## Overview

## Aruba 2930F Switch Series



## Models

Aruba 2930F 24G 4SFP+ Switch JL253A
Aruba 2930F 48G 4SFP+ Switch JL254A
Aruba 2930F 24G PoE+ 4SFP+ Switch JL255A
Aruba 2930F 48G PoE+ 4SFP+ Switch JL256A
Aruba 2930F 8G PoE+ 2SFP+ Switch JL258A
Aruba 2930F 24G 4SFP Switch JL259A
Aruba 2930F 48G 4SFP Switch JL260A
Aruba 2930F 24G PoE+ 4SFP Switch JL261A
Aruba 2930F 48G PoE+ 4SFP Switch JL262A
Aruba 2930F 24G PoE+ 4SFP+ TAA-compliant Switch JL263A
Aruba 2930F 48G PoE+ 4SFP+ TAA-compliant Switch JL264A
Aruba 2930F 48G PoE+ 4SFP 740W Switch JL557A
Aruba 2930F 48G PoE+ 4SFP+ 740W Switch JL558A
Aruba 2930F 48G PoE+ 4SFP+ 740W TAA-compliant Switch JL559A

## Key features

- Basic Layer 3 switch series with VSF stacking, RIP routing, Access OSPF, ACLs and robust QoS
- Advanced security and network management tools like Aruba ClearPass Policy Manager and Aruba Airwave
- Simple deployment with Zero Touch Provisioning and cloud-based Aruba Central support
- Convenient built-in 1GbE or 10GbE uplinks and up to 740 W PoE+
- Ready for software defined network with REST APIs and OpenFlow support


## Overview

## Product overview

The Aruba 2930F Switch Series is designed for customers creating digital workplaces optimized for mobile users with an integrated wired and wireless approach. These basic Layer 3 access switches are easy to deploy and manage with advanced security and network management tools like Aruba ClearPass Policy Manager and Aruba AirWave. With support from Aruba Central, you can quickly set up remote branch sites with little or no IT support. A powerful Aruba ProVision ASIC delivers performance and flexibility to meet the needs of today and tomorrow's network programmability and automation requirements. Stacking with Virtual Switching Framework (VSF) provides simplicity and scalability. The 2930F supports builtin 1 GbE or 10 GbE uplinks, PoE+, Access OSPF routing, Tunnel node, robust QoS, RIP routing, and IPv6 with no software licensing required.

The Aruba 2930F Switch Series provides a convenient and cost-effective access switch solution that can be quickly set up with Zero Touch Provisioning. The robust basic Layer 3 feature set includes a limited lifetime warranty.

## Features and benefits

## Unified Wired and Wireless

- ClearPass Policy Manager support
unified wired and wireless policies using Aruba ClearPass Policy Manager
- Switch auto-configuration
automatically configures switch for different settings such as VLAN, CoS, PoE max power, and PoE priority when an Aruba access point is detected.
- User role
defines a set of switch-based policies in areas such as security, authentication, and QoS. A user role can be assigned to a group of users or devices, using switch-based local user role or download from ClearPass
- Tunneled node
provides a secured tunnel to transport network traffic on a per-port or per-user-role basis to an Aruba Controller. In per-user-role Tunneled Node, users are authenticated with ClearPass Policy Manager which can direct the traffic to be tunneled to Aruba controller or switch locally
- Open Authentication Roles
simplifies first-time AAA deployments to allow access as soon as a client connects as well as to provide access even if authentication fails


## Software-defined networks

- REST APIs and OpenFlow

Supports multiple programmatic interfaces, including REST APIs and Openflow 1.0 and 1.3, to enable automation of network operations, monitoring, and troubleshooting.

## Quality of Service (QoS)

- Traffic prioritization (IEEE 802.1p)
allows real-time traffic classification into eight priority levels mapped to eight queues
- Layer 4 prioritization
enables prioritization based on TCP/UDP port numbers
- 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
- Rate limiting
sets per-port ingress enforced maximums and per-port, per-queue minimums
- Large buffers:

Provide graceful congestion management

## Connectivity

## Overview

- Flexible $10 \mathrm{~Gb} / \mathrm{s}$ Ethernet connectivity

Four fixed 10 Gigabit ports (SFP+)available

- Auto-MDIX
provides automatic adjustments for straight-through or crossover cables on all 10/100 and 10/100/1000 ports
- IEEE 802.3at Power over Ethernet (PoE+)
provides up to 30 W per port that allows support of the latest PoE+-capable devices such as IP phones, wireless access points, and security cameras, as well as any IEEE 802.3af-compliant end device; eliminates the cost of additional electrical cabling and circuits that would otherwise be necessary in IP phone and WLAN deployments
- Pre-standard PoE support
detects and provides power to pre-standard PoE devices
- IPv6


## -IPv6 host

enables switches to be managed in an IPv6 network
-Dual stack (IPv4 and IPv6)
transitions from 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 network traffic
-IPv6 routing
supports static and RIPng protocols
-Security
provides RA guard, DHCPv6 protection, dynamic IPv6 lockdown, and ND snooping

## Performance

- 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
- HPE/Aruba ASIC architecture is designed with the latest HPE/Aruba ASIC, providing very low latency, increased packet buffering, and adaptive power consumption
- 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


## Convergence

- IP Multicast Routing for v4 and v6
includes PIM Sparse and Dense modes to route IP multicast traffic (limited to 16 interfaces)
- IP multicast snooping and data-driven IGMP
automatically prevent 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 configure automatically network devices such as IP phones
- IEEE 802.1AB Link Layer Discovery Protocol (LLDP)
facilitates easy mapping using network management applications with LLDP automated device discovery protocol
- PoE and PoE+ allocations


## Overview

support multiple methods (automatic, IEEE 802.3at dynamic, LLDP-MED fine grain, IEEE 802.3af device class, or user-specified) to allocate and manage PoE/PoE+ power for more efficient energy savings

- Local MAC Authentication
assigns attributes such as VLAN and QoS using locally configured profile that can be a list of MAC prefixes


## Resiliency and high availability

- Virtual Switching Framework (VSF)
creates one virtual resilient switch from up to four switches; servers or switches can be attached using standard LACP for automatic load balancing and high availability; simplify network operation by reduce the need for complex protocols like Spanning Tree Protocol (STP), Equal-Cost Multipath (ECMP), and VRRP
- Virtual Router Redundancy Protocol (VRRP)
allows groups of two routers to dynamically back each other up to create highly available routed environments for IPv4 and IPv6 networks (limited to 128 VRs)
- 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
- IEEE 802.3ad link-aggregation-control protocol (LACP) and port trunking
support up to 26 static, dynamic, or distributed trunks with each trunk having up to eight links (ports) per static trunk
- SmartLink
provides easy-to-configure link redundancy of active and standby links


## Management

- SNMPv1, v2, and v3
provide complete support of SNMP; provide full support of industry-standard Management Information Base (MIB) plus private extensions; SNMPv3 supports increased security using encryption
- Zero-Touch Provisioning (ZTP)
simplifies installation of the switch infrastructure using the Aruba Activate-based or a DHCP-based process with AirWave Network Management
- Aruba Central support
cloud based management platform offers simple, secure, and cost effective way to manage switches


## Manageability

- Dual flash images
provides independent primary and secondary operating system files for backup while upgrading
- Friendly port names
allow assignment of descriptive names to ports
- Find-Fix-Inform
finds and fixes common network problems automatically, then informs administrator
- Multiple configuration files
allow multiple configuration files to be stored to a flash image
- Software updates
free downloads from the Web
- RMON, XRMON, and sFlow
provide advanced monitoring and reporting capabilities for statistics, history, alarms, and events
- Troubleshooting
ingress and egress port monitoring enable network problem solving
- Unidirectional link detection (UDLD)
monitors the link between two switches and blocks the ports on both ends of the link if the link goes


## Overview

down at any point between the two devices

- IP service level agreements (SLA) for voice
monitor quality of voice traffic using the UDP jitter and UDP jitter for VoIP tests


## Layer 2 switching

- VLAN Support and Tagging
supports IEEE 802.1Q (4094 VLAN IDs) and 2K VLANs simultaneously
- Jumbo packet support
improves the performance of large data transfers; supports frame size of up to 9220 bytes
- IEEE 802.1v protocol VLANs
isolate select non-IPv4 protocols automatically into their own 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+
- GVRP and MVRP
allows automatic learning and dynamic assignment of VLANs
- VxLAN
encapsulation (tunneling) protocol for overlay network that enables a more scalable virtual network deployment


## Layer 3 services

- DHCP server
centralizes and reduces the cost of IPv4 address management


## Layer 3 routing

- Static IP routing
provides manually configured routing; includes ECMP capability
- 256 static and 10,000 RIP routes
facilitate segregation of user data, without adding external hardware
- Routing Information Protocol (RIP)
provides RIPv1, RIPv2, and RIPng routing
- Access OSPF
provide OSPFv2 and OSPFv3 protocols for routing between access and the next layer on the LAN.
Only one OSPF area and up to 8 interfaces are supported
- Policy-based routing
uses a classifier to select traffic that can be forwarded based on policy set by the network administrator (limited to 16 next-hop routes)


## Security

- Control Plane Policing set rate limit on control protocols to protect CPU overload from DOS attacks
- Multiple user authentication methods


## -IEEE 802.1X

uses an IEEE 802.1X supplicant on the client in conjunction with a RADIUS server to authenticate in accordance with industry standards
-Web-based authentication
provides a browser-based environment, similar to IEEE 802.1X, to authenticate clients that do not support the IEEE 802.1X supplicant
-MAC-based authentication
authenticates the client with the RADIUS server based on the client's MAC address

- Authentication flexibility
-Multiple IEEE 802.1X users per port


## Overview

provides authentication of multiple IEEE 802.1X users per port; prevents a user from "piggybacking" on another user's IEEE 802.1X authentication
-Concurrent IEEE 802.1X, Web, and MAC authentication schemes per port
switch port will accept up to 32 sessions of IEEE 802.1X, Web, and MAC authentications

- Access control lists (ACLs)
provide IP Layer 3 filtering based on source/destination IP address/subnet and source/destination TCP/UDP port number
- 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
- 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
- Custom banner
displays security policy when users log in to the switch
- STP BPDU port protection
blocks Bridge Protocol Data Units (BPDUs) on ports that do not require BPDUs, preventing forged
BPDU attacks
- 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
- Identity-driven ACL
enables implementation of a highly granular and flexible access security policy and VLAN assignment
specific to each authenticated network user
- Per-port broadcast throttling

Configures broadcast control selectively on heavy traffic port uplinks

- 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
Monitor and diagnostics
- Digital optical monitoring of SFP+ and 1000BASE-T transceivers
allows detailed monitoring of the transceiver settings and parameters


## Warranty and support

## - Limited Lifetime Warranty

see http://www.hpe.com/networking/warrantysummary for warranty and support information included with your product purchase.

## Overview

- 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

Configuration

## Build To Order:

BTO is a standalone unit with no integration. BTO products ship standalone are not part of a CTO or Rack-
Shippable solution.
Aruba 2930F 24G 4SFP+ Switch

- 24 RJ-45 autosensing 10/100/1000 ports
- 4 SFP/SFP+ 1G/10G ports
- min=0 $\backslash$ max=4 SFP/SFP+ Transceivers
- 1 U - Height

PDU Cable NA/MEX/TW/JP
JL253A\#B2B

- C15 PDU Jumper Cord (NA/MEX/TW/JP)


## PDU Cable ROW

JL253A\#B2C

- C15 PDU Jumper Cord (ROW)

High Volt Switch to Wall Power Cord
JL253A\#B2E

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

Aruba 2930F 48G 4SFP+ Switch

- 48 RJ-45 autosensing 10/100/1000 ports
- 4 SFP/SFP+1G/10G ports See Configuration
- min=0 $\backslash$ max=4 SFP/SFP+ Transceivers
- 1U - Height


## PDU Cable NA/MEX/TW/JP

JL254A\#B2B

- C15 PDU Jumper Cord (NA/MEX/TW/JP)

PDU Cable ROW
JL254A\#B2C

- C15 PDU Jumper Cord (ROW)

High Volt Switch to Wall Power Cord
JL254A\#B2E

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

Aruba 2930F 24G PoE+4SFP+ Switch

- 24 RJ-45 PoE+ autosensing 10/100/1000 ports
- 4 SFP/SFP+1G/10G ports See Configuration
- min=0 $\backslash \backslash$ max=4 SFP/SFP+ Transceivers
- 1U-Height


## PDU Cable NA/MEX/TW/JP

JL255A\#B2B

- C15 PDU Jumper Cord (NA/MEX/TW/JP)

PDU Cable ROW
JL255A\#B2C

- C15 PDU Jumper Cord (ROW)

High Volt Switch to Wall Power Cord
JL255A\#B2E

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


## Configuration

## Aruba 2930F 48G PoE+ 4SFP+ Switch

- 48 RJ-45 PoE+ autosensing 10/100/1000 ports
- 4 SFP/SFP+1G/10G ports

JL256A
See Configuration
NOTE: 1, 2, 3

- min=0 $\backslash$ max=4 SFP/SFP+ Transceivers
- 1 U - Height


## PDU Cable NA/MEX/TW/JP

JL256A\#B2B

- C15 PDU Jumper Cord (NA/MEX/TW/JP)


## PDU Cable ROW

JL256A\#B2C

- C15 PDU Jumper Cord (ROW)

High Volt Switch to Wall Power Cord
JL256A\#B2E

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

Aruba 2930F 8G PoE +2 SFP + Switch

- 8 RJ-45 PoE+ autosensing 10/100/1000 ports
- 2 SFP/SFP+1G/10G ports
- min=0 $\backslash \backslash \max =2$ SFP/SFP+ Transceivers
- 1 U - Height


## PDU Cable NA/MEX/TW/JP

JL258A\#B2B

- C15 PDU Jumper Cord (NA/MEX/TW/JP)


## PDU Cable ROW

JL258A\#B2C

- C15 PDU Jumper Cord (ROW)

High Volt Switch to Wall Power Cord
JL258A\#B2E

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

Aruba 2930F 24G 4SFP Switch

- 24 RJ-45 autosensing 10/100/1000 ports
- 4 SFP 1G ports

JL259A

- min=0 $\backslash$ max=4 SFP Transceivers
- 1 U - Height


## PDU Cable NA/MEX/TW/JP

JL259A\#B2B

- C15 PDU Jumper Cord (NA/MEX/TW/JP)


## PDU Cable ROW

JL259A\#B2C

- C15 PDU Jumper Cord (ROW)

High Volt Switch to Wall Power Cord
JL259A\#B2E

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

Aruba 2930F 48G PoE+ 4SFP 740W Switch

## Configuration

- 48 RJ-45 autosensing 10/100/1000 ports

See Configuration
NOTE: 1, 3

- 4 SFP 1G ports
- min=0 $\backslash \backslash$ max=4 SFP Transceivers
- 1 U - Height


## PDU Cable NA/MEX/TW/JP

JL557A\#B2B

- C15 PDU Jumper Cord (NA/MEX/TW/JP)


## PDU Cable ROW

JL557A\#B2C

- C15 PDU Jumper Cord (ROW)

High Volt Switch to Wall Power Cord
JL557A\#B2E

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

No Power Cord
JL557A\#AC3

- No Localized Power Cord Selected

Aruba 2930F 48G 4SFP Switch

- 48 RJ-45 autosensing 10/100/1000 ports
- 4 SFP 1G ports

JL260A

- min=0 $\backslash \backslash$ max=4 SFP Transceivers
- 1 U - Height


## PDU Cable NA/MEX/TW/JP

JL260A\#B2B

- C15 PDU Jumper Cord (NA/MEX/TW/JP)


## PDU Cable ROW

JL260A\#B2C

- C15 PDU Jumper Cord (ROW)

High Volt Switch to Wall Power Cord
JL260A\#B2E

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

Aruba 2930F 24G PoE+ 4SFP Switch

- 24 RJ-45 PoE+ autosensing 10/100/1000 ports
- 4 SFP 1G ports

JL261A

- min=0 <br> max=4 SFP Transceivers
- 1 U - Height


## PDU Cable NA/MEX/TW/JP

JL261A\#B2B

- C15 PDU Jumper Cord (NA/MEX/TW/JP)

PDU Cable ROW
JL261A\#B2C

- C15 PDU Jumper Cord (ROW)

High Volt Switch to Wall Power Cord
JL261A\#B2E

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

Aruba 2930F 48G PoE+4SFP+740W Switch
JL558A

## Configuration

- 48 RJ-45 PoE+ autosensing 10/100/1000 ports

See Configuration
NOTE: 1, 3

- 4 SFP 1G ports
- min=0 $\backslash \backslash$ max=4 SFP Transceivers
- 1 U - Height


## PDU Cable NA/MEX/TW/JP

JL558A\#B2B

- C15 PDU Jumper Cord (NA/MEX/TW/JP)


## PDU Cable ROW

JL558A\#B2C

- C15 PDU Jumper Cord (ROW)

High Volt Switch to Wall Power Cord
JL558A\#B2E

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

No Power Cord
JL558A\#AC3

- No Localized Power Cord Selected

Aruba 2930F 48G PoE+ 4SFP Switch

- 48 RJ-45 PoE+ autosensing 10/100/1000 ports
- 4 SFP 1G ports

JL262A

- min=0 <br> max=4 SFP Transceivers
- 1 U - Height


## PDU Cable NA/MEX/TW/JP

JL262A\#B2B

- C15 PDU Jumper Cord (NA/MEX/TW/JP)


## PDU Cable ROW

JL262A\#B2C

- C15 PDU Jumper Cord (ROW)

High Volt Switch to Wall Power Cord
JL262A\#B2E

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


## TAA Compliant Chassis

Aruba 2930F 24G PoE+ 4SFP+ TAA-compliant Switch

- 24 RJ-45 PoE+ autosensing 10/100/1000 ports
- 4 SFP/SFP+1G/10G ports

JL263A
See Configuration

- min=0 $\backslash \backslash$ max=4 SFP/SFP+ Transceivers
- 1 U - Height


## PDU Cable NA/MEX/TW/JP

JL263A\#B2B

- C15 PDU Jumper Cord (NA/MEX/TW/JP)


## PDU Cable ROW

JL263A\#B2C

- C15 PDU Jumper Cord (ROW)

High Volt Switch to Wall Power Cord
JL263A\#B2E

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


## Configuration

- 48 RJ-45 PoE+ autosensing 10/100/1000 ports
- 4 SFP/SFP+1G/10G ports
- min=0 $\backslash \backslash$ max=4 SFP/SFP+ Transceivers
- 1 U - Height


## PDU Cable NA/MEX/TW/JP

JL559A\#B2B

- C15 PDU Jumper Cord (NA/MEX/TW/JP)


## PDU Cable ROW

JL559A\#B2C

- C15 PDU Jumper Cord (ROW)


## High Volt Switch to Wall Power Cord

JL559A\#B2E

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

No Power Cord
JL559A\#AC3

- No Localized Power Cord Selected

Aruba 2930F 48G PoE+ 4SFP+ TAA-compliant Switch

- 48 RJ-45 PoE+ autosensing 10/100/1000 ports
- 4 SFP/SFP+1G/10G ports

JL264A
See Configuration
NOTE: 1, 2, 3, 4

- min=0 $\backslash \backslash$ max=4 SFP/SFP+ Transceivers
- 1U-Height


## PDU Cable NA/MEX/TW/JP

JL264A\#B2B

- C15 PDU Jumper Cord (NA/MEX/TW/JP)


## PDU Cable ROW

JL264A\#B2C

- C15 PDU Jumper Cord (ROW)

High Volt Switch to Wall Power Cord
JL264A\#B2E

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


## Configuration Rules:

NOTE 1 The following Transceivers install into this Chassis :
HPE X121 1G SFP LC SX Transceiver J4858C
HPE X121 1G SFP LC LX Transceiver J4859C
HPE X121 1G SFP LC LH Transceiver J4860C
HPE X121 1G SFP RJ45 T Transceiver J8177C
HPE X111 100M SFP LC FX Transceiver J9054C
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
Aruba 100M SFP LC FX 2km MMF Transceiver J9054D
NOTE 2 The following Transceivers install into this Switch:
HPE X132 10G SFP+ LC ER Transceiver J9153A
HPE X132 10G SFP+ LC SR Transceiver J9150A
HPE X132 10G SFP+ LC LR Transceiver J9151A

## Configuration

| Aruba 10G SFP+ LC SR 300m OM3 MMF Transceiver | J9150D |
| :--- | :--- |
| Aruba 10G SFP+ LC LR 10km SMF Transceiver | J9151D |
| 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 |
| HPE X242 10G SFP+ to SFP+ 1m Direct Attach Copper Cable | J9281B |
| HPE X242 10G SFP+ to SFP+ 3m Direct Attach Copper Cable | J9283B |

NOTE 3 Localization required on orders without \#B2B, \#B2C or \#B2E options.
NOTE 4 TAA Switch Chassis are available in the US, UK, Israel, Vietnam, South Korea, India and Taiwan only.

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)
\#AC3 - No Power Cord

## Rack Level Integration CTO Models

Aruba 2930F 24G 4SFP+ Switch

- 24 RJ-45 autosensing 10/100/1000 ports
- 4 SFP/SFP+ 1G/10G ports
- min=0 $\backslash$ max=4 SFP/SFP+ Transceivers
- 1 U - Height

PDU Cable NA/MEX/TW/JP
JL253A\#B2B

- C15 PDU Jumper Cord (NA/MEX/TW/JP)

PDU Cable ROW
JL253A\#B2C

- C15 PDU Jumper Cord (ROW)

High Volt Switch to Wall Power Cord
JL253A\#B2E

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

Aruba 2930F 48G 4SFP+ Switch

- 48 RJ-45 autosensing 10/100/1000 ports

JL254A

- 4 SFP/SFP+1G/10G ports
- min=0 $\backslash$ max=4 SFP/SFP+ Transceivers
- 1U-Height


## PDU Cable NA/MEX/TW/JP

JL254A\#B2B

- C15 PDU Jumper Cord (NA/MEX/TW/JP)

PDU Cable ROW
JL254A\#B2C

- C15 PDU Jumper Cord (ROW)


## Configuration

High Volt Switch to Wall Power Cord
JL254A\#B2E

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

Aruba 2930F 24G PoE+ 4SFP+ Switch

- 24 RJ-45 PoE+ autosensing 10/100/1000 ports
- 4 SFP/SFP+ 1G/10G ports

JL255A

- min=0 $\backslash$ max=4 SFP/SFP+ Transceivers
- 1 U - Height


## PDU Cable NA/MEX/TW/JP

JL255A\#B2B

- C15 PDU Jumper Cord (NA/MEX/TW/JP)


## PDU Cable ROW

JL255A\#B2C

- C15 PDU Jumper Cord (ROW)

High Volt Switch to Wall Power Cord
JL255A\#B2E

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

Aruba 2930F 48G PoE+ 4SFP+ Switch

- 48 RJ-45 PoE+ autosensing 10/100/1000 ports
- 4 SFP/SFP+1G/10G ports

See Configuration

- min=0 $\backslash$ max=4 SFP/SFP+ Transceivers
- 1 U - Height


## PDU Cable NA/MEX/TW/JP

JL256A\#B2B

- C15 PDU Jumper Cord (NA/MEX/TW/JP)


## PDU Cable ROW

JL256A\#B2C

- C15 PDU Jumper Cord (ROW)

High Volt Switch to Wall Power Cord
JL256A\#B2E

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

Aruba 2930F 24G 4SFP Switch

- 24 RJ-45 autosensing 10/100/1000 ports
- 4 SFP 1G ports

See Configuration

- min=0 $\backslash \backslash \max =4$ SFP Transceivers
- 1U - Height


## PDU Cable NA/MEX/TW/JP

JL259A\#B2B

- C15 PDU Jumper Cord (NA/MEX/TW/JP)

PDU Cable ROW
JL259A\#B2C

- C15 PDU Jumper Cord (ROW)

High Volt Switch to Wall Power Cord
JL259A\#B2E

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

Aruba 2930F 48G PoE+ 4SFP 740W Switch

## Configuration

- 48 RJ-45 autosensing 10/100/1000 ports

See Configuration
NOTE: 1, 3

- 4 SFP 1G ports
- min=0 $\backslash \backslash$ max=4 SFP Transceivers
- 1 U - Height


## PDU Cable NA/MEX/TW/JP

JL557A\#B2B

- C15 PDU Jumper Cord (NA/MEX/TW/JP)


## PDU Cable ROW

JL557A\#B2C

- C15 PDU Jumper Cord (ROW)

High Volt Switch to Wall Power Cord
JL557A\#B2E

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

No Power Cord
JL557A\#AC3

- No Localized Power Cord Selected

Aruba 2930F 48G 4SFP Switch

- 48 RJ-45 autosensing 10/100/1000 ports
- 4 SFP 1G ports

JL260A
See Configuration
NOTE: 1, 3, 4, 5

- min=0 $\backslash \backslash$ max=4 SFP Transceivers
- 1 U - Height


## PDU Cable NA/MEX/TW/JP

JL260A\#B2B

- C15 PDU Jumper Cord (NA/MEX/TW/JP)


## PDU Cable ROW

JL260A\#B2C

- C15 PDU Jumper Cord (ROW)

High Volt Switch to Wall Power Cord
JL260A\#B2E

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

Aruba 2930F 24G PoE+ 4SFP Switch

- 24 RJ-45 PoE+ autosensing 10/100/1000 ports
- 4 SFP 1G ports

JL261A
See Configuration
NOTE: 1, 3, 4, 5

- min=0 <br> max=4 SFP Transceivers
- 1 U - Height


## PDU Cable NA/MEX/TW/JP

JL261A\#B2B

- C15 PDU Jumper Cord (NA/MEX/TW/JP)

PDU Cable ROW
JL261A\#B2C

- C15 PDU Jumper Cord (ROW)

High Volt Switch to Wall Power Cord
JL261A\#B2E

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

Aruba 2930F 48G PoE+4SFP+740W Switch
JL558A

## Configuration

- 48 RJ-45 PoE+ autosensing 10/100/1000 ports

See Configuration
NOTE: 1, 3

- 4 SFP 1G ports
- min=0 $\backslash \backslash$ max=4 SFP Transceivers
- 1 U - Height


## PDU Cable NA/MEX/TW/JP

JL558A\#B2B

- C15 PDU Jumper Cord (NA/MEX/TW/JP)


## PDU Cable ROW

JL558A\#B2C

- C15 PDU Jumper Cord (ROW)

High Volt Switch to Wall Power Cord
JL558A\#B2E

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

No Power Cord
JL558A\#AC3

- No Localized Power Cord Selected

Aruba 2930F 48G PoE+ 4SFP Switch

- 48 RJ-45 PoE+ autosensing 10/100/1000 ports
- 4 SFP 1G ports
- min=0 <br> max=4 SFP Transceivers
- 1 U - Height


## PDU Cable NA/MEX/TW/JP

JL262A\#B2B

- C15 PDU Jumper Cord (NA/MEX/TW/JP)


## PDU Cable ROW

JL262A\#B2C

- C15 PDU Jumper Cord (ROW)

High Volt Switch to Wall Power Cord
JL262A\#B2E

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


## TAA Compliant Chassis

Aruba 2930F 24G PoE+ 4SFP+ TAA-compliant Switch

- 24 RJ-45 PoE+ autosensing 10/100/1000 ports
- 4 SFP/SFP+1G/10G ports
- min=0 $\backslash \backslash \max =4$ SFP/SFP+ Transceivers
- 1 U - Height

PDU Cable NA/MEX/TW/JP
JL263A\#B2B

- C15 PDU Jumper Cord (NA/MEX/TW/JP)

PDU Cable ROW
JL263A\#B2C

- C15 PDU Jumper Cord (ROW)

High Volt Switch to Wall Power Cord
JL263A\#B2E

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

Aruba 2930F 48G PoE+ 4SFP+ 740W TAA-compliant Switch
JL559A

## Configuration

- 48 RJ-45 PoE+ autosensing 10/100/1000 ports
- 4 SFP/SFP+1G/10G ports

See Configuration

- min=0 $\backslash \backslash$ max=4 SFP/SFP+ Transceivers
- 1 U - Height


## PDU Cable NA/MEX/TW/JP

JL559A\#B2B

- C15 PDU Jumper Cord (NA/MEX/TW/JP)


## PDU Cable ROW

JL559A\#B2C

- C15 PDU Jumper Cord (ROW)

High Volt Switch to Wall Power Cord
JL559A\#B2E

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

No Power Cord
JL559A\#AC3

- No Localized Power Cord Selected

Aruba 2930F 48G PoE+ 4SFP+ TAA-compliant Switch

- 48 RJ-45 PoE+ autosensing 10/100/1000 ports
- 4 SFP/SFP+1G/10G ports

JL264A
See Configuration

- min=0 $\backslash \backslash$ max=4 SFP/SFP+ Transceivers
- 1 U - Height


## PDU Cable NA/MEX/TW/JP

JL264A\#B2B

- C15 PDU Jumper Cord (NA/MEX/TW/JP)


## PDU Cable ROW

JL264A\#B2C

- C15 PDU Jumper Cord (ROW)

High Volt Switch to Wall Power Cord
JL264A\#B2E

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


## Configuration Rules:

## NOTE 1 The following Transceivers install into this Chassis

HPE X121 1G SFP LC SX Transceiver J4858C
HPE X121 1G SFP LC LX Transceiver J4859C
HPE X121 1G SFP LC LH Transceiver J4860C
HPE X121 1G SFP RJ45 T Transceiver J8177C
HPE X111 100M SFP LC FX Transceiver J9054C
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
Aruba 100M SFP LC FX 2km MMF Transceiver J9054D
NOTE 2 The following Transceivers install into this Switch:
HPE X132 10G SFP+ LC ER Transceiver J9153A
HPE X132 10G SFP+ LC SR Transceiver J9150A

## Configuration

|  | HPE X132 10G SFP+ LC LR Transceiver | J9151A |
| :---: | :---: | :---: |
|  | Aruba 10G SFP+ LC SR 300m OM3 MMF Transceiver | J9150D |
|  | Aruba 10G SFP+ LC LR 10km SMF Transceiver | J9151D |
|  | 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 |
|  | HPE X242 10G SFP+ to SFP+ 1m Direct Attach Copper Cable | J9281B |
|  | HPE X242 10G SFP+ to SFP+ 3m Direct Attach Copper Cable | J9283B |
| NOTE 3 | If this switch is factory installed in HPE Racks, Then the J9583 CLIC Only - Allow the J9583AZ in all regions. | required |
| NOTE 4 | Localization required on orders without \#B2B, \#B2C, \#B2E optior |  |
| NOTE 5 | If this Switch Chassis is selected for Rack Level Integration, Th to integrate (with \#OD1) to the HPE Rack. | witch Ch |
| NOTE 6 | TAA Switch Chassis are available in the US, UK, Israel, Vietnam Taiwan only. | Korea, |
| Remarks: | Drop down under power supply should offer the following optio Switch/Router/Power Supply to PDU Power Cord - \#B2B in No and Japan or \#B2C ROW. (Watson Default B2B or B2C for Rack Switch/Router/Power Supply to Wall Power Cord - Localized and Box Level CTO) <br> \#AC3 - No Power Cord | sults: <br> ica, Me CTO) atson D |

Enter the following menu selections as integrated to the CTO Model X server above if order is factory built.

## Transceivers

## SFP Transceivers

| HPE X111 100M SFP LC FX Transceiver | J9054C |
| :--- | :--- |
| Aruba 100M SFP LC FX 2km MMF Transceiver | J 9054 D |
| HPE X121 1G SFP LC LH Transceiver | J 4860 C |
| HPE X121 1G SFP LC LX Transceiver | J 4859 C |
| HPE X121 1G SFP LC SX Transceiver | J 4858 C |
| HPE X121 1G SFP RJ45 T Transceiver | J 8177 C |
| Aruba 1G SFP LC SX 500m OM2 MMF Transceiver | J 4858 D |
| Aruba 1G SFP LC LX 10km SMF Transceiver | J 4859 D |
| Aruba 1G SFP LC LH 70km SMF Transceiver | J 4860 D |
| Aruba 1G SFP RJ45 T 100m Cat5e Transceiver | J 8177 D |

## SFP+ Transceivers

| HPE X132 10G SFP+ LC ER Transceiver | J9153A |
| :--- | :--- |
| HPE X132 10G SFP+ LC SR Transceiver | J9150A |
| HPE X132 10G SFP+ LC LR Transceiver | J9151A |
| Aruba 10G SFP+ LC SR 300m OM3 MMF Transceiver | J9150D |

## Configuration

| Aruba 10G SFP+ LC LR 10km SMF Transceiver | J9151D |
| :--- | :--- |
| 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 |
| HPE X242 10G SFP+ to SFP+1m Direct Attach Copper Cable | J9281B |
| HPE X242 10G SFP+ to SFP+ 3m Direct Attach Copper Cable | J9283B |

Cables

## Console Cables

## (std 0 // max 99) User Selection (min 0 // max 99) per switch

Aruba X2C2 RJ45 to DB9 Console Cable JL448A

## Multi-Mode Cables

## (std 0 // max 99) User Selection (min $0 / / \max 99)$ per switch

HPE LC to LC Multi-mode OM3 2-Fiber 0.5m 1-Pack Fiber Optic Cable
HPE LC to LC Multi-mode OM3 2-Fiber 1.0m 1-Pack Fiber Optic Cable
AJ834A
HPE LC to LC Multi-mode OM3 2-Fiber 2.0m 1-Pack Fiber Optic Cable AJ835A

HPE LC to LC Multi-mode OM3 2-Fiber 5.0m 1-Pack Fiber Optic Cable AJ836A

HPE LC to LC Multi-mode OM3 2-Fiber 15.0m 1-Pack Fiber Optic Cable AJ837A

HPE LC to LC Multi-mode OM3 2-Fiber 30.0m 1-Pack Fiber Optic Cable AJ838A

HPE LC to LC Multi-mode OM3 2-Fiber 50.0m 1-Pack Fiber Optic Cable
AJ839A
HPE Premier Flex LC/LC Multi-mode OM4 2 fiber 1m Cable QK732A

HPE Premier Flex LC/LC Multi-mode OM4 2 fiber 2m Cable QK733A

HPE Premier Flex LC/LC Multi-mode OM4 2 fiber 5m Cable
QK734A
HPE Premier Flex LC/LC Multi-mode OM4 2 fiber 15m Cable QK735A

HPE Premier Flex LC/LC Multi-mode OM4 2 fiber 30m Cable
HPE Premier Flex LC/LC Multi-mode OM4 2 fiber 50m Cable

QK736A

QK737A

Switch Enclosure Options

## Configuration

## Mounting Kit

(std 0 // max 1) User Selection (min $0 / / \max 1)$ per switch

| HPE X410 1U Universal 4-post Rackmount Kit | J9583A |
| :--- | :---: |
| See Configuration |  |
| NOTE: 1,2 |  |

Configuration Rules:
NOTE 1 If this Mounting Kit is order with \#0D1 then it integrates to the HPE Universal Rack. (not the switch)

NOTE 2 This Rack Mount Kit is not compatible with JL258A

## Accessories

For JL258A System (std $0 / / \max 1)$ User Selection (min $0 / / \max 1)$ per switch
Aruba 2930F 8-port Cable Guard JL311A
Aruba 2930F 8-port Power Shelf JL312A

Technical Specifications

Aruba 2930F 24G 4SFP+ Switch (JL253A)

| 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) <br> Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only |  |
| :---: | :---: | :---: |
| Additional ports and slots | 1 dual-pers | or USB micro-B) serial console port |
| Physical characteristics | Dimensions | $17.42(\mathrm{w}) \times 7.88(\mathrm{~d}) \times 1.73(\mathrm{~h})$ in $(44.25 \times 20.02 \times 4.39 \mathrm{~cm})$ (1U height) |
|  | Weight | 5.31 lb (2.41 kg) |

Memory and processor Dual Core ARM Coretex A9 @ $1016 \mathrm{MHz}, 1$ GB DDR3 SDRAM; Packet buffer size: 12.38 MB 4.5MB Ingress/7.875MB Egress, 4 GB eMMC
Performance

Electrical characteristics

10 Gbps Latency $<1.6 \mu \mathrm{~s}$ (64-byte packets)
Throughput up to 95.2 Mpps
Switching capacity 128 Gbps
Routing table size $\quad 2,000$ IPv4, 1,000 IPv6 in hardware, 200 OSPF, 256 Static, 10,000 RIP
MAC address table 32768 entries size
Environment Operating $\quad 32^{\circ} \mathrm{F}$ to $113^{\circ} \mathrm{F}\left(0^{\circ} \mathrm{C}\right.$ to $\left.45^{\circ} \mathrm{C}\right)$; up to 5000 Feet, -0 C to temperature
Operating relative humidity

40C (32F to 104F) up to 10000 Feet
$15 \%$ to $95 \%$ @ $104^{\circ} \mathrm{F}\left(40^{\circ} \mathrm{C}\right)$, noncondensing

Nonoperating/Storage $-40^{\circ} \mathrm{F}$ to $158^{\circ} \mathrm{F}\left(-40^{\circ} \mathrm{C}\right.$ to $\left.70^{\circ} \mathrm{C}\right)$; up to 15000 Feet temperature
Nonoperating/Storage 15\% to 95\% @ $149^{\circ} \mathrm{F}\left(65^{\circ} \mathrm{C}\right)$, noncondensing temperature

Acoustic
Airflow direction
Maximum heat dissipation
Voltage
Current
Maximum power 29.3 W
rating
Idle power $\quad 19.5 \mathrm{~W}$
Frequency
Notes
Side-to-side
0.6/0.4 A
$50 / 60 \mathrm{~Hz}$

Power: 49.7 dB, Pressure: 37.1 dB

100 BTU/hr (105.5 kJ/hr)

100-127 / 200-240 VAC, rated

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..

Technical Specifications

| Safety | UL 60950-1, 2nd Edition; EN 60950-1:2006 +A11:2009 +A1:2010 +A12:2011+A2:2013; IEC 60950-1:2005 +A1:2009 +A2:2013; CSA 22.2 No. 60950-1-07 2nd; EN 60825-1:2014 / IEC 60825-1:2014 Class 1 |
| :---: | :---: |
| Emissions | EN 55032:2012/CISPR 32 Class A; FCC CFR 47 Part 15 Class A; VCCI Class A; ICES-003 Class A; CNS 13438 |
| Immunity | Generic EN 55024:2010/CISPR 24 |
|  | ESD IEC 61000-4-2 |
|  | Radiated IEC 61000-4-3 |
|  | EFT/Burst IEC 61000-4-4 |
|  | Surge IEC 61000-4-5 |
|  | Conducted IEC 61000-4-6 |
|  | Power frequency <br> magnetic field$\quad$ IEC 61000-4-8 |
|  | Voltage dips and IEC 61000-4-11 interruptions |
|  | Harmonics IEC/EN 61000-3-2 |
|  | Flicker IEC/EN 61000-3-3 |
| Management | Aruba AirWave Network Management; IMC - Intelligent Management Center; Command-line interface; Web browser; Configuration menu; SNMP manager; Telnet; RMON1; FTP; Out-of-band management (serial RS-232C or micro USB) |
| Services | Refer to the Hewlett Packard Enterprise website at http://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. |


| Aruba 2930F 48G 4SFP+ Switch (JL254A) |  |  |
| :---: | :---: | :---: |
| I/O ports and slots | 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+ 1/10GbE ports; PHY-less |  |
| Additional ports and slots | 1 dual-personality (RJ-45 or USB micro-B) serial console port |  |
| Physical characteristics | Dimensions | $17.42(\mathrm{w}) \times 9.7(\mathrm{~d}) \times 1.73(\mathrm{~h})$ in $(44.25 \times 24.63 \times 4.39 \mathrm{~cm})$ (1U height) |
|  | Weight | $6.83 \mathrm{lb}(3.10 \mathrm{~kg})$ |
| Memory and processor | Dual Core ARM Coretex @ 1016 MHz, 1 GB DDR3 SDRAM; Packet buffer size: 12.38 MB 4.5MB Ingress/7.875MB Egress, 4 GB eMMC |  |
| Performance | 1000 Mb Latency | $<3.8 \mu \mathrm{~s}$ (64-byte packets) |
|  | 10 Gbps Latency | < $1.6 \mu \mathrm{~s}$ (64-byte packets) |
|  | Throughput | up to 112.0 Mpps |
|  | Switching capacity | 176 Gbps |
|  | Routing table size | 2,000 IPv4, 1,000 IPv6 in hardware, 200 OSPF, 256 Static, 10,000 RIP |
|  | MAC address table size | 32768 entries |
| Environment | Operating temperature | $32^{\circ} \mathrm{F}$ to $113^{\circ} \mathrm{F}\left(0^{\circ} \mathrm{C}\right.$ to $\left.45^{\circ} \mathrm{C}\right)$; up to 5000 Feet, -0 C to 40C (32F to 104F) up to 10000 Feet |

Technical Specifications

|  | Operating relative <br>  <br> humidity | 15\% to $95 \%$ @ $104^{\circ} \mathrm{F}\left(40^{\circ} \mathrm{C}\right)$, noncondensing |
| :--- | :--- | :--- |
|  | Nonoperating/Storage $-40^{\circ} \mathrm{F}$ to $158^{\circ} \mathrm{F}\left(-40^{\circ} \mathrm{C}\right.$ to $\left.70^{\circ} \mathrm{C}\right)$; up to 15000 Feet |  |
| temperature |  |  |

Technical Specifications

Aruba 2930F 24G PoE+ 4SFP+ Switch (JL255A)
I/O ports and slots
Additional ports and
slots

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 4 SFP+ 1/10GbE ports; PHY-less
Additional ports and
1 dual-personality (RJ-45 or USB micro-B) serial console port

Physical
characteristics

| Dimensions | $17.42(\mathrm{w}) \times 11.98(\mathrm{~d}) \times 1.73(\mathrm{~h})$ in $(44.25 \times 30.42 \times 4.39 \mathrm{~cm})$ <br> $(1 U$ height $)$ |
| :--- | :--- |
| Weight | $8.6 \mathrm{lb}(3.9 \mathrm{~kg})$ |

Memory and processor Dual Core ARM Coretex @ 1016 MHz, 1 GB DDR3 SDRAM; Packet buffer size:
12.38 MB 4.5 MB Ingress/7.875MB Egress, 4 GB eMMC

Performance

Electrical characteristics

10 Gbps Latency $<1.6 \mu \mathrm{~s}$ (64-byte packets)
Throughput up to 95.2 Mpps
Switching capacity 128 Gbps
Routing table size $\quad 2,000$ IPv4, 1,000 IPv6 in hardware, 200 OSPF, 256 Static, 10,000 RIP
MAC address table 32768 entries
size
Environment Operating $\quad 32^{\circ} \mathrm{F}$ to $113^{\circ} \mathrm{F}\left(0^{\circ} \mathrm{C}\right.$ to $\left.45^{\circ} \mathrm{C}\right)$; up to 5000 Feet, -0 C to temperature
Operating relative 40 C (32F to 104F) up to 10000 Feet
$15 \%$ to $95 \%$ @ $104^{\circ} \mathrm{F}\left(40^{\circ} \mathrm{C}\right)$, noncondensing humidity
Nonoperating/Storage $-40^{\circ} \mathrm{F}$ to $158^{\circ} \mathrm{F}\left(-40^{\circ} \mathrm{C}\right.$ to $\left.70^{\circ} \mathrm{C}\right)$; up to 15000 Feet temperature
Nonoperating/Storage $15 \%$ to $95 \%$ @ $149^{\circ} \mathrm{F}\left(65^{\circ} \mathrm{C}\right)$, noncondensing temperature

Acoustic
Airflow direction
80plus.org
Certification
Maximum heat dissipation
Voltage
Current
Maximum power 445 W
rating
Idle power
PoE power
Frequency
Notes
Silver
4.9/2.4 A
36.8 W
$50 / 60 \mathrm{~Hz}$

Power: 54.1 dB , Pressure: 40.2 dB
Side-to-side
258.0 BTU/hr (272.2 KJ/hr)

100-127 / 200-240 VAC, rated
$370 \mathrm{~W} \mathrm{PoE}+$

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

Technical Specifications

| Safety | UL 60950-1 2nd Edition; EN 60950-1:2006 +A11:2009 +A1:2010 +A12:2011+A2:2013; IEC 60950-1:2005 +A1:2009 +A2:2013; CSA 22.2 No. 60950-1-07 2nd; EN 60825-1:2014 / IEC 60825-1:2014 Class 1 |
| :---: | :---: |
| Emissions | EN 55032:2012/CISPR 32 Class A; FCC CFR 47 Part 15 Class A; VCCI Class A; ICES-003 Class A; CNS 13438 |
| Immunity | Generic EN 55024:2010/CISPR 24 |
|  | ESD IEC 61000-4-2 |
|  | Radiated IEC 61000-4-3 |
|  | EFT/Burst IEC 61000-4-4 |
|  | Surge IEC 61000-4-5 |
|  | Conducted IEC 61000-4-6 |
|  | Power frequency IEC 61000-4-8 magnetic field |
|  | Voltage dips and IEC 61000-4-11 interruptions |
|  | Harmonics IEC/EN 61000-3-2 |
|  | Flicker IEC/EN 61000-3-3 |
| Management | Aruba AirWave Network Management; IMC - Intelligent Management Center; Command-line interface; Web browser; Configuration menu; SNMP manager; Telnet; RMON1; FTP; Out-of-band management (serial RS-232C or micro USB) |
| Services | Refer to the Hewlett Packard Enterprise website at http://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. |

Aruba 2930F 48G PoE+ 4SFP+ Switch (JL256A)
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 4 SFP+ 1/10GbE ports; PHY-less
Additional ports and 1 dual-personality (RJ-45 or USB micro-B) serial console port slots

| Physical <br> characteristics | Dimensions | $17.42(\mathrm{w}) \times 11.98(\mathrm{~d}) \times 1.73(\mathrm{~h})$ in $(44.25 \times 30.42 \times 4.39 \mathrm{~cm})$ <br> $(1 \mathrm{U}$ height) |
| :--- | :--- | :--- |
|  | Weight | $9.83 \mathrm{lb}(4.46 \mathrm{~kg})$ |

Memory and processor Dual Core ARM Coretex @ $1016 \mathrm{MHz}, 1$ GB DDR3 SDRAM; Packet buffer size: 12.38 MB 4.5MB Ingress/7.875MB Egress, 4 GB eMMC

Performance
1000 Mb Latency $\quad<3.8 \mu \mathrm{~s}$ (64-byte packets)
10 Gbps Latency $<1.6 \mu \mathrm{~s}$ (64-byte packets)
Throughput up to 112.0 Mpps
Switching capacity
176 Gbps
Routing table size $\quad 2,000$ IPv4, 1,000 IPv6 in hardware, 200 OSPF, 256
Static, 10,000 RIP

Technical Specifications

|  | MAC address table size | 32768 entries |
| :---: | :---: | :---: |
| Environment | Operating temperature | $32^{\circ} \mathrm{F}$ to $113^{\circ} \mathrm{F}\left(0^{\circ} \mathrm{C}\right.$ to $\left.45^{\circ} \mathrm{C}\right)$; up to 5000 Feet, -0 C to 40C (32F to 104F) up to 10000 Feet |
|  | Operating relative humidity | $15 \%$ to $95 \%$ @ $104^{\circ} \mathrm{F}\left(40^{\circ} \mathrm{C}\right)$, noncondensing |
|  | Nonoperating/Storage $-40^{\circ} \mathrm{F}$ to $158^{\circ} \mathrm{F}\left(-40^{\circ} \mathrm{C}\right.$ to $\left.70^{\circ} \mathrm{C}\right)$; up to 15000 Feet temperature |  |
|  | Nonoperating/Storage $15 \%$ to $95 \%$ @ $149^{\circ} \mathrm{F}\left(65^{\circ} \mathrm{C}\right)$, noncondensing temperature |  |
|  | Acoustic | Power: 55.7 dB , Pressure: 41.7 dB |
|  | Airflow direction | Side-to-side |
| Electrical characteristics | 80plus.org Certification | Silver |
|  | Maximum heat dissipation | 293.0 BTU/hr (309.1 kJ/hr) |
|  | Voltage | 100-127 / 200-240 VAC, rated |
|  | Current | 5.1/2.5 A |
|  | Maximum power rating | 459 W |
|  | Idle power | 48.6 W |
|  | PoE power | 370 W PoE+ |
|  | Frequency | $50 / 60 \mathrm{~Hz}$ |
|  | Notes | Idle power is the actual power consumption of the device with no ports connected.. <br> Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), $100 \%$ traffic, all ports plugged in, and all modules populated.. |
| Safety | UL 60950-1 2nd Edition; EN 60950-1:2006 +A11:2009 +A1:2010 +A12:2011+A2:2013; IEC 60950-1:2005 +A1:2009 +A2:2013; CSA 22.2 No. 60950-1-07 2nd; EN 60825-1:2014 / IEC 60825-1:2014 Class 1 |  |
| Emissions | EN 55032:2012/CISPR 32 Class A; FCC CFR 47 Part 15 Class A; VCCI Class A; ICES-003 Class A; CNS 13438 |  |
| Immunity | Generic | EN 55024:2010/CISPR 24 |
|  | ESD | IEC 61000-4-2 |
|  | Radiated | IEC 61000-4-3 |
|  | EFT/Burst | IEC 61000-4-4 |
|  | Surge | IEC 61000-4-5 |
|  | Conducted | IEC 61000-4-6 |
|  | Power frequency magnetic field | IEC 61000-4-8 |
|  | Voltage dips and interruptions | IEC 61000-4-11 |
|  | Harmonics | IEC/EN 61000-3-2 |

Technical Specifications

|  | Flicker $\quad$ IEC/EN 61000-3-3 |
| :--- | :--- |
| Management | Aruba AirWave Network Management; IMC - Intelligent Management Center; |
|  | Command-line interface; Web browser; Configuration menu; SNMP manager; |
| Services | Telnet; RMON1; FTP; Out-of-band management (serial RS-232C or micro USB) <br> Refer to the Hewett Packard Enterprise website at <br> http://www.hpe.com/networking/services for details on the service-level descriptions and <br> product numbers. For details about services and response times in your area, please contact <br> your local Hewlett Packard Enterprise sales office. |

Aruba 2930F 8G PoE+ 2SFP+ Switch (JL258A)
I/O ports and slots $\quad 8$ 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 2 SFP+ 1/10GbE ports; PHY-less
Additional ports and 1 dual-personality (RJ-45 or USB micro-B) serial console port slots
Physical
characteristics

Dimensions $\quad 10(\mathrm{w}) \times 10(\mathrm{~d}) \times 1.73(\mathrm{~h})$ in $(25.4 \times 25.4 \times 4.39 \mathrm{~cm})(1 \mathrm{U}$ height)
Weight $\quad 4.41 \mathrm{lb}(2.0 \mathrm{~kg})$
Memory and processor Dual Core ARM Coretex A9 @ $1016 \mathrm{MHz}, 1$ GB DDR3 SDRAM; Packet buffer size: 12.38 MB 4.5MB Ingress/7.785 Egress, 4 GB eMMC

| Performance | 1000 Mb Latency | $<3.8 \mu \mathrm{~s}$ (64-byte packets) |
| :---: | :---: | :---: |
|  | 10 Gbps Latency | < $1.6 \mu \mathrm{~s}$ (64-byte packets) |
|  | Throughput | up to 41.7 Mpps |
|  | Switching capacity | 56 Gbps |
|  | Routing table size | 2,000 IPv4, 1,000 IPv6 in hardware, 200 OSPF, 256 Static, 10,000 RIP |
|  | MAC address table size | 32768 entries |
| Environment | Operating temperature | $32^{\circ} \mathrm{F}$ to $113^{\circ} \mathrm{F}\left(0^{\circ} \mathrm{C}\right.$ to $\left.45^{\circ} \mathrm{C}\right)$; up to 5000 Feet, -0 C to 40C ( 32 F to 104F) up to 10000 Feet |
|  | Operating relative humidity | $15 \%$ to $95 \%$ @ $104^{\circ} \mathrm{F}\left(40^{\circ} \mathrm{C}\right)$, noncondensing |
|  | Nonoperating/Stora temperature | $-40^{\circ} \mathrm{F}$ to $158^{\circ} \mathrm{F}\left(-40^{\circ} \mathrm{C}\right.$ to $\left.70^{\circ} \mathrm{C}\right)$; up to 15000 Feet |
|  | Nonoperating/Stora temperature | $15 \%$ to $95 \%$ @ $149^{\circ} \mathrm{F}\left(65^{\circ} \mathrm{C}\right)$, noncondensing |
|  | Acoustic | Power: 0 dB , Pressure: 0 dB Fanless |
| Electrical characteristics | Description | Power supply meets DoE VI certification. |
|  | Maximum heat dissipation | 58.6 BTU/hr ( $61.8 \mathrm{~kJ} / \mathrm{hr}$ ) |
|  | Voltage | 90-264 VAC, rated |
|  | Current | 2.6 A |
|  | Maximum power rating | 155 W |
|  | PoE power | 125 W PoE+ |
|  | Frequency | $50 / 60 \mathrm{~Hz}$ |

Technical Specifications

|  | Notes | Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100\% traffic, all ports plugged in, and all modules populated. <br> PoE Power is the power supplied by the internal power supply, it is dependent on the type and quantity of power supplies and may be supplemented with the use of a External Power Supply (EPS). |
| :---: | :---: | :---: |
| Safety | UL 60950-1 2nd Edition; EN 60950-1:2006 +A11:2009 +A1:2010 +A12:2011+A2:2013; IEC 60950-1:2005 +A1:2009 +A2:2013; CSA 22.2 No. 60950-1-07 2nd; EN 60825-1:2014 / IEC 60825-1:2014 Class 1 |  |
| Emissions | EN 55032:2012/CISPR 32 Class A; FCC CFR 47 Part 15 Class A; VCCI Class A; ICES-003 Class A; CNS 13438 |  |
| Immunity | Generic | EN 55024:2010/CISPR 24 |
|  | ESD | IEC 61000-4-2 |
|  | Radiated | IEC 61000-4-3 |
|  | EFT/Burst | IEC 61000-4-4 |
|  | Surge | IEC 61000-4-5 |
|  | Conducted | IEC 61000-4-6 |
|  | Power frequency magnetic field | IEC 61000-4-8 |
|  | Voltage dips and interruptions | IEC 61000-4-11 |
|  | Harmonics | IEC/EN 61000-3-2 |
|  | Flicker | IEC/EN 61000-3-3 |
| Management | Aruba AirWave Network Management; IMC - Intelligent Management Center; Command-line interface; Web browser; Configuration menu; SNMP manager; Telnet; RMON1; FTP; Out-of-band management (serial RS-232C or micro USB) |  |
| Services | Refer to the Hewlett http://www.hpe.com product numbers. For your local Hewlett Pa | rd Enterprise website at <br> working/services for details on the service-level descriptions and ils about services and response times in your area, please contact Enterprise sales office. |

Aruba 2930F 24G 4SFP Switch (JL259A)
I/O ports and slots $\quad 24$ 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
Additional ports and 1 dual-personality (RJ-45 or USB micro-B) serial console port slots

| Physical <br> characteristics | Dimensions | $17.42(\mathrm{w}) \times 7.88(\mathrm{~d}) \times 1.73(\mathrm{~h})$ in $(44.25 \times 20.02 \times 4.39 \mathrm{~cm})$ <br> $(1 U$ height $)$ |
| :--- | :--- | :--- |
|  | Weight | $5.31 \mathrm{lb}(2.41 \mathrm{~kg})$ |

Technical Specifications

|  | Switching capacity | 56 Gbps |
| :---: | :---: | :---: |
|  | Routing table size | 2,000 IPv4, 1,000 IPv6 in hardware, 200 OSPF, 256 Static, 10,000 RIP |
|  | MAC address table size | 32768 entries |
| Environment | Operating temperature | $32^{\circ} \mathrm{F}$ to $113^{\circ} \mathrm{F}\left(0^{\circ} \mathrm{C}\right.$ to $\left.45^{\circ} \mathrm{C}\right)$; up to 5000 Feet, -0 C to 40C (32F to 104F) up to 10000 Feet |
|  | Operating relative humidity | $15 \%$ to $95 \%$ @ $104^{\circ} \mathrm{F}\left(40^{\circ} \mathrm{C}\right)$, noncondensing |
|  | Nonoperating/Storag temperature | $-40^{\circ} \mathrm{F}$ to $158^{\circ} \mathrm{F}\left(-40^{\circ} \mathrm{C}\right.$ to $\left.70^{\circ} \mathrm{C}\right)$; up to 15000 Feet |
|  | Nonoperating/Storag temperature | $15 \%$ to $95 \%$ @ $149^{\circ} \mathrm{F}\left(65^{\circ} \mathrm{C}\right)$, noncondensing |
|  | Acoustic | Power: 49.7 dB , Pressure: 37.1 dB |
|  | Airflow direction | Side-to-side |
| Electrical characteristics | Maximum heat dissipation | $100 \mathrm{BTU} / \mathrm{hr}(105.5 \mathrm{~kJ} / \mathrm{hr})$ |
|  | Voltage | 100-127/200-240 VAC, rated |
|  | Current | 0.6/0.4 A |
|  | Maximum power rating | 29.3 W |
|  | Idle power | 19.5 W |
|  | Frequency | $50 / 60 \mathrm{~Hz}$ |
|  | Notes | Idle power is the actual power consumption of the device with no ports connected. <br> Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), $100 \%$ traffic, all ports plugged in, and all modules populated. |
| Safety | UL 60950-1 2nd Edition; EN 60950-1:2006 +A11:2009 +A1:2010 +A12:2011+A2:2013; IEC 60950-1:2005 +A1:2009 +A2:2013; CSA 22.2 No. 60950-1-07 2nd; EN 60825-1:2014 / IEC 60825-1:2014 Class 1 |  |
| Emissions | EN 55032:2012/CISPR 32 Class A; FCC CFR 47 Part 15 Class A; VCCI Class A; ICES-003 Class A; CNS 13438 |  |
| Immunity | Generic | EN 55024:2010/CISPR 24 |
|  | ESD | IEC 61000-4-2 |
|  | Radiated | IEC 61000-4-3 |
|  | EFT/Burst | IEC 61000-4-4 |
|  | Surge | IEC 61000-4-5 |
|  | Conducted | IEC 61000-4-6 |
|  | Power frequency magnetic field | IEC 61000-4-8 |
|  | Voltage dips and interruptions | IEC 61000-4-11 |
|  | Harmonics | IEC/EN 61000-3-2 |

## Technical Specifications

Flicker
IEC/EN 61000-3-3

| Management | Aruba AirWave Network Management; IMC - Intelligent Management Center; |
| :--- | :--- |
|  | Command-line interface; Web browser; Configuration menu; SNMP manager; |
| Services | Telnet; RMON1; FTP; Out-of-band management (serial RS-232C or micro USB) |
|  | Refer to the Hewlett Packard Enterprise website at |
|  | httt: $/ /$ www.hpe.com/networking services for details on the service-level descriptions and <br> product numbers. For details about services and response times in your area, please contact <br> your local Hewlett Packard Enterprise sales office. |

Aruba 2930F 48G 4SFP Switch (JL260A)

| I/O ports and slots | $\begin{array}{l}\text { 48 RJ-45 autosensing 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE }\end{array}$ |
| :--- | :--- | :--- |
|  | 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T); Duplex: 10BASE- |
|  | T/100BASE-TX: half or full; 1000BASE-T: full only | 12.38 MB 4.5MB Ingress/7.875MB Egress, 4 GB eMMC

Performance
$\mathbf{1 0 0 0} \mathbf{~ M b}$ Latency $\quad<3.8 \mu \mathrm{~s}$ (64-byte packets)
Throughput up to 77.4 Mpps

Electrical characteristics

Switching capacity
Routing table size $\quad 2,000$ IPv4, 1,000 IPv6 in hardware, 200 OSPF, 256
Static, 10,000 RIP
MAC address table 32768 entries
size

| Environment | Operating temperature | $32^{\circ} \mathrm{F}$ to $113^{\circ} \mathrm{F}\left(0^{\circ} \mathrm{C}\right.$ to $\left.45^{\circ} \mathrm{C}\right)$; up to 5000 Feet, -0 C to 40 C ( 32 F to 104F) up to 10000 Feet |
| :---: | :---: | :---: |
|  | Operating relative humidity | $15 \%$ to 95\% @ $104^{\circ} \mathrm{F}\left(40^{\circ} \mathrm{C}\right)$, noncondensing |
|  | Nonoperating/Storage temperature | $-40^{\circ} \mathrm{F}$ to $158^{\circ} \mathrm{F}\left(-40^{\circ} \mathrm{C}\right.$ to $\left.70^{\circ} \mathrm{C}\right)$; up to 15000 Feet |
|  | Nonoperating/Storage temperature | 15\% to 95\% @ $149^{\circ} \mathrm{F}\left(65^{\circ} \mathrm{C}\right)$, noncondensing |
|  | Acoustic | Power: 54.1 dB , Pressure: 40.2 dB |
|  | Airflow direction | Side-to-side |
| Electrical characteristics | Maximum heat dissipation | 100.0 BTU/hr ( $105.5 \mathrm{~kJ} / \mathrm{hr}$ ) |
|  | Voltage | 100-127 / 200-240 VAC, rated |
|  | Current | 0.9/0.6 A |
|  | Maximum power rating | 46.6 W |
|  | Idle power | 32.7 W |
|  | Frequency | $50 / 60 \mathrm{~Hz}$ |

Notes Idle power is the actual power consumption of the device

Technical Specifications
$\left.\begin{array}{ll} & \begin{array}{l}\text { with no ports connected. } \\ \text { Maximum power rating and maximum heat dissipation are } \\ \text { the worst-case theoretical maximum numbers provided }\end{array} \\ \text { for planning the infrastructure with fully loaded PoE (if } \\ \text { equipped), 100\% traffic, all ports plugged in, and all } \\ \text { modules populated. }\end{array}\right]$

Aruba 2930F 24G PoE+ 4SFP Switch (JL261A)
I/O ports and slots $\quad 24$ 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 4 SFP
Additional ports and 1 dual-personality (RJ-45 or USB micro-B) serial console port slots

| Physical <br> characteristics | Dimensions | $17.42(\mathrm{w}) \times 11.98(\mathrm{~d}) \times 1.73(\mathrm{~h})$ in $(44.25 \times 30.42 \times 4.39 \mathrm{~cm})$ <br> $(1 U \mathrm{height)}$ |
| :--- | :--- | :--- |
|  | Weight | $8.6 \mathrm{lb}(3.9 \mathrm{~kg})$ |

Technical Specifications

|  | Routing table size | 2,000 IPv4, 1,000 IPv6 in hardware, 200 OSPF, 256 Static, 10,000 RIP |
| :---: | :---: | :---: |
|  | MAC address table size | 32768 entries |
| Environment | Operating temperature | $32^{\circ} \mathrm{F}$ to $113^{\circ} \mathrm{F}\left(0^{\circ} \mathrm{C}\right.$ to $\left.45^{\circ} \mathrm{C}\right)$; up to 5000 Feet, -0 C to 40C (32F to 104F) up to 10000 Feet |
|  | Operating relative humidity | $15 \%$ to $95 \%$ @ $104^{\circ} \mathrm{F}\left(40^{\circ} \mathrm{C}\right)$, noncondensing |
|  | Nonoperating/Stora temperature | $-40^{\circ} \mathrm{F}$ to $158^{\circ} \mathrm{F}\left(-40^{\circ} \mathrm{C}\right.$ to $\left.70^{\circ} \mathrm{C}\right)$; up to 15000 Feet |
|  | Nonoperating/Stora temperature | $15 \%$ to $95 \%$ @ $149^{\circ} \mathrm{F}\left(65^{\circ} \mathrm{C}\right)$ |
|  | Acoustic | Power: 54.1 dB , Pressure: 40.6 dB |
|  | Airflow direction | Side-to-side |
| Electrical characteristics | 80plus.org Certification | Silver |
|  | Maximum heat dissipation | 258.0 BTU/hr (272.2 kJ/hr) |
|  | Voltage | 100-127 / 200-240 VAC, rated |
|  | Current | 4.9/2.4 A |
|  | Maximum power rating | 445 W |
|  | Idle power | 36.8 W |
|  | PoE power | 370 W PoE+ |
|  | Frequency | $50 / 60 \mathrm{~Hz}$ |
|  | Notes | Idle power is the actual power consumption of the device with no ports connected. <br> Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), $100 \%$ traffic, all ports plugged in, and all modules populated. |
| Safety | UL 60950-1 2nd Edition; EN 60950-1:2006 +A11:2009 +A1:2010 <br> +A12:2011+A2:2013; IEC 60950-1:2005 +A1:2009 +A2:2013; CSA 22.2 No. 60950-1-07 2nd; EN 60825-1:2014 / IEC 60825-1:2014 Class 1 |  |
| Emissions | EN 55032:2012/CISPR 32 Class A; FCC CFR 47 Part 15 Class A; VCCI Class A; ICES-003 Class A; CNS 13438 |  |
| Immunity | Generic | EN 55024:2010/CISPR 24 |
|  | ESD | IEC 61000-4-2: |
|  | Radiated | IEC 61000-4-3 |
|  | EFT/Burst | IEC 61000-4-4 |
|  | Surge | IEC 61000-4-5 |
|  | Conducted | IEC 61000-4-6 |
|  | Power frequency magnetic field | IEC 61000-4-8 |
|  | Voltage dips and interruptions | IEC 61000-4-11 |

Technical Specifications

|  | Harmonics | IEC/EN 61000-3-2 |
| :--- | :--- | :--- |
|  | Flicker | IEC/EN $61000-3-3$ |

Technical Specifications

|  | Idle power | 48.6 W |
| :---: | :---: | :---: |
|  | PoE power | $370 \mathrm{~W} \mathrm{PoE+}$ |
|  | Frequency | $50 / 60 \mathrm{~Hz}$ |
|  | Notes | Idle power is the actual power consumption of the device with no ports connected. <br> Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), $100 \%$ traffic, all ports plugged in, and all modules populated. |
| Safety | UL 60950-1 2nd Edition; EN 60950-1:2006 +A11:2009 +A1:2010 +A12:2011+A2:2013; IEC 60950-1:2005 +A1:2009 +A2:2013; CSA 22.2 No. 60950-1-07 2nd; EN 60825-1:2014 / IEC 60825-1:2014 Class 1 |  |
| Emissions | EN 55032:2012/CISPR 32 Class A; FCC CFR 47 Part 15 Class A; VCCI Class A; ICES-003 Class A; CNS 13438 |  |
| Immunity | Generic | EN 55024:2010/CISPR 24 |
|  | ESD | IEC 61000-4-2 |
|  | Radiated | IEC 61000-4-3 |
|  | EFT/Burst | IEC 61000-4-4 |
|  | Surge | IEC 61000-4-5 |
|  | Conducted | IEC 61000-4-6 |
|  | Power frequency magnetic field | IEC 61000-4-8 |
|  | Voltage dips and interruptions | IEC 61000-4-11 |
|  | Harmonics | IEC/EN 61000-3-2 |
|  | Flicker | IEC/EN 61000-3-3 |
| Management | Aruba AirWave Network Management; IMC - Intelligent Management Center; Command-line interface; Web browser; Configuration menu; SNMP manager; Telnet; RMON1; FTP; Out-of-band management (serial RS-232C or micro USB) |  |
| Services | Refer to the Hewlett Packard Enterprise website at http://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. |  |

Aruba 2930F 24G PoE+ 4SFP+ TAA-compliant Switch (JL263A)
I/O ports and slots $\quad 24$ RJ-45 autosensing 10/100/1000 PoE+ ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASETX, IEEE 802.3ab Type 1000BASE-T, IEEE 802.3at PoE+); Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only 4 SFP+ 1/10GbE ports; PHY-less
Additional ports and 1 dual-personality (RJ-45 or USB micro-B) serial console port slots

| Physical  <br> characteristics Dimensions | $17.42(\mathrm{w}) \times 11.98(\mathrm{~d}) \times 1.73(\mathrm{~h})$ in. $(44.25 \times 30.42 \times 4.39$ <br> $\mathrm{cm})(1 \mathrm{U}$ height) |  |
| :--- | :--- | :--- |
|  | Weight | $8.6 \mathrm{lb}(3.9 \mathrm{~kg})$ |

Aruba 2930F Switch Series
Technical Specifications

| Performance | 1000 Mb Latency | $<3.8$ ¢ (64-byte packets) |
| :---: | :---: | :---: |
|  | 10 Gbps Latency | < $1.6 \mu \mathrm{~s}$ (64-byte packets) |
|  | Throughput | Up to 95.2 Mpps |
|  | Switching capacity | 128 Gbps |
|  | Routing table size | 2,000 IPv4, 1,000 IPv6 in hardware, 200 OSPF, 256 Static, 10,000 RIP |
|  | MAC address table size | 32,768 entries |
| Environment | Operating temperature | $32^{\circ} \mathrm{F}$ to $113^{\circ} \mathrm{F}\left(0^{\circ} \mathrm{C}\right.$ to $\left.45^{\circ} \mathrm{C}\right)$; up to 5000 Feet, $-0^{\circ} \mathrm{C}$ to $40^{\circ} \mathrm{C}\left(32^{\circ} \mathrm{F}\right.$ to $\left.104^{\circ} \mathrm{F}\right)$ up to 10000 Feet |
|  | Operating relative humidity | $15 \%$ to $95 \%$ @ $104^{\circ} \mathrm{F}\left(40^{\circ} \mathrm{C}\right)$, noncondensing |
|  | Nonoperating/Stora temperature | $-40^{\circ} \mathrm{F}$ to $158^{\circ} \mathrm{F}\left(-40^{\circ} \mathrm{C}\right.$ to $\left.70^{\circ} \mathrm{C}\right)$; up to 15000 Feet |
|  | Nonoperating/Stora temperature | $15 \%$ to $95 \%$ @ $149^{\circ} \mathrm{F}\left(65^{\circ} \mathrm{C}\right)$ |
|  | Acoustic | Power: 54.1 dB , Pressure: 40.6 dB |
|  | Airflow direction | Side-to-side |
| Electrical characteristics | 80plus.org Certification | Silver |
|  | Maximum heat dissipation | 258.0 BTU/hr (272.2kJ/hr) |
|  | Voltage | 100-127 / 200-240 VAC, rated |
|  | Current | 4.9/2.4 A |
|  | Maximum power rating | 445 W |
|  | Idle power | 36.8 W |
|  | PoE power | 370 W PoE+ |
|  | Frequency | $50 / 60 \mathrm{~Hz}$ |
|  | Notes | Idle power is the actual power consumption of the device with no ports connected. <br> Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), $100 \%$ traffic, all ports plugged in, and all modules populated. |
| Safety | UL 69050-1: 2nd Edition; EN 60950-1:2006 +A11:2009 +A1:2010 +A12:2011+A2:2013; IEC 60950-1:2005 +A1:2009 +A2:2013; CSA 22.2 No. 60950-1-07 2nd; EN 60825-1:2014 / IEC 60825-1:2014 Class 1 |  |
| Emissions | EN 55032:2012/CISPR 32 Class A; FCC CFR 47 Part 15 Class A; VCCI Class A; ICES-003 Class A; CNS 13438 |  |
| Immunity | Generic | EN 55024:2010/CISPR 24 |
|  | ESD | IEC 61000-4-2 |
|  | Radiated | IEC 61000-4-3 |
|  | EFT/Burst | IEC 61000-4-4 |
|  | Surge | IEC 61000-4-5 |

Technical Specifications

|  | Conducted | IEC 61000-4-6 |
| :---: | :---: | :---: |
|  | Power frequency magnetic field | IEC 61000-4-8 |
|  | Voltage dips and interruptions | IEC 61000-4-11 |
|  | Harmonics | IEC/EN 61000-3-2 |
|  | Flicker | IEC/EN 61000-3-3 |
| Management | Aruba AirWave Net Command-line inte Telnet; RMON1; F | Management; IMC ; Web browser; Configu Uut-of-band managem |
| Services | Refer to the Hewlett http://www.hpe.com product numbers. For your local Hewlett Pack | ard Enterprise website a working/services for d ils about services and $r$ Enterprise sales office |

Aruba 2930F 48G PoE+ 4SFP+ TAA-compliant Switch (JL264A)
I/O ports and slots
Additional ports and
slots

48 RJ-45 autosensing 10/100/1000 PoE+ ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASETX, IEEE 802.3ab Type 1000BASE-T, IEEE 802.3at PoE+); Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only 4 SFP+ 1/10GbE ports; PHY-less
Additional ports and 1 dual-personality (RJ-45 or USB micro-B) serial console port

| Physical characteristics | Dimensions | $17.42(\mathrm{w}) \times 11.98(\mathrm{~d}) \times 1.73(\mathrm{~h}) \text { in. }(44.25 \times 30.42 \times 4.39$ $\mathrm{cm})(1 \cup \text { height) }$ |
| :---: | :---: | :---: |
|  | Weight | $9.83 \mathrm{lb}(4.46 \mathrm{~kg})$ |
| Memory and processor | Dual Core ARM® Cortex A9 @ 1016 MHz, 1 GB DDR3 SDRAM; Packet buffer size: 12.38 MB; 4.5 MB Ingress/7.785 MB Egress, 4 GB eMMC |  |
| Performance | 1000 Mb Latency | $<3.8$ [ (64-byte packets) |
|  | 10 Gbps Latency | < $1.6 \mu \mathrm{~s}$ (64-byte packets) |
|  | Throughput | Up to 112.0 Mpps |
|  | Switching capacity | 176 Gbps |
|  | Routing table size | 2,000 IPv4, 1,000 IPv6 in hardware, 200 OSPF, 256 Static, 10,000 RIP |
|  | MAC address table size | 32,768 entries |
| Environment | Operating temperature | $32^{\circ} \mathrm{F}$ to $113^{\circ} \mathrm{F}\left(0^{\circ} \mathrm{C}\right.$ to $\left.45^{\circ} \mathrm{C}\right)$; up to 5000 Feet, $-0^{\circ} \mathrm{C}$ to $40^{\circ} \mathrm{C}\left(32^{\circ} \mathrm{F}\right.$ to $\left.104^{\circ} \mathrm{F}\right)$ up to 10000 Feet |
|  | Operating relative humidity | $15 \%$ to $95 \%$ @ $104^{\circ} \mathrm{F}\left(40^{\circ} \mathrm{C}\right)$, noncondensing |
|  | Nonoperating/Stora temperature | $-40^{\circ} \mathrm{F}$ to $158^{\circ} \mathrm{F}\left(-40^{\circ} \mathrm{C}\right.$ to $\left.70^{\circ} \mathrm{C}\right)$; up to 15000 Feet |
|  | Nonoperating/Stora temperature | $15 \%$ to $95 \%$ @ $149^{\circ} \mathrm{F}\left(65^{\circ} \mathrm{C}\right)$ |
|  | Acoustic | Power: 55.7 dB , Pressure: 41.7 dB |
|  | Airflow direction | Side-to-side |
| Electrical | 80plus.org | Silver |

Technical Specifications

| characteristics | Certification |  |
| :---: | :---: | :---: |
|  | Maximum heat dissipation | 293.0 BTU/hr (309.1 kJ/hr) |
|  | Voltage | 100-127 / 200-240 VAC, rated |
|  | Current | 5.1/2.5 A |
|  | Maximum power rating | 459 W |
|  | Idle power | 48.6 W |
|  | PoE power | 370 W PoE+ |
|  | Frequency | $50 / 60 \mathrm{~Hz}$ |
|  | Notes | Idle power is the actual power consumption of the device with no ports connected. <br> Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), $100 \%$ traffic, all ports plugged in, and all modules populated. |
| Safety | UL 69050-1: 2nd Edition; EN 60950-1:2006 +A11:2009 +A1:2010 +A12:2011+A2:2013; IEC 60950-1:2005 +A1:2009 +A2:2013; CSA 22.2 No. 60950-1-07 2nd; EN 60825-1:2014 / IEC 60825-1:2014 Class 1 |  |
| Emissions | EN 55032:2012/CISPR 32 Class A; FCC CFR 47 Part 15 Class A; VCCI Class A; ICES-003 Class A; CNS 13438 |  |
| Immunity | Generic | EN 55024:2010/CISPR 24 |
|  | ESD | IEC 61000-4-2 |
|  | Radiated | IEC 61000-4-3 |
|  | EFT/Burst | IEC 61000-4-4 |
|  | Surge | IEC 61000-4-5 |
|  | Conducted | IEC 61000-4-6 |
|  | Power frequency magnetic field | IEC 61000-4-8 |
|  | Voltage dips and interruptions | IEC 61000-4-11 |
|  | Harmonics | IEC/EN 61000-3-2 |
|  | Flicker | IEC/EN 61000-3-3 |
| Management | Aruba AirWave Network Management; IMC - Intelligent Management Center; Command-line interface; Web browser; Configuration menu; SNMP manager; Telnet; RMON1; FTP; Out-of-band management (serial RS-232C or micro USB) |  |
| Services | Refer to the Hewlett Packard Enterprise website at http://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. |  |

Aruba 2930F 48G PoE+ 4SFP 740W Switch (JL557A)

Technical Specifications

| 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 4 SFP 1/10GbE ports; PHY-less |  |
| :---: | :---: | :---: |
| Additional ports and slots | 1 dual-personality (RJ-45 or USB micro-B) serial console port |  |
| Physical characteristics | Dimensions | $17.42(\mathrm{w}) \times 12.77$ (d) $\times 1.73(\mathrm{~h})$ in $(44.25 \times 32.42 \times 4.39 \mathrm{~cm})$ <br> (1U height) |
|  | Weight | $10.56 \mathrm{lb}(4.79 \mathrm{~kg})$ |
| Memory and processor | Dual Core ARM Coretex A9 @ 1016 MHz, 1 GB DDR3 SDRAM; Packet buffer size: 12.38 MB 4.5MB Ingress/7.785 Egress,4 GB eMMC |  |
| Performance | 1000 Mb Latency | $<3.8 \mu \mathrm{~s}$ (64-byte packets) |
|  | Throughput | up to 77.4 Mpps |
|  | Switching capacity | 104 Gbps |
|  | Routing table size | 2,000 IPv4, 1,000 IPv6 in hardware, 200 OSPF, 256 Static, 10,000 RIP |
|  | MAC address table size | 32,768 |
| Environment | Operating temperature | $32^{\circ} \mathrm{F}$ to $113^{\circ} \mathrm{F}\left(0^{\circ} \mathrm{C}\right.$ to $\left.45^{\circ} \mathrm{C}\right)$; up to 5,000 Feet, $0^{\circ} \mathrm{C}$ to $40^{\circ} \mathrm{C}\left(32^{\circ} \mathrm{F}\right.$ to $\left.104^{\circ} \mathrm{F}\right)$ up to 10,000 Feet |
|  | Operating relative humidity | $15 \%$ to $95 \%$ @ $104^{\circ} \mathrm{F}\left(40^{\circ} \mathrm{C}\right)$, noncondensing |
|  | Nonoperating/Storage temperature | $-40^{\circ} \mathrm{F}$ to $158^{\circ} \mathrm{F}\left(-40^{\circ} \mathrm{C}\right.$ to $\left.70^{\circ} \mathrm{C}\right)$; up to 15,000 Feet |
|  | Nonoperating/Storage temperature | $15 \%$ to $95 \%$ @ $149^{\circ} \mathrm{F}\left(65^{\circ} \mathrm{C}\right)$ |
|  | Acoustic (power and pressure) in decibals | Power: 55.1 dB , Pressure: 41.1 dB |
|  | Airflow direction | Side to side |
| Electrical characteristics | 80plus.org Certification | Gold |
|  | Maximum heat dissipation | 420.9 BTU/hr (444.1 kJ/hr) |
|  | Voltage | 100-127 / 200-240 VAC, rated |
|  | Current | 9.2 / 4.9 A |
|  | Maximum power rating | 980W |
|  | Idle power | 49.9W |
|  | PoE power | $740 \mathrm{~W} \mathrm{PoE+}$ |
|  | Frequency | $50 / 60 \mathrm{~Hz}$ |
|  | Notes | Idle power is the actual power consumption of the device with no ports connected. <br> Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if |

Technical Specifications

| Safety |  | equipped), $100 \%$ traffic, all ports plugged in, and all modules populated. |
| :---: | :---: | :---: |
|  | UL 69050-1: 2nd Edition; EN 60950-1:2006 +A11:2009 +A1:2010 +A12:2011+A2:2013; IEC 60950-1:2005 +A1:2009 +A2:2013; CSA 22.2 No. 60950-1-07 2nd; EN 60825-1:2014 / IEC 60825-1:2014 Class 1 |  |
| Emissions | EN 55032:2012/CISPR 32 Class A; FCC CFR 47 Part 15 Class A; VCCI Class A; ICES-003 Class A; CNS 13438 |  |
| Immunity | Generic | EN 55024:2010/CISPR 24 |
|  | ESD | IEC 61000-4-2 |
|  | Radiated | IEC 61000-4-3 |
|  | EFT/Burst | IEC 61000-4-4 |
|  | Surge | IEC 61000-4-5 |
|  | Conducted | IEC 61000-4-6 |
|  | Power frequency magnetic field | IEC 61000-4-8 |
|  | Voltage dips and interruptions | IEC 61000-4-11 |
|  | Harmonics | IEC/EN 61000-3-2 |
|  | Flicker | IEC/EN 61000-3-3 |
| Management | Aruba AirWave Network Management; IMC - Intelligent Management Center; Command-line interface; Web browser; Configuration menu; SNMP manager; Telnet; RMON1; FTP; Out-of-band management (serial RS-232C or micro USB) |  |
| Services | Refer to the Hewlett $P$ http://www.hpe.com product numbers. For your local Hewlett Pac | rd Enterprise website at vorking/services for details on the service-level descriptions and ils about services and response times in your area, please contact Enterprise sales office. |

Aruba 2930F 48G PoE+ 4SFP+ 740W Switch (JL558A)

| 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 4 SFP+ 1/10GbE ports; PHY-less |  |
| :---: | :---: | :---: |
| Additional ports and slots | 1 dual-personality (RJ-45 or USB micro-B) serial console port |  |
| Physical characteristics | Dimensions | $17.42(\mathrm{w}) \times 12.77$ (d) $\times 1.73(\mathrm{~h})$ in $(44.25 \times 32.42 \times 4.39 \mathrm{~cm})$ <br> (1U height) |
|  | Weight | $10.56 \mathrm{lb}(4.79 \mathrm{~kg})$ |

Memory and processor Dual Core ARM Coretex A9 @ 1016 MHz, 1 GB DDR3 SDRAM; Packet buffer size: 12.38 MB 4.5MB Ingress/7.785 Egress,4 GB eMMC
Performance
1000 Mb Latency $<3.8 \mu \mathrm{~s}$ (64-byte packets)
10Gbps latency $<1.6 \mu \mathrm{~s}$ (64-byte packets)
Throughput
up to 112.0 Mpps
Switching capacity
176 Gbps
Routing table size $\quad 2,000$ IPv4, 1,000 IPv6 in hardware, 200 OSPF, 256
Static, 10,000 RIP

Technical Specifications

|  | MAC address table size | 32,768 |
| :---: | :---: | :---: |
| Environment | Operating temperature | $32^{\circ} \mathrm{F}$ to $113^{\circ} \mathrm{F}\left(0^{\circ} \mathrm{C}\right.$ to $\left.45^{\circ} \mathrm{C}\right)$; up to 5,000 Feet, $0^{\circ} \mathrm{C}$ to $40^{\circ} \mathrm{C}\left(32^{\circ} \mathrm{F}\right.$ to $\left.104^{\circ} \mathrm{F}\right)$ up to 10,000 Feet |
|  | Operating relative humidity | 15\% to 95\% @ $104^{\circ} \mathrm{F}\left(40^{\circ} \mathrm{C}\right)$, noncondensing |
|  | Nonoperating/Storage temperature | $-40^{\circ} \mathrm{F}$ to $158^{\circ} \mathrm{F}\left(-40^{\circ} \mathrm{C}\right.$ to $\left.70^{\circ} \mathrm{C}\right)$; up to 15,000 Feet |
|  | Nonoperating/Storage temperature | $15 \%$ to $95 \%$ @ $149^{\circ} \mathrm{F}\left(65^{\circ} \mathrm{C}\right)$ |
|  | Acoustic (power and pressure) in decibals | Power: 55.1 dB , Pressure: 41.1 dB |
|  | Airflow direction | Side to side |
| Electrical characteristics | 80plus.org Certification | Gold |
|  | Maximum heat dissipation | 420.9 BTU/hr (444.1 kJ/hr) |
|  | Voltage | 100-127 / 200-240 VAC, rated |
|  | Current | 9.2 / 4.9 A |
|  | Maximum power rating | 980W |
|  | Idle power | 49.9W |
|  | PoE power | 740 W PoE+ |
|  | Frequency | $50 / 60 \mathrm{~Hz}$ |
|  | Notes | Idle power is the actual power consumption of the device with no ports connected. <br> Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), $100 \%$ traffic, all ports plugged in, and all modules populated. |
| Safety | UL 69050-1: 2nd Edition; EN 60950-1:2006 +A11:2009 +A1:2010 +A12:2011+A2:2013; IEC 60950-1:2005 +A1:2009 +A2:2013; CSA 22.2 No. 60950-1-07 2nd; EN 60825-1:2014 / IEC 60825-1:2014 Class 1 |  |
| Emissions | EN 55032:2012/CISPR 32 Class A; FCC CFR 47 Part 15 Class A; VCCI Class A; ICES-003 Class A; CNS 13438 |  |
| Immunity | Generic | EN 55024:2010/CISPR 24 |
|  | ESD | IEC 61000-4-2 |
|  | Radiated | IEC 61000-4-3 |
|  | EFT/Burst | IEC 61000-4-4 |
|  | Surge | IEC 61000-4-5 |
|  | Conducted | IEC 61000-4-6 |
|  | Power frequency magnetic field | IEC 61000-4-8 |

Technical Specifications

|  | Voltage dips and <br> interruptions | IEC 61000-4-11 |
| :--- | :--- | :--- |
|  | Harmonics | IEC/EN 61000-3-2 |
| Management | Flicker | IEC/EN 61000-3-3 |

Aruba 2930F 48G PoE+ 4SFP+ 740W TAA-compliant Switch (JL559A)
I/O ports and slots $\quad 48$ 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 4 SFP+ 1/10GbE ports; PHY-less
Additional ports and 1 dual-personality (RJ-45 or USB micro-B) serial console port slots

| Physical characteristics | Dimensions | $17.42(\mathrm{w}) \times 12.77$ (d) $\times 1.73(\mathrm{~h})$ in ( $44.25 \times 32.42 \times 4.39 \mathrm{~cm}$ ) <br> (1U height) |
| :---: | :---: | :---: |
|  | Weight | $10.56 \mathrm{lb}(4.79 \mathrm{~kg})$ |

Memory and processor Dual Core ARM Coretex A9 @ 1016 MHz, 1 GB DDR3 SDRAM; Packet buffer size: 12.38 MB 4.5MB Ingress/7.785 Egress,4 GB eMMC
Performance

Environment
1000 Mb Latency $\quad<3.8 \mu \mathrm{~s}$ (64-byte packets)
10Gbps latency $\quad<1.6 \mu \mathrm{~s}$ (64-byte packets)
Throughput up to 112.0 Mpps
Switching capacity 176 Gbps
Routing table size $\quad 2,000$ IPv4, 1,000 IPv6 in hardware, 200 OSPF, 256 Static, 10,000 RIP
MAC address table 32,768
size
Operating $\quad 32^{\circ} \mathrm{F}$ to $113^{\circ} \mathrm{F}\left(0^{\circ} \mathrm{C}\right.$ to $\left.45^{\circ} \mathrm{C}\right)$;
temperature up to 5,000 Feet,
$0^{\circ} \mathrm{C}$ to $40^{\circ} \mathrm{C}\left(32^{\circ} \mathrm{F}\right.$ to $\left.104^{\circ} \mathrm{F}\right)$
up to 10,000 Feet
Operating relative $15 \%$ to $95 \%$ @ $104^{\circ} \mathrm{F}\left(40^{\circ} \mathrm{C}\right)$, noncondensing humidity
Nonoperating/Storage $-40^{\circ} \mathrm{F}$ to $158^{\circ} \mathrm{F}\left(-40^{\circ} \mathrm{C}\right.$ to $\left.70^{\circ} \mathrm{C}\right)$; up to 15,000 Feet temperature
Nonoperating/Storage $15 \%$ to $95 \%$ @ $149^{\circ} \mathrm{F}\left(65^{\circ} \mathrm{C}\right)$
temperature
Acoustic (power and
Power: 55.1 dB , Pressure: 41.1 dB
pressure) in decibals
Airflow direction Side to side

Technical Specifications

| Electrical characteristics | 80plus.org Certification | Gold |
| :---: | :---: | :---: |
|  | Maximum heat dissipation | 420.9 BTU/hr (444.1 kJ/hr) |
|  | Voltage | 100-127 / 200-240 VAC, rated |
|  | Current | 9.2 / 4.9 A |
|  | Maximum power rating | 980W |
|  | Idle power | 49.9W |
|  | PoE power | 740 W PoE+ |
|  | Frequency | $50 / 60 \mathrm{~Hz}$ |
|  | Notes | Idle power is the actual power consumption of the device with no ports connected. <br> Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), $100 \%$ traffic, all ports plugged in, and all modules populated. |
| Safety | UL 69050-1: 2nd Edition; EN 60950-1:2006 +A11:2009 +A1:2010 <br> +A12:2011+A2:2013; IEC 60950-1:2005 +A1:2009 +A2:2013; CSA 22.2 No. 60950-1-07 2nd; EN 60825-1:2014 / IEC 60825-1:2014 Class 1 |  |
| Emissions | EN 55032:2012/CISPR 32 Class A; FCC CFR 47 Part 15 Class A; VCCI Class A; ICES-003 Class A; CNS 13438 |  |
| Immunity | Generic | EN 55024:2010/CISPR 24 |
|  | ESD | IEC 61000-4-2 |
|  | Radiated | IEC 61000-4-3 |
|  | EFT/Burst | IEC 61000-4-4 |
|  | Surge | IEC 61000-4-5 |
|  | Conducted | IEC 61000-4-6 |
|  | Power frequency magnetic field | IEC 61000-4-8 |
|  | Voltage dips and interruptions | IEC 61000-4-11 |
|  | Harmonics | IEC/EN 61000-3-2 |
|  | Flicker | IEC/EN 61000-3-3 |
| Management | Aruba AirWave Network Management; IMC - Intelligent Management Center; Command-line interface; Web browser; Configuration menu; SNMP manager; Telnet; RMON1; FTP; Out-of-band management (serial RS-232C or micro USB) |  |
| Services | Refer to the Hewlett Packard Enterprise website at http://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. |  |

[^0]Technical Specifications
Denial of service CPU DoS Protection
protection

Device Management RFC 1155 Structure and Mgmt Information (SMIv1)
RFC 1157 SNMPv1/v2c
RFC 1591 DNS (client)
RFC 1901 (Community based SNMPv2)
RFC 1901-1907 SNMPv2c, SMIv2 and Revised MIB-II
RFC 1908 (SNMP v1/2 Coexistence)
RFC 2576 (Coexistence between SNMP V1, V2, V3)
RFC 2578-2580 SMIv2
RFC 2579 (SMIv2 Text Conventions)
RFC 2580 (SMIv2 Conformance)
RFC 2819 (RMON groups Alarm, Event, History and Statistics only)
RFC 3416 (SNMP Protocol Operations v2)
RFC 3417 (SNMP Transport Mappings)
HTML and telnet management
HTTP, SSHv1, and Telnet
Multiple Configuration Files
Multiple Software Images
SNMP v3 and RMON RFC support
SSHv1/SSHv2 Secure Shell
TACACS/TACACS+ Web UI

General Protocols 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 802.3ab 1000BASE-T
IEEE 802.3ad Link Aggregation Control Protocol (LACP)
IEEE 802.3af Power over Ethernet
IEEE 802.3at PoE+
IEEE 802.3az Energy Efficient 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 1256 ICMP Router Discovery Protocol (IRDP)
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

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RFC 2236 IGMP Snooping
RFC 2453 RIPv2
RFC 2865 Remote Authentication Dial In User Service (RADIUS)
RFC 2866 RADIUS Accounting
RFC 3046 DHCP Relay Agent Information Option
RFC 3411 An Architecture for Describing Simple Network Management Protocol (SNMP) Management Frameworks
RFC 3412 Message Processing and Dispatching for the Simple Network Management Protocol (SNMP)
RFC 3413 Simple Network Management Protocol (SNMP) Applications
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 3416 Protocol Operations for SNMP
RFC 3417 Transport Mappings for the Simple Network Management Protocol (SNMP)
RFC 3418 Management Information Base (MIB) for the Simple Network Management Protocol (SNMP)
RFC 3575 IANA Considerations for RADIUS
RFC 3576 Ext to RADIUS (CoA only)
RFC 4541 Considerations for Internet Group Management Protocol (IGMP) and
Multicast Listener Discovery (MLD) Snooping Switches
RFC 4675 RADIUS VLAN \& Priority
RFC 4861 Neighbor Discovery for IP version 6 (IPv6)
RFC 4862 IPv6 Stateless Address Autoconfiguration
RFC 5905 Network Time Protocol Version 4: Protocol and Algorithms Specification UDLD (Uni-directional Link Detection)

| IP Multicast | RFC 1112 IGMP <br> RFC 2236 IGMPv2 <br> RFC 2710 Multicast Listener Discovery (MLD) for IPv6 <br> RFC 3376 IGMPv3 <br> RFC 4541 Considerations for Internet Group Management Protocol (IGMP) and Multicast Listener Discovery (MLD) Snooping Switches |
| :---: | :---: |
| IPv6 | RFC 1981 IPv6 Path MTU Discovery <br> RFC 2080 RIPng for IPv6 <br> RFC 2081 RIPng Protocol Applicability Statement <br> RFC 2082 RIP-2 MD5 <br> RFC 2460 IPv6 Specification <br> RFC 2464 Transmission of IPv6 over Ethernet Networks <br> RFC 2710 Multicast Listener Discovery (MLD) for IPv6 <br> RFC 2925 Definitions of Managed Objects for Remote Ping, Traceroute, and Lookup <br> Operations (Ping only) <br> RFC 2925 Remote Operations MIB (Ping only) <br> RFC 3019 MLDv1 MIB <br> RFC 3315 DHCPv6 (client and relay) <br> RFC 3484 Default Address Selection for IPv6 <br> RFC 3513 IPv6 Addressing Architecture <br> RFC 3596 DNS Extension for IPv6 <br> RFC 3810 MLDv2 for IPv6 <br> RFC 4022 MIB for TCP <br> RFC 4113 MIB for UDP |

## Technical Specifications

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 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 6620 FCFS SAVI
draft-ietf-savi-mix

MIBs

Network
Management
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 1156 (TCP/IP MIB)
RFC 1157 A Simple Network Management Protocol (SNMP)
RFC 1213 MIB II
RFC 1493 Bridge MIB
RFC 1724 RIPv2 MIB
RFC 2021 RMONv2 MIB
RFC 2578 Structure of Management Information Version 2 (SMIv2)
RFC 2579 Textual Conventions for SMIv2
RFC 2580 Conformance Statements for 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 2819 RMON MIB
RFC 2863 The Interfaces Group MIB
RFC 2925 Ping MIB
RFC 2932 IP (Multicast Routing MIB)
RFC 2933 IGMP MIB
RFC 3414 SNMP-User based-SM MIB
RFC 3415 SNMP-View based-ACM MIB
RFC 3417 Simple Network Management Protocol (SNMP) over IEEE 802 Networks
RFC 3418 MIB for SNMPv3
RFC 4836 Managed Objects for 802.3 Medium Attachment Units (MAU)

IEEE 802.1AB Link Layer Discovery Protocol (LLDP)
RFC 1155 Structure of Management Information
RFC 1157 SNMPv1
RFC 2021 Remote Network Monitoring Management Information Base Version 2 using SMIv2
RFC 2576 Coexistence between SNMP versions
RFC 2578 Structure of Management Information Version 2 (SMIv2)
RFC 2579 Textual Conventions for SMIv2

Technical Specifications
RFC 2580 Conformance Statements for SMIv2
RFC 2819 Four groups of RMON: 1 (statistics), 2 (history), 3 (alarm) and 9 (events)
RFC 2819 Remote Network Monitoring Management Information Base
RFC 2856 Textual Conventions for Additional High Capacity Data Types
RFC 2925 Definitions of Managed Objects for Remote Ping, Traceroute, and Lookup
Operations
RFC 3164 BSD syslog Protocol
RFC 3176 sFlow
RFC 3411 SNMP Management Frameworks
RFC 3412 Message Processing and Dispatching for the Simple Network
Management Protocol (SNMP)
RFC 3413 Simple Network Management Protocol (SNMP) Applications
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 5424 Syslog Protocol
ANSI/TIA-1057 LLDP Media Endpoint Discovery (LLDP-MED)
SNMPv1/v2c/v3
XRMON

| QoS/CoS | IEEE 802.1p (CoS) <br> RFC 2474 DiffServ Precedence, including 8 queues/port RFC 2475 DiffServ Architecture RFC 2597 DiffServ Assured Forwarding (AF) RFC 2598 DiffServ Expedited Forwarding (EF) Ingress Rate Limiting |
| :---: | :---: |
| Security | IEEE 802.1X Port Based Network Access Control <br> RFC 1321 The MD5 Message-Digest Algorithm <br> RFC 1334 PPP Authentication Protocols (PAP) <br> RFC 1492 An Access Control Protocol, Sometimes Called TACACS <br> RFC 1492 TACACS+ <br> RFC 1994 PPP Challenge Handshake Authentication Protocol (CHAP) <br> RFC 2082 RIP-2 MD5 Authentication <br> RFC 2104 Keyed-Hashing for Message Authentication <br> RFC 2138 RADIUS Authentication <br> RFC 2139 RADIUS Accounting <br> RFC 2246 Transport Layer Security (TLS) <br> RFC 2548 Microsoft Vendor-specific RADIUS Attributes <br> RFC 2618 RADIUS Authentication Client MIB <br> RFC 2620 RADIUS Accounting Client MIB <br> RFC 2716 PPP EAP TLS Authentication Protocol <br> RFC 2818 HTTP Over TLS <br> RFC 2865 RADIUS (client only) <br> RFC 2865 RADIUS Authentication <br> RFC 2866 RADIUS Accounting <br> RFC 2867 RADIUS Accounting Modifications for Tunnel Protocol Support <br> RFC 2868 RADIUS Attributes for Tunnel Protocol Support <br> RFC 2869 RADIUS Extensions <br> RFC 2882 NAS Requirements: Extended RADIUS Practices <br> RFC 3162 RADIUS and IPv6 |

Technical Specifications
RFC 3576 Dynamic Authorization Extensions to RADIUS
RFC 3579 RADIUS Support For Extensible Authentication Protocol (EAP)
RFC 3580 IEEE 802.1X RADIUS
RFC 3580 IEEE 802.1X Remote Authentication Dial In User Service (RADIUS)
Usage Guidelines
RFC 4675 RADIUS Attributes
Access Control Lists (ACLs)
draft-grant-tacacs-02 (TACACS)
Guest VLAN for 802.1X
MAC Authentication
MAC Lockdown
MAC Lockout
Port Security
Secure Sockets Layer (SSL)
SSHv2 Secure Shell
Web Authentication

## Accessories

## Aruba 2930F Switch Series accessories

## Transceivers

Aruba 100M SFP LC FX 2km MMF Transceiver J9054D
Aruba 1G SFP RJ45 T 100m Cat5e Transceiver J8177D
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 10G SFP+ LC SR 300m OM3 MMF Transceiver J9150D
Aruba 10G SFP+ LC LR 10km SMF Transceiver J9151D
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: no support for J9152D 10G LRM, nor J9285D 10G 7m DAC

## Cables

Aruba X2C2 RJ45 to DB9 Console Cable JL448A
HPE LC to LC Multi-mode OM3 2-Fiber 0.5m 1-Pack Fiber Optic Cable AJ833A
HPE LC to LC Multi-mode OM3 2-Fiber 1.0m 1-Pack Fiber Optic Cable AJ834A
HPE LC to LC Multi-mode OM3 2-Fiber 2.0m 1-Pack Fiber Optic Cable AJ835A
HPE LC to LC Multi-mode OM3 2-Fiber 5.0m 1-Pack Fiber Optic Cable AJ836A
HPE LC to LC Multi-mode OM3 2-Fiber 15.0m 1-Pack Fiber Optic Cable AJ837A
HPE LC to LC Multi-mode OM3 2-Fiber 30.0m 1-Pack Fiber Optic Cable AJ838A
HPE LC to LC Multi-mode OM3 2-Fiber 50.0m 1-Pack Fiber Optic Cable AJ839A
HPE Premier Flex LC/LC Multi-mode OM4 2 fiber 1m Cable QK732A
HPE Premier Flex LC/LC Multi-mode OM4 2 fiber 2 m Cable QK733A
HPE Premier Flex LC/LC Multi-mode OM4 2 fiber 5m Cable QK734A
HPE Premier Flex LC/LC Multi-mode OM4 2 fiber 15m Cable QK735A
HPE Premier Flex LC/LC Multi-mode OM4 2 fiber 30m Cable QK736A
HPE Premier Flex LC/LC Multi-mode OM4 2 fiber 50m Cable QK737A

Aruba 2930F 24G 4SFP+ Switch (JL253A)
HPE X410 1U Universal 4-post Rackmount Kit
J9583A

Aruba 2930F 48G 4SFP+ Switch (JL254A)
HPE X410 1U Universal 4-post Rackmount Kit
J9583A
Aruba 2930F 24G PoE+ 4SFP+ Switch (JL255A)
HPE X410 1U Universal 4-post Rackmount Kit
J9583A

## Aruba 2930F 48G PoE+ 4SFP+ Switch (JL256A)

HPE X410 1 U Universal 4-post Rackmount Kit
J9583A
Accessories
Aruba 2930F 8G PoE+ 2SFP+ Switch (JL258A)
Aruba 2930F 8-port Cable Guard ..... JL311A
Aruba 2930F 8-port Power Shelf ..... JL312A
Aruba 2930F 24G 4SFP Switch (JL259A)
HPE X410 1U Universal 4-post Rackmount Kit ..... J9583A
Aruba 2930F 48G 4SFP Switch (JL260A)
HPE X410 1U Universal 4-post Rackmount KitJ9583A
Aruba 2930F 24G PoE+ 4SFP Switch (JL261A)
HPE X410 1U Universal 4-post Rackmount Kit ..... J9583A
Aruba 2930F 48G PoE+ 4SFP Switch (JL262A) ..... J9583A
Aruba 2930F 24G PoE+ 4SFP+ TAA-compliant Switch (JL263A)
HPE X410 1U Universal 4-post Rackmount Kit ..... J9583A
Aruba 2930F 48G PoE+ 4SFP+ TAA-compliant Switch (JL264A)
HPE X410 1U Universal 4-post Rackmount Kit ..... J9583A
Aruba 2930F 48G PoE+ 4SFP 740W Switch (JL557A)
HPE X410 1U Universal 4-post Rackmount Kit ..... J9583A
Aruba 2930F 48G PoE+ 4SFP+ 740W Switch (JL558A)
HPE X410 1U Universal 4-post Rackmount Kit ..... J9583A
Aruba 2930F 48G PoE+ 4SFP+ 740W TAA-compliant Switch (JL559A)
HPE X410 1 U Universal 4-post Rackmount Kit ..... J9583A

## Accessory Product Details

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

## Aruba 2930F 8-port

Cable Guard (JL311A)
The Cable Guard
secures cables that are connected to the switch and provides extra security against theft or tampering with the switch and its cables after it is installed
Product Type
Physical
characteristics
Notes

Services

Mounting Kit
Dimensions: $1.42(\mathrm{w}) \times 4.33(\mathrm{~d}) \times 0.69(\mathrm{~h})$ in ( $3.6 \times 11 \times 1.75 \mathrm{~cm}$ ) Weight: $1.28 \mathrm{lb}(0.58 \mathrm{~kg})$
Dimensions: 10.94 " x 3.62 " x 1.69 " or $27.8 \mathrm{~cm} \times 9.2 \mathrm{~cm} \times 4.3 \mathrm{~cm}$ w/ears 10.94 " x 1.69 " x 1.69 " or $27.8 \mathrm{~cm} \times 4.3 \mathrm{~cm} \times 4.3 \mathrm{~cm}$ without ears
Weight: 1.262 lbs or 57 kg (including faceplate, ears, and screws) 1.026 lbs or . 47 kg (faceplate only)
Limited Lifetime Warranty: See
http://www.hpe.com/networking/warrantysummary for warranty and support information included with your product purchase.
Refer to the Hewlett Packard Enterprise website at http://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.

Aruba 2930F 8-port
Power Shelf (JL312A)
An easy-to-use solution for attaching the external power adapter to any of the Aruba 2530 8-port switches.

## Product Type <br> Physical characteristics <br> Overall Positioning Statement

Key Features

Notes

## Warranty

Services

Mounting Kit
Dimensions: $10.75(\mathrm{w}) \times 6(\mathrm{~d}) \times 2(\mathrm{~h})$ in $(27.31 \times 15.24 \times 5.08$ cm)

Weight: $0.93 \mathrm{lb}(0.42 \mathrm{~kg})$
The Aruba 2930F 8-port Power Shelf provides an easy to use solution for attaching the external power adapter to the Aruba 2930F 8G 2SFP+ PoE+ Switch. The power adapter shelf can be quickly attached on the rear of the Aruba 2930F 8G PoE+ 2SFP+ Switch and the adapter fit into place. This power adapter shelf is designed for wall, table or rack deployments.

- Quickly attach external power adapter to 8 port switch
- Designed for use with Aruba 2930F 8G PoE+ 2SFP+ Switch
The Aruba 2930F 8-port Power Shelf is an accessory for the Aruba 2930F 8G PoE+2SFP+ Switch. The shelf mounts on the back of the switch providing a place to hold the external power adapter.
Limited Lifetime Warranty: See
http://www.hpe.com/networking/warrantysummary for warranty and support information included with your product purchase.
Refer to the Hewlett Packard Enterprise website at http://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.


## HPE X121 1G SFP LC SX Transceiver (J4858C)

A small form-factor pluggable (SFP) Gigabit SX
transceiver that provides a full-duplex Gigabit solution up to 550 m on multimode fiber.

## Ports <br> Physical characteristics

## Environment

Electrical
characteristics
Cabling

## Services

1 LC 1000BASE-SX port; Duplex: full only
Dimensions: 2.24(d) $\times 0.54(w) \times 0.48(h)$ in. $(5.69 \times 1.37 \times 1.22$ cm)

Weight: $0.04 \mathrm{lb} .(0.02 \mathrm{~kg})$
Transceiver form factor: SFP
Operating temperature: $32^{\circ} \mathrm{F}$ to $158^{\circ} \mathrm{F}\left(0^{\circ} \mathrm{C}\right.$ to $\left.70^{\circ} \mathrm{C}\right)$
Operating relative humidity: $5 \%$ to $85 \%$, noncondensing
Nonoperating/Storage temperature: $-40^{\circ} \mathrm{F}$ to $203^{\circ} \mathrm{F}\left(-40^{\circ} \mathrm{C}\right.$ to $85^{\circ} \mathrm{C}$ )
Altitude: up to $10,000 \mathrm{ft}$. ( 3 km )
Power consumption typical: 0.4 W
Power consumption maximum: 0.7 W
Type:

- $62.5 / 125 \mu \mathrm{~m}$ or $50 / 125 \mu \mathrm{~m}$ (core/cladding) diameter, graded-index, low metal content, multimode fiber optic, complying with ITU-T G. 651 and ISO/IEC 793-2 Type A1b or A1a, respectively;

Maximum distance:

- 2-220 m (62.5 $\mu \mathrm{m}$ core diameter, $160 \mathrm{MHz}^{*} k m$ bandwidth
- 2-275 m (62.5 $\mu \mathrm{m}$ core diameter, $200 \mathrm{MHz}^{*} k m$ bandwidth
- 2-500 m ( $50 \mu \mathrm{~m}$ core diameter, $400 \mathrm{MHz*}$ km bandwidth)
- 2-550 m ( $50 \mu \mathrm{~m}$ core diameter, $500 \mathrm{MHz*}$ km bandwidth)

Cable length: 2-550m
Fiber type: Multi Mode
Refer to the Hewlett Packard Enterprise website at http://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.

Accessory Product Details

## HPE X121 1G SFP LC LX Transceiver (J4859C) <br> HPE X121 1G SFP LC LX Transceiver: An SFP format gigabit transceiver with LC connectors using LX technology. <br> Physical characteristics

## Services

1 LC 1000BASE-LX port (IEEE 802.3z Type 1000BASE-LX); Duplex: full only
Dimensions: 2.24(d) $\times 0.54(w) \times 0.486(h)$ in. ( $5.69 \times 1.37 \times$ 1.23 cm )

Weight:0.04 lb. (0.02 kg)
Operating temperature: $32^{\circ} \mathrm{F}$ to $158^{\circ} \mathrm{F}\left(0^{\circ} \mathrm{C}\right.$ to $\left.70^{\circ} \mathrm{C}\right)$
Operating relative humidity: $0 \%$ to $85 \%$, noncondensing
Nonoperating/Storage temperature: $-40^{\circ} \mathrm{F}$ to $212^{\circ} \mathrm{F}\left(-40^{\circ} \mathrm{C}\right.$ to $100^{\circ} \mathrm{C}$ )
Altitude: up to 10,000 ft. (3 km)
Type:

- Either single mode or multimode; $62.5 / 125 \mu \mathrm{~m}$ or $50 / 125$ $\mu \mathrm{m}$ (core/cladding) diameter, graded-index, low metal content, multimode fiber optic, complying with ITU-T G. 651 and ISO/IEC 793-2 Type A1b or A1a, respectively; Low metal content, single-mode fiber-optic, complying with ITU-T G. 652 and ISO/IEC 793-2 Type B1;

Maximum distance:

- 2-550 m (multimode $62.5 \mu \mathrm{~m}$ core diameter, $500 \mathrm{MHz}^{*} \mathrm{~km}$ bandwidth)
- 2-550 m (multimode $50 \mu \mathrm{~m}$ core diameter, $400 \mathrm{MHz}^{*} \mathrm{~km}$ bandwidth)
- 2-550 m (multimode $50 \mu \mathrm{~m}$ core diameter, $500 \mathrm{MHz}^{*} \mathrm{~km}$ bandwidth)
- 2-10,000 m (single-mode fiber)

A mode conditioning patch cord may be needed in some multimode fiber installations.
Wavelength: 1310nm
Power Consumption: < 500mW Typical
Refer to the Hewlett Packard Enterprise website at http://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.

## Accessory Product Details

## HPE X121 1G SFP LC

 LH Transceiver (J4860C)A small form-factor pluggable (SFP) Gigabit LH transceiver that provides a full-duplex Gigabit solution up to 70 km on single-mode fiber.

Ports
Physical characteristics

Environment


Cabling

Notes

## Services

1 LC 1000BASE-LH port (no IEEE standard exists for 1550 nm optics); Duplex: full only
Dimensions: 2.17(d) $\times 0.60(w) \times 0.46(h)$ in. $(5.5 \times 1.53 \times 1.18$ cm)

Weight: $0.04 \mathrm{lb} .(0.02 \mathrm{~kg})$
Operating temperature: $-40^{\circ} \mathrm{F}$ to $185^{\circ} \mathrm{F}\left(-40^{\circ} \mathrm{C}\right.$ to $\left.85^{\circ} \mathrm{C}\right)$
Operating relative humidity: $0 \%$ to $95 \%$ @ $77^{\circ} \mathrm{F}\left(25^{\circ} \mathrm{C}\right)$,
noncondensing
Nonoperating/Storage temperature: $-40^{\circ} \mathrm{F}$ to $185^{\circ} \mathrm{F}\left(-40^{\circ} \mathrm{C}\right.$ to $85^{\circ} \mathrm{C}$ )
Altitude: up to $10,000 \mathrm{ft}$. $(3 \mathrm{~km})$
Cable type:

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

Maximum distance:

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

Power consumption is 0.8 watts typical with 1 watt maximum at 100\% utilization.
For distances less than 20 km , a 10 dB attenuator must be used.
For distances between 20 km and 40 km , a 5 dB attenuator must be used.
Attenuators can be purchased from most cable vendors.
Refer to the Hewlett Packard Enterprise website at http://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.

## HPE X111 100M SFP LC Ports

## FX Transceiver

 (J9054C)HP X111 100M SFP LC FX Transceiver: An SFP format 100-megabit transceiver with LC connectors using FX technology.

Physical characteristics

Environment

Cabling

Notes

1 LC 100BASE-FX port (IEEE 802.3u Type 100BASE-FX); Duplex: half or full
Dimensions: $2.7(\mathrm{~d}) \times 0.54(\mathrm{w}) \times 0.48(\mathrm{~h})$ in. $(6.86 \times 1.38 \times 1.22$ cm)

Weight: $0.06 \mathrm{lb} .(0.03 \mathrm{~kg})$
Operating temperature: $32^{\circ} \mathrm{F}$ to $158^{\circ} \mathrm{F}\left(0^{\circ} \mathrm{C}\right.$ to $\left.70^{\circ} \mathrm{C}\right)$
Operating relative humidity: $5 \%$ to $95 \%$
Nonoperating/Storage temperature: $-40^{\circ} \mathrm{F}$ to $185^{\circ} \mathrm{F}\left(-40^{\circ} \mathrm{C}\right.$ to $85^{\circ} \mathrm{C}$ )
Nonoperating/Storage relative humidity: $5 \%$ to $85 \%$ Altitude: up to $10,000 \mathrm{ft}$. $(3 \mathrm{~km})$
Cable type:
62.5/125 im or 50/125 im (core/cladding) diameter, graded-index, low metal content, multimode fiber optic, complying with ITU-T G. 651 and ISO/IEC 793-2 Type A1b or A1a, respectively; Maximum distance: 2 km (full duplex) or 412 m (half duplex)

Transmitter wavelength: 1310 nm
Power consumption is 1.1 watt maximum.
For supported platforms and minimum software requirements

## Services

to support this product, see the document titled "Support for the J9054C 100-FX SFP-LC Transceiver" on the "ProCurve Mini-GBICs and SFPs" Manuals Web page.
Refer to the Hewlett Packard Enterprise website at http://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.

HPE LC to LC Multimode OM3 2-Fiber 0.5 m 1-Pack Fiber

Optic Cable (AJ833A)

Cabling

Notes

Cable type:
50/125 $\mu \mathrm{m}$ (core/cladding) diameter, mulitimode fiber optic, with effective modal bandwidth of $2000 \mathrm{MHz} / \mathrm{km}$ as detailed in TIA-492AAAC for distances of up to 300 m

## Maximum distance:

10Gbps Transfer Rate (Ethernet): 300 m
Cable Specs: Tight buffered duplex fiber optic multimode OM3 50/125 um fiber optic cable and Ethernet assembly with LC duplex connectors on one end and LC duplex connectors on other end.

- Dimensions: Core diameter: $50 \pm 3.0$ um Cladding diameter: $125 \pm 2$. 0 um Coating diameter: $245 \pm 10$ um
- Optical glass: Bandwidth: For LED sources: 1500/500 MHz-km @850/1300nm.
- Optical glass: Bandwidth: For Laser sources: 2000/500 MHz-km @850/1300nm. VCSEL Laser sources: 600 / 600 meters @850/1300nm for Gigabit Ethernet compliant links.
- CABLE: The cable is duplex zipcord graded index 50/125um multimode optical fiber and designed to work in both the 850 and 1300 nm wavelength windows.
- BULK CABLE \& CABLE ASSEMBLY CONFIGURATION:
- Jacket Material: Riser Grade - Low Smoke Zero Halogen thermoplastic.
- Jacket Color: Aqua for OM3 multimode per TIA 598
- Boot Color: White
- Insertion Loss: less than 0.5 dB @ 850 with LED source, $0.003 \mathrm{~dB} / \mathrm{M}$ added for lengths $>30$ meters.
- Maximum Cable attenuation: $3.0 \mathrm{~dB} / \mathrm{km} @ 850 \mathrm{~nm}, 1.0$ $\mathrm{dB} / \mathrm{Km} @ 1310 \mathrm{~nm} @ 23^{\circ} \mathrm{C}$ as tested in accordance with EIA 455-46.
- Weight: Air Packed Weight: 1 LB Net Weight: 0.454 Kg


## Services

Refer to the Hewlett Packard Enterprise website at http://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.

## Accessory Product Details

HPE Premier Flex Notes
LC/LC Multi-mode OM4
2 fiber 1m Cable
(QK732A)

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

Core Diameter: 50um $\pm 3 u m$, Cladding diameter: $125 u m \pm 2 u m$; Coating diameter: $245 \pm 10 \mathrm{um}$
Bandwidth: $3000 \mathrm{MHz-km} @ 850 n m$ (Laser)
Jacket Color: Blue
Jacket Material: Riser Grade - Low Smoke Zero Halogen (LSZH)
thermoplastic
Boot Color: White
Outer Jacket Print: HPE PremierFlex OM3+ Fiber Optic Cable, 50/125um, Type OFNR (UL), LSZH, cUL, OFN FT4, ROHS. Cable also has a longitudinal white stripe that runs the entire length of the cable. Insertion Loss: Less than 0.5 dB @ 850nm with LED source, $0.003 \mathrm{~dB} / \mathrm{m}$ added for lengths $>30 \mathrm{~m}$
Maximum Cable Attenuation: $3.0 \mathrm{~dB} / \mathrm{km}$ @ 850nm, $1.0 \mathrm{~dB} / \mathrm{km}$ @ $1310 \mathrm{~nm} @ 23^{\circ} \mathrm{C}$ as tested in accordance with EIA 455-45
Services
Refer to the Hewlett Packard Enterprise website at http://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.

HPE Premier Flex Notes
LC/LC Multi-mode OM4
2 fiber 2m Cable
(QK733A)

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

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

Refer to the Hewlett Packard Enterprise website at http://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.

## Accessory Product Details

HPE Premier Flex Notes
LC/LC Multi-mode OM4
2 fiber 5m Cable
(QK734A)

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

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

HPE Premier Flex Notes
LC/LC Multi-mode OM4
2 fiber 15m Cable (QK735A)

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

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

Refer to the Hewlett Packard Enterprise website at http://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.

## Accessory Product Details

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

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

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

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

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

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

Refer to the Hewlett Packard Enterprise website at http://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.

Summary of Changes

| Date | Version History | Action | Description of Change: |
| :--- | :--- | :--- | :--- |
| 08-Jan-2018 | From Version 6 to <br> 7 | Added | Models added: JL557A, JL558A, JL559A |
| 03-Jul-2017 | From Version 5 to <br> 6 | Added | SKU added: JL448A |
| 20-Jan-2017 | From Version 4 to <br> 5 | Changed | Minor changes made on Standards and <br> protocols |
| 07-Nov-2016 | From Version 3 to <br> 4 | Changed | Product overview, Features and Benefits, <br> Technical Specifications updated |
| 02-Sep-2016 | From Version 2 to <br> 3 | Changed | Product description updated. |
| 24-June-2016 | From Version 1 to <br> 2 | Changed | Updated B2E Attribute Description for all <br> switches on the Configuration section. |
| 06-Jun-2016 | Version 1 | Creation | Document creation |

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To learn more, visit: http://www.hpe.com/networking
c05052929-15576-Worldwide - V7-08-January-2018


[^0]:    Standards and protocols (applies to all products in series)

