Aruba Instant IAP-134 and IAP-135 Access Points

HIGH AVAILABILITY
Aruba Instant employs a fully distributed architecture and is resilient to failure. If an Aruba Instant AP functioning as the primary Virtual Controller fails, another Aruba Instant AP automatically inherits the role of the primary Virtual Controller with no service disruption. The primary Virtual Controller operates like any other Aruba Instant AP with full WLAN functionality.

MANAGEMENT AND VISIBILITY
Multiple Aruba Instant networks can be securely and centrally managed by AirWave, allowing Aruba Instant to operate in hundreds of distributed locations. With AirWave, IT has real-time visibility into users, mobile devices, and the wired and wireless infrastructure from a single management console.

The multifunction Aruba Instant can be configured to provide WLAN access with part-time air monitoring, dedicated air monitoring for wireless IPS and secure enterprise mesh functionality.

INVESTMENT PROTECTION
As application and WLAN requirements change over time, Aruba Instant can migrate to a centralized Mobility Controller architecture.

OPERATING MODES
• 802.11a/b/g/n AP
• Air monitor (AM)

RADIOS
• Software-configurable dual radio capable of supporting 2.4 GHz and 5 GHz
• 3x3 MIMO with three spatial streams and up to 450 Mbps data rate per radio

RF MANAGEMENT
• Automatic transmit power and channel management control with auto coverage-hole correction via Adaptive Radio Management (ARM™)

ADVANCED FEATURES
• IEEE 802.1AE MACsec
• Wireless intrusion detection and prevention
• Secure enterprise mesh
• Integrated Trusted Platform Module (TPM) for secure storage of credentials and keys
• RADIUS support
• Bandwidth limiting

ARUBA INSTANT
IAP-134 AND IAP-135 ACCESS POINTS
For extremely high-density Wi-Fi client environments

The IAP-134 and IAP-135 virtualize Aruba Mobility Controller functionality to create a feature-rich, enterprise-grade wireless LAN (WLAN) that combines affordability with unmatched configuration simplicity.

Deployed at a single location or at multiple sites, the IAP-134 and IAP-135 maximize mobile device performance in extremely high-density Wi-Fi client environments and provide strong threat protection with integrated IEEE 802.1AE MACsec security.

Multiple Aruba Instant APs can be managed by a single AP that is dynamically elected the Virtual Controller, and multiple Virtual Controller networks can be centrally managed with the Aruba AirWave™ network management system.

The IAP-134 features two 3x3 MIMO dual-band 2.4-GHz and 5-GHz radios with external antenna connectors, while the IAP-135 features the same radios with internal antennas. Both provide years of trouble-free operation and are backed by a limited lifetime warranty.

VIRTUAL CONTROLLER TECHNOLOGY
The Virtual Controller technology in Aruba Instant delivers enterprise-grade capabilities such as automatic quality of service (QoS), 802.1X authentication, role- and device-based policy enforcement, rogue containment and Adaptive Radio Management™ (ARM™), which optimizes Wi-Fi client behavior by making sure that APs stay clear of RF interference.

EASY TO DEPLOY
Aruba Instant is up and running in minutes. From a laptop, simply connect wirelessly to an SSID to perform over-the-air provisioning in minutes. To expand wireless coverage, simply install more Aruba Instant APs — configurations are automatically distributed from the Virtual Controller.
INTERNET-WIDE SECURITY
With an OpenDNS service subscription, Aruba Instant delivers integrated web filtering, malware and botnet protection to every device connected to the WLAN.

WIRELESS RADIO SPECIFICATIONS
- **AP type:** Dual-radio, dual-band 802.11n indoor
- **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
- **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
  - 2.4 GHz: 23 dBm (limited by local regulatory requirements)
  - 5 GHz: 23 dBm (limited by local regulatory requirements)
- **Maximum ratio combining (MRC) for improved receiver performance**
- **Space time blocking code (STBC) for increased range and improved reception**
- **Low-density parity check (LDPC) for high efficiency error correction and increased throughput**
- **Transmit beam-forming (TxBF) ready platform for increased reliability in signal delivery**
- **Association rates (Mbps):**
  - 802.11b: 1, 2, 5.5, 11
  - 802.11a/g: 6, 9, 12, 18, 24, 36, 48, 54
  - 802.11n: MCS0-MCS23/6.5-450 Mbps
- **802.11n high-throughput (HT) support:** HT 20/40
- **802.11n packet aggregation:** A-MPDU, A-MSDU

POWER
- **48 V DC 802.3af power over Ethernet**
- **12 V DC for external AC supplied power (adapter sold separately)**
- **Maximum power consumption:**
  - 14 watts when powered from 802.3at PoE or DC
  - 12.5 watts when powered from 802.3af PoE

ANTENNA
- **IAP-134:** Three RP-SMA antenna interfaces for external dual-band antennas
- **IAP-135:** Six internal downtilt omni-directional antennas; three per frequency band
  - 2.4 to 2.5 GHz/3.5 dBi
  - 5.150 to 5.875 GHz/4.5 dBi

INTERFACES
- **Network:**
  - Two 10/100/1000BASE-T Ethernet (RJ-45), auto-sensing link speed and MDI/MDX
  - 802.1AE MACsec connectionless data confidentiality and integrity
  - 802.3az (EEE)
  - Power: 48 V DC 802.3af PoE or 802.3at PoE+ interoperable with intellisource power sourcing equipment (both ports)
  - Antenna (AP-134): Three RP-SMA antenna interfaces (supports up to 3x3 MIMO)
  - Other: One RJ-45 console interface

MOUNTING
- **Standard:**
  - Wall
  - Tool-less ceiling tile rail (15/16”)
- **Mounting kit:**
  - Desk stand and wall outlet mount plate
  - Solid wall mount bracket
  - Wall box mount bracket (fits standard US single-gang wall boxes)
  - Ceiling tile rail adapters (15/16” and 9/16” recessed or non-recessed)
- **Optional mounting kit:** Wall-mount bracket for offset wall mounting, providing spacing between wall and unit (cable bend radius)
- **Security:** Kensington security lock point

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

REGULATORY
- **FCC/Industry of Canada**
- **EN 300 328**
- **EN 301 893**
- **CB Scheme Safety, cTUVus**
- **Korea KCC**
- **Mexico NOM/COFETEL**
- **UL2043 Compliant**
- **CE Marked**
- **Low Voltage Directive**
- **EN 301 489**
- **UL/IEC/EN 60950**
- **Japan MIC/VCCI**
- **Brazil ANATEL**
- **China SRRC/CCC**
- **AS/NZS 4260, 4771, 3548**

WARRANTY
- **Limited lifetime warranty**

CERTIFICATIONS
- **Wi-Fi certified 802.11a/b/g/n**
### IAP-135 RF Performance Table

<table>
<thead>
<tr>
<th>Rate</th>
<th>2.4GHz</th>
<th>5GHz</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Transmit power</td>
<td>Transmit power</td>
</tr>
<tr>
<td></td>
<td>(per active transmit chain)</td>
<td>(per active transmit chain)</td>
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<tr>
<td>802.11b</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Mbps</td>
<td>18</td>
<td>-97</td>
</tr>
<tr>
<td>11 Mbps</td>
<td>18</td>
<td>-92</td>
</tr>
<tr>
<td>802.11a/g</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 Mbps</td>
<td>18</td>
<td>-94</td>
</tr>
<tr>
<td>54 Mbps</td>
<td>16</td>
<td>-81</td>
</tr>
<tr>
<td>802.11n HT20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MCS0/8/16</td>
<td>17</td>
<td>-94</td>
</tr>
<tr>
<td>MCS7/15/23</td>
<td>12</td>
<td>-78</td>
</tr>
<tr>
<td>802.11n HT40</td>
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<td></td>
</tr>
<tr>
<td>MCS0/8/16</td>
<td>17</td>
<td>-92</td>
</tr>
<tr>
<td>MCS7/15/23</td>
<td>11</td>
<td>-75</td>
</tr>
</tbody>
</table>

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

### IAP-135 ANTENNA PATTERN PLOTS

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

![2.450 GHz, H-plane, 20 degrees down-tilt](image)

#### 2.450 GHz, E-plane, AP facing down

![2.450 GHz, E-plane, AP facing down](image)

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

![5.500 GHz, H-plane, 20 degrees down-tilt](image)

#### 5.500 GHz, E-plane, AP facing down

![5.500 GHz, E-plane, AP facing down](image)
## Ordering Information

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IAP-135</td>
<td>Aruba Instant 135 AP (802.11a/n and 802.11b/g/n: integrated antennas)</td>
</tr>
<tr>
<td>IAP-134</td>
<td>Aruba Instant 134 AP (802.11a/n and 802.11b/g/n: antenna connectors)</td>
</tr>
<tr>
<td>AP-130-MNT</td>
<td>Aruba 130 series access point flat surface mounting kit</td>
</tr>
<tr>
<td>AP-AC-UN</td>
<td>Aruba 12 V DC universal AC power adapter kit – North America, Japan, United Kingdom, Italy, EC (Europlug), Australia, China, India, Korea</td>
</tr>
</tbody>
</table>

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