DATA SHEET

# 아루바 330 시리즈 엑세스 포인트

멀티기가빗 이더넷까지 확장되는 802.11AC WAVE 2

아루바 330 시리즈 액세스 포인트는 디지털 워크플레이스 환경에서 모바일 디바이스와 애플리케이션을 위한 가장 빠른 기가빗 데이터 속도와 탁월한 사용자 경험을 제공합니다. HPE Smart Rate 포트가 결합되어 최고 5Gbps 이더넷까지 확장이 가능한 330 시리즈는 기업이 멀티기가빗 이더넷 유선 네트워크 인프라를 활용하여 병목현상을 제거할 수 있도록 해줍니다.

330 시리즈는 ArubaOS의 ClientMatch 기술을 통해 802.11ac Wave 2 모바일 디바이스들을 자동으로 탐지하고 분류합니다. ClientMatch는 단일 Wave 2 라디오로 Wave 2 디바이스들을 자동 수집하여, 802.11ac 및 기존 802.11n 모바일 디바이스 속도를 저하시키지 않으면서 MU MIMO(Multi-user MIMO)의 성능 이점을 실현합니다. 결과적으로 네트워크 용량 증대 및 네트워크 효율성 향상이 가능합니다.

5-GHz 대역에서 1,733 Mbps, 2.4 GHz 대역에서 800 Mbps의 최고 동시 데이터 속도(최고 총 데이터 속도 2.5 Gbps)를 제공하는 330 시리즈 액세스 포인트는 강의실, 강당, 공공시설, 고밀도 사무 환경을 위한 동급최강의 차세대 802.11ac Wi-Fi 인프라스트럭처를 제공합니다.

고성능, 고밀도 802.11ac 330 시리즈 액세스 포인트는 160 MHz 채널 대역폭(VHT160), 4-Stream MU MIMO(Multi-user MIMO) 및 4SS (4 Spatial Streams)를 지원합니다.

330 시리즈 AP는 다수의 디바이스로 동시에 데이터를 전송함으로써 데이터 처리량을 극대화하고 네트워크 효율성을 향상시킵니다.

330 시리즈 액세스 포인트에는 Bluetooth Aruba Beacon이 내장되어 있습니다.

Bluetooth Aruba Beacon은 배터리 전원을 사용하는 아루바 비콘들이 대규모로 구축되어 있는 네트워크의 원격 관리를 간소화해 줍니다. 또한 고급 위치 정보 및 실내 길 찾기, 프록시미티(Proximity) 기반 푸시 알림 기능을 제공합니다. 이러한 기능을 통해 기업은 모빌리티 컨텍스트(Mobility Context)를 활용하여 사용자 경험을 향상시키는 애플리케이션들을 개발하고, 무선 네트워크의 가치를 향상시킬 수 있습니다.

## 330 시리즈 AP의 강점

- MU MIMO를 지원하는 Dual Radio 802.11ac 액세스 포인트
  - 5 GHz 대역에서 최고 1,733 Mbps(4SS/VHT80 클라이언트) 및 2.4 GHz 대역에서 800 Mbps 지원(4SS/VHT40 클라이언트)
- RF 성능 최적화를 위한 안테나 편파 다양성
  - 각 5 GHz 라디오 체인에 스위치 1, 안테나 2
  - 소프트웨어를 통한 컨트롤, 수평 및 수직 편파
- HPE Smart Rate 업링크 포트: 5Gbps까지 확장
  - 최대 5Gbps 지원, NBase-T 이더넷 지원
  - 100/1000Base-T 하위호환
  - HPE Smart Rate 포트와 보조 1000Base-T 포트 간 Hitless PoE Failover 지원
    추가 (두 포트 모두 사용 시)
- 빌트인 BLE(Bluetooth Low-Energy) 라디오
  - 여러 대의 아루바 비콘(Aruba Beacons)으로부터 동시에 신호를 수신하는 BLE-인에이블드 모바일 디바이스에서 위치 기반 서비스 지원
- ACC(Advanced Cellular Coexistence)
  - 3G/4G 셀룰러 네트워크, 분산 안테나 시스템, 상용 스몰셀/ 펨토셀 장비로부터의 간섭 최소화

• 앱 가시성 및 컨트롤을 위한 QoS
  - Skype for Business의 암호화된 화상회의, 음성, 채팅, 데스크톱 공유 등의 UC(Unified Communication) 앱들을 위한 우선순위 처리 및 정책 실행 지원
  - Aruba AppRF 기술이 Deep Packet Inspection을 활용하여 1,500 여 엔터프라이즈 앱 또는 앱 그룹에 대한 분류 및 차단, 우선순위화 또는 대역폭 제한을 실행

• RF 관리
  - Adaptive Radio Management (ARM) 기술이 채널 및 파워 설정을 자동적으로 할당하고, Airtime Fairness를 제공하며, AP들이 간섭원의 영향을 받지 않도록 보장함으로써 안정적인 고성능 WLAN 제공
  - 아루바 330 시리즈 AP는 스펙트럼 분석 및 WIP(Wireless Intrusion Protection)를 위한 파트타임 또는 전용 에어 모니터링, 본사 리소스를 리모트 로케이션으로 확장하는 VPN 터널 생성, 이더넷 단자가 없는 곳에서의 무선 메시 연결을 제공하도록 구성 가능

• 스펙트럼 분석
  - 파트타임 또는 전용 에어 모니터링 기능을 통해 2.4 GHz 및 5 GHz 대역을 원격 스캔하여 HT20에서부터 VHT160 전반의 RF 간섭원 파악

• 보안
  - 별도의 RF 센서 및 보안 장비 필요 없이 내장된 WIP(Wireless Intrusion Protection)가 위협 방지 및 대응 제공
  - IP 평판(Reputation) 및 보안 서비스를 통해 악성 파일, URL, IP 등을 파악하고 분류 및 차단함으로써 최신 온라인 위협에 대한 종합적인 방어 제공
  - 크리덴셜과 암호키의 안전한 저장을 위한 통합 TPM(Trusted Plat-form Module)
  - 유선 이더넷 트래픽의 안전한 터널링을 위한 SecureJack 지원

• IPM(Intelligent Power Monitoring)
  - 액세스 포인트 실제 전력 소비량을 지속적으로 모니터링 및 보고. 가용 전력에 따라 특정 기능을 자율적으로 비활성화시키는 옵션 사용 가능
  - 특정 순서에 따라 기능들을 비활성화시키도록 소프트웨어 구성 가능. 330시리즈 액세스 포인트는 AP 전력 소비가 가용 전력을 초과할 경우, USB 인터페이스가 가장 먼저 비활성화되도록 디폴트 설정

## 운영모드 선택

아루바 330 시리즈는 고객의 관리 및 구축 요구사항에 따라 다음과 같이 운영모드를 선택할 수 있습니다.

• Controller-Managed 모드 - 아루바 모빌리티 컨트롤러 (Aruba Mobility Controller)로 아루바 330 시 리즈 AP들을 관리하여 중앙 구성, 데이터 암호화, 정책 실행 및 네트워크 서비스, 분산/중앙 트래픽 포워딩을 제공합니다.

• Aruba Instant 모드 - Aruba Instant 모드에서는 AP 한 대가 자동적으로 네트워크 구성을 WLAN 내의 다른 Instant AP들에게 배포합니다. 간단히 Instant AP 한대의 전원을 켜기만 하면 무선을 통해 구성이 설정되고, 다른 AP 들에 플럭인(plug in) 됩니다. 이 모든 과정이 대략 5분 안에 완료됩니다. WLAN 및 네트워크 요구사항 변경 시, 빌트인된 마이그레이션 경로를 통해 330 시리즈 Instant AP들을 Mobility Controller에 의해 중앙 관리되는 WLAN의 일부로 전환할 수 있습니다.

• Remote AP (RAP): 브랜치 구축

• Air Monitor (AM): WIDS(Wireless IDS), 악성 AP 탐지(Rogue Detection) 및 봉쇄

• Spectrum Analyzer: 전용 또는 하이브리드, RF 간섭원 파악

• Secure Enterprise Mesh

여러 사이트를 연결하는 대규모 인스톨의 경우, Aruba Activate 서비스를 통해 디바이스 프로비저닝, 펌웨어 업그레이드, 인벤토리 관리를 자동화함으로써 구축 시간을 획기적으로 단축할 수 있습니다. Aruba Activate을 사용하면, 공장에서 어떤 사이트로든지 Instant AP들을 직배송하여 전원만 켜면 자동구성이 가능합니다.

## 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 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 (vertically polarized) integrated 2.4 GHz downtilt omni-directional antennas for 4x4 MIMO with peak 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.
  - Four integrated vertically polarized 5 GHz downtilt omnidirectional antennas for 4x4 MIMO with peak antenna gain of 5.4 dBi per antenna
  - Four integrated horizontally polarized 5 GHz downtilt omni-directional antennas for 4x4 MIMO with peak antenna gain of 4.2 dBi 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.
  - Combining the patterns of each of the antennas of the MIMO radios, the peak gain of the effective per-antenna pattern is 2.6dBi in 2.4 GHz and 2.5 dBi (vertical) or 2.1 dB (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 93% 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

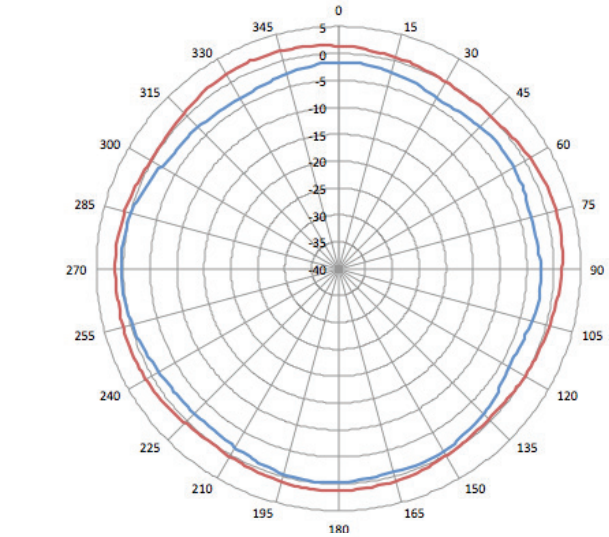
- ArubaOS 6.5.0.0, 8.0.1.0
- Aruba InstantOS 4.3.0.0

| 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 |

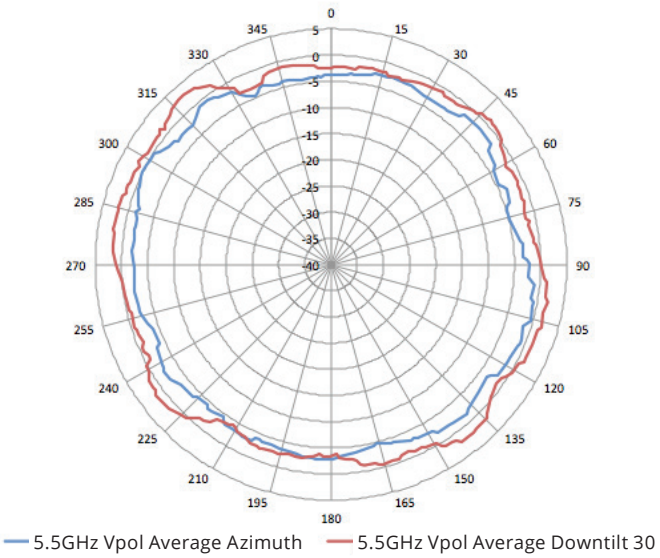
## AP-330 ANTENNA PATTERN PLOTS

### Horizontal planes (top view, AP facing forward)

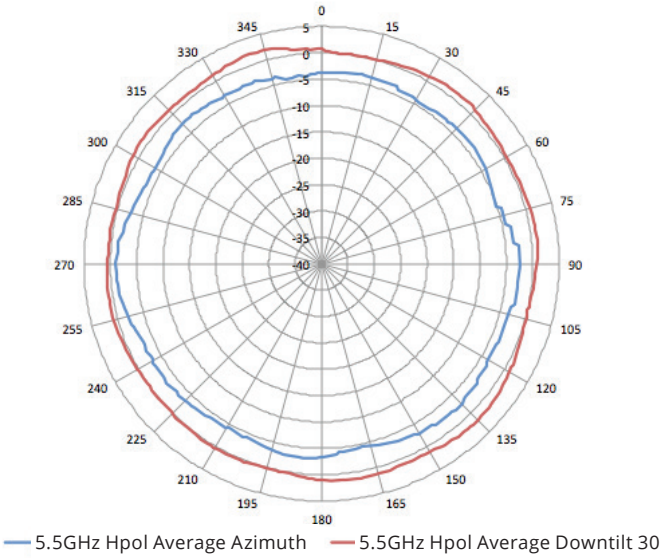
Showing azimuth (0 degrees) and 30 degrees downtilt pattern



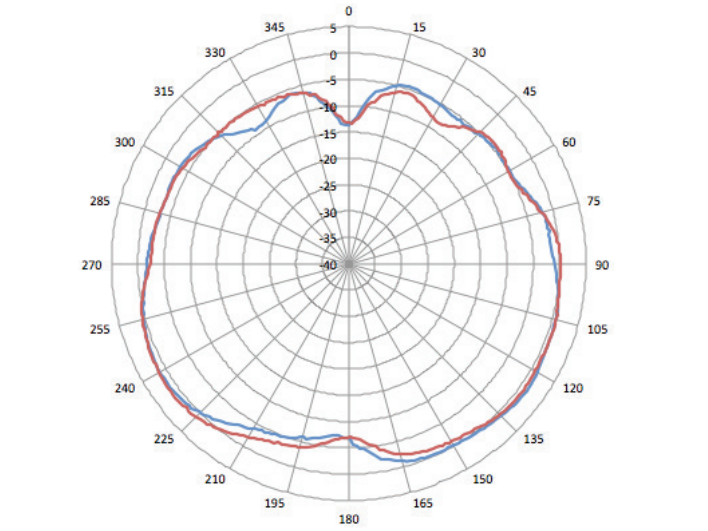

2.45GHz Wi-Fi (antennas 5,6,7,8)



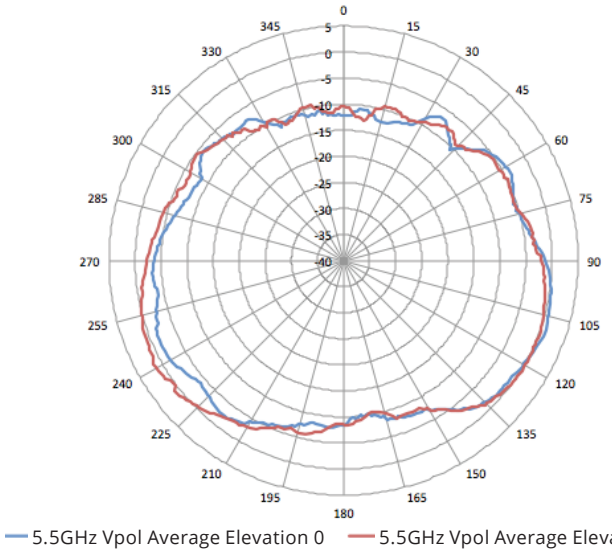

5.5GHz Wi-Fi Vpol (antennas 0,1,3,4)



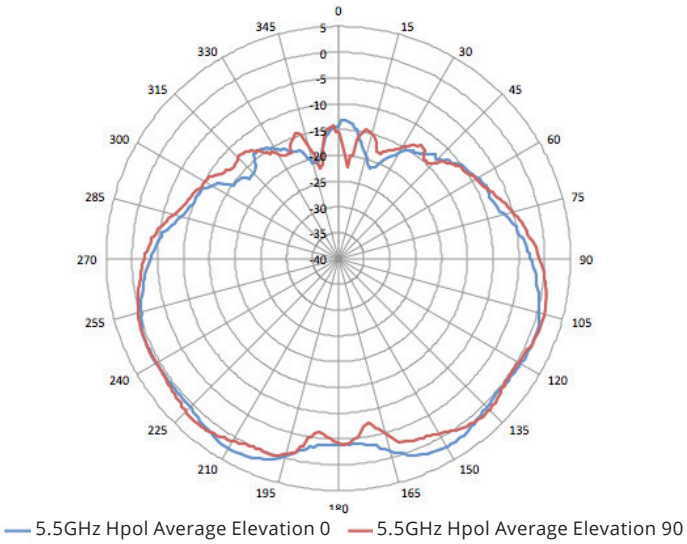

5.5GHz Wi-Fi Hpol (antennas A,B,C,D)




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** | |
| JW799A | Aruba AP-334 802.11n/ac 4x4:4 MU-MIMO Dual Radio Antenna Connectors 2.5+1 GbE AP |
| JW800A | Aruba AP-334 FIPS/TAA-compliant 802.11n/ac Dual 4x4:4 MU-MIMO Dual Radio Ant Connectors 2.5+1 GbE AP |
| JW817A | Aruba Instant IAP-334 (RW) 802.11n/ac Dual 4x4:4 MU-MIMO Radio Antenna Connectors 2.5+1 GbE AP |
| JW819A | Aruba Instant IAP-334 (US) 802.11n/ac Dual 4x4:4 MU-MIMO Radio Antenna Connectors 2.5+1 GbE AP |
| JW816A | Aruba Instant IAP-334 (JP) 802.11n/ac Dual 4x4:4 MU-MIMO Radio Antenna Connectors 2.5+1 GbE AP |
| JW815A | Aruba Instant IAP-334 (IL) 802.11n/ac Dual 4x4:4 MU-MIMO Radio Antenna Connectors 2.5+1 GbE AP |
| JW801A | Aruba AP-335 802.11n/ac 4x4:4 MU-MIMO Dual Radio Integrated Antenna 2.5+1 GbE AP |
| JW802A | Aruba AP-335 FIPS/TAA-compliant 802.11n/ac Dual 4x4:4 MU-MIMO Dual Radio Integrated Ant 2.5+1 GbE AP |
| JW823A | Aruba Instant IAP-335 (RW) 802.11n/ac Dual 4x4:4 MU-MIMO Radio Integrated Antenna 2.5+1 GbE AP |
| JW825A | Aruba Instant IAP-335 (US) 802.11n/ac Dual 4x4:4 MU-MIMO Radio Integrated Antenna 2.5+1 GbE AP |
| JW822A | Aruba Instant IAP-335 (JP) 802.11n/ac Dual 4x4:4 MU-MIMO Radio Integrated Antenna 2.5+1 GbE AP |
| JW821A | Aruba Instant IAP-335 (IL) 802.11n/ac Dual 4x4:4 MU-MIMO Radio Integrated Antenna 2.5+1 GbE AP |
| JW818A | Aruba Instant IAP-334 (RW) FIPS/TAA 802.11n/ac Dual 4x4:4 MU-MIMO Radio Ant Connectors 2.5+1 GbE AP |
| JW820A | Aruba Instant IAP-334 (US) FIPS/TAA 802.11n/ac Dual 4x4:4 MU-MIMO Radio Ant Connectors 2.5+1 GbE AP |
| JW824A | Aruba Instant IAP-335 (RW) FIPS/TAA 802.11n/ac Dual 4x4:4 MU-MIMO Radio Integrated Ant 2.5+1 GbE AP |
| JW826A | Aruba Instant IAP-335 (US) FIPS/TAA 802.11n/ac Dual 4x4:4 MU-MIMO Radio Integrated Ant 2.5+1 GbE AP |
| **Mounting Spares** | |
| JW044A | 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 |
| JW048A | AP-220-MNT-W2 AP Box Style Secure Flat Mt Kit w/1 Flat Surface Wall/Ceiling Secure Mount |
| JW049A | P-220-MNT-W2W AP Box Style Secure Flat Mt Kit w/1 Flat Surface Wall/Ceiling Secure Mount |
| JY706A | AP-220-MNT-W3 White Low Profile Box Style Secure Large AP Flat Surface Mount Kit |
| **Other Accessories** | |
| JW828A | Aruba 335-CVR-20 20-pk for AP-335 with Holes for LED Indicators White Non-glossy Snap-on Covers |
| **Generic Indoor AP Accessories** | |
| JX991A | AP-AC-48V36C 48V/36W AC/DC Desktop Style 1.35/3.5/9.5mm Circular 90 Deg Plug DoE Level VI Adapter |
| JW629A | PD-9001GR-AC 30W 802.3at PoE+ 10/100/1000 Ethernet Indoor Rated Midspan Injector |
| Antennas | See info on the Aruba website for antenna part numbers |

a Hewlett Packard Enterprise company

www.arubanetworks.com
www.arubanetworks.co.kr

**아루바 휴렛팩커드 엔터프라이즈 컴퍼니**
서울특별시 영등포구 의사당대로 83 한국휴렛팩커드 빌딩
제품정보 및 구입안내: 02-2199-0371

Copyright ©2017 Aruba, a Hewlett Packard Enterprise Company.
M01/2017

데이터시트

# 아루바 7200 시리즈 모빌리티 컨트롤러

## 아루바 7200 시리즈 모빌리티 컨트롤러(Mobility Controller)는 모바일 애플리케이션 전송에 최적화된 차세대 네트워킹 플랫폼으로서, 사용자가 Wi-Fi를 통해 최상의 모빌리티를 경험할 수 있도록 보장합니다.

7200 시리즈에는 각각 4개의 스레드를 가진 8개의 코어가 장착된 새로운 중앙 프로세서가 탑재되어 있습니다. 이는 32개의 버추얼 CPU를 가진 것과 마찬가지입니다. 이를 통해 7200 시리즈는 모바일 디바이스 32,000대를 지원하고, 40 Gbps 속도로 스테이트풀 방화벽 정책 적용을 수행합니다. 아울러 BYOD와 802.11ac 디바이스들을 위한 막대한 용량과 빠른 속도를 제공합니다.

7200 시리즈 모빌리티 컨트롤러 상에서 실행되는 아루바의 독보적인 AppRF 기술은 혁신적인 수준의 가시성을 제공합니다. AppRF를 통해 IT는 Facebook, Box 등 주요 웹 기반 애플리케이션을 비롯한 애플리케이션들을 사용자 별로 인식할 수 있습니다.

7200 시리즈는 또한 인증(authentication), 암호화, VPN 연결, IPv4/IPv6 레이어 3 서비스, Aruba Policy Enforcement Firewall™, Aruba Adaptive Radio Management™, Aruba RFProtect™ 스펙트럼 분석 및 WIP(wireless intrusion protection)를 관리합니다.

클러스터링 및 중앙 관리를 통해 극소수의 네트워크 관리자만으로 대규모 네트워크 내부에 수백 대의 모빌리티를 구축할 수 있습니다. 마스터 모빌리티 컨트롤러로 로컬 모빌리티 컨트롤러를 관리할 수 있으며, 이와 동시에 Aruba AirWave™ 네트워크 관리를 통해 실시간 모니터링, 히스토리 리포팅, 트러블슈팅을 실행함으로써 사용자 단말부터 백본까지 네트웍 전반에 대한 명확한 가시성과 예상되는 문제점을 관리자에게 정확하게 알려주어 관리의 효율성을 극대화 할 수 있습니다.

## HA (HIGH AVAILABILITY) 아키텍처

7200 시리즈는 최고 수준의 가용성이 요구되는 사이트 구축 시에 적합한 다음과 같은 HA 기능들을 제공합니다.

- 이중전원: 7210/7220/7240은 현장 교체가 가능한 이중 전원, 즉 RPS(Redundant Power Supplies)를 지원하여 무중단 네트워크 운영을 보장합니다.
- 다수의 팬과 핫스왑이 가능한 팬 트레이: 7210/7220/7240에는 현장 교체가 가능한 팬 트레이(fan tray)와 여러 개의 팬이 포함되어 있습니다. 이를 통해 충분한 냉각과 신속한 수리가 보장됩니다.
- 안정성 및 업타임 극대화를 위한 SSD(Solid State Drives).
- 7210/7220/7240은 2개의 듀얼-미디어 포트 지원: 고가용성(HA)을 위한 1000BASE-X 또는 10/100/1000BASE-T 연결.

전면: 7210/7220/7240

전면: 7205

후면: 7210/7220/7240

후면:7205

| PERFORMANCE AND CAPACITY | | | | |
|---|---|---|---|---|
| **Features** | **7205** | **7210** | **7220** | **7240** |
| Maximum APs (licenses) | 256 | 512 | 1,024 | 2,048 |
| Maximum RAPs | 256 | 512 | 1,024 | 2,048 |
| Maximum concurrent devices | 8,192 | 16,384 | 24,576 | 32,768 |
| VLANs | 2,048 | 4,094 | 4,094 | 4,094 |
| Concurrent GRE Tunnels (System BSSIDs) | 8,192 | 8,192 | 16,384 | 32,768 |
| Concurrent Tunneled Ports | 4,096 | 8,192 | 12,288 | 16,384 |
| Concurrent IPsec sessions | 4,096 | 16,384 | 24,576 | 32,768 |
| Concurrent SSL fallback sessions | 4,096 | 8,192 | 8,192 | 8,192 |
| Active Firewall Sessions (Concurrent sessions) | 1,000,000 | 2,015,291 | 2,015,291 | 2,015,291 |
| Wired Throughput (large packets) | 12 Gbps | 20 Gbps | 40 Gbps | 40 Gbps |

## SPECIFICATIONS

### Interfaces and indicators

- 7210/7220/7240 has four 10GBASE-X (SFP+) ports
- 7205 has two 10GBASE-X and four dual-media (1000BASE-X or 10/100/1000BASE-T) ports
- One USB 2.0
- Console (RS-232) RJ-45 or mini-USB
- LINK/ACT and status LEDs
- Management/status LEDs
- LCD panel and navigation buttons
- Expansion slot (reserved for future use)

### Dimensions

- 7210, 7220, 7240:
  - (H) 4.4 cm x (W) 44.5 cm x (D) 44.5 cm (1.75" x 17.5" x 17.5")
  - Weight (with one AC power supply installed) 7.45 kg (16.43 lbs)
- 7205:
  - (H) 4.4 cm x (W) 33.4 cm x (D) 44.2 cm (1.75" x 13.13" x 17.38")
  - Weight: 4.95 kg (10.19 lbs)

### Environmental

- Operating temperature range: 0° C to 40° C
- Operating humidity: 5% to 95% non-condensing
- Storage temperature range: -40° C to 70° C
- Storage humidity: 5% to 95%, non-condensing
- Operating altitude: 10,000 feet
- Acoustic noise[3] (with AC power supply):
  - 7210: 46.9 dBA
  - 7220: 46.9 dBA
  - 7240: 54.7 dBA
  - 7205: 49.0 dBA

[3]Sound power per ETSI 300 753 in accordance with ISO 7779

### Power Supply Specifications

- 350-watt AC power supply
  - AC input voltage: 100 VAC to 240 VAC
  - AC input current: 5-2.5A
  - AC input frequency: 50-60 Hz
  - Weight: 2.8 lbs (1.3 kg)
- Maximum power consumption
  - 7210: 110 watts
  - 7220: 125 watts
  - 7240: 165 watts
  - 7205: 75.2 watts

### Regulatory and Safety Compliance

- FCC Part 15 Class A CE
- Industry Canada Class A
- VCCI Class A (Japan)
- EN 55022 Class A (CISPR 22 Class A), EN 61000-3,
- EN 61000-4-2, EN 61000-4-3, EN 61000-4-4,
- EN 61000-4-5, EN 61000-4- 6, EN 61000-4-8,
- EN 61000-4-11, EN 55024, AS/NZS 3548
- UL 60950, EN60950
- CAN/CSA 22.2 #60950
- CE mark, cTUVus, CB, C-tick, Anatel, NOM, MIC

### Regulatory SKU Information

- 7210: ARCN0100
- 7220: ARCN0101
- 7240: ARCN0102
- 7205: ARCN7205

### Minimum ArubaOS Release

- 7210: 6.2.0.0
- 7220: 6.2.0.0
- 7240: 6.2.0.0
- 7205: 6.4.3.0

### WARRANTY

- Hardware: 1 year parts/labor*
- Software: 90 days*

* Extended with support contract

## ORDERING INFORMATION

| Part Number | Description |
|---|---|
| **Aruba 7200 Series Mobility Controllers and Accessories** | |
| 7205-RW | Aruba 7205, 2x 10GBASE-X (SFP+), Unrestricted Regulatory Domain. These products should be considered as 'Rest of World' products and MUST NOT be used for deployments in the United States, Israel or Japan |
| 7205-US | Aruba 7205, 2x 10GBASE-X (SFP+), Restricted Regulatory Domain. For deployment in the United States only. |
| 7205-JP | Aruba 7205, 2x 10GBASE-X (SFP+), Restricted Regulatory Domain. For deployment in Japan only. |
| 7205-IL | Aruba 7205, 2x 10GBASE-X (SFP+), Restricted Regulatory Domain. For deployment in Israel only. |
| 7205-RWF1 | Aruba 7205, 2x 10GBASE-X (SFP+), TAA/FIPS compliant. Unrestricted Regulatory Domain. These products should be considered as 'Rest of World' products and MUST NOT be used for deployments in the United States, Israel or Japan |
| 7205-USF1 | Aruba 7205, 2x 10GBASE-X (SFP+), TAA/FIPS compliant. Restricted Regulatory Domain. For deployment in the United States only. |
| 7205-JPF1 | Aruba 7205, 2x 10GBASE-X (SFP+), TAA/FIPS compliant. Restricted Regulatory Domain. For deployment in Japan only. |
| 7205-ILF1 | Aruba 7205, 2x 10GBASE-X (SFP+), TAA/FIPS compliant. Restricted Regulatory Domain. For deployment in Israel only. |
| 7210 | Aruba 7210 Mobility Controller with 4x 10GBase-x (SFP/SFP+) and 2x dual media (10/100/1000BASE-T or SFP) ports. Includes one 350W AC power supply. Restricted Regulatory Domain. These products should be considered as 'Rest of World' products and MUST NOT be used for deployments in the United States, Israel or Japan |
| 7210-US | Aruba 7210 Mobility Controller with 4x 10GBase-x (SFP/SFP+) and 2x dual media (10/100/1000BASE-T or SFP) ports. Includes one 350W AC power supply. US regulatory domain (for deployments in USA only). |
| 7210DC | Aruba 7220 Mobility Controller with 4x 10GBase-x (SFP/SFP+) and 2x dual media (10/100/1000BASE-T or SFP) ports. Includes one 350W DC (-48V DC) power supply. Restricted Regulatory Domain. These products should be considered as 'Rest of World' products and MUST NOT be used for deployments in the United States, Israel or Japan |
| 7210DC-US | Aruba 7210 Mobility Controller with 4x 10GBase-x (SFP/SFP+) and 2x dual media (10/100/1000BASE-T or SFP) ports. Includes one 350W DC (-48V DC) power supply. US regulatory domain (for deployments in USA only). |

## ORDERING INFORMATION

| Part Number | Description |
|---|---|
| **Aruba 7200 Series Mobility Controllers and Accessories** | |
| 7210-F1 | Aruba 7210, 4x 10GBase-X (SFP+), 1x 350W AC PS, Unrestricted Regulatory Domain. FIPS & TAA Compliant. These products should be considered as 'Rest of World' products and MUST NOT be used for deployments in the United States, Israel or Japan. |
| 7210-USF1 | Aruba 7210, 4x 10GBase-X (SFP+), 1x 350W AC PS, Restricted Regulatory Domain – US, FIPS & TAA Compliant |
| 7210-IL | Aruba 7210 Mobility Controller with 4x 10GBase-x (SFP/SFP+) and 2x dual media (10/100/1000BASE-T or SFP) ports. Includes one 350W AC power supply. Restricted regulatory domain (for deployments in Israel only). |
| 7210DC-IL | Aruba 7210 Mobility Controller with 4x 10GBase-x (SFP/SFP+) and 2x dual media (10/100/1000BASE-T or SFP) ports. Includes one 350W DC (-48V DC) power supply. Restricted regulatory domain (for deployments in Israel only). |
| 7210-ILF1 | Aruba 7210, 4x 10GBase-X (SFP+), 1x 350W AC PS, Restricted Regulatory Domain – IL FIPS & TAA Compliant |
| 7210-JP | Aruba 7210 Mobility Controller with 4x 10GBase-x (SFP/SFP+) and 2x dual media (10/100/1000BASE-T or SFP) ports. Includes one 350W AC power supply. Restricted regulatory domain (for deployments in Japan only). |
| 7210DC-JP | Aruba 7210 Mobility Controller with 4x 10GBase-x (SFP/SFP+) and 2x dual media (10/100/1000BASE-T or SFP) ports. Includes one 350W DC (-48V DC) power supply. Restricted regulatory domain (for deployments in Japan only). |
| 7210-JPF1 | Aruba 7210, 4x 10GBase-X (SFP+), 1x 350W AC PS, Restricted Regulatory Domain – JP FIPS & TAA Compliant |
| 7220 | Aruba 7220 Mobility Controller with 4x 10GBase-x (SFP/SFP+) and 2x dual media (10/100/1000BASE-T or SFP) ports. Includes one 350W AC power supply. Restricted Regulatory Domain. These products should be considered as 'Rest of World' products and MUST NOT be used for deployments in the United States, Israel or Japan. |
| 7220-US | Aruba 7220 Mobility Controller with 4x 10GBase-x (SFP/SFP+) and 2x dual media (10/100/1000BASE-T or SFP) ports. Includes one 350W AC power supply. US regulatory domain (for deployments in USA only). |
| 7220DC | Aruba 7220 Mobility Controller with 4x 10GBase-x (SFP/SFP+) and 2x dual media (10/100/1000BASE-T or SFP) ports. Includes one 350W DC (-48V DC) power supply. Restricted Regulatory Domain. These products should be considered as 'Rest of World' products and MUST NOT be used for deployments in the United States, Israel or Japan. |
| 7220DC-US | Aruba 7220 Mobility Controller with 4x 10GBase-x (SFP/SFP+) and 2x dual media (10/100/1000BASE-T or SFP) ports. Includes one 350W DC (-48V DC) power supply. US regulatory domain (for deployments in USA only). |
| 7220-F1 | Aruba 7220, 4x 10GBase-X (SFP+), 1x 350W AC PS, Unrestricted Regulatory Domain. FIPS & TAA Compliant. These products should be considered as 'Rest of World' products and MUST NOT be used for deployments in the United States, Israel or Japan. |
| 7220-USF1 | Aruba 7220, 4x 10GBase-X (SFP+), 1x 350W AC PS, Restricted Regulatory Domain – US, FIPS & TAA Compliant |
| 7220-IL | Aruba 7220 Mobility Controller with 4x 10GBase-x (SFP/SFP+) and 2x dual media (10/100/1000BASE-T or SFP) ports. Includes one 350W AC power supply. Restricted regulatory domain (for deployments in Israel only). |
| 7220DC-IL | Aruba 7220 Mobility Controller with 4x 10GBase-x (SFP/SFP+) and 2x dual media (10/100/1000BASE-T or SFP) ports. Includes one 350W DC (-48V DC) power supply. Restricted regulatory domain (for deployments in Israel only). |
| 7220-ILF1 | Aruba 7220, 4x 10GBase-X (SFP+), 1x 350W AC PS, Restricted Regulatory Domain – IL FIPS & TAA Compliant |
| 7220-JP | Aruba 7220 Mobility Controller with 4x 10GBase-x (SFP/SFP+) and 2x dual media (10/100/1000BASE-T or SFP) ports. Includes one 350W AC power supply. Restricted regulatory domain (for deployments in Japan only). |
| 7220DC-JP | Aruba 7220 Mobility Controller with 4x 10GBase-x (SFP/SFP+) and 2x dual media (10/100/1000BASE-T or SFP) ports. Includes one 350W DC (-48V DC) power supply. Restricted regulatory domain (for deployments in Japan only). |

## ORDERING INFORMATION

| Part Number | Description |
|---|---|
| **Aruba 7200 Series Mobility Controllers and Accessories** | |
| 7220-JPF1 | Aruba 7220, 4x 10GBase-X (SFP+), 1x 350W AC PS, Restricted Regulatory Domain – JP FIPS & TAA Compliant |
| 7240 | Aruba 7240 Mobility Controller with 4x 10GBase-x (SFP/SFP+) and 2x dual media (10/100/1000BASE-T or SFP) ports. Includes one 350W AC power supply. Restricted Regulatory Domain. These products should be considered as 'Rest of World' products and MUST NOT be used for deployments in the United States, Israel or Japan. |
| 7240-US | Aruba 7240 Mobility Controller with 4x 10GBase-x (SFP/SFP+) and 2x dual media (10/100/1000BASE-T or SFP) ports. Includes one 350W AC power supply. US regulatory domain (for deployments in USA only). |
| 7240DC | Aruba 7240 Mobility Controller with 4x 10GBase-x (SFP/SFP+) and 2x dual media (10/100/1000BASE-T or SFP) ports. Includes one 350W DC (-48V DC) power supply. Restricted Regulatory Domain. These products should be considered as 'Rest of World' products and MUST NOT be used for deployments in the United States, Israel or Japan. |
| 7240DC-US | Aruba 7240 Mobility Controller with 4x 10GBase-x (SFP/SFP+) and 2x dual media (10/100/1000BASE-T or SFP) ports. Includes one 350W DC (-48V DC) power supply. US regulatory domain (for deployments in USA only). |
| 7240-F1 | Aruba 7240, 4x 10GBase-X (SFP+), 1x 350W AC PS, Unrestricted Regulatory Domain. FIPS & TAA Compliant. These products should be considered as 'Rest of World' products and MUST NOT be used for deployments in the United States, Israel or Japan. |
| 7240-USF1 | Aruba 7240, 4x 10GBase-X (SFP+), 1x 350W AC PS, Restricted Regulatory Domain – US, FIPS & TAA Compliant |
| 7240-IL | Aruba 7240 Mobility Controller with 4x 10GBase-x (SFP/SFP+) and 2x dual media (10/100/1000BASE-T or SFP) ports. Includes one 350W AC power supply. Restricted regulatory domain (for deployments in Israel only). |
| 7240DC-IL | Aruba 7240 Mobility Controller with 4x 10GBase-x (SFP/SFP+) and 2x dual media (10/100/1000BASE-T or SFP) ports. Includes one 350W DC (-48V DC) power supply. Restricted regulatory domain (for deployments in Israel only). |
| 7240-ILF1 | Aruba 7240, 4x 10GBase-X (SFP+), 1x 350W AC PS, Restricted Regulatory Domain – IL FIPS & TAA Compliant |
| 7240-JP | Aruba 7240 Mobility Controller with 4x 10GBase-x (SFP/SFP+) and 2x dual media (10/100/1000BASE-T or SFP) ports. Includes one 350W AC power supply. Restricted regulatory domain (for deployments in Japan only). |
| 7240DC-JP | Aruba 7240 Mobility Controller with 4x 10GBase-x (SFP/SFP+) and 2x dual media (10/100/1000BASE-T or SFP) ports. Includes one 350W DC (-48V DC) power supply. Restricted regulatory domain (for deployments in Japan only). |
| 7240-JPF1 | Aruba 7240, 4x 10GBase-X (SFP+), 1x 350W AC PS, Restricted Regulatory Domain – JP FIPS & TAA Compliant |
| PSU-350-AC | 350W AC Power Supply. May be used as a redundant power supply or field-replaceable spare for 7200 Series, S3500-24T, S3500-48T and S3500-24F. Power cord not included- order country-specific (PC-AC-xx) power cord. |
| PSU-350-DC | 350W DC (-48V DC) Power Supply. May be used as a redundant power supply or field-replaceable spare for 7200 Series Mobility Controllers. |

## ORDERING INFORMATION

| Part Number | Description |
|---|---|
| **Aruba Mobility Controller Pluggable Transceivers** | |
| SFP-LX | 1000BASE-LX SFP; 1310nm pluggable GbE optic; LC connector; up to 10,000 meters over single-mode fiber |
| SFP-SX | 1000BASE-SX SFP; 850nm pluggable GbE optic; LC connector; up to 270 meters over multi-mode fiber (Type FDDI/OM1) and up to 550 meters over multi-mode fiber (Type OM2) |
| SFP-TX | 1000BASE-T SFP; copper GbE pluggable; RJ45 connector; up to 100 meters over Category-5, 5e, 6 and 6a unshielded twisted pair cable |
| SFP-10GE-LRM | 10GBASE-LRM SFP+; 1310nm pluggable 10GbE optic; LC connector; up to 220 meters over multi-mode fiber (Type FDDI/OM1/OM2) |
| SFP-10GE-SR | 10GBASE-SR SFP+; 850nm pluggable 10GbE optic; LC connector; up to 300 meters over multi-mode fiber (Type OM3) or 400 meters with OM4 |
| SFP-10GE-LR | 10GBASE-LR SFP+; 1310nm pluggable 10GbE optic; LC connector; up to 10,000 meters over single-mode fiber |
| DAC-SFP-10GE-50CM | 50cm length, 10GbE SFP+ direct attach cable (DAC); copper Twinax connectors on both ends for ArubaS-tack or interconnect between devices. For use with 7200, S2500 and S3500 10GbE ports only and S1500 1GbE Ports (requires ArubaOS 7.4). |
| DAC-SFP-10GE-1M | 1m length, 10GbE SFP+ direct attach cable (DAC); copper Twinax connectors on both ends for ArubaStack or interconnect between devices. For use with 7200, S2500 and S3500 10GbE ports only and S1500 1GbE Ports (requires ArubaOS 7.4). |
| DAC-SFP-10GE-3M | 3m length, 10GbE SFP+ direct attach cable (DAC); copper Twinax connectors on both ends for ArubaStack or interconnect between devices. For use with 7200, S2500 and S3500 10GbE ports only and S1500 1GbE Ports (requires ArubaOS 7.4). |
| DAC-SFP-10GE-5M | 5m length, 10GbE SFP+ direct attach cable (DAC); copper Twinax connectors on both ends for ArubaStack or interconnect between devices. For use with 7200, S2500 and S3500 10GbE ports only and S1500 1GbE Ports (requires ArubaOS 7.4). |
| DAC-SFP-10GE-7M | 7m length, 10GbE SFP+ direct attach cable (DAC); copper Twinax connectors on both ends for ArubaStack or interconnect between devices. For use with 7200, S2500 and S3500 10GbE ports only and S1500 1GbE Ports (requires ArubaOS 7.4). |
| XFP-LR | Aruba XFP - 1310nm serial pluggable XFP optic (LC) for up to 10km over SMF (used in M3 only) |
| XFP-SR | Aruba XFP - 850nm serial pluggable XFP optic (LC), target range 300m over MMF (used in M3 only) |

아루바 네트웍스 코리아 www.arubanetworks.co.kr
서울시 강남구 삼성동 트레이드타워 14층 우)135-729
Tel. 02-6000-8690 | Fax. 02-6000-8698 | dl-korea@arubanetworks.com