

HP 5130 EI Switch Series



Key features

- Fixed 10G ports for high-speed stacking or uplinks
- Support for multiple services
- Comprehensive security control policies
- Diversified quality of service (QoS) policies
- Excellent manageability

Product overview

HP 5130 EI Switch Series comprises Gigabit Ethernet switches that support static and RIP Layer 3 routing, diversified services, and IPv6 forwarding, as well as provides four 10-Gigabit Ethernet (10GbE) extended interfaces. Unique Intelligent Resilient Framework (IRF) technology creates a virtual fabric by managing several switches as one logical device, which increases network resilience, performance, and availability, while reducing operational complexity. These switches provide Gigabit Ethernet access and can be used at the edge of a network or to connect server clusters in data centers. High availability, simplified management, and comprehensive security control policies are among the key features that distinguish this series.

Features and benefits

Software-defined networking

- OpenFlow

Supports OpenFlow 1.3 specification to enable SDN by allowing separation of the data (packet forwarding) and control (routing decision) paths

Quality of service (QoS)

- Broadcast control

Allows limitation of broadcast traffic rate to cut down on unwanted network broadcast traffic

- Advanced classifier-based QoS

Classifies traffic using multiple match criteria based on Layer 2, 3, and 4 information; applies QoS policies such as setting priority level and rate limit to selected traffic on a port, VLAN, or whole switch

- Powerful QoS feature

Supports the following congestion actions: strict priority (SP) queuing, weighted round robin (WRR), and SP+WRR

- Traffic policing

Supports Committed Access Rate (CAR) and line rate

Management

- Remote configuration and management

Enables configuration and management through a secure Web browser or a CLI located on a remote device

- Manager and operator privilege levels

Provides read-only (operator) and read or write (manager) access on CLI and Web browser management interfaces

- Command authorization

Leverages HWTACACS to link a custom list of CLI commands to an individual network administrator's login; also provides an audit trail

- Secure Web GUI

Provides a secure, easy-to-use graphical interface for configuring the module via HTTPS. Multiple configuration files allow easy configuration changes

- Complete session logging

Provides detailed information for problem identification and resolution

- SNMPv1, v2c, and v3

Facilitates centralized discovery, monitoring, and secure management of networking devices

- Remote monitoring (RMON)

Uses standard SNMP to monitor essential network functions; supports events, alarm, history, and statistics group plus a private alarm extension group

- IEEE 802.1AB Link Layer Discovery Protocol (LLDP)

Advertises and receives management information from adjacent devices on a network, facilitating easy mapping by network management applications

- sFlow (RFC 3176)

Provides scalable ASIC-based wirespeed network monitoring and accounting with no impact on network performance; this allows network operators to gather a variety of sophisticated network statistics and information for capacity planning and real-time network monitoring purposes

- Management VLAN

Segments traffic to and from management interfaces, including CLI/telnet, a Web browser interface, and SNMP

- Remote intelligent mirroring

Mirrors ingress/egress ACL-selected traffic from a switch port or VLAN to a local or remote switch port anywhere on the network

- Device Link Detection Protocol (DLDP)

Monitors a cable between two switches and shuts down the ports on both ends if the cable is broken, which prevents network problems such as loops

- IPv6 management

Provides future-proof networking because the switch is capable of being managed whether the attached network is running IPv4 or IPv6; supports pingv6, tracertv6, Telnetv6, TFTPv6, DNSv6, syslogv6, FTPv6, SNMPv6, DHCPv6, and RADIUS for IPv6

- Troubleshooting

Ingress and egress port monitoring enables network problem-solving; virtual cable tests provide visibility into cable problems

- HP Intelligent Management Center (IMC)

Integrates fault management, element configuration, and network monitoring from a central vantage point; built-in support for third-party devices enables network administrators to centrally manage all network elements with a variety of automated tasks, including discovery, categorization, baseline configurations, and software images; the software also provides configuration comparison tools, version tracking, change alerts, and more

- Network management

Offers SNMP v1/2/3, MIB-II with Traps, and RADIUS Authentication Client MIB (RFC 2618); embedded HTML management tool with secure access

Connectivity

- Auto-MDIX

Adjusts automatically for straight-through or crossover cables on all 10/100/1000 ports

- Flow control

Provides back pressure using standard IEEE 802.3x, reducing congestion in heavy traffic situations

- High-density connectivity

Provides up to 48 fixed 10/100/1000BASE-T ports in a Layer 2/Layer 3 switch

- IEEE 802.3at Power over Ethernet (PoE+) support

Simplifies deployment and dramatically reduces installation costs by helping to eliminate the time and cost involved in supplying local power at each access point location

- Ethernet operations, administration and maintenance (OAM)

Detects data link layer problems that occurred in the “last mile” using the IEEE 802.3ah OAM standard; monitors the status of the link between two devices

Performance

- Nonblocking architecture

Up to 176 Gbps nonblocking switching fabric provides wirespeed switching with up to 130.9 million pps throughput

- Hardware-based wirespeed access control lists (ACLs)

Helps provide high levels of security and ease of administration without impacting network performance with a feature-rich TCAM-based ACL implementation

Resiliency and high availability

- Separate data and control paths

Separates control from services and keeps service processing isolated; increases security and performance

- External redundant power supply

Provides high reliability

- Smart Link

Allows under 100 ms failover between links

- Spanning Tree/PVST+, MSTP, RSTP

Provides redundant links while preventing network loops

- Intelligent Resilient Framework (IRF)

Creates virtual resilient switching fabrics, where two to nine switches perform as a single L2 switch and L3 router; switches do not have to be co-located and can be part of a disaster-recovery system; servers or switches can be attached using standard LACP for automatic load balancing and high availability; can reduce need for complex protocols like Spanning Tree Protocol, Equal-Cost Multipath (ECMP), or VRRP, thereby simplifying network operation

Layer 2 switching

- 16K MAC address table

Provides access to many Layer 2 devices

- VLAN support and tagging

Supports IEEE 802.1Q with 4,094 simultaneous VLAN IDs

- IEEE 802.1ad QinQ and selective QinQ

Increases the scalability of an Ethernet network by providing a hierarchical structure; connects multiple LANs on a high-speed campus or metro network

- 10GbE port aggregation

Allows grouping of ports to increase overall data throughput to a remote device

- Device Link Detection Protocol (DLDP)

Monitors link connectivity and shuts down ports at both ends if unidirectional traffic is detected, preventing loops in STP-based networks

- Jumbo frame support

Improves the performance of large data transfers; supports frame size of up to 9K-byte

Layer 3 services

- Address Resolution Protocol (ARP)

Determines the MAC address of another IP host in the same subnet; supports static ARPs; gratuitous ARP allows detection of duplicate IP addresses; proxy ARP allows normal ARP operation between subnets or when subnets are separated by a Layer 2 network

- Dynamic Host Configuration Protocol (DHCP)

Simplifies the management of large IP networks; supports client; DHCP Relay enables DHCP operation across subnets

- Loopback interface address

Defines an address that can always be reachable, improving diagnostic capability

- User Datagram Protocol (UDP) helper function

Allows UDP broadcasts to be directed across router interfaces to specific IP unicast or subnet broadcast addresses and prevents server spoofing for UDP services such as DHCP

- Route maps

Provides more control during route redistribution; allows filtering and altering of route metrics

Layer 3 routing

- Static IP routing

Provides manually configured routing for both IPv4 and IPv6 networks

- Routing Information Protocol (RIP)

Uses a distance vector algorithm with UDP packets for route determination; supports RIPv1 and RIPv2 routing; includes loop protection

Security

- Access control lists (ACLs)

Provides IP Layer 2 to Layer 4 traffic filtering; supports global ACL, VLAN ACL, port ACL, and IPv6 ACL

- IEEE 802.1X

Industry-standard method of user authentication using an IEEE 802.1X supplicant on the client in conjunction with a RADIUS server

- MAC-based authentication

client is authenticated with the RADIUS server based on the client's MAC address

- Identity-driven security and access control

- Per-user ACLs

Permits or denies user access to specific network resources based on user identity and time of day, allowing multiple types of users on the same network to access specific network services without risking network security or providing unauthorized access to sensitive data

- Automatic VLAN assignment

Automatically assigns users to the appropriate VLAN based on their identities

- Secure management access

Delivers secure encryption of all access methods (CLI, GUI, or MIB) through SSHv2, SSL, and/or SNMPv3

- Secure FTP

Allows secure file transfer to and from the switch; protects against unwanted file downloads or unauthorized copying of a switch configuration file

- Guest VLAN

Provides a browser-based environment to authenticated clients that is similar to IEEE 802.1X

- Port security

Allows access only to specified MAC addresses, which can be learned or specified by the administrator

- Port isolation

Secures and adds privacy, and prevents malicious attackers from obtaining user information

- STP BPDU port protection

Blocks Bridge Protocol Data Units (BPDUs) on ports that do not require BPDUs, preventing forged BPDU attacks

- STP root guard

Protects the root bridge from malicious attacks or configuration mistakes

- DHCP protection

Blocks DHCP packets from unauthorized DHCP servers, preventing denial-of-service attacks

- IP source guard

Helps prevent IP spoofing attacks

- Dynamic ARP protection

Blocks ARP broadcasts from unauthorized hosts, preventing eavesdropping or theft of network data

- RADIUS/HWTACACS

Eases switch management security administration by using a password authentication server

Convergence

- IEEE 802.1AB Link Layer Discovery Protocol (LLDP)

Facilitates easy mapping using network management applications with LLDP automated device discovery protocol

- LLDP-MED

Is a standard extension that automatically configures network devices, including LLDP-capable IP phones

- LLDP-CDP compatibility

Receives and recognizes CDP packets from Cisco's IP phones for seamless interoperation

- IEEE 802.3af Power over Ethernet

Provides up to 15.4 W per port to PoE-powered devices such as IP phones, wireless access points, and video cameras

- PoE allocations

Supports multiple methods (automatic, IEEE 802.3af class, LLDP-MED, or user-specified) to allocate PoE power for more efficient energy savings

- Voice VLAN

Automatically assigns VLAN and priority for IP phones, simplifying network configuration and maintenance

- IP multicast snooping (data-driven IGMP)

Prevents flooding of IP multicast traffic

Device support

- Prestandard PoE Support

Detects and provides power to prestandard PoE devices such as wireless LAN access points and IP phones

Additional information

- Green IT and power

Improves energy efficiency through the use of the latest advances in silicon development; shuts off unused ports and utilizes variable-speed fans, reducing energy costs

- Green initiative support

Provides support for RoHS and WEEE regulations

- Unified HP Comware operating system with modular architecture

Provides an easy-to-enhance-and-extend feature set, which doesn't require whole-scale changes; all switching, routing, and security platforms leverage the Comware OS, a common unified modular operating system

- Energy Efficient Ethernet (EEE) Support

Reduces power consumption in accordance with IEEE 802.3az

Warranty and support

- HP Lifetime Warranty 2.0

Advance hardware replacement for as long as you own the product with next-business-day delivery (available in most countries)¹

- Electronic and telephone support (for Lifetime Warranty 2.0)

Limited 24x7 telephone support is available from HP for the first three years; limited electronic and business hours telephone support is available from HP for the entire warranty period; to reach our support centers, refer to hp.com/networking/contact-support; for details on the duration of support provided with your product purchase, refer to hp.com/networking/warrantysummary

- Software releases

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

¹ HP warranty includes repair or replacement of hardware for as long as you own the product, with next business day advance replacement (available in most countries). The disk drive included with HP AllianceOne Advanced Services and Services zL Modules, HP Threat Management Services zL Module, HP AllianceOne Extended zL Module with Riverbed Steelhead, HP MSM765 zL Mobility Controller, and HP Survivable Branch Communication zL Module powered by Microsoft® Lync® has a five-year hardware warranty. For details, refer to the software license and hardware warranty statements at hp.com/networking/warranty.

HP 5130 EI Switch Series

Specifications



	HP 5130-24G-4SFP+ EI Switch (JG932A)	HP 5130-24G-SFP-4SFP+ EI Switch (JG933A)	HP 5130-48G-4SFP+ EI Switch (JG934A)
I/O ports and slots	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); Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only 4 SFP+ fixed 1000/10000 SFP+ ports	16 SFP 100/1000 Mbps ports 8 SFP dual-personality ports; 100/1000BaseX or 100/1000BASE-T RJ-45 Combo Ports 4 SFP+ fixed 1000/10000 SFP+ ports	48 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); Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only 4 SFP+ fixed 1000/10000 SFP+ ports
Additional ports and slots	1 RJ-45 serial console port	1 RJ-45 serial console port	1 RJ-45 serial console port
Power supplies		2 power supply slots 1 minimum power supply required (ordered separately)	
Physical characteristics			
Dimensions	17.32(w) x 6.3(d) x 1.72(h) in (44 x 16 x 4.36 cm) (1U height)	17.32(w) x 14.17(d) x 1.72(h) in (44 x 36 x 4.36 cm) (1U height)	17.32(w) x 10.24(d) x 1.72(h) in (44 x 26 x 4.36 cm) (1U height)
Weight	11.02 lb (5 kg)	17.64 lb (8 kg)	11.02 lb (5 kg)
Memory and processor	1 GB SDRAM, 128 MB flash; packet buffer size: 1.5 MB	1 GB SDRAM, 128 MB flash; packet buffer size: 1.5 MB	1 GB SDRAM, 128 MB flash; packet buffer size: 3 MB
Mounting and enclosure	Mounts in an EIA standard 19-inch telco rack or equipment cabinet (hardware included)	Mounts in an EIA standard 19-inch telco rack or equipment cabinet (hardware included)	Mounts in an EIA standard 19-inch telco rack or equipment cabinet (hardware included)
Performance			
1000 Mb Latency	< 5 µs	< 5 µs	< 5 µs
10 Gbps Latency	< 1.5 µs	< 1.5 µs	< 1.5 µs
Throughput	96 Mpps	96 Mpps	130.9 Mpps
Routing/Switching capacity	128 Gbps	128 Gbps	176 Gbps
Routing table size	512 entries (IPv4), 256 entries (IPv6)	512 entries (IPv4), 256 entries (IPv6)	512 entries (IPv4), 256 entries (IPv6)
MAC address table size	16384 entries	16384 entries	16384 entries
Reliability			
MTBF (years)	98.1	52.79	61.4
Environment			
Operating temperature	32°F to 113°F (0°C to 45°C)	32°F to 113°F (0°C to 45°C)	32°F to 113°F (0°C to 45°C)
Operating relative humidity	10% to 90%, noncondensing	10% to 90%, noncondensing	10% to 90%, noncondensing
Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)	-40°F to 158°F (-40°C to 70°C)	-40°F to 158°F (-40°C to 70°C)
Nonoperating/Storage relative humidity	5% to 95%, noncondensing	5% to 95%, noncondensing	5% to 95%, noncondensing
Acoustic	High-speed fan: 39.7 dB; ISO 7779	Low-speed fan: 47.1 dB, High-speed fan: 50.7 dB; ISO 7779	Low-speed fan: 43.1 dB, High-speed fan: 53.4 dB; ISO 7779

	HP 5130-24G-4SFP+ EI Switch (JG932A)	HP 5130-24G-SFP-4SFP+ EI Switch (JG933A)	HP 5130-48G-4SFP+ EI Switch (JG934A)
Electrical characteristics			
Frequency	50/60 Hz	50/60 Hz	50/60 Hz
Maximum heat dissipation	64/88 BTU/hr (67.52/92.84 kJ/hr)	102/204 BTU/hr (107.61/215.22 kJ/hr), for AC Powered units. For DC powered units heat dissipation is 130BTU/hr min, 232BTU/hr max.	130/153 BTU/hr (137.15/161.42 kJ/hr), For AC powered units. For DC powered units heat dissipation is 130BTU/hr min, 171 BTU/hr max
AC voltage	100 - 240 VAC	100 - 240 VAC	100 - 240 VAC
DC voltage		-48 to -60 VDC	-48 to -60 VDC
Current	2 A	5 A	10 A
Maximum power rating	26 W	60 W	45 W
Idle power	19 W	30 W	38 W
Notes			
	Idle power is the actual power consumption of the device with no ports connected. 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.	Idle power is the actual power consumption of the device with no ports connected. 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. Power Ratings for AC Power Supply indicated above. For DC input power, Idle Power is 38W and Max is 68W. DC Max input current is 8A. Units are supplied without a power supply. Customer must buy 1 or 2 JD362A(AC) or JD366A (DC) power supply.	Idle power is the actual power consumption of the device with no ports connected. 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. Power ratings for AC power indicated above. Current used is 5A Max when DC Power used. For DC input power, idle power is 38W, maximum DC power used is 50W.
Safety			
	UL 60950-1; EN 60825-1 Safety of Laser Products-Part 1; EN 60825-2 Safety of Laser Products-Part 2; IEC 60950-1; CAN/CSA-C22.2 No. 60950-1; Anatel; ULAR; GOST; EN 60950-1/A11; FDA 21 CFR Subchapter J; NOM; ROHS Compliance	UL 60950-1; EN 60825-1 Safety of Laser Products-Part 1; EN 60825-2 Safety of Laser Products-Part 2; IEC 60950-1; CAN/CSA-C22.2 No. 60950-1; Anatel; ULAR; GOST; EN 60950-1/A11; FDA 21 CFR Subchapter J; NOM; ROHS Compliance	UL 60950-1; EN 60825-1 Safety of Laser Products-Part 1; EN 60825-2 Safety of Laser Products-Part 2; IEC 60950-1; CAN/CSA-C22.2 No. 60950-1; Anatel; ULAR; GOST; EN 60950-1/A11; FDA 21 CFR Subchapter J; NOM; ROHS Compliance
Emissions			
	EMC Directive 2004/108/EC; FCC (CFR 47, Part 15) Class A; EN 61000-4-11:2004; ANSI C63.4-2009; EN 61000-3-3:2008; VCCI V-4/2012.04; EN 6100-3-2:2006+A1:2009 + A2:2009; EN 61000-3-2:2006+A1:2009+A2:2009 ; EN 61000-4-3:2006; EN 61000-4-4:2012; EN 61000-4-5:2006; EN 61000-4-6:2009; AS/NZS CISPR 22:2009 Class A; CISPR 22:2008 Class A; EN 55022:2010 Class A; EN 61000-4-29: 2000; CISPR 24:2010; EN 300 386 V1.6.1; VCCI V-3/2013.04 Class A	EMC Directive 2004/108/EC; FCC (CFR 47, Part 15) Class A; EN 61000-4-11:2004; ANSI C63.4-2009; EN 61000-3-3:2008; VCCI V-4/2012.04; EN 6100-3-2:2006+A1:2009 + A2:2009; EN 61000-3-2:2006+A1:2009+A2:2009 ; EN 61000-4-3:2006; EN 61000-4-4:2012; EN 61000-4-5:2006; EN 61000-4-6:2009; AS/NZS CISPR 22:2009 Class A; CISPR 22:2008 Class A; EN 55022:2010 Class A; EN 61000-4-29: 2000; CISPR 24:2010; EN 300 386 V1.6.1; VCCI V-3/2013.04 Class A	EMC Directive 2004/108/EC; FCC (CFR 47, Part 15) Class A; EN 61000-4-11:2004; ANSI C63.4-2009; EN 61000-3-3:2008; VCCI V-4/2012.04; EN 6100-3-2:2006+A1:2009 + A2:2009; EN 61000-3-2:2006+A1:2009+A2:2009 ; EN 61000-4-3:2006; EN 61000-4-4:2012; EN 61000-4-5:2006; EN 61000-4-6:2009; AS/NZS CISPR 22:2009 Class A; CISPR 22:2008 Class A; EN 55022:2010 Class A; EN 61000-4-29: 2000; CISPR 24:2010; EN 300 386 V1.6.1; VCCI V-3/2013.04 Class A
Immunity			
Generic ESD	EN 55024 EN300 386	EN 55024 EN300 386	EN 55024 EN300 386
Management			
	IMC - Intelligent Management Center; command-line interface; Web browser; SNMP Manager	IMC - Intelligent Management Center; command-line interface; Web browser; SNMP Manager	IMC - Intelligent Management Center; command-line interface; Web browser; SNMP Manager
Services			
	Refer to the HP website at 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.	Refer to the HP website at 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.	Refer to the HP website at 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 5130 EI Switch Series

Specifications (continued)



	HP 5130-24G-PoE+-4SFP+ (370W) EI Switch (JG936A)	HP 5130-48G-PoE+-4SFP+ (370W) EI Switch (JG937A)
I/O ports and slots	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); Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only 4 SFP+ fixed 1000/10000 SFP+ ports	48 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); Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only 4 SFP+ fixed 1000/10000 SFP+ ports
Additional ports and slots	1 RJ-45 serial console port	1 RJ-45 serial console port
Physical characteristics		
Dimensions	17.32(w) x 11.81(d) x 1.72(h) in (44 x 30 x 4.37 cm) (1U height)	17.32(w) x 14.17(d) x 1.72(h) in (44 x 36 x 4.36 cm) (1U height)
Weight	17.64 lb (8 kg)	17.64 lb (8 kg)
Memory and processor	1 GB SDRAM, 128 MB flash; packet buffer size: 1.5 MB	1 GB SDRAM, 128 MB flash; packet buffer size: 3 MB
Mounting and enclosure	Mounts in an EIA standard 19-inch telco rack or equipment cabinet (hardware included)	Mounts in an EIA standard 19-inch telco rack or equipment cabinet (hardware included)
Performance		
1000 Mb Latency	< 5 µs	< 5 µs
10 Gbps Latency	< 1.5 µs	< 1.5 µs
Throughput	96 Mpps	130.9 Mpps
Routing/Switching capacity	128 Gbps	176 Gbps
Routing table size	512 entries (IPv4), 256 entries (IPv6)	512 entries (IPv4), 256 entries (IPv6)
MAC address table size	16384 entries	16384 entries
Reliability		
MTBF (years)	48.3	37.1
Environment		
Operating temperature	32°F to 113°F (0°C to 45°C)	32°F to 113°F (0°C to 45°C)
Operating relative humidity	10% to 90%, noncondensing	10% to 90%, noncondensing
Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)	-40°F to 158°F (-40°C to 70°C)
Nonoperating/Storage relative humidity	5% to 95%, noncondensing	5% to 95%, noncondensing
Acoustic	Low-speed fan: 49.8 dB, High-speed fan: 52.9 dB; ISO 7779	Low-speed fan: 50.6 dB, High-speed fan: 54.6 dB; ISO 7779

	HP 5130-24G-PoE+-4SFP+ (370W) EI Switch (JG936A)	HP 5130-48G-PoE+-4SFP+ (370W) EI Switch (JG937A)
Electrical characteristics		
Frequency	50/60 Hz	50/60 Hz
Maximum heat dissipation	102/1569 BTU/hr (107.61/1655.29 kJ/hr), for AC Power. For DC Power min heat dissipation is 85BTU/hr and max heat dissipation is 2559 BTU/hr	160/1671 BTU/hr (168.8/1762.91 kJ/hr), for AC power. For DC power min heat dissipation is 147BTU/hr and 3037BTU/hr max.
AC voltage	100 - 240 VAC	100 - 240 VAC
Current	10 A	10 A
Maximum power rating	460 W	490 W
Idle power		47 W
PoE power	370 W PoE+	370 W PoE+
Notes		
	<p>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.</p> <p>PoE Power is the power supplied by the internal power supply. When supplemented with the use of an HP RPS1600 Redundant Power System, up to 740 W of PoE+ can be supplied.</p> <p>Max current rating for DC power is 25A. AC Input power is 30W typical, and 460W max (including 370W PoE+ consumption). DC Input voltage range is -54 to -57VDC. Total DC input power is 25W Typical and 790W with 740W PoE+ Power consumption. DC Input voltage range is -54VDC to -57VDC. DC Input Source is the HP RPS1600.</p>	<p>Idle power is the actual power consumption of the device with no ports connected. 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.</p> <p>PoE Power is the power supplied by the internal power supply. When supplemented with the use of an HP RPS1600 Redundant Power System, up to 740 W of PoE+ can be supplied.</p> <p>Max current rating for DC power is 25A. AC Input power is 47W typical, and 490W max (including 370W PoE+ consumption). DC Input voltage range is -54 to -57VDC. Total DC input power is 43W typical and 890W with 800W PoE+ Power consumption. DC Input voltage range is -54VDC to -57VDC. DC Input Source is the HP RPS1600.</p>
Safety		
	UL 60950-1; EN 60825-1 Safety of Laser Products-Part 1; EN 60825-2 Safety of Laser Products-Part 2; IEC 60950-1; CAN/CSA-C22.2 No. 60950-1; Anatel; ULAR; GOST; EN 60950-1/A11; FDA 21 CFR Subchapter J; NOM; ROHS Compliance	UL 60950-1; EN 60825-1 Safety of Laser Products-Part 1; EN 60825-2 Safety of Laser Products-Part 2; IEC 60950-1; CAN/CSA-C22.2 No. 60950-1; Anatel; ULAR; GOST; EN 60950-1/A11; FDA 21 CFR Subchapter J; NOM; ROHS Compliance
Emissions		
	EMC Directive 2004/108/EC; FCC (CFR 47, Part 15) Class A; EN 61000-4-11:2004; ANSI C63.4-2009; EN 61000-3-3:2008; VCCI V-4/2012.04; EN 6100-3-2:2006+A1:2009 + A2:2009; EN 61000-3-2:2006+A1:2009+A2:2009; EN 61000-4-3:2006; EN 61000-4-4:2012; EN 61000-4-5:2006; EN 61000-4-6:2009; AS/NZS CISPR 22:2009 Class A; CISPR 22:2008 Class A; EN 55022:2010 Class A; EN 61000-4-29: 2000; CISPR 24:2010; EN 300 386 V1.6.1; VCCI V-3/2013.04 Class A	EMC Directive 2004/108/EC; FCC (CFR 47, Part 15) Class A; EN 61000-4-11:2004; ANSI C63.4-2009; EN 61000-3-3:2008; VCCI V-4/2012.04; EN 6100-3-2:2006+A1:2009 + A2:2009; EN 61000-3-2:2006+A1:2009+A2:2009; EN 61000-4-3:2006; EN 61000-4-4:2012; EN 61000-4-5:2006; EN 61000-4-6:2009; AS/NZS CISPR 22:2009 Class A; CISPR 22:2008 Class A; EN 55022:2010 Class A; EN 61000-4-29: 2000; CISPR 24:2010; EN 300 386 V1.6.1; VCCI V-3/2013.04 Class A
Immunity		
Generic	EN 55024	EN 55024
ESD	EN300 386	EN300 386
Management		
	IMC - Intelligent Management Center; command-line interface; Web browser; SNMP Manager	IMC - Intelligent Management Center; command-line interface; Web browser; SNMP Manager
Services		
	Refer to the HP website at 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.	Refer to the HP website at 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	RFC 1157 SNMPv1/v2c RFC 1305 NTPv3 RFC 2573 (SNMPv3 Applications)	RFC 2819 (RMON groups Alarm, Event, History and Statistics only) RFC 3416 (SNMP Protocol Operations v2) HTML and telnet management	Multiple Configuration Files SNMP v3 and RMON RFC support SSHv1/SSHv2 Secure Shell TACACS/TACACS+ Web UI
General protocols	IEEE 802.1ad Q-in-Q 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 802.1X PAE IEEE 802.3 Type 10BASE-T IEEE 802.3ab 1000BASE-T IEEE 802.3ad Link Aggregation Control Protocol (LACP) IEEE 802.3ae 10-Gigabit Ethernet IEEE 802.3af Power over Ethernet IEEE 802.3i 10BASE-T IEEE 802.3u 100BASE-X IEEE 802.3x Flow Control IEEE 802.3z 1000BASE-X RFC 768 UDP RFC 783 TFTP Protocol (revision 2)	RFC 791 IP RFC 792 ICMP RFC 793 TCP RFC 826 ARP RFC 854 TELNET RFC 951 BOOTP RFC 1213 Management Information Base for Network Management of TCP/IP-based internets RFC 1305 NTPv3 RFC 1350 TFTP Protocol (revision 2) RFC 1519 CIDR RFC 1812 IPv4 Routing RFC 1866 Hypertext Markup Language - 2.0 RFC 2131 DHCP RFC 2236 IGMP Snooping RFC 2616 HTTP Compatibility v1.1 RFC 2665 Definitions of Managed Objects for the Ethernet-like Interface Types	RFC 2668 Definitions of Managed Objects for IEEE 802.3 Medium Attachment Units (MAUs) RFC 2865 Remote Authentication Dial In User Service (RADIUS) RFC 2866 RADIUS Accounting RFC 3414 User-based Security Model (USM) for version 3 of the Simple Network Management Protocol (SNMPv3) RFC 3415 View-based Access Control Model (VACM) for the Simple Network Management Protocol (SNMP) RFC 3418 Management Information Base (MIB) for the Simple Network Management Protocol (SNMP) RFC 3576 Ext to RADIUS (CoA only) RFC 4213 Basic IPv6 Transition Mechanisms 802.1r - GARP Proprietary Attribute Registration Protocol (GPRP)
IPv6	RFC 2461 IPv6 Neighbor Discovery RFC 2463 ICMPv6	RFC 3162 RADIUS and IPv6 RFC 3306 Unicast-Prefix-based IPv6 Multicast Addresses	RFC 3315 DHCPv6 (client and relay)
MIBs	RFC 1212 Concise MIB Definitions RFC 1213 MIB II RFC 1493 Bridge MIB RFC 1757 Remote Network Monitoring MIB RFC 2096 IP Forwarding Table MIB RFC 2233 Interface MIB RFC 2571 SNMP Framework MIB RFC 2572 SNMP-MPD MIB	RFC 2573 SNMP-Notification MIB RFC 2573 SNMP-Target MIB RFC 2574 SNMP USM MIB RFC 2618 RADIUS Authentication Client MIB RFC 2620 RADIUS Accounting Client 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 2819 RMON MIB RFC 2863 The Interfaces Group MIB RFC 2925 Ping MIB RFC 3414 SNMP-User based-SM MIB RFC 3415 SNMP-View based-ACM MIB RFC 3418 MIB for SNMPv3 RFC 3621 Power Ethernet MIB
Network management	IEEE 802.1AB Link Layer Discovery Protocol (LLDP)	RFC 2819 Four groups of RMON: 1 (statistics), 2 (history), 3 (alarm) and 9 (events)	ANSI/TIA-1057 LLDP Media Endpoint Discovery (LLDP-MED) SNMPv1/v2c/v3
Security	IEEE 802.1X Port Based Network Access Control RFC 1492 TACACS+ RFC 2138 RADIUS Authentication	RFC 2139 RADIUS Accounting RFC 2865 RADIUS (client only) RFC 2866 RADIUS Accounting	Secure Sockets Layer (SSL) SSHv2 Secure Shell

HP 5130 EI Switch Series accessories

Transceivers

HP X110 100M SFP LC LH40 Transceiver (JD090A)
 HP X110 100M SFP LC LH80 Transceiver (JD091A)
 HP X110 100M SFP LC FX Transceiver (JD102B)
 HP X110 100M SFP LC LX Transceiver (JD120B)
 HP X115 100M SFP LC BX 10-U Transceiver (JD100A)
 HP X115 100M SFP LC BX 10-D Transceiver (JD101A)
 HP X125 1G SFP LC LH40 1310nm Transceiver (JD061A)
 HP X120 1G SFP LC LH40 1550nm Transceiver (JD062A)
 HP X125 1G SFP LC LH70 Transceiver (JD063B)
 HP X120 1G SFP LC LH100 Transceiver (JD103A)
 HP X120 1G SFP LC SX Transceiver (JD118B)
 HP X120 1G SFP LC LX Transceiver (JD119B)
 HP X120 1G SFP LC BX 10-U Transceiver (JD098B)
 HP X120 1G SFP LC BX 10-D Transceiver (JD099B)
 HP X120 1G SFP RJ45 T Transceiver (JD089B)
 HP X130 10G SFP+ LC SR Transceiver (JD092B)
 HP X130 10G SFP+ LC LR Transceiver (JD094B)
 HP X240 10G SFP+ to SFP+ 0.65m Direct Attach Copper Cable (JD095C)
 HP X240 10G SFP+ to SFP+ 1.2m Direct Attach Copper Cable (JD096C)
 HP X240 10G SFP+ to SFP+ 3m Direct Attach Copper Cable (JD097C)
 HP X240 10G SFP+ to SFP+ 5m Direct Attach Copper Cable (JD081C)

Cables

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)
 HP Premier Flex LC/LC Multi-mode OM4 2 fiber 1m Cable (QK732A)
 HP Premier Flex LC/LC Multi-mode OM4 2 fiber 2m Cable (QK733A)
 HP Premier Flex LC/LC Multi-mode OM4 2 fiber 5m Cable (QK734A)
 HP Premier Flex LC/LC Multi-mode OM4 2 fiber 15m Cable (QK735A)
 HP Premier Flex LC/LC Multi-mode OM4 2 fiber 30m Cable (QK736A)
 HP Premier Flex LC/LC Multi-mode OM4 2 fiber 50m Cable (QK737A)

HP 5130-24G-SFP-4SFP+ EI Switch (JG933A)

HP 5500 150WAC Power Supply (JD362A)
 HP 5500 150WDC Power Supply (JD366A)

HP 5130-48G-4SFP+ EI Switch (JG934A)

HP RPS 800 Redundant Power Supply (JD183A)
 HP RPS1600 Redundant Power System (JG136A)
 HP RPS1600 1600W AC Power Supply (JG137A)
 HP X290 500 V 1m RPS Cable (JD186A)
 HP X290 1000 A JD5 Non-PoE 2m RPS Cable (JD188A)

HP 5130-24G-PoE+-4SFP+ (370W) EI Switch (JG936A)

HP RPS1600 Redundant Power System (JG136A)
 HP RPS1600 1600W AC Power Supply (JG137A)
 HP X290 1000 A JD5 2m RPS Cable (JD187A)

HP 5130-48G-PoE+-4SFP+ (370W) EI Switch (JG937A)

HP RPS1600 Redundant Power System (JG136A)
 HP RPS1600 1600W AC Power Supply (JG137A)
 HP X290 1000 A JD5 2m RPS Cable (JD187A)

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