



Installing the Access Point

This chapter describes how to install the access point.

- [Mounting on a Wall or a Pole, on page 1](#)
- [Working with the Access Cover, on page 26](#)
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- [Grounding the Access Point, on page 32](#)
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- [Powering the Access Point, on page 34](#)
- [Connecting Data Cables, on page 40](#)
- [Performing Maintenance, on page 45](#)

Mounting on a Wall or a Pole

This section provides instructions for the physical installation of your access points. Personnel installing the access point must understand wireless access points and bridging techniques and grounding methods.



Caution All installation methods for mounting an access point on any wall surface is subject to the acceptance of local jurisdiction.

Installation Option

The Cisco Catalyst IW6300 Heavy Duty Series Access Points are installed using the pole mount installation kit (IOT-ACCPMK), which is used for pole or wall installations.



Warning Only trained and qualified personnel should be allowed to install, replace, or service this equipment. Statement 1030



Warning Installation of the equipment must comply with local and national electrical codes. Statement 1074

Refer to these sections for installation details:

Access Point Mounting Orientation

Cisco Catalyst IW6300 Heavy Duty Series Access Points are only intended to be installed vertically with the antenna ports facing upwards. If you want the antennas to face down, you should use the Extender Bracket Kit (IOT-ACCPMK-LB=). Any other mounting orientation will compromise the IP66/67 and type 4X ingress ratings required for safety and hazardous locations compliance.

The access point is oriented with the system LED pointing down and the access cover facing out. This positioning allows the LEDs to be visible to someone on the ground below the access point, and the I/O interfaces are on the bottom to minimize moisture ingress in case ports are not adequately sealed.



Note Omnidirectional antennas are vertically polarized and should be mounted vertically.

The following figures show the dimension of the access point:

Figure 1: Unit Dimension - Front

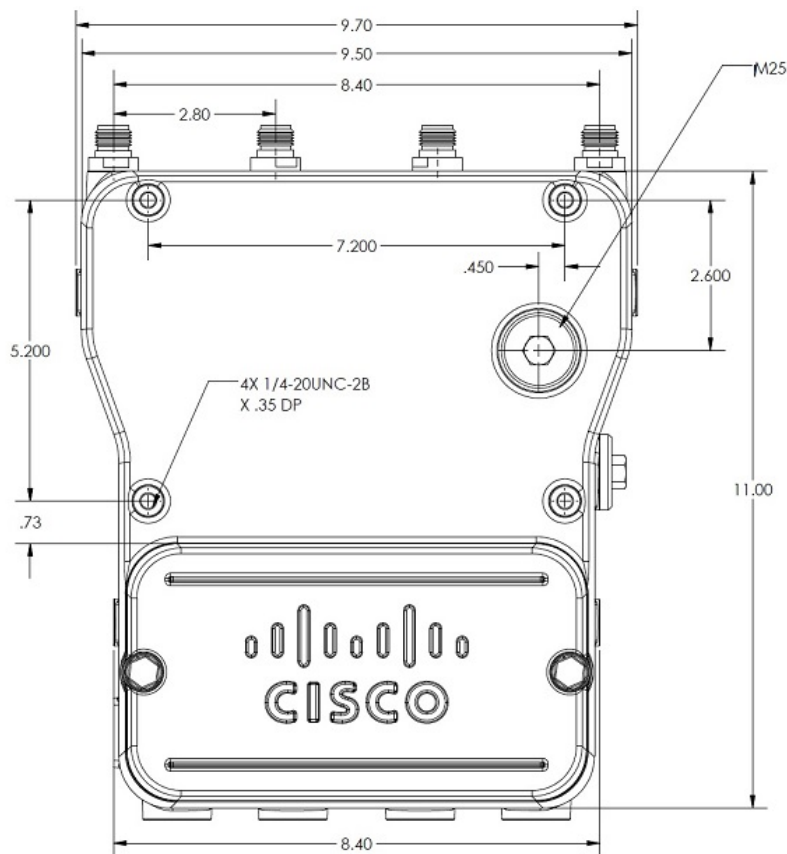
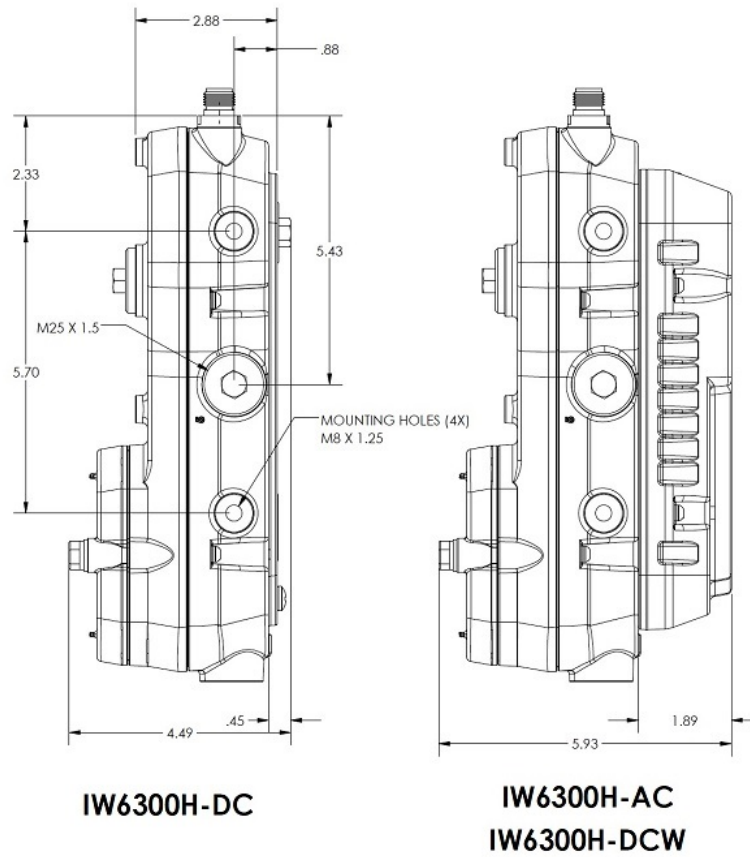


Figure 2: Unit Dimension - Side



Mounting the Access Point on a Wall

The optional pole mount kit contains a mounting bracket for wall mounting. You can use the mounting bracket as a template to mark the positions of the mounting holes for your installation. You then install the mounting plate, and attach the access point when you are ready. The following table lists the material that you will need to provide in addition to the pole mount kit.

Table 1: Material Needed to Mount Access Point to a Vertical Wall

Materials Required	In Kit
Ground lug and screws (provided with access point)	Yes
Crimping tool for ground lug	No
Four M8 or 5/16 in. (31 mm) screws	No
Four wall anchors (specified for wall material)	No
Drill bit for wall anchors	No

Materials Required	In Kit
Electric drill and standard screwdriver	No
#6-AWG ground wire	No
Shielded outdoor-rated Ethernet (CAT5e or better) cable	No
Grounding block	No
Grounding rod	No
13-mm box-end wrench or socket set	No



Caution The mounting surface, attaching screws, and optional wall anchors must be able to support a 50-lb(22.7 kg) static weight.

The mounting bracket can be used as a template to mark the screw hole locations. To mount the access point on a vertical wall, follow these instructions:

Procedure

Step 1 Use the mounting bracket as a template to mark four screw hole locations on your mounting surface. You can optionally use the individual mounting holes or the mounting slots.

Figure 3: Mounting Bracket Dimension

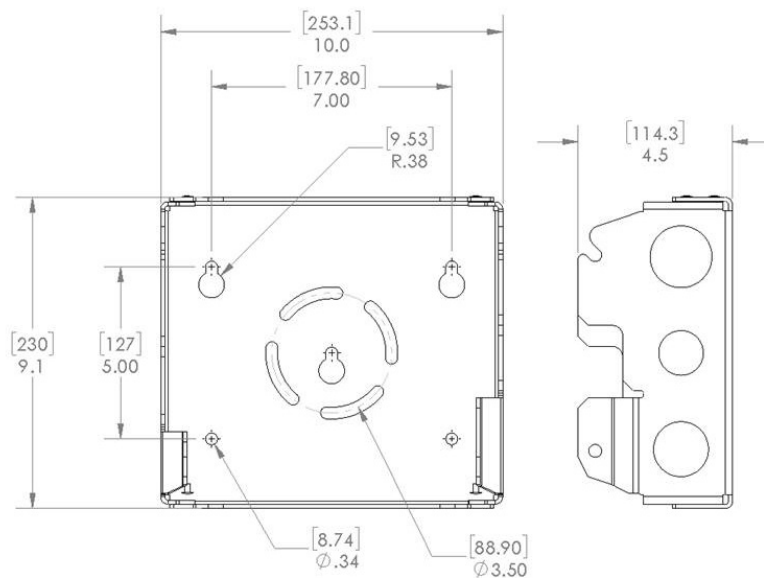
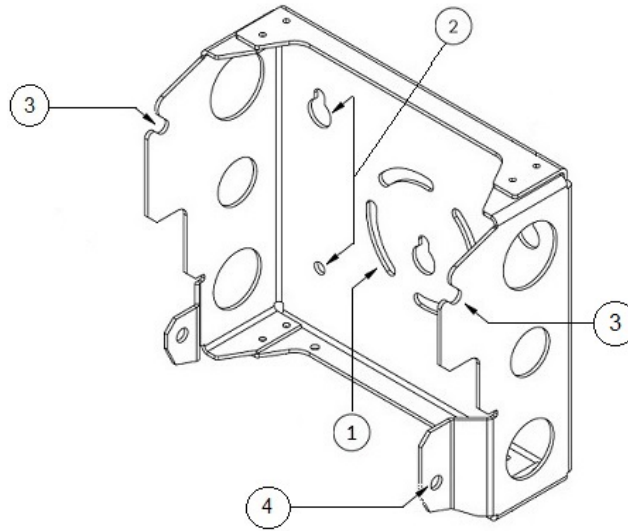


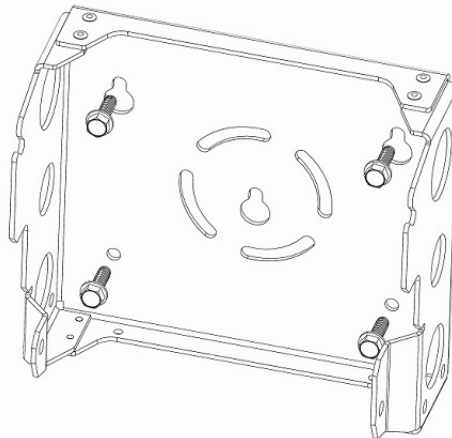
Figure 4: Screw Hole Locations on the Mounting Bracket



1	Mounting slots	3	Hands-free attach point
2	Mounting holes	4	Second support bolt hole

Step 2 Use four customer-supplied screws and optional screw anchors to attach the mounting plate to the mounting surface.

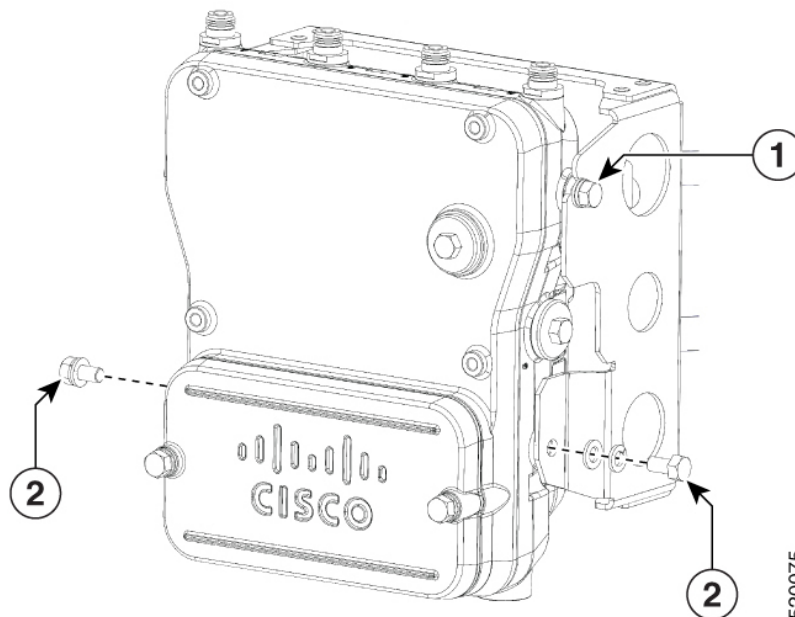
Note If necessary, use suitable screw anchors and an exterior-grade plywood backboard to mount the access point to stucco, cement, or drywall.



Step 3 Screw a M8 x16 bolt (with flat and lock washers) in the top support bolt hole on each side the access point. Do not screw the bolt all the way in; leave approximately a 0.25 inch (0.635 cm) space.

- Step 4** Position the two bolts on the access point onto the hands-free attach points on each side of the mounting bracket. Ensure that the access point cover is facing out. Never leave the access point unattended until fully installed.

Figure 5: Support Bolt Installation



1	Top support M8 x16 bolt	2	Second support M8 x16 bolt
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- Step 5** Screw a M8 x16 bolt (with flat and lock washers) into the second bolt hole on each side of the access point.
- Step 6** Ensure that the front of the access point is vertical, and tighten the four bolts to 6 to 7 ft-lbs (8.1 to 9.5 Nm).
- Step 7** When using the Cisco Aironet Dual-Band Omnidirectional Antennas, connect them to the access point. Hand-tighten the antennas to the access point.
- Step 8** Continue with [Grounding the Access Point, on page 32](#) and [Powering the Access Point, on page 34](#).

Wall Mounting with L Bracket

Cisco Catalyst IW6300 Heavy Duty Series Access Points are only intended to be installed vertically with the antenna ports facing upwards. If you want the antennas to face down, you should use the additional L Bracket (IOT-ACCPMK-LB) and the customer supplied RF cable is required.



Caution The mounting surface, attaching screws, and optional wall anchors must be able to support a 50-lb(22.7 kg) static weight.

The mounting bracket can be used as a template to mark the screw hole locations. To mount the access point on a vertical wall, follow these instructions:

Procedure

Step 1

Use the mounting bracket as a template to mark four screw hole locations on your mounting surface. You can optionally use the individual mounting holes or the mounting slots.

Figure 6: Mounting Bracket Dimension

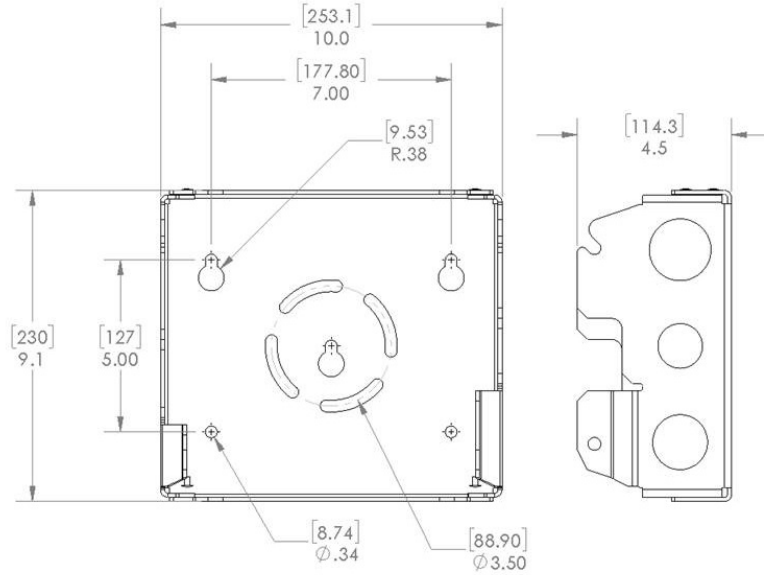
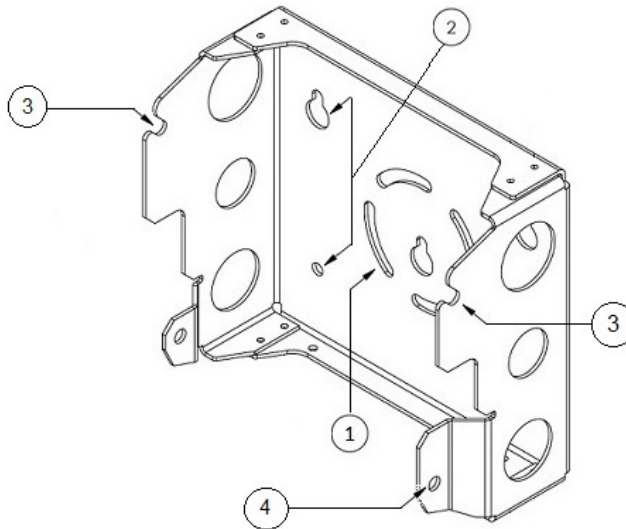


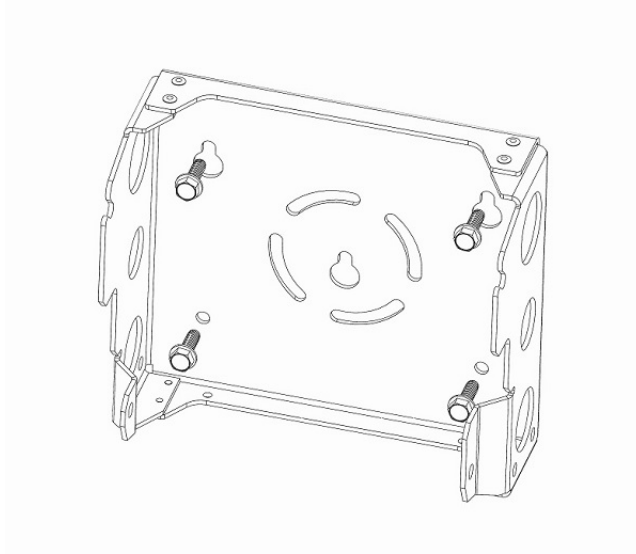
Figure 7: Screw Hole Locations on the Mounting Bracket



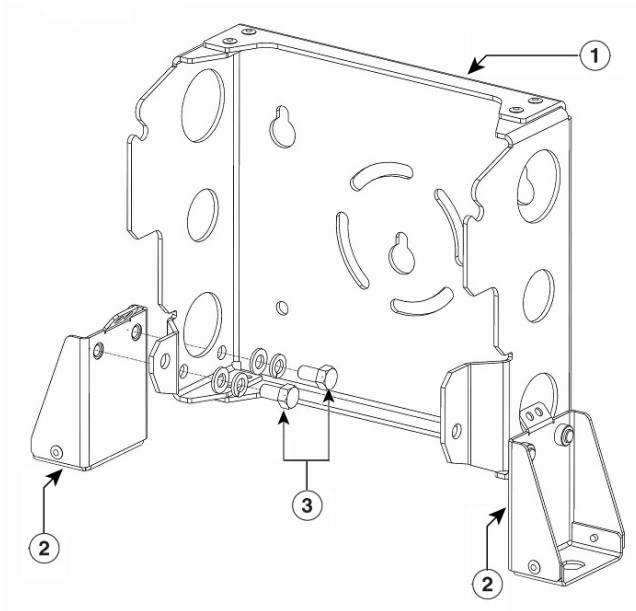
1	Mounting slots	3	Hands-free attach point
2	Mounting holes	4	Second support bolt hole

Step 2 Use four customer-supplied screws and optional screw anchors to attach the mounting plate to the mounting surface.

Note If necessary, use suitable screw anchors and an exterior-grade plywood backboard to mount the access point to stucco, cement, or drywall.

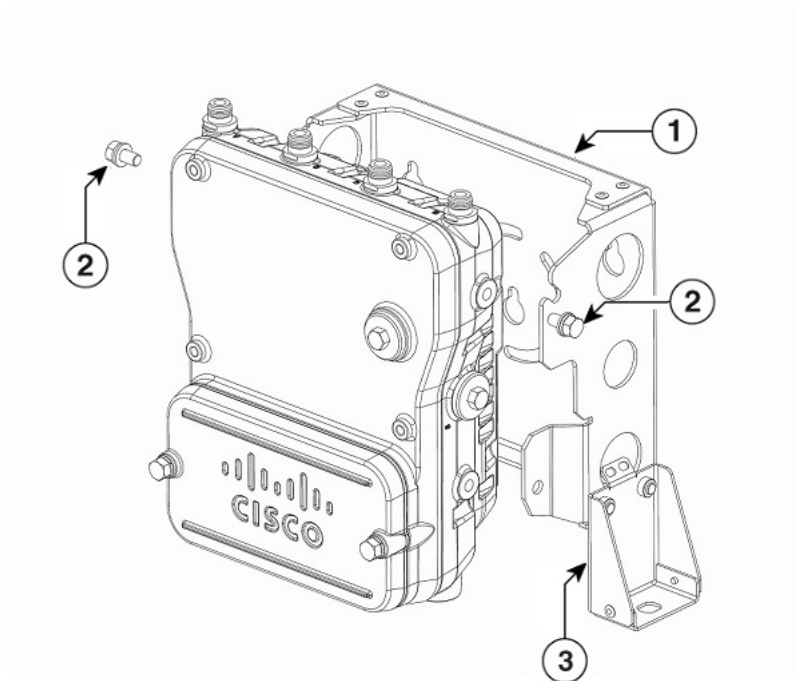


Step 3 Use four bolts (with flat and lock washers) to install the L brackets to the mounting bracket as shown below. Tighten the bolts to 6 to 7 ft-lbs (8.1 to 9.5 Nm).



1	Mounting bracket	3	M8 x 16 bolts
2	L bracket		

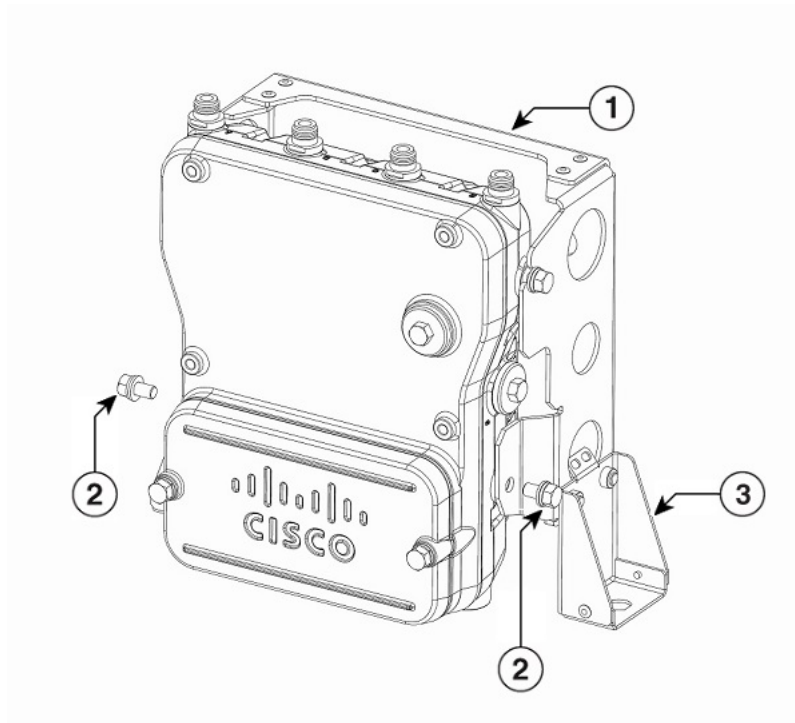
- Step 4** Screw a M8 x16 bolt (with flat and lock washers) in the top support bolt hole on each side the access point. Do not screw the bolt all the way in; leave approximately a 0.25 inch (0.635 cm) space.



1	Mounting bracket	2	Top support M8 x16 bolt
3	L bracket		

- Step 5** Position the two bolts on the access point onto the hands-free attach points on each side of the mounting bracket. Ensure that the access point cover is facing out. Never leave the access point unattended until fully installed.
- Step 6** Screw a M8 x16 bolt (with flat and lock washers) into the second bolt hole on each side of the access point.

Figure 8: Support Bolt Installation



1	Mounting bracket	2	Second support M8 x16 bolt
3	L bracket		

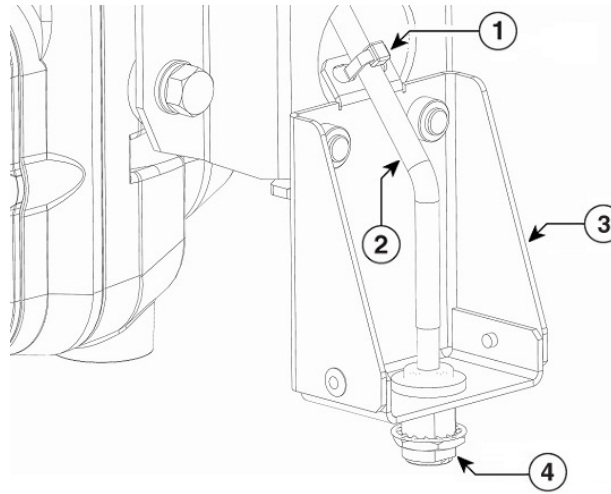
Step 7

Ensure that the front of the access point is vertical, and tighten the four bolts to 6 to 7 ft-lbs (8.1 to 9.5 Nm).

Step 8

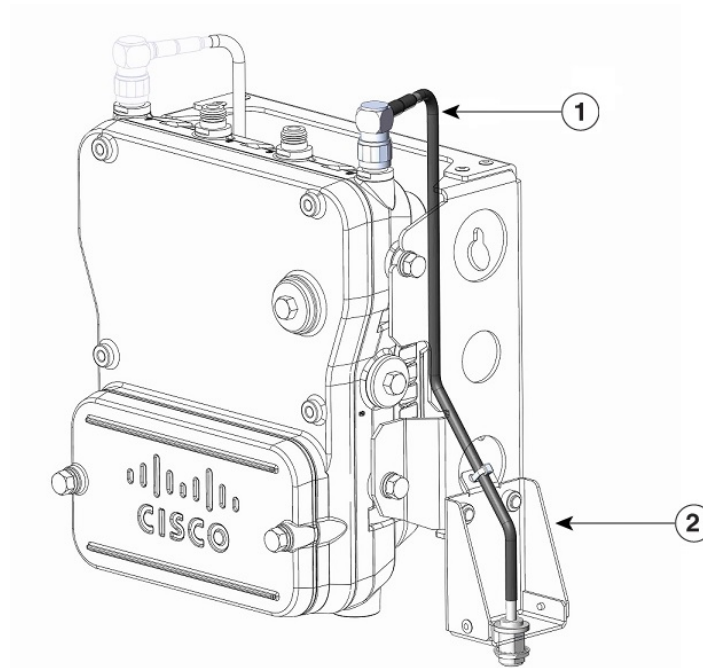
Insert the N-connector of the RF cable into the L-bracket and attach it with washer and nut (torque 12-15 in-lbs). Fix the RF cable to the L bracket with a zip tie cable as shown below.

Note For the RF cable, it is recommended that you use the 17in LMR240DB Jumper with Right Angle N-Style Male to N-Style Female Bulkhead Connectors. For more details about this cable, see <https://ventevinfra.com/product/17in-lmr240db-jumper-with-right-angle-n-style-male-to-n-style-female-bulkhead-connectors/>.



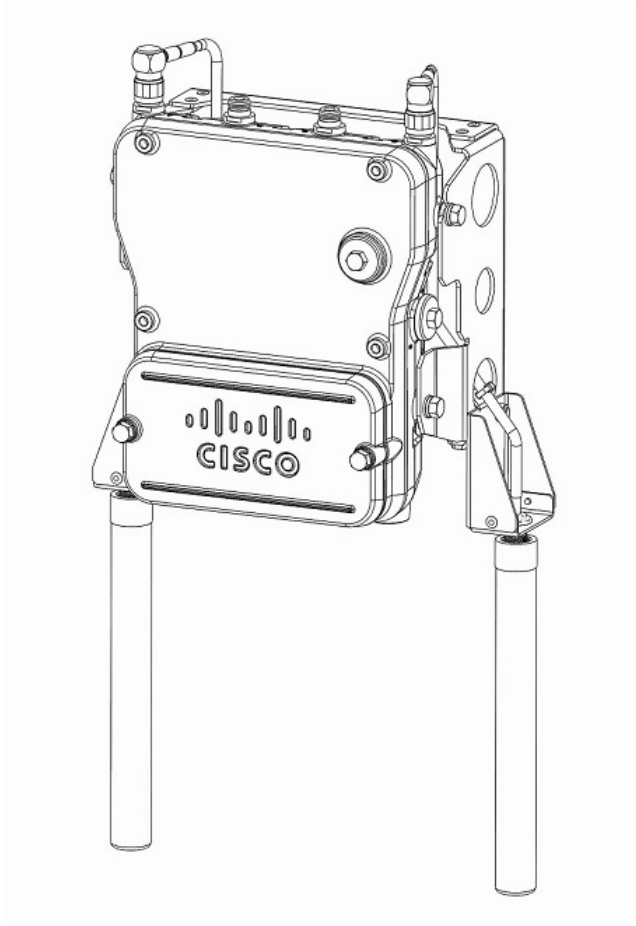
1	Zip tie cable	2	RF cable
3	L bracket	4	N-connector

Step 9 Attach the right angle N-connector of the RF cable to the access point antenna port (torque 12-15 in-lbs).



1	RF cable	2	L bracket
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Step 10 Connect the antenna to the N-connector of the RF cable. Hand-tighten the antennas to the N-connector.



Step 11 Continue with [Grounding the Access Point, on page 32](#) and [Powering the Access Point, on page 34](#).

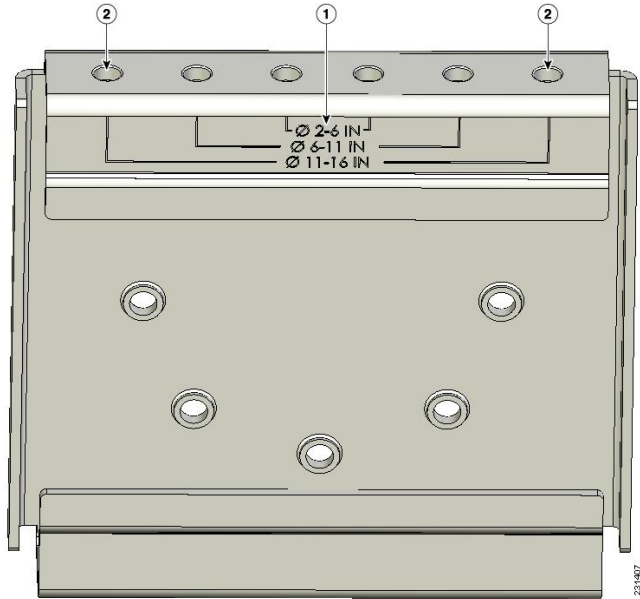
Mounting the Access Point on a Pole

When installing an access point on a vertical pole, you should use the optional Cisco pole mount kit. The kit supports metal, wood, or fiberglass poles from 2 to 16 inches in diameter.

Assembling the Pole Clamp Bracket and the Mounting Bracket

The pole mount kit contains several parts that you must assemble prior to mounting on a pole. First you need to assemble two strap brackets on the pole clamp bracket that are positioned for the pole diameter you are using to mount the access point. The following figure illustrates the pole diameter indicators and bolt holes on the pole clamp bracket.

Figure 9: Pole Clamp Bracket Adjustment Hole Locations



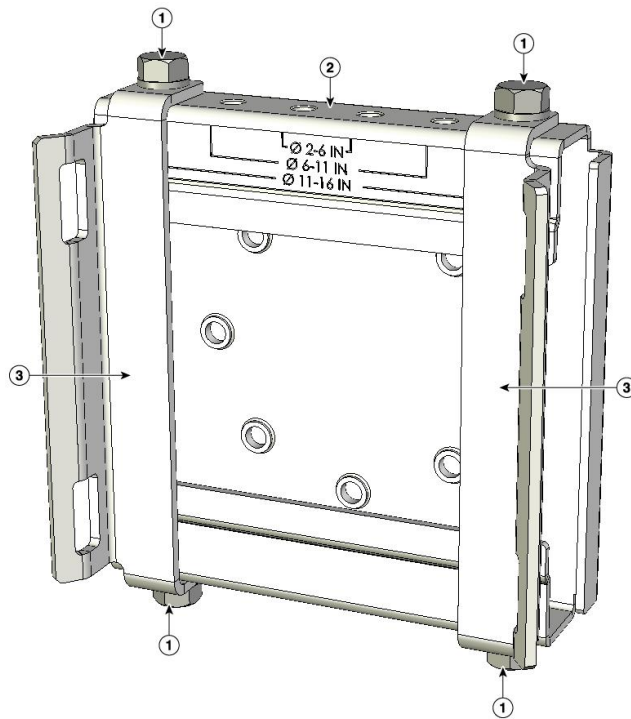
1	<p>Pole size indicators</p> <ul style="list-style-type: none"> • 2 to 6 inches (5.08 cm to 15.24 cm) • 6 to 11 inches (15.24 cm to 27.94 cm) • 11 to 16 inches (27.94 cm to 40.64 cm) 	2	<p>Bolt holes for pole diameters (11 to 16 inches (27.94 cm to 40.64 cm) indicated)</p>
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To assemble the pole clamp bracket, follow these steps:

Procedure

- Step 1** Position the strap brackets on the pole clamp bracket for the pole diameter you are using and secure each strap bracket with two M8 x16 bolts (with lock washers). Tighten the bolts to 13 to 15 ft lbs (17.6 to 20.3 Nm).

Figure 10: Assembled Pole Clamp Bracket and Strap Brackets



1	M8 x1.25x16 bolts (with lock washers)	2	Pole clamp bracket
3	Strap bracket (shown positioned for 11 to 16 inch diameter pole)		

Step 2 Screw the M8 nut onto the pole clamp bracket support bolt, and tighten just enough to prevent the bolt from falling off.

Step 3 Go to [Pole Mounting, on page 14](#).

Pole Mounting

To mount your access point on a vertical pole, you need to install two metal bands around the pole to support the access point. This process requires extra tools and material not provided in the pole mount kit (see the following table).

Table 2: Materials Needed to Mount Access Point on a Pole

Mounting Method	Materials Required	In Kit
Vertical or streetlight pole	Two 0.75-in (1.9 cm) stainless steel bands	Yes
	Banding strap tool (BAND IT) (Cisco AIR-BAND-INST-TL=)	No
	Ground lug (provided with access point)	Yes
	Crimping tool for ground lug, Panduit CT-720 with CD-720-1 die (http://onlinecatalog.panduit.com)	No
	#6 AWG ground wire	No

To mount the access point onto a vertical pole, follow these steps:

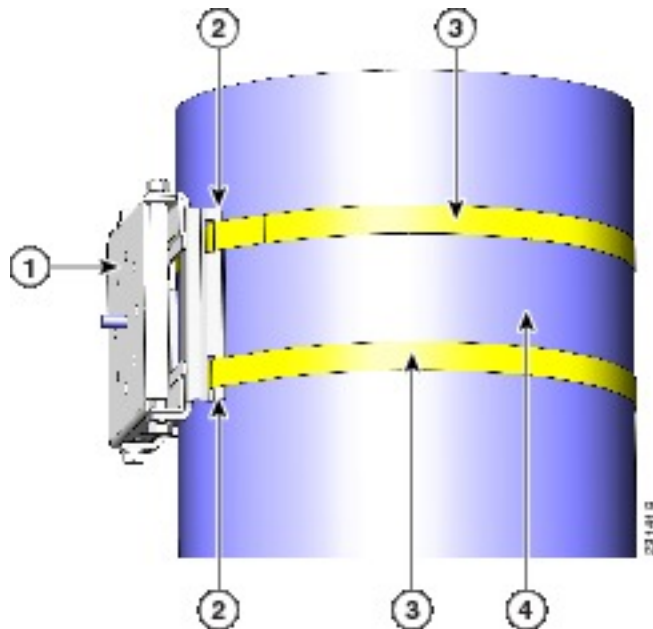
Procedure

Step 1 Select a mounting location on the pole to mount the access point. You can attach the access point to any pole from 2 to 16 inch (5.1 to 40.6 cm) in diameter.

Step 2 For poles larger than 3.5 inch (8.9 cm), mount the pole clamp bracket assembly to a pole using two metal straps. Following the instructions provided with the banding strap tool (BAND IT) (AIR-BAND-INST-TL=), loop each metal strap twice through the slots on the strap bracket.

Caution Do not place the metal straps in the large open area between the pole clamp bracket and the strap brackets because this does not properly secure the access point.

Figure 11: Clamp Bracket Assembly Mounted on Poles Larger than 3.5 inch (8.9 cm)



1	Pole clamp bracket	3	Metal mounting strap
2	Strap slot in strap bracket	4	Pole

Step 3 For pole diameters of 3.5 inch (8.9 cm) or less, mount the pole clamp bracket assembly to a pole using two metal straps looped through the space between the pole clamp bracket and the strap brackets to provide maximum holding strength for extreme environments. Following the instructions provided with the banding strap tool (BAND IT) (AIR-BAND-INST-TL=), loop each metal strap twice.

Caution Do not place the metal straps in the large open area between the pole clamp bracket and the strap brackets because this does not properly secure the access point.

Step 4 Position the pole clamp bracket on the pole as needed before tightening the metal bands.

Note When the metal bands are tightened to the full tension, the pole clamp bracket cannot be adjusted unless the metal bands are cut or disassembled.

Step 5 Tighten the metal bands using the banding strap tool (BAND IT) (Cisco AIR-BAND-INST-TL=) by following the operating instructions in the box with the tool. Ensure that the metal bands are as tight as possible.

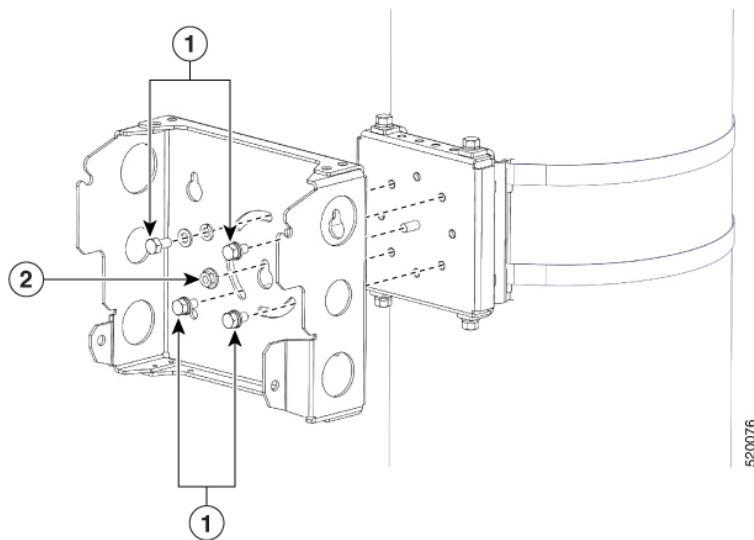
Step 6 Place the mounting bracket onto the pole clamp bracket support bolt.

Step 7 Install four M8 x16 bolts (with flat and lock washers) into the bolt holes.

Step 8 Hand-tighten the bolts and the nut (do not overtighten).

Step 9 Adjust the top edge of the mounting bracket until it is horizontal and tighten the bolts and the flange nut to 13 to 15 ft lbs (17.6 to 20.3 Nm).

Figure 12: Attach the Mount Bracket



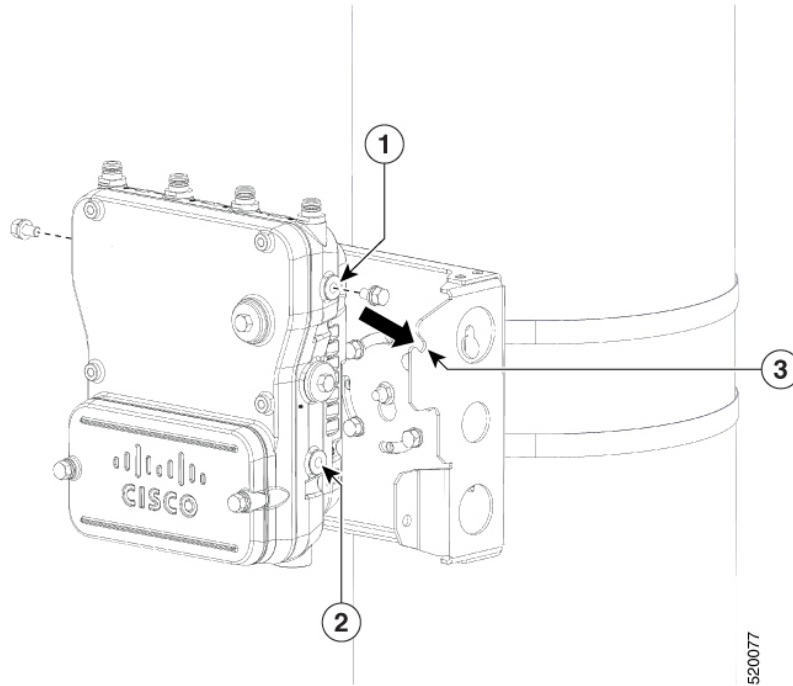
1	M8 x 16 bolts	2	Flange nut
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Step 10 Screw a M8 x16 bolt (with a flat or lock washer) in the top support bolt hole on each side the access point. Do not screw the bolt all the way in. Leave a gap of approximately 0.25 inch (0.635 cm).

Step 11 Position the two bolts on the access point onto the hands-free attach point of the mounting bracket.

Note The access point should be positioned with the LEDs on the bottom to allow viewing from the ground and with the hinged cover facing out.

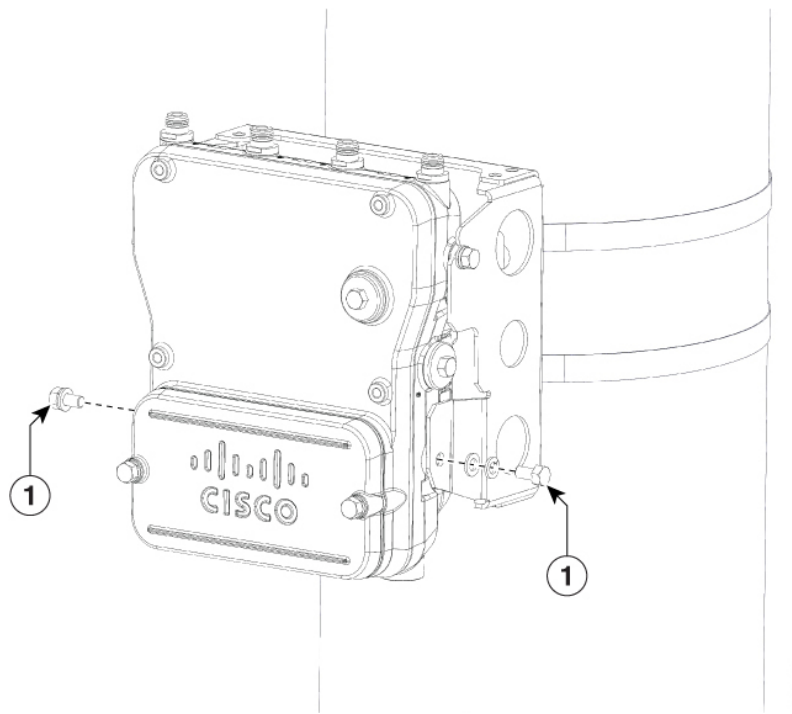
Figure 13: Assembling Access Point to Hands-Free Attach Point with Top Support Bolts



1	Top Support M8 x16 bolt hole	3	Hands-free attach point
2	Second M8 x16 bolt hole		

Step 12 Screw a M8 x16 bolt (with flat and lock washers) into the second bolt hole on each side of the access point.

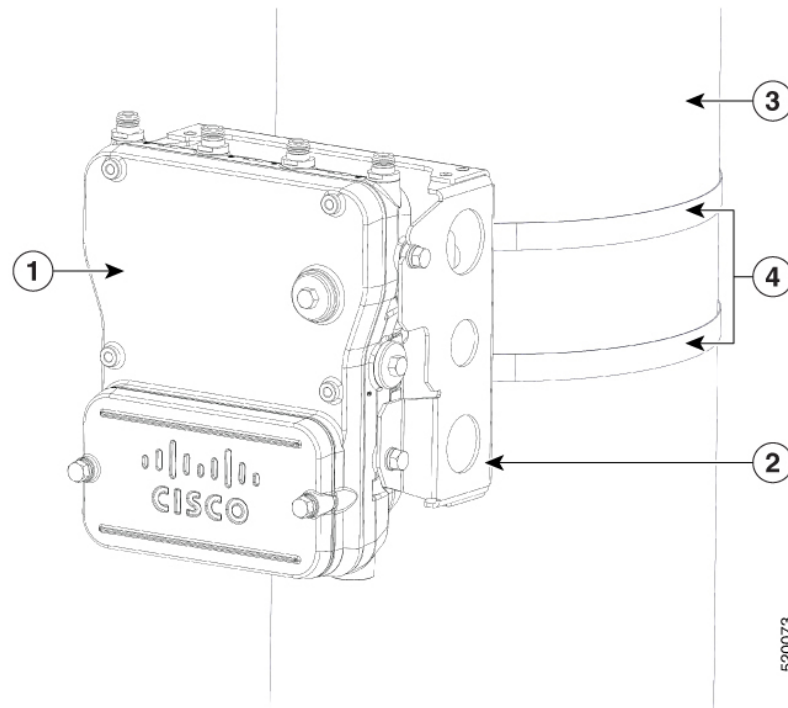
Figure 14: Second Support Bolt Installation



1	M8 x16 bolt
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Step 13 Ensure that the front of the access point is vertical, and tighten the four bolts to 6 to 7 ft-lbs (8.1 to 9.5 Nm).

Figure 15: Assembled Access Point Hanging in Mounting Bracket



1	Access point	3	Pole (wood, metal, or fiberglass) 2 to 16 in. (5.1 to 40.6 cm) diameter
2	Mount bracket	4	Stainless steel mounting straps

- Step 14** When using the Cisco Aironet Dual-Band Omnidirectional Antennas, connect them to the access point. Hand-tighten the antennas to the access point.
- Step 15** Continue with [Grounding the Access Point](#), on page 32 and [Powering the Access Point](#), on page 34.

Pole Mounting with L Bracket

Cisco Catalyst IW6300 Heavy Duty Series Access Points are only intended to be installed vertically with the antenna ports facing upwards. If you want the antennas to face down, you should use the additional L Bracket (IOT-ACCPMK-LB) and the customer supplied RF cable is required.

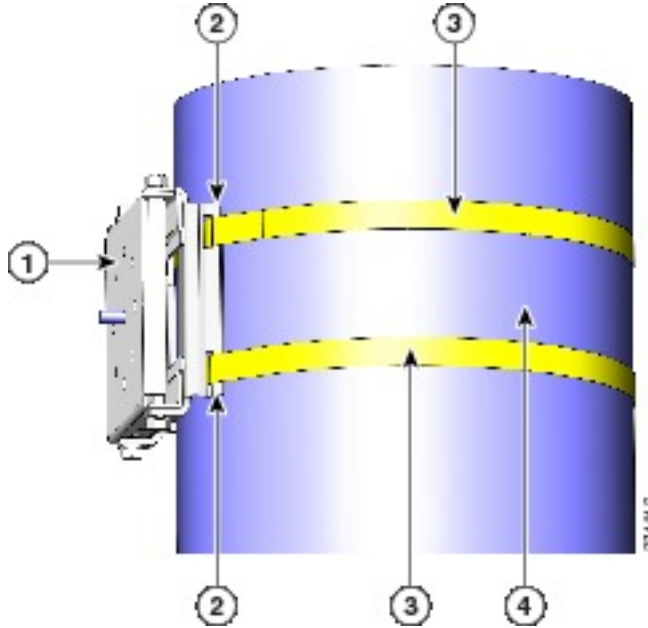
To mount the access point onto a vertical pole, follow these steps:

Procedure

- Step 1** Select a mounting location on the pole to mount the access point. You can attach the access point to any pole from 2 to 16 inch (5.1 to 40.6 cm) in diameter.
- Step 2** For poles larger than 3.5 inch (8.9 cm), mount the pole clamp bracket assembly to a pole using two metal straps. Following the instructions provided with the banding strap tool (BAND IT) (AIR-BAND-INST-TL=), loop each metal strap twice through the slots on the strap bracket.

Caution Do not place the metal straps in the large open area between the pole clamp bracket and the strap brackets because this does not properly secure the access point.

Figure 16: Clamp Bracket Assembly Mounted on Poles Larger than 3.5 inch (8.9 cm)



1	Pole clamp bracket	3	Metal mounting strap
2	Strap slot in strap bracket	4	Pole

Step 3 For pole diameters of 3.5 inch (8.9 cm) or less, mount the pole clamp bracket assembly to a pole using two metal straps looped through the space between the pole clamp bracket and the strap brackets to provide maximum holding strength for extreme environments. Following the instructions provided with the banding strap tool (BAND IT) (AIR-BAND-INST-TL=), loop each metal strap twice.

Caution Do not place the metal straps in the large open area between the pole clamp bracket and the strap brackets because this does not properly secure the access point.

Step 4 Position the pole clamp bracket on the pole as needed before tightening the metal bands.

Note When the metal bands are tightened to the full tension, the pole clamp bracket cannot be adjusted unless the metal bands are cut or disassembled.

Step 5 Tighten the metal bands using the banding strap tool (BAND IT) (Cisco AIR-BAND-INST-TL=) by following the operating instructions in the box with the tool. Ensure that the metal bands are as tight as possible.

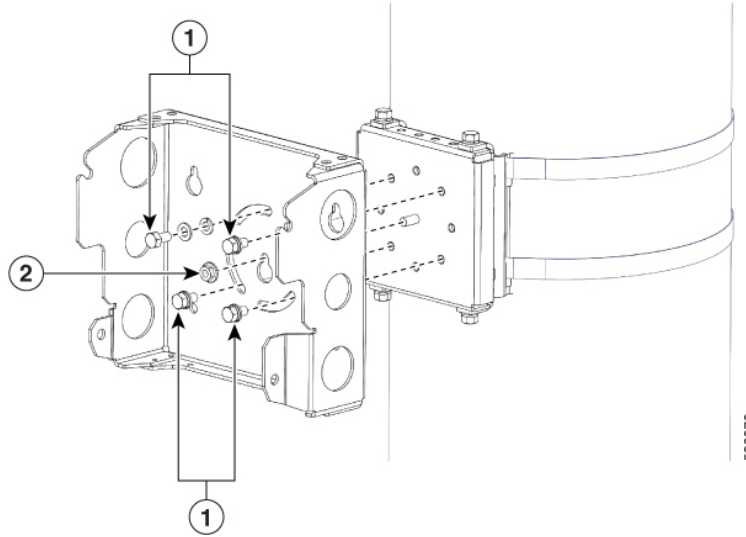
Step 6 Place the mounting bracket onto the pole clamp bracket support bolt.

Step 7 Install four M8 x16 bolts (with flat and lock washers) into the bolt holes.

Step 8 Hand-tighten the bolts and the nut (do not overtighten).

Step 9 Adjust the top edge of the mounting bracket until it is horizontal and tighten the bolts and the flange nut to 13 to 15 ft lbs (17.6 to 20.3 Nm).

Figure 17: Attach the Mount Bracket

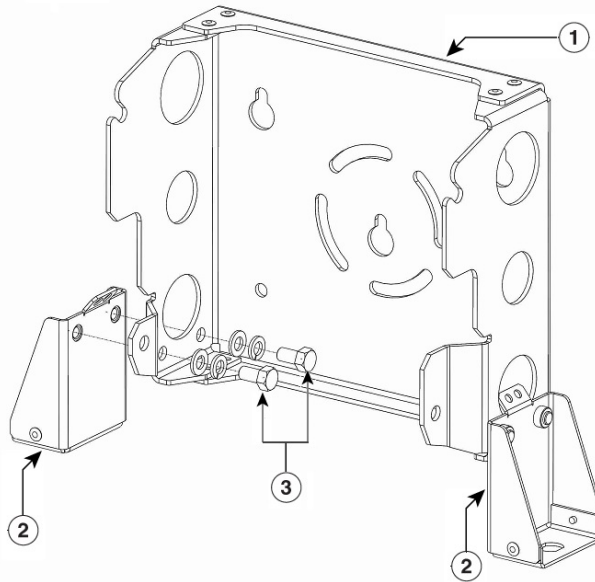


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1	M8 x 16 bolts	2	Flange nut
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Step 10

Use four bolts (with flat and lock washers) to install the L brackets to the mounting bracket as shown below. Tighten the bolts to 6 to 7 ft-lbs (8.1 to 9.5 Nm).



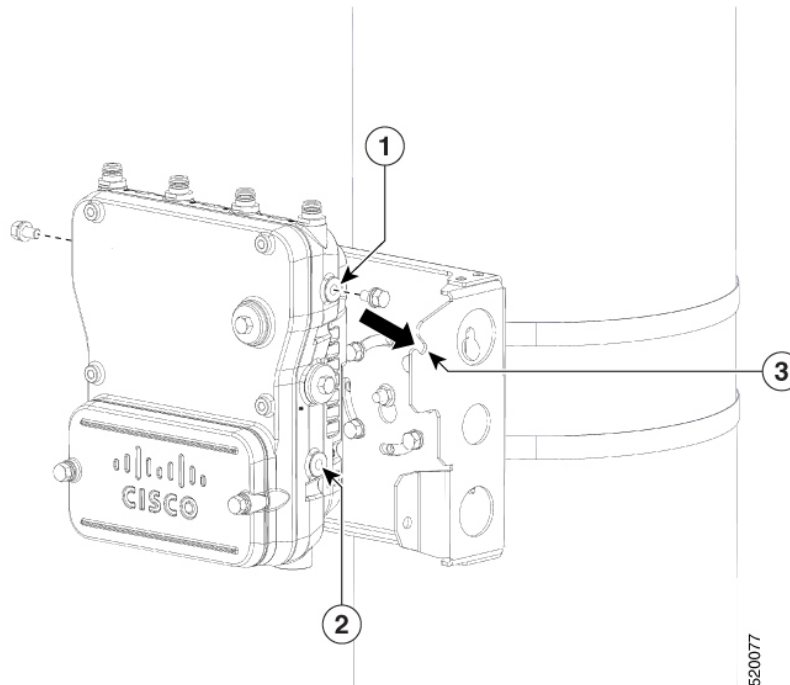
1	Mounting bracket	3	M8 x 16 bolts
2	L bracket		

Step 11

Screw a M8 x16 bolt (with a flat or lock washer) in the top support bolt hole on each side the access point. Do not screw the bolt all the way in. Leave a gap of approximately 0.25 inch (0.635 cm).

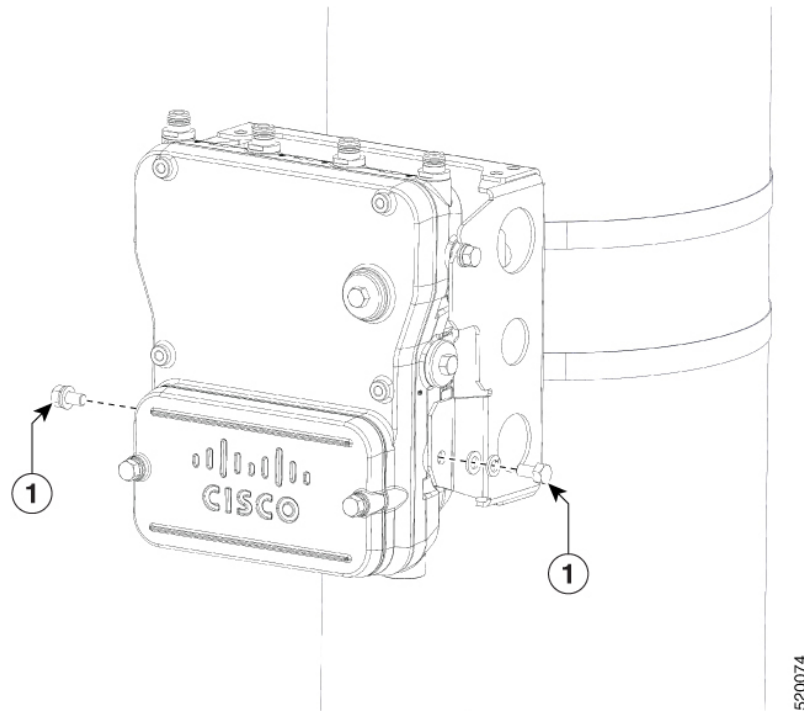
Step 12 Position the two bolts on the access point onto the hands-free attach point of the mounting bracket.

Note The access point should be positioned with the LEDs on the bottom to allow viewing from the ground and with the hinged cover facing out.



1	Top Support M8 x16 bolt hole	3	Hands-free attach point
2	Second M8 x16 bolt hole		

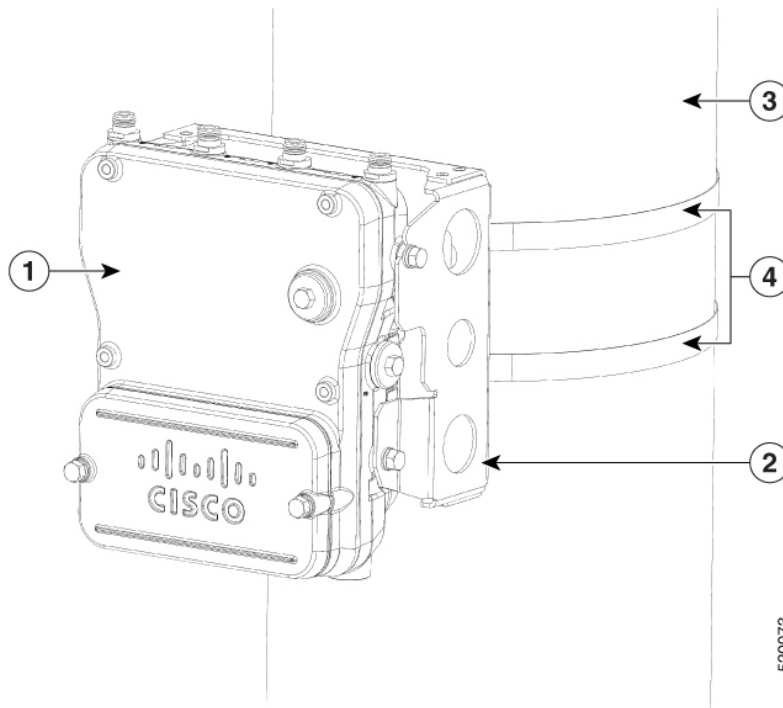
Step 13 Screw a M8 x16 bolt (with flat and lock washers) into the second bolt hole on each side of the access point.

Figure 18: Second Support Bolt Installation

1	M8 x16 bolt
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Step 14 Ensure that the front of the access point is vertical, and tighten the four bolts to 6 to 7 ft-lbs (8.1 to 9.5 Nm).

Figure 19: Assembled Access Point Hanging in Mounting Bracket

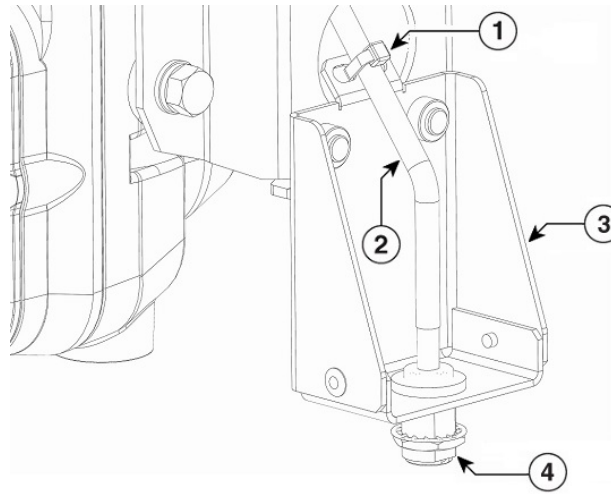


1	Access point	3	Pole (wood, metal, or fiberglass) 2 to 16 in. (5.1 to 40.6 cm) diameter
2	Mount bracket	4	Stainless steel mounting straps

Step 15

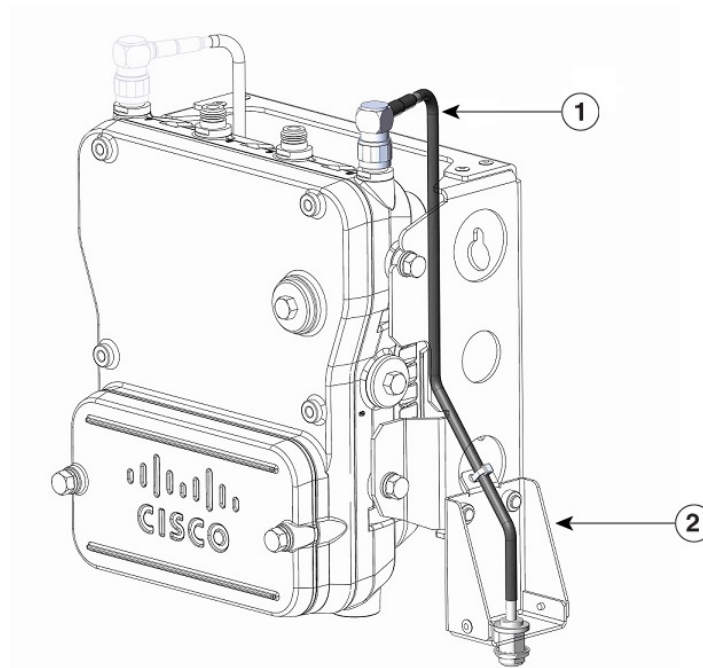
Insert the N-connector of the RF cable into the L-bracket and attach it with washer and nut (torque 12-15 in-lbs). Fix the RF cable to the L bracket with a zip tie cable as shown below.

Note For the RF cable, it is recommended that you use the 17in LMR240DB Jumper with Right Angle N-Style Male to N-Style Female Bulkhead Connectors. For more details about this cable, see <https://ventevinfra.com/product/17in-lmr240db-jumper-with-right-angle-n-style-male-to-n-style-female-bulkhead-connectors/>.



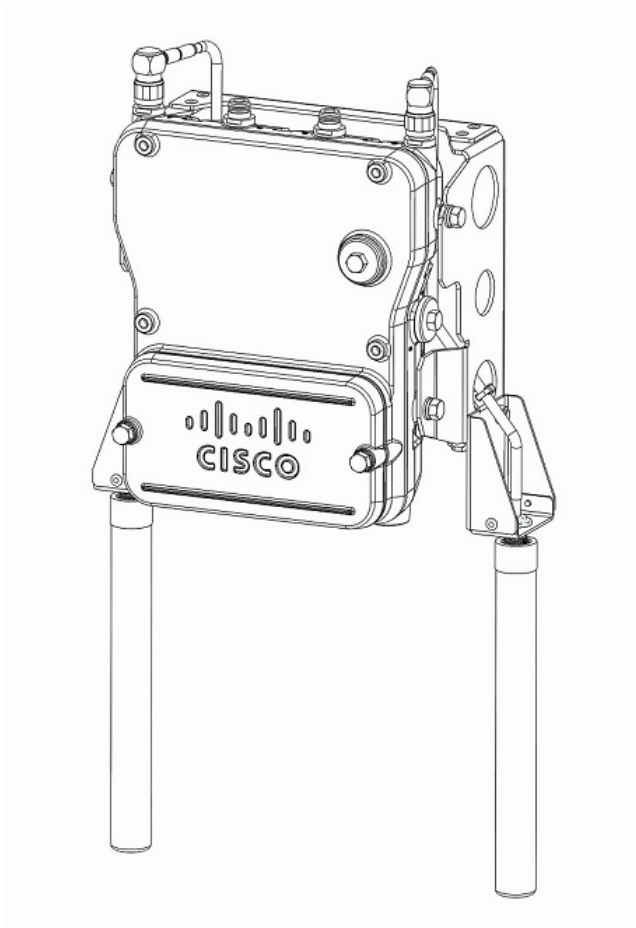
1	Zip tie cable	2	RF cable
3	L bracket	4	N-connector

Step 16 Attach the right angle N-connector of the RF cable to the access point antenna port (torque 12-15 in-lbs).



1	RF cable	2	L bracket
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Step 17 Connect the antenna to the N-connector of the RF cable. Hand-tighten the antennas to the N-connector.



Step 18 Continue with [Grounding the Access Point, on page 32](#) and [Powering the Access Point, on page 34](#).

Working with the Access Cover

This section details opening and closing the access cover of the access point.

Opening the Access Cover



Caution The access cover must not be opened unless the area is considered non-hazardous and the AP has been powered off.

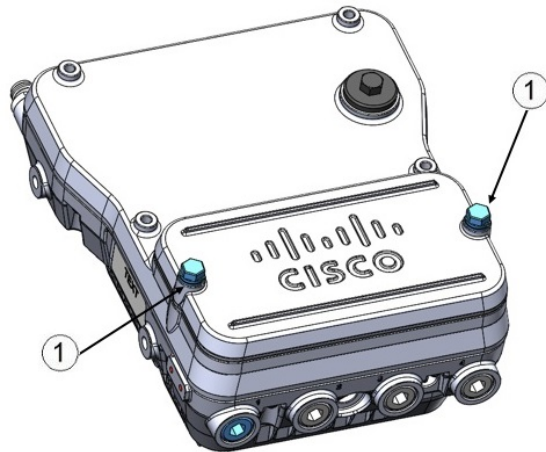
You need to open the access cover to access the AC or DC terminal block, the Ethernet ports, and when you are installing the fiber-optic SFP module.

To open the access cover, follow these steps:

Procedure

- Step 1** Use 0.5-in (13-mm) box-end wrench or socket set to unscrew the two bolts on the front cover of the unit. Only unscrew the bolts about 2 turns until they are easily turned by hand, and the bolts are resting on springs.

Figure 20: Access Point Front View of Cover



1	M8 bolts
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- Step 2** The cover is hinged on the bottom, and the bolts are designed to be captive. Carefully open the cover and fold the cover back.

Closing the Access Cover

To close the access cover, follow these steps:

Procedure

- Step 1** Ensure that O-ring sealing surface is free of debris and that O-ring is undamaged and fully contained in groove.
- Step 2** When closing the access cover, be careful not to pinch internal wires.
- Step 3** Carefully position the cover flush with all sides of the access point, then slowly hand-tighten each bolt.
- Step 4** When all bolts are hand-tightened, use a 13-mm closed-end wrench or socket to partially tighten the bolts in the tightening sequence. Tighten each bolt to 3 to 4 ft-lbs (4.1 to 5.4 Nm).
- Step 5** Repeat Step 3 using the same tightening sequence to fully tighten each bolt to 6 to 7 ft-lbs (8.1 to 9.5 Nm).

Installing External Antennas



Note When operating in the 5GHz UNII-1 band, all Omni Directional antennas should be installed vertically, and all directional antennas should be installed with the main beam aimed parallel to or tilted down toward the horizon.

The following table shows the external antennas supported by the IW-6300H access point.

Table 3: IW-6300H Access Point Supported External Antennas

Product ID	Frequency Band	Gain	Type
AIR-ANT2547V-N	2.4 / 5 GHz	4 / 7 dBi	Omnidirectional, vertically polarized, white
AIR-ANT2547VG-N	2.4 / 5 GHz	4 / 7 dBi	Omnidirectional, vertically polarized, gray
AIR-ANT2547V-N-HZ	2.4 / 5 GHz	4 / 7 dBi	Omnidirectional, vertically polarized, white, for Hazardous Locations
AIR-ANT2568VG-N	2.4 / 5 GHz	6 / 8 dBi	Omnidirectional, vertically polarized, gray
AIR-ANT2588P3M-N=	2.4 / 5 GHz	8 / 8 dBi	Directional, dual polarized, 3 port
AIR-ANT2513P4M-N=	2.4 / 5 GHz	13 / 13 dBi	Directional, dual polarized, 4 port
AIR-ANT2450V-N=	2.4 GHz	5 dBi	Omnidirectional, vertically polarized, white
AIR-ANT2450V-N-HZ=	2.4 GHz	5 dBi	Omnidirectional, vertically polarized, white, for Hazardous Locations
AIR-ANT2450VG-N=	2.4 GHz	5 dBi	Omnidirectional, vertically polarized, gray
AIR-ANT2450HG-N=	2.4 GHz	5 dBi	Omnidirectional, horizontally polarized, gray
AIR-ANT2480V-N=	2.4 GHz	8 dBi	Omnidirectional, vertically polarized
AIR-ANT2413P2M-N=	2.4 GHz	13 dBi	Directional, dual polarized, 2 port
AIR-ANT5150VG-N=	5 GHz	5 dBi	Omnidirectional, vertically polarized, gray
AIR-ANT5150HG-N=	5 GHz	5 dBi	Omnidirectional, horizontally polarized, gray
AIR-ANT5180V-N=	5 GHz	8 dBi	Omnidirectional, vertically polarized
AIR-ANT5114P2M-N=	5 GHz	13 dBi	Directional, dual polarized, 2 port

For installation instructions and detailed information on any of these antennas, refer to the following antenna guides:

Cisco Industrial Routers and Industrial Wireless Access Points Antenna Guide

<http://www.cisco.com/c/en/us/support/wireless/aironet-antennas-accessories/products-installation-guides-list.html>

Follow all safety precautions when installing the antennas. For information on safety, see [Safety Precautions When Installing Antennas](#).

Antennas Tested and Certified for Hazardous Locations and IP66/67

Antennas installed within a hazardous locations environment must be passive only, rated IP66/67 and compliant to IEC 60079-0. The following antennas were hazardous locations and IP66/67 certified with the IW6300H series:

Product Number	Description
AIR-ANT5180V-N (Cisco PN 07-1062-01)	4.9 GHz-5.8 GHz 8dBi Omni with N Connector by Laird Technologies
AIR-ANT2450V-N-HZ (Cisco PN 07-1133-01)	2.4 GHz 5 dBi Omni with N Connector by Pulse Electronics
AIR-ANT2480V-N (Cisco PN 07-1058-01)	2.4 GHz 8dBi Omnidirectional with fixed Type N Male Connector, by Laird Corporation
AIR-ANT2547V-N-HZ (Cisco PN 07-1134-01)	2.4-2.483. 5.25-5.85GHz 4/7 dBi Omni by Laird Technologies
AIR-ANT5114P2M-N (Cisco PN 07-1192-01)	5 GhZ Directional (Panel) Antenna by Pctel Inc
AIR-ANT2413P2M-N (Cisco PN 07-1193-01)	2.4 GHz Directional (Panel) Antenna by Pctel Inc
AIR-ANT2588P3M-N (Cisco PN 07-1194-01)	PDM24519-CS2 (Panel) Antenna by Laird
AIR-ANT2513P4M-N (Cisco PN 07-1284-01)	2.4 GHz/5GHz 13dBi (Panel) Antenna by Laird Technologies

In order to keep IW6300H and the above antennas compliant to hazardous locations requirements, the following conditions shall be met:

- Provision to protect antennas from unintentional damage shall be provided to the Cisco Catalyst IW6300 Heavy Duty Series Access Points.
- The maximum antenna inductance (10uH) and capacitance (0.01uF).
- Maximum cable length of 150ft shall be used for the antennas.
- If using a non-Cisco provided cable, the cable jacket must have a UL certified UV rating.

Antenna Selection Examples

The following examples list suggested antenna and RF accessory selections for typical installation scenarios.



Note Connecting four antennas directly to the chassis is not recommended. To provide omnidirectional coverage with both 2.4 and 5 GHz radios using directly attached antennas, it is recommended to configure the IW-6300H in dual band mode and connect two dual band omnidirectional antennas as described in the first row of the following table.

Use Case	Antennas	Coaxial Cables	Lightning Arrestors and/or Adapters	Installation	Antenna Mode Configuration
Omnidirectional access coverage on both radios	2x Dual-Band Omni-Directional Antennas AIR-ANT2547V-N, AIR-ANT2547VG-N, AIR-ANT2547V-N-HZ, or AIR-ANT2568VG-N	None	None	Connect antennas directly to ports A and B. Cap ports C and D with weatherproof caps.	Dual band
Omnidirectional access on 2.4 GHz, backhaul on 5 GHz	2x Dual-Band Omni-Directional Antennas AIR-ANT2547V-N, AIR-ANT2547VG-N, AIR-ANT2547V-N-HZ, or AIR-ANT2568VG-N or 2x 2.4 GHz 5 dBi Omnidirectional Antennas AIR-ANT2450V-N, AIR-ANT2450VG-N, AIR-ANT2450V-N-HZ, or AIR-ANT2450HG-N or 2x 2.4 GHz 8 dBi Omnidirectional Antennas AIR-ANT2480V-N and 1x 5 GHz 13 dBi Directional Antenna AIR-ANT5114P2M-N=	2x N(m) – N(m) cables: CAB-L400-5-N-N CAB-L400-5-N-NS CAB-L400-20-N-N CAB-L600-30-N-N or AIR-CAB025HZ-N	2x N(m)-N(f) Lightning Arrestor CGR-LA-NM-NF and 2x N(f)-N(f) adapter AIR-ACC370-NF-NF	Connect the two 2.4 GHz omnidirectional antennas directly to ports A and B. Mount the 5 GHz directional antenna with the included hardware and connect it to ports C and D via the adapters, coaxial cables, and lightning arrestors (if required).	Single band

Use Case	Antennas	Coaxial Cables	Lightning Arrestors and/or Adapters	Installation	Antenna Mode Configuration
Omnidirectional access on 5 GHz, backhaul on 2.4 GHz	1x 2.4 GHz 13 dBi Directional Antenna AIR-ANT2413P2M-N= and 2x Dual-Band Omni-Directional Antennas AIR-ANT2547V-N, AIR-ANT2547VG-N, AIR-ANT2547V-N-HZ, or AIR-ANT2568VG-N or 2x 5 GHz 5 dBi Omnidirectional Antennas AIR-ANT5150VG-N or AIR-ANT5150HG-N or 2x 5 GHz 8 dBi Omnidirectional Antennas AIR-ANT5180V-N	2x N(m) – N(m) cables: CAB-L400-5-N-N CAB-L400-5-N-NS CAB-L400-20-N-N CAB-L600-30-N-N or AIR-CAB025HZ-N	2x N(m)-N(f) Lightning Arrestor CGR-LA-NM-NF and 2x N(f)-N(f) adapter AIR-ACC370-NF-NF	Connect the two 5 GHz omnidirectional antennas directly to ports C and D. Mount the 2.4 GHz directional antenna with the included hardware and connect it to ports A and B via the adapters, coaxial cables, and lightning arrestors (if required).	Single band
Directional access and/or backhaul with both radios; both radios covering the same direction	1x 2.4-GHz/5-GHz 8-dBi Directional Antenna AIR-ANT2588P3M-N=	2x N(m) – N(m) cables: CAB-L400-5-N-N CAB-L400-5-N-NS CAB-L400-20-N-N CAB-L600-30-N-N or AIR-CAB025HZ-N	2x N(m)-N(f) Lightning Arrestor CGR-LA-NM-NF	Connect the coax cables from Ports A and B to the two outer ports of the antenna. Terminate the unused middle port of the antenna and Ports C and D of the IW-6300 with a weatherproof cap. Use lightning arrestors if required.	Dual band
	1x Four-Port Dual-Band Polarization-Diverse Antenna AIR-ANT2513P4M-N=	4x N(m) – N(m) cables: CAB-L400-5-N-N CAB-L400-5-N-NS CAB-L400-20-N-N CAB-L600-30-N-N or AIR-CAB025HZ-N	4x N(m)-N(f) Lightning Arrestor CGR-LA-NM-NF	Connect all four ports of the AIR-ANT2513P4M-N to all four ports of the IW-6300. Any port of the IW-6300 can connect to any port of the AIR-ANT2513P4M-N. Use lightning arrestors if required.	Single band

Use Case	Antennas	Coaxial Cables	Lightning Arrestors and/or Adapters	Installation	Antenna Mode Configuration
Directional coverage and/or backhaul with both radios; each radio covering a different direction	1x 2.4 GHz 13 dBi Directional Antenna AIR-ANT2413P2M-N= and 1x 5 GHz 13 dBi Directional Antenna AIR-ANT5114P2M-N=	4x N(m) – N(m) cables: CAB-L400-5-N-N CAB-L400-5-N-NS CAB-L400-20-N-N CAB-L600-30-N-N or AIR-CAB025HZ-N	4x N(m)-N(f) Lightning Arrestor CGR-LA-NM-NF and 4x N(f)-N(f) adapter AIR-ACC370-NF-NF	Connect the 2.4 GHz panel to ports A and B, connect the 5 GHz panel to ports C and D. Use lightning arrestors if required.	Single band

Non-Cisco Antennas

Cisco does not support any third-party antennas. RF connectivity and compliance of third party antennas is the user's responsibility. Cisco does not recommend any third-party antennas, and Cisco Technical Assistance Center will not be able to provide any support for third-party antennas. Cisco's FCC Part 15 compliance is only guaranteed with Cisco antennas or antennas that are of the same design and gain as Cisco antennas.

Grounding the Access Point

Make sure to follow any grounding requirements at your site. The ground lug is supplied with the device.



Warning This equipment must be grounded. Never defeat the ground conductor or operate the equipment in the absence of a suitably installed ground conductor. Contact the appropriate electrical inspection authority or an electrician if you are uncertain that suitable grounding is available. Statement 1024



Warning This equipment is intended to be grounded to comply with emission and immunity requirements. Ensure that the switch functional ground lug is connected to earth ground during normal use. Statement 2004



Note Use size 6-AWG (13.3 mm²) or larger copper wire and a ring terminal with an inner diameter of 1/4 in. (6 to 7 mm).

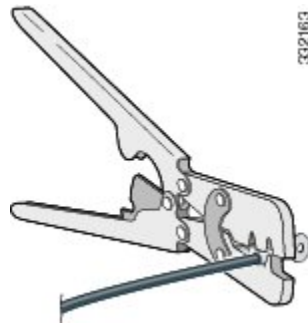
The access point must be grounded before connecting power.

In all outdoor installations you must follow these instructions to properly ground the case:

Procedure

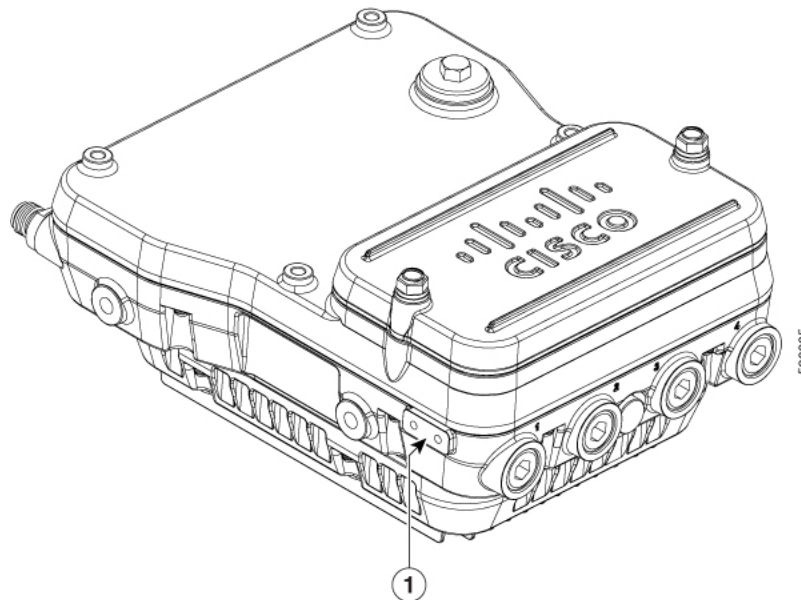
- Step 1** If using insulated 6-AWG copper ground wire, strip the insulation as required for the grounding lug.
- Step 2** Use the appropriate crimping tool to crimp the bare 6-AWG copper ground wire to the supplied grounding lug.

Note The grounding lug and hardware used must comply with local and national electrical codes.



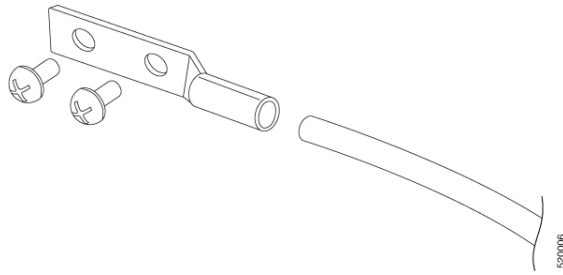
- Step 3** Open the anti-corrosion sealant (supplied), and apply a liberal amount over the metal surface, called the Ground Pad, where the ground strap screw holes are located (see the following figure).

Figure 21: Position of the Ground Pad on the Right Side of the AP



1	Ground pad, where the ground strap screw holes are located.
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- Step 4** Connect the grounding lug to the access point grounding screw holes using the supplied two Phillips head screws (M4 x10 mm) with lock washers. Tighten the grounding screw to 22 to 24 lb-in (2.49 to 2.71 Nm).

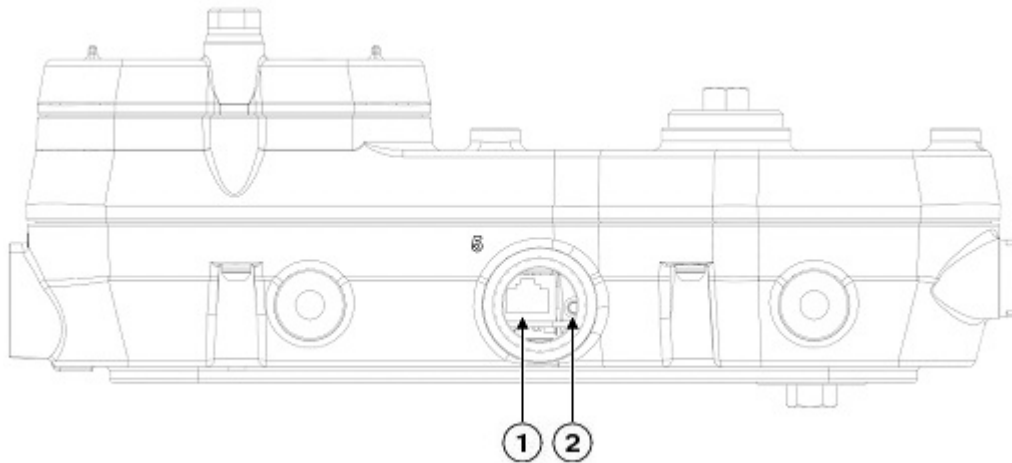


- Step 5** If necessary, strip the other end of the ground wire and connect it to a reliable earth ground, such as a grounding rod or an appropriate grounding point on a metal streetlight pole that is grounded.

Using the Reset Button

The access point has a reset button located on the right side of the unit (see the following figure).

Figure 22: IW-6300H Access Point Console Port and Reset Button



1	Console port	2	Reset button
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The reset button is under a covering M25 plug. Properly tighten it at the time of installation, and also every time it is removed and replaced. Tighten the screw to 5-6 lb-ft. If you do not tighten the plug properly, it will not meet IP67 criteria, and may lead to water leaking into the unit.

Powering the Access Point

The access point can be powered by one of these methods:

- Power over Ethernet
- Power injector, AIR-PWRINJ-60RGD1= and AIR-PWRINJ-60RGD2=

- Power over Ethernet Plus (PoE+) or Cisco Universal Power over Ethernet (UPOE) switch
- AC or DC power
 - IW-6300H-AC-x-K9: 85-264V~ maximum, marked 100-240V~, 50-60Hz, 1.3A
 - IW-6300H-DC-x-K9: 44 to 57Vdc, 1.2A
 - IW-6300H-DCW-x-K9: 10.8 to 36Vdc, 5.9A



Note The marked DC input range is an absolute range. Do not apply tolerances.



Note In all cases above, the AC branch circuit powering the access point must be limited to no more than 20A from the over-protection device supplied by the user. This branch power protection must meet all local and national electrical codes.

The IW6300 access point for hazardous locations can be connected to more than one power source. The access point detects the available power sources and switches to the preferred power source using the following priority:

1. AC or DC power
2. Power over Ethernet

Connecting a Power Injector

The power injector provides 55 VDC to the access point over the Ethernet cable and supports a total end-to-end Ethernet cable length of 100 m (328 ft) from the switch to the access point.



Caution Power injector AIR-PWRINJ-60RGDx= is not certified for installation within hazardous locations environments.



Note The PoE Out power is disabled when the access point is powered by the power injector. But the PoE Out data link can still be active when using power injector.

When your access point is powered by an optional power injector, follow these steps to complete the installation:

Procedure

- Step 1** Before applying PoE to the access point, ensure that the access point is grounded (see [Grounding the Access Point, on page 32](#)).
- Step 2** Connect a CAT5e or better Ethernet cable from your wired LAN network to the power injector.

Danger To reduce the risk of fire, use only No. 26 AWG or larger telecommunication line cord. Statement 1023

Use only the power injector (AIR-PWRINJ-60RGDx=) for the access point.

Note The installer is responsible for ensuring that powering the access point from this type of power injector is allowed by local and/or national safety and telecommunications equipment standards.

Tip To forward bridge traffic, add a switch between the power injector and controller. Refer to the latest *Cisco Wireless Mesh Access Points, Design and Deployment Guide* for more information.

Step 3 Ensure that the antennas are connected and that a ground is attached to the access point before you apply power to the access point.

Step 4 Ensure that the power injector is grounded. See the power injector installation guide for details: https://www.cisco.com/c/en/us/td/docs/wireless/access_point/power/guide/air_pwrinj_60rgd.html

Step 5 Connect a shielded outdoor-rated Ethernet (CAT5e or better) cable between the power injector and the PoE In connector of the access point.

Step 6 Connect the Ethernet cable to the access point PoE IN port (see [Connecting an Ethernet Cable to the Access Point, on page 41](#)).

Note When the access point is powered by PoE+ or UPoE, the PoE Out power is disabled. But the PoE Out data link can still be active.

Connecting AC Power to IW-6300H-AC-x-K9



Note When you install the conduit, be sure to comply with the local electrical codes for your area.

To route and connect the ground and AC power cabling to the IW-6300H-AC-x-K9 access point model, follow these steps:



Warning A readily accessible two-poled disconnect device must be incorporated in the fixed wiring. Statement 1022



Warning When installing or replacing the unit, the ground connection must always be made first and disconnected last. Statement 1046

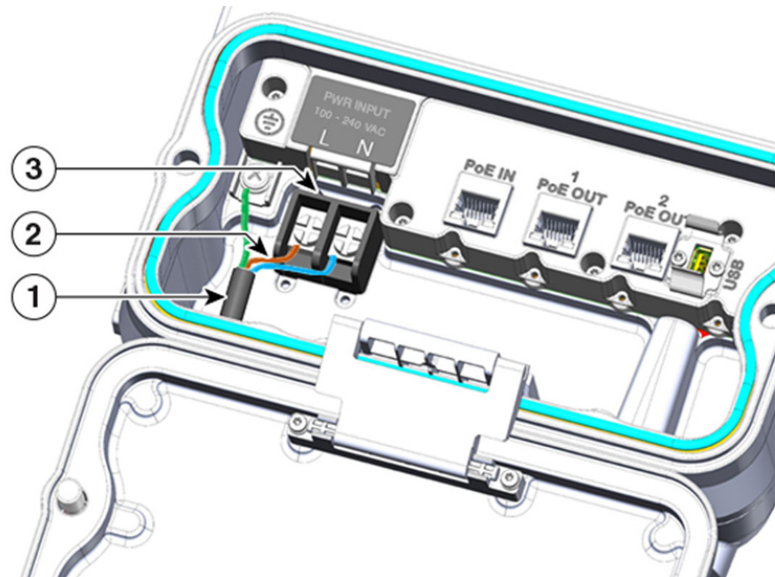


Caution Always install the ground wire before connecting all power leads.

Procedure

- Step 1** Open the access point cover. See [Opening the Access Cover, on page 26](#) for instructions.
- Step 2** Ensure a 6 AWG (13.3 mm²) ground wire is connected to the access point (see [Grounding the Access Point, on page 32](#)).
- Step 3** Route the AC power cable through the 1/2-NPT port.

Figure 23: Connecting Internal Ground and AC Power Connection for IW-6300H-AC-X-K9



1	Customer-supplied harness	3	Terminal block
2	Customer-supplied cable (ATEX only)		

- Step 4** Use a wire stripper tool to remove the insulation from each wire. Remove only enough wire to provide a solid connection in the terminal block. The hot wires should have no bare wire exposed after the connection is made.
- Step 5** Insert the ground wire into the internal ground.
- Step 6** Insert each hot wire into the AC entry terminal block.
- Step 7** Use a Phillips screwdriver to tighten the terminal block set screws to secure the wires in the terminal block.
- Step 8** Verify that no bare wire is exposed. If wire is exposed, remove it from the terminal block, adjust the length, and reinstall.
- Step 9** Check your work.
- Step 10** Close the access point cover. See [Closing the Access Cover, on page 27](#) for details.

Connecting DC Power to IW-6300H-DCW-x-K9



Warning This product relies on the building's installation for short-circuit (overcurrent) protection. Ensure that the protective device is rated not greater than:10 A. Statement 1005



Warning A readily accessible two-poled disconnect device must be incorporated in the fixed wiring. Statement 1022



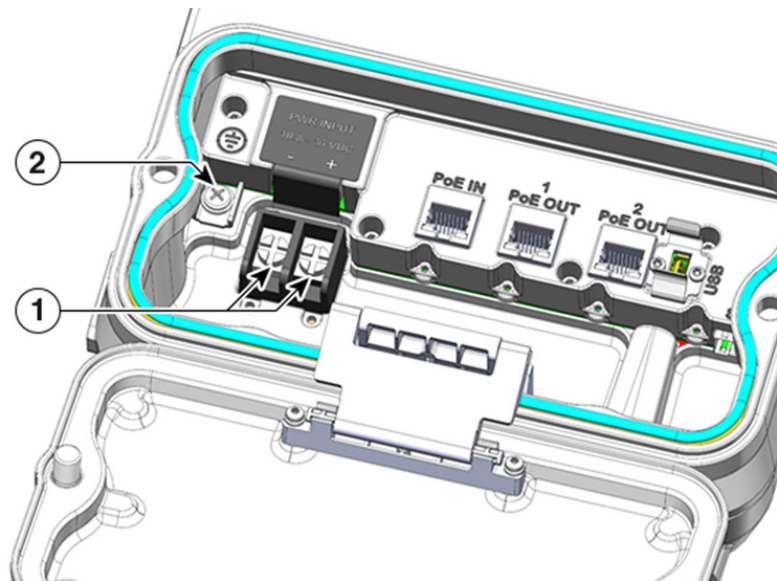
Warning To reduce risk of electric shock, connect the unit only to DC power source that complies with the Safety Extra-Low Voltage (SELV) requirements in IEC 60950 based safety standards or ES1 requirements in IEC 62368 based safety standards. Statement 1033

To route and connect the power cable to the IW-6300H-DCW-x-K9 model, follow these steps:

Procedure

- Step 1** Open the access point cover. See [Opening the Access Cover, on page 26](#) for instructions.
- Step 2** Ensure a 6 AWG ground wire is connected to the access point (see [Grounding the Access Point, on page 32](#)).
- Step 3** Route the power cable through the 1/2 NPT port.
- Step 4** Use a wire stripper tool to remove the insulation from each wire. Remove only enough wire to provide a solid connection in the terminal block. The hot wires should have no bare wire exposed after the connection is made.
- Step 5** Insert the ground wire into the internal ground.
- Step 6** Insert each hot wire into the terminal block.

Figure 24: IW-6300H-DCW-x-K9 Internal Ground and Terminal Block Location



1	Terminal block	2	Internal ground
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- Step 7** Use a Phillips screwdriver to tighten the terminal block set screws to secure the wires in the terminal block.
- Step 8** Verify that no bare wire is exposed. If wire is exposed, remove it from the terminal block, adjust the length, and reinstall.
- Step 9** Check your work.
- Step 10** Close the access point cover. See [Closing the Access Cover, on page 27](#) for details.

Connecting DC Power to IW-6300H-DC-x-K9



Warning This product relies on the building's installation for short-circuit (overcurrent) protection. Ensure that the protective device is rated not greater than:5 A. Statement 1005



Warning A readily accessible two-poled disconnect device must be incorporated in the fixed wiring. Statement 1022



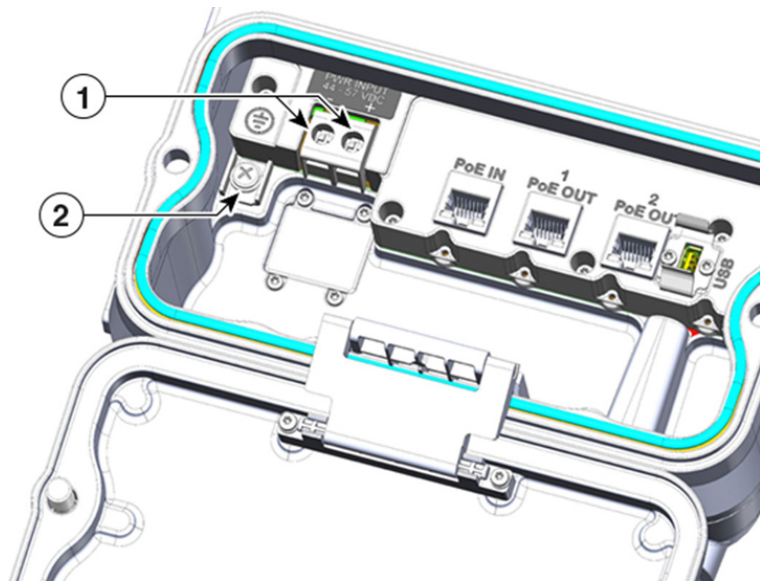
Warning To reduce risk of electric shock, connect the unit only to DC power source that complies with the Safety Extra-Low Voltage (SELV) requirements in IEC 60950 based safety standards or ES1 requirements in IEC 62368 based safety standards. Statement 1033

To route and connect the power cable to the IW-6300H-DC-x-K9 model, follow these steps:

Procedure

- Step 1** Open the access point cover. See [Opening the Access Cover, on page 26](#) for instructions.
- Step 2** Ensure a 6 AWG ground wire is connected to the access point (see [Grounding the Access Point, on page 32](#)).
- Step 3** Route the power cable through the 1/2-NPT port.

Figure 25: Connecting Internal Ground and DC Power for IW-6300H-DC-x-K9



1	Terminal block	2	Internal ground
---	----------------	---	-----------------

- Step 4** Use a wire stripper tool to remove the insulation from each wire. Remove only enough wire to provide adequate crimp on to ring terminals (Cisco supplied).
- Step 5** Remove terminal strip screw and square washer. Connect DC line to terminal strip location. Tighten terminal strip screws to secure ring terminal and wire.
- Step 6** Secure DC input cord to wire tie anchor adjacent to terminal strip.
- Step 7** Check your work.
- Step 8** Close the access point cover. See [Closing the Access Cover, on page 27](#) for details.

Connecting Data Cables

All models of the AP support data connections through the Ethernet port and the Small Form-factor Pluggable (SFP) port. However, both the Ethernet port and the SFP port cannot be used for data at the same time.

If the SFP is detected and active, the Ethernet port is disconnected. If the SFP is not detected, the Ethernet port stays connected.

If you are using the SFP port, to delivery data through a fiber-optic cable, then the AP needs to be powered by AC or DC power, or by a power injector.

For details on installing Ethernet, see [Connecting an Ethernet Cable to the Access Point, on page 41](#).

For details on installing a fiber-optic cable, see [Connecting a Fiber-optic Cable to the AP, on page 41](#).

Connecting an Ethernet Cable to the Access Point

The following tools and materials are required:

- Shielded outdoor-rated Ethernet (CAT5e or better) cable



Note The Ethernet cable from the power injector to the access point must be at least 10 ft (3.05 m) long.

- RJ-45 connector and installation tool
- Adjustable wrench
- Ex-certified cable gland or conduit

To connect the shielded Ethernet cable to the access point, follow these steps:

Procedure

- Step 1** Disconnect power to the power injector, and ensure all power sources to the access point are turned off.
- Step 2** Ensure a 6 AWG ground wire is connected to the access point (see [Grounding the Access Point, on page 32](#)).
- Step 3** Use a 3/8" Allen wrench to remove the 1/2" NPT I/O port plug from the access point.
- Step 4** Insert the unterminated end of the Ethernet cable into the conduit, and pull several inches of cable through the conduit.
- Step 5** Install an RJ-45 connector on the unterminated end of the Ethernet cable using your Ethernet cable installation tool.
- Warning** To reduce the risk of fire, use only No. 26 AWG or larger telecommunication line cord. Statement 1023
- Step 6** Carefully insert the RJ-45 cable connector through the I/O port and connect to the internal Ethernet connector.
- Step 7** Route your Ethernet cable, and cut off any excess cable.
- Step 8** Install an RJ-45 connector on the unterminated cable end, and insert it into the power injector.
- Step 9** Apply sealant to the thread and then install the conduit or cable gland. Ensure the access cover gasket is fully in groove prior to closing the cover.
- Step 10** Ensure that the antennas are connected to the access point before you apply power to the access point.
- Step 11** Turn on power to the power injector.
-

Connecting a Fiber-optic Cable to the AP

You require the following materials for connecting the fiber-optic cable to the AP:

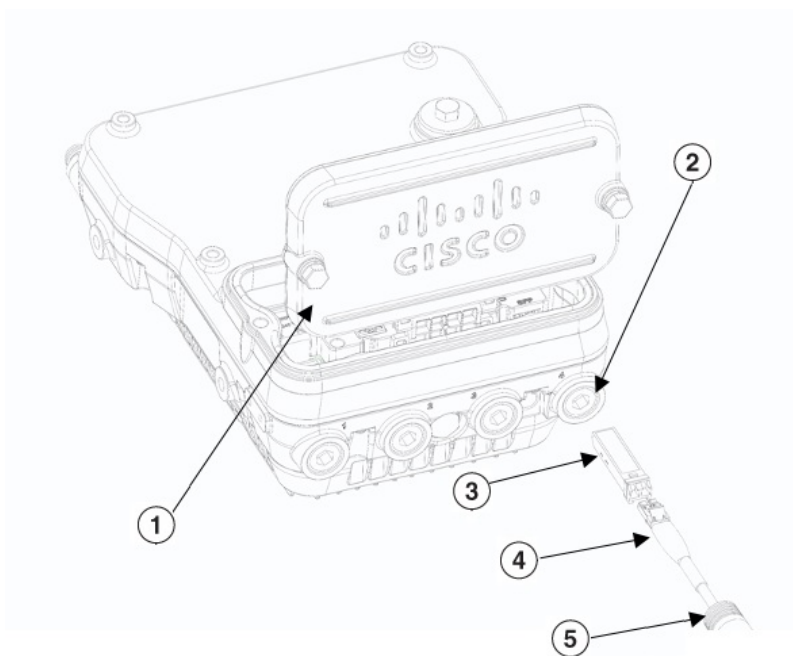
- Small form-factor pluggable (SFP) transceiver module
- The cable glands or conduit are not supplied. Make sure that the cable size you choose is appropriate for conduit or Ex certified cable gland that is being used.
- Adjustable wrench

You can connect the fiber-optic networking cable to the SFP port. The small form-factor pluggable (SFP) transceiver module is used to connect the cable to the SFP port. To install the SFP transceiver module and the cable, follow this procedure:

Procedure

Step 1 Ensure that all power sources have been disconnected from the access point.

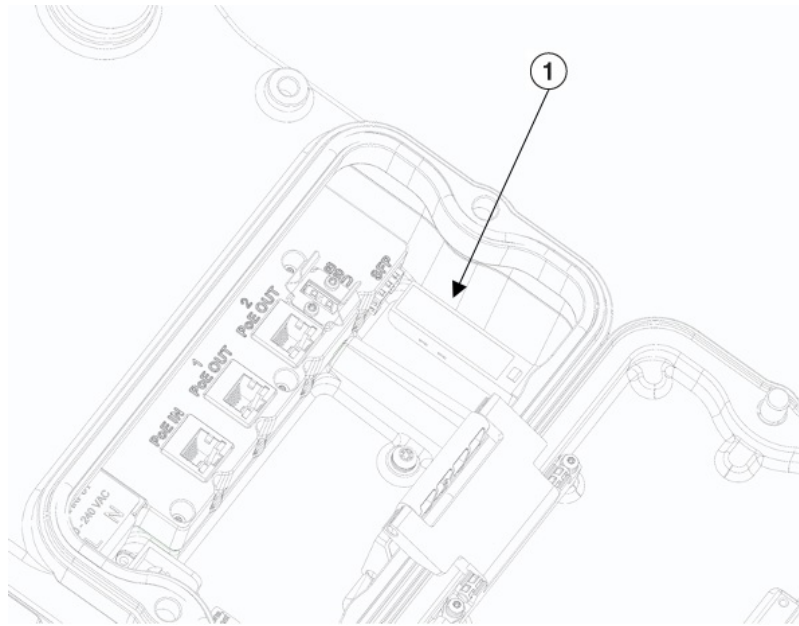
Step 2 Use a 3/8" Allen wrench to remove the covering plug from I/O port 4 as shown below. Open the access cover by loosening the M8 bolts with 1/2 or 13mm socket and swing the cover back.



1	Access cover	4	Optic fiber cable
2	I/O port 4	5	Conduit or cable gland
3	SFP		

Step 3 Insert the SFP module into the SFP port, and ensure that it latches properly.

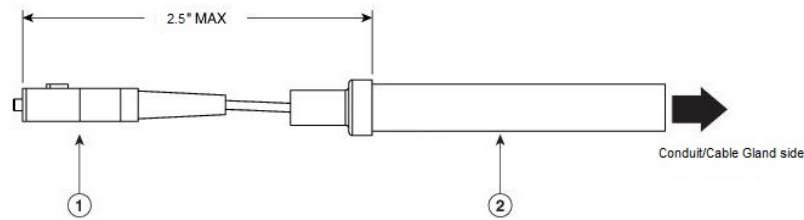
Note Do not lean on or push on the access cover.



1	SFP
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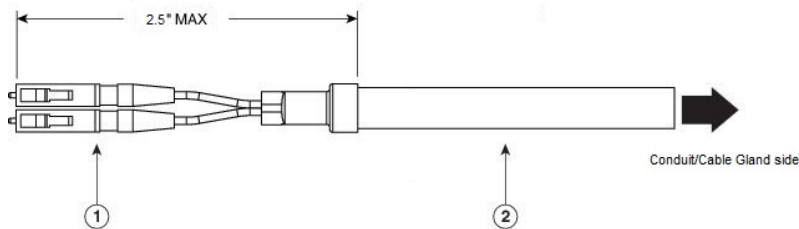
Step 4 Feed cable through conduit or certified cable gland per manufacturer’s instructions. The cable size should meet a max exposed dimension for where the fiber cable jacket needs to start.

Figure 26: SC Fiber-optic cable



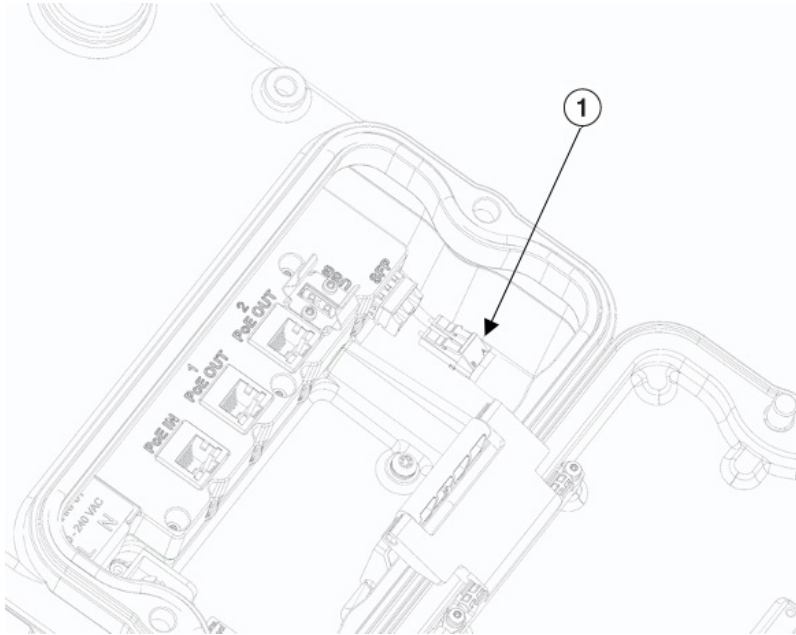
1	SC optic fiber connector	2	Cable jacket
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Figure 27: Duplex LC Fiber Optic Cable



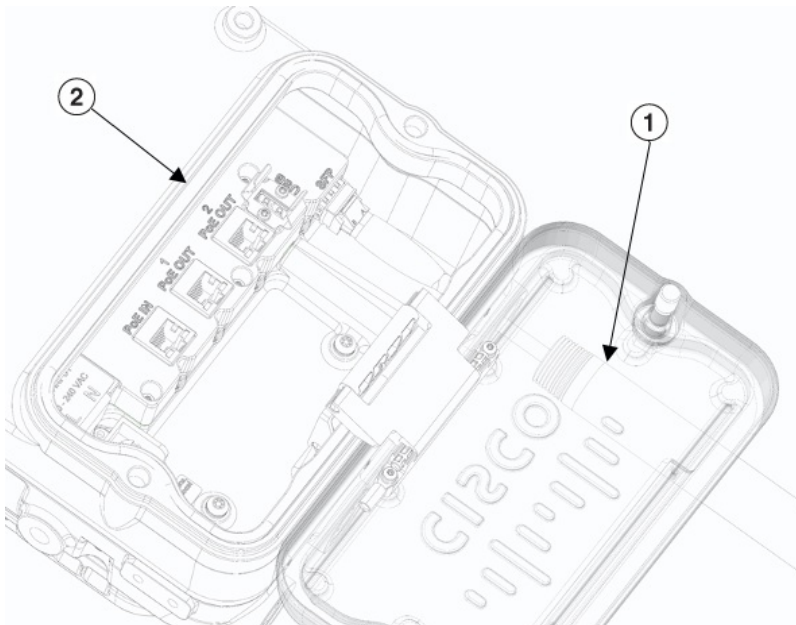
1	Duplex LC optic fiber connector	2	Cable jacket
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- Step 5** Insert the SC or LC optic fiber connector into the SFP module through I/O port 4 and ensure that it latches into place.



1	Fiber-optic cable
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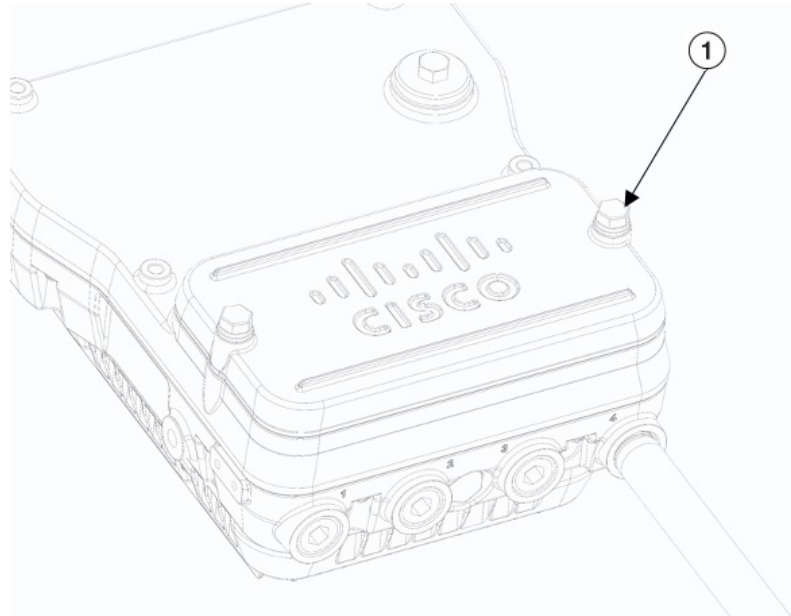
- Step 6** Apply sealant to the thread and then install the conduit or cable gland. Ensure the access cover gasket is fully in groove prior to closing the cover.



1	Conduit or cable gland
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2	Ensure the gasket is fully in groove prior to closing cover.
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Step 7 Close the cover and torque the M8 bolts to 6-7 ft-lbs.



1	M8 Bolt
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Performing Maintenance

The access point requires minimal periodic or preventive maintenance as it has no moving parts, filters, lubricants, or mechanical contact components. However, when installed in a hazardous location, periodic inspections should be conducted in order to ensure that the access point is operating satisfactory. This section provides information about performing maintenance on an access point installed in a hazardous location.

Additional maintenance information can be found in [Chapter 4, “Troubleshooting”](#) and the [Troubleshooting a Mesh Network Guide](#).

Removing the Access Point from Service

When removing an access point from service, make sure you remove power from the access point before opening the cover and disconnecting the input wiring. When removing the wiring, the ground connection should be the last to be disconnected.

Conducting Periodic Inspections

The access point should be inspected periodically to ensure normal and airtight operation in the hazardous location environment. [Table 4: Periodic Inspection Table, on page 46](#) lists the inspection routines and their periodicity.

Table 4: Periodic Inspection Table

Inspection Routine	Periodicity
Inspect O-ring seals and exterior electrical connections for aging, corrosion, and low ground resistance.	Every 3 years
Inspect cover and liquid-tight adapter gaskets for airtightness.	Every 5 years

Conducting Periodic Cleaning

The access point is designed to not require periodic cleaning.