



## data sheet



### BENEFITS

#### **Industry's lowest cost enterprise class 802.11ac solution**

Unprecedented performance with extended range at the industry's most affordable price point

#### **Extended range requires fewer APs**

Adaptive antenna technology delivers a 2x to 4x increase in Wi-Fi signal coverage minimizing the number of APs required to service any area

#### **Sleek, low profile enclosure for ease-of-deployment**

Aesthetically-pleasing design fits almost anywhere. Powerful 802.11ac technology that literally fits in the palm of your hand for easy deployment

#### **Channel selection optimizes throughput**

ChannelFly dynamically chooses the best channel giving users the highest possible throughput even in highly congested environments

#### **Intuitive configuration and management**

The industry's simplest configuration and management through a Web-based wizard and automated deployment capabilities

#### **Hassle free migration to higher speed Wi-Fi**

Support for standard 802.3af power over Ethernet allows enterprises to use existing PoE switches without costly upgrades

# ZoneFlex™ R310

## DUAL-BAND 802.11AC SMART WI-FI ACCESS POINTS

### High Performance, 802.11ac Smart Wi-Fi Access Points with Adaptive Antenna Technology

The Ruckus ZoneFlex R310 delivers high-performance and reliable 802.11ac wireless networking at the industry's most affordable price point.

Unlike any other 802.11ac wireless solution in its class, the ZoneFlex R310 combines patented adaptive antenna technology and automatic interference mitigation to deliver consistent, predictable performance at extended ranges with up to 4dB of statistical BeamFlex gain and up to 10dB of interference mitigation.

Additional performance enhancements to signal gain can be attributed to the chip-based transmit beamforming capability adding 3 dB when associated to a compatible client.

Each ZoneFlex R310 integrates Ruckus-patented BeamFlex, a software-controlled, high gain antenna array that continually forms and directs each 802.11ac packet over the best performing signal path. The ZoneFlex R310 automatically selects channels for highest throughput potential using Ruckus ChannelFly dynamic channel management, adapting to environmental changes. Once deployed, enterprises never have to worry about constant site surveys as the environment changes.

# ZoneFlex™ R310

## DUAL-BAND 802.11AC SMART WI-FI ACCESS POINTS

### Patented BeamFlex™ Technology Extends Signal Range, Improves Stability of Client Connections

All ZoneFlex R310 Smart Wi-Fi access points integrate a software-controlled smart antenna array that delivers up to an additional 4 dB of BeamFlex gain and 10 dB of interference mitigation. This allows a 2 to 4x improvement in signal range and a reduction in packet loss from the ability to automatically mitigate interference and avoid obstacles.

### Advanced WLAN Applications with Smart/OS

When used with Ruckus controllers, each ZoneFlex R310 supports a wide range of value-added applications such as guest access networking, Dynamic PSK, hotspot authentication, wireless intrusion detection and many more. With Smart/OS, WLANs can be created and mapped to the same or different APs or VLANs. In a centrally managed configuration, the ZoneFlex R310 works with a wide range of authentication servers including Microsoft's Active Directory, LDAP, and RADIUS.



### Flexible Deployment Options

ZoneFlex R310 APs can be deployed as a standalone AP or as part of a centrally managed wireless LAN using Ruckus's ZoneDirector or SmartZone Smart WLAN controllers. ZoneFlex R310 can be deployed across any L2/L3 network and can bridge traffic onto the local network, tunnel to a central location using L2TP or PPPoE, or route between the WAN and NAT'ed private subnets. When used with the controllers, each ZoneFlex R310 is automatically configured through the network making deployment quick and easy.

### Complete Local and Remote Management

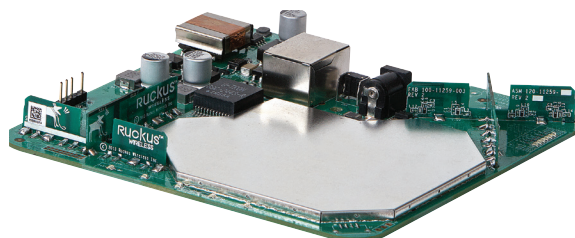
Each ZoneFlex R310 can be managed as a standalone AP through a Web-based GUI, using SNMP or through the Ruckus FlexMaster Wi-Fi remote management system. Local management can also be performed using the ZoneDirector or SmartZone Smart WLAN controllers. FlexMaster is a LINUX-based software platform that uses industry-standard protocols to perform bulk configuration, fault detection, monitoring and a wide range of troubleshooting capabilities over a wide area connection. The controllers enable local management and control of APs, adding value-added services such as transmit power control, and guest access networking.



## FEATURES

- Blazing fast 802.11ac speeds at the lowest cost in its class
- Dual-band concurrent (2.4GHz/5GHz) 802.11ac
- Adaptive antenna technology and advanced RF management
- Up to an additional 4dB BeamFlex gain / 10dB interference mitigation
- Automatic interference mitigation, optimized for high-density environments
- Integrated smart antenna technology
- Standard 802.3af Power over Ethernet (PoE)
- Router mode with NAT and DHCP services
- 2 to 4 times extended range and coverage
- IP multicast video streaming support
- Up to 8 BSSIDs per radio (16 BSSIDs per access point) with unique QoS and security policies
- Advanced QoS packet classification and automatic priority for latency-sensitive traffic
- Dynamic, per-user rate-limiting for hotspot WLANs
- WPA-PSK (AES), 802.1X support for RADIUS and Active Directory\*\*
- Ethernet 802.1x port-based authentication (authenticator and supplicant)
- Zero-IT and Dynamic PSK\*\*
- Admission control/load balancing\*\*
- Bandsteering and airtime fairness
- Captive portal and guest accounts \*\*
- Guest access services\*\*
- Application Recognition and Control\*\*
- Wall, desktop or ceiling mountable
- Limited lifetime warranty

\*\* when used with Ruckus ZoneDirector or SmartZone controllers.

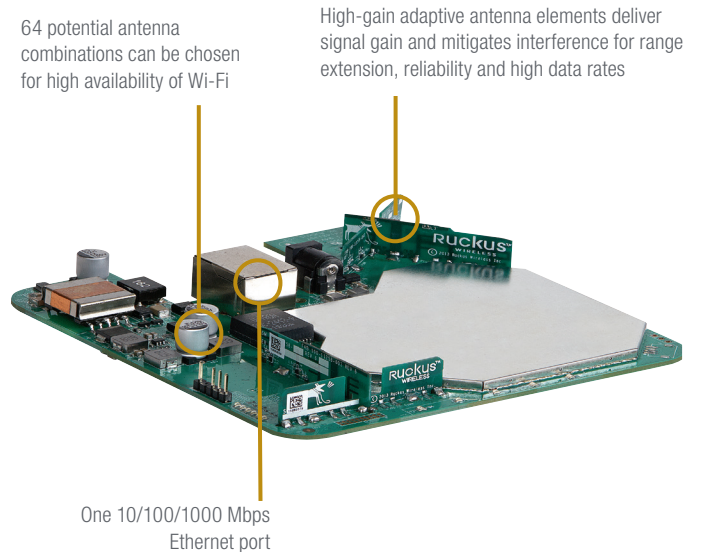
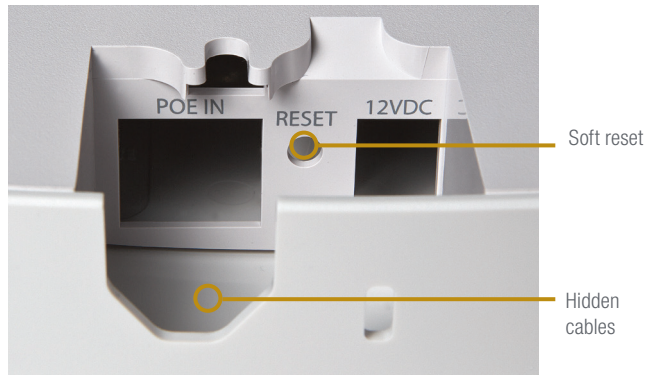
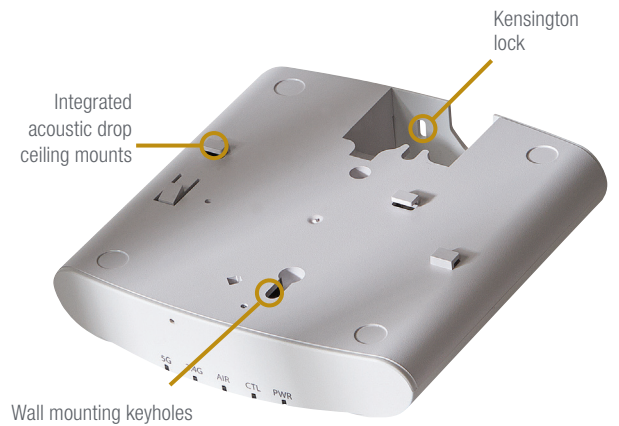
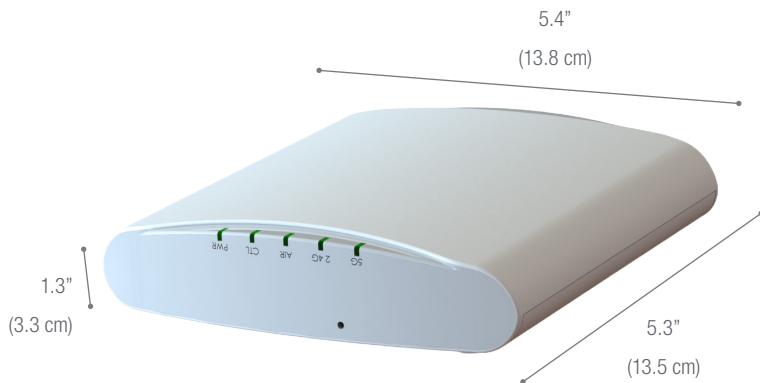


# ZoneFlex™ R310

## DUAL-BAND 802.11AC SMART WI-FI ACCESS POINTS

Small lightweight form factor with integrated mounting options for easy deployment.

The ZoneFlex R310 installs & mounts seamlessly, making it ideal for quick and effective set up for carrier & enterprise deployments.



## Specifications

PHYSICAL CHARACTERISTICS	
<b>POWER</b>	<ul style="list-style-type: none"> <li>DC Input: 12 VDC 1.0A</li> <li>Power over Ethernet 802.3 af</li> </ul>
<b>PHYSICAL SIZE</b>	<ul style="list-style-type: none"> <li>13.8cm (L), 13.5cm (W), 3.3cm (H)</li> <li>5.4 in (L), 5.3 in (W), 1.3 in (H)</li> </ul>
<b>WEIGHT</b>	<ul style="list-style-type: none"> <li>220 gms (0.485 lbs)</li> </ul>
<b>ETHERNET PORTS</b>	<ul style="list-style-type: none"> <li>1 auto MDX, auto-sensing 10/100/1000 Mbps, RJ-45, POE port</li> </ul>
<b>LOCK OPTIONS</b>	<ul style="list-style-type: none"> <li>Hidden latching mechanism</li> <li>Kensington Lock Hole</li> <li>T-bar Torx</li> </ul>
<b>ENVIRONMENTAL CONDITIONS</b>	<ul style="list-style-type: none"> <li>Operating Temperature: 0°C - 40°C</li> <li>Operating Humidity: 10% - 95% non-condensing</li> </ul>
<b>POWER DRAW</b>	<ul style="list-style-type: none"> <li>DC Input                             <ul style="list-style-type: none"> <li>Idle: 6W</li> <li>Typical: 7.1W</li> <li>Peak: 9W</li> </ul> </li> <li>Power over Ethernet Input                             <ul style="list-style-type: none"> <li>Idle: 6W</li> <li>Typical: 7.8W</li> <li>Peak: 11W</li> </ul> </li> </ul>

PERFORMANCE AND CAPACITY	
<b>MAX PHY RATE</b>	<ul style="list-style-type: none"> <li>300 Mbps (2.4GHz)</li> <li>867 Mbps (5GHz)</li> </ul>
<b>CONCURRENT STATIONS</b>	<ul style="list-style-type: none"> <li>Up to 100 clients per AP</li> </ul>
<b>SIMULTANEOUS VoIP CLIENTS</b>	<ul style="list-style-type: none"> <li>Up to 30</li> </ul>

RF	
<b>ANTENNA</b>	<ul style="list-style-type: none"> <li>Adaptive antenna that provides up to 128 unique antenna patterns</li> <li>64 patterns per band</li> </ul>
<b>RF POWER OUTPUT (Aggregated)</b>	<ul style="list-style-type: none"> <li>23 dBm for 2.4GHz†</li> <li>24 dBm for 5GHz†</li> </ul>
<b>PHYSICAL ANTENNA GAIN</b>	<ul style="list-style-type: none"> <li>Up to 3 dBi per spatial stream</li> </ul>
<b>BEAMFLEX* SINR TX GAIN</b>	<ul style="list-style-type: none"> <li>Up to 4 dB</li> </ul>
<b>INTERFERENCE MITIGATION</b>	<ul style="list-style-type: none"> <li>Up to 10 dB</li> </ul>
<b>MINIMUM RX SENSITIVITY</b>	<ul style="list-style-type: none"> <li>Up to -99 dBm</li> </ul>

\*BeamFlex gains are statistical system level effects translated to enhanced SINR based on observations over time in real-world conditions with multiple APs and many clients

MANAGEMENT	
<b>DEPLOYMENT OPTIONS</b>	<ul style="list-style-type: none"> <li>Standalone (individually managed)</li> <li>Managed by ZoneDirector*</li> <li>Managed by FlexMaster*</li> <li>Managed by SmartZone</li> </ul>
<b>CONFIGURATION</b>	<ul style="list-style-type: none"> <li>Web User Interface (HTTP/S)</li> <li>CLI (Telnet/SSH), SNMP v1, 2, 3</li> <li>TR-069 vis FlexMaster</li> </ul>
<b>AUTO AP SOFTWARE UPDATES</b>	<ul style="list-style-type: none"> <li>FTP or TFTP, remote auto available</li> </ul>

NOTE: SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE

\* some features not supported - e.g., mesh

WI-FI	
<b>STANDARDS</b>	<ul style="list-style-type: none"> <li>IEEE 802.11a/b/g/n/ac</li> <li>2.4GHz and 5GHz</li> </ul>
<b>SUPPORTED DATA RATES</b>	<ul style="list-style-type: none"> <li>802.11n/ac: 6.5Mbps – 173.4Mbps (20MHz) 13.5Mbps – 400Mbps (40MHz)</li> <li>29.3Mbps - 867Mbps (80MHz)</li> <li>802.11a: 54, 48, 36, 24, 18, 12, 9 and 6Mbps</li> <li>802.11b: 11, 5.5, 2 and 1 Mbps</li> <li>802.11g: 54, 48, 36, 24, 18, 12, 9 and 6 Mbps</li> </ul>
<b>RADIO CHAINS</b>	<ul style="list-style-type: none"> <li>2 x 2</li> </ul>
<b>SPATIAL STREAMS</b>	<ul style="list-style-type: none"> <li>2</li> </ul>
<b>CHANNELIZATION</b>	<ul style="list-style-type: none"> <li>20MHz, 40MHz, 80MHz</li> </ul>
<b>FREQUENCY BAND</b>	<ul style="list-style-type: none"> <li>IEEE 802.11 b/g/n: 2.4 – 2.484 GHz</li> <li>IEEE 802.11a/ac: 5.15 – 5.25 GHz; 5.25 – 5.35 GHz; 5.47 – 5.725 GHz; 5.725 – 5.85 GHz</li> </ul>
<b>OPERATING CHANNELS</b>	<ul style="list-style-type: none"> <li>US/Canada: 1-11, Europe ( ETSI X30): 1-13, Japan X41: 1-13</li> <li>5 GHz channels: Country dependent</li> </ul>
<b>BSSID</b>	<ul style="list-style-type: none"> <li>Up to 8 per radio (16 per AP)</li> </ul>
<b>POWER SAVE</b>	<ul style="list-style-type: none"> <li>Supported</li> </ul>
<b>WIRELESS SECURITY</b>	<ul style="list-style-type: none"> <li>WPA-PSK, WPA-TKIP, WPA2 AES, 802.11i</li> <li>Authentication via 802.1X with the ZoneDirector or SmartZone, local authentication database, support for RADIUS, LDAP, and ActiveDirectory</li> </ul>
<b>CERTIFICATIONS**</b>	<ul style="list-style-type: none"> <li>U.S., Europe, Argentina, Australia, Brazil, Canada, Chile, China, Colombia, Costa Rica, Ecuador, Egypt, Hong Kong, India, Indonesia, Israel, Japan, Jordan, Kenya, Korea, Malaysia, Mexico, New Zealand, Peru, Philippines, Russia, Saudi Arabia, Singapore, South Africa, Taiwan, Thailand, UAE, Vietnam</li> <li>WEEE/RoHS2 compliance</li> <li>EN 60601-1-2 (Medical)</li> <li>Wi-Fi Alliance</li> <li>Industry Canada</li> <li>EU/EFTA</li> <li>CB Scheme Certificate</li> <li>EN 50121-1 Railway EMC</li> <li>EN 50121-4 Railway Immunity</li> <li>IEC 61373 Railway Shock &amp; Vibration</li> <li>UL 2043 Plenum Rated</li> </ul>

† Maximum power varies by country

\*\* For current certification status please see price list

## Product Ordering Information

MODEL	DESCRIPTION
<b>ZoneFlex R310 Smart Wi-Fi 802.11ac Access Point</b>	
<b>901-R310-XX02</b>	Concurrent dual band 802.11ac AP, no power adapter
<b>Optional Accessories</b>	
<b>902-0120-0000</b>	Universal secure mounting bracket fits multiple ZoneFlex AP's including R310. Mounts to Hard Wall, Ceiling, Pole & Truss. Fits without pad-lock support.
<b>902-0173-XX10</b>	Power Adapter, AC/DC wall plug,100-250Vac 50/60Hz
<b>902-0162-XXYY</b>	PoE Adapter

PLEASE NOTE: When ordering ZoneFlex Indoor APs, you must specify the destination region by indicating -US, -WW, or -Z2 instead of XX. When ordering PoE injectors or power supplies, you must specify the destination region by indicating -US, -EU, -AU, -BR, -CN, -IN, -JP, -KR, -SA, -UK, or -UN instead of -XX.

WARRANTY: Sold with a limited lifetime warranty.

For details see: <http://support.ruckuswireless.com/warranty>