

## Installation Guidelines

Systems must be **professionally installed** by a qualified engineer familiar with WLAN, including trained partners and resellers.

Because the access point is a radio device, it is susceptible to common causes of interference that can reduce throughput and range. Follow these basic guidelines to ensure the best possible performance:

- Perform a site survey before beginning the installation.
- The access points can be installed at any height, but best throughput is achieved when all the access points are mounted at the same height. We recommends installing the access points no higher than 40 feet to allow support for wireless clients on the ground.

### Site Surveys

Every network application is a unique installation. Before installing multiple access points, you should perform a site survey to determine the optimum use of networking components and to maximize range, coverage, and network performance.

Consider the following operating and environmental conditions when performing a site survey:

- Data rates—Sensitivity and range are inversely proportional to data bit rates. The maximum radio range is achieved at the lowest workable data rate. A decrease in receiver sensitivity occurs as the radio data increases.
- Antenna type and placement—Proper antenna configuration is a critical factor in maximizing radio range. As a general rule, range increases in proportion to antenna height. However, do not place the antenna higher than necessary, because the extra height also increases potential interference from other unlicensed radio systems and decreases the wireless coverage from the ground.
- Physical environment—Clear or open areas provide better radio range than closed or filled areas.
- Obstructions—Physical obstructions such as buildings, trees, or hills can hinder performance of wireless devices. Avoid locating the devices in a location where there is an obstruction between the sending and receiving antennas.

### Before Beginning the Installation

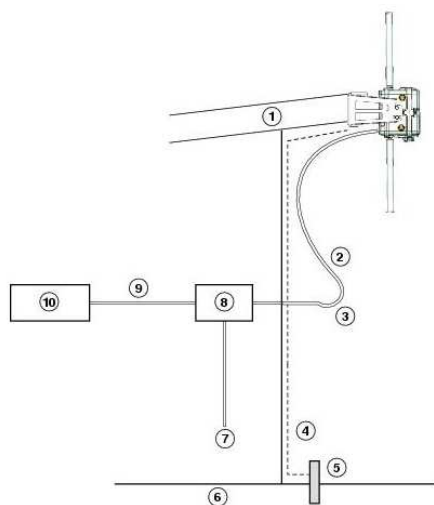
Before you begin the installation process:

- Ensure that a site survey has been performed.
- Ensure that your network infrastructure devices are operational and properly configured.
- Ensure that your controllers are connected to switch trunk ports.
- Ensure that your switch is configured with untagged access ports for connecting your access points.
- Ensure that a DHCP server with Option 43 configured is reachable by your access points, or manually configure the controller information in the access point
- Become familiar with the access point installation components

### Becoming Familiar with Access Point Installation Components

The access point is designed to be installed in an indoor environment, such as an interior wall or ceiling or the exterior roof overhang of a tall building or a streetlight pole.

- Components in a typical access point installation



1	Building roof-overhang	6	Ground
2	Shielded outdoor-rated Ethernet (CAT5e or better) cable	7	AC power cord
3	Water drip loop	8	Power injector
4	Grounding wire	9	Shielded Ethernet (CAT5e or better) cable
5	Ground rod	10	Controller (through a switch)

## Mounting the Access Point

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

### Access Point Mounting Orientation

When installing an access point on a horizontal or vertical surface, you must ensure that the access point is oriented with the LED indicators pointing down. This positioning allows the LEDs to be visible to someone on the ground below the access point.

You must also ensure the access point is mounted with the hinged access cover facing out.

### Mounting the Access Point on a Wall

The optional pole mount kit contain 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. It lists the material that you will need to provide in addition to the pole mount kit.

Materials Required
Ground lug and screws (provided with access point)
Crimping tool for ground lug, Panduit CT-720 with CD-720-1 die ( <a href="http://onlinecatalog.panduit.com">http://onlinecatalog.panduit.com</a> )
Four M8 or 5/16 in. (31 mm) screws
Four wall anchors (specified for wall material)
Drill bit for wall anchors
Electric drill and standard screwdriver
#6-AWG ground wire
Shielded outdoor-rated Ethernet (CAT5e or better) cable
Grounding block
Grounding rod
13-mm box-end wrench or socket set