

# Lysora CPE3-P Wireless Bridge


## Installation Guide

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# Preface

## Intended Audience

This document is intended for:

- Network engineers
- Technical support and servicing engineers
- Network administrators

## Technical Support

- Official website: <https://help.lysoratech.com/>
- Technical support email: [support@lysoratech.com](mailto:support@lysoratech.com)

## Conventions

### 1. Signs

The signs used in this document are described as follows:

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#### **Danger**

An alert that calls attention to safety instruction that if not understood or followed can result in personal injury.

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#### **Warning**

An alert that calls attention to important rules and information that if not understood or followed can result in data loss or equipment damage.

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#### **Caution**

An alert that calls attention to essential information that if not understood or followed can result in function failure or performance degradation.

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#### **Note**

An alert that contains additional or supplementary information that if not understood or followed will not lead to serious consequences.

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 **Specification**

An alert that contains a description of product or version support.

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## **2. Notes**

This manual provides installation steps, troubleshooting, technical specifications, and usage guidelines for cables and connectors. It is intended for users who want to understand the above and have extensive experience in network deployment and management, and assume that users are familiar with related terms and concepts.

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# 1 Product Overview

## 1.1 Overview

The CPE3-P (HVIN: L2527 ) is an IEEE 802.11ac-compliant wireless bridge for applications such as video surveillance backhaul and remote data transmission in scenarios covering elevators, tower cranes, factories, campuses, and construction sites.

The CPE3-P operates on the 5 GHz frequency band and supports 2x2 Multiple Input Multiple Output (MIMO) with two spatial streams, delivering a maximum wireless throughput of 867 Mbps for bridging applications. This meets users' bandwidth demands for data links. Additionally, the CPE3-P supports the IEEE 802.11n standard, offering a maximum data rate of 150 Mbps on the 2.4 GHz band, which is ideal for remote device management. The CPE3-P also supports IEEE 802.3af-compliant PoE and features two PoE-out ports, with a total output power of 15.4 W.

## 1.2 Appearance

### 1.2.1 Front Panel

Figure 1-1 Front View of the CPE3-P





**Table 1-1 Components on the Back Panel**

No.	Component	Description
1	DC power connector	Connected to a 12–24 V DC power adapter.
2	PoE In port	<ul style="list-style-type: none"> <li>● 10/100BASE-T port.</li> <li>● Connected to a Cat5e or higher cable.</li> <li>● Supporting 24 V passive PoE power supply.</li> <li>● Supporting IEEE 802.3af/at-compliant PoE power supply.</li> </ul>
3	PoE Out ports	<ul style="list-style-type: none"> <li>● 10/100BASE-T ports.</li> <li>● Supporting IEEE 802.3at-compliant PoE output.</li> </ul> <hr/> <p><b>i Note</b></p> <ul style="list-style-type: none"> <li>● When powered by 24 V passive PoE or 802.3at, the device can supply power to other devices via PoE.</li> <li>● When powered by 12 V DC or 802.3af, the device cannot supply power to other devices via PoE.</li> </ul>
4	Reset/One-Touch Pairing button	<ul style="list-style-type: none"> <li>● Press and hold the button for less than 2s: The wireless bridge pairs with another wireless bridge in 30s (the LED blinks during pairing).</li> </ul> <hr/> <p><b>i Note</b></p> <ul style="list-style-type: none"> <li>● After the One-Touch Pairing button is pressed, the wireless bridge is switched to BaseStation mode regardless of whether it is in BaseStation or CPE mode.</li> <li>● During one-touch pairing, the signal LEDs on the wireless bridge in BaseStation mode blink for 1 minute (it will stop blinking after 1 minute if no bridge connection is</li> </ul>

No.	Component	Description
		<p>established). The signal LEDs on the wireless bridge in CPE mode also blink until the pairing is complete.</p> <ul style="list-style-type: none"> <li>● Only a wireless bridge that has been reset to factory settings and has not been bridged before can be switched to CPE mode through one-touch pairing.</li> <li>● The one-touch pairing feature is enabled by default.</li> <li>● One-touch pairing is disabled during interference scanning.</li> </ul> <hr/> <ul style="list-style-type: none"> <li>● Press and hold the button for 2s to 10s: No action is triggered.</li> <li>● Press and hold the button for more than 10s: The wireless bridge is restored to factory settings.</li> </ul>
5	Grounding point	Connects to the environmental grounding system through a grounding cable to provide grounding protection to the device.

### 1.2.3 LED

Figure 1-4 LEDs

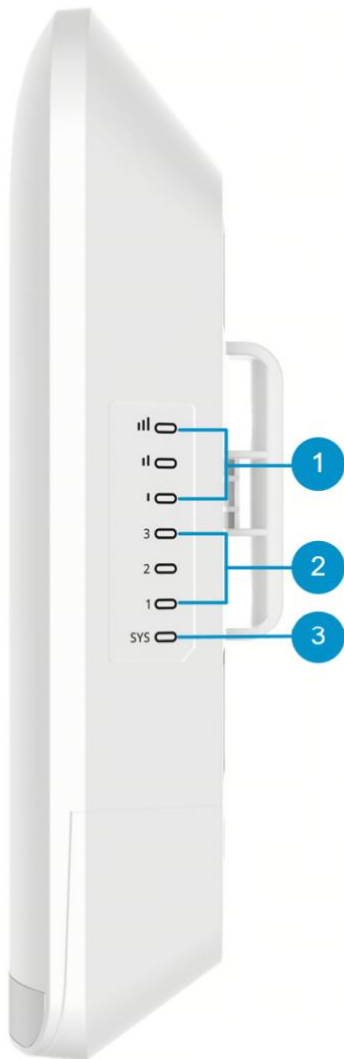
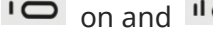


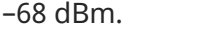
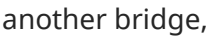


Table 1-2 LEDs

No.	LED	Description
1	Signal status LEDs	<ul style="list-style-type: none"> <li>● <b>I</b>, <b>II</b>, and <b>III</b> off: The bridge is not paired with another bridge.</li> <li>● <b>I</b> blinking: The bridge is paired with another bridge, and the Received Signal Strength Indicator (RSSI) is lower than -75 dBm.</li> <li>● <b>I</b> on: The bridge is paired with another bridge, and the RSSI is greater than -75 dBm.</li> </ul>

No.	LED	Description
		<ul style="list-style-type: none"> <li>● : The bridge is paired with another bridge, and the RSSI is greater than -73 dBm.</li> <li>● : The bridge is paired with another bridge, and the RSSI is greater than -71 dBm.</li> <li>● : The bridge is paired with another bridge, and the RSSI is greater than -68 dBm.</li> <li>● : The bridge is paired with another bridge, and the RSSI is greater than -64 dBm.</li> <li>● : The bridge is pairing with another bridge.</li> </ul>
2	Ethernet port LEDs	<ul style="list-style-type: none"> <li>● Off: The port is not connected.</li> <li>● Solid on: The port is connected, but is not receiving or sending data.</li> <li>● Fast blinking: The port is connected, and is receiving and sending data.</li> </ul>
3	System status LED	<ul style="list-style-type: none"> <li>● Off: The bridge is not powered on.</li> <li>● Solid on: The bridge is operating normally.</li> <li>● Slow blinking: The bridge is operating but an alarm or a power failure occurs.</li> <li>● Fast blinking (8 to 10 times/second): The bridge is starting up.</li> <li>● Fast blinking (2 times/second): The bridge is initializing or upgrading.</li> </ul>

## 1.3 Technical Specifications

**Warning**

- Avoid using PoE injectors or switches of other models to power the bridges, as this may cause irreparable damage to the bridges.
- To ensure reliable operation of the bridge, use the supplied DC power adapter or passive PoE injector indoors.
- When the bridge is operating at full load, ensure the ambient temperature remains below 55°C (131°F).
- When using a DC power supply to power the device, ensure that the power output of the DC power supply is less than 100 W.

**Table 1-3 Technical Specifications**

<b>System Specifications</b>	Flash memory	16 MB
	RAM	64 MB DDR2
<b>Wi-Fi Radio</b>	Radio design	Dual-radio 3 spatial streams <ul style="list-style-type: none"> <li>● Radio 1: 2.4 GHz, 1 spatial stream: 1 x 1, SISO</li> <li>● Radio 2: 5 GHz, 2 spatial streams: 2 x 2, MIMO</li> </ul>
	2.4 GHz channel width	Auto/20/40 MHz
	5 GHz channel width	Auto/20/40/80 MHz
	Wi-Fi standard	Wi-Fi 5 (IEEE 802.11ac) standard, compatible with IEEE 802.11a/b/g/n standards
	Receive sensitivity	802.11b: -91 dBm (1 Mbps), -88 dBm (5 Mbps), -85 dBm (11 Mbps)

		<p>802.11a/g: -89 dBm (6 Mbps), -80 dBm (24 Mbps), -76 dBm (36 Mbps), -71 dBm (54 Mbps)</p> <p>802.11n: -83 dBm@MCS0, -65 dBm@MCS7, -83 dBm@MCS8, -65dBm@MCS15</p> <p>802.11ac HT20: -83 dBm (MCS0), -57 dBm (MCS9)</p> <p>802.11ac HT40: -79 dBm (MCS0), -54 dBm (MCS9)</p> <p>802.11ac HT80: -76 dBm (MCS0), -51 dBm (MCS9)</p>
	Modulation	<p>802.11b: BPSK, QPSK, CCK</p> <p>802.11a/g/n: BPSK, QPSK, 16-QAM, 64-QAM</p> <p>802.11ac: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM</p>
	2.4 GHz Wi-Fi	Wi-Fi 4 (IEEE 802.11b/g/n)
	5 GHz Wi-Fi	Wi-Fi 5 (IEEE 802.11ac)
	Transmission rate	<p>Maximum wireless data rate: 1017 Mbps</p> <ul style="list-style-type: none"> <li>● Radio 1: 2.4 GHz, 150 Mbps</li> <li>● Radio 2: 5 GHz, 867 Mbps</li> </ul>
	Operating band	<p>IEEE 802.11b/g/n: 2.400 GHz to 2.483 GHz</p> <p>IEEE 802.11a/n/ac: 5.150 GHz to 5.350 GHz</p> <p>IEEE 802.11a/n/ac: 5.470 GHz to 5.725 GHz</p> <p>IEEE 802.11a/n/ac: 5.725 GHz to 5.850 GHz</p> <p>Note: Available bands vary with countries and regions. To use the preceding frequency bands, ensure that your country or region supports these frequency bands.</p>

	Maximum transmit power	2.4 GHz: 20 dBm (20 dBm per link) 5 GHz: 29 dBm (26 dBm per link) Note: The transmit power varies according to regulations in different countries and regions.
	Highest QAM order	256
<b>Antenna</b>	Antenna horizontal orientation	30°
	Antenna vertical orientation	30°
	Antenna	2.4 GHz: 1 x 1 Built-in omnidirectional antenna 5 GHz: 2 x 2 Built-in directional antenna, horizontal: 30°, vertical: 30°
	Antenna gain (2.4 GHz)	1.27 dBi
	Antenna gain (5 GHz)	<ul style="list-style-type: none"> <li>● Ant1: 12.42 dBi</li> <li>● Ant2: 12.68 dBi</li> </ul>
<b>WLAN</b>	Maximum bridge distance	3 km (1.86 miles)
<b>Port Specifications</b>	Number of fixed LAN ports	3
	Number of 10/100BASE-T ports	3
	Reset button	1
	LEDs	1 x system status LED 3 x Ethernet port LEDs

<b>Power Supply and Consumption</b>		3 x signal status LEDs
	Power supply	<p>Power supply options:</p> <ul style="list-style-type: none"> <li>● DC power adapter</li> <li>● Passive PoE injector</li> </ul>
	Power input	<p>DC power adapter:</p> <ul style="list-style-type: none"> <li>● Rated input voltage: 100 V AC to 240 V AC, 50 Hz to 60 Hz</li> <li>● Rated input current: 1 A Max.</li> </ul> <p>Output:</p> <ul style="list-style-type: none"> <li>● Rated output voltage: 24 V DC</li> <li>● Maximum output current: 1.5 A</li> </ul> <p>Passive PoE injector:</p> <ul style="list-style-type: none"> <li>● Rated input voltage: 24 V DC</li> <li>● Rated input current: 1.5 A</li> </ul> <p>Output:</p> <ul style="list-style-type: none"> <li>● Rated output voltage: 24 V DC</li> <li>● Maximum output current: 1.5 A</li> </ul>
	Power supply to external devices	<p>Yes</p> <p>Note:</p> <ol style="list-style-type: none"> <li>1. When powered by 24 V passive PoE or 802.3at, the device can supply power to other devices via PoE.</li> <li>2. When powered by 12 V DC or 802.3af, the device cannot supply power to other devices via PoE.</li> </ol>
PoE power pins	1-2 (+), 3-6 (-);4-5 (+), 7-8 (-)	

	Number of PoE In ports	1
	Number of PoE/PoE+ In ports	1
	PoE Out standard	PoE/PoE+(IEEE802.3af/at) or Non-standard PoE (24 V DC power supply)
	PoE budget	15.4 W (PoE budget for two ports)
	Number of PoE Out ports	2
	PoE budget per port	15.4 W
	Dimensions of the DC connector	Outer Diameter: 5.50 mm $\pm$ 0.05 mm (0.22 in. $\pm$ 0.002 in.) Inner Diameter: 2.10 mm $\pm$ 0.05 mm (0.08 in. $\pm$ 0.002 in.) Depth: 9 mm (0.35 in.)
	Maximum power consumption	9 W (Without PoE Out) 24.4 W (With PoE Out)
<b>Dimensions and Weight</b>	Product dimensions (W x D x H)	198.8 mm x 102 mm x 53.4 mm (7.827 in. x 4.016 in. x 2.102 in.)
	Color	Elegant white
	Weight	0.37 kg (0.82 lbs) (without packaging materials)
	Package dimensions (W x D x H)	276 mm x 165 mm x 107 mm (10.87 in. x 6.50 in. x 4.21 in.)
	Shipping weight	0.91 kg (2.01 lbs)
	Surge protection	Service port: $\pm$ 4 kV for common mode

<b>Environment and Reliability</b>		Power connector: $\pm 4$ kV for common mode and $\pm 2$ kV differential mode
	Cooling	Natural cooling
	Altitude	Operating altitude: -500 m to +5,000 m (-1,640.42 ft. to +16,404.20 ft.) Storage altitude: -500 m to +5,000 m (-1,640.42 ft. to +16,404.20 ft.)
	IP rating	IP55
	Operating temperature	$-30^{\circ}\text{C}$ to $+55^{\circ}\text{C}$ ( $-22^{\circ}\text{F}$ to $+131^{\circ}\text{F}$ )
	Storage temperature	$-40^{\circ}\text{C}$ to $+85^{\circ}\text{C}$ ( $-40^{\circ}\text{F}$ to $+185^{\circ}\text{F}$ )
	Operating humidity	5% RH to 95% RH (non-condensing)
	Storage humidity	5% RH to 95% RH (non-condensing)
	MTBF	400,000 hours (about 45 years)
	ESD protection	Standard test: contact discharge=8 kV, air discharge=15 kV, Class B
	Mounting options	Wall/Pole
<b>Certification and Regulatory Compliance</b>	EMC	FCC 47 CFR Part 2 Subpart J FCC 47 CFR Part 15 Subpart E IC RSS-247 Issue 3 FCC 47 CFR Part 15 Subpart B ICES-003 Issue 7
	Safety compliance	UL 62368-1:2019
	Certification	FCC, IC, cTUVus

 **Warning**

- Operation of this equipment in a residential area is likely to cause radio interference.
  - This device does not support the 6GHz frequency band (5925MHz-7125MHz).
-

# 2 Preparing for Installation

## 2.1 Package Contents

Upon unpacking the product, carefully inspect each item according to the provided package contents. If there is any discrepancy with the actual contents, please contact the supplier or distributor.

**Table 2-1 Package Contents**

No.	Item	Quantity
1	Device	1
2	Power adapter	1 Note: 24 V/1.5 A DC power adapter
3	PoE injector	1
4	Cable tie	2
5	Screw	4 x Wall anchors 4 x Phillips pan head screws (self-tapping screws 4.2 mm x 19 mm)
6	Mounting template	1
7	User Manual	1
8	Warranty Card	1

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** Note**

The package contents above are intended to provide a general overview, and are subject to the terms of the order contract. Please check your goods carefully against the package contents or order contract. If you have any questions, please contact the distributor.

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## 2.2 Safety Guidelines

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 **Note**

- To avoid personal injury or equipment damage, review the safety guidelines in this chapter before you begin the installation.
  - The following safety guidelines may not include all the potentially hazardous situations.
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### 2.2.1 General Precautions

- Do not expose the equipment to high temperatures, dust, or harmful gases. Do not install the equipment in an inflammable or explosive environment. Keep the equipment away from electromagnetic interference (EMI) sources such as large radar stations, radio stations, and substations. Do not subject the equipment to unstable voltage, vibration, and noises.
  - The installation site should be dry. It is not recommended that the equipment be installed in a place near the sea. Keep the equipment at least 500 m (1640.42 ft.) away from the ocean and do not face it towards the sea breeze.
  - The installation site should be free from water flooding, seepage, dripping, or condensation. The installation site should be selected according to network planning and communications equipment features, and considerations such as climate, hydrology, geology, earthquake, electrical power, and transportation.
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 **Caution**

Follow the procedures in the user manual to install and remove the equipment.

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### 2.2.2 Chassis-Lifting Guidelines

- Avoid moving the equipment frequently.
- Turn off all power supplies and disconnect all cables before lifting or moving the equipment.

## 2.2.3 Electricity Safety

**! Warning**

- Any deviation from standard or improper electrical operations can result in accidents such as fires or electric shocks, potentially causing severe or even fatal harm to both individuals and equipment.
- Direct or indirect touch through a wet object on high-voltage and mains supply can bring a fatal danger.

- Always observe the local regulations and standards. Only qualified personnel should be allowed to operate the equipment.
- Carefully check the work area for potential hazards, including ungrounded power system, and absent safety grounds.

## 2.3 Site Requirements

To ensure the normal operation and prolonged service life of the equipment, the installation site must meet the following requirements.

### 2.3.1 Installation Site

- The equipment should be installed in an open environment if possible. If the environment is enclosed, confirm that a good ventilation and heat dissipation system is available.
- The installation site is sturdy enough to support the weight of the equipment and its accessories.
- The equipment should be installed at an installation site with sufficient space and a proper clearance should be maintained around the equipment for heat dissipation.

Bridge Type	Distance Between Base Station and Customer Premises Equipment (CPE)	Recommended Installation Height (Above the Obstacle)
5 GHz bridge	500 m (0.31 mi.)	2.6 m (8.53 ft.)

Bridge Type	Distance Between Base Station and Customer Premises Equipment (CPE)	Recommended Installation Height (Above the Obstacle)
	1 km (0.62 mi.)	3.5 m (11.48 ft.)
	2 km (1.24 mi.)	5.2 m (17.06 ft.)
	3 km (1.86 mi.)	6.3 m (20.67 ft.)
	4 km (2.49 mi.)	7.3 m (23.95 ft.)
	5 km (3.11 mi.)	8.2 m (26.9 ft.)
	6 km (3.73 mi.)	9 m (29.53 ft.)
	7 km (4.35 mi.)	9.7 m (31.82 ft.)
	8 km (4.97 mi.)	10.5 m (34.45 ft.)
	9 km (5.59 mi.)	11 m (36.09 ft.)
	10 km (6.21 mi.)	11.6 m (38.06 ft.)
	11 km (6.84 mi.)	12 m (39.37 ft.)
	12 km (7.46 mi.)	12.8 m (41.99 ft.)
	13 km (8.08 mi.)	13.3 m (43.64 ft.)
	14 km (8.70 mi.)	13.8 m (45.28 ft.)
	15 km (9.32 mi.)	14.3 m (46.92 ft.)
2.4 GHz bridge	50 m (164.04 ft.)	1.2 m (3.94 ft.)
	100 m (328.08 ft.)	1.7 m (5.58 ft.)
	300 m (984.25 ft.)	3 m (9.84 ft.)
	500 m (1640.42 ft.)	4 m (13.12 ft.)

### 2.3.2 Surge Protection

- When the connection cable between the main grounding conductor and local equipotential earthing terminal board (LEB) on each floor is short, use a stranded copper wire with a sectional area not less than 1.318 mm<sup>2</sup> (16 AWG) for the connection cable.
- Use a shielded Ethernet cable if possible, ensure that devices connected to both ends of the shielded Ethernet cable are reliably grounded, and make sure that the sheath of the shielded Ethernet cable is also grounded if possible. If no shielded Ethernet cable is available, wire the Ethernet cable through a steel pipe and bury the steel pipe for lead-in, and properly ground both ends of the steel pipe.
- The equipment has a built-in high-grade lightning arrester, so an additional surge protector is typically not required. If a higher-level surge protection is needed, an external lightning arrester needs to be installed. During installation, ensure that the lightning arrester is properly grounded with a grounding wire.
- The product and power supply equipment can only be installed and used in the same building.

### 2.3.3 Temperature and Humidity

To ensure the normal operation and prolonged service life of the equipment, maintain appropriate temperature and humidity in the equipment room. Prolonged exposure to inappropriate temperature and humidity conditions can cause damage to the equipment.

- In an environment with high relative humidity, insulating materials are prone to poor insulation or even electricity leakage. Sometimes, high humidity may cause changes in the mechanical properties and cause rusting of metal parts.
- In an environment with low relative humidity, insulating gaskets may shrink, resulting in screw loosening.
- A high temperature can accelerate the aging process of insulation materials, greatly reducing the availability of the equipment and severely affecting its service life.

**Table 2-2 Operating Temperature and Humidity Requirements**

Operating Temperature	Operating Humidity
-30°C to +55°C (-22°F to +131°F)	5% RH to 95% RH (non-condensing)

### 2.3.4 Preventing Electromagnetic Interference

- Take interference prevention measures for the power supply system.
- Keep the equipment away from the grounding system or lightning protection grounding system of the power facility.
- Keep the equipment far away from high-frequency current equipment such as a high-power radio transmitting stations and radar launchers.

## 2.4 Tools

**Table 2-3 Tools**

<b>Common Tools</b>	Marker, Phillips screwdriver, hammer drill, hammer, hose clamp, cables, diagonal pliers, cable ties
<b>Dedicated Tools</b>	ESD-preventive gloves, wire stripper, crimping pliers, RJ45 crimping pliers, wire cutter, and waterproof tape
<b>Meters</b>	Multimeter and Ethernet cable tester
<b>Relevant Equipment</b>	PC, display, and keyboard

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**Note**

The equipment is delivered without a toolkit. Prepare the preceding tools by yourself.

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# 3 Installation

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## Caution

Before installing the equipment, make sure that you have carefully read the requirements described in Chapter 2.

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## 3.1 Before You Begin

Carefully plan and arrange the installation location, networking mode, power supply, and cabling of the device before installation. Confirm the following points before installation:

- The installation site provides sufficient space for heat dissipation.
- The installation site meets the temperature and humidity requirements of the device.
- The power supply and required current are available in the installation site.
- The selected power supply modules meet the system power requirement.
- The network cables have been deployed in the installation site.
- The installation site meets all requirements described in this guide.
- The device meets the customers' requirements.

## 3.2 Safety Precautions During Installation

To ensure minimal interference when installing multiple wireless bridges in close proximity, maintain a horizontal installation distance of at least 2 meters (6.56 ft), or a vertical installation distance of at least 0.5 meters (1.64 ft) between each wireless bridge. Ensure that the horizontal angle formed by the two wireless bridges is greater than 120 degrees. The specific installation location of the wireless bridge should be determined by professionals after conducting a thorough site survey.

Before installation, ensure that the installation site meets the requirements described in Section [2.3 Site Requirements](#), and pay attention to the following:

- Use the supplied 24 V/1.5 A DC power adapter or an equivalent power source with the same specifications to power the equipment. Do not use adapters with different specifications.
- The supplied DC power adapter and passive PoE injector support power supply over

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Ethernet cables up to 100 meters (328.08 ft.). Before using an Ethernet cable for power supply, ensure that the power switches on the power modules are turned off.

- Ensure that the Ethernet cable and power cord are securely connected.

### 3.3 Mounting the Device

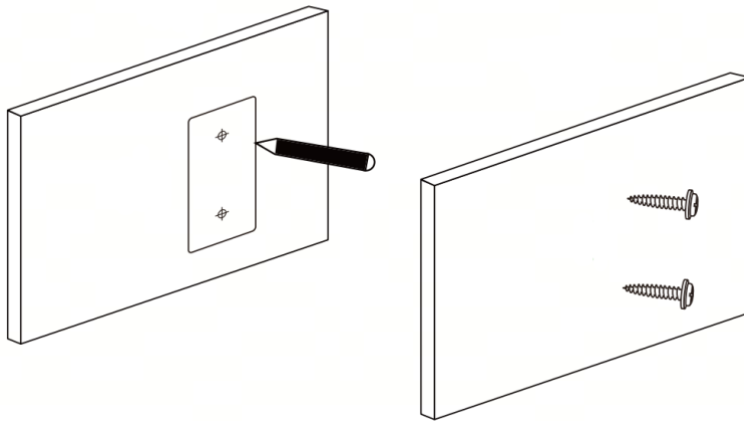
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**⚠ Caution**

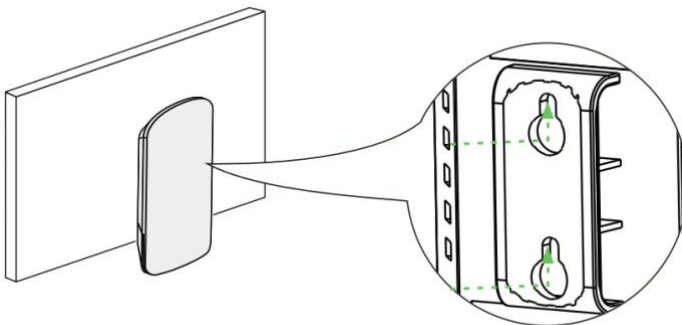
- When installing the equipment, ensure that it is positioned to maximize the coverage area for antenna radiation.
  - This installation guide is for reference only. The actual installation procedure may differ depending on the specific product.
- 

#### 3.3.1 Wall Mounting

- (1) Use the mounting template to mark the screw holes on the wall, then drill the holes and insert the 4.2 mm x 19 mm (0.17 in. x 0.75 in.) self-tapping screws.



- (2) Align the holes on the mounting bracket with the screws, then slide the device into place.



### 3.3.2 Pole Mounting

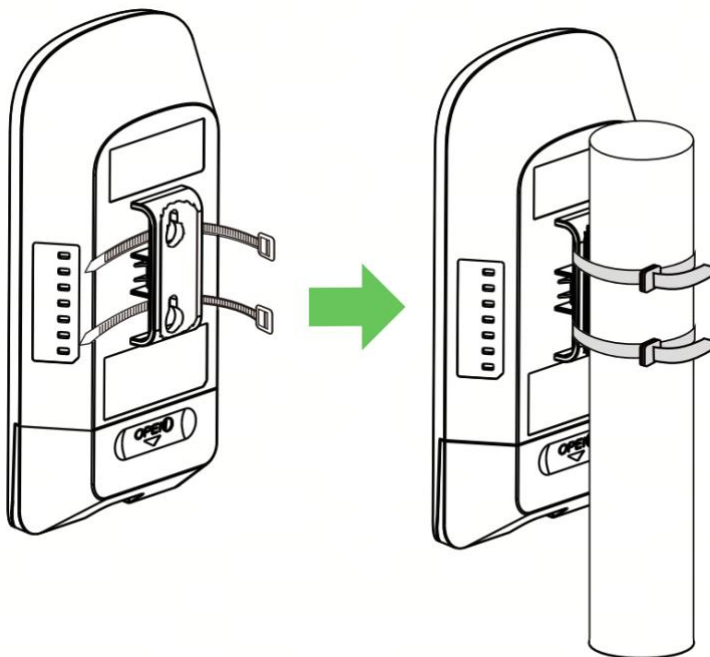
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**Note**

The recommended pole diameter ranges from 35 mm (1.38 in.) to 89 mm (3.50 in.). If the pole falls outside this range, you will need to use hose clamps with a wall thickness of at least 2.5 mm (0.10 in.).

---

- (1) Thread the cable ties through the mounting bracket on the back of the bridge.
- (2) Tighten the cable ties to secure it to the pole.



### 3.4 Connecting the Cables

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**Warning**

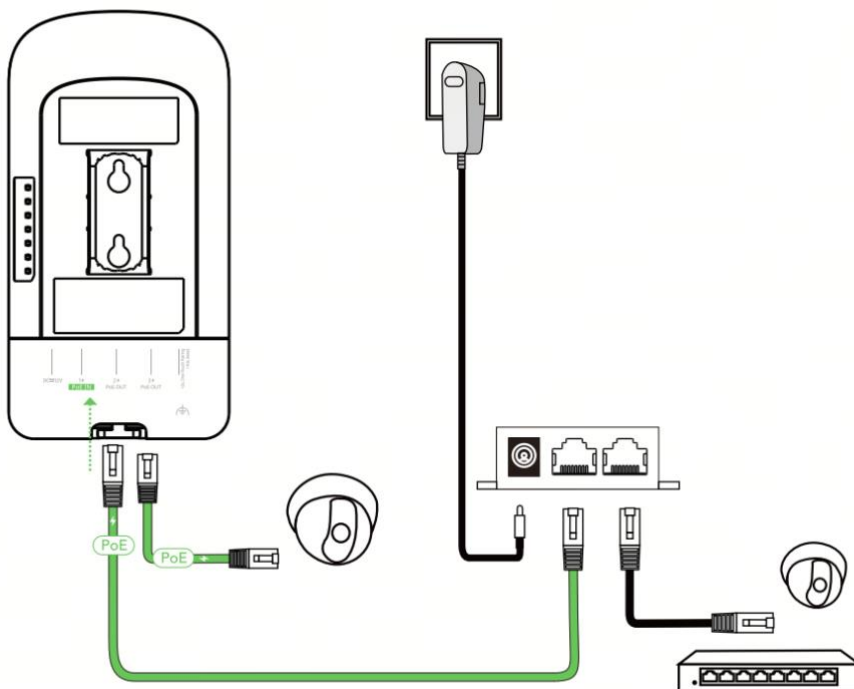
- After connecting the device to an Ethernet cable, cover the Ethernet port to ensure it is waterproof and dustproof.
  - Do not use PoE injectors or switches of different models for power supply, as this may damage the device.
  - If a solar panel is used to power the bridge, ensure that the power of the solar panel is less than 100 W.
-

Select or make an Ethernet cable suitable for the distance between the bridge and the power source equipment. (The bridge supports Cat5e or higher cables up to 100 meters (328.08 ft) for PoE power supply.)

You can connect the cables in the following ways:

- Connect the Ethernet cable to the passive PoE injector:
  - (1) Connect one end of the Ethernet cable to the PoE port of the passive PoE injector, and the other end to the LAN1/PoE port on the bridge.
  - (2) Connect the LAN port of the passive PoE injector to a server or IP camera.
  - (3) Connect the 24 V/1.5 A DC power adapter to the DC power connector of the PoE injector for power supply.
  - (4) Connect one end of the Ethernet cable to the LAN2 or LAN3 port on the bridge, and the other end to an IP camera.

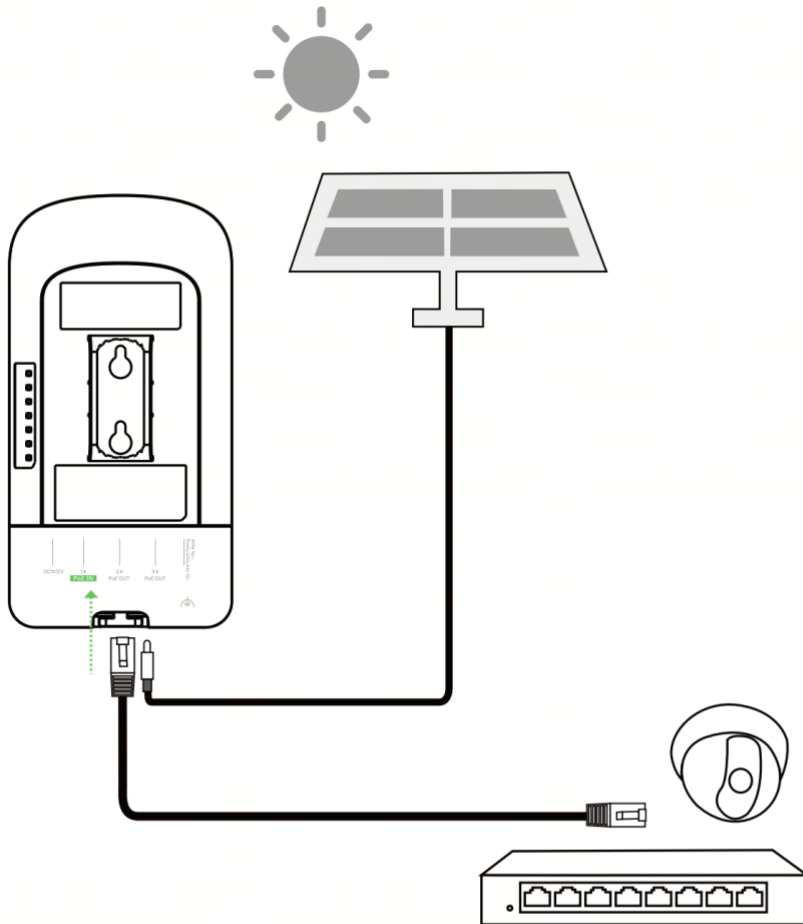
**Figure 3-1 Connecting the Ethernet Cable to the Passive PoE Injector**



- Connect the Ethernet cable to a solar panel:
  - (1) Connect one end of the Ethernet cable to the LAN1/PoE, LAN2, or LAN3 port on the bridge, and the other end to a server or IP camera.

- 
- (2) Connect the 12 V/1.5 A DC solar panel to the DC connector on the bridge for power supply.

**Figure 3-2 Connect the Ethernet cable to a solar panel**



### Solar Panel

Solar panels convert light energy from sunlight into electrical energy. The CPE3-P requires a solar power panel with an output specification of 12V/1.5A DC.

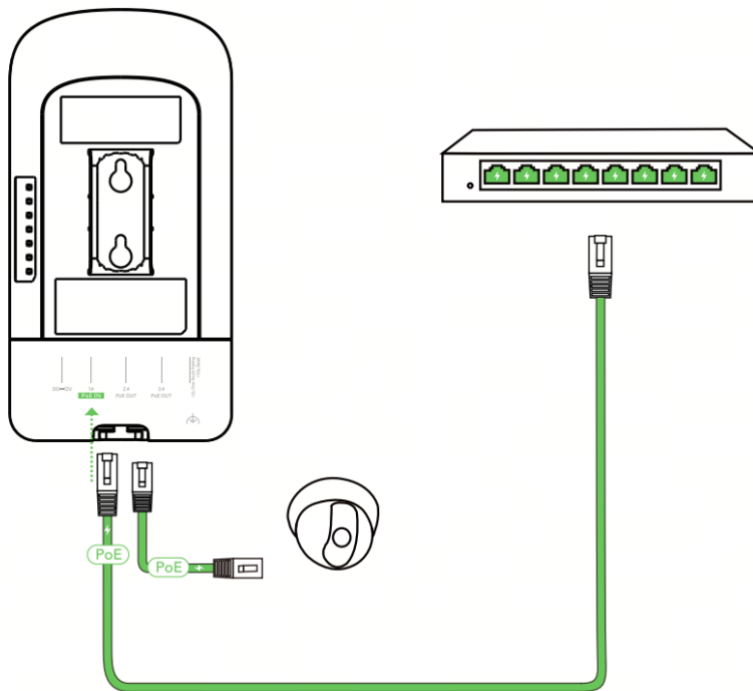
### Notes for Installing the Solar Panel

Because the sun's position differs between the Northern and Southern Hemispheres, the solar panel should face south in the Northern Hemisphere and north in the Southern Hemisphere to achieve optimal power output. Additionally, the tilt angle of the solar panel affects the efficiency of solar energy conversion. The optimal tilt angle varies with latitude. The following table shows the optimal tilt angles for different latitude ranges.

Latitude Range	Optimum Tilt
0°~10°	10°~20°
10°~20°	20°~30°
20°~30°	30°~40°
30°~40°	40°~50°
40°~50°	50°~60°
50°~60°	Approximately 60°

- Connect the Ethernet cable to a PoE switch:
  - (1) Connect one end of the Ethernet cable to a PoE port on the PoE switch, and the other end to the LAN1/PoE port on the bridge.
  - (2) Connect one end of the Ethernet cable to the LAN2 or LAN3 port on the bridge, and the other end to an IP camera.

**Figure 3-3 Connect the Ethernet cable to a PoE switch**



## **3.5 Verifying the Installation**

### (1) Checking the Bridge

- Verify that the external power supply meets the requirement of the wireless bridge.
- Verify that the wireless bridge is securely fastened.

### (2) Checking the Power Supply

- Verify that the power cord is properly connected and meets safety requirements.
- Connect the power supply to the bridge and verify that it works properly.

# 4 Commissioning

## 4.1 Power-On

(1) Checklist Before Power-on

- The power cord is reliably connected.
- The input voltage meets the requirement.

(2) Checklist after Power-on (Recommended)

The LED status is normal.

## 4.2 Configuring the Wireless Bridge through Web Login

(1) Connect the LAN port of the wireless bridge to a PC using an Ethernet cable for wired connection, or connect your smartphone or PC to the device's SSID (default SSID: ***Lysora-bxxxx***) for wireless connection.

(2) Enter **10.100.111.254** in a browser to access the device's web interface.

(3) Enter the device password (default password: admin) and click **Login** to log in to web interface for configuration.

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 **Caution**

- Enter the initial password **admin** to log in and begin configuration.
  - To ensure device security, set a password after login and change the password regularly.
-

# 5 Monitoring and Maintenance

## 5.1 Monitoring

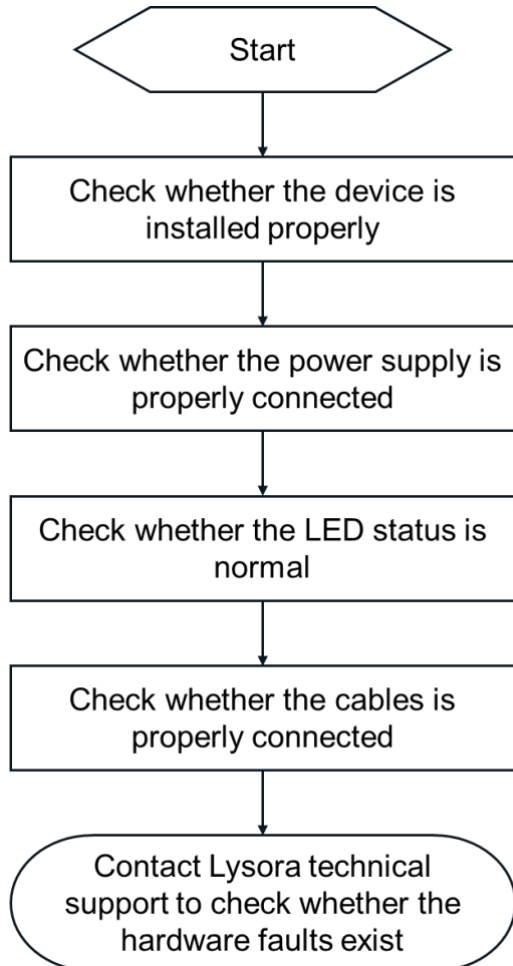
When the device is running, you can monitor the device status by observing the indicator.

## 5.2 Maintenance

If a hardware error occurs, please contact Lysora Technical support for help.

# 6 Common Troubleshooting

## 6.1 General Troubleshooting Procedure



# 7 Appendix: Connectors and Media

## 10/100BASE-T Port

The 10/100BASE-T port supports auto-negotiation for 10 Mbps, and 100 Mbps connections and also supports auto MDI/MDIX Crossover.

The 100BASE-TX or 10BASE-T ports can also be connected by cables of the preceding specifications. Besides, the 10BASE-T ports can be connected by 100-ohm CAT3, CAT4, and CAT5 cables with a maximum distance of 100 meters (328.08 feet).

The 100BASE-TX ports can be connected by 100-ohm CAT5 cables with a maximum distance of 100 meters (328.08 feet). The following table lists pin assignments for the 10BASE-T or 100BASE-T ports.

**Table 7-1 Pin Assignments for 100BASE-TX or 10BASE-T Ports**

Pin	Socket	Plug
1	Input Receive Data+	Output Transmit Data+
2	Input Receive Data-	Output Transmit Data-
3	Output Transmit Data+	Input Receive Data+
6	Output Transmit Data-	Input Receive Data-
4, 5, 7, 8	Not Used	Not Used

The following table shows wiring of straight-through and crossover cables for the 100BASE-TX or 10BASE-T ports.

**Figure 7-2 Twisted Pair Connections for 100BASE-TX or 10BASE-T Ports**

