DATA SHEET

ARUBA 320 SERIES ACCESS POINTS

Bringing a switch-like experience to 802.11ac

Multifunctional 320 series wireless APs provide the best 802.11ac Wi-Fi connectivity and user experience. Featuring Aruba enhanced ClientMatch and Aruba Beacon technologies, the 320 series enables the highest capacity, performance, and efficiency in extremely high-density environments.

With a maximum concurrent data rate of 1,733 Mbps in the 5 GHz band and 800 Mbps in the 2.4 GHz band (aggregated date rate of 2.5 Gbps), 320 series APs deliver best-in-class next-generation .11ac Wi-Fi infrastructure for the highest density environments.

The high performance and high density 802.11ac 320 series supports multi-user MIMO (MU-MIMO) and 4 spatial streams (4SS). It provides simultaneous multicast data transmission to multiple devices, maximizing data throughput and improving network efficiency.

The 320 series includes the patent-pending enhanced ClientMatch technology that extends the client steering technology with MU-MIMO client awareness. It automatically identifies MU-MIMO capable mobile devices and steers those devices to the closest MU-MIMO capable Aruba access point. By grouping MU-MIMO capable mobile devices together, the network starts taking advantage of the simultaneous transmission to these devices, increasing its overall capacity. These dynamic roaming policies that are based on device types, help customers achieve the best WLAN performance in a mixed device environment during the technology transition period.

The 320 series has an integrated Bluetooth Aruba Beacon that simplifies the remote management of a network of large-scale battery-powered Aruba beacons while also providing advanced location and indoor way finding, and proximity-based push notification capabilities. It enables businesses to leverage mobility context to develop applications that will deliver an enhanced user experience and increase the value of the wireless network for organizations.

UNIQUE BENEFITS

- Dual radio 4x4 802.11ac access point with multi-user MIMO
  - Supports up to 1,733 Mbps in the 5 GHz band (with 4SS/VHT80 clients) and 800 Mbps in the 2.4 GHz band (with 4SS/VHT40 clients).
- Built-in Bluetooth Low-Energy (BLE) radio
  - Enables location based services with BLE-enabled mobile devices receiving signals from multiple Aruba Beacons at the same time.
  - Simplifies battery-powered Aruba beacon management.
- Advanced Cellular Coexistence (ACC)
  - Minimizes interference from 3G/4G cellular networks, distributed antenna systems, and commercial small cell/femtocell equipment.
- Quality of service for unified communication apps
  - Supports priority handling and policy enforcement for unified communication apps, including Microsoft Skype for Business with encrypted videoconferencing, voice, chat, and desktop sharing.
- RF Management
  - Adaptive Radio Management (ARM) technology automatically assigns channel and power settings, provides airtime fairness, and ensures that APs stay clear of all sources of RF interference to deliver reliable, high-performance WLANs.
  - The Aruba 320 series APs can be configured to provide part-time or dedicated air monitoring for spectrum analysis and wireless intrusion protection, VPN tunnels to extend remote locations to corporate resources, and wireless mesh connections where Ethernet drops are not available.

- Support for additional 5 GHz bands
  - Supports software upgrade to enable additional 5 GHz spectrums when governments expand available frequencies.
- Spectrum analysis
  - Capable of part-time or dedicated air monitoring, the spectrum analyzer remotely scans the 2.4 GHz and 5 GHz radio bands to identify sources of RF interference.
- Intelligent app visibility and control
  - AppRF technology leverages deep packet inspection to classify and block, prioritize or limit bandwidth for over 1,500 enterprise apps or groups of apps.
- Security
  - Integrated wireless intrusion protection offers threat protection and mitigation, and eliminates the need for separate RF sensors and security appliances.
  - IP reputation and security services identify, classify, and block malicious files, URLs and IPs, providing comprehensive protection against advanced online threats.
  - Integrated Trusted Platform Module (TPM) for secure storage of credentials and keys.
  - SecureJack-capable for secure tunneling of wired Ethernet traffic.

CHOOSE YOUR OPERATING MODE

Aruba 320 series APs offer a choice of operating modes to meet your unique management and deployment requirements.

- Controller-managed mode – When managed by Aruba Mobility Controllers, Aruba 320 series APs offer centralized configuration, data encryption, policy enforcement, and network services, as well as distributed and centralized traffic forwarding.
- Aruba Instant mode – In Aruba Instant mode, a single AP automatically distributes the network configuration to other Instant APs in the WLAN. Simply power-up one Instant AP, configure it over the air, and plug in the other APs – the entire process takes about five minutes. If WLAN requirements change, a built-in migration path allows 320 series Instant APs to become part of a WLAN that is managed by a Mobility Controller.
- Remote AP (RAP) for branch deployments.
- Air monitor (AM) for wireless IDS, rogue detection, and containment.
- Spectrum analyzer, dedicated or hybrid, for identifying sources of RF interference.
- Secure enterprise mesh.
  * Targeted to be available in the first half of 2016 through a software upgrade

For large installations across multiple sites, the Aruba Activate service significantly reduces deployment time by automating device provisioning, firmware upgrades, and inventory management. With Aruba Activate, Instant APs are factory-shipped to any site and configure themselves when powered up.

AP-320 SERIES SPECIFICATIONS

- AP-325 and IAP-325
  - 5 GHz (1,733 Mbps max rate) and 2.4 GHz (800 Mbps max rate) radios, each with 4x4 MIMO support and a total of eight integrated omni-directional downtilt antennas.
- AP-324 and IAP-324
  - 5 GHz (1,733 Mbps max rate) and 2.4 GHz (800 Mbps max rate) radios, each with 4x4 MIMO support and a total of four combined, diplexed (dual-band) external RP-SMA antenna connectors.

WI-FI RADIO SPECIFICATIONS

- AP type: Indoor, dual radio, 5 GHz 802.11ac and 2.4 GHz 802.11n 4x4 MIMO.
- Software-configurable dual radio supports 5 GHz (Radio 0) and 2.4 GHz (Radio 1).
- Four spatial stream SU-MIMO for up to 1,733 Mbps wireless data rate to a single client device.
- Three spatial stream MU-MIMO for up to 1,300 Mbps wireless data rate to up to three MU-MIMO capable client devices simultaneously.
- Support for up to 255 associated client devices per radio, and up to 16 BSSIDs per radio.
- Supported frequency bands (country-specific restrictions apply):
  - 2.400 to 2.4835 GHz
  - 5.150 to 5.250 GHz
  - 5.250 to 5.350 GHz
  - 5.470 to 5.725 GHz
  - 5.725 to 5.850 GHz
- Available channels: Dependent on configured regulatory domain.
- Dynamic frequency selection (DFS) optimizes the use of available RF spectrum.
- Supported radio technologies:
  - 802.11b: Direct-sequence spread-spectrum (DSSS)
  - 802.11a/g/n/ac: Orthogonal frequency-division multiplexing (OFDM)

- Supported modulation types:
  - 802.11b: BPSK, QPSK, CCK
  - 802.11a/g/n/ac: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM
- Transmit power: Configurable in increments of 0.5 dBm
- Maximum (aggregate, conducted total) transmit power (limited by local regulatory requirements):
  - 2.4 GHz band: +24 dBm (18 dBm per chain)
  - 5 GHz band: +24 dBm (18 dBm per chain)
  - Note: conducted transmit power levels exclude antenna gain. For total (EIRP) transmit power, add antenna gain
- Advanced Cellular Coexistence (ACC) minimizes interference from cellular networks.
- Maximum ratio combining (MRC) for improved receiver performance.
- Cyclic delay/shift diversity (CDD/CSD) for improved downlink RF performance.
- Short guard interval for 20-MHz, 40-MHz and 80-MHz channels.
- Space-time block coding (STBC) for increased range and improved reception.
- Low-density parity check (LDPC) for high-efficiency error correction and increased throughput.
- Transmit beamforming (TxBF) for increased signal reliability and range.
- Supported data rates (Mbps):
  - 802.11b: 1, 2, 5.5, 11
  - 802.11a/g: 6, 9, 12, 18, 24, 36, 48, 54
  - 802.11n: 6.5 to 450 (MCS0 to MCS23)
  - 802.11ac: 6.5 to 1,733 (MCS0 to MCS9, NSS = 1 to 4)
- 802.11n high-throughput (HT) support: HT 20/40
- 802.11ac very high throughput (VHT) support: VHT 20/40/80
- 802.11n/ac packet aggregation: A-MPDU, A-MSDU

WI-FI ANTENNAS

- AP-324/IAP-324: Four RP-SMA connectors for external dual band antennas. Internal loss between radio interface and external antenna connectors (due to diplexing circuitry): 2.5 dB in 2.4 GHz and 1.5 dB in 5 GHz.
- AP-325/IAP-325: Eight integrated downtilt omni-directional antennas for 4x4 MIMO with maximum antenna gain of 3.5 dBi in 2.4 GHz and 5.0 dBi in 5 GHz. Built-in antennas are optimized for horizontal ceiling-mounted orientation of the AP. The downtilt angle for maximum gain is ~ 30 degrees.

OTHER INTERFACES

- Two 10/100/1000BASE-T Ethernet network interfaces (RJ-45)
  - Auto-sensing link speed and MDI/MDX
  - Link Aggregation support to achieve platform throughput up to 2 Gbps
  - 802.3az Energy Efficient Ethernet (EEE)
  - PoE-PD: 48 Vdc (nominal) 802.3af or 802.3at PoE
- DC power interface, accepts 2.1/5.5-mm center-positive circular plug with 9.5-mm length
- USB 2.0 host interface (Type A connector)
- Bluetooth Low Energy (BLE) radio
  - Up to 4dBm transmit power (class 2) and -94dBm receive sensitivity
  - Integrated antenna, -5dBi gain (30 degrees downtilt)
  - Can be disabled with configuration
- Visual indicators (tri-color LEDs): For system and radio status
- Reset button: Factory reset (during device power up)
- Serial console interface (RJ-45)
- Kensington security slot

POWER

- Maximum (worst-case) power consumption: 20W (802.3at PoE), 13.5W (802.3af PoE) or 18.5W (DC)
  - Excludes power consumed by external USB device (and internal overhead); this could add up to 6W (POE) or 5.5W (DC) for 5W/1A USB device
- Maximum (worst-case) power consumption in idle mode: 8W (PoE) or 7W (DC)
- Direct DC source: 12 Vdc nominal, +/- 5%
- Power over Ethernet (PoE): 48 Vdc (nominal) 802.3af/802.3at compliant source
  - Unrestricted functionality with 802.3at PoE
  - Power-save mode with reduced functionality from 802.3af PoE
    - > USB port disabled
    - > Second Ethernet port disabled
    - > 2.4 GHz radio in 1x1:1 mode
- Power sources sold separately
- When both power sources are available, DC power takes priority

MOUNTING

- The AP ships with two (white) mounting clips to attach to a 9/16-inch or 15/16-inch flat T-bar drop-tile ceiling.
- Several optional mount kits are available to attach the AP to a variety of surfaces; see the Ordering Information section for details.

MECHANICAL

- Dimensions/weight (unit, excluding mount accessories):
  - 203mm (W) x 203mm (D) x 57mm (H)
    8.0" (W) x 8.0" (D) x 2.2" (H)
  - 950g/34 oz
- Dimensions/weight (shipping):
  - 315mm(W) x 265mm(D) x 100mm (H)
    12.4" (W) x 10.4" (D) x 3.9" (H)
  - 1,350g/48 oz

ENVIRONMENTAL

- Operating:
  - Temperature: 0° C to +50° C (+32° F to +122° F)
  - Humidity: 5% to 95% non-condensing
- Storage and transportation:
  - Temperature: -40° C to +70° C (-40° F to +158° F)

REGULATORY

- FCC/Industry of Canada
- CE Marked
- R&TTE Directive 1995/5/EC
- Low Voltage Directive 72/23/EEC
- EN 300 328
- EN 301 489
- EN 301 893
- UL/IEC/EN 60950
- EN 60601-1-1, EN60601-1-2

For more country-specific regulatory information and approvals, please see your Aruba representative.

RELIABILITY

MTBF: 739,935 hrs (84.5yrs) at +25C operating temperature (AP-325)

REGULATORY MODEL NUMBERS

- AP-324 and IAP-324: APIN0324
- AP-325 and IAP-325: APIN0325

CERTIFICATIONS

- CB Scheme Safety, cTUVus
- UL2043 plenum rating
- Wi-Fi Alliance (WFA) certified 802.11a/b/g/n/ac
- Bluetooth SIG interoperability certification

WARRANTY

- Aruba limited lifetime warranty

MINIMUM OPERATING SYSTEM SOFTWARE VERSIONS

- ArubaOS 6.4.4.0

  320 Series Access Points are not supported on 650 Series Mobility Controllers.

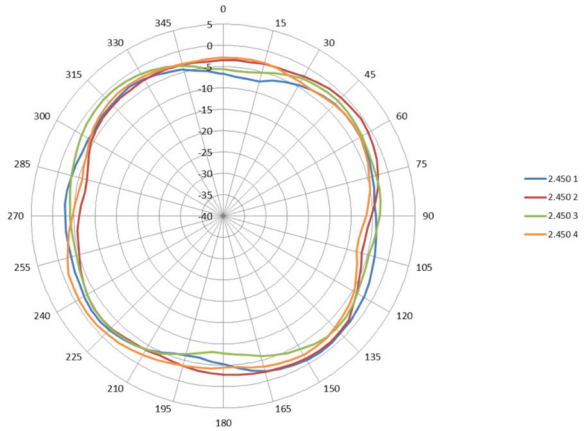
- Aruba InstantOS 4.2.2.0

RF PERFORMANCE TABLE		
	Maximum transmit power (dBm) per transmit chain	**Receiver sensitivity (dBm) per receive chain**
802.11b 2.4 GHz		
1 Mbps	18.0	-97.0
11 Mbps	18.0	-89.0
802.11g 2.4 GHz		
6 Mbps	18.0	-93.0
54 Mbps	18.0	-75.0
802.11n HT20 2.4 GHz		
MCS0/8/16	18.0	-92.0
MCS7/15/23	16.0	-72.0
802.11n HT40 2.4 GHz		
MCS0/8/16	18.0	-90.0
MCS7/15/23	16.0	-70.0
802.11a 5 GHz		
6 Mbps	18.0	-93.0
54 Mbps	16.5	-75.0
802.11n HT20 5 GHz		
MCS0/8/16	18.0	-92.0
MCS7/15/23	16.0	-72.0
802.11n HT40 5 GHz		
MCS0/8/16	18.0	-89.0
MCS7/15/23	16.0	-69.0
802.11ac VHT20 5 GHz		
MCS0	18.0	-92.0
MCS9	14.0	-65.0
802.11ac VHT40 5 GHz		
MCS0	18.0	-89.0
MCS9	14.0	-62.0
802.11ac VHT80 5 GHz		
MCS0	18.0	-86.0
MCS9	14.0	-59.0

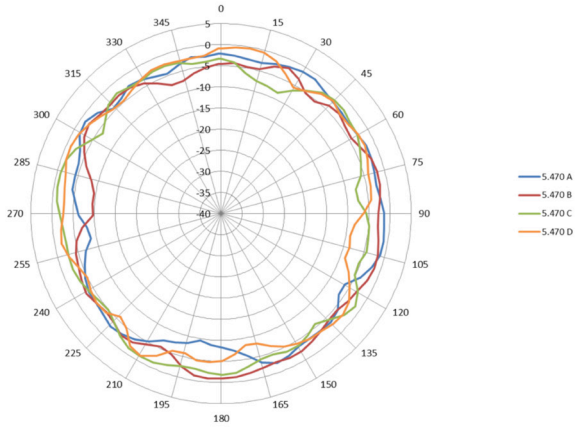
Maximum capability of the hardware provided (excluding antenna gain). Maximum transmit power is limited by local regulatory settings.

AP-320 ANTENNA PATTERN PLOTS

Horizontal or Azimuth plane (top view), 0 degrees downtilt

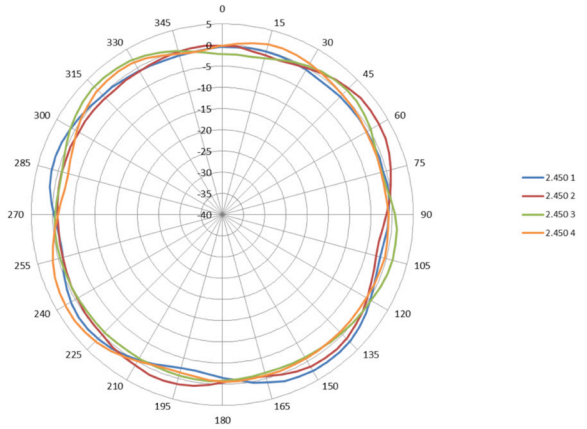


2.450 GHz

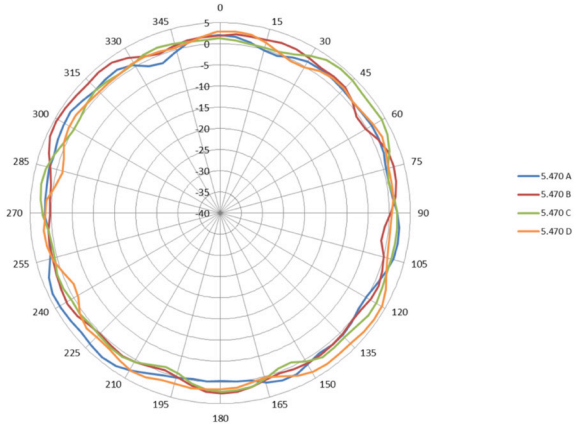


5.470 GHz

Horizontal or Azimuth plane (top view), 30 degrees downtilt

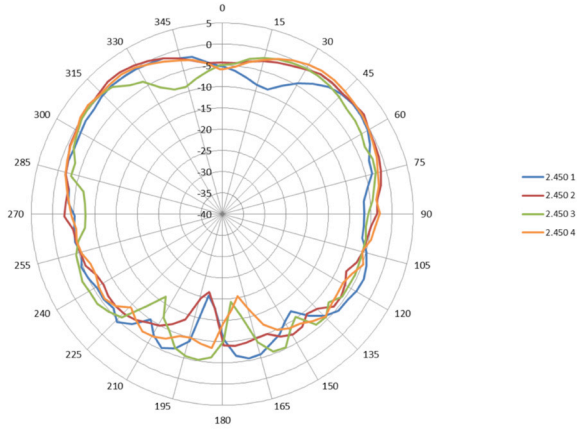


2.450 GHz

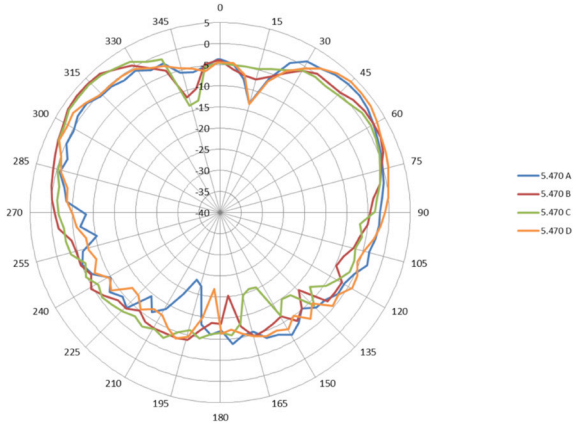


5.470 GHz

Elevation plane (side view, 0 degrees angle)



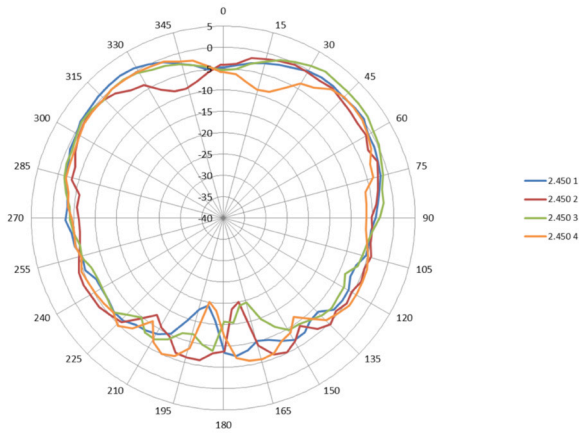
2.450 GHz



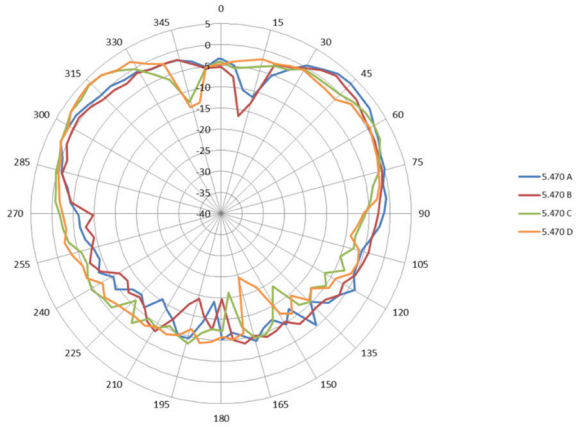
5.470 GHz

AP-320 ANTENNA PATTERN PLOTS

Elevation plane (side view, 90 degrees angle)



2.450 GHz



5.470 GHz

ORDERING INFORMATION

Part Number	Description
AP-320 Series Access Points	
AP-324	Aruba AP-324 Wireless Access Point, 802.11n/ac, 4x4 MU-MIMO, dual radio, antenna connectors
AP-324-F1	Aruba AP-324 Wireless Access Point, 802.11n/ac, 4x4 MU-MIMO, dual radio, antenna connectors. FIPS/TAA compatible version.
IAP-324-RW	Aruba Instant IAP-324 Wireless Access Point, 802.11n/ac, 4x4 MU-MIMO, dual radio, antenna connectors – Restricted regulatory domain: Rest of World
IAP-324-US	Aruba Instant IAP-324 Wireless Access Point, 802.11n/ac, 4x4 MU-MIMO, dual radio, antenna connectors – Restricted regulatory domain: United States
IAP-324-JP	Aruba Instant IAP-324 Wireless Access Point, 802.11n/ac, 4x4 MU-MIMO, dual radio, antenna connectors – Restricted regulatory domain: Japan
IAP-324-IL	Aruba Instant IAP-324 Wireless Access Point, 802.11n/ac, 4x4 MU-MIMO, dual radio, antenna connectors – Restricted regulatory domain: Israel
AP-325	Aruba AP-325 Wireless Access Point, 802.11n/ac, 4x4 MU-MIMO, dual radio, integrated antennas
AP-325-F1	Aruba AP-325 Wireless Access Point, 802.11n/ac, 4x4 MU-MIMO, dual radio, integrated antennas. FIPS/TAA compatible version.
IAP-325-RW	Aruba Instant IAP-325 Wireless Access Point, 802.11n/ac, 4x4 MU-MIMO, dual radio, integrated antennas – Restricted regulatory domain: Rest of World
IAP-325-US	Aruba Instant IAP-325 Wireless Access Point, 802.11n/ac, 4x4 MU-MIMO, dual radio, integrated antennas – Restricted regulatory domain: United States
IAP-325-JP	Aruba Instant IAP-325 Wireless Access Point, 802.11n/ac, 4x4 MU-MIMO, dual radio, integrated antennas – Restricted regulatory domain: Japan
IAP-325-IL	Aruba Instant IAP-325 Wireless Access Point, 802.11n/ac, 4x4 MU-MIMO, dual radio, integrated antennas – Restricted regulatory domain: Israel

ORDERING INFORMATION

Part Number	Description
Mounting Accessories	
AP-220-MNT-C1	Spare Aruba Access Point Mount Kit (ceiling grid). Contains 2x ceiling grid rail adapters (for flat rails). Color: black. Spare.
AP-220-MNT-C2	Aruba Access Point Mount Kit (ceiling grid). Contains 2x ceiling grid rail adapters (for Interlude and silhouette style rails). Color: black
AP-220-MNT-W1	Aruba Access Point Mount Kit (basic, flat surface). Contains 1x flat surface wall/ceiling mount bracket. Color: black
AP-220-MNT-W1W	Aruba Access Point Mount Kit (basic, flat surface). Contains 1x flat surface wall/ceiling mount bracket. Color: white
AP-220-MNT-W2	Aruba Access Point Mount Kit (secure, flat surface). Contains 1x flat surface wall/ceiling mount cradle. Color: black
AP-220-MNT-W2W	Aruba Access Point Mount Kit (secure, flat surface). Contains 1x flat surface wall/ceiling mount cradle. Color: white
AP-320-MNT-T	Aruba 320 Series Access Points ceiling tile mount kit
Other Accessories	
AP-325-CVR-20	Kit of 20 snap-on covers for AP-325. Non-glossy, with holes for LED indicators. Color: white
AP-AC-12V30UN	12V/30W Indoor Access Point AC power adapter. Universal, ships with 8 country-specific plug inserts (US, EU, UK, Australia, China, Korea, Argentina, Brazil), covering all Aruba core countries
PD-9001GR-AC	30W 802.3at PoE midspan injector, 10/100/1000BASE-T Ethernet
Antennas	See info on the Aruba website for antenna part numbers

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