DATA SHEET

ARUBA 330 SERIES ACCESS POINTS

802.11ac Wave 2 that scales up to multi-gig Ethernet

The Aruba 330 Series access points provide the fastest gigabit data speeds and superb user experience for mobile devices and applications in a digital workplace. Designed with an integrated HPE Smart Rate port to scale up to 5Gbps Ethernet, the 330 Series allows enterprises to leverage their multi-gigabit Ethernet wired network infrastructures to eliminate bottlenecks.

Thanks to ClientMatch technology, ArubaOS enables the 330 series to automatically detect and classify 802.11ac Wave 2 capable mobile devices. This allows ClientMatch to automatically collect Wave 2 capable devices under a single Wave 2 radio so that performance benefits of multi-user MIMO can be realized — without the adverse effects of slower 802.11ac and traditional 802.11n capable mobile devices. This means increased network capacity and a boost in network efficiency.

With a maximum concurrent data rate of 1,733 Mbps in the 5 GHz band and 800 Mbps in the 2.4 GHz band (for an aggregate peak data rate of 2.5Gbps), the 330 Series Access Points deliver a best-in-class, next-generation 802.11ac Wi-Fi infrastructure that is ideal for lecture halls, auditoriums, public venues, and high-density office environments.

The high performance and high density 802.11ac 330 Series Access Points support 160 MHz channel bandwidth (VHT160), 4-stream multi-user MIMO (MU-MIMO) and 4 spatial streams (4SS).

They provide simultaneous data transmission to multiple devices, maximizing data throughput and improving network efficiency.

The 330 Series Access Points have 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 wayfinding, 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 802.11ac access point with Multi-User MIMO
  - Supports up to 1,733 Mbps in the 5 GHz band (with 4SS/VHT80 or 2SS/VHT160 clients) and up to 800 Mbps in the 2.4 GHz band (with 4SS/VHT40 clients)
- Antenna polarization diversity for optimized RF performance
  - Each 5 GHz radio chain has a switch and two antennas
  - Software controlled; Horizontally and vertically polarized
- HPE Smart Rate uplink port that scales up to 5Gbps
  - Supports up to 5Gbps with NBase-T Ethernet compatibility
  - Backwards compatible with 100/1000Base-T
  - Adds support for hitless PoE failover between the HPE Smart Rate port and the secondary 1000Base-T port when both ports are powered
- 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
- Advanced Cellular Coexistence (ACC)
  - Minimizes interference from 3G/4G cellular networks, distributed antenna systems and commercial small cell/femtocell equipment

- Quality of service for app visibility and control
  - Supports priority handling and policy enforcement for unified communication apps, including Skype for Business with encrypted videoconferencing, voice, chat and desktop sharing
  - Aruba AppRF technology leverages deep packet inspection to classify and block, prioritize or limit bandwidth for over 1,500 enterprise apps or groups of apps
- 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 330 Series Access Points 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
- 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 from HT20 through VHT160 operation
- 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
- Intelligent Power Monitoring (IPM)
  - Enables the AP to continuously monitor and report its actual power consumption and optionally make autonomous decisions to disable certain capabilities based on the amount of power available to the unit
  - Software configurable to disable capabilities in certain orders. For the 330 Series Access Points, by default, the USB interface will be the first feature to turn off if the AP power consumption exceeds the available power budget

CHOOSE YOUR OPERATING MODE

The Aruba 330 Series Access Points offer a choice of operating modes to meet your unique management and deployment requirements.

- Controller-managed mode – When managed by Aruba Mobility Controllers, Aruba 330 Series Access Points 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 the 330 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

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, the Instant APs are factory-shipped to any site and configure themselves when powered up.

SPECIFICATIONS

- AP-334 (controller-managed) and IAP-334 (Instant):
  - 802.11ac – 5 GHz 4x4 MIMO (1,733 Mbps max rate) and 2.4 GHz 4x4 MIMO (800 Mbps max rate) radios, with a total of four dual-band RP-SMA connectors for external antennas
- AP-335 (controller-managed) and IAP-335 (Instant):
  - 802.11ac – 5 GHz 4x4 MIMO (1,733 Mbps max rate) and 2.4 GHz 4x4 MIMO (800 Mbps max rate) radios, with a total of twelve integrated omni-directional downtilt dual-band antennas

WI-FI RADIO SPECIFICATIONS

- AP type: Indoor, dual radio, 5 GHz 802.11ac 4x4 MIMO and 2.4 GHz 802.11n 4x4 MIMO
  - In addition to 802.11n, the 2.4 GHz radio supports all 802.11ac features as well (proprietary extension)
- Software-configurable dual radio supports 5 GHz (Radio 0) and 2.4 GHz (Radio 1)
- 5 GHz:
  - Four spatial stream Single User (SU) MIMO for up to 1,733 Mbps wireless data rate to individual 4x4 VHT80 or 2x2 VHT160 client devices
  - Four spatial stream Multi User (MU) MIMO for up to 1,733 Mbps wireless data rate to up to three MU-MIMO capable client devices simultaneously
- 2.4 GHz: Four spatial stream Single User (SU) MIMO for up to 800 Mbps wireless data rate to individual 4x4 VHT40 client devices (600 Mbps for HT40 802.11n client devices)
- 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, 80 MHz and 160 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 beam-forming (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 600 (MCS0 to MCS31)
  - 802.11ac: 6.5 to 1,733 (MCS0 to MCS9, NSS = 1 to 4 for VHT20/40/80, NSS = 1 to 2 for VHT160)
- 802.11n high-throughput (HT) support: HT 20/40
- 802.11ac very high throughput (VHT) support: VHT 20/40/80/160
- 802.11n/ac packet aggregation: A-MPDU, A-MSDU

WI-FI ANTENNAS

- AP-334/IAP-334: Four RP-SMA connectors for external dual band antennas. Internal loss between radio interface and external antenna connectors (due to diplexing circuitry): 2.3 dB in 2.4 GHz and 1.2 dB in 5 GHz.
- AP-335/IAP-335
  - Four integrated 2.4 GHz downtilt omni-directional antennas for 4x4 MIMO with maximum antenna gain of 4.3 dBi per antenna.
  - Each 5 GHz radio chain has both a vertically and a horizontally polarized antenna element; AP software automatically and dynamically selects the best set of elements for each data packet transmitted or received.
  - Eight integrated 5 GHz downtilt omni-directional antennas for 4x4 MIMO with maximum antenna gain of 5.4 dBi (vertical)/4.2 dBi (horizontal) per antenna.
  - Built-in antennas are optimized for horizontal ceiling mounted orientation of the AP. The downtilt angle for maximum gain is roughly 30 degrees.
  - The maximum gain of the combined (summed) antenna patterns for all elements operating in the same band is 8.6 dBi in 2.4 GHz and 8.5 dBi (vertical)/8.1 dBi (horizontal) in 5 GHz.

OTHER INTERFACES

- One HPE Smart Rate port (RJ-45, maximum negotiated speed 5Gbps)
  - Auto-sensing link speed (100/1000/2500/5000BASE-T) and MDI/MDX
  - 802.3az Energy Efficient Ethernet (EEE)
  - PoE-PD: 48 Vdc (nominal) 802.3at PoE
- One 10/100/1000BASE-T Ethernet network interface (RJ-45)
  - Auto-sensing link speed and MDI/MDX
  - 802.3az Energy Efficient Ethernet (EEE)
  - PoE-PD: 48 Vdc (nominal) 802.3at PoE
- Link aggregation (LACP) support between both network ports for redundancy and increased capacity
- DC power interface, accepts 1.35/3.5-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 4 dBm transmit power (class 2) and -91 dBm receive sensitivity
  - Integrated antenna with roughly 30 degrees downtilt and peak gain of 5.1 dBi (AP-334/IAP-334) or 2.2 dBi (AP-335/IAP-335)
- Visual indicators (tri-color LEDs): for System and Radio status
- Reset button: factory reset (during device power up)
- Serial console interface (RJ-45, RS232)
- Kensington security slot

POWER SOURCES AND CONSUMPTION

- The AP supports direct DC power and Power over Ethernet (PoE)
- When both power sources are available, DC power takes priority over PoE
- Power sources are sold separately
- Direct DC source: 48Vdc nominal, +/- 5%
  - Interface accepts 1.35/3.5-mm center-positive circular plug with 9.5-mm length
- Power over Ethernet (PoE): 48 Vdc (nominal) 802.3af/802.3at compliant source
  - When using IPM, the AP may enter power-save mode with reduced functionality when powered by a PoE source (see details on Intelligent Power Monitoring in this datasheet)
  - Without IPM the AP will apply some fixed restrictions when using PoE:
  - The USB interface is disabled when using an 802.3at PoE power source
  - The USB interface and second Ethernet port are disabled, and both radios operate in 1x1 mode when using an 802.3af POE power source
- Maximum (worst-case) power consumption: 25.3W (802.3at PoE), 13.2W (802.3af PoE) or 25W (DC)
  - Excludes power consumed by external USB device (and internal overhead); this could add up to 5.9W (PoE or DC) for a 5W/1A USB device
- Maximum (worst-case) power consumption in idle mode: 10.9W (PoE or DC)

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 below for details

MECHANICAL

- Dimensions/weight (unit, excluding mount accessories):
  - - 225mm (W) x 224mm (D) x 52mm (H)
    8.9" (W) x 8.9" (D) x 2.0" (H)
  - 1150g/41oz
- Dimensions/weight (shipping):
  - 335mm (W) x 290mm (D) x 76mm (H)
    13.2" (W) x 11.4" (D) x 3.0" (H)
  - 1550g/55oz

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 and EN 60601-1-2

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

RELIABILITY

MTBF: 531,662hrs (61yrs) at +25C operating temperature

REGULATORY MODEL NUMBERS

- AP-334 and IAP-334: APIN0334
- AP-335 and IAP-335: APIN0335

CERTIFICATIONS

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

WARRANTY

- Aruba limited lifetime warranty

MINIMUM SOFTWARE VERSIONS

- ArubaOS 6.5.0.0, 8.0.1.0
- Aruba InstantOS 4.3.0.0

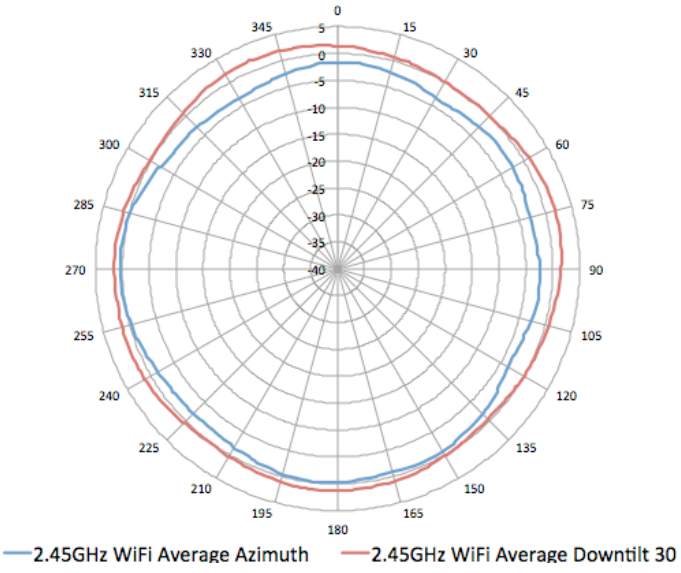
RF PERFORMANCE TABLE		
	Maximum transmit power (dBm) per transmit chain	**Receiver sensitivity (dBm) per receive chain**
802.11b 2.4 GHz		
1 Mbps	18.0	-96.0
11 Mbps	18.0	-89.0
802.11g 2.4 GHz		
6 Mbps	18.0	-91.0
54 Mbps	18.0	-75.0
802.11n HT20 2.4 GHz		
MCS0/8/16	18.0	-90.0
MCS7/15/23/31	17.0	-71.0
802.11n HT40 2.4 GHz		
MCS0/8/16/24	18.0	-88.0
MCS7/15/23/31	16.0	-68.0
802.11a 5 GHz		
6 Mbps	18.0	-88.0
54 Mbps	16.0	-73.0
802.11n HT20 5 GHz		
MCS0/8/16/24	18.0	-88.0
MCS7/15/23/31	16.0	-70.0
802.11n HT40 5 GHz		
MCS0/8/16/24	18.0	-86.0
MCS7/15/23/31	16.0	-67.0
802.11ac VHT20 5 GHz		
MCS0	18.0	-88.0
MCS9	13.0	-63.0
802.11ac VHT40 5 GHz		
MCS0	18.0	-86.0
MCS9	13.0	-61.0
802.11ac VHT80 5 GHz		
MCS0	18.0	-83.0
MCS9	15.0	-58.0
802.11ac VHT160 5 GHz		
MCS0	18.0	-80.0
MCS9	14.0	-55.0

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

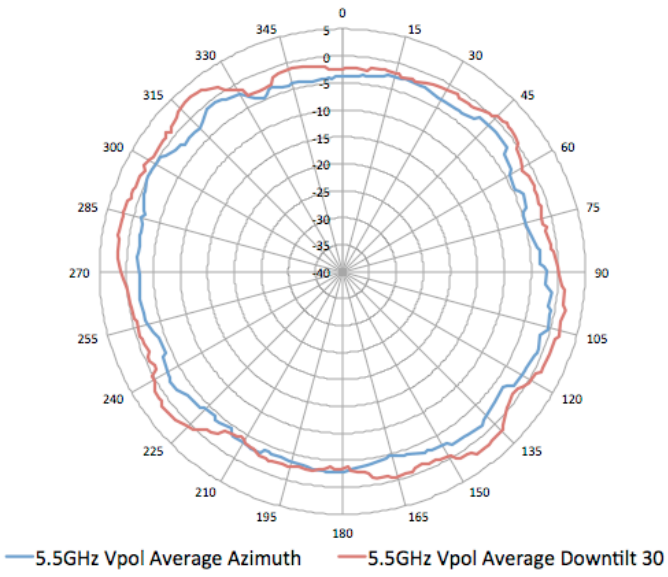
AP-330 ANTENNA PATTERN PLOTS

Horizontal planes (top view, AP facing forward)

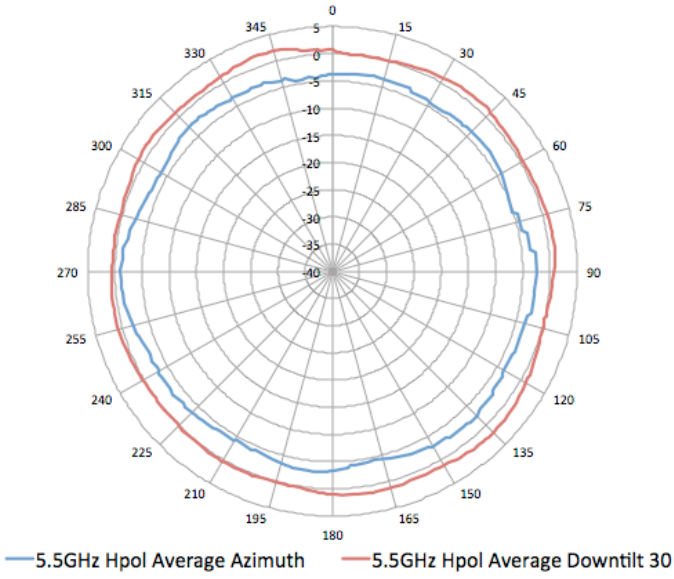
Showing azimuth (0 degrees) and 30 degrees downtilt pattern



2.45GHz Wi-Fi (antennas 5,6,7,8)



5.5GHz Wi-Fi Vpol (antennas 0,1,3,4)

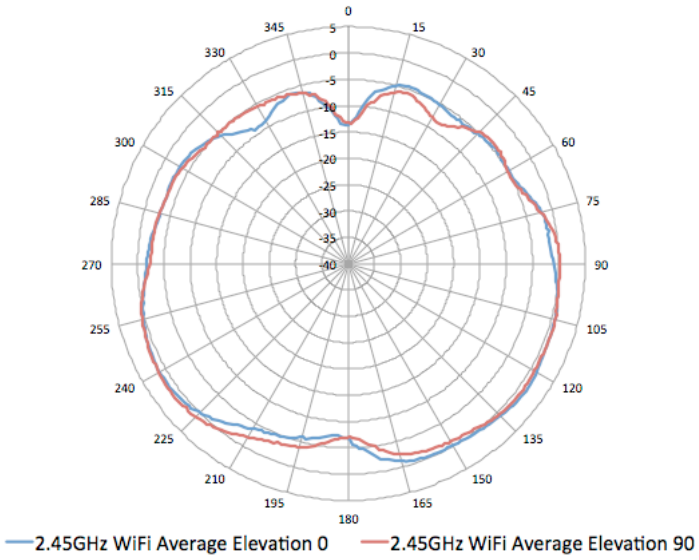


5.5GHz Wi-Fi Hpol (antennas A,B,C,D)

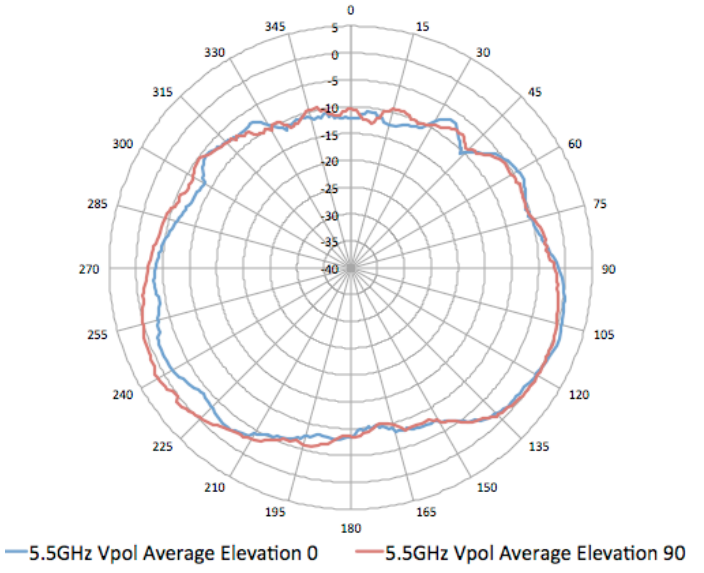
AP-330 ANTENNA PATTERN PLOTS

Elevation planes (side view, AP facing down)

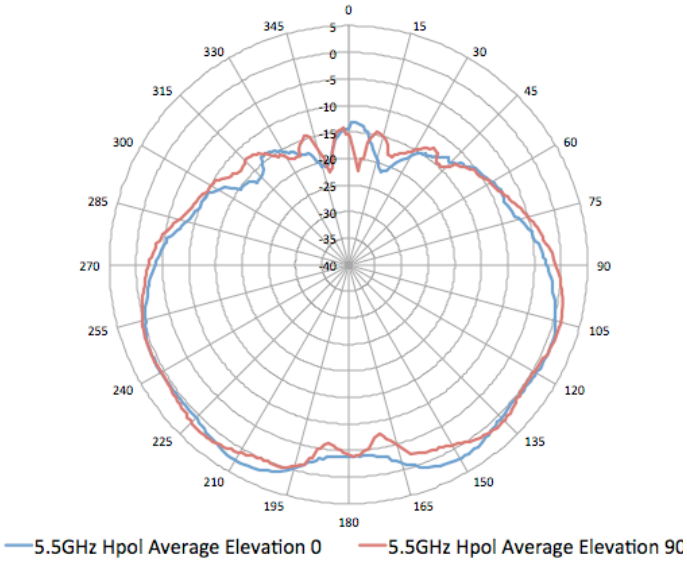
Showing side view with AP rotated 0 and 90 degrees



2.45GHz Wi-Fi (antennas 5,6,7,8)



5.5GHz Wi-Fi Vpol (antennas 0,1,3,4)



5.5GHz Wi-Fi Hpol (antennas A,B,C,D)

ORDERING INFORMATION

Part Number	Description
AP-330 Series Access Points	
AP-334	Aruba AP-334 NBase-T Access Point, 802.11n/ac, 4x4 MU-MIMO, dual radio, antenna connectors.
AP-334-F1	Aruba AP-334 NBase-T Access Point, 802.11n/ac, 4x4 MU-MIMO, dual radio, antenna connectors. FIPS/TAA compatible version.
IAP-334-RW	Aruba Instant IAP-334 NBase-T Access Point, 802.11n/ac, 4x4 MU-MIMO, dual radio, antenna connectors – Restricted regulatory domain: Rest of World.
IAP-334-US	Aruba Instant IAP-334 NBase-T Access Point, 802.11n/ac, 4x4 MU-MIMO, dual radio, antenna connectors – Restricted regulatory domain: United States.
IAP-334-JP	Aruba Instant IAP-334 NBase-T Access Point, 802.11n/ac, 4x4 MU-MIMO, dual radio, antenna connectors – Restricted regulatory domain: Japan.
IAP-334-IL	Aruba Instant IAP-334 NBase-T Access Point, 802.11n/ac, 4x4 MU-MIMO, dual radio, antenna connectors – Restricted regulatory domain: Israel.
AP-335	Aruba AP-335 NBase-T Access Point, 802.11n/ac, 4x4 MU-MIMO, dual radio, integrated antennas.
AP-335-F1	Aruba AP-335 NBase-T Access Point, 802.11n/ac, 4x4 MU-MIMO, dual radio, integrated antennas. FIPS/TAA compatible version.
IAP-335-RW	Aruba Instant IAP-335 NBase-T Access Point, 802.11n/ac, 4x4 MU-MIMO, dual radio, integrated antennas – Restricted regulatory domain: Rest of World.
IAP-335-US	Aruba Instant IAP-335 NBase-T Access Point, 802.11n/ac, 4x4 MU-MIMO, dual radio, integrated antennas – Restricted regulatory domain: United States.
IAP-335-JP	Aruba Instant IAP-335 NBase-T Access Point, 802.11n/ac, 4x4 MU-MIMO, dual radio, integrated antennas – Restricted regulatory domain: Japan.
IAP-335-IL	Aruba Instant IAP-335 NBase-T Access Point, 802.11n/ac, 4x4 MU-MIMO, dual radio, integrated antennas – Restricted regulatory domain: Israel.
IAP-334-RWF1	Aruba Instant IAP-334 Wireless Access Point, 802.11n/ac, 4x4 MU-MIMO, dual radio, antenna connectors – Restricted regulatory domain: Rest of World. FIPS/TAA compatible version.
IAP-334-USF1	Aruba Instant IAP-334 Wireless Access Point, 802.11n/ac, 4x4 MU-MIMO, dual radio, antenna connectors – Restricted regulatory domain: United States. FIPS/TAA compatible version.
IAP-335-RWF1	Aruba Instant IAP-335 Wireless Access Point, 802.11n/ac, 4x4 MU-MIMO, dual radio, integrated antennas – Restricted regulatory domain: Rest of World. FIPS/TAA compatible version.
IAP-335-USF1	Aruba Instant IAP-335 Wireless Access Point, 802.11n/ac, 4x4 MU-MIMO, dual radio, integrated antennas – Restricted regulatory domain: United States. FIPS/TAA compatible version.
Mounting Spares	
AP-220-MNT-C1	Aruba Access Point Mount Kit (ceiling grid). Contains 2x ceiling grid rail adapters (for flat rails). Color: black. Spare.
Mounting Accessories	
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-MNT-CM1	Suspended ceiling rail mount kit for indoor campus access points (metal, industrial grade). Fits most rail types.
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-220-MNT-W3	Indoor Access Point flat surface mount kit (box style, secure, low-profile, large, white)

ORDERING INFORMATION

Part Number	Description
Other Accessories	
AP-335-CVR-20	Kit of 20 snap-on covers for AP-335. Plain white, non-glossy, with holes for LED indicators. Color: white
Generic Indoor AP Accessories	
AP-AC-48V36C	48V/36W AC-to-DC Desktop Style Power Adapter with Type C DC plug (1.35/3.5/9.5mm circular, 90-degree angled). Note: Does not include country specific AC power cord (PC-AC-xx).
PD-9001GR-AC	30W 802.3at PoE midspan injector, 10/100/1000BASE-T Ethernet. Note: Does not include country specific AC power cord (PC-AC-xx)
Antennas	See info on the Aruba website for antenna part numbers

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