

DATA SHEET

ARUBA 3810 SWITCH SERIES

PRODUCT OVERVIEW

The Aruba 3810 Switch Series is an industry-leading mobile campus access solution for enterprises, SMBs, and branch office networks. With HPE Smart Rate multi-gigabit ports for high-speed IEEE 802.11ac devices, the Aruba 3810 will prepare your network for tomorrow. Rightsize deployment and back haul capacity with modular 10GbE and 40GbE uplinks.

Full PoE+ provisioning available on 48-ports. Dual, redundant, hot-swappable power supplies and innovative backplane stacking technology delivers resiliency and scalability in a convenient 1U form factor. Advanced Layer 2 and 3 feature set with OSPF, IPv6, IPv4 BGP, robust QoS and policy-based routing are included with no software licensing.

With support for OpenFlow, the Aruba 3810 is ready to take advantage of SDN applications such as HPE Network Visualizer, Optimizer, and Protector Applications. Delivers consistent wired and wireless user experience by supporting ClearPass Policy Manager and AirWave Network Management.

FEATURES AND BENEFITS

Software-defined networking

- OpenFlow is a key technology that enables SDN by allowing separation of the data (packet forwarding) and control (routing decision) paths

Unified Wired and Wireless

- NEW ClearPass Policy Manager support unified wired and wireless policies using Aruba ClearPass Policy Manager
- HTTP redirect function supports HPE Intelligent Management Center (IMC) bring your own device (BYOD) solution
- NEW Switch auto-configuration automatically configures switch for rogue AP detection, add VLAN, and set PoE priority when Aruba AP is detected

Quality of Service (QoS)

- 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 per-port or per-VLAN basis
- Layer 4 prioritization enables prioritization based on TCP/UDP port numbers



KEY FEATURES

- Powerful Aruba Layer 3 switch series with backplane stacking, low latency and resiliency
 - HPE Smart Rate for high-speed multigigabit capacity and PoE+ power
 - Modular line rate 10GbE and 40GbE ports for wireless aggregation
 - Full PoE+ on all 48 ports for power-hungry high-speed wireless APs
 - Ready for innovative SDN applications with OpenFlow support
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- 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
 - Bandwidth shaping
 - Port-based rate limiting provides per-port ingress-/egress-enforced increased bandwidth
 - Classifier-based rate limiting uses an access control list (ACL) to enforce increased bandwidth for ingress traffic on each port
 - Reduced bandwidth provides per-port, per-queue egress-based reduced bandwidth
 - Remote intelligent mirroring mirrors selected ingress/egress traffic based on an ACL, port, MAC address, or VLAN to a local or remote Aruba 5400R z12, 8200 zl, 6600, 6200 yl, 5400 zl, or 3500 switch anywhere on the network
 - Remote monitoring (RMON), Extended RMON (XRMON), and sFlow v5 provide advanced monitoring and reporting capabilities for statistics, history, alarms, and events
 - Traffic prioritization allows real-time traffic classification into eight priority levels that are mapped to eight queues

Management

- Friendly port names allows assignment of descriptive names to ports
- 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
- Command authorization leverages RADIUS to link a custom list of CLI commands to an individual network administrator's login; an audit trail documents activity
- Multiple configuration files stores easily to the flash image
- Dual flash images provides independent primary and secondary operating system files for backup while upgrading
- Out-of-band Ethernet management port enables management over a separate physical management network; and keeps management traffic segmented from network data traffic
- Comware CLI
 - Comware-compatible CLI bridges the experience of Hewlett Packard Enterprise Comware CLI users who are using the ProVision CLI
 - Display and fundamental Comware CLI commands are natively embedded in the switch CLI; display output is formatted as on Comware-based switches; fundamental commands provide Comware-familiar initial switch setup
 - Configuration Comware CLI commands when Comware commands are entered, CLI help is elicited to formulate the correct ProVision software CLI command
- NEW Zero-Touch ProVisioning (ZTP) uses settings in DHCP to enable ZTP with Aruba AirWave Network Management
- Unidirectional Link Detection (UDLD) support HPE UDLD and DLDLP protocols to monitor a cable between two switches and shut down the ports on both ends if a broken link is detected, preventing network problems such as loops

Connectivity

- Jumbo frames on Gigabit Ethernet and 10-Gigabit Ethernet ports, jumbo frames allow high-performance remote backup and disaster-recovery services
- IEEE 802.3at PoE+ provides up to 30 W per port to IEEE 802.3at-complaint PoE/PoE+-powered devices such as video IP phones, IEEE 802.11n wireless access points, and advanced pan/zoom/tilt security cameras
- Pre-standard PoE support detects and provides power to pre-standard PoE devices (refer to the list of supported devices in the product FAQs, which can be accessed at www.hpe.com)

- Choice of uplinks
 - SFP+ uplink models provide fiber-optic (up to 70 km) or direct-attach-cable (DAC) connectivity
 - 10GBASE-T uplink models offer 10GbE speeds, using standard RJ-45 connectors and standard twisted-pair cabling up to 100 m
- Auto-MDIX provides automatic adjustments for straight-through or crossover cables on all RJ-45 ports
- NEW IPv6
 - IPv6 host enables switch management in an IPv6 network
 - Dual stack (IPv4 and IPv6) transitions IPv4 to IPv6, supporting connectivity for both protocols
 - MLD snooping forwards IPv6 multicast traffic to the appropriate interface
 - IPv6 ACL/QoS supports ACL and QoS for IPv6 traffic
 - IPv6 routing supports static, RIPng, OSPFv3 routing protocols
 - 6in4 tunneling supports encapsulation of IPv6 traffic in IPv4 packets
 - Security provides RA guard, DHCPv6 protection, dynamic IPv6 lockdown, and ND snooping

Performance

- Selectable queue configurations allows for increased performance by selecting the number of queues and associated memory buffering that best meet the requirements of the network applications
- Energy-efficient design
 - 80 PLUS Silver Certified power supply increases power efficiency and savings
 - Energy-efficient Ethernet (EEE) support reduces power consumption in accordance with IEEE 802.3az
- Meshed stacking technology
 - High-performance stacking provides up to 336 Gb/s of stacking throughput; each 4-port stacking module can support up to 42 Gb/s in each direction per stacking port
 - Ring, chain, and mesh topologies support up to a 10-member ring or chain and 5-member fully meshed stacks; meshed topologies offer increased resiliency vs. a standard ring
 - Virtualized switching provides simplified management as the switches appear as a single chassis when stacked
- Aruba Provision ASIC architecture is designed with the latest ProVision ASIC, providing very low latency, increased packet buffering, and adaptive power consumption

Resiliency and high availability

- Virtual Router Redundancy Protocol (VRRP) allows groups of two routers to dynamically back each other up to create highly available routed environments in IPv4 and IPv6 networks
- Nonstop switching and routing improves network availability to better support critical applications, such as unified communication and mobility; traffic will continue to be forwarded during failovers, when the backup member of the stack becomes the commander
- IEEE 802.3ad Link Aggregation Protocol (LACP) and Hewlett Packard Enterprise 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
- Dual hot-swappable power supplies
 - Increased resiliency provides secondary power supply to enable complete switch power redundancy in case of power line or supply failure
 - Increased PoE+ power provides the secondary power supply to increase the total available PoE+ power
- Distributed trunking enables loop-free and redundant network topology without using Spanning Tree Protocol; allows a server or switch to connect to two switches using one logical trunk for redundancy and load sharing
- SmartLink provides easy-to-configure link redundancy of active and standby links

Layer 2 switching

- IEEE 802.1ad QinQ increases the scalability of an Ethernet network by providing a hierarchical structure; connects multiple LANs on a high-speed campus or metro network
- NEW VLAN support and tagging supports the IEEE 802.1Q standard and 4096 VLANs simultaneously
- IEEE 802.1v protocol VLANs isolate select non-IPv4 protocols automatically into their own VLANs
- MAC-based VLAN provides granular control and security; uses RADIUS to map a MAC address/user to specific VLANs
- Rapid Per-VLAN Spanning Tree (RPVST+) allows each VLAN to build a separate spanning tree to improve link bandwidth usage; is compatible with PVST+
- Hewlett Packard Enterprise switch meshing dynamically load balances across multiple active redundant links to increase available aggregate bandwidth; allows concurrent Layer 3 routing
- NEW GVRP and MVRP allows automatic learning and dynamic assignment of VLANs

Layer 3 services

- Loopback interface address defines an address in Routing Information Protocol (RIP) and Open Shortest Path First (OSPF), improving diagnostic capability
- Route maps provide more control during route redistribution; allow filtering and altering of route metrics
- User datagram protocol (UDP) helper function allows UDP broadcasts to be directed across router interfaces to specific IP unicast or subnet broadcast addresses; and helps prevent server spoofing for UDP services such as DHCP
- DHCP server centralizes and reduces the cost of IPv4 address management
- NEW Bidirectional Forwarding Detection (BFD) enables link connectivity monitoring and reduces network convergence time for static routing, OSPFv2, and VRRP

Layer 3 routing

- Static IP routing provides manually configured routing for both IPv4 and IPv6 networks
- OSPF provides OSPFv2 for IPv4 routing and OSPFv3 for IPv6 routing
- Policy-based routing makes routing decisions based on policies set by the network administrator
- Border Gateway Protocol (BGP) provides IPv4 Border Gateway Protocol routing, which is scalable, robust, and flexible
- NEW Routing Information Protocol (RIP) provides RIPv1, RIPv2, and RIPv6 routing

Security

- Source-port filtering allows only specified ports to communicate with each other
- RADIUS/TACACS+ eases switch management security administration by using a password authentication server
- Secure shell encrypts all transmitted data for secure remote CLI access over IP networks
- Secure Sockets Layer (SSL) encrypts all HTTP traffic, allowing secure access to the browser-based management GUI in the switch
- Port security allows access only to specified MAC addresses, which can be learned or specified by the administrator
- MAC address lockout prevents particular configured MAC addresses from connecting to the network
- Detection of malicious attacks monitors 10 types of network traffic and sends a warning when an anomaly that potentially can be caused by malicious attacks is detected
- Secure FTP allows secure file transfer to and from the switch; protects against unwanted file downloads or unauthorized copying of a switch configuration file

- Switch management logon security helps secure switch CLI logon by optionally requiring either RADIUS or TACACS+ authentication
 - Secure management access delivers secure encryption of all access methods (CLI, GUI, or MIB) through SSHv2, SSL, and/or SNMPv3
 - ICMP throttling defeats ICMP denial-of-service attacks by enabling any switch port to automatically throttle ICMP traffic
 - Virus throttling detects traffic patterns typical of worm-type viruses and either throttles or entirely prevents the virus from spreading across the routed VLANs or bridged interfaces without requiring external appliances
 - Identity-driven ACL enables implementation of a highly granular and flexible access security policy and VLAN assignment specific to each authenticated network user
 - STP BPDU port protection blocks Bridge Protocol Data Units (BPDUs) on ports that do not require BPDUs, preventing forged BPDU attacks
 - Dynamic IP lockdown works with DHCP protection to block traffic from unauthorized hosts, preventing IP source address spoofing
 - DHCP protection blocks DHCP packets from unauthorized DHCP servers, preventing denial-of-service attacks
 - Dynamic ARP protection blocks ARP broadcasts from unauthorized hosts, preventing eavesdropping or theft of network data
 - STP root guard protects the root bridge from malicious attacks or configuration mistakes
 - Management Interface Wizard helps secure management interfaces such as SNMP, telnet, SSH, SSL, Web, and USB at the desired level
 - Security banner displays a customized security policy when users log in to the switch
 - Switch CPU protection provides automatic protection against malicious network traffic trying to shut down the switch
 - ACLs provide filtering based on the IP field, source/destination IP address/subnet and source/destination TCP/UDP port number on a per-VLAN or per-port basis
 - Multiple authentication methods
 - IEEE 802.1X authenticates multiple IEEE 802.1X users per port; prevents a user from “piggybacking” on another user’s authentication
 - Web-based authentication authenticates from Web browser for clients that do not support 802.1X supplicant
 - MAC-based authentication authenticates client with the RADIUS server based on client’s MAC address
 - Concurrent authentication modes enables a switch port to accept up to 32 sessions of 802.1X, Web, and MAC authentication
 - NEW Private VLAN provides network security by restricting peer-to-peer communication to prevent a variety of malicious attacks; typically a switch port can only communicate with other ports in the same community and/or an uplink port, regardless of VLAN ID or destination MAC address
- Convergence**
- IP multicast snooping (data-driven IGMP) prevents flooding of IP multicast traffic
 - LLDP-MED (Media Endpoint Discovery) defines a standard extension of LLDP that stores values for parameters such as QoS and VLAN to automatically configure network devices such as IP phones
 - PoE allocations supports multiple methods (automatic, IEEE 802.3af class, LLDP-MED, or user-specified) to allocate PoE power for more efficient energy savings
 - IP multicast routing (requires the premium license) includes PIM sparse and dense modes to route IP multicast traffic
 - Auto VLAN configuration for voice
 - RADIUS VLAN uses a standard RADIUS attribute and LLDP-MED to automatically configure a VLAN for IP phones
 - CDPv2 uses CDPv2 to configure legacy IP phones
 - Local MAC Authentication assigns attributes such as VLAN and QoS using locally configured profile that can be a list of MAC prefixes
- Warranty and support**
- Limited Lifetime Warranty
See www.hpe.com/networking/warrantysummary for warranty and support information included with your product purchase.
 - Software releases to find software for your product, refer to www.hpe.com/networking/support; for details on the software releases available with your product purchase, refer to www.hpe.com/networking/warrantysummary

SPECIFICATIONS			
	Aruba 3810M 24G 1-slot Switch (JL071A)	Aruba 3810M 48G 1-slot Switch (JL072A)	Aruba 3810M 24G PoE+ 1-slot Switch (JL073A)
Included accessories			
	1 Aruba 3810 Switch Fan Tray (JL088A)	1 Aruba 3810 Switch Fan Tray (JL088A)	1 Aruba 3810 Switch Fan Tray (JL088A)
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; Ports 1 – 24 support MACSec 1 open module slot Supports a maximum of 4 SFP+ ports or 1 40GbE ports, with optional module	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; Ports 1 – 48 support MACSec 1 open module slot Supports a maximum of 4 SFP+ ports or 2 40GbE ports, with optional module	24 RJ-45 autosensing 10/100/1000 PoE+ ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T, IEEE 802.3at PoE+); Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only; Ports 1 – 24 support MACSec 1 open module slot Supports a maximum of 4 SFP+ ports or 1 40GbE ports, with optional module
Additional ports and slots			
	1 stacking module slot 1 RJ-45 serial console port 1 RJ-45 out-of-band management port 1 dual-personality (RJ-45 or USB micro-B)	1 stacking module slot 1 RJ-45 serial console port 1 RJ-45 out-of-band management port 1 dual-personality (RJ-45 or USB micro-B)	1 stacking module slot 1 RJ-45 serial console port 1 RJ-45 out-of-band management port 1 dual-personality (RJ-45 or USB micro-B)
Power supplies			
	2 power supply slots 1 minimum power supply required (ordered separately)	2 power supply slots 1 minimum power supply required (ordered separately)	2 power supply slots 1 minimum power supply required (ordered separately)
Fan tray			
	Includes: 1 x JL088A 1 fan tray slot Switch ships with 1 JL088A fan tray installed. Spares ordered separately.	Includes: 1 x JL088A 1 fan tray slot Switch ships with 1 JL088A fan tray installed. Spares ordered separately.	Includes: 1 x JL088A 1 fan tray slot Switch ships with 1 JL088A fan tray installed. Spares ordered separately.
Physical characteristics			
Dimensions	17.42(w) x 16.98(d) x 1.73(h) in (44.25 x 43.13 x 4.39 cm) (1U height)	17.42(w) x 16.98(d) x 1.73(h) in (44.25 x 43.13 x 4.39 cm) (1U height)	17.42(w) x 16.98(d) x 1.73(h) in (44.25 x 43.13 x 4.39 cm) (1U height)
Weight	12.76 lb (5.79 kg)	13.20 lb (5.99 kg)	13.02 lb (5.91 kg)
Memory and processor			
	P2020 Dual Core @ 1.2 GHz, 4 GB DDR3 SDRAM, 1 GB SD Card	P2020 Dual Core @ 1.2 GHz, 4 GB DDR3 SDRAM, 1 GB SD Card	P2020 Dual Core @ 1.2 GHz, 4 GB DDR3 SDRAM, 1 GB SD Card
	Dual ARM Coretex A9 @ 1 GHz, 2 GB DDR3 SDRAM; Packet buffer size: 13.5 MB Internal	Dual ARM Coretex A9 @ 1 GHz, 2 GB DDR3 SDRAM; Packet buffer size: 13.5 MB Internal	Dual ARM Coretex A9 @ 1 GHz, 2 GB DDR3 SDRAM; Packet buffer size: 13.5 MB Internal

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Mounting and enclosure			
	Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included); Horizontal surface mounting only	Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included); Horizontal surface mounting only	Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included); Horizontal surface mounting only
Performance			
	IPv6 Ready Certified	IPv6 Ready Certified	IPv6 Ready Certified
1000 Mb Latency	< 2.8 μs (FIFO 64-byte packets)	< 2.8 μs (FIFO 64-byte packets)	< 2.8 μs (FIFO 64-byte packets)
10 Gbps Latency	< 1.8 μs (FIFO 64-byte packets)	< 1.8 μs (FIFO 64-byte packets)	< 1.8 μs (FIFO 64-byte packets)
40 Gbps Latency	< 1.5 μs (FIFO 64-byte packets)	< 1.5 μs (FIFO 64-byte packets)	< 1.5 μs (FIFO 64-byte packets)
Throughput	up to 95.2 Mpps (64-byte packets)	up to 190.5 Mpps (64-byte packets)	up to 95.2 Mpps (64-byte packets)
Routing/Switching capacity	160 Gbps	320 Gbps	160 Gbps
Switch fabric speed	169 Gbps	338 Gbps	169 Gbps
Routing table size	10000 entries (IPv4), 5000 entries (IPv6)	10000 entries (IPv4), 5000 entries (IPv6)	10000 entries (IPv4), 5000 entries (IPv6)
MAC address table size	64000 entries	64000 entries	64000 entries
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	15% to 95% @ 104°F (40°C), noncondensing	15% to 95% @ 104°F (40°C), noncondensing	15% to 95% @ 104°F (40°C), 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	15% to 90% @ 149°F (65°C), noncondensing	15% to 90% @ 149°F (65°C), noncondensing	15% to 90% @ 149°F (65°C), noncondensing
Altitude	up to 10,000 ft (3 km)	up to 10,000 ft (3 km)	up to 10,000 ft (3 km)
Acoustic	64000 entries	64000 entries	64000 entries
Safety			
	EN 60950/IEC 60950; UL 60950; UL 60950-1; CAN/CSA 22.2 No. 60950; EN 60825; CSA 22.2 60950-1; EN62479:2010; EN 60950-1:2006 +A11:2009 +A1:2010 +A12:2011+A2:2013; EN 62368-1, Ed. 2; IEC 60950-1:2005 Ed.2; Am 1:2009+A2:2013; IEC 60825:2007; EN60850-1:2007/IEC 60825-1: 2007 Class1 Class 1 Laser Products/Laser Klasse 1; UL 62368-1 Ed.2	EN 60950/IEC 60950; UL 60950; UL 60950-1; CAN/CSA 22.2 No. 60950; EN 60825; CSA 22.2 60950-1; EN62479:2010; EN 60950-1:2006 +A11:2009 +A1:2010 +A12:2011+A2:2013; EN 62368-1, Ed. 2; IEC 60950-1:2005 Ed.2; Am 1:2009+A2:2013; IEC 60825:2007; EN60850-1:2007 / IEC 60825-1: 2007 Class1 Class 1 Laser Products / Laser Klasse 1; UL 62368-1 Ed.2	EN 60950/IEC 60950; UL 60950; UL 60950-1; CAN/CSA 22.2 No. 60950; EN 60825; CSA 22.2 60950-1; EN62479:2010; EN 60950-1:2006 +A11:2009 +A1:2010 +A12:2011+A2:2013; EN 62368-1, Ed. 2; IEC 60950-1:2005 Ed.2; Am 1:2009+A2:2013; IEC 60825:2007; EN60850-1:2007 / IEC 60825-1: 2007 Class1 Class 1 Laser Products / Laser Klasse 1; UL 62368-1 Ed.2
Emissions			
	FCC Class A; VCCI Class A; EN 55022/CISPR 22 Class A; EN 60950-1:2006 +A11:2009 +A1:2010 +A12:2011+A2:2013	FCC Class A; VCCI Class A; EN 55022/CISPR 22 Class A; EN 60950-1:2006 +A11:2009 +A1:2010 +A12:2011+A2:2013	FCC Class A; VCCI Class A; EN 55022/CISPR 22 Class A; EN 60950-1:2006 +A11:2009 +A1:2010 +A12:2011+A2:2013

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Immunity			
Generic	EN55022: 2010	EN55022: 2010	EN55022: 2010
EN	EN55024: 2010	EN55024: 2010	EN55024: 2010
ESD	IEC 61000-4-2	IEC 61000-4-2	IEC 61000-4-2
Radiated	IEC 61000-4-3; 3 V/m	IEC 61000-4-3; 3 V/m	IEC 61000-4-3; 3 V/m
EFT/Burst	IEC 61000-4-4; 1.0 kV (power line), 0.5 kV (signal line)	IEC 61000-4-4; 1.0 kV (power line), 0.5 kV (signal line)	IEC 61000-4-4; 1.0 kV (power line), 0.5 kV (signal line)
Surge	IEC 61000-4-5; 1 kV/2 kV AC	IEC 61000-4-5; 1 kV/2 kV AC	IEC 61000-4-5; 1 kV/2 kV AC
Conducted	IEC 61000-4-6; 3 V	IEC 61000-4-6; 3 V	IEC 61000-4-6; 3 V
Power frequency magnetic field	IEC 61000-4-8; 1 A/m, 50 or 60 Hz	IEC 61000-4-8; 1 A/m, 50 or 60 Hz	IEC 61000-4-8; 1 A/m, 50 or 60 Hz
Voltage dips and interruptions	IEC 61000-4-11; >95% reductions, 0.5 period; 30% reduction, 25 periods	IEC 61000-4-11; >95% reductions, 0.5 period; 30% reduction, 25 periods	IEC 61000-4-11; >95% reductions, 0.5 period; 30% reduction, 25 periods
Harmonics	EN61000-3-2:2006 +A1:2009 +A2:2009 Class A	EN61000-3-2:2006 +A1:2009 +A2:2009 Class A	EN61000-3-2:2006 +A1:2009 +A2:2009 Class A
Flicker	EN61000-3-3:2008	EN61000-3-3:2008	EN61000-3-3:2008
Management			
	Aruba AirWave Network Management; IMC – Intelligent Management Center; Command-line interface; Web browser; Configuration menu; Out-of-band management (RJ-45 Ethernet); In-line and out-of-band; Out-of-band management (serial RS-232c or micro usb)	Aruba AirWave Network Management; IMC – Intelligent Management Center; Command-line interface; Web browser; Configuration menu; Out-of-band management (RJ-45 Ethernet); In-line and out-of-band; Out-of-band management (serial RS-232c or micro usb)	Aruba AirWave Network Management; IMC – Intelligent Management Center; Command-line interface; Web browser; Configuration menu; Out-of-band management (RJ-45 Ethernet); In-line and out-of-band; Out-of-band management (serial RS-232c or micro usb)
Services			
	Refer to the Hewlett Packard Enterprise website at www.hpe.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 Hewlett Packard Enterprise sales office.	Refer to the Hewlett Packard Enterprise website at www.hpe.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 Hewlett Packard Enterprise sales office.	Refer to the Hewlett Packard Enterprise website at www.hpe.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 Hewlett Packard Enterprise sales office.

SPECIFICATIONS			
	Aruba 3810M 48G PoE+ 1-slot Switch (JL074A)	Aruba 3810M 16SFP+ 2-slot Switch (JL075A)	Aruba 3810M 40G 8 HPE Smart Rate PoE+ 1-slot Switch (JL076A)
Included accessories			
	1 Aruba 3810 Switch Fan Tray (JL088A)	1 Aruba 3810 Switch Fan Tray (JL088A)	1 Aruba 3810 Switch Fan Tray (JL088A)
I/O ports and slots			
	48 RJ-45 autosensing 10/100/1000 PoE+ ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T, IEEE 802.3at PoE+); Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only; Ports 1 – 48 support MACSec 1 open module slot Supports a maximum of 4 SFP+ ports or 2 40GbE ports, with optional module	16 SFP+ fixed 1000/10000 SFP+ ports; Duplex: 100BASE-TX: half or full; 1000BASE-T: full only; Ports 1 – 16 support MACSec 2 open module slots Supports a maximum of 8 SFP+ ports or 2 40GbE ports, with optional module	40 RJ-45 autosensing 10/100/1000 PoE+ ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T, IEEE 802.3at PoE+); Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only; Ports 1 – 40 support MACSec 8 RJ-45 HP Smart Rate Multi-Gigabit ports; Ports 1 – 8 support MACSec 1 open module slot Supports a maximum of 4 SFP+ ports or 2 40GbE ports, with optional module
Additional ports and slots			
	1 stacking module slot 1 RJ-45 serial console port 1 RJ-45 out-of-band management port 1 dual-personality (RJ-45 or USB micro-B)	1 stacking module slot 1 RJ-45 serial console port 1 RJ-45 out-of-band management port 1 dual-personality (RJ-45 or USB micro-B)	1 stacking module slot 1 RJ-45 serial console port 1 RJ-45 out-of-band management port 1 dual-personality (RJ-45 or USB micro-B)
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Weight	13.62 lb (6.18 kg)	13.28 lb (6.02 kg)	13.61 lb (6.17 kg)
Memory and processor			
	P2020 Dual Core @ 1.2 GHz, 4 GB DDR3 SDRAM, 1 GB SD Card	P2020 Dual Core @ 1.2 GHz, 4 GB DDR3 SDRAM, 1 GB SD Card	P2020 Dual Core @ 1.2 GHz, 4 GB DDR3 SDRAM, 1 GB SD Card
	Dual ARM Coretex A9 @ 1 GHz, 2 GB DDR3 SDRAM; Packet buffer size: 13.5 MB Internal	Dual ARM Coretex A9 @ 1 GHz, 2 GB DDR3 SDRAM; Packet buffer size: 13.5 MB Internal	Dual ARM Coretex A9 @ 1 GHz, 2 GB DDR3 SDRAM; Packet buffer size: 13.5 MB Internal

SPECIFICATIONS			
	Aruba 3810M 48G PoE+ 1-slot Switch (JL074A)	Aruba 3810M 16SFP+ 2-slot Switch (JL075A)	Aruba 3810M 40G 8 HPE Smart Rate PoE+ 1-slot Switch (JL076A)
Mounting and enclosure			
	Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included); Horizontal surface mounting only	Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included); Horizontal surface mounting only	Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included); Horizontal surface mounting only
Performance			
	IPv6 Ready Certified	IPv6 Ready Certified	IPv6 Ready Certified
1000 Mb Latency	< 2.8 μs (FIFO 64-byte packets)	< 2.8 μs (FIFO 64-byte packets)	< 2.8 μs (FIFO 64-byte packets)
10 Gbps Latency	< 1.8 μs (FIFO 64-byte packets)	< 1.8 μs (FIFO 64-byte packets)	< 1.8 μs (FIFO 64-byte packets)
40 Gbps Latency	< 1.5 μs (FIFO 64-byte packets)	< 1.5 μs (FIFO 64-byte packets)	< 1.5 μs (FIFO 64-byte packets)
Throughput	up to 190.5 Mpps (64-byte packets)	up to 285.7 Mpps (64-byte packets)	up to 273.8 Mpps (64-byte packets)
Routing/Switching capacity	320 Gbps	480 Gbps	480 Gbps
Switch fabric speed	338 Gbps	508 Gbps	508 Gbps
Routing table size	10000 entries (IPv4), 5000 entries (IPv6)	10000 entries (IPv4), 5000 entries (IPv6)	10000 entries (IPv4), 5000 entries (IPv6)
MAC address table size	64000 entries	64000 entries	64000 entries
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	15% to 95% @ 104°F (40°C), noncondensing	15% to 95% @ 104°F (40°C), noncondensing	15% to 95% @ 104°F (40°C), 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	15% to 90% @ 149°F (65°C), noncondensing	15% to 90% @ 149°F (65°C), noncondensing	15% to 90% @ 149°F (65°C), noncondensing
Altitude	up to 10,000 ft (3 km)	up to 10,000 ft (3 km)	up to 10,000 ft (3 km)
Acoustic	Power: 42 dB, Pressure: 26 dB	Power: 39 dB, Pressure: 22.3 dB	Power: 45 dB, Pressure: 27.9 dB
Safety			
	EN 60950/IEC 60950; UL 60950; UL 60950-1; CAN/CSA 22.2 No. 60950; EN 60825; CSA 22.2 60950-1; EN62479:2010; EN 60950-1:2006 +A11:2009 +A1:2010 +A12:2011+A2:2013; EN 62368-1, Ed. 2; IEC 60950-1:2005 Ed.2; Am 1:2009+A2:2013; IEC 60825:2007; EN60850-1:2007/IEC 60825-1: 2007 Class1 Class 1 Laser Products/Laser Klasse 1; UL 62368-1 Ed.2	EN 60950/IEC 60950; UL 60950; UL 60950-1; CAN/CSA 22.2 No. 60950; EN 60825; CSA 22.2 60950-1; EN62479:2010; EN 60950-1:2006 +A11:2009 +A1:2010 +A12:2011+A2:2013; EN 62368-1, Ed. 2; IEC 60950-1:2005 Ed.2; Am 1:2009+A2:2013; IEC 60825:2007; EN60850-1:2007/IEC 60825-1: 2007 Class1 Class 1 Laser Products/Laser Klasse 1; UL 62368-1 Ed.2	EN 60950/IEC 60950; UL 60950; UL 60950-1; CAN/CSA 22.2 No. 60950; EN 60825; CSA 22.2 60950-1; EN62479:2010; EN 60950-1:2006 +A11:2009 +A1:2010 +A12:2011+A2:2013; EN 62368-1, Ed. 2; IEC 60950-1:2005 Ed.2; Am 1:2009+A2:2013; IEC 60825:2007; EN60850-1:2007/IEC 60825-1: 2007 Class1 Class 1 Laser Products/Laser Klasse 1; UL 62368-1 Ed.2

SPECIFICATIONS			
	Aruba 3810M 48G PoE+ 1-slot Switch (JL074A)	Aruba 3810M 16SFP+ 2-slot Switch (JL075A)	Aruba 3810M 40G 8 HPE Smart Rate PoE+ 1-slot Switch (JL076A)
Emissions			
	FCC Class A; VCCI Class A; EN 55022/CISPR 22 Class A; EN 60950-1:2006 +A11:2009 +A1:2010 +A12:2011+A2:2013	FCC Class A; VCCI Class A; EN 55022/CISPR 22 Class A; EN 60950-1:2006 +A11:2009 +A1:2010 +A12:2011+A2:2013	FCC Class A; VCCI Class A; EN 55022/CISPR 22 Class A; EN 60950-1:2006 +A11:2009 +A1:2010 +A12:2011+A2:2013
Immunity			
Generic	EN55022: 2010	EN55022: 2010	EN55022: 2010
EN	EN55024: 2010	EN55024: 2010	EN55024: 2010
ESD	IEC 61000-4-2	IEC 61000-4-2	IEC 61000-4-2
Radiated	IEC 61000-4-3; 3 V/m	IEC 61000-4-3; 3 V/m	IEC 61000-4-3; 3 V/m
EFT/Burst	IEC 61000-4-4; 1.0 kV (power line), 0.5 kV (signal line)	IEC 61000-4-4; 1.0 kV (power line), 0.5 kV (signal line)	IEC 61000-4-4; 1.0 kV (power line), 0.5 kV (signal line)
Surge	IEC 61000-4-5; 1 kV/2 kV AC	IEC 61000-4-5; 1 kV/2 kV AC	IEC 61000-4-5; 1 kV/2 kV AC
Conducted	IEC 61000-4-6; 3 V	IEC 61000-4-6; 3 V	IEC 61000-4-6; 3 V
Power frequency magnetic field	IEC 61000-4-8; 1 A/m, 50 or 60 Hz	IEC 61000-4-8; 1 A/m, 50 or 60 Hz	IEC 61000-4-8; 1 A/m, 50 or 60 Hz
Voltage dips and interruptions	IEC 61000-4-11; >95% reductions, 0.5 period; 30% reduction, 25 periods	IEC 61000-4-11; >95% reductions, 0.5 period; 30% reduction, 25 periods	IEC 61000-4-11; >95% reductions, 0.5 period; 30% reduction, 25 periods
Harmonics	EN61000-3-2:2006 +A1:2009 +A2:2009 Class A	EN61000-3-2:2006 +A1:2009 +A2:2009 Class A	EN61000-3-2:2006 +A1:2009 +A2:2009 Class A
Flicker	EN61000-3-3:2008	EN61000-3-3:2008	EN61000-3-3:2008
Management			
	Aruba AirWave Network Management; IMC – Intelligent Management Center; Command-line interface; Web browser; Configuration menu; Out-of-band management (RJ-45 Ethernet); In-line and out-of-band; Out-of-band management (serial RS-232c or micro usb)	Aruba AirWave Network Management; IMC – Intelligent Management Center; Command-line interface; Web browser; Configuration menu; Out-of-band management (RJ-45 Ethernet); In-line and out-of-band; Out-of-band management (serial RS-232c or micro usb)	Aruba AirWave Network Management; IMC – Intelligent Management Center; Command-line interface; Web browser; Configuration menu; Out-of-band management (RJ-45 Ethernet); In-line and out-of-band; Out-of-band management (serial RS-232c or micro usb)
Services			
	Refer to the Hewlett Packard Enterprise website at www.hpe.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 Hewlett Packard Enterprise sales office.	Refer to the Hewlett Packard Enterprise website at www.hpe.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 Hewlett Packard Enterprise sales office.	Refer to the Hewlett Packard Enterprise website at www.hpe.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 Hewlett Packard Enterprise sales office.

STANDARDS AND PROTOCOLS (APPLIES TO ALL PRODUCTS IN SERIES)

BGP

- RFC 1997 BGP Communities Attribute
- RFC 2918 Route Refresh Capability
- RFC 4271 A Border Gateway Protocol 4 (BGP-4)
- RFC 4456 BGP Route Reflection: An Alternative to Full Mesh Internal BGP (IBGP)
- RFC 4724 Graceful Restart Mechanism for BGP
- RFC 5492 Capabilities Advertisement with BGP-4

Denial of service protection

- CPU DoS Protection

Device management

- RFC 1591 DNS (client)
- HTML and telnet management

General protocols

- IEEE 802.1ad Q-in-Q
- IEEE 802.1AX-2008 Link Aggregation
- IEEE 802.1D MAC Bridges
- IEEE 802.1p Priority
- IEEE 802.1Q VLANs
- IEEE 802.1s Multiple Spanning Trees
- IEEE 802.1v VLAN classification by Protocol and Port
- IEEE 802.1w Rapid Reconfiguration of Spanning Tree
- IEEE 802.3ad Link Aggregation Control Protocol (LACP)
- IEEE 802.3af Power over Ethernet
- 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 868 Time Protocol
- RFC 951 BOOTP
- RFC 1058 RIPv1
- RFC 1350 TFTP Protocol (revision 2)
- RFC 1519 CIDR
- RFC 1542 BOOTP Extensions
- RFC 1918 Address Allocation for Private Internet
- RFC 2030 Simple Network Time Protocol (SNTP) v4
- RFC 2131 DHCP
- RFC 2453 RIPv2
- RFC 2548 (MS-RAS-Vendor only)
- RFC 3046 DHCP Relay Agent Information Option

- RFC 3576 Ext to RADIUS (CoA only)
- RFC 3768 VRRP
- RFC 4675 RADIUS VLAN & Priority
- RFC 5798 VRRP (exclude Accept Mode and sub-sec timer)
- RFC 5880 Bidirectional Forwarding Detection
- RFC 5905 Network Time Protocol Version 4: Protocol and Algorithms Specification
- UDLD (Uni-directional Link Detection)

IP multicast

- RFC 3376 IGMPv3
- RFC 3973 PIM Dense Mode
- RFC 4601 PIM

IPv6

- RFC 1981 IPv6 Path MTU Discovery
- RFC 2080 RIPng for IPv6
- RFC 2081 RIPng Protocol Applicability Statement
- RFC 2082 RIP-2 MD5
- RFC 2375 IPv6 Multicast Address Assignments
- RFC 2460 IPv6 Specification
- RFC 2464 Transmission of IPv6 over Ethernet Networks
- RFC 2710 Multicast Listener Discovery (MLD) for IPv6
- RFC 2925 Definitions of Managed Objects for Remote Ping, Traceroute, and Lookup Operations (Ping only)
- RFC 3019 MLDv1 MIB
- RFC 3315 DHCPv6 (client only)
- RFC 3484 Default Address Selection for IPv6
- RFC 3587 IPv6 Global Unicast Address Format
- RFC 3596 DNS Extension for IPv6
- RFC 3810 MLDv2 (host joins only)
- RFC 4022 MIB for TCP
- RFC 4087 IP Tunnel MIB
- RFC 4113 MIB for UDP
- RFC 4213 Basic Transition Mechanisms for IPv6 Hosts and Routers
- RFC 4251 SSHv6 Architecture
- RFC 4252 SSHv6 Authentication
- RFC 4253 SSHv6 Transport Layer
- RFC 4254 SSHv6 Connection
- RFC 4291 IP Version 6 Addressing Architecture
- RFC 4293 MIB for IP
- RFC 4294 IPv6 Node Requirements
- RFC 4419 Key Exchange for SSH
- RFC 4443 ICMPv6
- RFC 4541 IGMP & MLD Snooping Switch
- RFC 4861 IPv6 Neighbor Discovery
- RFC 4862 IPv6 Stateless Address Auto-configuration

- RFC 5095 Deprecation of Type 0 Routing Headers in IPv6
- RFC 5340 OSPFv3 for IPv6
- RFC 5453 Reserved IPv6 Interface Identifiers
- RFC 5519 Multicast Group Membership Discovery MIB (MLDv2 only)
- RFC 5722 Handling of Overlapping IPv6 Fragments
- RFC 6620 FCFS SAVI
- draft-ietf-savi-mix

MIBs

- IEEE 802.1ap (MSTP and STP MIB's only)
- IEEE 8021-Bridge-MIB (2008)
- IEEE 8021-Q-Bridge-MIB (2008)
- RFC 1155 Structure & ID of Mgmt Info for TCP/IP Internets
- RFC 1213 MIB II
- RFC 1493 Bridge MIB
- RFC 1724 RIPv2 MIB
- RFC 1850 OSPFv2 MIB
- RFC 2021 RMONv2 MIB
- RFC 2096 IP Forwarding Table MIB
- RFC 2578 Structure of Management Information Version 2 (SMIv2)
- 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 2787 VRRP MIB
- RFC 2863 The Interfaces Group MIB
- RFC 2925 Ping MIB
- RFC 2932 IP (Multicast Routing MIB)
- RFC 2933 IGMP MIB
- RFC 4836 Managed Objects for 802.3 Medium Attachment Units (MAU)
- RFC 7331 BFD 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)
- RFC 3176 sFlow
- RFC 5424 Syslog Protocol
- ANSI/TIA-1057 LLDP Media Endpoint Discovery (LLDP-MED)
- SNMPv1/v2c/v3
- XRMON

OSPF

- RFC 2328 OSPFv2
- RFC 3101 OSPF NSSA
- RFC 3623 Graceful OSPF Restart (Unplanned Outages only)
- RFC 5340 OSPFv3 for IPv6

QoS/CoS

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

Security

- IEEE 802.1X Port Based Network Access Control
- RFC 1492 TACACS+
- RFC 2865 RADIUS (client only)
- RFC 2866 RADIUS Accounting
- RFC 3579 RADIUS Support For Extensible Authentication Protocol (EAP)
- Secure Sockets Layer (SSL)
- SSHv2 Secure Shell

ARUBA 3810 SWITCH SERIES ACCESSORIES

Modules

- Aruba 3810M 4-port Stacking Module (JL084A)
- Aruba 3810M 4SFP+ Module (JL083A)
- Aruba 3810M 1QSFP+ 40GbE Module (JL078A)
- Aruba 3810M 2QSFP+ 40GbE Module (JL079A)

Transceivers

- HP X111 100M SFP LC FX Transceiver (J9054C)
- HP X121 1G SFP LC SX Transceiver (J4858C)
- HP X121 1G SFP LC LX Transceiver (J4859C)
- HP X121 1G SFP LC LH Transceiver (J4860C)
- HP X121 1G SFP RJ45 T Transceiver (J8177C)
- HP X122 1G SFP LC BX-D Transceiver (J9142B)
- HP X122 1G SFP LC BX-U Transceiver (J9143B)
- HP X132 10G SFP+ LC SR Transceiver (J9150A)
- HP X132 10G SFP+ LC LR Transceiver (J9151A)
- HP X132 10G SFP+ LC LRM Transceiver (J9152A)
- HP X132 10G SFP+ LC ER Transceiver (J9153A)
- HP X142 40G QSFP+ MPO SR4 Transceiver (JH231A)
- HP X142 40G QSFP+ MPO CSR4 300M Transceiver (JH233A) HP X142 40G QSFP+ LC LR4 SM Transceiver (JH232A)
- HP X242 10G SFP+ to SFP+ 1m Direct Attach Copper Cable (J9281B)
- HP X242 10G SFP+ to SFP+ 3m Direct Attach Copper Cable (J9283B)

- HP X242 10G SFP+ to SFP+ 7m Direct Attach Copper Cable (J9285B)
- HP X244 10G XFP to SFP+ 1m Direct Attach Copper Cable (J9300A)
- HP X244 10G XFP to SFP+ 3m Direct Attach Copper Cable (J9301A)
- HP X244 10G XFP to SFP+ 3m Direct Attach Copper Cable (J9302A)
- HP X242 40G QSFP+ to QSFP+ 1m Direct Attach Copper Cable (JH234A)
- HP X242 40G QSFP+ to QSFP+ 3m DAC Cable (JH235A)
- HP X242 40G QSFP+ to QSFP+ 5m DAC Cable (JH236A)

Cables

- Aruba 3800/3810M 0.5m Stacking Cable (J9578A)
- Aruba 3800/3810M 1m Stacking Cable (J9665A)
- Aruba 3800/3810M 3m Stacking Cable (J9579A)
- 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)

Power Supply

- Aruba X371 12VDC 250W 100-240VAC Power Supply (JL085A)
- Aruba X372 54VDC 680W 100-240VAC Power Supply (JL086A)
- Aruba X372 54VDC 1050W 110-240VAC Power Supply (JL087A)

Fan Tray

- Aruba 3810 Switch Fan Tray (JL088A)

Mounting Kit

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