



## WAC6103D-I

### 802.11ac Dual Radio Dual-optimized Antenna 3x3 Access Point

Cloud management is a simpler, faster and much more efficient way to handle larger networks. However Zyxel knows that it's not always easy for administrators of busy venues to go for cloud immediately. In response to this challenge, the Zyxel WAC6103D-I featuring NebulaFlex Pro offers the full flexibility for users to switch among standalone, controller-managed and cloud-managed modes. In addition, it comes with a 1-year bundled Nebula Professional pack license\* that eliminates immediate licensing cost when migrating to full-featured cloud management.

Most access points on the market are designed with single static radiation pattern and it's typically only support ceiling-mount installation. However, in the real world ceiling-mount deployment is not always feasible for locations such as high ceiling warehouses, fancy ceiling lobbies or atriums. An AP with ceiling-mount pattern installed as wall-mount cannot achieve its best signal coverage and could cause interference. It's no doubt that a WiFi AP with installation flexibility, optimal performance and stylish exterior is a necessity today.

Zyxel's WAC6103D-I is a high performance 3-stream 802.11ac WiFi AP featuring ultra-fast speeds of up to 1.75 Gbps with groundbreaking "Dual-optimized" antenna design. With the innovative adjustable antenna, the WAC6103D-I provides two optimized signal coverage types for either ceiling-mount or wall-mount deployments. Even better, the stylish, ultra-slim industrial design perfectly blends into modern decorations. Choose WAC6103D-I for constant, no-compromise WiFi performance.



NebulaFlex Pro allows users to switch among standalone, on-premises controller managed or intuitive Nebula cloud managed modes as needed



Enterprise class 3x3 802.11ac AP supports combined data rates of up to 1.75 Gbps



"Dual-optimized antenna" allows pattern optimization adapting to wall- or ceiling-mount installations



Dynamic Channel Selection, Load Balancing and Smart Client Steering ensure optimal wireless experience



Stylish, ultra-slim ID design as the 32 mm height blends perfectly into modern interior decorations

## Benefits

### NebulaFlex Pro – simply manage it your way!

The NebulaFlex Pro provides extended flexibility, especially for those who hesitate to step up for cloud networking. You can easily switch network management modes among standalone, on-premises controller and our intuitive NCC cloud platform. You can even change your mind any time without additional cost while protecting previous investments on wireless technology. You can have the privilege to use advanced features with professional pack for one year upon registration on Nebula; these features include site-wide topology, 365-day statistics on the device and client monitoring along with more upcoming new features on NCC and its App.

### Superior performance with innovative “Dual-optimized” antenna

People without RF expertise may not realize that installing an AP optimized for ceiling-mount as wall-mount may cause the ceiling-mount radiation pattern to interfere with other devices up- or downstairs as well as to deliver signals with shorter-than-expected range for its clients. Designed with the innovative “Dual-optimized” antenna, the WAC6103D-I adapts to both wall- and ceiling-mount installations. Thus, users can switch between the two optimized antenna modes easily to fit either situation. To boost WiFi speeds for your network, the WAC6103D-I is definitely an excellent choice.

### Ultra-slim, stylish exterior blends into environments

The WAC6103D-I inherits the stylish honeycomb exterior design of the Zyxel WAC6500 Series; its low-profile white color blends perfectly into most modern decorations. The compact, elegant design makes WAC6103D-I flexible for different decors – it can be as outstanding as understated.

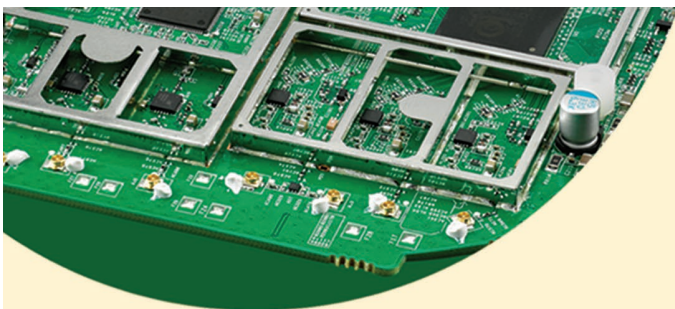
### Streamlined deployment tools save valuable time

WAC6103D-I features APFlex™ to simplify managed/standalone AP mode configuration and to facilitate integration into network environments automatically so pre-install preparation can be eliminated. The ZWO (Zyxel Wireless Optimizer) Utility also allows IT managers to perform AP planning, coverage detection and wireless health management centrally. ZyMesh is Zyxel's proprietary protocol for creating wireless mesh links for easy configuration, optimized management and enhanced reliability. These user-friendly tools not only save time, but also facilitate faster responses to network issues.

### Optimized wireless experience with advanced feature settings

With a range of wireless features, the WAC6103D-I ensures optimized wireless experience for users. Dynamic Channel Selection (DCS) avoids interference of co-channel and overlapping channel at initialization, while Load Balancing enables administrators to limit the number of clients associated with each AP. Smart Client Steering features with Band Select, Signal Threshold and Band Balancing, offering stable, reliable wireless connections. The WAC6103D-I has been certified with industrial-strength WPA2 enterprise protection and features Layer-2 isolation. With these technologies, the WAC6103D-I is capable of delivering consistent, uninterrupted and highly secured wireless access experience to its users.

## Robust Hardware

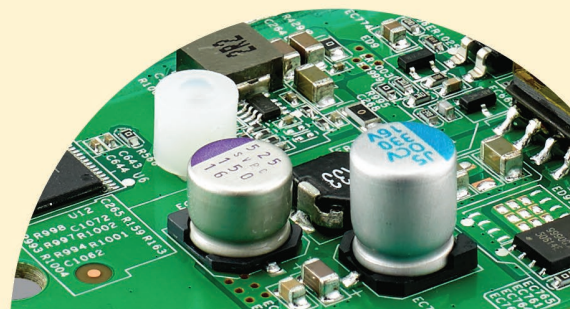


### Fine art of RF design

The WAC6103D-I isolates RF circuits by solid shielding frames. Thus, RF noise and electromagnetic interference (EMI) is mitigated meanwhile RF performance is enhanced as well.

### Solid capacitor for longevity

All-solid capacitor design provides up to 6 times lifespan than electrolytic capacitors that delivers better stability and reliability.



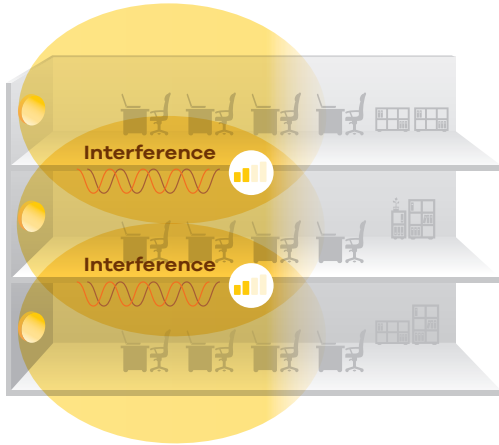
## Dual-optimized Antenna

The unprecedented Dual-optimized Antenna is an adjustable internal antenna with “just fit” pattern options optimized for wall- or ceiling-mount that the installation technician can instantly change the antenna pattern simply via the physical antenna switch without booting the device. If needed, administrators can base on their know-

how to perform granular signal optimization per floor plan via software configuration remotely. With the flexibility, the WAC6103D-I can fit for wall-mount or ceiling-mount deployment without the hassles of antenna accessory selection and signal coverage adjustment.

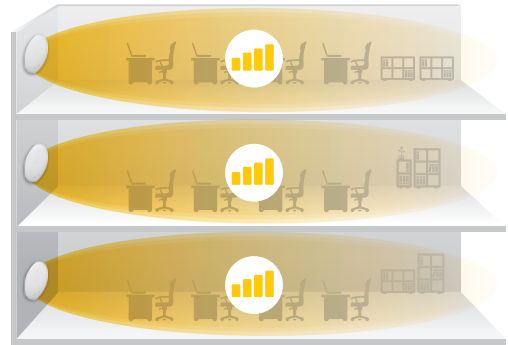
### Traditional (Side View)

Pattern for wall-mount (H-plane, side view)



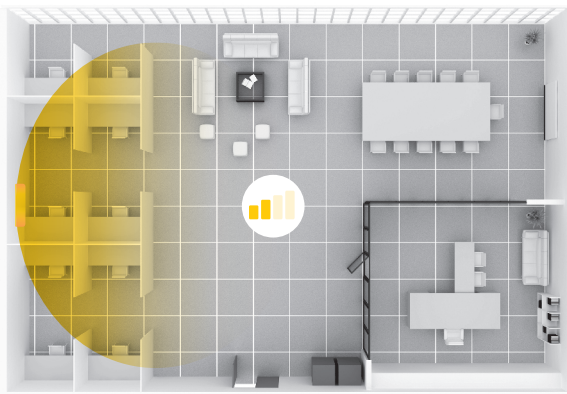
### Dual-optimized (Side View)

Pattern for wall-mount (H-plane, side view)



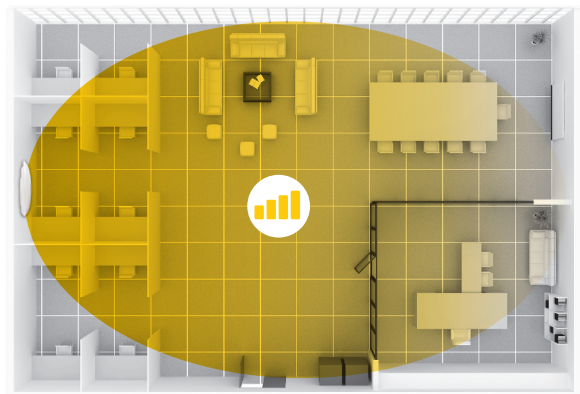
### Traditional (Top View)

Pattern for wall-mount (E-plane, top view)

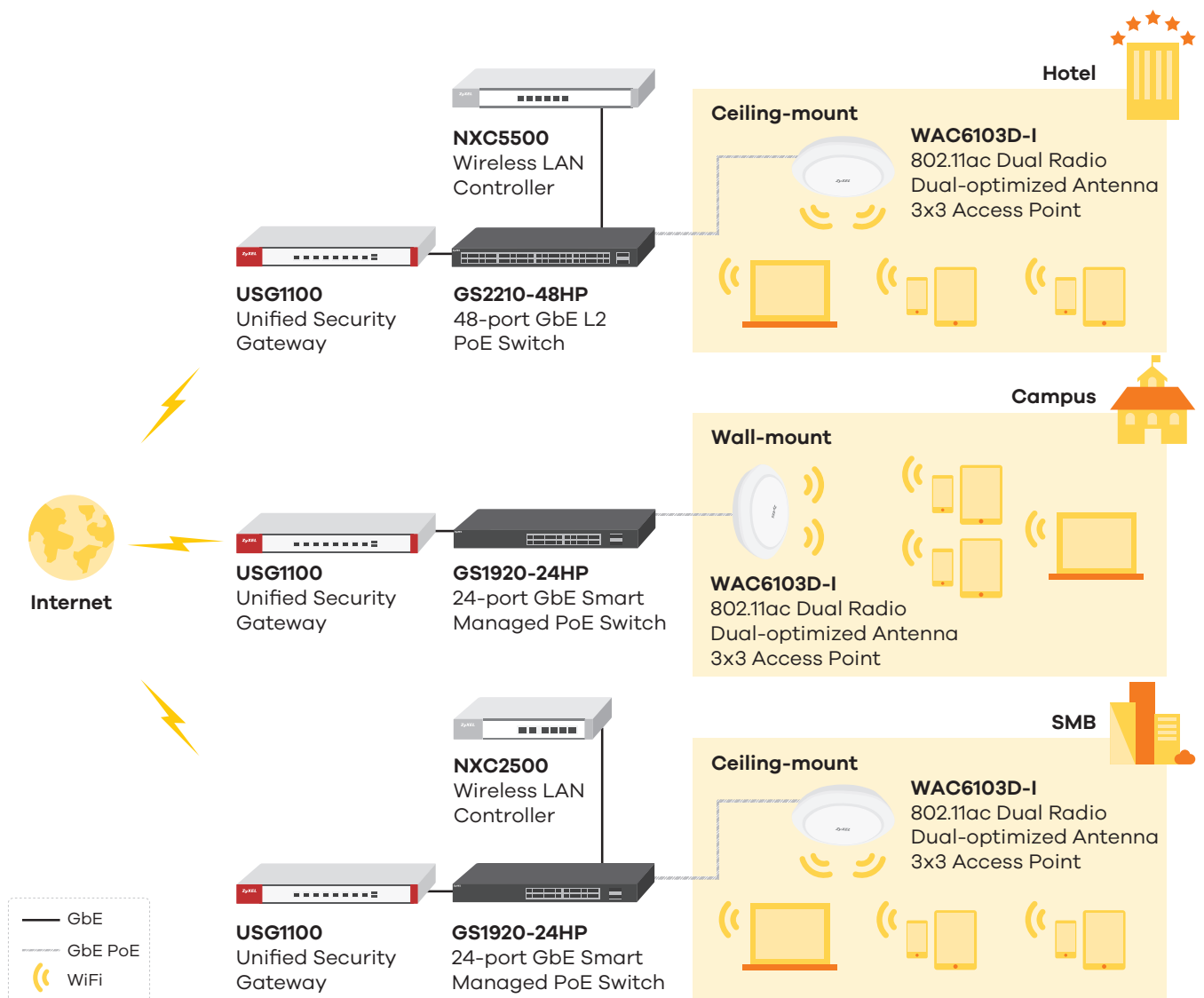


### Dual-optimized (Top View)


Pattern for wall-mount (E-plane, top view)



# Application Diagram



## Specifications

<b>Model</b>	<b>WAC6103D-I</b>	
<b>Product name</b>	802.11ac Dual Radio Dual-optimized Antenna 3x3 Access Point	
		
<b>Main Design</b>		
<b>Wireless frequency</b>	2.4 and 5 GHz	
<b>Radio</b>	2	
<b>RF Specifications</b>		
<b>Frequency band</b>	2.4 GHz (IEEE 802.11 b/g/n) <ul style="list-style-type: none"> <li>• USA (FCC): 2.412 to 2.462 GHz</li> <li>• Europe (ETSI): 2.412 to 2.472 GHz</li> <li>• Taiwan (TW): 2.412 to 2.462 GHz</li> </ul>	5 GHz (IEEE 802.11 a/n/ac) <ul style="list-style-type: none"> <li>• USA (FCC): 5.15 to 5.25 GHz; 5.725 to 5.850 GHz</li> <li>• European (ETSI): 5.15 to 5.35 GHz; 5.470 to 5.725 GHz</li> <li>• Taiwan (TW): 5.15 to 5.25 GHz; 5.725 to 5.850 GHz</li> </ul>
<b>802.11n/ac premium features</b>	<ul style="list-style-type: none"> <li>• 3x3 Multiple-Input Multiple-Output (MIMO) with three spatial streams</li> <li>• Maximal Ratio Combining (MRC)</li> <li>• 20-, 40- and 80-MHz channels</li> <li>• Packet aggregation: A-MPDU (Tx/Rx), A-MSDU (Tx/Rx)</li> <li>• Cyclic Delay diversity (CSD) support</li> <li>• Maximum Likelihood Demodulation (MLD) support</li> <li>• Low Density Parity Check (LDPC) support</li> </ul>	
<b>Conducted typical transmit output power (dBm)*1</b>	<b>FCC 11b/g</b>	28
	<b>FCC 11g/n</b>	28
	<b>FCC 11a</b>	28
	<b>FCC 11n/a (ac)</b>	28
	<b>EU 11b/g</b>	20
	<b>EU 11g/n</b>	20
	<b>EU 11a</b>	21
	<b>EU 11n/a (ac)</b>	26
<b>Antenna system</b>	Dual-optimized internal antenna	
<b>Antenna gain</b>	<ul style="list-style-type: none"> <li>• Ceiling: 2.4 GHz 3 dBi; 5 GHz 4 dBi</li> <li>• Wall: 2.4 GHz 4 dBi; 5 GHz 5 dBi</li> </ul>	
<b>Support data rate</b>	<ul style="list-style-type: none"> <li>• 802.11a/g: 6, 9, 12, 18, 24, 36, 48 and 54 Mbps</li> <li>• 802.11b: 1, 2, 5.5 and 11 Mbps</li> <li>• 802.11n: up to 450 Mbps in MCS23 (40 MHz)</li> <li>• 802.11ac: up to 1300 Mbps in MCS9 (80 MHz)</li> </ul>	
<b>Receive sensitivity</b>	Min. Rx sensitivity to -102 dBm	
<b>Interfaces</b>		
<b>Number of 10/100/1000M LAN</b>	2 x switch ports	
<b>Console port</b>	4-Pin serial	
<b>PoE</b>	Yes	
<b>PoE power draw</b>	12.48 W (802.3at PoE)*2	
<b>WLAN Features</b>		
<b>WLAN maximum throughput</b>	Up to 900 Mbps	
<b>ZyMesh (Controller-managed mode)</b>	Yes	
<b>WDS/Mesh*3</b>	Yes	
<b>Fast roaming</b>	Pre-authentication, PMK caching and 802.11r/k/v	

\*1: Conducted typical transmit output power excludes antenna gain. For total (EIRP) transmit power, add antenna gain.

\*2: Max. power draw is 12.48 W. In extreme cases, the inrush current is greater than 802.3af limit, thus 802.3at PoE is required.

\*3: WDS, ZyMesh, Smart Mesh and Industry's Open Mesh, Easy Mesh are different mesh systems that do not work with one another.

<b>Model</b>	<b>WAC6103D-I</b>
<b>Wireless Security</b>	
WEP	Yes
WPA/WPA2-PSK	Yes
WPA/WPA2-Enterprise	Yes
WMM(WiFi certified)	Yes
<b>Wireless Security</b>	
WLAN access control list	Yes
EAP types	EAP-TLS, EAP-TTLS, EAP-PEAP, EAP-FAST, EAP-AKA and EAP-SIM
IEEE 802.1X	Yes
Number of SSID	16
Web authentication	Yes
MAC filtering	Yes
Layer-2 isolation	Yes
RADIUS authentication	Yes
Microsoft AD authentication	Yes
LDAP authentication	Yes
MAC authentication	Yes
Rogue AP detection	Yes
Rogue AP containment	Yes
<b>Network</b>	
IPv6 host	Yes
VLANs	Yes
DHCP client	Yes
<b>QoS</b>	
WMM	Yes
WMM power save	Yes
DiffServ marking	Yes
<b>Management</b>	
<b>ZON Utility</b>	<ul style="list-style-type: none"> <li>• Discovery of Zyxel switches, APs and gateways</li> <li>• Centralized and batch configurations <ul style="list-style-type: none"> <li>▪ IP configuration</li> <li>▪ IP renew</li> <li>▪ Device factory reset</li> <li>▪ Device reboot</li> <li>▪ Device locating</li> <li>▪ Web GUI access</li> <li>▪ Firmware upgrade</li> <li>▪ Password configuration</li> <li>▪ One-click quick association with Zyxel AP Configurator (ZAC)</li> </ul> </li> </ul>
<b>Smart Connect</b>	<ul style="list-style-type: none"> <li>• Neighbor device discovery</li> <li>• One-click remote management access to the neighboring Zyxel devices</li> </ul>
<b>Zyxel AP Configurator</b>	<ul style="list-style-type: none"> <li>• Batch AP configuration</li> <li>• Batch AP firmware upgrade</li> <li>• Batch AP profile backup</li> </ul>
<b>Zyxel Wireless Optimizer</b>	<ul style="list-style-type: none"> <li>• WiFi AP planning</li> <li>• WiFi coverage detection</li> <li>• Wireless health management</li> </ul>
<b>Standalone AP mode</b>	Yes
<b>Managed AP mode</b>	Yes
<b>CLI</b>	Yes
<b>Web UI</b>	Yes
<b>SNMP</b>	v2c/v3

<b>Model</b>		<b>WAC6103D-I</b>
<b>Others</b>		
<b>Plenum rating</b>	Yes	
<b>Input power</b>	802.3at PoE only (No DC jack)	
<b>MTBF (hr)</b>	1,005,235	
<b>Standard Compliance</b>		
<b>Ethernet</b>	<ul style="list-style-type: none"> <li>• IEEE 802.3</li> <li>• IEEE 802.3u</li> <li>• IEEE 802.11ab</li> <li>• IEEE 802.3au</li> <li>• IEEE 802.3az</li> <li>• IEEE 802.3at</li> </ul>	
<b>PoE</b>	IEEE 802.3at	
<b>WLAN</b>	<ul style="list-style-type: none"> <li>• 802.11b: DBPSK, DQPSK, CCK</li> <li>• 802.11g: BPSK, QPSK, 16-QAM, 64-QAM</li> <li>• 802.11a: BPSK, QPSK, 16-QAM, 64-QAM</li> <li>• 802.11n: BPSK, QPSK, 16-QAM, 64-QAM</li> <li>• 802.11ac: BPSK, QPSK, 64-QAM, 256-QAM</li> </ul>	
<b>Certifications</b>		
<b>Radio</b>	FCC part 15C, FCC part 15E, ETSI EN 300 328, EN 301 893, LPO002	
<b>EMC</b>	FCC part 15B, EN 301 489-1, EN 301 489-17, EN55022, EN55024, EN61000-3-2/-3, EN60601-1-2, BSMI CNS13438	
<b>Safety</b>	EN 60950-1, IEC 60950-1, BSMI CNS14336-1	
<b>Physical Specifications</b>		
<b>Item</b>	<b>Dimensions (WxDxH) (mm/in.)</b>	203.9 x 191.7 x 34.7/8.03 x 7.55 x 1.37
	<b>Weight (g/lb.)</b>	445/0.98
<b>Packing</b>	<b>Dimensions (WxDxH) (mm/in.)</b>	235 x 246 x 60/9.25 x 9.69 x 2.36
	<b>Weight (g/lb.)</b>	938/2.07
<b>Included accessories</b>	Wall/ceiling mount plate	
<b>Environmental Specifications</b>		
<b>Operating</b>	<b>Temperature</b>	0°C to 50°C/32°F to 122°F
	<b>Humidity</b>	10% to 90% (non-condensing)
<b>Storage</b>	<b>Temperature</b>	-40°C to 70°C/-40°F to 158°F
	<b>Humidity</b>	10% to 90% (non-condensing)

## Optional Accessory

<b>Part Number</b>	<b>Description</b>
<b>ACCESSORY-ZZ0105F</b>	Accessory, T-bar ceiling clips for ceiling mount AP to ceiling rails, 5 sets, ROHS
<b>POE12-HP-EU0102F</b>	802.3at PoE injector, ROHS
<b>POE12-HP-US0102F</b>	802.3at PoE injector, ROHS

# Weather-Proof Mounting Option

## Outdoor Enclosure

People like to enjoy the combination of great view, fresh air and WiFi service when they're outdoors. This weather-resistant enclosure brings the Zyxel indoor AP outdoors to make deployments in places such as parks, campus, poolside or camping yard convenient and affordable. This enclosure allows the AP to be easily mounted on any wall or pole. The durable enclosure is designed to withstand a wide range of temperature from 50°C to -20°C, waterproof the APs with IPX5 rating certified and extend lifespan with the UV stabilized plastic, which makes it the most reliable weatherproof enclosure.



## Features

- **Compatible with various APs** including unified, cloud-managed and standalone units
- **Wide operating temperature** range from 50°C to -20°C
- **Compact size** easily blends into any environment seamlessly
- **UV stabilized plastic** extends enclosure lifetime
- **Flexible mount design** for wall mount, or pole mount installation with pole mount kit (sold separately)
- **IPX5 rating** makes Zyxel indoor AP weatherproof



Wall mount installation





Pole mount installation

## Specifications

Model	Enclosure
Dimensions (WxDxH)(mm/in.)	238.54 x 249.72 x 86.97/9.39 x 9.83 x 3.42
Weight (kg/lb.)	0.64/1.4
Mounting options	Wall, Pole (pole mount kit is sold separately)
Certified	IPX5
Adjustability	Swivel +/-40° Tilt +/-15°

## Compatibility List



Model
 <ul style="list-style-type: none"><li>• NWA1123-ACv2</li><li>• NWA5121-NI</li><li>• NWA5123-AC</li><li>• NAP102</li></ul>
 <ul style="list-style-type: none"><li>• NWA1123-AC PRO</li><li>• WAC6103D-I</li><li>• NAP203</li></ul>

For more product information, visit us on the web at [www.zyxel.com](http://www.zyxel.com)

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