ARUBA 300 SERIES WIRELESS ACCESS POINTS

Entry-level 802.11ac Wave 2 (Wi-Fi 5) Access Points

The entry-level Aruba 300 Series Wave 2 access points deliver high performance and superb user experience for medium density environments. Featuring 3x3:3SS MU-MIMO capability, Aruba advanced ClientMatch radio management, and integrated Aruba Beacons, the 300 Series enables an all wireless digital work environment in a cost-effective manner.

With a maximum concurrent data rate of 1,300 Mbps in the 5GHz band and 300 Mbps in the 2.4GHz band (for an aggregate peak data rate of 1.6Gbps), the entry-level 300 Series brings an always-on wireless network experience with the performance required for enterprises. It is ideal for cost-sensitive medium density environments across verticals.

The high performance 802.11ac 300 Series supports multi-user MIMO (MU-MIMO) and 3 spatial streams (3SS). It provides simultaneous data transmission to multiple devices (up to two), maximizing data throughput and improving network efficiency.

The 300 Series includes the 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.

IOT PLATFORM CAPABILITIES

Like all Aruba Wi-Fi 6 APs, the 300 Series provides integrated Bluetooth capabilities to enable Meridian and IoT-based location services, asset tracking, and mobile engagement services. For expanded use cases, an IoT expansion radio can be added to support the Zigbee protocol.

KEY FEATURES

- Resolve sticky clients with MU-MIMO-aware ClientMatch
- Maximum concurrent data rate of 1,300 Mbps in the 5GHz band and 300 Mbps in the 2.4GHz band (for an aggregate peak data rate of 1.6Gbps)
- Participates in Aruba's Dynamic Segmentation solution
- Includes integrated Bluetooth Low Energy (BLE) radio, for advanced location and indoor wayfinding

These features allow organizations to leverage the AP as an IoT platform, which eliminates the need for an overlay infrastructure and additional IT resources.

UNIQUE BENEFITS

- Dual Radio 802.11ac Access Point with Multi-User MIMO
  - Supports up to 1,300 Mbps in the 5GHz band (with 3SS/VHT80 clients) and up to 300 Mbps in the 2.4GHz band (with 2SS/HT40 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.
  - Enables management of your deployment of battery-powered Aruba Beacons.

- 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 300 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.
- Intelligent app visibility and control
  - AppRF technology leverages deep packet inspection to classify and block, prioritize, or limit bandwidth for thousands of applications in a range of categories.
- 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.
- 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.
  - For the 300 Series APs, the IPM power-save feature applies when the unit is powered by an 802.3af PoE source. By default, the USB interface will be the first feature to turn off if AP power consumption exceeds the available power budget. In rare cases it may be necessary to take additional power saving measures, but in most cases, the 300 Series APs will operate in unrestricted mode.

CHOOSE YOUR OPERATING MODE

Aruba 300 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 300 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 300 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, Instant APs are factory-shipped to any site and configure themselves when powered up.

AP-300 SERIES SPECIFICATIONS

- AP-304 (controller-managed) and IAP-304 (Instant):
  - 5GHz 802.11ac 3x3 MIMO (1,300 Mbps max rate) and 2.4GHz 802.11n 2x2 MIMO (300 Mbps max rate) radios, with a total of three dual-band RP-SMA connectors for external antennas.
- AP-305 (controller-managed) and IAP-305 (Instant):
  - 5GHz 802.11ac 3x3 MIMO (1,300 Mbps max rate) and 2.4GHz 802.11n 2x2 MIMO (300 Mbps max rate) radios, with a total of three integrated omni-directional downtilt dual- band antennas.

WI-FI RADIO SPECIFICATIONS

- AP type: Indoor, dual radio, 5GHz 802.11ac 3x3 MIMO and 2.4GHz 802.11n 2x2 MIMO
- Software-configurable dual radio supports 5GHz (Radio 0) and 2.4GHz (Radio 1)

- 5GHz: Three spatial stream Single User (SU) MIMO for up to 1,300 Mbps wireless data rate to individual 3x3 VHT80 client devices
- 5GHz: Two spatial stream Multi User (MU) MIMO for up to 867 Mbps wireless data rate to up to two (1x1 VHT80) MU-MIMO capable client devices simultaneously
- 2.4GHz: Two spatial stream Single User (SU) MIMO for up to 300 Mbps wireless data rate to individual 2x2 HT40 client devices
- Support for up to 256 associated client devices per radio, and up to 16 BSSIDs per radio
- Supported frequency bands (country-specific restrictions apply):
  - 2.400 to 2.4835GHz
  - 5.150 to 5.250GHz
  - 5.250 to 5.350GHz
  - 5.470 to 5.725GHz
  - 5.725 to 5.850GHz
- 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):
  - 2.4GHz band: +18 dBm per chain, +21 dBm aggregate (2x2)
  - 5GHz band: +18 dBm per chain, +23 dBm aggregate (3x3)
  - 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 20MHz, 40MHz and 80MHz 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 (2.4GHz): 6.5 to 300 (MCS0 to MCS15)
  - 802.11n (5GHz): 6.5 to 450 (MCS0 to MCS23)
  - 802.11ac: 6.5 to 1,300 (MCS0 to MCS9, NSS = 1 to 3 for VHT20/40/80)
- 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-304/IAP-304: Three RP-SMA connectors for external dual band antennas. Worst-case internal loss between radio interface and external antenna connectors (due to diplexing circuitry): 0.8dB in 2.4GHz and 1.6dB in 5GHz.
- AP-305/IAP-305: Three integrated dual-band downtilt omni-directional antennas for 3x3 MIMO with peak antenna gain of 3.9dBi in 2.4GHz and 5.4dBi in 5GHz. Built-in antennas are optimized for horizontal ceiling mounted orientation of the AP. The downtilt angle for maximum gain is roughly 30 degrees.
  - Combining the patterns of each of the antennas of the MIMO radios, the peak gain of the effective per-antenna pattern is 2.4dBi in 2.4GHz and 2.8dBi in 5GHz.

OTHER INTERFACES
- One 10/100/1000BASE-T Ethernet network interface (RJ-45)
  - Auto-sensing link speed and MDI/MDX
  - 802.3az Energy Efficient Ethernet (EEE)
- USB 2.0 host interface (Type A connector)
- Bluetooth Low Energy (BLE) radio
  - Up to 3dBm transmit power (class 2) and -92dBm receive sensitivity
  - Integrated antenna with roughly 30 degrees downtilt and peak gain of 2.3dBi (AP-304/IAP-304) or 3.4dBi (AP-305/IAP-305)
- Visual indicators (multi-color LEDs): for System and Radio status
- Reset button: factory reset (during device power up)
- Serial console interface (proprietary; optional adapter cable available)
- 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: 12Vdc nominal, +/- 5%
  - Interface accepts 2.1/5.5-mm center-positive circular plug with 9.5-mm length
- Power over Ethernet (PoE): 48 Vdc (nominal) 802.3af/802.3at compliant source
  - Unrestricted functionality with 802.3at PoE
  - When using IPM, the AP may enter power-save mode with reduced functionality when powered by an 802.3af PoE source (see details on Intelligent Power Monitoring elsewhere in this datasheet)
  - Without IPM, the USB port is disabled when the AP is powered by an 802.3af PoE source
- Maximum (worst-case) power consumption: 13W (PoE) or 12W (DC)
  - Excludes power consumed by external USB device (and internal overhead); this could add up to 6.5W (PoE) or 5.5W (DC) for a 5W/1A USB device
- Maximum (worst-case) power consumption in idle mode: 3.7W (PoE) or 2.6W (DC)

MOUNTING

- The AP ships with two (black) 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):
  - 165mm x 165mm x 38mm
  - 460g
- Dimensions/weight (shipping):
  - 205mm x 205mm x 52mm
  - 620g

ENVIRONMENTAL

- Operating:
  - Temperature: 0° C to +50° C (+32° F to +122° F)
  - Humidity: 5% to 93% non-condensing
- Storage and transportation:
  - Temperature: -40° C to +70° C (-40° F to +158° F)

REGULATORY

- FCC/ISED
- CE Marked
- RED Directive 2014/53/EU
- EMC Directive 2014/30/EU
- Low Voltage Directive 2014/35/EU
- UL/IEC/EN 60950
- EN 60601-1-1 and EN 60601-1-2
- EN 50155 (AP-305/IAP-305)

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

RELIABILITY

MTBF: 1,116,000hrs (127yrs) at +25C operating temperature

REGULATORY MODEL NUMBERS

- AP-304 and IAP-304: APIN0304
- AP-305 and IAP-305: APIN0305

CERTIFICATIONS

- CB Scheme Safety, cTUVus
- UL2043 plenum rating
- Wi-Fi Alliance (WFA) certified 802.11a/b/g/n/ac
- WPA, WPA2 and WPA3 – Enterprise with CNSA option, Personal (SAE), Enhanced Open (OWE)
- Passpoint® (Release 2) with ArubaOS and Instant 8.3+

WARRANTY

- Aruba limited lifetime warranty

MINIMUM OPERATING SYSTEM SOFTWARE VERSIONS

- ArubaOS 6.5.1.0, 8.1.0.0
- Aruba InstantOS 4.3.1.0

RF PERFORMANCE TABLE

	Maximum transmit power (dBm) per transmit chain	Receiver sensitivity (dBm) per receive chain
802.11b 2.4GHz		
1 Mbps	18.0	-95.0
11 Mbps	18.0	-88.0
802.11g 2.4GHz		
6 Mbps	18.0	-92.0
54 Mbps	18.0	-74.0
802.11n HT20 2.4GHz		
MCS0/8	18.0	-91.0
MCS7/15	18.0	-71.0
802.11n HT40 2.4GHz		
MCS0/8	18.0	-88.0
MCS7/15	18.0	-68.0
802.11a 5GHz		
6 Mbps	18.0	-92.0
54 Mbps	18.0	-74.0
802.11n HT20 5GHz		
MCS0/8/16	18.0	-91.0
MCS7/15/23	18.0	-71.0
802.11n HT40 5GHz		
MCS0/8/16	18.0	-88.0
MCS7/15/23	17.0	-68.0
802.11ac VHT20 5GHz (SU-MIMO)		
MCS0	18.0	-91.0
MCS8	18.0	-67.0
802.11ac VHT40 5GHz (SU-MIMO)		
MCS0	18.0	-88.0
MCS9	17.0	-63.0
802.11ac VHT80 5GHz (SU-MIMO)		
MCS0	18.0	-85.0
MCS9	17.0	-58.0

Maximum capability of the hardware provided (excluding antenna gain). Maximum transmit power is limited by local regulatory settings.
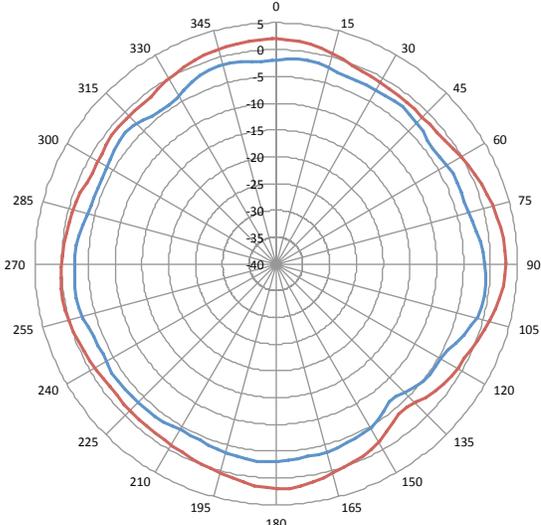
AP-300 ANTENNA PATTERN PLOTS

Horizontal planes (top view, AP facing forward)

Showing azimuth (0 degrees) and 30 degrees downtilt pattern
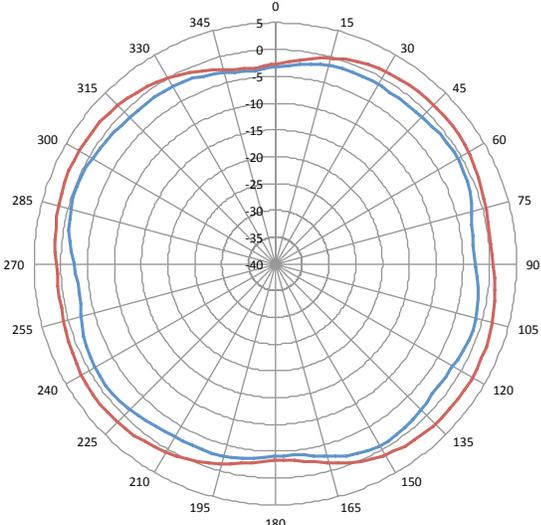
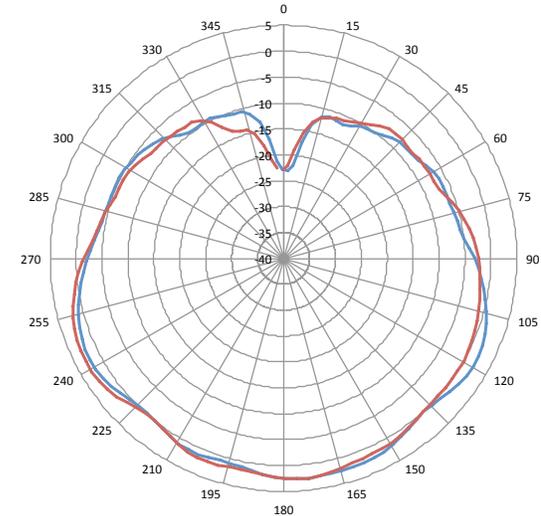2.45GHz Wi-Fi (antennas A1, A2)

5.5GHz Wi-Fi (antennas A1, A2, A3)

Elevation planes (side view, AP facing down)

Showing side view with AP rotated 0 and 90 degrees
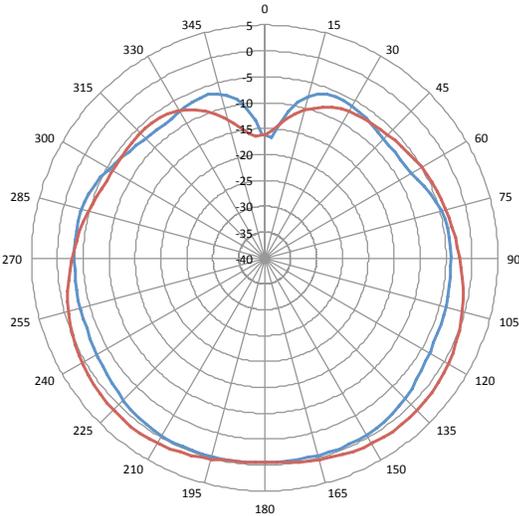
2.45GHz Wi-Fi (antennas A1, A2)

5.5GHz Wi-Fi (antennas A1, A2, A3)

ORDERING INFORMATION

Part Number	Description
AP-300 Series Access Points	
JX935A	Aruba AP-304 802.11n/ac 2x2:2/3x3:3 MU-MIMO Dual Radio Antenna Connectors AP
JX937A	Aruba AP-304 TAA-compliant 802.11n/ac Dual 2x2:2/3x3:3 MU-MIMO Dual Radio Antenna Connectors AP
JX936A	Aruba AP-305 802.11n/ac 2x2:2/3x3:3 MU-MIMO Dual Radio Integrated Antenna AP
JX938A	Aruba AP-305 TAA-compliant 802.11n/ac Dual 2x2:2/3x3:3 MU-MIMO Dual Radio Integrated Antenna AP
AP-300 Series Instant Access Points	
JX942A	Aruba Instant IAP-304 (JP) 802.11n/ac Dual 2x2:2/3x3:3 MU-MIMO Radio Antenna Connectors AP
JX939A	Aruba Instant IAP-304 (RW) 802.11n/ac Dual 2x2:2/3x3:3 MU-MIMO Radio Antenna Connectors AP
JX943A	Aruba Instant IAP-304 (RW) TAA 802.11n/ac Dual 2x2:2/3x3:3 MU-MIMO Radio Ant Connectors AP
JX940A	Aruba Instant IAP-304 (US) 802.11n/ac Dual 2x2:2/3x3:3 MU-MIMO Radio Antenna Connectors AP
JX945ACM	Aruba CM Instant IAP-305 (RW) 802.11n/ac Dual 2x2:2/3x3:3 MU-MIMO Radio Integrated Antenna AP
JX946ACM	Aruba CM Instant IAP-305 (US) 802.11n/ac Dual 2x2:2/3x3:3 MU-MIMO Radio Integrated Antenna AP
JX944A	Aruba Instant IAP-304 (US) TAA 802.11n/ac Dual 2x2:2/3x3:3 MU-MIMO Radio Ant Connectors AP
JY864A	Aruba Instant IAP-305 (EG) 802.11n/ac Dual 2x2:2/3x3:3 MU-MIMO Radio Integrated Antenna AP
JX947A	Aruba Instant IAP-305 (IL) 802.11n/ac Dual 2x2:2/3x3:3 MU-MIMO Radio Integrated Antenna AP
JX948A	Aruba Instant IAP-305 (JP) 802.11n/ac Dual 2x2:2/3x3:3 MU-MIMO Radio Integrated Antenna AP
JX945A	Aruba Instant IAP-305 (RW) 802.11n/ac Dual 2x2:2/3x3:3 MU-MIMO Radio Integrated Antenna AP
JX949A	Aruba Instant IAP-305 (RW) TAA 802.11n/ac Dual 2x2:2/3x3:3 MU-MIMO Radio Integrated Ant AP
JX946A	Aruba Instant IAP-305 (US) 802.11n/ac Dual 2x2:2/3x3:3 MU-MIMO Radio Integrated Antenna AP
JX950A	Aruba Instant IAP-305 (US) TAA 802.11n/ac Dual 2x2:2/3x3:3 MU-MIMO Radio Integrated Ant AP
Mounting Spares	
JW044A	AP-220-MNT-C1 2x Ceiling Grid Rail Adapter for Basic Flat Rails Mount Kit
JW044ACM	Aruba CM AP-220-MNT-C1 2x Ceiling Grid Rail Adapter for Basic Flat Rails Mount Kit
Mounting Accessories	
JW045A	AP-220-MNT-C2 2x Ceiling Grid Rail Adapter for Interlude and Silhouette Mt Kit
JX961A	AP-MNT-CM1 Industrial Grade Indoor Access Point Metal Suspended Ceiling Rail Mount Kit
JW046A	AP-220-MNT-W1 Flat Surface Wall/Ceiling Black AP Basic Flat Surface Mount Kit
JW047A	AP-220-MNT-W1W Flat Surface Wall/Ceiling White AP Basic Flat Surface Mount Kit
JY706A	AP-220-MNT-W3 White Low Profile Box Style Secure Large AP Flat Surface Mount Kit
Q9U25A	AP-MNT-W4 White Low Profile Basic AP Flat Surface Mount Kit
JW045ACM	Aruba CM AP-220-MNT-C2 2x Ceiling Grid Rail Adapter for Interlude and Silhouette Mt Kit
JX961ACM	Aruba CM AP-MNT-CM1 Metal Suspended Ceiling Rail Mount Kit
JW046ACM	Aruba CM AP-220-MNT-W1 Flat Surface Wall/Ceiling Black AP Basic Flat Surface Mount Kit
JW047ACM	Aruba CM AP-220-MNT-W1W Flat Surface Wall/Ceiling White AP Basic Flat Surface Mount Kit
JY706ACM	Aruba CM AP-220-MNT-W3 White Low Profile Box Style Secure Large AP Flat Surface Mount Kit
Q9U25ACM	Aruba CM AP-MNT-W4 White Low Profile Basic AP Flat Surface Mount Kit

ORDERING INFORMATION

Part Number	Description
Power Accessories	
R3K00A	12V/36W AC/DC power adapter type B
R3K00ACM	Aruba CM AP-AC2-12B 12V/36W AC/DC desktop style power adapter with type B connector
Other Accessories	
JX951A	AP-305-CVR-20 20-pk for AP-305 with Holes for LED Indicators White Non-glossy Snap-on Covers
JX951ACM	Aruba CM AP-305-CVR-20 20-pk White Non-glossy Snap-on Covers

Note: All hardware SKUs can be managed by Aruba Central. Central Managed (CM) SKUs are used for simplified ordering within US and Canada only.

For more ordering information, please refer to the ordering guide

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