



Installing the Avaya WLAN Access Point WAE9132-WAO9132

Indoor Access Point: WAE9132

Outdoor Access Point: WAO9132

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Quick Installation Guide

WAE9132-WAO9132 Hardened Wireless Access Points (WAPs) provide two dual-band 802.11ac radios in a hardened case. The WAO9132 is used for installation outdoors, while the WAE9132 is a plenum-rated model for indoor use. This guide describes how to install the WAE9132-WAO9132 on a pole or wall and execute the initial power up of the AP. The WAE9132-WAO9132 is not compatible with other Avaya WLAN 9100 mounting options. For additional information, refer to *Using the Avaya OS for Avaya WLAN AP 9100 Series* (NN47252-102).



This document is intended ONLY for WAE9132-WAO9132 model APs. For other models please see the installation guide for that model series.

1

You need the following items:

- ◆ Professional Installation Required—regulatory requirements for the WAE9132-WAO9132 mandate that the device be installed and configured for use by trained professionals only. Direct questions regarding installation and use of the products to [Customer Support](#).
- ◆ Accessory Kit (included in each AP carton) includes:
 - ◆ Mounting bracket and eight attachment screws
 - ◆ Grounding screw
 - ◆ Two watertight RJ connector assemblies
- ◆ Appropriate tools, bands, screws, and/or anchors required for the desired mounting location (not provided with the AP).
- ◆ Antennas and cables for two radios, to be installed by a professional installer. Cables are low-loss outdoor-rated coaxial cables terminated with N-type male connectors. Note that some antennas include integrated cables as part of the unit, and these do not need separate cables.

If you are not using recommended antennas, the WAE9132-WAO9132's output power setting must be reduced by 1 dB for every dB above 6dBi gain the selected antenna may produce.

- ◆ Grounding wire and lug (for outdoor installations). If lightning surges are a concern, consider using a lightning arrester.
- ◆ Workstation with a Web browser to configure the AP.
- ◆ RJ-45 Ethernet connection(s) to your wired network.

- ◆ **Gigabit1/PoE+** —WAE9132-WAO9132 APs are powered via one Power over Ethernet (PoE) port using an outdoor-rated Ethernet Cat 5e or Cat 6 cable that also carries data traffic. Use only 802.3at PoE+ compliant switches or power injectors, or PoE injectors supplied by Avaya for use with this AP.
- ◆ (Optional) **GIGABIT2**—Connection to this second, data-only Gigabit port provides additional bandwidth. Use Cat 5E or Cat 6 cable.
- ◆ The AP protects its inputs from typical static charge buildup on antennas. In outdoor installations where lightning surges are a concern, a lightning arrestor may be used between the antenna and the AP, with 6 AWG copper wire from the arrestor to a good earth ground.

NOTE: PoE Injectors and switches must be installed and used indoors.

NOTE: If 9132 models are used indoors, they are to be connected only to PoE networks without routing to the outside plant.

NOTE: The AP comes with plastic covers installed on Ethernet and antenna ports. You MUST leave these covers securely installed on unused ports to prevent weather damage.

2

Choose a Suitable Location

The WAE9132-WAO9132 is tested to IP65 waterproof and dust-proof requirements to protect against severely wet and dusty environments. For optimal placement, we recommend that a predictive survey be performed by a qualified Avaya partner.

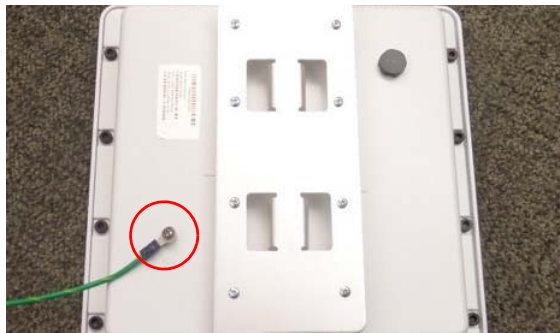
- ◆ Choose a location that is not subjected to submersion.
- ◆ Direct sunlight may raise the effective ambient temperature many degrees above air temperature. It is best to choose a location that has some protection from the sun.
- ◆ The maximum cable length between the WAE9132-WAO9132 and the RJ-45 Ethernet network is 100 meters. The PoE injector is not a repeater, so its location will not increase this distance.
- ◆ The WAE9132-WAO9132 can operate from a Wireless Distribution System (WDS) link. However, the unit will need to be configured via the Ethernet connection prior to mounting and power must still be supplied via the GIG1 Ethernet connector.
- ◆ Keep the unit away from electrical devices or appliances that generate RF noise—at least 3 to 6 feet (1 to 2 meters).
- ◆ The AP must be installed in a position so that the LED's cover is not directly affected by the sun's radiation (typically with the LED and Ethernet connectors facing down).

3

Prepare the Mounting Location

For outdoor installations, you must ensure that the AP is grounded to earth ground to dissipate any static electric charge that may develop due to wind.

- ◆ Determine a good electrical earth ground point near the AP mounting location. If an earth ground point is not available, consult an electrician to have one installed.
- ◆ Before the AP is attached to a wall or pole, secure a grounding wire and lug to the AP with the provided screw in the location indicated in the illustration.



4

Attach the Mounting Plate to the AP

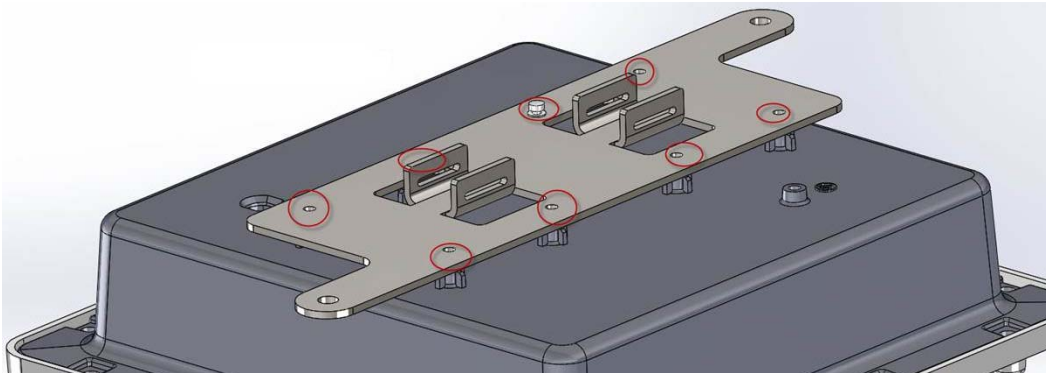
The accessory kit includes a mounting plate. Mounting plate dimensions are included in “Dimensions” on page 13. The mounting plate can be used for wall or pole mounting by reversing the side of the plate exposed. Attach the mounting plate to the AP using the eight provided screws in the locations indicated below (secure in at least 4 places).

For Wall Mounting:

For Wall Mounting, position the bracket with the four slotted flanges pointed towards the AP, as shown in Step 3, above.

For Pole Mounting:

For Pole Mounting, position the bracket with the four slotted flanges pointed away from the AP, as shown below.



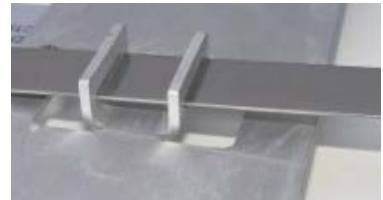
5

Mount the AP on a Pole or Wall

5a - Pole Mounting

For pole mounting, Avaya recommends using metal straps (not included with the AP). The metal straps can be obtained from BAND-IT-IDEX, Inc. (www.BAND-IT-IDEX.com). See their web site for additional contact information. Complete the following steps to mount the AP to a pole.

- ◆ Install the metal bands through the holes in the mounting bracket.
- ◆ Note that the photos below show a different mounting bracket. The steps for installation are identical, however.
- ◆ Hand tighten the Band-It strap through the pole mounting bracket, thread it through the strap buckle and then bend the strap back.



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- ◆ Using the Band-It tool, place the tool onto the strap.
- ◆ Rotate the Band-It tool so that it can pull the excess strap through the buckle and turn the crank until the strap is very tight.
- ◆ Once the strap is satisfactorily tight, rotate the Band-It tool back so that the strap cannot slide back through the buckle.
- ◆ Using the built in cutting tool on the Band-It tool, cut the excess strap.
- ◆ Your installation should now appear as shown here.



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- ◆ Using a hammer, bend back and flatten the remaining strap.
- ◆ Using a hammer, bend and flatten the two tabs on the buckle to hold the flattened strap end in place.
- ◆ The completed attachment should have the mounting bracket firmly seated against the pole. One band should be enough for most installations however a second band can be used for additional mounting security.



5b - Wall Mounting

- ◆ Place the AP in the desired location and mark the location of the two mounting holes on the wall, as shown.
- ◆ Drill and prepare the holes for the desired screw type. In metal walls the holes may be tapped to the proper thread or alternatively the AP may be mounted with sheet metal screws. For concrete walls a plastic anchor and screw are suggested.

NOTE: Mounting screws for attaching the plate to the wall are not provided in the kit.

- ◆ The AP should already be secured to the mounting plate (Step 4). Mount the assembly to the wall, securing it at the two locations indicated.



6

Ground to Earth Ground (Required for Outdoor Installations)

WARNING: Equipment installed outdoors must be externally grounded using a customer-supplied ground wire before power is applied. Contact the appropriate electrical inspection authority or an electrician if you are uncertain that suitable grounding is available.



This step is not needed for indoor installation.

The mechanical installation must ensure that the AP is grounded to earth ground to dissipate static electric charge that may develop due to wind. In Step 3, you secured a grounding wire to the AP.

- ◆ After Step 3 is complete and the AP is mounted to the wall or pole, attach the grounding wire from the AP to the electrical earth ground point that you located or installed in Step 3. The photo shows an earth ground connection where the AP is mounted on a pole at ground level and the grounding wire is attached to a stake driven into the ground.
- ◆ Continue the installation by mounting the antenna and attaching the cables as described in Steps 7, 8, and 9.

7

Install Antenna(s)

Use Avaya-recommended antennas.

NOTE: See the Warnings and Notices regarding external antennas in the regulatory document for this AP.

NOTE: Be sure to configure the AP's Radios to the proper bands (2.4 GHz and 5.0 GHz) in Step 10. Each must match the band of the antenna to which it is connected.

- ◆ Install your antenna(s) as directed by the manufacturer.
- ◆ Use low-loss outdoor-rated coaxial cables terminated with male N type connectors. Note that some antennas include integrated cables as part of the unit, and these do not need separate cables.

8

Connect the Ethernet Cable with the Waterproof Connector

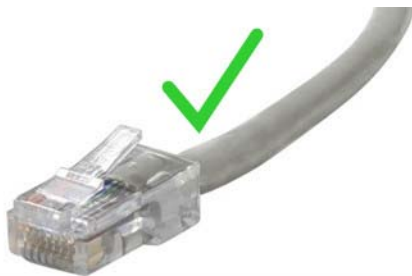
Waterproof connectors are not needed for indoor installations. For indoor use, simply plug the PoE cable into the GIG1 PoE+ port. If using a second data cable, plug it into the GIG2 port. Skip to [Step 9 on page 11](#).

For outdoor installations, follow the instructions below.

- ◆ **Power:** These APs are only powered through the GIG1 PoE+ port.
- ◆ **Data:** Data is supplied to the GIG1-POE+ port via the same cable that powers the AP, and a second optional connection to the GIG2 port.

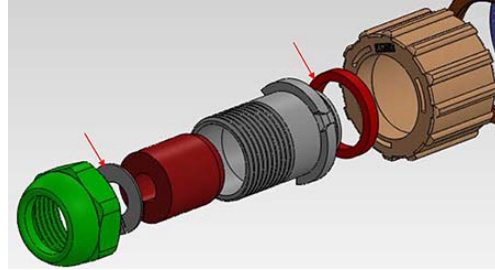
NOTE: It is VERY IMPORTANT to assemble the waterproof connector properly, following the directions below. Failure to do so may expose the AP to the elements, and may result in an intermittent connection causing the AP to connect at very low speeds! If you are not using GIG2, you MUST leave its plastic protector cap securely installed.

- ◆ The Ethernet cable must be terminated with a simple RJ45 plug with the tab exposed, as shown on the left below. Do not use a plug with a tab protector boot, as shown on the right. This will not seat properly in the waterproof connector, and the assembly will not be watertight.

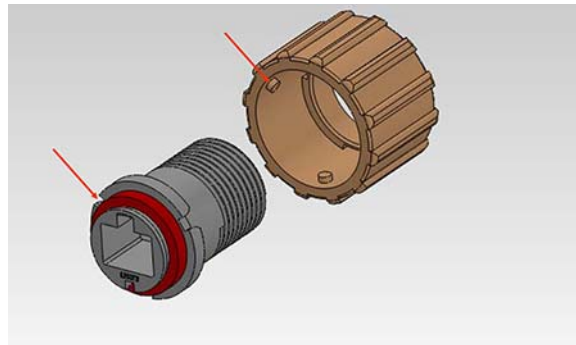
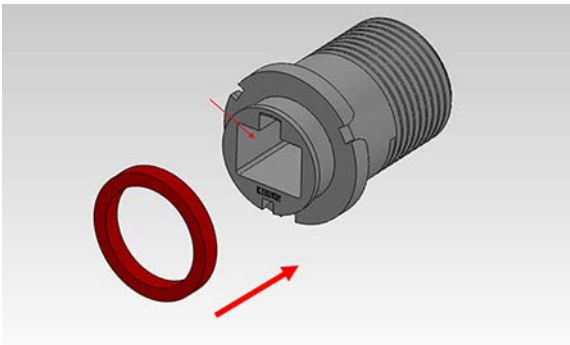


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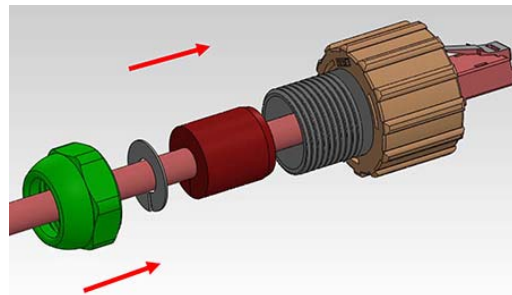
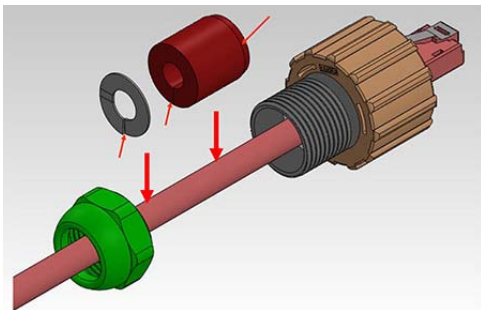
- ◆ The components of the connector are shown in the photo below in the order that they are placed onto the Ethernet cable, and also shown in more detail as a color-coded drawing. You will perform a few assembly steps below before sliding the parts onto the cable.



- ◆ Seat the O-ring (shown in red) on the connector body (gray) at its RJ45 jack side.
- ◆ Note the slots in the collar of the connector body and the matching tabs inside the connector ring. Insert the connector body into the connector ring so that they mate.



- ◆ Slide the sealing nut (shown in green) and the connector body assembly over the Ethernet cable as shown.
- ◆ Attach the split washer and split rubber grommet over the cable.
- ◆ Seat the washer in the sealing nut and slide the grommet into the connector body.

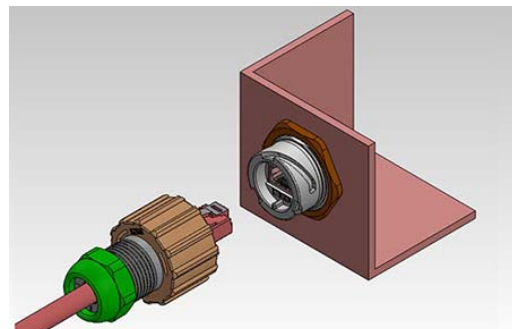
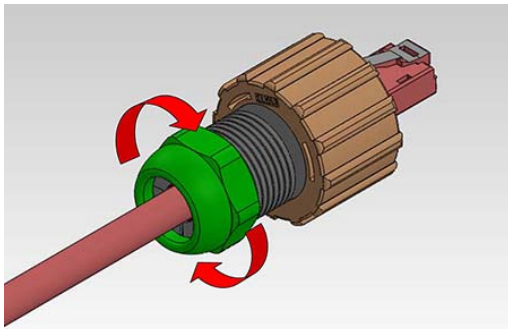


Installing the Avaya WLAN Access Point WAE9132-WAO9132

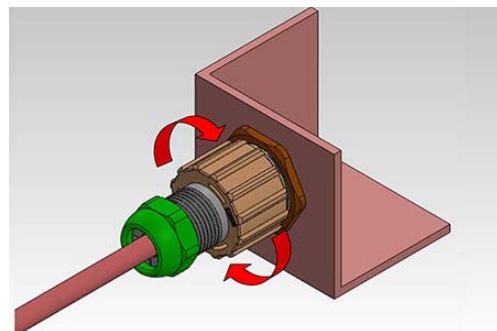
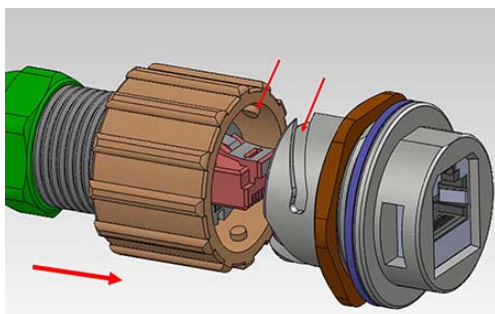
- ◆ Snug all of the components together as shown, but leave the RJ45 connector protruding. Tighten the sealing nut lightly, making sure that the RJ45 connector is rotated so that it will seat easily in the connector body later.

NOTE: Once you connect the AP's GIG1/POE port, an automatic upgrade typically starts soon after the AP has Internet connectivity. Do not unplug this port while booting or during the upgrade process or the AP may become inoperable. The upgrade should take 10 minutes or less depending on bandwidth.

- ◆ Plug the RJ45 connector into the GIG1 POE+ port on the bottom of the WAE9132-WAO9132, making sure that its tab clicks in place for a secure connection. If power is being properly supplied to the AP, the LED located between the two Ethernet ports will show blinking green. When the boot has successfully completed, the LED will be solid green.

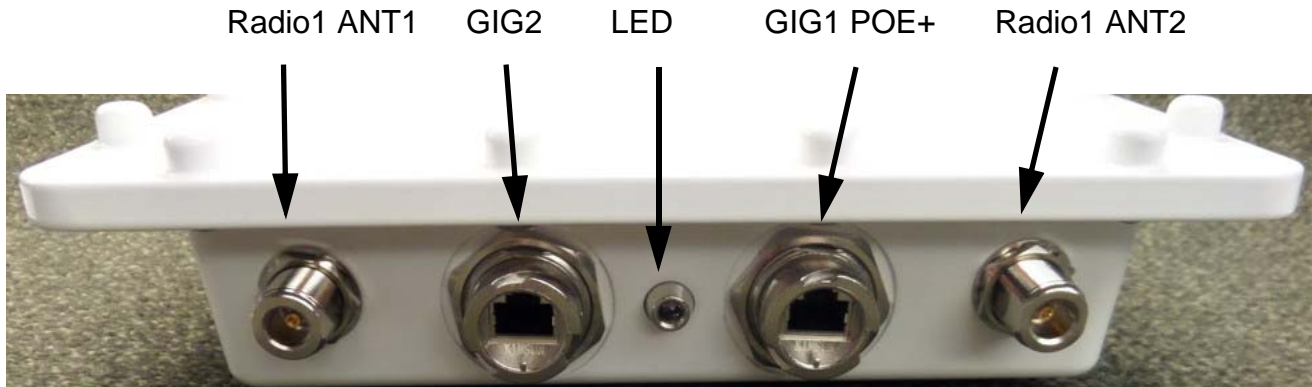


- ◆ Seat the RJ45 connector correctly in the connector body.
- ◆ Note the slotted track in the connector ring on the bottom of the AP and the matching tabs inside the connector ring in the waterproof connector assembly, below. Screw the assembly onto the AP's connector ring so that they mate securely.



- ◆ Snug all the sections of the assembly together a final time and tighten the sealing nut on the end to 5kg but not more than 8kg torque force to insure a water tight fit.
- ◆ Repeat for the GIG2 port, if you are using it.

9

Connect the Antenna

The WAE9132-WAO9132 has four male Type N connectors for the antennas, two on the bottom of the unit and two on the top.



Both of the AP's Radio1 cables (Radio1 ANT1 and Radio1 ANT2) must be attached to antenna leads for the same frequency band (for example, 2.4GHz), and Radio1 must be configured to that band on the AP (see Step 10). Similarly, both Radio2 cables need to go to the same frequency band on the antenna (for example, 5GHz). For simplicity, if you are using an antenna with two 2.4GHz leads and two 5GHz leads, we suggest that you connect Radio1 (ANT1 and ANT2) to 2.4GHz on the antenna, and connect Radio2 (ANT1 and ANT2) to 5GHz. Then you must configure the AP to match in Step 10—set Radio1 to 2.4GHz and Radio2 to 5GHz.

NOTE: To use a 3x3 MIMO antenna type with the WAE9132-WAO9132, connect to the +45 and -45 antenna outputs. Do not use the connector marked "V".

NOTE: For some MIMO omni-directional antennas whose individual antennas are all dual-band, it does not matter which lead is connected to which AP connector.

10

Provisioning and Ongoing Management

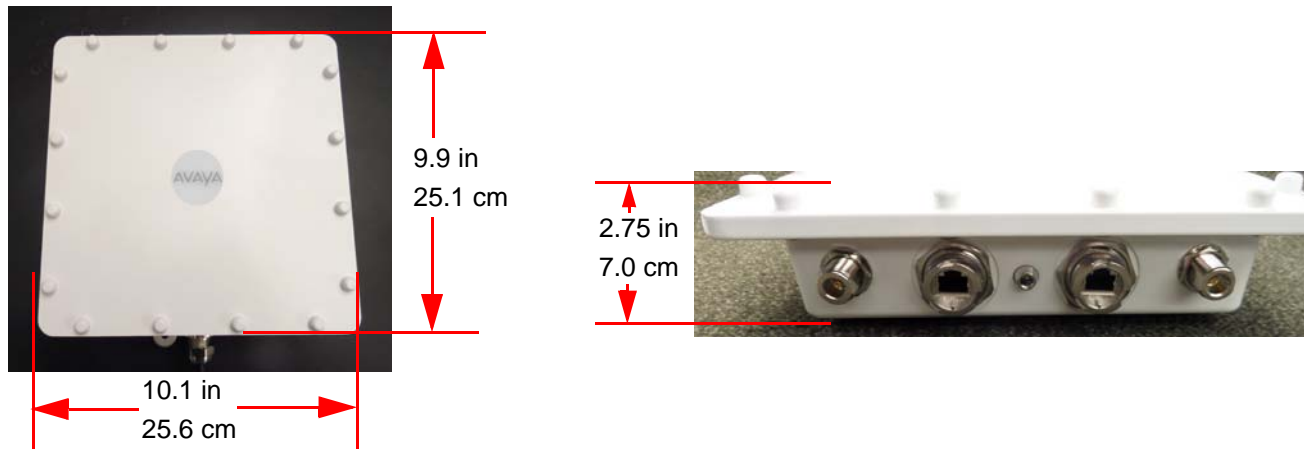
Most customers employ the Wireless LAN Orchestration System (WOS) for the initial setup and continuing management of Avaya devices. WOS users can readily set up their new devices for provisioning and ongoing maintenance. Set up discovery for your APs' subnetwork, and create and configure a default profile for newly added APs. Newly discovered APs are automatically assigned to the WOS "default" profile, and will receive the configuration and software version defined for that profile.

If you are not using WOS, please refer to *Using the Avaya OS for Avaya WLAN AP 9100 Series* (NN47252-102) to configure your AP manually via the Express Setup menu option.

11

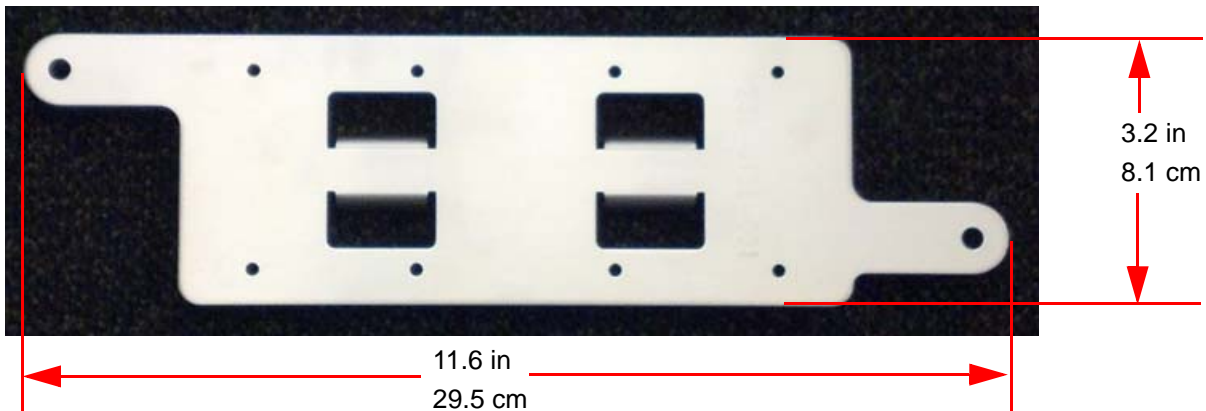
Dimensions

WAE9132-WA09132 Dimensions



Note: Depth (2.75 in) includes the height of the protrusions built into the top and bottom of unit for screws.

Mounting Bracket Dimensions



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