

# Dell Networking W-IAP220 Series Instant Access Point

## Installation Guide

The Dell W-IAP220 Series (W-IAP224 and W-IAP225) Instant Access Point (IAP) supports the IEEE 802.11ac standard for high-performance WLAN. It uses MIMO (Multiple-in, Multiple-out) technology and other high-throughput mode techniques to deliver high-performance, 802.11n 2.4 GHz and 802.11ac 5 GHz functionality while simultaneously supporting existing legacy wireless services. The W-IAP220 Series Instant access point works only in conjunction with a virtual controller.

The W-IAP220 Series Instant access point provides the following capabilities:

- Wireless transceiver
- Protocol-independent networking functionality
- IEEE 802.11a/b/g/n/ac operation as a wireless Instant access point
- IEEE 802.11a/b/g/n/ac operation as a wireless air monitor
- Compatibility with IEEE 802.3at PoE+ and 802.3af PoE

**Note:** The W-IAP220 Series Instant access point requires Dell Instant 4.0 or later.

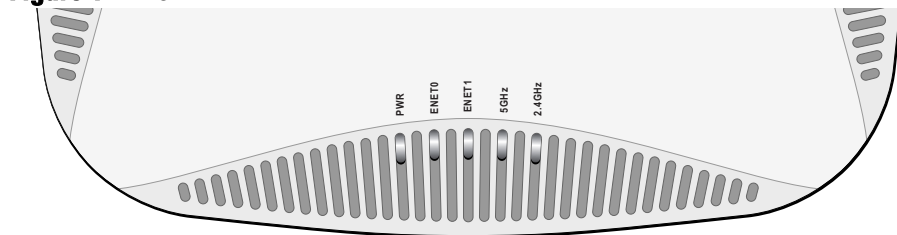
### Package Contents

- W-IAP224 or W-IAP225 Instant Access Point
- 9/16" and 15/16" Ceiling Rail Adapters
- Quick Start Guide
- Installation Guide (this document)

**Note:** Inform your supplier if there are any incorrect, missing, or damaged parts. If possible, retain the carton, including the original packing materials. Use these materials to repack and return the unit to the supplier if needed.

### W-IAP220 Series Hardware Overview

**Figure 1** LEDs



### LEDs

The W-IAP220 Series Instant access point is equipped with five LEDs that indicate the status of the various components of the IAP.

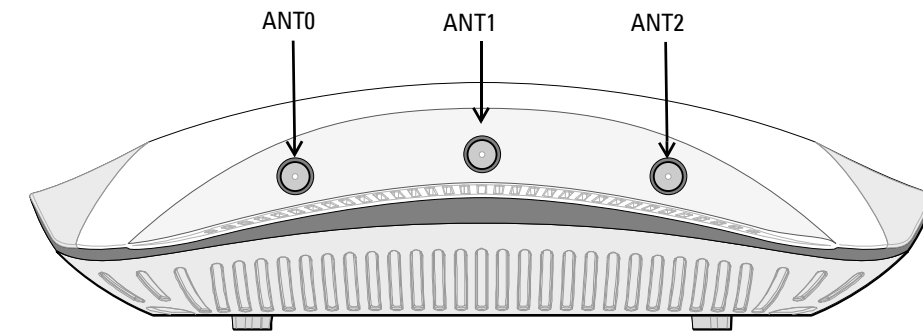
**Table 1** LED Behavior

LED	Color/State	Meaning
PWR	Off	No power to IAP
	Red	Initial power-up
	Green - Flashing	IAP booting
	Green - Steady	IAP ready
ENET0, ENET1	Off	Ethernet link unavailable
	Amber - Steady	10/100Mbps Ethernet link established
	Green - Steady	1000Mbps Ethernet link established
5GHz	Flashing	Ethernet link activity
	Off	5 GHz radio disabled
	Amber - Steady	5 GHz radio enabled in non-HT WLAN mode
	Green - Steady	5 GHz radio enabled in HT WLAN mode
2.4GHz	Flashing - Green	5 GHz Air or Spectrum Monitor
	Off	2.4 GHz radio disabled
	Amber - Steady	2.4 GHz radio enabled in non-HT WLAN mode
	Green - Steady	2.4 GHz radio enabled in HT WLAN mode
Flashing - Green	2.4 GHz Air or Spectrum Monitor	

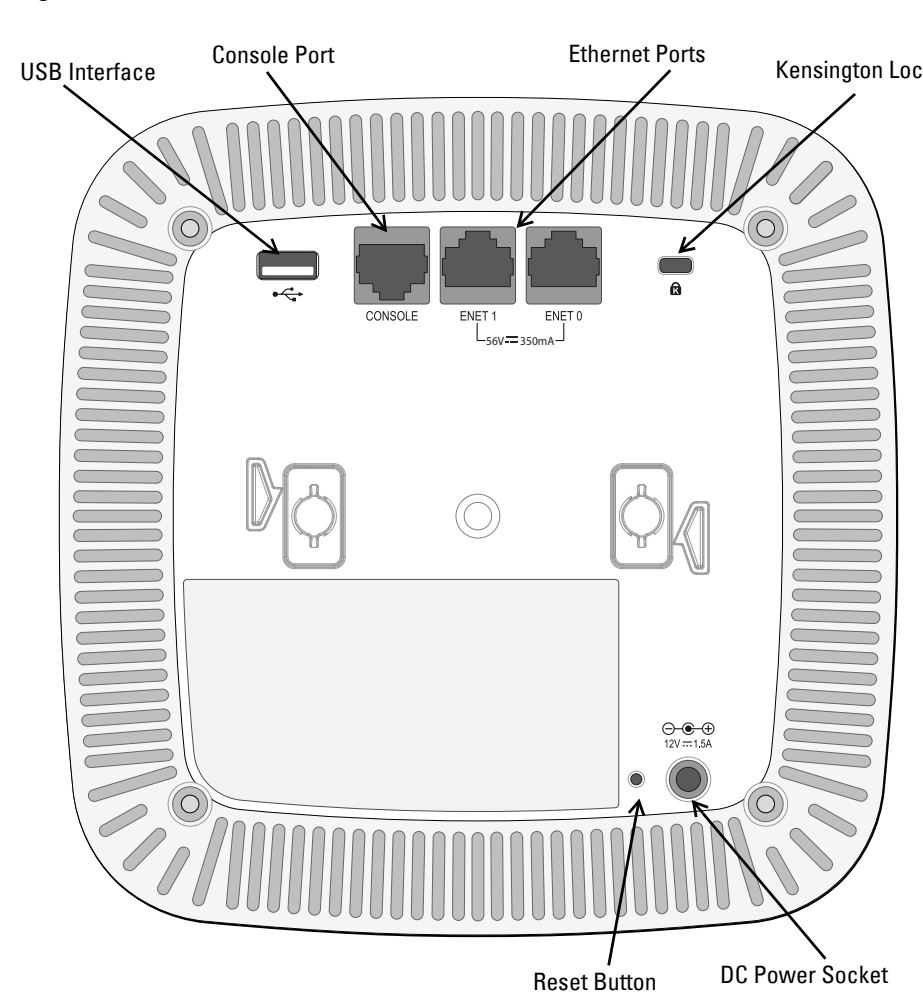
### External Antenna Connectors

The W-IAP224 Instant access point is equipped with three external antenna connectors. The connectors are labeled ANT0, ANT1, and ANT2, and correspond to radio chains 0, 1, and 2.

**Figure 2** External Antenna Connectors (W-IAP224 only)



**Figure 3** Bottom Panel



### USB Interface

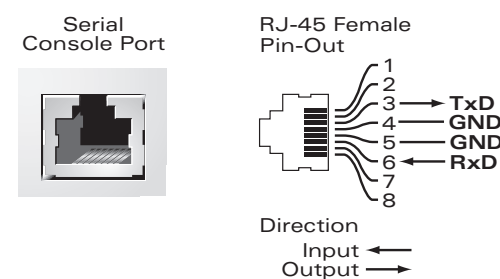
The W-IAP220 Series Instant access point is equipped with a USB interface for connectivity with cellular modems.

**Note:** The USB interface is disabled when the W-IAP220 Series Instant access point is powered from 802.3af PoE.

### Console Port

The serial console port allows you to connect the W-IAP220 Series Instant access point to a serial terminal or a laptop for direct local management. This port is an RJ-45 female connector with the pinouts described in Figure 4. Connect it directly to a terminal or terminal server using an Ethernet cable.

**Figure 4** Serial Port Pin-Out



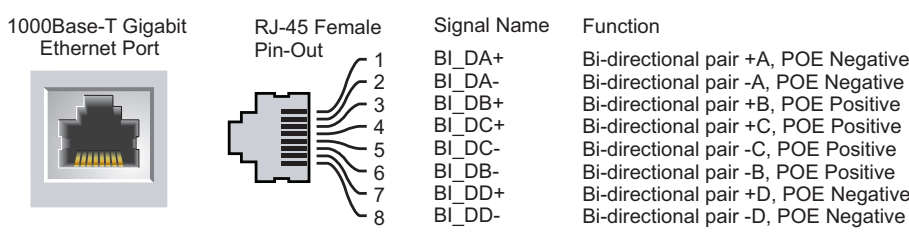
### Ethernet Ports

The W-IAP220 Series Instant access point is equipped with two 10/100/1000Base-T (RJ-45) auto-sensing, MDI/MDX wired-network connectivity port. These ports support IEEE 802.3af and 802.3at Power over Ethernet (PoE) compliance, accepting 48 VDC (nominal) as a standard defined Powered Device (PD) from a Power Sourcing Equipment (PSE) such as a PoE midspan injector, or network infrastructure that supports PoE.

**Note:** When operating on 802.3af, only the port connected to power is usable. For example, if the power source is connected to ENET 0, then ENET 1 will not work.

The 10/100/1000 Mbps Ethernet ports are on the bottom of the IAP. These ports have RJ-45 female connectors with the pin-outs shown in Figure 5.

**Figure 5** Gigabit Ethernet Port Pin-Out



### Kensington Lock Slot

The W-IAP220 Series Instant access point is equipped with a Kensington lock slot for additional security.

### Reset Button

The reset button can be used to return the W-IAP220 Series Instant access point to factory default settings. To reset the IAP:

1. Power off the IAP.
2. Press and hold the reset button using a small, narrow object, such as a paperclip.
3. Power-on the IAP without releasing the reset button. The power LED will flash within 5 seconds.
4. Release the reset button.

The power LED will flash again within 15 seconds indicating that the reset is completed. The IAP will now continue to boot with the factory default settings.

### DC Power Socket

If PoE is not available, an optional Dell IAP AC-DC adapter kit (sold separately) can be used to power the W-IAP220 Series Instant access point.

Additionally, a locally-sourced AC-to-DC adapter (or any DC source) can be used to power this device, as long as it complies with all applicable local regulatory requirements and the DC interface meets the following specifications:

- 12 VDC (+/- 5%)/18W
- Center-positive 1.7/4.0 mm circular plug, 9.5 mm length

### Power Modes

The W-IAP220 Series Instant access point can operate in two power modes. The IAP's mode is not configurable and is determined by the IAP based on the amount of power available. The two modes are:

- Full Power: The IAP is receiving power from an 802.3at PoE source or is powered using the optional AC-DC adapter kit. In this mode, all IAP functionality is available.
- PoE Power Saving: The IAP is receiving power from an 802.3af PoE source. In this mode, the IAP has somewhat reduced functionality: the second Ethernet port is disabled, the USB port is disabled, and the IAP operates in 1x3 RF chain mode for 2.4 GHz (two transmit chains disabled). The 5 GHz radio operates without restrictions.

### Before You Begin

**Caution:** FCC Statement: Improper termination of access points installed in the United States (non-US model Regulatory Domain model/s) will be in violation of the FCC grant of equipment authorization. Any such willful or intentional violation may result in a requirement by the FCC for immediate termination of operation and may be subject to forfeiture (47 CFR 1.80).

**Caution:** EU Statement: Lower power radio LAN product operating in 2.4 GHz and 5 GHz bands. Please refer to the *Dell Networking W-Series Instant Access Point User Guide* for details on restrictions.

Produit réseau local radio basse puissance opérant dans la bande fréquence 2.4 GHz et 5 GHz. Merci de vous référer au *Dell Networking W-Series Instant Access Point User Guide* pour les détails des restrictions.

Low Power FunkLAN Produkt, das im 2.4 GHz und im 5 GHz Band arbeitet. Weitere Informationen bezüglich Einschränkungen finden Sie im *Dell Networking W-Series Instant Access Point User Guide*

Apparati Radio LAN a bassa Potenza, operanti a 2.4 GHz e 5 GHz. Fare riferimento alla *Dell Networking W-Series Instant Access Point User Guide* per avere informazioni dettagliate sulle restrizioni.

### IAP Pre-Installation Checklist

Before installing the W-IAP220 Series Instant access point, ensure that you have the following:

- CAT5e or CAT6 UTP cable of required length.
- One of the following power sources:
  - IEEE 802.3at or 802.3af-compliant Power over Ethernet (PoE) source. The POE source can be any midspan power source equipment (PSE) device.
  - Dell IAP AC-DC adapter kit (sold separately).

### Summary of the Setup Process

Successful setup of a W-IAP220 Series Instant access point consists of four tasks, which must be performed in this order:

1. Identify the specific installation location for each IAP.
2. Install each IAP.
3. Verify post-installation connectivity.
4. Configure the virtual controller. Refer to the *Dell Networking W-Series Instant Access Point Quick Start Guide*.

**Note:** Dell, in compliance with governmental requirements, has designed the W-IAP220 Series Instant access points so that only authorized network administrators can change the settings. For more information about IAP configuration, refer to the *Dell Networking W-Series Instant Access Point Quick Start Guide* and *Dell Networking W-Series Instant Access Point User Guide*.

**Caution:** Instant access points are radio transmission devices and as such are subject to governmental regulation. Network administrators responsible for the configuration and operation of Instant access points must comply with local broadcast regulations. Specifically, Instant access points must use channel assignments appropriate to the location in which the Instant access point will be used.

### Identifying Specific Installation Locations

You can mount the W-IAP220 Series Instant access point on a wall or on the ceiling. Use the IAP placement map generated by the Dell VisualRF Plan software application to determine the proper installation location(s). Each location should be as close as possible to the center of the intended coverage area and should be free from obstructions or obvious sources of interference. These RF absorbers/reflectors/interference sources will impact RF propagation and should have been accounted during the planning phase and adjusted in the RF plan.

### Identifying Known RF Absorbers/Reflectors/Interference Sources

Identifying known RF absorbers, reflectors, and interference sources while in the field during the installation phase is critical. Make sure that these sources are taken into consideration when you attach an IAP to its fixed location. Examples of sources that degrade RF performance include:

- Cement and brick
- Objects that contain water
- Metal
- Microwave ovens
- Wireless phones and headsets

### Installing the IAP

**Note:** Service to all Dell Networking products should be performed by trained service personnel only.

### Using the Ceiling Rail Adapter

The W-IAP220 Series Instant access point ships with two ceiling rail adapters for 9/16" and 15/16" ceiling rails. Additional wall mount adapters and ceiling rail adapters for other rail styles are available as accessory kits.

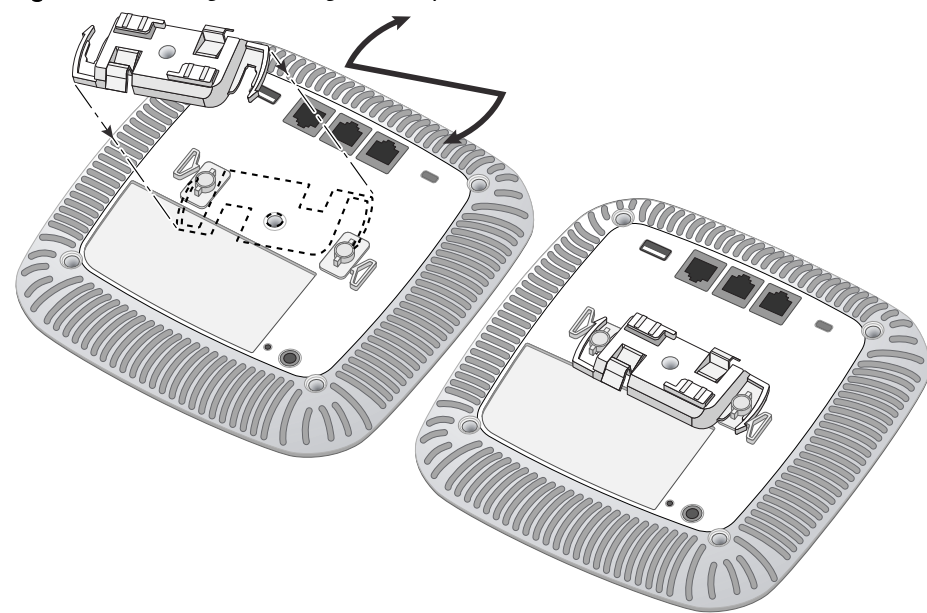
**Caution:** Make sure the IAP fits securely on the ceiling tile rail when hanging the device from the ceiling, because poor installation could cause it to fall onto people or equipment.

1. Pull the necessary cables through a prepared hole in the ceiling tile where the IAP will be placed.



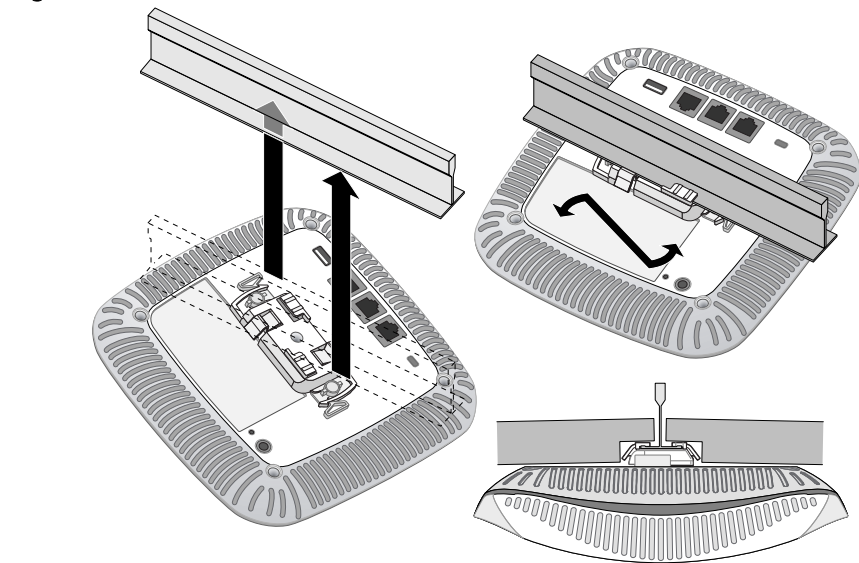
- Place the adapter against the back of the IAP at an angle of approximately 30 degrees to the tabs (see [Figure 6](#)).
- Twist the adapter clockwise until it snaps into place in the tabs (see [Figure 6](#)).

**Figure 6** Attaching the Ceiling Rail Adapter



- If necessary, connect the console cable to the console port on the back of the IAP.
- Hold the IAP next to the ceiling tile rail with the mounting slots at approximately 30-degree angle (see [Figure 7](#)). Check if any cable slack is above the ceiling tile.
- Pushing toward the ceiling tile, rotate the IAP clockwise until the device clicks into place on the ceiling tile rail.

**Figure 7** Mounting the IAP



- On the W-IAP224 Instant access point, install the external antennas according to the manufacturer's instructions, and connect the antennas to the antenna interfaces on the IAP.

## Connecting Required Cables

Install cables in accordance with all applicable local and national regulations and practices.

## Power Connection

The W-IAP220 Series Instant access point has a single 12V DC power jack socket to support powering through an AC-to-DC power adapter.



**Note:** If both PoE and DC power are available, the IAP draws power from the PoE source.

## Verifying Post-Installation Connectivity

The integrated LEDs on the IAP can be used to verify that the IAP is receiving power and initializing successfully (see [Table 1](#)). Refer to the *Dell Networking W-Series Instant Access Point Quick Start Guide* for further details on verifying post-installation network connectivity.

## Product Specifications

### Electrical

- Ethernet:
  - 2 x 10/100/1000Base-T auto-sensing Ethernet RJ-45 Interfaces
  - MDI/MDX
  - IEEE 802.3 (10Base-T), IEEE 802.3u (100Base-T), IEEE 802.3ab (1000Base-T)
  - Power over Ethernet (IEEE 802.3at compliant), 48V DC (nominal) and 56V DC (maximum)/350mA (see [Figure 5](#) for pin configuration)
- Power:
  - 12 VDC power interface, supports powering through an AC-to-DC power adapter

- PoE support on Ethernet ports: 802.3at-compliant PoE sourcing devices



**Note:** If a power adapter other than the one provided by Dell is used in the US or Canada, it should be cULus (NRTL) Listed, with an output rated 12 VDC, minimum 1.25A, marked "LPS" or "Class 2," and suitable for plugging into a standard power receptacle in the US and Canada.

### Environmental

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

For additional specifications on this product, please refer to the product data sheet at [dell.com](#).

## Safety and Regulatory Compliance

Dell provides a multi-language document that contains country-specific restrictions and additional safety and regulatory information for Dell hardware products. The *Dell Networking W-Series Safety, Environmental, and Regulatory Information* document is included with this product.

### Regulatory Model Names

The following regulatory model names apply to the W-IAP220 Series Instant access point:

- W-IAP224: APIN0224
- W-IAP225: APIN0225

### FCC

The device is electronically labeled and the FCC ID is displayed via the WebUI under the **About** menu.



**Caution: RF Radiation Exposure Statement:** This equipment complies with FCC RF radiation exposure limits. This equipment should be installed and operated with a minimum distance of 7.9 inches (20 cm) between the radiator and your body for 2.4 GHz and 5 GHz operations. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. When operated in the 5.15 to 5.25 GHz frequency range, this device is restricted to indoor use to reduce the potential for harmful interference with co-channel Mobile Satellite Systems.

### FCC Class B Part 15

This device complies with Part 15 of the Federal Communications Commission (FCC) Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.



**Caution: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.**

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the manufacturer's instructions, may cause interference harmful to radio communications.

If this equipment does cause interference, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio or TV technician for help.

Complies with the Class B limits for radio noise emissions as set out in the interference-causing equipment standard entitled "Digital Apparatus," ICES-003 of Industry Canada.

Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

### CE EU Regulatory Conformance

Dell, hereby declares that this APIN0224 and APIN0225 device models are in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.

CE(!)The Declaration of Conformity made under Directive 1999/5/EC is available for viewing at [dell.com](#).

### Hong Kong

<p>Certified for use in Hong Kong 經認證可在香港使用</p> <p>Certificate No. 證書號碼 HK0011300681</p>	<p>Certified for use in Hong Kong 經認證可在香港使用</p> <p>Certificate No. 證書號碼 HK0011300680</p>
<p>通訊事務管理局 COMMUNICATIONS AUTHORITY</p>	<p>通訊事務管理局 COMMUNICATIONS AUTHORITY</p>

### UAE

<p>TRA REGISTERED No. ER01179013</p> <p>DEALER No. DA00342910</p>	<p>TRA REGISTERED No. ER01179513</p> <p>DEALER No. DA003942910</p>
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### Singapore

Complies with  
IDA Standards  
200202320G

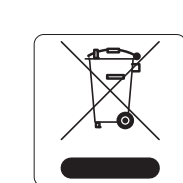
### Medical

- Equipment not suitable for use in the presence of flammable mixtures.
- End product system, including power supply, must be evaluated to IEC 60601-1-1 and IEC 60601-1 by the end user.
- Wipe with a dry cloth, no additional maintenance required.
- No serviceable parts, the unit must be sent back to the manufacturer for repair.
- No modifications are allowed without Dell approval.

## Proper Disposal of Dell Equipment

Dispose of Dell products per local regulations. For the most current information about Global Environmental Compliance and Dell products, visit [dell.com](#).

### Waste of Electrical and Electronic Equipment



Dell products at end of life are subject to separate collection and treatment in the EU Member States, Norway, and Switzerland and therefore are marked with the symbol shown at the left (crossed-out wheeled bin). The treatment applied at end of life of these products in these countries shall comply with the applicable national laws of countries implementing Directive 2002/96/EC on Waste of Electrical and Electronic Equipment (WEEE).

### China RoHS

Dell products also comply with China environmental declaration requirements and are labeled with the "EFUP 10" label shown at the left.



部件名称 (Parts)	有毒有害物质或元素 (Hazardous Substance)					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr <sup>6+</sup> )	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
电路板 (PCB Boards)	×	○	○	○	○	○
机械组件 (Mechanical Sub-Assemblies)	×	○	○	○	○	○

○: 表示该有害物质在该部件所有均质材料中的含量均在 SJ/T 11363-2006 标准规定的限量要求以下。Indicates that the concentration of the hazardous substance in all homogeneous materials in the parts is below the relevant threshold of the SJ/T 11363-2006 standard.

×: 表示该有害物质至少在该部件的某一均质材料中的含量超出 SJ/T 11363-2006 标准规定的限量要求。Indicates that the concentration of the hazardous substance of at least one of all homogeneous materials in the parts is above the relevant threshold of the SJ/T 11363-2006 standard.

对赠物之日的所产品, 本表显示, 供应链的电子产品信息可能包含这些物质。  
This table shows where these substances may be found in the supply chain of electronic information products, as of the date of sale of the enclosed product.

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此环保使用期限只适用于产品是在产品手册中所规定的条件下工作。  
The Environment-Friendly Use Period (EFUP) for all enclosed products and their parts are per the symbol shown here. The Environment-Friendly Use Period is valid only when the product is operated under the conditions defined in the product manual.

### European Union RoHS

Aruba Networks Inc., hereby, being the manufacturer of this product, declares that all CE Marked Dell wireless controller and Instant access points products are manufactured in accordance to the provisional requirements set forth in the RoHS Directive 2011/65/EC.

A copy of the Aruba Declaration of Conformity may be obtained upon request from:

Aruba Networks International Ltd.  
Building 1000,  
Citygate Mahon  
Cork Ireland

Please include the regulatory model number located on the product's regulatory nameplate with the request.

# Dell Networking W-IAP220 Series Instant Access Point Installation Guide



### Contacting Dell

Website Support	
Main Website	<a href="#">dell.com</a>
Support Website	<a href="#">dell.com/support</a>
Documentation Website	<a href="#">dell.com/support/manuals</a>

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[http://www.arubanetworks.com/open\\_source](http://www.arubanetworks.com/open_source)

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