% to 85%, noncondensing

Nonoperating/Storage temperature: -40°F to 212°F (-40°C to 100°C)

Altitude: up to 10,000 ft. (3 km)

#### Cabling

Type:

- Either single mode or multimode; 62.5/125  $\mu\text{m}$  or 50/125  $\mu\text{m}$  (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  $\mu\text{m}$  core diameter, 500 MHz\*km bandwidth)
- 2-550 m (multimode 50  $\mu\text{m}$  core diameter, 400 MHz\*km bandwidth)
- 2-550 m (multimode 50  $\mu\text{m}$  core diameter, 500 MHz\*km bandwidth)
- 2-10,000 m (single-mode fiber)

#### Notes

A mode conditioning patch cord may be needed in some multimode fiber installations.

Wavelength: 1310nm

Power Consumption: < 500mW Typical

#### Services

Refer to the HP website at [www.hp.com/networking/services](http://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

<p><b>HP X122 1G SFP LC BX-D Transceiver (J9142B)</b></p> <p>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.</p>	<p><b>Ports</b></p> <p>1 LC 1000BASE-BX10 port (IEEE 802.3ah Type 1000BASE-BX10-D); Duplex: full only</p>
<p><b>Physical characteristics</b></p>	<p><b>Dimensions</b></p> <p>2.19(d) x 0.54(w) x 0.46(h) in. (5.57 x 1.37 x 1.18 cm)</p>
<p><b>Environment</b></p>	<p><b>Weight</b></p> <p>0.04 lb. (0.02 kg)</p> <p><b>Operating temperature</b></p> <p>32°F to 158°F (0°C to 70°C)</p> <p><b>Operating relative humidity</b></p> <p>0% to 95%, non-condensing</p> <p><b>Non-operating/Storage temperature</b></p> <p>–40°F to 185°F –40°C to 85°C)</p>
<p><b>Cabling</b></p>	<p>Type:</p> <p>Single-mode fiber optic, complying with ITU-T G.652;</p> <p>Maximum distance:</p> <ul style="list-style-type: none"> <li>● 0.5-10,000 m (single-mode fiber)</li> </ul>
<p><b>Notes</b></p>	<p>Transmit wavelength: 1490 nm. Receive wavelength: 1310 nm. Power consumption is 1 watt maximum. For supported platforms and minimum software requirements to support this product, see the document titled "Support for the HP BX Transceivers" on the "HP Mini-GBICs and SFPs" Manuals Web page. The J9142B connects to the J9143B "upstream" transceiver, or to any IEEE-standard 1000BASE-BX10-U ("upstream") device. (A 1000-BX-D transceiver can only connect to a 1000-BX-U product. You cannot connect two 1000-BX-D transceivers together.)</p>
<p><b>Services</b></p>	<p>Refer to the HP website at <a href="http://www.hp.com/networking/services">www.hp.com/networking/services</a> 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.</p>

<p><b>HP X122 1G SFP LC BX-U Transceiver (J9143B)</b></p> <p>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.</p>	<p><b>Ports</b></p> <p>1 LC 1000BASE-BX10 port (IEEE 802.3ah Type 1000BASE-BX10-U); Duplex: full only</p>
<p><b>Physical characteristics</b></p>	<p><b>Dimensions</b></p> <p>2.19(d) x 0.54(w) x 0.46(h) in. (5.57 x 1.37 x 1.18 cm)</p>
<p><b>Environment</b></p>	<p><b>Weight</b></p> <p>0.04 lb. (0.02 kg)</p> <p><b>Operating temperature</b></p> <p>32°F to 158°F (0°C to 70°C)</p> <p><b>Operating relative humidity</b></p> <p>0% to 95%, non-condensing</p> <p><b>Non-operating/Storage temperature</b></p> <p>–40°F to 185°F –40°C to 85°C)</p>
<p><b>Cabling</b></p>	<p>Type:</p> <p>Single-mode fiber optic, complying with ITU-T G.652;</p> <p>Maximum distance:</p> <ul style="list-style-type: none"> <li>● 0.5-10,000 m (single-mode fiber)</li> </ul>
<p><b>Notes</b></p>	<p>Transmit wavelength: 1310 nm. Receive wavelength: 1490 nm.</p>



### Accessory Product Details

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

HP 0.5 m Multimode OM3 LC/LC Optical Cable (AJ833A)

#### Cabling

##### Cable type:

50/125  $\mu\text{m}$  (core/cladding) diameter, multimode 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  $\mu\text{m}$  fiber optic cable and Ethernet assembly with LC duplex connectors on one end and LC duplex connectors on other end.

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

#### Services

Refer to the HP website at [www.hp.com/networking/services](http://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 1 m Multimode OM3 Cabling  
LC/LC Optical Cable  
(AJ834A)

**Cable type:**

50/125  $\mu\text{m}$  (core/cladding) diameter, multimode 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  $\mu\text{m}$  fiber optic cable and Ethernet assembly with LC duplex connectors on one end and LC duplex connectors on other end.

- Dimensions: Core diameter:  $50 \pm 3.0\mu\text{m}$  Cladding diameter:  $125 \pm 2.0\mu\text{m}$  Coating diameter:  $245 \pm 10\mu\text{m}$
- 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 50/125 $\mu\text{m}$  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](http://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 2 m Multimode OM3 Cabling  
LC/LC Optical Cable  
(AJ835A)

**Cable type:**

50/125  $\mu\text{m}$  (core/cladding) diameter, multimode 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  $\mu\text{m}$  fiber optic cable and Ethernet assembly with LC duplex connectors on one end and LC duplex connectors on other end.

- Dimensions: Core diameter:  $50 \pm 3.0\mu\text{m}$  Cladding diameter:  $125 \pm 2.0\mu\text{m}$  Coating diameter:  $245 \pm 10\mu\text{m}$
- 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 50/125 $\mu\text{m}$  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](http://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 Cabling  
LC/LC Optical Cable  
(AJ836A)

#### Cable type:

50/125  $\mu\text{m}$  core/cladding) diameter, multimode 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  $\mu\text{m}$  fiber optic cable and Ethernet assembly with LC duplex connectors on one end and LC duplex connectors on other end.

- Dimensions: Core diameter:  $50 \pm 3.0\mu\text{m}$  Cladding diameter:  $125 \pm 2.0\mu\text{m}$  Coating diameter:  $245 \pm 10\mu\text{m}$
- 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 50/125 $\mu\text{m}$  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](http://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 15 m Multimode  
OM3 LC/LC Optical  
Cable (AJ837A)

#### Cabling

#### Cable type:

50/125  $\mu\text{m}$  (core/cladding) diameter, multimode 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  $\mu\text{m}$  fiber optic cable and Ethernet assembly with LC duplex connectors on one end and LC duplex connectors on other end.

- Dimensions: Core diameter:  $50 \pm 3.0\mu\text{m}$  Cladding diameter:  $125 \pm 2.0\mu\text{m}$  Coating diameter:  $245 \pm 10\mu\text{m}$
- 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 50/125 $\mu\text{m}$  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](http://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  $\mu\text{m}$  (core/cladding) diameter, multimode 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  $\mu\text{m}$  fiber optic cable and Ethernet assembly with LC duplex connectors on one end and LC duplex connectors on other end.

- Dimensions: Core diameter:  $50 \pm 3.0\mu\text{m}$  Cladding diameter:  $125 \pm 2.0\mu\text{m}$  Coating diameter:  $245 \pm 10\mu\text{m}$
- 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 50/125 $\mu\text{m}$  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](http://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 50 m Multimode  
OM3 LC/LC Optical  
Cable (AJ839A)

Cabling

**Cable type:**

50/125  $\mu\text{m}$  (core/cladding) diameter, multimode 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  $\mu\text{m}$  fiber optic cable and Ethernet assembly with LC duplex connectors on one end and LC duplex connectors on other end.

- Dimensions: Core diameter:  $50 \pm 3.0\mu\text{m}$  Cladding diameter:  $125 \pm 2.0\mu\text{m}$  Coating diameter:  $245 \pm 10\mu\text{m}$
- 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 50/125 $\mu\text{m}$  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](http://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 0.5 m PremierFlex  
OM3+ LC/LC Optical  
Cable (BK837A)

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  $\pm$  3um; Cladding diameter: 125um  $\pm$  2um; Coating diameter: 245  $\pm$  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 @ 1310 nm @ 23°C as tested in accordance with EIA 455-46

Services

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

HP 1 m PremierFlex  
OM3+ LC/LC Optical  
Cable (BK838A)

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  $\pm$ 3um, Cladding diameter: 125um  $\pm$ 2um; Coating diameter: 245  $\pm$  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](http://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 2 m PremierFlex  
OM3+ LC/LC Optical  
Cable (BK839A)

#### 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  $\pm$ 3um, Cladding diameter: 125um  $\pm$ 2um; Coating diameter: 245  $\pm$  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](http://www.hp.com/networking/services) for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.

HP 5 m PremierFlex  
OM3+ LC/LC Optical  
Cable (BK840A)

#### 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  $\pm$ 3um, Cladding diameter: 125um  $\pm$ 2um; Coating diameter: 245  $\pm$  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](http://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 15 m PremierFlex OM3+ LC/LC Optical Cable (BK841A)**      **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  $\pm$ 3um, Cladding diameter: 125um  $\pm$ 2um; Coating diameter: 245  $\pm$  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](http://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 30 m PremierFlex OM3+ LC/LC Optical Cable (BK842A)**      **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  $\pm$ 3um, Cladding diameter: 125um  $\pm$ 2um; Coating diameter: 245  $\pm$  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](http://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 50 m PremierFlex OM3+ LC/LC Optical Cable (BK843A)**      **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](http://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 600 Redundant and External Power Supply (J8168A)**      **Ports**

6 redundant power supply ports  
Restrictions: Each port can provide redundant +12 V power to a connected switch; only one port can provide power at a given time

2 external power supply ports  
Restrictions: Provides 50 VDC external PoE to up to two switch devices; provides max. of 408 W full power to one device, and half power (204 W each) if connected to two devices

**Physical characteristics**

**Dimensions**      12.83(d) x 17.44(w) x 1.73(h) in. (32.59 x 44.3 x 4.39 cm) (1U height)

**Weight**      11.78 lb. (5.34 kg), Fully loaded

**Mounting**

1U rack-mountable and wall-mountable enclosure using standard mounting hardware

**Environment**

**Operating temperature**      32°F to 131°F (0°C to 55°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**      Noise emission LwA=59.2 dB at virtual workspace, according to DIN 45635 T.19

**Electrical characteristics**      **Description**

The unit automatically adjusts to any voltage between 100-240 V and either 50 or 60 Hz



### Accessory Product Details

	<b>Voltage</b>	100-240 VAC
	<b>Current</b>	9/5 A
	<b>Maximum power rating</b>	800 W
	<b>RPS power</b>	180 W
	<b>PoE power</b>	408 W
	<b>Frequency</b>	50/60 Hz
	<b>Notes</b>	Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated.
<b>Safety</b>		CSA 22.2 No. 60950; EN 60950/IEC 60950; UL 60950
<b>Emissions</b>		FCC Class A; VCCI Class A; EN 55022/CISPR 22 Class A
<b>Immunity</b>	<b>EN</b>	EN 55024, CISPR 24
	<b>ESD</b>	IEC 61000-4-2; 4 kV CD, 8 kV AD
	<b>Radiated</b>	IEC 61000-4-3; 3 V/m
	<b>EFT/Burst</b>	IEC 61000-4-4; 1.0 kV (power line), 0.05 kV (signal line)
	<b>Surge</b>	IEC 61000-4-5; 1 kV/2 kV AC
	<b>Conducted</b>	IEC 61000-4-6; 3 V
	<b>Power frequency magnetic field</b>	IEC 61000-4-8; 1 A/m, 50 or 60 Hz
	<b>Voltage dips and interruptions</b>	IEC 61000-4-11; >95% reduction, 0.5 period; 30% reduction, 25 periods
	<b>Harmonics</b>	EN 61000-3-2, IEC 61000-3-2
	<b>Flicker</b>	EN 61000-3-3, IEC 61000-3-3
<b>Management</b>		Provides information via port interfaces of attached devices
<b>Notes</b>		Supported devices <ul style="list-style-type: none"><li>• HP Switch 2600-PWR Series, Switch 2610 Series, Switch 2610-PWR Series, Switch 2800 Series, Switch 2810 Series, Switch 5300xl Series, Switch 3400cl Series, Switch 6400cl Series, and Secure Router 7000dl Series</li></ul>
<b>Services</b>		3-year, 4-hour onsite, 13x5 coverage for hardware (U9270E) 3-year, 4-hour onsite, 24x7 coverage for hardware (U9271E) 4-year, 4-hour onsite, 13x5 coverage for hardware (UR854E) 4-year, 4-hour onsite, 24x7 coverage for hardware (UR855E) 5-year, 4-hour onsite, 13x5 coverage for hardware (UR857E) 5-year, 4-hour onsite, 24x7 coverage for hardware (UR858E) 3 Yr 6 hr Call-to-Repair Onsite (UW371E) 4 Yr 6 hr Call-to-Repair Onsite (UW372E) 5 Yr 6 hr Call-to-Repair Onsite (UW373E)

Refer to the HP website at: [www.hp.com/networking/services](http://www.hp.com/networking/services) for details on the service-level descriptions and product numbers. For details about



### Accessory Product Details

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services and response times in your area, please contact your local HP sales office.

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#### HP X410 1U Universal 4-post Rack Mounting Kit (J9583A)

The rack mounting kit supports the 1U, full width switches in the following switch series and the power supply: 1810 Series, 2510 Series, 2520 Series, 2610 Series, 2810 Series, 2910 Series, 3500 Series, and the 620 Power Supply

This universal rack mounting kit is design to fit the following racks: HP 10K 10642, HP 10K 10842, Panduit CN, Panduit CS, Wrightline Vantage S2, APC Netshelter 600mm, and APC Netshelter 800mm. It may well fit many other brands and models too.

#### Services

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