

# ARUBA 130 SERIES ACCESS POINTS

Maximize the performance of mobile devices



**Multifunctional 130 series wireless access points (APs) maximize mobile device performance in extremely high-density Wi-Fi environments.**

These ultra-high-performance 802.11n APs deliver wireless data rates up to 450 Mbps per radio and employ three spatial streams to support 50% more throughput and mobile devices than previous-generation APs.

The AP-135 and IAP-135 APs feature a 2.4-GHz and 5-GHz radio, each with 3x3 MIMO and three integrated omni-directional downtilt antennas. The AP-134 and IAP-134 models feature the same radios with three (combined, diplexed) external antenna connectors.

## WI-FI CLIENT OPTIMIZATION

To eliminate sticky client behavior, every Aruba AP comes with ClientMatch™ technology, which continuously gathers session performance metrics and utilizes this data to steer mobile devices to the best AP and radio on the WLAN, even while users roam.

## BEST-IN-CLASS RF MANAGEMENT

All Aruba APs include Adaptive Radio Management™ technology, which is essential to creating the most reliable, high-performance WLANs. ARM™ manages the 2.4-GHz and 5-GHz radio bands to optimize Wi-Fi client performance and ensures that APs stay clear of RF interference.

The 130 series 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.

## CHOOSE YOUR OPERATING MODE

The 130 series of APs offers a choice of operating modes to meet your unique management and deployment requirements.

- **Controller-managed mode.** When managed by Aruba Mobility Controllers, 130 series APs offer centralized configuration, data encryption, policy enforcement and network services, as well as distributed and centralized traffic forwarding. Please refer to the Aruba [Mobility Controller](#) data sheets for more details.
- **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.

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.

If WLAN and network requirements change, a built-in migration path allows 130 series Instant APs to become part of a WLAN that is centrally managed by a Mobility Controller.

## ADVANCED FEATURES

- Spectrum Analysis:
  - Spectrum analyzer remotely scans the 2.4-GHz and 5-GHz radio bands to identify sources of RF interference.
- Security:
  - With an [OpenDNS](#) service subscription, Aruba Instant delivers integrated web filtering, malware and botnet protection to every device connected to the WLAN
  - Integrated Trusted Platform Module (TPM) for secure storage of credentials and keys
  - SecureJack-capable for secure tunneling of wired Ethernet traffic

## OPERATING MODES

- 802.11a/b/g/n Aruba Instant AP
- 802.11a/b/g/n Mobility Controller-managed AP
- Air monitor (AM)
- Secure enterprise mesh
- Remote AP (RAP) when used with a Mobility Controller

## WIRELESS RADIO SPECIFICATIONS

- AP type: Dual-radio, dual-band 802.11n indoor
- Software-configurable dual radio supports 2.4 GHz and 5 GHz
- 3x3 MIMO 802.11n with three spatial streams and up to 450 Mbps 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 upon 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: Orthogonal frequency division multiplexing (OFDM)
  - 802.11n: 3x3 MIMO with three spatial streams
- Supported modulation types:
  - 802.11b: BPSK, QPSK, CCK
  - 802.11a/g/n: BPSK, QPSK, 16-QAM, 64-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: +23 dBm (18 dBm per chain)
  - 5-GHz bands: +23 dBm (18 dBm per chain)
- Maximum ratio combining (MRC) for improved receiver performance
- Cyclic delay diversity for improved downlink RF performance
- Short guard interval for 20-MHz and 40-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 reliability in signal delivery (Supported in hardware; currently not enabled in software)
- Association rates (Mbps):
  - 802.11b: 1, 2, 5.5, 11
  - 802.11a/g: 6, 9, 12, 18, 24, 36, 48, 54
  - 802.11n: MCS0 to MCS23 (6.5 Mbps to 450 Mbps)
- 802.11n high-throughput (HT) support: HT 20/40
- 802.11n packet aggregation: A-MPDU, A-MSDU

## POWER

- 48 volts DC 802.3af power over Ethernet (PoE) or 802.3at PoE+
  - Note: when using 802.3af POE, the second Ethernet port is disabled. It is enabled when using an 802.3at POE power source (or direct DC power).
- 12 volts DC external AC supplied power (adapter sold separately)
- Maximum power consumption: 12.5 watts

## ANTENNAS

- AP-134 and IAP-134: Three RP-SMA connectors for external dual-band antennas. Internal loss between radio interface and external antenna connectors (due to duplexing circuitry): 1.5 dB in 2.4 GHz and 3.0 dB in 5 GHz.
- AP-135 and IAP-135: Six integrated downtilt omni-directional antennas for 3x3 MIMO with maximum antenna gain of 3.5 dBi in 2.4 GHz and 4.5 dBi in 5 GHz

## INTERFACES

- Network: Two 10/100/1000BASE-T Ethernet (RJ-45), auto-sensing link speed and MDI/MDX
- Ethernet ports support 802.3az Energy Efficient Ethernet (EEE)
- 48 volts DC 802.3af PoE or 802.3at PoE+ interoperable with intelligisource power sourcing equipment (both ports)
- Other: One RJ-45 console interface

## MOUNTING

- Included with AP:
  - Mounting brackets for attaching to 9/16" and 15/16" T-bar drop-tile ceiling
  - Kensington security lock point
- Optional mounting kits:
  - AP-130-MNT: Aruba 130 series AP mount kit contains one flat-surface wall/ceiling mount bracket.
  - AP-130-MNT-C2: Aruba 130 series AP mount kit contains two ceiling-grid rail adapters for interlude and silhouette style rails.
  - AP-130-MNT-W2: Aruba 130 series AP mount kit contains one flat-surface wall/ceiling secure mount cradle.

## MECHANICAL

- Dimensions/weight (unit):
  - 170 mm x 170 mm x 45 mm (6.69" x 6.69" x 1.77")
  - 760 g (1.68 lb)
- Dimensions/weight (shipping):
  - 285 mm x 240 mm x 70 mm (11.22" x 9.45" x 2.76")
  - 1,050 g (2.31 lb)

## ENVIRONMENTAL

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

## CERTIFICATIONS

- CB Scheme Safety, cTUVus
- UL2043 plenum rating
- Wi-Fi certified 802.11a/b/g/n

## WARRANTY

- Limited lifetime warranty

## MINIMUM ARUBAOS VERSION

- ArubaOS 6.1.1.0 on an Aruba Mobility Controller
- Aruba Instant 2.0.0.3 software



## IAP-135 AND AP-135 RF PERFORMANCE TABLE

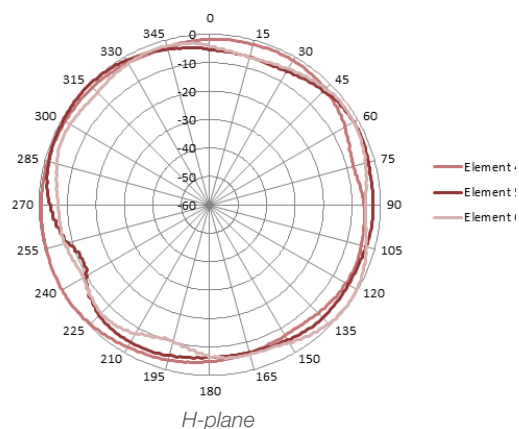
	Max transmit power per active transmit chain (dBm)	Receiver sensitivity level per active receive chain (dBm)	Max transmit power per active transmit chain (dBm)	Receiver sensitivity level per active receive chain (dBm)
	2.4 GHz		5 GHz	
802.11b				
1 Mbps	18	-92	–	–
11 Mbps	18	-87	–	–
802.11a/g				
6 Mbps	18	-89	18	-89
54 Mbps	16	-77	15	-77
802.11n HT20				
MCS0/8/16	18	-89	17	-89
MCS7/15/23	15	-73	12	-73
802.11n HT40				
MCS0/8/16	17	-87	16	-87
MCS7/15/23	11	-70	11	-69

Maximum capability of the hardware provided. Maximum transmit power is limited by local regulatory settings.

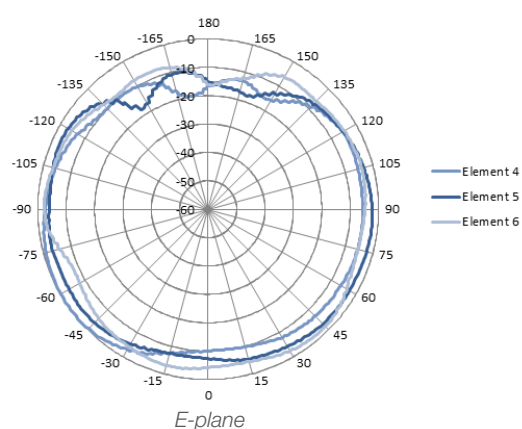
RF performance numbers for IAP-134 and AP-134 are slightly lower due to additional internal RF circuitry.

## IAP-135 AND AP-135 ANTENNA PATTERN PLOTS

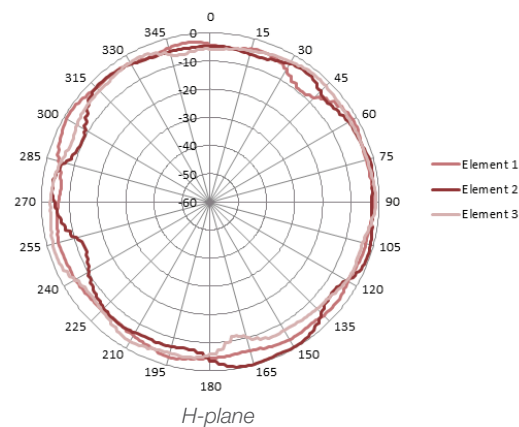
2.450 GHz, H-Plane, 20 degrees down-tilt



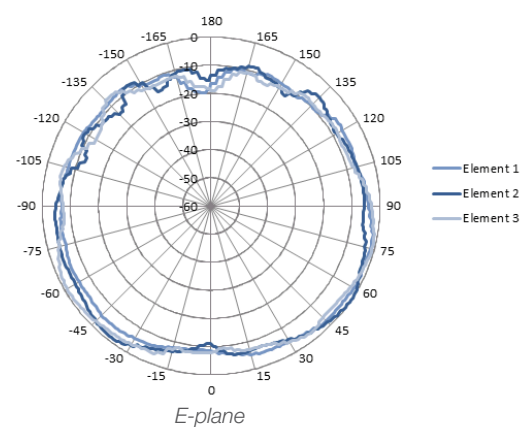
2.450 GHz, E-plane, AP facing down



5.500 GHz, H-Plane, 20 degrees down-tilt



5.500 GHz, E-plane, AP facing down



**ORDERING INFORMATION**

<b>Part Number</b>	<b>Description</b>
IAP-135	Aruba Instant 135 Wireless Access Point, 802.11abgn, 3x3:3, dual radio, integrated antenna. Restricted regulatory domain – ROW. This product must not be deployed in the United States, Japan or Israel.
IAP-135-US	Aruba Instant IAP-135 wireless AP, 802.11a/b/g/n, 3x3:3, dual radio, integrated antennas. Contains: AP, installation guide and two ceiling rail mount adapters. Restricted regulatory domain: United States
IAP-135-IL	Aruba Instant IAP-135 wireless AP, 802.11a/b/g/n, 3x3:3, dual radio, integrated antennas. Contains: AP, installation guide and two ceiling rail mount adapters. Restricted regulatory domain: Israel
IAP-135-JP	Aruba Instant IAP-135 wireless AP, 802.11a/b/g/n, 3x3:3, dual radio, integrated antennas. Contains: AP, installation guide and two ceiling rail mount adapters. Restricted regulatory domain: Japan
AP-135	Aruba AP-135 wireless AP, 802.11a/b/g/n, 3x3:3, dual radio, integrated antennas. Contains: AP, installation guide and two ceiling rail mount adapters.
IAP-134	Aruba Instant 134 Wireless Access Point, 802.11abgn, 3x3:3, dual radio, antenna connectors. Restricted regulatory domain – ROW. This product must not be deployed in the United States, Japan or Israel.
IAP-134-US	Aruba Instant 134 Wireless Access Point, 802.11abgn, 3x3:3, dual radio, antenna connectors. Restricted regulatory domain: United States
IAP-134-IL	Aruba Instant 134 Wireless Access Point, 802.11abgn, 3x3:3, dual radio, antenna connectors. Restricted regulatory domain: Israel
IAP-134-JP	Aruba Instant 134 Wireless Access Point, 802.11abgn, 3x3:3, dual radio, antenna connectors. Restricted regulatory domain: Japan
AP-134	Aruba AP-134 wireless AP, 802.11a/b/g/n, 3x3:3, dual radio, antenna connectors. Contains: AP, installation guide and two ceiling rail mount adapters.
AP-130-MNT	Aruba 130 series AP mount kit contains one flat-surface wall/ceiling mount bracket.
AP-130-MNT-W2	Aruba 130 series AP mount kit contains one flat-surface wall/ceiling secure mount cradle.
AP-130-MNT-C2	Aruba 130 series AP mount kit contains two ceiling-grid rail adapters for interlude and silhouette style rails.
AP-AC-UN	12V/18W 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
AP-AC-12V18	12V/18W indoor Access Point AC power adapter. Does not include country-specific power cord (order separately)
PD-9001GR-AC	30W 802.3at POE midspan injector, 10/100/1000Base-T Ethernet


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