

Overview

Aruba 8320 Switch Series

The past several decades in networking have been defined by static, closed networking solutions designed for the client-server era. The Aruba 8320 campus core and aggregation switch is a game-changing solution offering a flexible and innovative approach to dealing with the demands of the mobile, cloud and IoT era. The Aruba 8320 also serves as a top of rack (ToR) switch for data centers needing 10GbE connectivity to servers and 40GbE to the spine.

The 8320 provides industry-leading line rate 1/10GbE (SFP/SFP+ and 10GBASE-T) and 40GbE connectivity in a compact 1U form factor. Together with the modular Aruba 8400 chassis and the Aruba 8325 series, the 8320 rounds out Aruba's switching portfolio with an enterprise core and aggregation solution that ensures higher performance and higher uptime.

The 8320 is based on the new ArubaOS-CX, a modern software system that automates and simplifies many critical and complex network tasks, delivers enhanced fault tolerance and facilitates zero-service disruption during planned or unplanned control-plane events.

The key innovations in ArubaOS-CX are its micro-services style modular architecture, REST APIs, Python scripting capabilities, Aruba Network Analytics Engine, support for Aruba NetEdit, and Aruba Virtual Switching Extension (VSX). ArubaOS-CX is based on a modular architecture that allows individual process re-startability and upgrades. Its REST APIs and Python scripting enables fine-grained programmability of the switch functions and its unique Aruba Network Analytics Engine provides the ability to monitor and troubleshoot the network easily.

The Aruba new virtualization technology, Aruba VSX, takes advantage of the ArubaOS-CX modern architecture, and delivers best in class high availability required by campus core and aggregation solutions.

The Network Analytics Engine framework is made up of a time series database and associated REST APIs. The time series data may also be used to analyze trends, identify anomalies and predict future capacity requirements.



Aruba 8320 Switch Series

Standard Features

Models

Aruba 8320 32p 40G QSFP+ with X472 5 Fans 2 Power Supply Switch Bundle	JL579A
Aruba 8320 48p 10G SFP/SFP+ and 6p 40G QSFP+ with X472 5 Fans 2 Power Supply Switch Bundle	JL479A
Aruba 8320 48p 1G/10GBASE-T and 6p 40G QSFP+ with X472 5 Fans 2 Power Supply Switch Bundle	JL581A

Key features

- High performance 2.5Tbps with 1,905 mpps
 - High availability with Aruba Virtual Switching Extension (VSX), and redundant, hot-swappable power supplies and fans
 - ArubaOS-CX enables automation and programmability using built-in REST APIs and Python scripts
 - Intelligent monitoring and visibility with Aruba Network Analytics Engine
 - Advanced Layer 2/3 feature set includes BGP, OSPF, VRF, and IPv6
 - Compact 1U switches with 1/10GbE (SFP+ and 10GBASE-T) and 40GbE connectivity
-

Standard Features

Product Capabilities

Product architecture

- **ArubaOS-CX.**
 - Modular, Linux based and built with OVSDB to support a database-centric operating system.
 - Distributed architecture with separation of data and control planes.
 - Includes independent monitoring and restart of individual software modules, and enhanced software process serviceability functions.
 - Allows individual software modules to be upgraded for higher availability.

- **Aruba Network Analytics Engine (NAE)**

A first of a kind built-in framework for monitoring, troubleshooting and capacity planning NAE provides automatic base-lining to automatically generate thresholds for alerts which eliminates manual configuration of thresholds.

Performance

- **High-speed fully distributed architecture**

Provides 2.5Tbps for switching and 1,905MPPS for forwarding. All switching and routing are wire-speed to meet the demands of bandwidth-intensive applications today and in the future.

- **Scalable system design**

Provides investment protection to support future technologies and higher-speed connectivity

Connectivity

- **High-density port connectivity**

Choice of compact 1U switches include model with 32 ports of 40GbE and models with 48 ports of 1/10GbE (SFP+ and 10GBASE-T) and 6 ports of 40GbE. 40GbE ports support QSFP+ transceivers.

- **Jumbo frames**

Allows high-performance backups and disaster-recovery systems; provides a maximum frame size of 9K bytes

- **Flexible port selection**

Provides connectivity for 1/10GbE (SFP+, 10GBASE-T) and 40GbE (QSFP+).

- **Packet storm protection**

Protects against unknown broadcast, unknown multicast, or unicast storms with user-defined thresholds

Quality of Service (QoS)

- **Powerful QoS feature**

Supports the following congestion actions: strict priority (SP) queuing and deficit weighted round robin (DWRR)

Resiliency and high availability

- **Aruba Virtual Switching Extension (VSX)**

Aruba VSX enables a distributed and redundant architecture that is highly available during upgrades inherently by architecture design. High availability is delivered through redundancy gained by deploying two chassis in the core with each chassis maintaining its independent control.

- **Redundant and load-sharing fans, and power supplies**

Increases total performance and power availability while providing hitless, stateful failover

- **All hot-swappable modules**

Allows replacement of modules without any impact on other modules

- **Separate data and control paths**

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

- **Bidirectional forward detection (BFD)**

Enable sub-second failure detection for rapid routing protocol re-balancing

- **VRRP**

Allows groups of two routers to dynamically back each other up to create highly available routed environments

- **Ethernet Ring Protection Switching**

Supports rapid protection and recovery in a ring topology

Standard Features

Resiliency and high availability

- **Unidirectional link detection (UDLD)**
Monitors link connectivity and shuts down ports at both ends if unidirectional traffic is detected, preventing loops in STP-based networks
- **IEEE 802.3ad LACP**
Supports up to 128 link aggregation groups (LAGs), each with eight links per LAG; and provides support for static or dynamic groups and a user-selectable hashing algorithm
- **Redundant power supplies**
Provides N+1 high reliability with hot swappable, redundant power supplies

Management

- **IPSLA**
Monitor the network for degradation of various services, including monitoring voice. Monitoring is enabled via the NAE for history and for automated gathering of additional information when anomalies are detected.
 - **Management interface control**
Enables or disables each of the following interfaces depending on security preferences: console port, or reset button
 - **Industry-standard CLI with a hierarchical structure**
Reduces training time and expenses, and increases productivity in multivendor installations
 - **Management security**
Restricts access to critical configuration commands; offers multiple privilege levels with password protection; ACLs provide SNMP access; local and remote syslog capabilities allow logging of all access
 - **SNMP v2c/v3**
Provides SNMP read and trap support of industry standard Management Information Base (MIB), and private extensions
 - **sFlow® (RFC 3176)**
Provides scalable ASIC-based wire speed 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
 - **Remote monitoring (RMON)**
Uses standard SNMP to monitor essential network functions and supports events, alarms, history, and statistics groups as well as a private alarm extension group
 - **TFTP, and SFTP support**
Offers different mechanisms for configuration updates; trivial FTP (TFTP) allows bidirectional transfers over a TCP/IP network; Secure File Transfer Protocol (SFTP) runs over an SSH tunnel to provide additional security
 - **Debug and sampler utility**
Supports ping and traceroute for both IPv4 and IPv6
 - **Network Time Protocol (NTP)**
Synchronizes timekeeping among distributed time servers and clients; keeps timekeeping consistent among all clock-dependent devices within the network. Can serve as the NTP server in a customer network.
 - **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
 - **Dual flash images**
Provides independent primary and secondary operating system files for backup while upgrading
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Standard Features

Layer 2 switching

- **VLAN**
Supports up to 4,096 port-based or IEEE 802.1Q-based VLANs
- **VLAN translation**
Remaps VLANs during transit across a core network
- **Bridge Protocol Data Unit (BPDU) tunneling**
Transmits STP BPDUs transparently, allowing correct tree calculations across service providers, WANs, or MANs
- **Port mirroring**
Duplicates port traffic (ingress and egress) to a monitoring port; supports 4 mirroring groups, with an unlimited number of ports per group
- **STP**
Supports standard IEEE 802.1D STP, IEEE 802.1w Rapid Spanning Tree Protocol (RSTP) for faster convergence, and IEEE 802.1s Multiple Spanning Tree Protocol (MSTP)
- **Rapid Per-VLAN spanning tree plus (RPVST+)**
Allows each VLAN to build a separate spanning tree to improve link bandwidth usage in network environments with multiple VLANs

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
- **IP Directed Broadcast**
Support directed broadcast on configured network subnets.
- **Dynamic Host Configuration Protocol (DHCP)**
Simplifies the management of large IP networks and supports client; DHCP Relay enables DHCP operation across subnets
- **DHCP Server**
Supports DHCP Services (for IPv4 and IPv6) in customer networks
- **Domain Name System (DNS)**
Provides a distributed database that translates domain names and IP addresses, which simplifies network design; supports client and server

Layer 3 routing

- **Policy Based Routing (PBR)**
Enables using a classifier to select traffic that can be forwarded based on policy set by the network administrator.
- **Static IPv4 routing**
Provides simple manually configured IPv4 routing
- **Open shortest path first (OSPF)**
Delivers faster convergence; uses link-state routing Interior Gateway Protocol (IGP), which supports ECMP, NSSA, and MD5 authentication for increased security and graceful restart for faster failure recovery
- **6in4 tunnels**
Supports the tunneling of IPv6 traffic in an IPv4 network.
- **Border Gateway Protocol 4 (BGP-4)**
Delivers an implementation of the Exterior Gateway Protocol (EGP) utilizing path vectors; uses TCP for enhanced reliability for the route discovery process; reduces bandwidth consumption by advertising only incremental updates; supports extensive policies for increased flexibility; scales to very large networks
- **Multiprotocol BGP (MP-BGP) with IPv6 Address Family**
Enables sharing of IPv6 routes using BGP and connections to BGP peers using IPv6.
- **IP performance optimization**
Provides a set of tools to improve the performance of IPv4 networks; includes directed broadcasts, customization of TCP parameters, support of ICMP error packets, and extensive display capabilities
- **Static IPv6 routing**
Provides simple manually configured IPv6 routing

Standard Features

Layer 3 routing

- **Dual IP stack**
Maintains separate stacks for IPv4 and IPv6 to ease the transition from an IPv4-only network to an IPv6-only network design
 - **OSPFv3 for IPv6**
Delivers faster convergence; uses link-state routing interior gateway protocol (IGP), which supports ECMP, NSSA, and IPSEC authentication for increased security and graceful restart for faster failure recovery
 - **Equal-Cost multipath (ECMP)**
Enables multiple equal-cost links in a routing environment to increase link redundancy and scale bandwidth
 - **Generic Routing Encapsulation (GRE)**
Enables tunneling traffic site to site over a Layer 3 path
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Security

- **TAA Compliance**
The Aruba 8320, a TAA compliant product, with the ArubaOS-CX uses FIPS 140-2 validated cryptography for protection of sensitive information
 - **Access control list (ACL) Features**
Supports powerful ACLs for both IPv4 and IPv6. Supports creation of object groups representing sets of devices like IP addresses. For instance, IT management devices could be grouped in this way. ACLs can also support protecting control plane services such as SSH, SNMP, NTP or web servers.
 - **Remote Authentication Dial-In User Service (RADIUS)**
Eases security access administration by using a password authentication server
 - **Terminal Access Controller Access-Control System (TACACS+)**
Delivers an authentication tool using TCP with encryption of the full authentication request, providing additional security
 - **Management access security**
Aruba OS CX provides for both on-box as well as off-box authentication for administrative access. RADIUS or TACACS+ can be used to provide encrypted user authentication. Additionally, TACACS+ can also provide user authorization services
 - **Secure shell (SSHv2)**
Uses external servers to securely log in to a remote device; with authentication and encryption, it protects against IP spoofing and plain-text password interception; increases the security of Secure FTP (SFTP) transfers
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Multicast

- **Internet Group Management Protocol (IGMP)**
Enables establishing multicast group memberships in IPv4 networks; supports IGMPv1, v2, and v3
 - **Multicast Listener Discovery (MLD)**
Enable discovery of IPv6 multicast listeners; supports MLDv1 and v2
 - **Multicast Service Delivery Protocol (MSDP)**
Efficiently routes multicast traffic through core networks
 - **IGMP/MLD Snooping**
Prevent flooding of multicast traffic to non-listening ports
 - **Protocol Independent Multicast (PIM)**
Protocol Independent Multicast for IPv4 and IPv6 supports one-to-many and many-to-many media casting use cases such as IPTV over IPv4 and IPv6 networks. Support for PIM Sparse Mode (PIM-SM, IPv4 and IPv6)
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Additional information

- **Green initiative support**
Provides support for RoHS and WEEE regulations
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Warranty and support

- **5-year Warranty**
See <http://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 <http://www.hpe.com/networking/support>; for details on the software releases available with your product purchase, refer to <http://www.hpe.com/networking/warrantysummary>.
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Configuration Information

Build To Order:

BTO is a standalone unit with no integration. BTO products ship standalone are not part of a CTO or Rack-Shippable solution.

Standard Switch Enclosures

Configuration Description

Rules #:

SKU

	Aruba 8320 48p 10G SFP/SFP+ and 6p 40G QSFP+ with X472 5 Fans 2 Power Supply Switch Bundle	JL479A
1, 2, 3, 4	<ul style="list-style-type: none"> • Aruba 8320 48p 10G SFP/SFP+ and 6p 40G QSFP+ with X472 5 Fans 2 Power Supply Switch Bundle • Includes 2 Power Supplies (JL480A) with No open PS slots • Includes 5 Fan Tray Bundles (JL481A) with No open FT Slots • Includes 1 2-Post Rack Kit (JL482A) • Min=0 \ Max= 48 SFP/SFP+ 1/10G Transceivers • Min=0 \ Max = 6 QSFP+ 40G Transceiver • 1U – Height 	
	Aruba 8320 48p 10G SFP/SFP+ and 6p 40G QSFP+ with X472 5 Fans 2 Power Supply Switch Bundle PDU	JL479A#B2B
	<ul style="list-style-type: none"> • C13 PDU Jumper Cord (NA/MEX/TW/JP) 	
	Aruba 8320 48p 10G SFP/SFP+ and 6p 40G QSFP+ with X472 5 Fans 2 Power Supply Switch Bundle PDU	JL479A#B2C
	<ul style="list-style-type: none"> • C13 PDU Jumper Cord (ROW) 	
	Aruba 8320 48p 10G SFP/SFP+ and 6p 40G QSFP+ with X472 5 Fans 2 Power Supply Switch Bundle 220 volt	JL479A#B2E
	<ul style="list-style-type: none"> • HPE 2.3M C13 to NEMA L6-20P Power Cord(J9936A) 	
	Aruba 8320 48p 10G SFP/SFP+ and 6p 40G QSFP+ with X472 5 Fans 2 Power Supply Switch Bundle	JL479A#AC3
	<ul style="list-style-type: none"> • No Localized Power Cord Selected. Use J9955A to obtain a Locking Plug Power Cord (L6-20P) 	
3, 4	Aruba 8320 32p 40G QSFP+ with X472 5 Fans 2 Power Supply Switch Bundle	JL579A
	<ul style="list-style-type: none"> • Aruba 8320 32p 40G QSFP+ with X472 5 Fans 2 Power Supply Switch Bundle • Includes 2 Power Supplies (JL480A) with No open PS slots • Includes 5 Fan Tray Bundles (JL481A) with No open FT Slots • Includes 1 2-Post Rack Kit (JL482A) • Min=0 \ Max = 32 QSFP+ 40G Transceiver • 1U - Height 	
	Aruba 8320 32p 40G QSFP+ with X472 5 Fans 2 Power Supply Switch Bundle PDU NA, JP or TW	JL579A#B2B
	<ul style="list-style-type: none"> • C13 PDU Jumper Cord (NA/MEX/TW/JP) 	
	Aruba 8320 32p 40G QSFP+ with X472 5 Fans 2 Power Supply Switch Bundle PDU ROW	JL579A#B2C
	<ul style="list-style-type: none"> • C13 PDU Jumper Cord (ROW) 	
	Aruba 8320 32p 40G QSFP+ with X472 5 Fans 2 Power Supply Switch Bundle United States 220 volt	JL579A#B2E
	<ul style="list-style-type: none"> • HPE 2.3M C13 to NEMA L6-20P Power Cord(J9936A) 	
	Aruba 8320 32p 40G QSFP+ with X472 5 Fans 2 Power Supply Switch Bundle	JL579A#AC3
	<ul style="list-style-type: none"> • No Localized Power Cord Selected. Use J9955A to obtain a Locking Plug Power Cord (L6-20P) 	

Configuration Information

3, 4	Aruba 8320 48p 1G/10GBASE-T and 6p 40G QSFP+ with X472 5 Fans 2 Power Supply Switch Bundle	JL581A
	<ul style="list-style-type: none"> • Aruba 8320 48p 1/10BASE-T and 6p 40G QSFP+ with X472 5 Fans 2 Power Supply Switch Bundle • Includes 2 Power Supplies (JL480A) with No open PS slots • Includes 5 Fan Tray Bundles (JL481A) with No open FT Slots • Includes 1 2-Post Rack Kit (JL482A) • Min=0 \ Max = 40 QSFP+ 40G Transceiver • 1U – Height 	
	Aruba 8320 48p 1G/10GBASE-T and 6p 40G QSFP+ with X472 5 Fans 2 Power Supply Switch Bundle PDU	JL581A#B2B
	C13 PDU Jumper Cord (NA/MEX/TW/JP)	
	Aruba 8320 48p 1G/10GBASE-T and 6p 40G QSFP+ with X472 5 Fans 2 Power Supply Switch Bundle PDU	JL581A#B2C
	C13 PDU Jumper Cord (ROW)	
	High Volt Switch/Router to Wall Power Cord	JL581A#B2E
	HPE 2.3M C13 to NEMA L6-20P Power Cord(J9936A)	
	No Power Cord	JL581A#AC3
	No Localized Power Cord Selected. Use J9955A to obtain a Locking Plug Power Cord (L6-20P)	

Configuration Rules:

Transceivers

Configuration Description

SKU

Rules #:

- 1 The following Transceivers install into this Module: (Use BTO only when adding to switch)

Aruba 1G SFP LC SX 500m OM2 MMF Transceiver	J4858D
Aruba 1G SFP LC LX 10km SMF Transceiver	J4859D
Aruba 1G SFP LC LH 70km SMF Transceiver	J4860D
Aruba 1G SFP RJ45 T 100m Cat5e Transceiver	J8177D

- 2 The following Transceivers install into this Module: (Use BTO only when adding to switch)

Aruba 10GBASE-T SFP+ RJ45 30m Cat6A Transceiver	JL563A
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NOTE: Available in CY18Q2

Aruba 10G SFP+ LC SR 300m OM3 MMF Transceiver	J9150D
Aruba 10G SFP+ LC LR 10km SMF Transceiver	J9151E
Aruba 10G SFP+ LC ER 40km SMF Transceiver	J9153D
Aruba 10G SFP+ to SFP+ 1m Direct Attach Copper Cable	J9281D
Aruba 10G SFP+ to SFP+ 3m Direct Attach Copper Cable	J9283D

- 3 The following Transceivers install into this Module: (Use BTO only when adding to switch)

Aruba 40G QSFP+ LC ER4 40km SMF Transceiver	Q9G82A
HPE X142 40G QSFP+ MPO SR4 Transceiver	JH231A
HPE X142 40G QSFP+ LC LR4 SM Transceiver	JH232A
HPE X142 40G QSFP+ MPO eSR4 300M Transceiver	JH233A
Aruba 40G QSFP+ LC Bidirectional 150m MMF 2-strand Transceiver	JL308A
HPE X242 40G QSFP+ to QSFP+ 1m Direct Attach Copper Cable	JH234A
HPE X242 40G QSFP+ to QSFP+ 3m Direct Attach Copper Cable	JH235A
HPE X242 40G QSFP+ to QSFP+ 5m Direct Attach Copper Cable	JH236A

- 4 Localization required on orders without #B2B, #B2C, #B2E or #AC3 options.

Configuration Information

NOTES:

Drop down under power supply should offer the following options and results:

Switch/Router/Power Supply to PDU Power Cord - #B2B in North America, Mexico, Taiwan, and Japan or #B2C ROW. (Watson Default B2B or B2C for Rack Level CTO)

Switch/Router/Power Supply to Wall Power Cord - Localized Option (Watson Default for BTO and Box Level CTO)

High Volt Switch/Router/Power Supply to Wall Power Cord - #B2E Option. (Offered only in North America, Mexico, Taiwan, and Japan)

No Power Cord - #AC3 Option

OCA Blue: Locking Power Cord (J9955A) L6-20P is available through the OCA Accessories tab

OCA Only Model Selection Form -

HPE Offering > Aruba > Switches - ArubaOS:
8320 Switch Series

Rack Level Integration CTO Models

Standard Switch Enclosures

Configuration Description

SKU

Rules #:

Aruba 8320 48p 10G SFP/SFP+ and 6p 40G QSFP+ with X472 5 Fans 2 Power Supply Switch Bundle JL479A

1, 2, 3, 4, 6

- Aruba 8320 48p 10G SFP/SFP+ and 6p 40G QSFP+ with X472 5 Fans 2 Power Supply Switch Bundle
- Includes 2 Power Supplies (JL480A) with No open PS slots
- Includes 5 Fan Tray Bundles (JL481A) with No open FT Slots
- Includes 1 2-Post Rack Kit (JL482A)
- Min=0 \ Max= 48 SFP/SFP+ 1/10G Transceivers
- Min=0 \ Max = 6 QSFP+ 40G Transceiver
- 1U – Height

Aruba 8320 48p 10G SFP/SFP+ and 6p 40G QSFP+ with X472 5 Fans 2 Power Supply Switch Bundle PDU JL479A#B2B

Aruba 8320 48p 10G SFP/SFP+ and 6p 40G QSFP+ with X472 5 Fans 2 Power Supply Switch Bundle PDU JL479A#B2C

- C13 PDU Jumper Cord (ROW)

Aruba 8320 48p 10G SFP/SFP+ and 6p 40G QSFP+ with X472 5 Fans 2 Power Supply Switch Bundle 220 volt JL479A#B2E

- HPE 2.3M C13 to NEMA L6-20P Power Cord(J9936A)

Aruba 8320 48p 10G SFP/SFP+ and 6p 40G QSFP+ with X472 5 Fans 2 Power Supply Switch Bundle JL479A#AC3

- No Localized Power Cord Selected. Use J9955A to obtain a Locking Plug Power Cord (L6-20P)

Aruba 8320 32p 40G QSFP+ with X472 5 Fans 2 Power Supply Switch Bundle JL579A

3, 4, 6

- Aruba 8320 32p 40G QSFP+ with X472 5 Fans 2 Power Supply Switch Bundle
- Includes 2 Power Supplies (JL480A) with No open PS slots
- Includes 5 Fan Tray Bundles (JL481A) with No open FT Slots
- Includes 1 2-Post Rack Kit (JL482A)
- Min=0 \ Max = 32 QSFP+ 40G Transceiver
- 1U – Height

Aruba 8320 32p 40G QSFP+ with X472 5 Fans 2 Power Supply Switch Bundle PDU NA, JP or TW JL579A#B2B

- C13 PDU Jumper Cord (NA/MEX/TW/JP)

Configuration Information

	Aruba 8320 32p 40G QSFP+ with X472 5 Fans 2 Power Supply Switch Bundle PDU ROW	JL579A#B2C
	<ul style="list-style-type: none"> • C13 PDU Jumper Cord (ROW) 	
	Aruba 8320 32p 40G QSFP+ with X472 5 Fans 2 Power Supply Switch Bundle United States 220 volt	JL579A#B2E
	<ul style="list-style-type: none"> • HPE 2.3M C13 to NEMA L6-20P Power Cord(J9936A) 	
	Aruba 8320 32p 40G QSFP+ with X472 5 Fans 2 Power Supply Switch Bundle	JL579A#AC3
	<ul style="list-style-type: none"> • No Localized Power Cord Selected. Use J9955A to obtain a Locking Plug Power Cord (L6-20P) 	
	Aruba 8320 48p 1G/10GBASE-T and 6p 40G QSFP+ with X472 5 Fans 2 Power Supply Switch Bundle	JL581A
3, 4, 6	<ul style="list-style-type: none"> • Aruba 8320 48p 1/10BASE-T and 6p 40G QSFP+ with X472 5 Fans 2 Power Supply Switch Bundle • Includes 2 Power Supplies (JL480A) with No open PS slots • Includes 5 Fan Tray Bundles (JL481A) with No open FT Slots • Includes 1 2-Post Rack Kit (JL482A) • Min=0 \ Max = 40 QSFP+ 40G Transceiver • 1U – Height 	
	Aruba 8320 48p 1G/10GBASE-T and 6p 40G QSFP+ with X472 5 Fans 2 Power Supply Switch Bundle PDU	JL581A#B2B
	<ul style="list-style-type: none"> • C13 PDU Jumper Cord (NA/MEX/TW/JP) 	
	Aruba 8320 48p 1G/10GBASE-T and 6p 40G QSFP+ with X472 5 Fans 2 Power Supply Switch Bundle PDU	JL581A#B2C
	<ul style="list-style-type: none"> • C13 PDU Jumper Cord (ROW) 	
	Aruba 8320 48p 1G/10GBASE-T and 6p 40G QSFP+ with X472 5 Fans 2 Power Supply Switch Bundle US220v	JL581A#B2E
	<ul style="list-style-type: none"> • HPE 2.3M C13 to NEMA L6-20P Power Cord(J9936A) 	
	Aruba 8320 48p 1G/10GBASE-T and 6p 40G QSFP+ with X472 5 Fans 2 Power Supply Switch Bundle	JL581A#AC3
	<ul style="list-style-type: none"> • No Localized Power Cord Selected. Use J9955A to obtain a Locking Plug Power Cord (L6-20P) 	

Configuration Rules:

Configuration Description

Rule #:

SKU

- 1** The following Transceivers install into this Module (Use #0D1 quoted to switch if switch is CTO) - if applicable:

Aruba 1G SFP LC SX 500m OM2 MMF Transceiver	J4858D
Aruba 1G SFP LC LX 10km SMF Transceiver	J4859D
Aruba 1G SFP LC LH 70km SMF Transceiver	J4860D
Aruba 1G SFP RJ45 T 100m Cat5e Transceiver	J8177D

- 2** The following Transceivers install into this Module(Use #0D1 quoted to switch if switch is CTO) - if applicable:

Aruba 10GBASE-T SFP+ RJ45 30m Cat6A Transceiver	JL563A
Aruba 10G SFP+ LC SR 300m OM3 MMF Transceiver	J9150D
Aruba 10G SFP+ LC LR 10km SMF Transceiver	J9151E
Aruba 10G SFP+ LC ER 40km SMF Transceiver	J9153D
Aruba 10G SFP+ to SFP+ 1m Direct Attach Copper Cable	J9281D
Aruba 10G SFP+ to SFP+ 3m Direct Attach Copper Cable	J9283D

Configuration Information

- 3** The following Transceivers install into this Module(Use #0D1 quoted to switch if switch is CTO) - if applicable:

Aruba 40G QSFP+ LC ER4 40km SMF Transceiver	Q9G82A
HPE X142 40G QSFP+ MPO SR4 Transceiver	JH231A
HPE X142 40G QSFP+ LC LR4 SM Transceiver	JH232A
HPE X142 40G QSFP+ MPO eSR4 300M Transceiver	JH233A
Aruba 40G QSFP+ LC Bidirectional 150m MMF 2-strand Transceiver	JL308A
HPE X242 40G QSFP+ to QSFP+ 1m Direct Attach Copper Cable	JH234A
HPE X242 40G QSFP+ to QSFP+ 3m Direct Attach Copper Cable	JH235A
HPE X242 40G QSFP+ to QSFP+ 5m Direct Attach Copper Cable	JH236A

- 4** Localization required on orders without #B2B, #B2C, #B2E or #AC3 options.

- 6** If the CTO Switch Chassis needs to be racked, Then the CTO Base Model needs to integrate (with #0D1) to the HPE Network Rack.

NOTES:

Drop down under power supply should offer the following options and results:

Switch/Router/Power Supply to PDU Power Cord - #B2B in North America, Mexico, Taiwan, and Japan or #B2C ROW. (Watson Default B2B or B2C for Rack Level CTO)

Switch/Router/Power Supply to Wall Power Cord - Localized Option (Watson Default for BTO and Box Level CTO)

High Volt Switch/Router/Power Supply to Wall Power Cord - #B2E Option. (Offered only in North America, Mexico, Taiwan, and Japan)

No Power Cord - #AC3 Option

OCA Blue Locking Power Cord (J9955A) L6-20P is available through the OCA Accessories tab

Transceivers

Configuration Description

Rule #:

SKU

SPF Transceivers

Aruba 1G SFP LC SX 500m OM2 MMF Transceiver	J4858D
Aruba 1G SFP LC LX 10km SMF Transceiver	J4859D
Aruba 1G SFP LC LH 70km SMF Transceiver	J4860D
Aruba 1G SFP RJ45 T 100m Cat5e Transceiver	J8177D

SPF+ Transceivers

Aruba 10GBASE-T SFP+ RJ45 30m Cat6A Transceiver	JL563A
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NOTE: Limit 12 per switch/module, only to be installed in ports 1-12

Aruba 10G SFP+ LC SR 300m OM3 MMF Transceiver	J9150D
Aruba 10G SFP+ LC LR 10km SMF Transceiver	J9151E
Aruba 10G SFP+ LC ER 40km SMF Transceiver	J9153D
Aruba 10G SFP+ to SFP+ 1m Direct Attach Copper Cable	J9281D
Aruba 10G SFP+ to SFP+ 3m Direct Attach Copper Cable	J9283D

NOTE: OCA Blue A maximum qty of 12 XCVRs (JL563A) can be installed into ports 1-12 within the JL479A Switch.

QSFP+ Transceivers

Aruba 40G QSFP+ LC ER4 40km SMF Transceiver	Q9G82A
HPE X142 40G QSFP+ MPO SR4 Transceiver	JH231A
HPE X142 40G QSFP+ LC LR4 SM Transceiver	JH232A
HPE X142 40G QSFP+ MPO eSR4 300M Transceiver	JH233A
Aruba 40G QSFP+ LC Bidirectional 150m MMF 2-strand Transceiver	JL308A
HPE X242 40G QSFP+ to QSFP+ 1m Direct Attach Copper Cable	JH234A
HPE X242 40G QSFP+ to QSFP+ 3m Direct Attach Copper Cable	JH235A

Configuration Information

HPE X242 40G QSFP+ to QSFP+ 5m Direct Attach Copper Cable

JH236A

Switch Options

Configuration Description

SKU

Rule #:

Rack Mount Kits

For Switch JL479A, JL579A, JL581A System (std 0 // max 1) User Selection (min 0 // max 1) per enclosure

Aruba X472 2-post Rack Kit

JL482B

1

Aruba X474 4-post Rack Kit

JL483B

- includes 1 x c19, 2750w

Configuration Rules:

Configuration Description

SKU

Rule #:

1

If the switch will be factory racked into an HPE Universal Rack, then this 4 Post Rack Mount kit is required.

NOTE: OCA Blue 1 2-Post Rack Mount Kit(JL482B) is included with the JL479A Switch Bundle

Accessories

Accessories

Spare Items

For Switch JL479A, JL579A, JL581A System (std 0 // max 99) User Selection (min 0 // max 99) per enclosure

Configuration Description

SKU

Rule #:

Rule #:	Configuration Description	SKU
	Power Supply	
1	Aruba X371 400W AC Power Supply	JL480A
	<ul style="list-style-type: none"> • includes 1 x c13, 400w 	
	Aruba X371 400W AC Power Supply PDU NA, JP or TW	JL480A#B2B
	<ul style="list-style-type: none"> • C13 PDU Jumper Cord (NA/MEX/TW/JP) 	
	Aruba X371 400W AC Power Supply PDU ROW	JL480A#B2C
	<ul style="list-style-type: none"> • C13 PDU Jumper Cord (ROW) 	
	Aruba X371 400W AC Power Supply United States 220 volt	JL480A#B2E
	<ul style="list-style-type: none"> • HPE 2.3M C13 to NEMA L6-20P Power Cord(J9936A) 	
	Aruba X371 400W AC Power Supply	JL480A#AC3
	<ul style="list-style-type: none"> • No Localized Power Cord Selected. Use J9955A to obtain a Locking Plug Power Cord (L6-20P) 	
	Aruba X721 Front-to-Back Fan	JL481A
	Aruba X472 2-post Rack Kit	JL482B
	Console Cable	
	Aruba X2C2 RJ45 to DB9 Console Cable	JL448A
	HPE 2.5M C15 to NEMA L6-20P Power Cord	J9955A

Configuration Rules:

Configuration Description

SKU

Rule #:

1	Localization required on orders without #B2B, #B2C, #B2E or #AC3 options	
	NOTES:	
	Drop down under power supply should offer the following options and results:	
	Switch/Router to PDU Power Cord - #B2B in NA, Mexico, Taiwan, and Japan or #B2C ROW. (Watson Default B2B or B2C for Rack Level CTO)	
	Switch/Router/Power Supply to Wall Power Cord - Localized Option (Watson Default for BTO and Box Level CTO)	
	High Volt Switch/Router/Power Supply to Wall Power Cord - #B2E Option. (Offered only in North America, Mexico, Taiwan, and Japan)	
	No Localized Power Cord Selected - #AC3 Option	
	OCA Blue Locking Power Cord (J9955A) L6-20P is available in the Accessories tab	
	OCA Blue 2 Power Supply is included with the Switch Bundle	

Technical Specifications

Aruba 8320 48p 10G SFP/SFP+ and 6p 40G QSFP+ with X472 5 Fans 2 Power Supply Switch Bundle (JL479A)

I/O ports and slots	Supports 48 ports of 1/10G for use with SFP and SFP+ transceivers, and 6 ports of 40G for use with QSFP+ transceivers.		
Additional ports and slots	Module VoQ	16 MB Packet Buffer	
	Power supplies	Field-replaceable, hot-swappable, and up to 2 power supplies. Bundles (JL479A, JL579A, and JL581A) include 2 power supplies.	
	Fans	Field-replaceable, hot-swappable, and up to 5 fans. Bundles (JL479A, JL579A, and JL581A) include 5 fans.	
	MTBF	314,721 hrs	
Physical characteristics	Dimensions	17.4in (442mm) (w) x 19.9in (505.5mm) (d) x 1.7in (43.2mm) (h)	
	Full configuration weight	20.7lbs (9.4kg)	
	Memory and Processor		
	CPU	2GHz	
	Memory Drive	16 GB RAM, 64 GB SSD, and 8 GB Flash	
Performance*	Switching Capacity	2.5Tbs	
	IPv4 Host Table	120,000	
	IPv6 Host Table	52,000	
	IPv4 Unicast Routes	131,072	
	IPv6 Unicast Routes	32,732	
	MAC Address Table Size	98,304	
	IGMP Groups	4,094	
	MLD Groups	4,094	
	IPv4 Multicast Routes	4,094	
	IPv6 Multicast Routes	4,094	
	Mounting and enclosure	Mounts in an EIA standard 19-inch rack or other equipment cabinet (hardware included); horizontal surface mounting only	
Environment	Operating Temperature	0°C to 40°C (32°F to 104°F) up to 10,000 ft (3Km)	
	Operating Relative Humidity	5% to 95% at 40°C (104°F) non-condensing	
	Non-Operating	-40°C to 70°C (-40°F to 158°F) up to 15,000ft (4.6Km)	
	Non-Operating/Storage Relative Humidity	5% to 95% @ 65°C (149°F)	
	Max Operating Altitude	Up to 10,000ft (3.048 Km)	
	Max Non-Operating	Up to 15,000ft (4.6 Km)	
	Acoustic	Sound Pressure (LpAm) (Bystander) 61.1 dB	
	Primary Airflow Direction	Front-to-Back	
	Electrical characteristics	Frequency	50-65 Hz
		AC voltage	100-127 and 200-240 with either 50 or 60Hz VAC
Current		6A (low voltage) - 3A (high voltage)	
Power output		357 W	

Technical Specifications

Safety	EN 60950-1:2006 +A11:2009 +A1:2010 +A12:2011+A2:2013; EN60825-1; IEC60950-1:2005 Ed.2; Am 1:2009+A2:2013; IEC 60825-1; UL60950-1, CSA 22.2 No 60950-
EMC	EN 55032:2012, Class A; EN 55024:2010; EN 61000-3-2:2014, Class A; EN 61000-3-3:2013; FCC CFR 47 Part 15:2010, Class A; EN 50581:2012 (RoHS)
Lasers	EN60825-1:2014 / IEC 60825-1: 2014 Class 1; Class 1 Laser Products / Laser Klasse 1
Management	SNMP; RJ-45 serial; USB micro USB console; RJ-45 Ethernet port

NOTE: * Some of these scaling numbers assume shared tables.

Aruba 8320 32p 40G QSFP+ with X472 5 Fans 2 Power Supply Switch Bundle (JL579A)

I/O ports and slots	Supports 32 ports of 40G for use with QSFP+ transceivers.	
Additional ports and slots	Module VoQ	16 MB Packet Buffer
	Power supplies	Field-replaceable, hot-swappable, and up to 2 power supplies. Bundles (JL479A, JL579A, and JL581A) include 2 power supplies.
	Fans	Field-replaceable, hot-swappable, and up to 5 fans. Bundles (JL479A, JL579A, and JL581A) include 5 fans.
	MTBF	296,526 hrs
Physical characteristics	Dimensions	17.26in (438mm) (W) 20.28in (515mm) (D) 1.71in (43.5mm) (H)
	Full configuration weight	21.27lbs (9.7kb)
	Memory and Processor	
	CPU	2GHz
	Memory Drive	16 GB RAM, 64 GB SSD, and 8 GB Flash
Performance*	Switching Capacity	2.5Tbs
	IPv4 Host Table	120,000
	IPv6 Host Table	52,000
	IPv4 Unicast Routes	131,072
	IPv6 Unicast Routes	32,732
	MAC Address Table Size	98,304
	IGMP Groups	4,094
	MLD Groups	4,094
	IPv4 Multicast Routes	4,094
	IPv6 Multicast Routes	4,094
Mounting and enclosure	Mounts in an EIA standard 19-inch rack or other equipment cabinet (hardware included); horizontal surface mounting only	
Environment	Operating Temperature	0°C to 40°C (32°F to 104°F) up to 10,000 ft (3Km)
	Operating Relative Humidity	5% to 95% at 40°C (104°F) non-condensing
	Non-Operating	-40°C to 70°C (-40°F to 158°F) up to 15,000Ft (4.6Km)
	Non-Operating/ Storage Relative Humidity	5% to 95% @ 65°C (149°F)
	Max Operating Altitude	Up to 10,000ft (3.048 Km)
	Max Non-Operating	Up to 15,000ft (4.6 Km)
	Acoustic	Sound Pressure (LpAm) (Bystander) 79 dB
	Primary Airflow Direction	Front-to-Back

Technical Specifications

Electrical characteristics	Frequency	50-65 Hz
	AC voltage	100-127 and 200-240 with either 50 or 60Hz VAC
	Current	6A (low voltage) - 3A (high voltage)
	Power output	310 W
Safety	EN 60950-1:2006 +A11:2009 +A1:2010 +A12:2011+A2:2013; EN60825-1; IEC60950-1:2005 Ed.2; Am 1:2009+A2:2013; IEC 60825-1; UL60950-1, CSA 22.2 No 60950-	
EMC	EN 55032:2012, Class A; EN 55024:2010; EN 61000-3-2:2014, Class A; EN 61000-3-3:2013; FCC CFR 47 Part 15:2010, Class A; EN 50581:2012 (RoHS)	
Lasers	EN60825-1:2014 / IEC 60825-1: 2014 Class 1; Class 1 Laser Products / Laser Klasse 1	
Management	SNMP; RJ-45 serial; USB micro USB console; RJ-45 Ethernet port	

NOTE: * Some of these scaling numbers assume shared tables.

Aruba 8320 48p 1G/10GBASE-T and 6p 40G QSFP+ with X472 5 Fans 2 Power Supply Switch Bundle (JL581A)

I/O ports and slots	Supports 48 ports of 10GBaseT and 6 ports of 40G for use with QSFP+ transceivers.	
Additional ports and slots	Module VoQ	16 MB Packet Buffer
	Power supplies	Field-replaceable, hot-swappable, and up to 2 power supplies. Bundles (JL479A, JL579A, and JL581A) include 2 power supplies.
	Fans	Field-replaceable, hot-swappable, and up to 5 fans. Bundles (JL479A, JL579A, and JL581A) include 5 fans.
	MTBF	275,339 hrs
Physical characteristics	Dimensions	18.6in (473mm) (W) 17.4in (443mm) (D) 1.71in (43.9mm) (H)
	Full configuration weight	20.94lbs (9.5kg)
Memory and Processor	CPU	2GHz
	Memory Drive	16 GB RAM, 64 GB SSD, and 8 GB Flash
Performance*	Switching Capacity	2.5 Tbs
	IPv4 Host Table	120,000
	IPv6 Host Table	52,000
	IPv4 Unicast Routes	131,072
	IPv6 Unicast Routes	32,732
	MAC Address Table Size	98,304
	IGMP Groups	4,094
	MLD Groups	4,094
	IPv4 Multicast Routes	4,094
IPv6 Multicast Routes	4,094	
Mounting and enclosure	Mounts in an EIA standard 19-inch rack or other equipment cabinet (hardware included); horizontal surface mounting only	
Environment	Operating Temperature	0°C to 40°C (32°F to 104°F) up to 10,000 ft (3Km)
	Operating Relative Humidity	5% to 95% at 40°C (104°F) non-condensing
	Non-Operating	-40°C to 70°C (-40°F to 158°F) up to 15,000Ft (4.6Km)
	Non-Operating/ Storage Relative Humidity	5% to 95% @ 65°C (149°F)

Technical Specifications

	Max Operating Altitude	Up to 10,000ft (3.048 Km)
	Max Non-Operating	Up to 15,000ft (4.6 Km)
	Acoustic	Sound Pressure (LpAm) (Bystander) 61.1 dB
	Primary Airflow Direction	Front-to-Back
Electrical characteristics	Frequency	50-65 Hz
	AC voltage	100-127 and 200-240 with either 50 or 60Hz VAC
	Current	6A (low voltage) - 3A (high voltage)
	Power output	348 W
Safety	EN 60950-1:2006 +A11:2009 +A1:2010 +A12:2011+A2:2013; EN60825-1; IEC60950-1:2005 Ed.2; Am 1:2009+A2:2013; IEC 60825-1; UL60950-1, CSA 22.2 No 60950-	
EMC	EN 55032:2012, Class A; EN 55024:2010; EN 61000-3-2:2014, Class A; EN 61000-3-3:2013; FCC CFR 47 Part 15:2010, Class A; EN 50581:2012 (RoHS)	
Lasers	EN60825-1:2014 / IEC 60825-1: 2014 Class 1; Class 1 Laser Products / Laser Klasse 1	
Management	SNMP; RJ-45 serial; USB micro USB console; RJ-45 Ethernet port	

NOTE: * Some of these scaling numbers assume shared tables.

Standards and protocols (applies to all products in series)

- IEEE 802.1AB-2009
- IEEE 802.1ak-2007
- IEEE 802.1t-2001
- IEEE 802.1AX-2008 Link Aggregation
- IEEE 802.1p Traffic Class Expediting and Dynamic Multicast Filtering
- 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
- IEEE 802.3z Gigabit Ethernet
- IEEE 802.3ae 10 Gigabit Ethernet
- IEEE 802.3ba 40 Gigabit Ethernet Architecture
- RFC 768 UDP
- RFC 791 IP
- RFC 792 ICMP
- RFC 793 TCP
- RFC 826 ARP
- RFC 768 User Datagram Protocol
- RFC 813 Window and Acknowledgement Strategy in TCP
- RFC 815 IP datagram reassembly algorithms
- RFC 879 TCP maximum segment size and related topics
- RFC 896 Congestion control in IP/TCP internetworks
- RFC 917 Internet subnets
- RFC 919 Broadcasting Internet Datagrams
- RFC 922 Broadcasting Internet Datagrams in the Presence of Subnets (IP_BROAD)
- RFC 925 Multi-LAN address resolution
- RFC 1215 Convention for defining traps for use with the SNMP
- RFC 1256 ICMP Router Discovery Messages
- RFC 1393 Traceroute Using an IP Option

Technical Specifications

Standards and protocols (applies to all products in series)

- RFC 1591 Domain Name System Structure and Delegation
- RFC 1657 Definitions of Managed Objects for BGP-4 using SMIv2
- RFC 1772 Application of the Border Gateway Protocol in the Internet
- RFC 1981 Path MTU Discovery for IP version 6
- RFC 1997 BGP Communities Attribute
- RFC 1998 An Application of the BGP Community Attribute in Multi-home Routing
- RFC 2385 Protection of BGP Sessions via the TCP MD5 Signature Option
- RFC 2401 Security Architecture for the Internet Protocol
- RFC 2402 IP Authentication Header
- RFC 2406 IP Encapsulating Security Payload (ESP)
- RFC 2460 Internet Protocol, Version 6 (IPv6) Specification
- RFC 2545 Use of BGP-4 Multiprotocol Extensions for IPv6 Inter-Domain Routing
- RFC 2710 Multicast Listener Discovery (MLD) for IPv6
- RFC 2787 Definitions of Managed Objects for the Virtual Router Redundancy Protocol
- RFC 2918 Route Refresh Capability for BGP-4
- RFC 2934 Protocol Independent Multicast MIB for IPv4
- RFC 3137 OSPF Stub Router Advertisement
- RFC 3176 InMon Corporation's sFlow: A Method for Monitoring Traffic in Switched and Routed Networks
- RFC 3509 Alternative Implementations of OSPF Area Border Routers
- RFC 3623 Graceful OSPF Restart
- RFC 3810 Multicast Listener Discovery Version 2 (MLDv2) for IPv6
- RFC 4213 Basic Transition Mechanisms for IPv6 Hosts and Routers
- RFC 4251 The Secure Shell (SSH) Protocol
- RFC 4271 A Border Gateway Protocol 4 (BGP-4)
- RFC 4273 Definitions of Managed Objects for BGP-4
- RFC 4291 IP Version 6 Addressing Architecture
- RFC 4292 IP Forwarding Table MIB
- RFC 4293 Management Information Base for the Internet Protocol (IP)
- RFC 4360 BGP Extended Communities Attribute
- RFC 4486 Subcodes for BGP Cease Notification Message
- RFC 4552 Authentication/Confidentiality for OSPFv3
- RFC 4724 Graceful Restart Mechanism for BGP
- RFC 4760 Multiprotocol Extensions for BGP-4
- RFC 4940 IANA Considerations for OSPF
- RFC 5187 OSPFv3 Graceful Restart
- RFC 5701 IPv6 Address Specific BGP Extended Community Attribute
- RFC 6987 OSPF Stub Router Advertisement
- RFC 7047 The Open vSwitch Database Management Protocol
- RFC 7059 A Comparison of IPv6-over-IPv4 Tunnel Mechanisms
- RFC 7313 Enhanced Route Refresh Capability for BGP-4
- RFC 8201 Path MTU Discovery for IP version 6

Summary of Changes

Date	Version History	Action	Description of Change
03-Jun-2019	Version 11	Changed	Overview, Standard Features and Technical Specifications sections were updated.
02-Apr-2019	Version 10	Changed	SKU JL483A was replaced with JL483B Obsolete SKUs were removed.
04-Mar-2019	Version 9	Changed	SKU J9151D was replaced with J9151E Obsolete SKUs were removed.
03-Dec-2018	Version 8	Changed	Features and benefits updated
02-Jul-2018	Version 7	Changed	Product overview, Key features, Features and benefits changed due to a Software feature update
04-Jun-2018	Version 6	Changed	Configuration section updated
07-May-2018	Version 5	Changed	SKU added: JL563A; Q9G82A
16-Apr-2018	Version 4	Changed	Standards and protocols updated
02-Apr-2018	Version 3	Changed	SKU added to the Configuration section: JL581A
05-Mar-2018	Version 2	Changed	SKU added: JL579A Updates made on product image, Overview, Technical Specifications and Configuration section.
04-Dec-2017	Version 1	New	New QuickSpecs



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