



Instruction Manual X DUAL-LENS PTZ — CNU01P-MPW-AB1



Instruction Manual X DUAL-LENS PTZ — CNU01P-MPW-AB1

Thank you for purchasing this product. Lorex Technology Inc. is committed to providing our customers with a high quality, reliable security solution.

CNU01P-MPW-AB1

For the latest online manual, downloads and product updates, and to learn about our complete line of accessory products, please visit our website at:

lorex.com



WARNING

**RISK OF ELECTRIC SHOCK
DO NOT OPEN**



WARNING: TO REDUCE THE RISK OF ELECTRIC SHOCK DO NOT REMOVE COVER. NO USER SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE.

CAUTION: TO PREVENT ELECTRIC SHOCK, MATCH WIDE BLADE OF THE PLUG TO THE WIDE SLOT AND FULLY INSERT.

Table of contents

1	Introduction	1
1.1	Overview	1
1.2	Key Features	1
1.3	System Compatibility	1
2	Safety Instructions	2
3	Getting Started.....	3
3.1	Package Contents.....	3
3.2	Overview	4
4	Installation.....	5
4.1	Installation notes	5
4.2	Mounting the Dual-Lens PTZ Camera	6
4.3	Installing the Weather-Resistant RJ45 Cable Gland.....	11
4.4	Removing the Dual-Lens PTZ Camera	12
4.5	Connect the Dual-Lens PTZ Camera.....	13
4.5.1	Option 1: Connect the Dual-Lens PTZ Camera Directly to the NVR.....	13
4.5.2	Add the PTZ Camera to a Second Channel.....	15
4.5.3	Option 2: Connect the Camera Through a PoE Switch.....	16
4.5.4	Turn Off the Heater (Defog)	17
5	PTZ Controls.....	19
5.1	Open PTZ Controls	19
5.2	Switch Between PTZ Menus	20
5.3	Use Advanced PTZ Controls	20
5.4	Create and Use Presets	21
5.5	Create and Run a Scan.....	22
5.6	Create and Run a Tour.....	24
6	Smart Linkage Tracking.....	27
6.1	Configure Smart Linkage Tracking.....	27
6.2	Linkage Calibration.....	28
6.2.1	Create the Calibration Points.....	29
6.2.2	Test the Calibration.....	31
6.3	Verify Smart Linkage Tracking in Live View	33
7	Zoom and Focus Settings	34
8	IVS / AI Analytics and PTZ Linkage.....	36
8.1	Display Person and Vehicle Bounding Boxes	36
8.2	Link PTZ Presets to IVS / AI Analytics Events.....	36
8.3	Configure PTZ Linkage for an IVS / AI Event	37
9	Inserting the microSD Card (Optional) and Resetting the Camera	38
10	Troubleshooting.....	39
11	Technical Specifications	43
11.1	Technical Specifications.....	43
11.2	Dimensions.....	45



1.1 Overview

The X Dual-Lens PTZ Camera combines a fixed overview camera and a PTZ camera in one housing. The fixed overview camera provides a continuous wide-area view, while the PTZ camera provides motorized pan, tilt, optical zoom, and target tracking.

The camera uses two NVR channels: one for the fixed overview camera and one for the PTZ camera. When the camera is connected to an NVR, the fixed overview camera appears on the corresponding PoE-port channel. The PTZ camera must then be added to a second available channel.

The camera can be powered through a compatible NVR PoE port. A compatible NVR PoE port can provide up to 30 W. If the camera's power requirements exceed the available power, certain functions may be limited. The heater is disabled by default.



NOTE

For full camera functionality while using the heater, use the included power adapter or a PoE++ switch.

1.2 Key Features

- 5MP PTZ camera
- 30× optical zoom
- Remote PTZ control
- 4MP fixed overview camera with manual 11°–25° tilt adjustment
- Smart Linkage Tracking for person and vehicle detection
- AI analytics
- IR night vision up to 656 ft / 200 m
- Advanced deterrence with red and blue lights, siren, and pre-recorded messages
- Built-in microphone and speaker for two-way talk
- PoE+ support
- microSD local storage up to 1 TB
- Dual-channel operation for separate overview and PTZ camera views

1.3 System Compatibility

This camera is compatible with select Lorex X Series Network Video Recorders. For the most up-to-date compatibility list, visit lorex.com/compatibility.

- Read and follow all instructions before installing or operating the camera. Retain this guide for future reference.
- Use the camera only within the specified temperature, humidity, and power ranges. See 11 *Technical Specifications*, page 43.
- This product is rated for outdoor use and is weather-resistant when properly installed. It is not intended for submersion in water. Installation in a sheltered location is recommended.
- Disconnect all power connections before installation. The camera may move automatically when power is applied.
- Clean the camera using a soft, damp cloth only. Do not use solvents or abrasive cleaning agents, as they may damage the camera lens.
- Do not disassemble or modify the camera. There are no user-serviceable parts inside.
- Do not point the camera directly toward the sun or other intense light sources.
- Always secure the camera during installation using the included camera safety cable.
- Install the camera in a location that is visible but out of reach.
- Ensure the mounting surface can support the combined weight of the camera and mounting hardware.
- Verify that no electrical wiring or utilities are present in the installation area before drilling.
- Ensure all cabling is properly routed and protected to prevent damage or tampering.
- Use only the specified power source. Use of an incorrect power supply may result in product damage and will void the warranty.
- Comply with all applicable local building and electrical codes.
- Do not lift or hold the camera by the cables. Always support the camera by its housing.
- Do not force the fixed-lens assembly beyond its adjustment range. Use the adjustment knob rather than pushing directly on the lens window.
- Use only a supported power source. For full camera functionality while using the heater, use the included power adapter or a PoE++ switch.
- If using the included power adapter, install the camera within reach of a suitable power outlet. Do not place tension on the power adapter cables or connectors.
- Before installing, removing, or servicing the camera, disconnect all power connections, including the Ethernet / PoE connection and the power adapter, if connected.
- If using the included power adapter, confirm that the power adapter wires are connected with the correct polarity before applying power.

3.1 Package Contents

Your PTZ camera package includes the following accessories:

 X Dual-Lens PTZ			
 Wall Mount	 Camera Safety Cable	 Power Adapter and Cable	 4 × Expansion Bolts
		 NOTE For full camera functionality while using the heater, use the included power adapter or a PoE++ switch.	
 3 × Wall Mount Screws	 Torx Key for Wall Mount Screws	 Allen Key for MicroSD / Reset Compartment	 Weather-Resistant RJ45 Cable Gland
 ESD Gloves	 6-Pin Wire Connector		

3.2 Overview



Component	Description
Service Panel Cover	Provides access to the camera's cables and connections.
Fixed-Lens Adjustment Knob	Manually adjusts the vertical viewing angle of the fixed over-view camera.
Fixed Overview Camera Lens	Provides a continuous wide-angle overview of the monitored area. This camera view is used to detect targets for Smart Link-age Tracking.
Deterrence Lights	Illuminate when a configured active-deterrence event is triggered.
microSD Card / Reset Compartment	Allows installation of a microSD card for local recording and provides access to the camera reset control. See 9 <i>Inserting the microSD Card (Optional) and Resetting the Camera</i> , page 38.
Speaker	Produces siren tones, pre-recorded messages, and two-way audio output.
PTZ Camera Lens	Provides motorized pan, tilt, optical zoom, and target-tracking functions.
Microphone	Captures audio from the monitored area.

Before permanently installing the X Dual-Lens PTZ, plan the power and network connections, confirm that the NVR has sufficient channel capacity, and test both camera views.

The camera requires:

- The included power adapter
- An Ethernet connection through a compatible NVR PoE port or external PoE+ switch.
- Two available NVR channels: one for the Fixed Overview Camera and one for the PTZ camera
- A supported power source appropriate for the intended camera functions. See *Power Requirements*, page 5below.

Before mounting the dual-lens PTZ camera, connect it as described in 4.5 *Connect the Dual-Lens PTZ Camera*, page 13 , confirm that both camera views appear in Live View, and test the PTZ controls.

4.1 Installation notes

- Ensure the mounting surface can support the weight of the dual-lens PTZ camera, wall mount, and mounting hardware. The camera weighs 9.92 lb (4.5 kg).
- This dual-lens PTZ camera is rated for outdoor use (IP66) when properly installed.
- Do not install the dual-lens PTZ camera where it will be exposed to direct, intense light sources.
- Plan the cable route before installation. Protect all cables and connections from moisture, physical damage, and tampering.
- Install the dual-lens PTZ camera in a sheltered location, such as under eaves, whenever possible to help prolong the life of the product.
- Use suitable safety equipment when installing the dual-lens PTZ camera at height.
- Always connect the included camera safety cable during installation to prevent the dual-lens PTZ camera from falling.
- If using the included power adapter, install the dual-lens PTZ camera close enough to a suitable power outlet for the supplied power adapter cables to reach without being stretched or placed under tension.
- Confirm that the NVR has two available channels before connecting the camera.

Power Requirements

The X Dual-Lens PTZ can consume up to 40 W when high-power functions are in use. A compatible NVR PoE port can provide up to 30 W. The camera can operate from the NVR PoE port when its power consumption remains within the available power. If the camera’s power requirements exceed the available power, certain functions may be limited.

The heater is disabled by default. If the heater has been enabled and the camera is powered from an NVR PoE port that provides up to 30 W, turn off **Defog** to reduce power consumption. See **Turn Off the Heater (Defog)** in page.

 **NOTE**

For full camera functionality while using the heater, use the included power adapter or a PoE++ switch.

The included power adapter has the following cable lengths:

- **Power adapter input cable: 4.9 ft (1.5 m)**
- **Power adapter output cable: 6.6 ft (2.0 m), +/- 2 in (5 cm)**

NVR Channel Requirements

The X Dual-Lens PTZ requires two NVR channels:

- **One channel displays the Fixed Overview Camera.**
- **One channel displays the PTZ camera.**

When the camera is connected to an NVR PoE port, the Fixed Overview Camera appears automatically on the channel corresponding to that PoE port. The PTZ camera must then be added manually to a second available channel.

For example, if the camera is connected to PoE port 9, the Fixed Overview Camera appears on Channel 9. You can then add the PTZ camera to another available channel, such as Channel 10.

4.2 Mounting the Dual-Lens PTZ Camera

Follow these instructions to mount the camera.

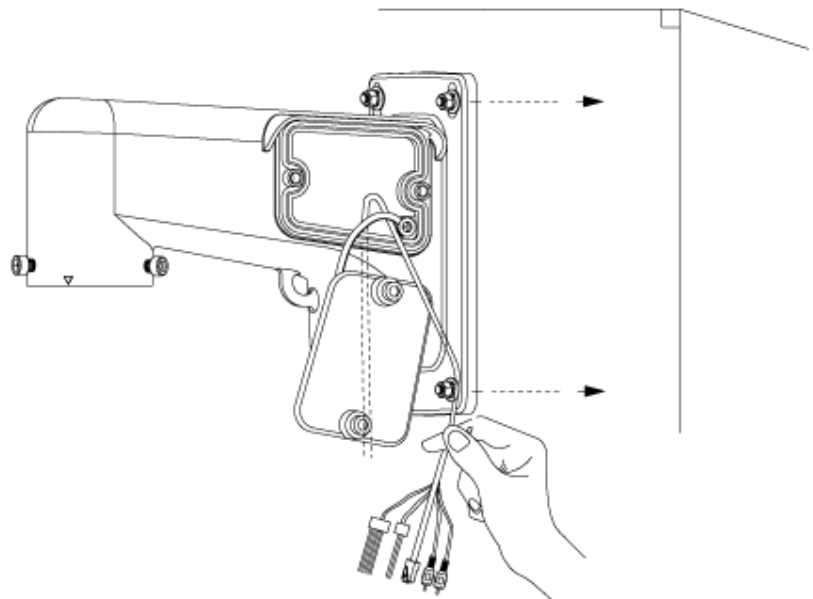


CAUTION

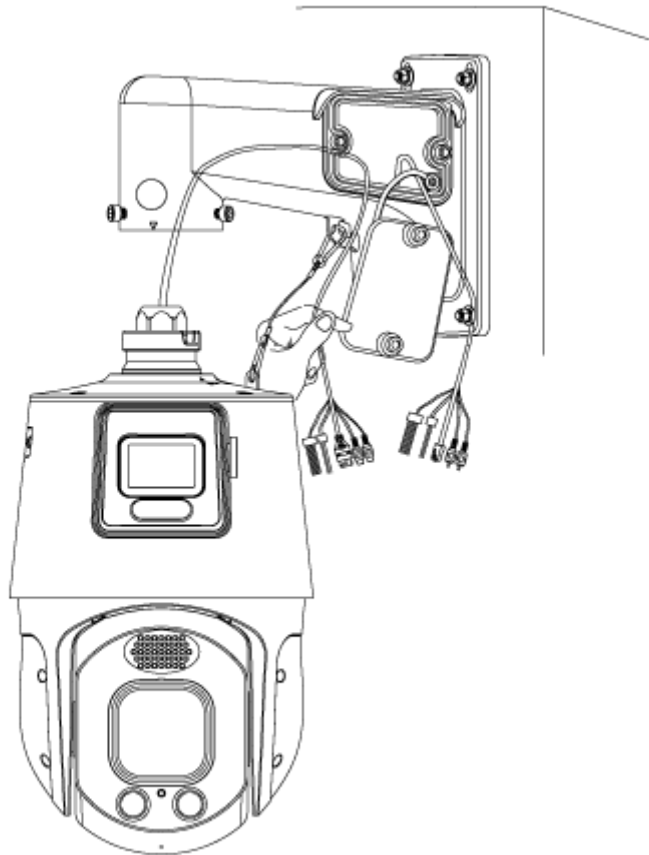
Do not connect power to the dual-lens PTZ camera until the camera is securely supported and all wiring is complete. The camera may move automatically when power is connected.

Before you begin:

- Use the included **4 expansion bolts** for **concrete installation only**.
 - Use the included **ESD gloves** when handling the camera to help prevent electrostatic discharge and avoid fingerprints on the camera lens.
 - User-supplied tools: drill, hammer, screwdriver, and pencil or marker.
 - If using the included power adapter, confirm that the power outlet is within reach of the included power adapter cables.
1. Position the wall mount against the installation surface.
 2. Use the wall mount to mark the mounting-hole locations.
 3. Drill holes at the marked locations. Ensure that the diameter and depth of each hole are suitable for the included expansion bolts.
 4. Prepare the expansion bolts:
 - Remove the nut and washers from each bolt.
 - Keep the nuts and washers for reinstallation.
 5. Insert the expansion bolts into the drilled holes.
 - Tap each bolt gently with a hammer until the sleeve is fully seated in the wall.
 - Tighten the nut on each bolt slightly to expand the anchor inside the concrete, then loosen and remove the nut and washers again.
(This secures the expansion sleeve in place.)
 6. Position the wall mount over the installed expansion bolts. Reinstall the washers and nuts onto the bolts and tighten them securely to fasten the wall mount to the surface.

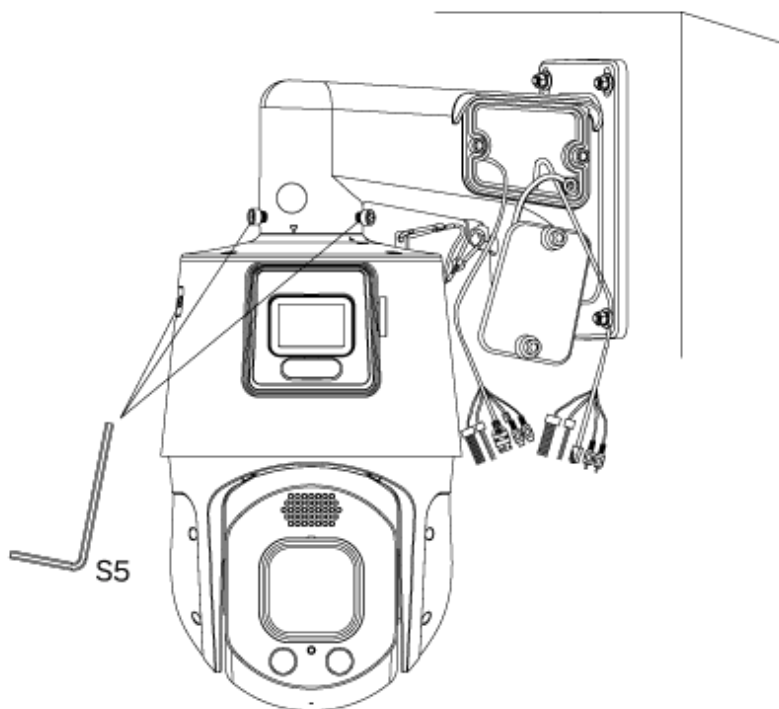


-
7. Use the included **Torx key** to open the cable compartment on the side of the wall mount. The cover will remain attached to the mount.
 8. Route the Ethernet cable and any optional Audio or Alarm I/O cables from the installation surface through the wall mount opening and into the cable compartment.
 - If using the included power adapter, also route the power adapter cable through the wall mount.
 9. Attach the included **camera safety cable** between the camera and the wall mount.

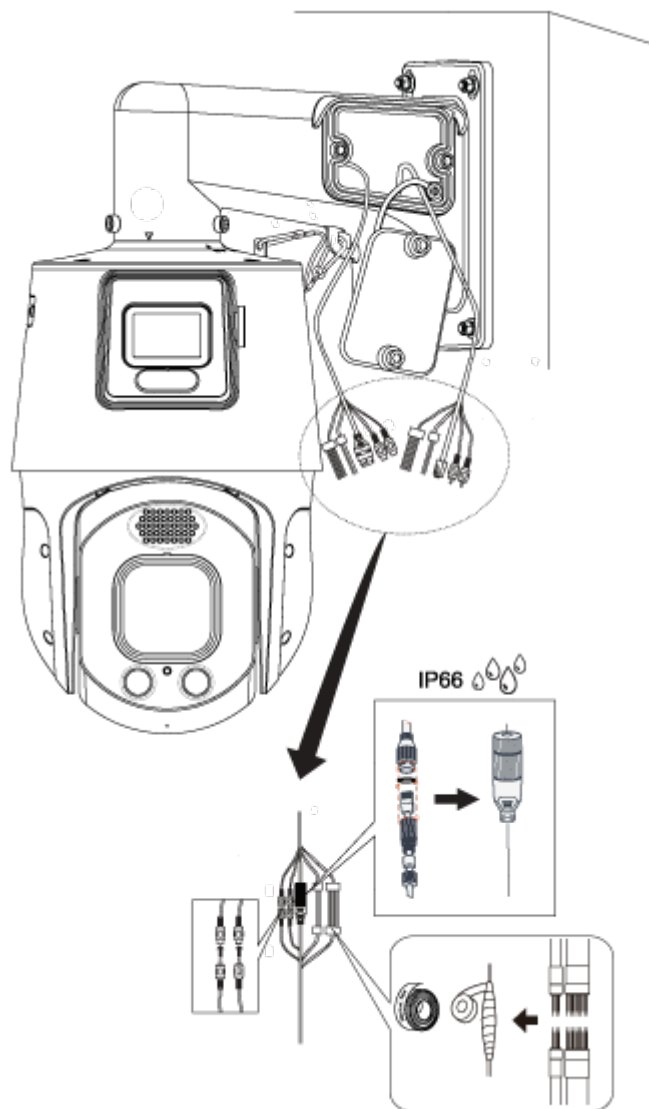


10. Lift the dual-lens PTZ camera and insert the top of the camera into the wall mount bracket.
11. Pull the dual-lens PTZ camera cables through the wall mount so they extend out of the cable compartment.
12. Align the **unlock symbol** on the dual-lens PTZ camera with the arrow on the wall mount.
13. Slide the dual-lens PTZ camera until the **lock symbol** aligns with the arrow to secure the camera in place.

-
14. Secure the dual-lens PTZ camera to the wall mount using the included **3 wall mount screws** and the Torx key.

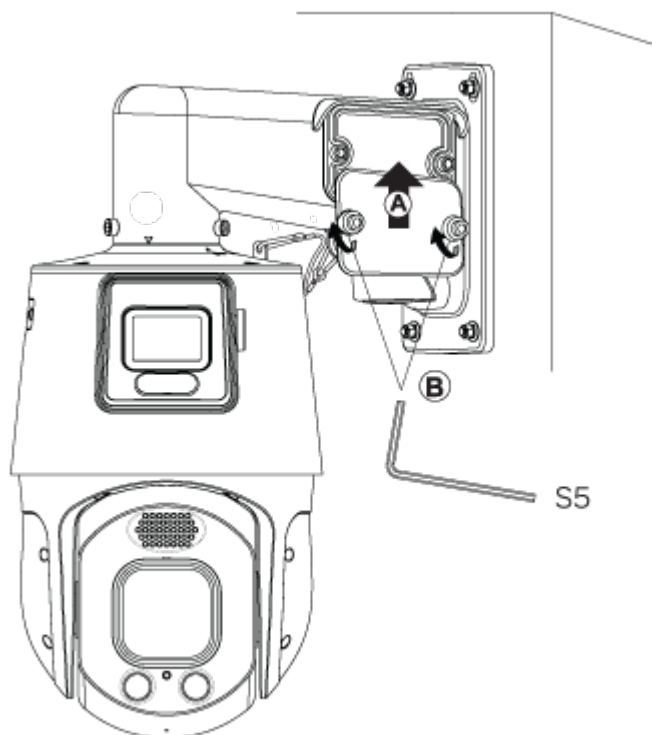


-
15. Make the required Ethernet connection and, if using the included power adapter, make the power adapter connection. See 4.5 *Connect the Dual-Lens PTZ Camera*, page 13.
- If using the Ethernet connection outdoors or in a damp location, install the included **weather-resistant RJ45 cable gland** over the Ethernet connection to help protect it from moisture. Refer to 4.3 *Installing the Weather-Resistant RJ45 Cable Gland*, page 11.



16. Carefully push excess cable back into the wall mount. Do not sharply bend, pinch, or place tension on any cable.

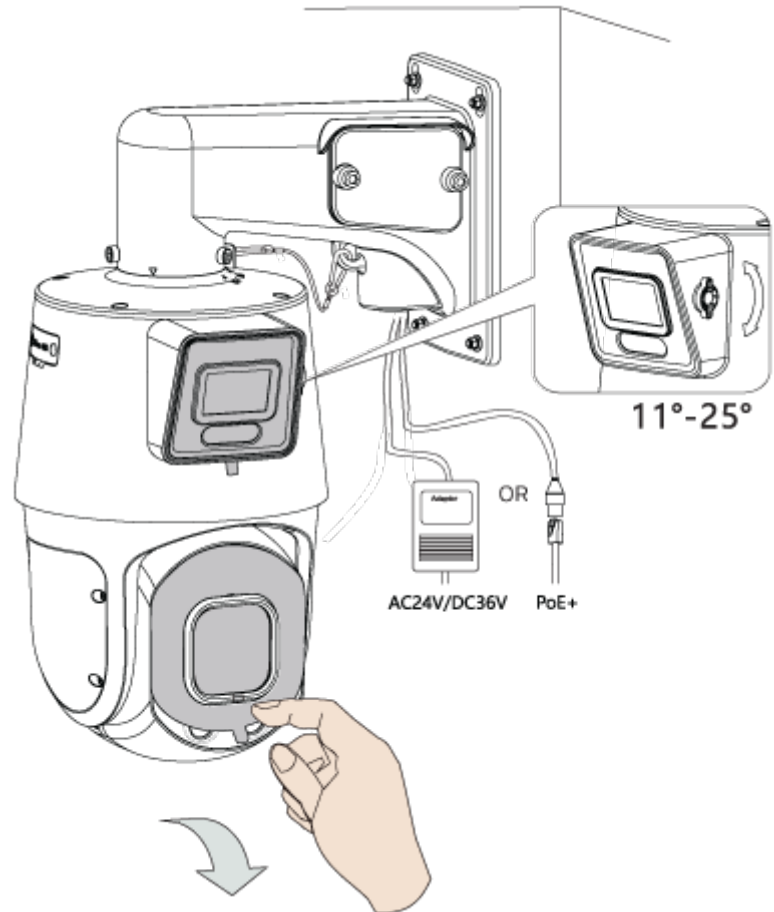
-
17. Close the cable compartment and tighten the screws using the Torx key.



18. Remove the protective vinyl film from both camera lenses.
19. Confirm that the dual-lens PTZ camera is securely installed and that all cables are properly connected.

20. Apply power to the dual-lens PTZ camera using the selected power method.

- If using the included power adapter, connect it to a suitable power outlet or surge protector.
- The dual-lens PTZ camera may move automatically while completing its startup sequence.



21. Allow the dual-lens PTZ camera to finish starting before attempting to adjust it or use PTZ controls.
22. Manually adjust the Fixed Overview Camera lens between 11° and 25° using the lens adjustment knob.

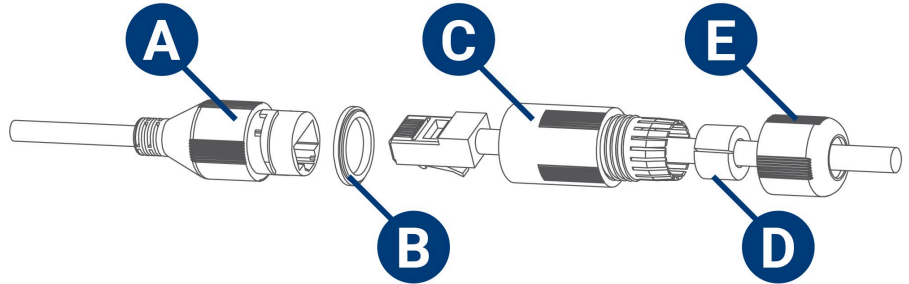


NOTE

If Smart Linkage Tracking will be used, set the Fixed Overview Camera to its final angle before performing Linkage Calibration. Changing the Fixed Overview Camera angle after calibration requires Linkage Calibration to be completed again. See 6.2 *Linkage Calibration*, page 28.

4.3 Installing the Weather-Resistant RJ45 Cable Gland

If the Ethernet connection will be exposed to moisture, install the included weather-resistant RJ45 cable gland. The cable gland helps protect the Ethernet connection from water intrusion and corrosion.

Cable Gland Components:

A: Camera Ethernet Connector

B: O-ring

C: Barrel

D: Rubber Grommet

E: End Cap

Install the Cable Gland:

1. Disassemble the weather-resistant RJ45 cable gland.
2. Route the Ethernet cable through the gland components in the following order:
 - End cap
 - Rubber grommet
 - Barrel
3. Ensure the threaded end of the barrel faces toward the dual-lens PTZ camera.
4. Place the O-ring over the dual-lens PTZ camera Ethernet connector.
5. Connect the Ethernet cable to the dual-lens camera Ethernet connector.
6. Slide the barrel over the Ethernet connection.
7. Tighten the barrel onto the dual-lens PTZ camera Ethernet connector so that the O-ring is compressed between the barrel and the connector.
8. Insert the rubber grommet into the back of the barrel.
9. Slide the end cap forward.
10. Tighten the end cap onto the barrel until the cable is sealed securely.

**NOTE**

Do not overtighten the cable gland components, as this may damage the threads or reduce sealing performance.

4.4 Removing the Dual-Lens PTZ Camera

1. Disconnect power from the dual-lens PTZ camera. If using the included power adapter, disconnect it from the power outlet or surge protector.
2. Disconnect the Ethernet cable and any optional Audio or Alarm I/O connections.
3. Open the wall mount cable compartment using the Torx key.
4. Disconnect the camera cables inside the cable compartment.
5. Support the camera securely.
6. Remove the three wall mount screws using the Torx key.
7. Slide the dual-lens PTZ camera until the lock symbol moves to the unlock position.
8. Pull the dual-lens PTZ camera downward to detach it from the wall mount.
9. Disconnect the camera safety cable.

10. Remove the camera from the installation area.

4.5 Connect the Dual-Lens PTZ Camera

The X Dual-Lens PTZ can be connected using either of the following methods:

- **Option 1:** Connect the camera directly to a PoE port on a compatible NVR.
- **Option 2:** Connect the camera to the same network as the NVR using a PoE switch.

A compatible NVR PoE port can provide up to 30 W. The camera can operate directly from the NVR PoE port when its power consumption remains within the available power. If the camera's power requirements exceed the available power, certain functions may be limited.

The heater is disabled by default.

	NOTE
For full camera functionality while using the heater, use the included power adapter or a PoE++ switch.	

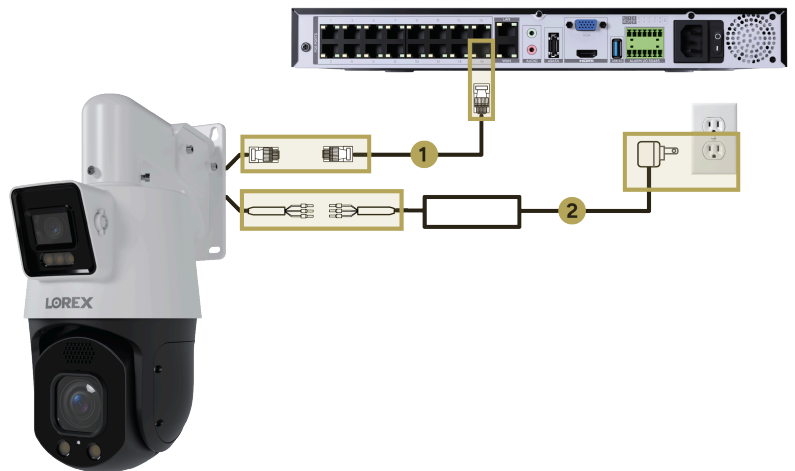
The camera also requires two NVR channels:

- One channel for the Fixed Overview Camera
- One channel for the PTZ camera

Before connecting the camera, confirm that the NVR has two available channels.

4.5.1 Option 1: Connect the Dual-Lens PTZ Camera Directly to the NVR

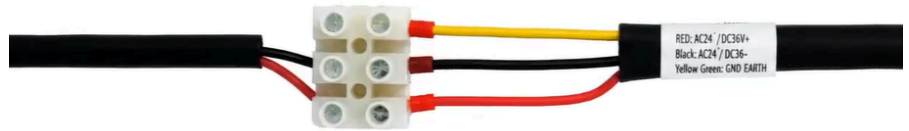
Use this method to connect the dual-lens PTZ camera directly to a PoE port on the back of the NVR.



1. Connect the Ethernet cable.

- Connect the dual-lens PTZ camera's Ethernet connector to an Ethernet extension cable.
- Connect the other end of the Ethernet extension cable to an available PoE port on the back of the compatible NVR.
- You can use a CAT5e or higher Ethernet cable up to 300 ft (91 m). The Ethernet extension cable is not included.
- If the Ethernet connection will be exposed to moisture, install the included weather-resistant RJ45 cable gland over the Ethernet connection. Refer to 4.3 *Installing the Weather-Resistant RJ45 Cable Gland*, page 11.

2. (Optional) Connect the power adapter.



- Use the included power adapter when additional power is required or for full camera functionality while using the heater.
- Locate the dual-lens PTZ camera power wires and the included 6-pin wire connector.
- Insert the dual-lens PTZ camera wires into the appropriate openings on one side of the 6-pin wire connector.
- Insert the red positive wire from the power adapter into the terminal directly opposite the dual-lens PTZ camera's red power wire.
- Tighten the terminal screw to secure the red positive wire.
- Insert the black negative wire from the power adapter into the terminal directly opposite the dual-lens PTZ camera's black power wire.
- Tighten the terminal screw to secure the remaining power adapter wire.
- Connect the power adapter to a suitable power outlet or surge protector.

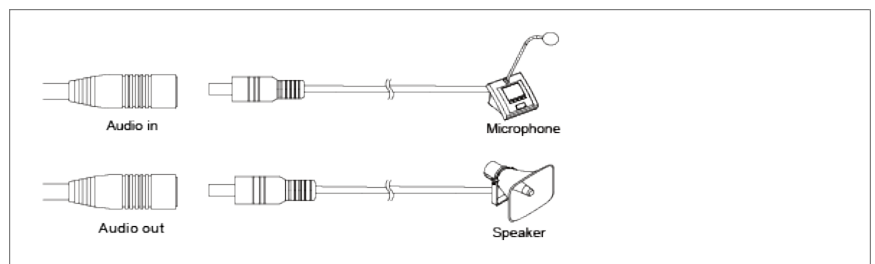
3. (Optional) Connect any optional Audio or Alarm I/O devices as required.



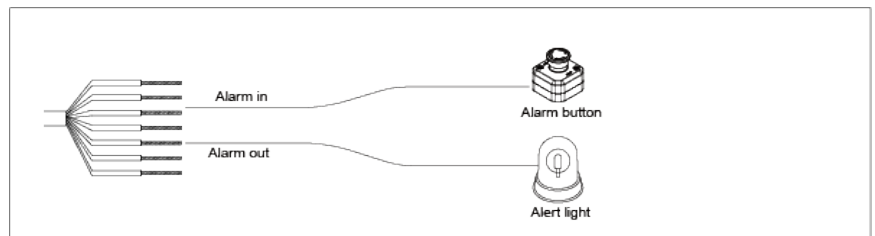
CAUTION

Disconnect all power sources before connecting additional wiring.

- **Audio In / Audio Out:** Connect a microphone or speaker for audio input and output.



- **Alarm I/O wires:** Connect external alarm devices such as sensors or sirens.



When the camera is connected directly to an NVR PoE port, the Fixed Overview Camera appears on the channel corresponding to that PoE port.

The PTZ camera must be added to a second channel. See 4.5.2 *Add the PTZ Camera to a Second Channel*, page 15.

4.5.2 Add the PTZ Camera to a Second Channel

The Fixed Overview Camera and PTZ camera use separate NVR channels.

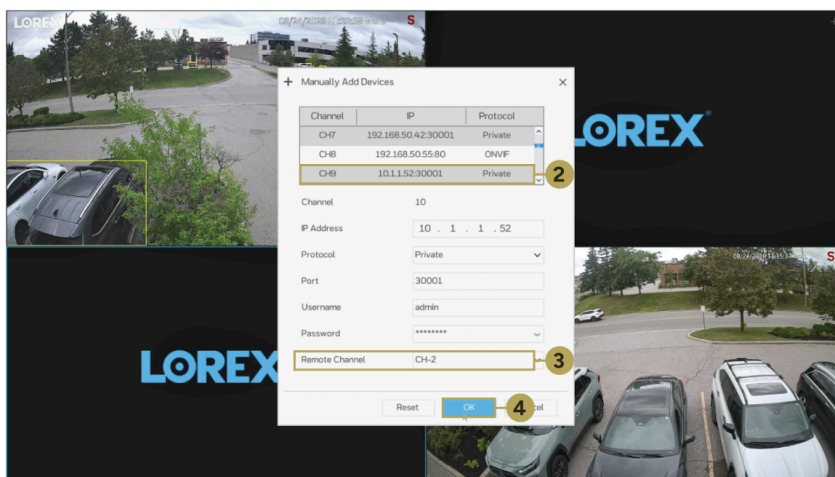
After the Fixed Overview Camera appears in Live View, add the PTZ camera to one additional empty channel.

Add the PTZ Camera

1. In Live View, click the + icon in an empty channel.
 - For easier monitoring, select a channel beside the Fixed Overview Camera channel whenever possible.

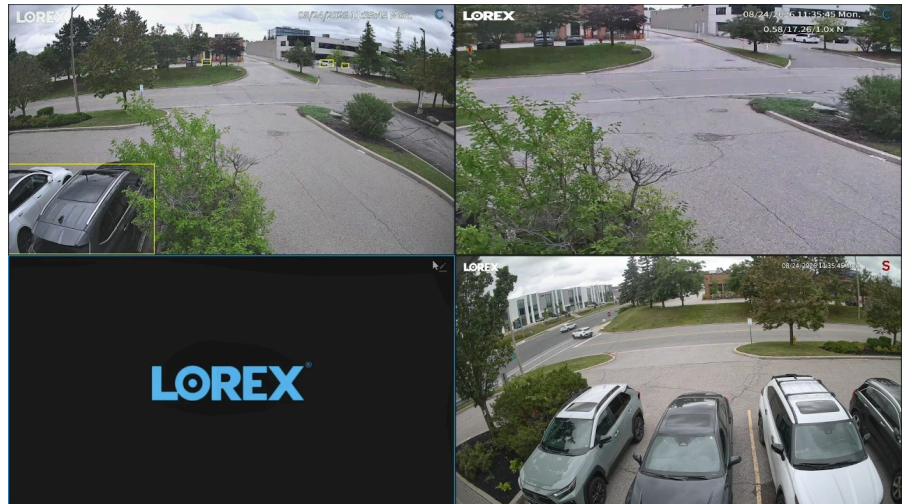


2. The Manually Add Devices window opens. In the device table at the top of the window, locate the channel where the X Dual-Lens PTZ is connected and select it.



3. Open the **Remote Channel** options and select **CH-2**.
4. Click **OK**.

- Wait for the PTZ camera image to appear in the destination channel.



The NVR now displays the two camera views on separate channels:

- The Fixed Overview Camera appears on the channel corresponding to the camera's connection.
- The PTZ camera appears on the destination channel where Remote Channel CH-2 was added.

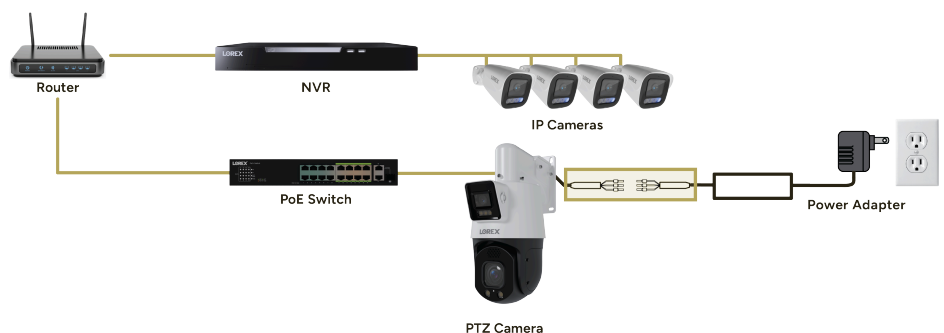
4.5.3 Option 2: Connect the Camera Through a PoE Switch

For added installation flexibility, the camera can also be connected to the same Local Area Network (LAN) as the NVR. In this type of installation, connect the camera through a compatible PoE switch.

A PoE+ connection can power the camera when camera power consumption remains within the available power. For full camera functionality while using the heater, use the included power adapter or a PoE++ switch.

Cameras connected through the LAN must be added manually to the NVR before they will appear in Live View or record to the system.

Connect the Camera to the Network



- Connect the PoE+ switch to your router using an Ethernet cable.
- Connect the NVR's LAN or network port to the same router using an Ethernet cable.
- Connect the PTZ camera to the PoE+ switch using an Ethernet cable.
- If using the included power adapter, connect the camera to the power adapter.
 - Follow the power-adaptor wiring instructions under 4.5.1 *Option 1: Connect the Dual-Lens PTZ Camera Directly to the NVR*, page 13.
- Confirm that the router, PoE switch, NVR, and camera are powered on.
- Allow the camera to complete its startup sequence.

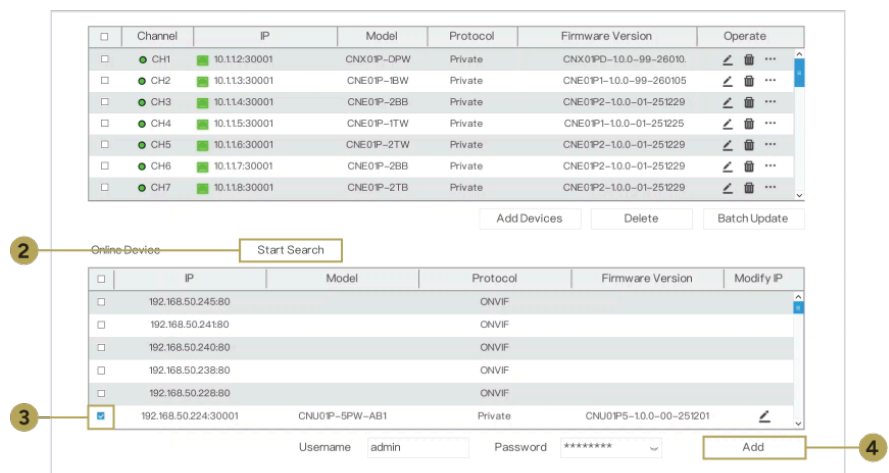
7. Add the X Dual-Lens PTZ to the NVR. Refer to *Add the X Dual-Lens PTZ to the NVR*, page 17.

Add the X Dual-Lens PTZ to the NVR

Cameras connected through the Local Area Network do not appear automatically in Live View. Search for and add the camera through the NVR camera settings.

You must have two empty channels before adding the camera to the NVR.

1. From Live View, right-click twice to open the Main Menu. Then Navigate to **Settings > Channel > Camera**.
2. Click **Search Device**. The NVR will search the network for compatible cameras.



3. Locate the X Dual-Lens PTZ in the search results and select the camera.
4. Click **Add**.
5. Wait for the camera status indicator to turn green.
6. After adding the Fixed Overview Camera, add the PTZ camera to another available NVR channel. See 4.5.2 *Add the PTZ Camera to a Second Channel*, page 15.



NOTE

Both the NVR and the X Dual-Lens PTZ must be connected to the same Local Area Network. If the camera does not appear in the search results, confirm that:

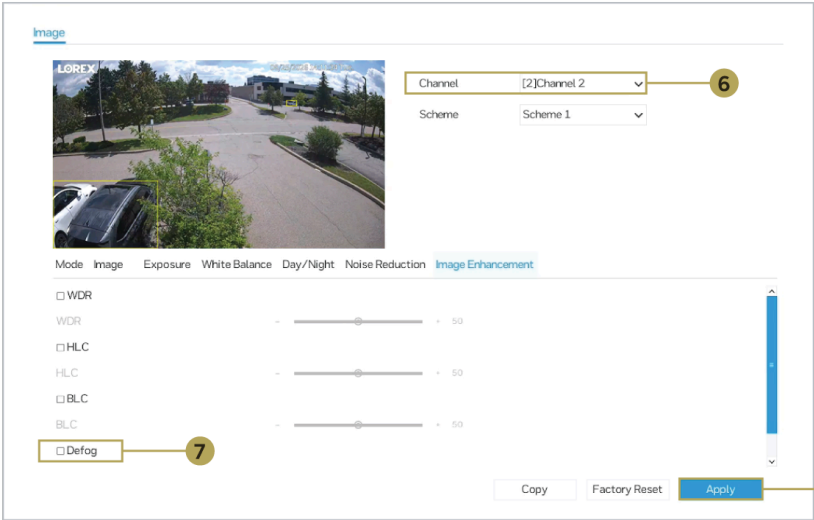
- The dual-lens PTZ camera is receiving power from the PoE switch or included power adapter, as applicable.
- The PoE switch is powered on.
- The dual-lens PTZ camera is connected to the PoE switch.
- The PoE switch is connected to the router.
- The NVR is connected to the same router.
- All Ethernet cables are securely connected.
- The NVR has two available camera channels.
- For more support, refer to 10 *Troubleshooting*, page 39.

4.5.4 Turn Off the Heater (Defog)

The heater is controlled by the **Defog** setting and is disabled by default. If Defog has been enabled and the camera is powered from an NVR PoE port that provides up to 30 W, turn off Defog to reduce camera power consumption.

1. From Live View, right-click twice to open the **Main Menu**.
2. Click **Settings**.
3. Select **Channel** at the top of the window.
4. Select **Image** from the left-side menu.

5. Select the **Image Enhancement** tab.



- 6. Select the PTZ **channel**.
- 7. Clear the **Defog** checkbox.
- 8. Click **Apply** to save the settings.

 **NOTE**

For full camera functionality while using the heater, use the included power adapter or a PoE++ switch.

PTZ (Pan/Tilt/Zoom) cameras are specialty cameras that can move and adjust their viewing angle based on commands from the recorder. You can control PTZ cameras manually in Live View, or configure automatic movements using presets, scans, and tours.

PTZ cameras allow you to **pan, tilt, and zoom** remotely, making them ideal for monitoring large or dynamic areas.

PTZ Control Tips

- Use presets for frequently monitored areas.
- Use tours for continuous monitoring of multiple zones.
- Adjust speed settings for smoother movement.
- Combine PTZ with smart analytics for automation.



NOTE

Preset, Scan, or Tour functions are disabled while Smart Linkage Tracking is active. See 6 *Smart Linkage Tracking*, page 27.

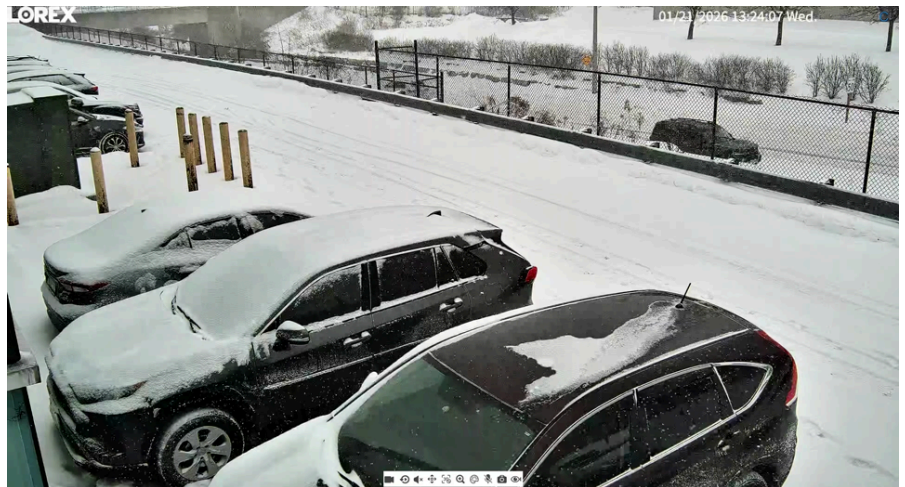
5.1 Open PTZ Controls

PTZ controls are available directly from Live View when a supported PTZ camera is connected.

PTZ controls, presets, scans, and tours apply only to the PTZ camera channel. Select the PTZ camera channel before opening the PTZ controls.

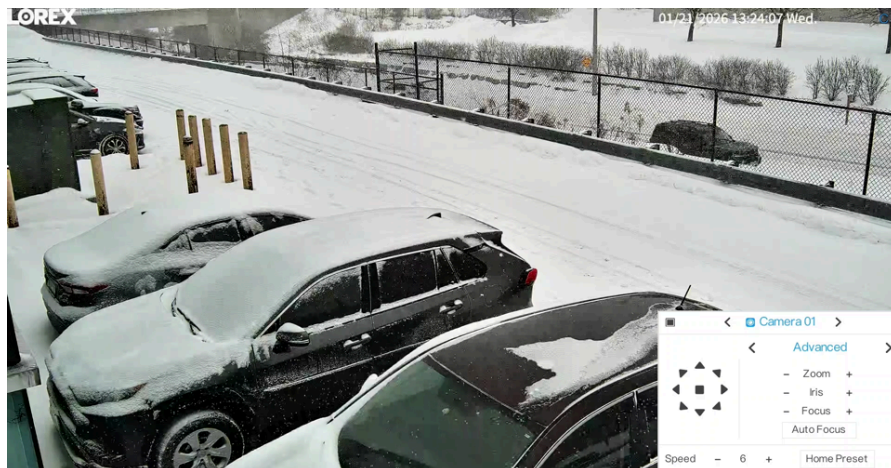
Open PTZ Controls

1. In **Live View**, select a channel with a connected PTZ camera.



2. Click  **PTZ** in the **Quick Camera Toolbar**.

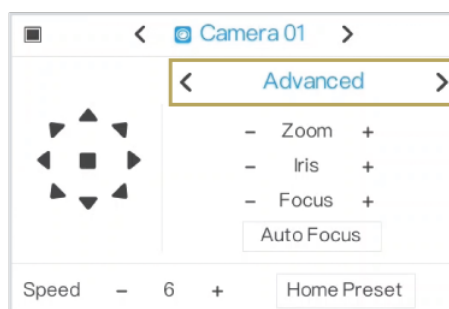
3. The PTZ control panel appears in the bottom-right corner of the screen.



By default, the PTZ panel opens to the **Advanced** menu.

5.2 Switch Between PTZ Menus

To move between PTZ menus

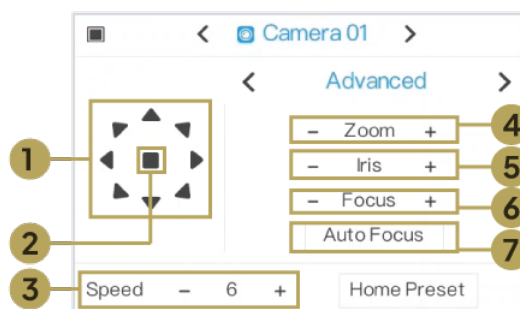


- Click the **arrow button next to the menu name** to cycle through:
 - Advanced**
 - Preset**
 - Scan**
 - Tour**

5.3 Use Advanced PTZ Controls

The **Advanced** menu provides manual control of the PTZ camera.

Available Controls



- 1. **Direction Arrows:** Move the camera up, down, left, right or diagonally to adjust the viewing position
- 2. **Stop:** The button located at the center of the directional arrows is used to **manually stop all PTZ movement**.
- 3. **Speed:** Adjust the speed of **manual camera movement** when using the directional arrows
- 4. **Zoom:** Zoom in or out
- 5. **Iris:** Adjust image brightness (light entering the lens)
- 6. **Focus:** Adjust image sharpness
- 7. **Auto Focus:** Automatically adjust focus

 **NOTE**

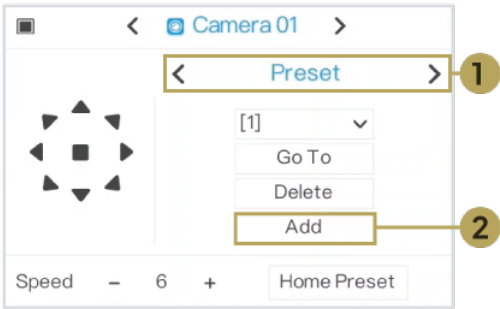
If the PTZ camera is configured with **AI motion detection or auto tracking**, the camera may move automatically when events are triggered. Manual controls may not override this behavior.

5.4 Create and Use Presets

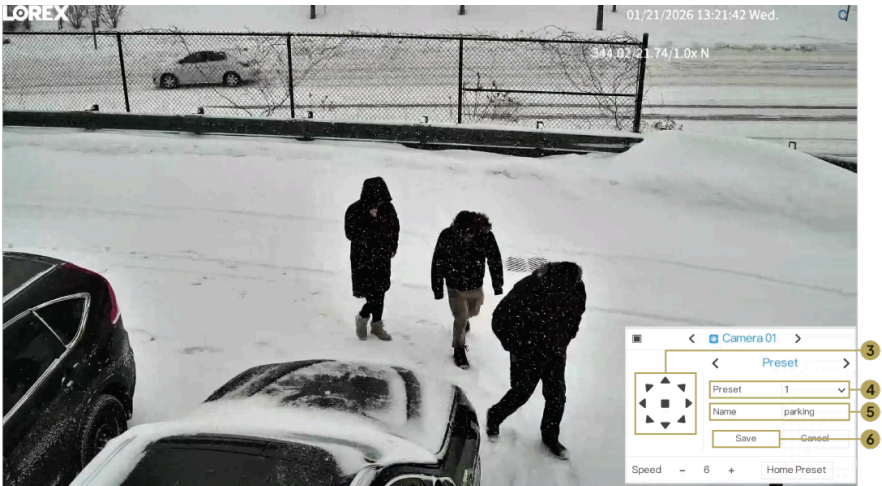
A **Preset** saves a specific camera position for quick access.

To create a preset

- 1. Open the **Preset** menu.



- 2. Click **Add**.



- 3. Use the directional controls to move the camera to the desired position.
- 4. Select a **Preset** number.

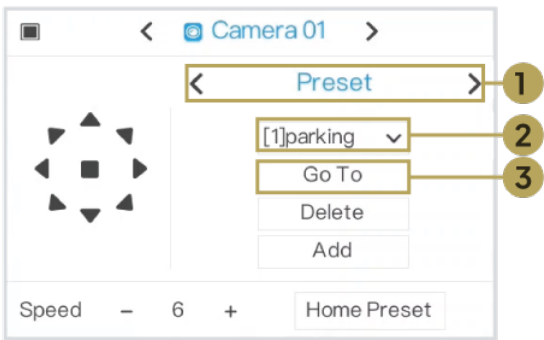
5. Enter a **Name**.

 **NOTE**
Use descriptive preset names when available, such as **Gate Entrance**, **Loading Bay**, or **Parking Lot North**, so operators can easily identify the correct position.

6. Click **Save**.

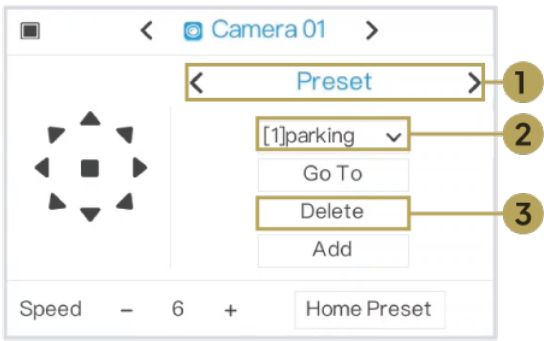
PTZ presets can also be linked to AI detection events. Refer to 8 *IVS / AI Analytics and PTZ Linkage*, page 36.

To go to a preset



- 1. Open the **Preset** menu.
- 2. Select a preset from the list.
- 3. Click **Go To**.

To delete a preset

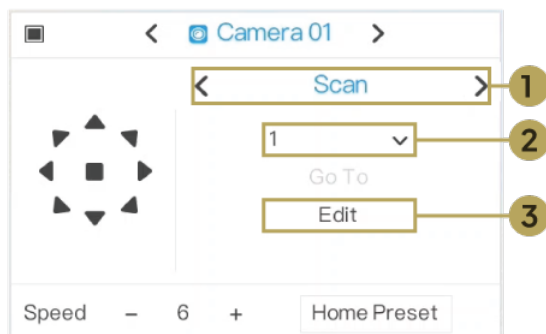


- 1. Open the **Preset** menu.
- 2. Select a preset.
- 3. Click **Delete**.

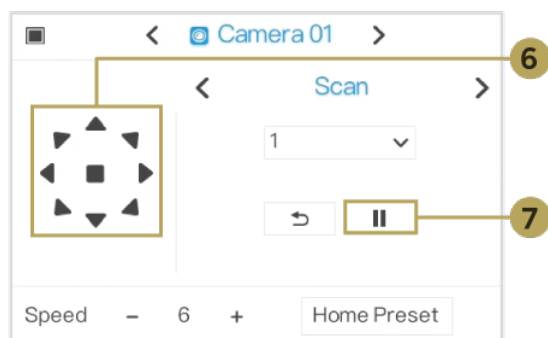
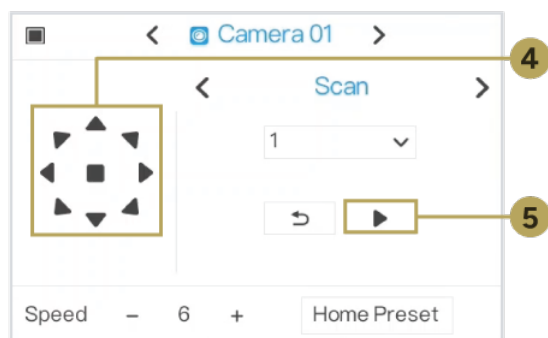
5.5 Create and Run a Scan

A **Scan** moves the camera automatically between two positions.
This is useful for scanning wide areas such as parking lots, driveways, hallways, or perimeters.

To create a scan



1. Open the **Scan** menu.
2. Select a **Scan** number.
3. Click **Edit**.
4. Use the directional arrows to move the camera to the first scan position.
5. Click **Start** to set the first position.



6. Use the directional arrows to move the camera to the next position.
7. Click **Pause** to set the second position and save the scan.

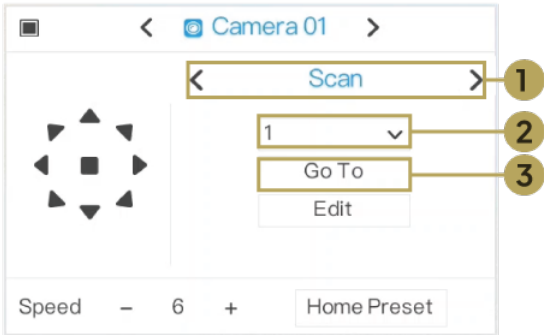
The camera will save the scan between the two defined positions.



NOTE

Scans cannot be deleted from the Scan menu. To change a scan, edit the same scan number and overwrite it with new start and end positions.

To start a scan



- 1. Open the **Scan** menu.
- 2. Select the desired **Scan** number.
- 3. Click **Go To**.

The camera will begin moving between the defined positions.

 **NOTE**

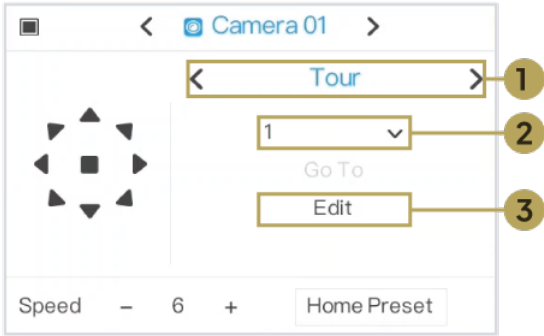
Go To is only available if a scan has already been created for the selected scan number.

5.6 Create and Run a Tour

A **Tour** cycles the camera through multiple preset positions automatically.

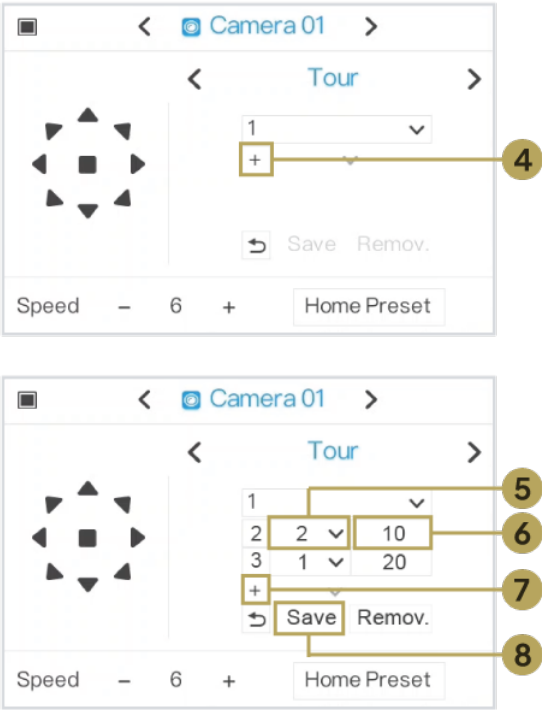
This allows the camera to monitor several areas in sequence.

To create or edit a tour



- 1. Open the **Tour** menu.
- 2. Select a **Tour** number.
- 3. Click **Edit**.

4. Click + to add a preset to the tour.



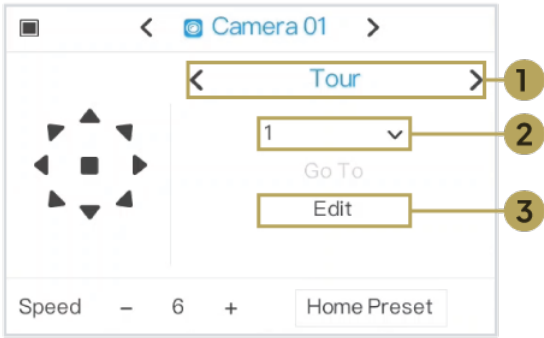
5. Select a **Preset** from the list.
6. Set the **dwell time (in seconds)** for how long the camera will remain at that preset.
7. Repeat steps 4–6 to add additional presets to the tour.
8. Click **Save**.

To start a tour

1. Open the **Tour** menu.
2. Select the desired **Tour**.
3. Click **Go To**.

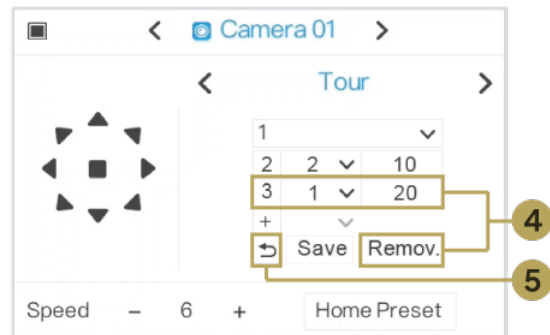
The camera will begin cycling through the saved presets.

To remove all presets from a tour



1. Open the **Tour** menu.
2. Select a **Tour** number.

3. Click **Edit**.



4. **To remove all presets:** Click **Remove All**, then **Save**.

5. Click **Return** to go back.



Smart Linkage Tracking coordinates the Fixed Overview Camera with the PTZ camera. The fixed overview camera monitors the complete scene and detects supported people and vehicles. When a supported target is detected, the PTZ camera moves toward the detected location and follows the target.

Smart Linkage Tracking is limited to the fixed overview camera's field of view. The PTZ camera does not continue following a target through a full 360 degrees after the target leaves the overview image. When the target leaves the fixed overview camera's line of sight, tracking ends.

If a **Start Point** preset has been configured, the PTZ camera returns to that preset after tracking ends and remains there until another supported target is detected. See *5.4 Create and Use Presets*, page 21.

Linkage Calibration should be completed before Smart Linkage Tracking is used. Calibration aligns locations in the overview image with the corresponding pan, tilt, and zoom positions in the PTZ image.



NOTE

While Smart Linkage Tracking is enabled, presets, scans, tours, and independent operation of the two camera views are unavailable. Disable Smart Linkage Tracking to use the PTZ camera's standard automatic functions.

6.1 Configure Smart Linkage Tracking

Open the Smart Linkage Tracking Settings

1. From Live View, right-click twice to open the **Main Menu**.
2. Click **Settings**.
3. Select **Channel** at the top of the window.
4. Select **Auto Tracking** from the left-side menu.
5. Select the **Auto Tracking** tab.

Smart Linkage Tracking Settings

1

2

3

4

5

6

7

8

9

Channel

[9]fixed lens

▼

Auto Tracking

☒

Time Of Duration(s)

-

+

7

Start Point

1

▼

Tracking type

Vehicle Priority

▼

Static Target Filter

☒

Filter Sensitivity(0-100)

50

Tracking Target Highlight

☒

Target Stationary Timeout(1-300)

60

Only available when used with a PTZ camera.

Apply

10

1. **Channel:** Select the fixed overview camera channel associated with the dual-lens PTZ camera.
2. **Auto Tracking:** Enable Smart Linkage Tracking.
3. **Time Of Duration(s):** Set the maximum amount of time the PTZ camera follows a target.
4. **Start Point:** Select the preset position that the PTZ camera returns to after tracking ends. The preset must first be created on the PTZ camera channel. See 5.4 *Create and Use Presets*, page 21.
5. **Tracking type:** Select one of the following:
 - **Person Only:** Tracks moving people only.
 - **Vehicle Only:** Tracks moving vehicles only.
 - **Person or Vehicle:** Tracks both moving people and vehicles.
 - **Person Priority:** Tracks both people and vehicles but gives priority to moving people.
 - **Vehicle Priority:** Tracks both people and vehicles but gives priority to moving vehicles.



NOTE

In a priority mode, the PTZ camera switches to a moving target of the higher-priority type when one is detected. When tracking ends, the camera returns to the selected Start Point.

6. **Static Target Filter:** Enable to reduce tracking of targets that remain stationary.
7. **Filter Sensitivity (0-100):** Adjust the sensitivity of the Static Target Filter.
8. **Tracking Target Highlight:** Enable to highlight the target currently being tracked.
9. **Target Stationary Timeout (1-300):** Set how long a target can remain stationary before tracking ends.
10. Click **Apply** to save the settings.

6.2 Linkage Calibration

Linkage calibration maps points in the fixed overview camera’s image to corresponding PTZ positions. This allows the PTZ camera to move accurately toward an object detected anywhere within the fixed overview camera’s field of view.

Complete linkage calibration:

- After mounting the dual-lens PTZ camera.
- Whenever the dual-lens PTZ camera or wall mount has been moved.
- Whenever the fixed overview camera’s angle is changed.
- If the PTZ camera repeatedly moves to the wrong part of the scene.

 **NOTE**

Adjust the fixed overview camera lens to its final viewing angle before performing calibration. Changing the fixed-lens angle after calibration changes the relationship between the two camera views and requires the calibration to be repeated.

Before you begin

Make sure that:

- Both the fixed overview camera and PTZ channels have been added to the NVR.
- Live video is available from both channels.
- The PTZ camera responds to manual direction and zoom controls. See 5 *PTZ Controls*, page 19.
- The fixed overview camera has been manually adjusted to the required viewing angle.
- The installation is complete and the dual-lens PTZ camera housing is securely fastened.

For best results, select stationary and easily identifiable details in the scene. Do not use people, vehicles, moving trees, or other objects that may change position during calibration.

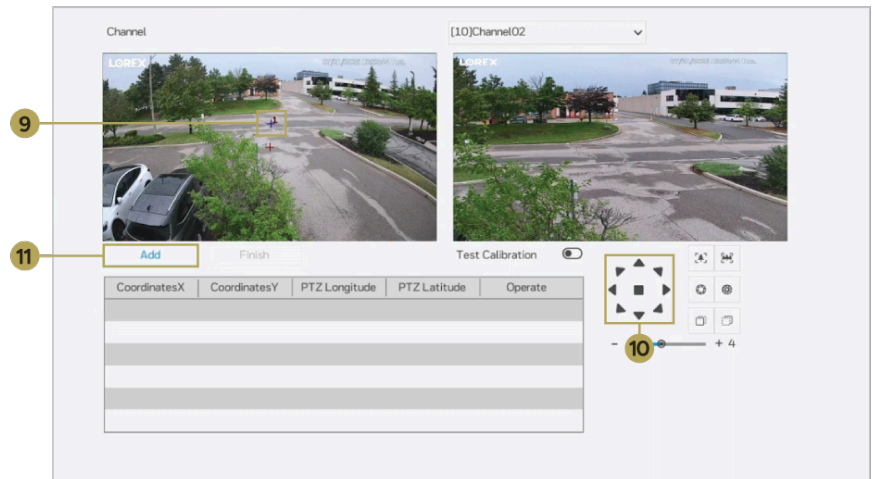
6.2.1 Create the Calibration Points

1. From Live View, right-click twice to open the **Main Menu**.
2. Click **Settings**.
3. Select **Channel** at the top of the window.
4. Select **Auto Tracking** from the left-side menu.
5. Select the **Linkage Calibration** tab.
 - The overview camera view appears on the left and the PTZ view appears on the right.
6. Under **Channel**, select the PTZ camera channel that you want to calibrate.



7. If calibration points are already shown in the table, click the  **Delete** button in the **Operate** column for each point.
 - Delete all existing points, including the five factory calibration points, before creating calibration points for the installed scene.
8. Make sure **Test Calibration** is turned off.

9. Click a clearly identifiable location in the fixed overview camera's image.
 - A numbered crosshair appears at the selected location.



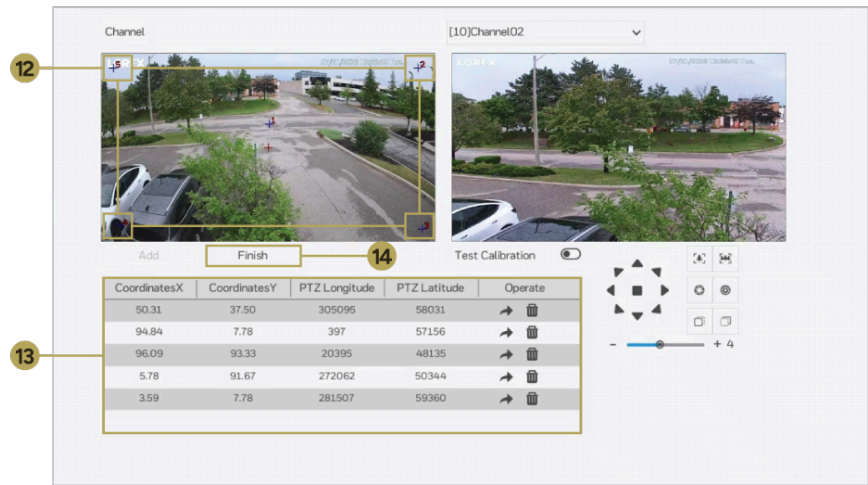
10. Use the PTZ direction and zoom controls to move the PTZ camera until the same location is centered in the PTZ view.
11. Click **Add**.
The calibration point is added to the table. The system automatically records the following values:
 - **CoordinatesX:** Horizontal position of the point in the fixed overview camera image.
 - **CoordinatesY:** Vertical position of the point in the fixed overview camera image.
 - **PTZ Longitude:** Corresponding horizontal PTZ position.
 - **PTZ Latitude:** Corresponding vertical PTZ position.
 - **Operate:** Controls for testing or deleting the saved point.

12. Repeat Steps 9–11 until five points have been created.

Use the following point distribution:

- One point near the center of the fixed overview camera image.
- One point near the upper-left area.
- One point near the upper-right area.
- One point near the lower-left area.
- One point near the lower-right area.

Keep the points inside the usable image area and distribute them across as much of the scene as practical.



13. Confirm that five rows appear in the calibration table.

14. Click **Finish** to save the calibration.

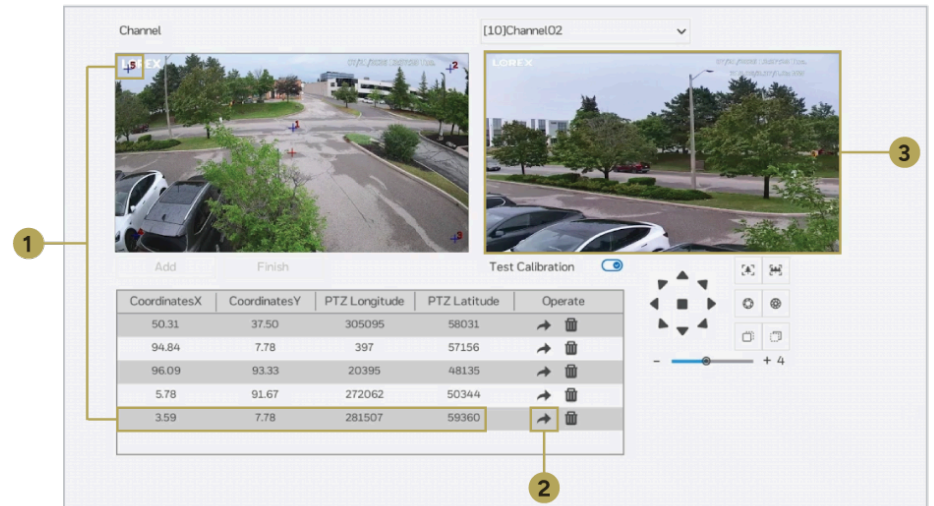
 **NOTE**

The **Add** and **Finish** buttons are unavailable while **Test Calibration** is enabled.

6.2.2 Test the Calibration

After saving the five calibration points, test several locations across the scene.

Test an individual saved point



1. Locate the calibration point in the table.
2. Click the arrow icon in the **Operate** column.
3. Confirm that the PTZ camera moves to the corresponding location and centers it in the PTZ view.

Test another location in the fixed overview camera image



1. Enable **Test Calibration**.
2. Click a location in the fixed overview camera image that is not one of the five saved calibration points.
3. Wait for the PTZ camera to move. Confirm that the selected location is centered, or approximately centered, in the PTZ view.
4. Repeat the test at several locations, including locations near the edges and center of the fixed overview camera image.

If the PTZ camera does not move to the correct area:

1. Turn off **Test Calibration**.
2. Delete the existing calibration points.
3. Confirm that the fixed overview camera has not moved.
4. Repeat the five-point calibration.

-
5. Use more widely distributed and clearly identifiable calibration points.

**NOTE**

If the Linkage Calibration page is blank or the PTZ view is unavailable, confirm that the PTZ channel has been added to the NVR and is online.

6.3 Verify Smart Linkage Tracking in Live View

1. Enable **Auto Tracking** and click **Apply**.
2. Return to **Live View**.
3. Display the overview camera and PTZ camera channels side by side.
4. Allow a supported person or vehicle to move within the fixed overview camera's field of view.
5. Confirm that the fixed overview camera detects the target.
6. Confirm that the PTZ camera moves toward and follows the target.
7. Confirm that tracking stops when the target leaves the fixed overview camera's field of view.
8. If a **Start Point** preset is selected, confirm that the PTZ camera returns to it after tracking ends.
9. If **Person Priority** or **Vehicle Priority** is selected, test both target types and confirm that the higher-priority moving target is followed.

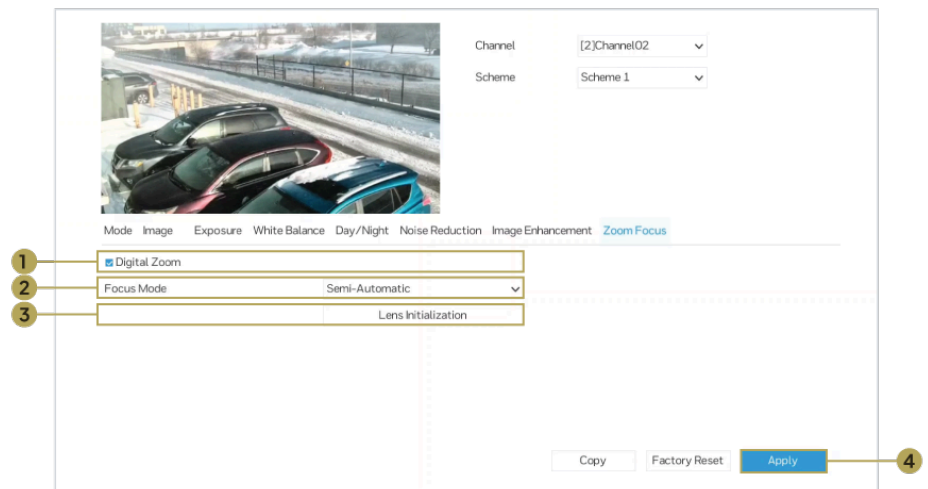
The Zoom Focus settings provide direct control over the PTZ camera's lens behavior, including digital zoom and focus operation modes. These options help optimize image clarity depending on the viewing distance and scene.



NOTE

These motorized zoom/focus controls do not apply to the overview camera channel.

Zoom Focus Settings



1. **Digital Zoom:** Enable or disable digital zoom for the selected PTZ camera channel. When enabled, you can zoom in on the image during live view.
2. **Focus Mode:** Select how the PTZ camera handles focus adjustments:
 - **Auto:** The PTZ camera automatically adjusts focus based on scene changes.
When **Auto** is selected:
 - **Auto Focus Sensitivity:** Adjust how quickly the PTZ camera responds to changes in focus.
 - **Shortest Focus Distance:** Select the minimum focusing distance: 10 m / 6 m / 3 m / 2 m / 1.5 m
 - **Manual:** Focus is adjusted manually using on-screen controls.
When **Manual** is selected:
 - **Zoom Out:** Decrease the zoom level.
 - **Zoom In:** Increase the zoom level.
 - **Near Focus:** Adjust focus for closer objects.
 - **Far Focus:** Adjust focus for distant objects.
 - **Auto Focus Once:** Perform a one-time automatic focus adjustment.
 - **Semi-Automatic:** Allows manual focus adjustments with optional automatic assistance.
3. **Lens Initialization:** Click **Lens Initialization** to reset the lens position. This may help resolve focus issues or recalibrate the PTZ camera.
4. **Apply:** Click **Apply** to save the settings.

Additional Options

- **Copy:** Click **Copy** to apply the current settings to other PTZ camera channels.
- **Factory Reset:** Click **Factory Reset** to restore the default image settings for the selected channel.

	NOTE
If the PTZ camera image remains out of focus after adjustment, see 10 <i>Troubleshooting</i> , page 39.	

The X Dual-Lens PTZ supports integration between IVS / AI analytics and PTZ functionality. An analytics event detected by a supported camera can trigger the PTZ camera to move to a saved preset position.

The camera that detects the event and the PTZ camera that responds are selected separately. For detailed instructions on configuring detection areas, lines, schedules, and event actions, refer to your compatible NVR's instruction manual.

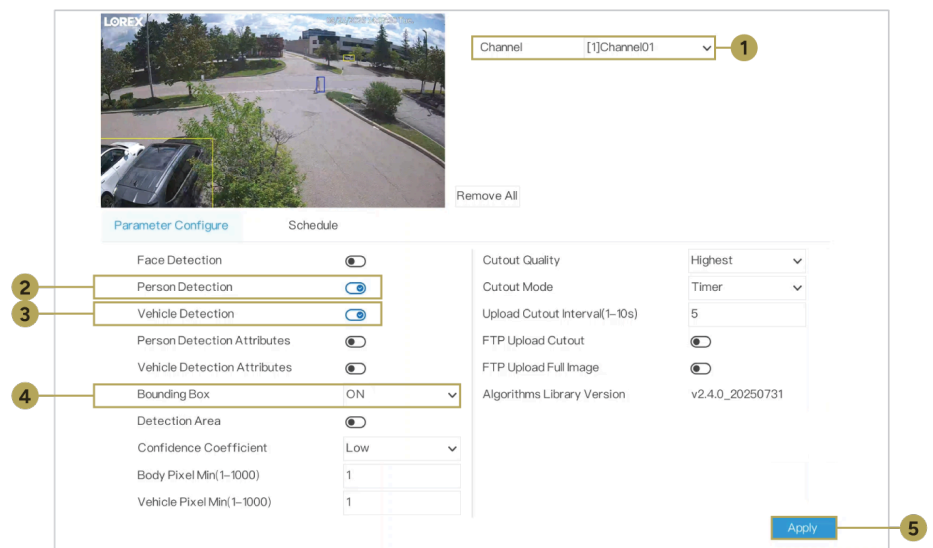
8.1 Display Person and Vehicle Bounding Boxes

The NVR can display a separate bounding box for each detected person and vehicle.

Open AI Multi-Target Settings

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **IVS** tab at the top of the menu.
4. Click **AI Multi-Target** from the left-side menu.

AI Multi-Target Settings



1. **Channel:** Select the Fixed Overview Camera channel.
2. **Person Detection:** Enable Person Detection.
3. **Vehicle Detection:** Enable Vehicle Detection.
4. **Bounding Box:** Set Bounding Box to ON.
5. Click **Apply** to save the settings.

Each detected person and vehicle is displayed with its own bounding box.

8.2 Link PTZ Presets to IVS / AI Analytics Events

An IVS / AI analytics event can trigger the PTZ camera to move to a saved preset position. The analytics source and responding PTZ camera do not need to be part of the same camera.

The analytics source can be:

- The Fixed Overview Camera
- Another compatible IP camera that supports the selected analytics feature

The PTZ camera channel of the X Dual-Lens PTZ cannot be selected as the analytics source and will not appear in the main **Channel** list. It can still be selected as the responding camera under **Event Actions > PTZ**.

Before configuring PTZ linkage, make sure:

- The analytics camera and PTZ camera are online.
- A preset has been created on the PTZ camera channel. See 5.4 *Create and Use Presets*, page 21.
- The selected analytics feature is supported by the analytics camera.

 **NOTE**

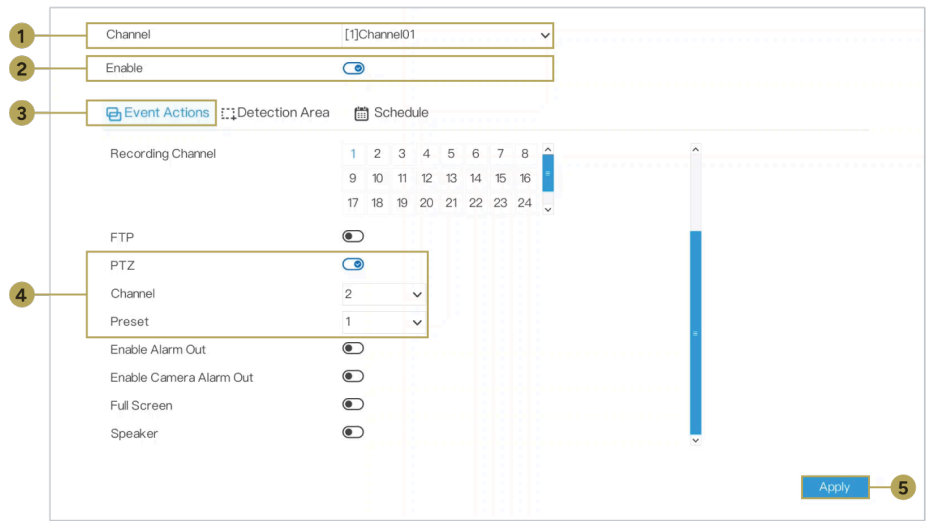
Smart Linkage Tracking overrides IVS / AI-triggered PTZ preset movements. Disable Smart Linkage Tracking before using analytics events to control the PTZ camera.

8.3 Configure PTZ Linkage for an IVS / AI Event

Open IVS / AI Analysis Settings

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **IVS** tab at the top of the menu.
4. Click **Smart Analysis**, **Behavior Analysis**, or **ES Analysis** from the left-side menu.
5. Select the analytics feature you want to configure.

Configure the Analytics Event and PTZ Action



1. **Channel:** Select the camera that will detect the event. This can be the Fixed Overview Camera or another compatible IP camera.
2. **Enable:** Enable and configure the analytics feature.
3. **Event Actions:** Click the **Event Actions** tab.
4. **PTZ:** Enable **PTZ**.
 - **Channel:** Select the PTZ camera channel that should respond to the event.
 - **Preset:** Select the preset position number that the PTZ camera should move to.
5. Click **Apply** to save the settings.

 **NOTE**

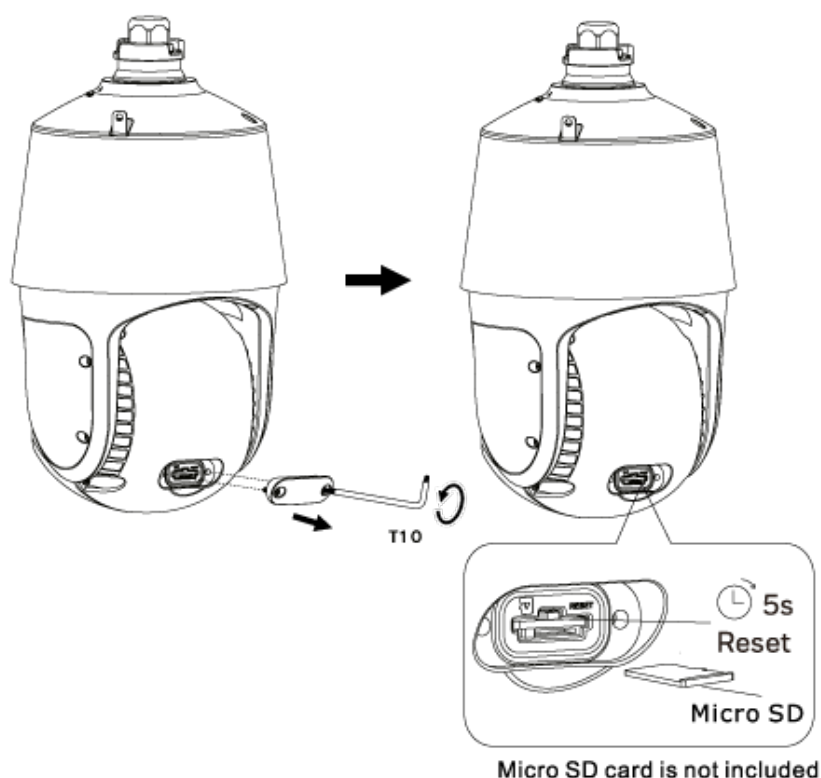
The main **Channel** field selects the camera that detects the analytics event. The **Channel** field under **PTZ** selects the PTZ camera that moves to the configured preset.

Inserting the microSD Card (Optional) and Resetting the Camera

The camera features a hard reset button that is used to reset all camera settings back to the default values. This is useful in case you want to revert camera image settings back to the default values.

To reset the camera:

1. Connect the camera as detailed in 4.5 *Connect the Dual-Lens PTZ Camera*, page 13. Make sure the camera is powered on.
2. Loosen the service panel screws (x2) using the allen key, but do not remove them. Remove the microSD/reset cover.



3. The microSD/reset compartment allows you to perform the following:
 - Insert a microSD card into the microSD card slot. For local recording, you can install a microSD card up to 1 TB.
 - Press and hold the reset button for 5 seconds to reset the camera to default settings.



NOTE

It may take a few minutes for the camera image to reappear on the screen.

1. No image appears at startup

- Allow at least two minutes for the camera to complete its startup sequence.
- Confirm that the camera is receiving power from a supported PoE source or the included power adapter.
- If using the included power adapter, make sure the power adapter wires are connected with the correct polarity. The red positive wire from the power adapter must connect to the terminal opposite the camera's red wire, and the remaining black negative power adapter wire must connect to the terminal opposite the camera's black wire.
- Check that the camera is properly connected. See 4.5 *Connect the Dual-Lens PTZ Camera*, page 13.
- Confirm that the Ethernet cable is connected to a compatible NVR PoE+ port or external PoE+ switch.
- If using a PoE+ switch, confirm that the switch is powered on and connected to the same router as the NVR.
- If the camera is connected through the LAN, make sure the camera and NVR are connected to the same network.
- If the camera is connected through the LAN, add the camera to the NVR manually. See *Add the X Dual-Lens PTZ to the NVR*, page 17.
- Make sure the Ethernet cable is CAT5e or higher and does not exceed 300 ft (91 m).
- Check the Ethernet cable for damage or loose connections. Try a different Ethernet cable if needed.
- If necessary, reset the camera. See 9 *Inserting the microSD Card (Optional) and Resetting the Camera*, page 38.

2. The dual-lens PTZ camera does not appear when searching for devices on the NVR

- Confirm that the camera is receiving power from the PoE connection or included power adapter.
- Confirm that the camera, PoE+ switch, router, and NVR are powered on and properly connected.
- Make sure the camera and NVR are connected to the same local network.
- Confirm that the NVR has two available channels for the Fixed Overview Camera and PTZ camera.
- Check that the Ethernet cable is securely connected to the camera, PoE+ switch, router, or NVR.
- If using a PoE+ switch, confirm that the switch is powered on and connected to the router.
- If using the included power adapter, confirm that the camera is also connected to the router using an Ethernet cable.
- Restart the camera, and then select **Search Device** again.
- For the most up-to-date list of compatible NVRs, visit lorex.com/compatibility.

3. Only the Fixed Overview Camera appears

The Fixed Overview Camera and PTZ camera use separate NVR channels. The Fixed Overview Camera normally appears first. The PTZ camera must be added manually.

- Confirm that one additional NVR channel is available.
- In Live View, click + on an empty channel.
- Select the channel associated with the X Dual-Lens PTZ.
- Set **Remote Channel** to **CH-2**.
- Click **OK**.

See Section 4.5.2 *Add the PTZ Camera to a Second Channel*, page 15.

4. PTZ controls are not responding

- Make sure the PTZ camera channel is selected, not the Fixed Overview Camera channel.
- Confirm that the PTZ camera channel is online and displaying video.
- Wait until the camera finishes its startup sequence before using PTZ controls.
- If Smart Linkage Tracking is operating, disable it before using the PTZ camera independently.
- If a Scan or Tour is running, stop the automatic PTZ action before using manual controls.
- Check that the camera is connected to a compatible NVR.
- If the camera is connected through the LAN, make sure it has been successfully added to the NVR.
- Check the network connection and Ethernet cable.

5. Some camera functions are limited when powered from the NVR PoE port

- A compatible NVR PoE port can provide up to 30 W. If camera power requirements exceed the available power, certain functions may be limited.
- The heater is disabled by default. If the heater has been enabled, turn off **Defog** when operating the camera from an NVR PoE port that provides up to 30 W.
 - From Live View, right-click twice to open the **Main Menu**.
 - Navigate to **Settings > Channel > Image > Image Enhancement**.
 - Clear the **Defog** checkbox.
 - Click **Apply** to save the settings.
- For full camera functionality while using the heater, use the included power adapter or a PoE++ switch.

6. The PTZ camera moves on its own

- Smart Linkage Tracking may be enabled. The camera can automatically pan, tilt, and zoom to follow supported targets. See 6 *Smart Linkage Tracking*, page 27.
- A Scan or Tour may be running. Stop the Scan or Tour from the PTZ controls. See 5 *PTZ Controls*, page 19.
- An IVS / AI analytics event may be triggering a saved PTZ preset. See 8 *IVS / AI Analytics and PTZ Linkage*, page 36.

7. Smart Linkage Tracking is not working

- Make sure Smart Linkage Tracking is enabled for the correct camera channel. See 6 *Smart Linkage Tracking*, page 27.
- Confirm that both the Fixed Overview Camera and PTZ camera channels are online.
- Complete Linkage Calibration before using Smart Linkage Tracking. See 6.2 *Linkage Calibration*, page 28.
- Make sure the target is moving within the Fixed Overview Camera's field of view.
- Confirm that the correct **Tracking type** is selected.
- Review **Time Of Duration(s)**, **Static Target Filter**, **Filter Sensitivity**, and **Target Stationary Timeout**.
- Remember that tracking ends when the target leaves the Fixed Overview Camera's field of view.

8. The PTZ camera does not return to the Start Point

- Create a preset on the PTZ camera channel. See 5 *PTZ Controls*, page 19.
- Select the preset under **Start Point** in the Auto Tracking settings.
- Click **Apply**.
- Test the preset using **Go To**.
- Review **Time Of Duration(s)** and **Target Stationary Timeout**.

9. Presets, scans, or tours do not operate

- Select the PTZ camera channel before opening the PTZ controls.
- Disable Smart Linkage Tracking. Presets, scans, and tours are unavailable while Smart Linkage Tracking is enabled.
- Confirm that the preset, scan, or tour has been saved correctly. See 5 *PTZ Controls*, page 19.

10. PTZ linkage is not working with an IVS / AI analytics event

- Disable Smart Linkage Tracking. Smart Linkage Tracking overrides IVS / AI-triggered PTZ preset movements.
- Confirm that the selected analytics feature is supported by the camera detecting the event.
- In the main **Channel** field, select the camera that will detect the event.
- Confirm that the analytics feature is enabled and that its detection area, detection line, and schedule are configured correctly.
- Under **Event Actions**, enable **PTZ**.
- Under **PTZ > Channel**, select the PTZ camera channel that should respond.
- Select an existing PTZ preset.
- Test the preset manually using **Go To**.
- See Section 8 *IVS / AI Analytics and PTZ Linkage*, page 36.

11. IVS / AI analytics are not detecting events

- Confirm that the selected analytics feature is supported by the camera and compatible NVR.
- Make sure the feature is enabled.
- Confirm that the correct analytics source camera is selected in the main **Channel** field.
- Check the detection area, detection line, target type, direction, sensitivity, and time threshold, as applicable.
- Confirm that the event schedule is active.
- Position the camera so that targets move across the detection area or line whenever possible.
- Check for poor lighting, glare, rain, snow, fog, obstructions, or a dirty lens.

12. Person or vehicle bounding boxes do not appear

- Open **Settings > IVS > AI Multi-Target**.
- Select the Fixed Overview Camera channel.
- Enable **Person Detection** and **Vehicle Detection**.
- Set **Bounding Box** to **ON**.
- Click **Apply**.

See 8 *IVS / AI Analytics and PTZ Linkage*, page 36.

13. The Linkage Calibration page is blank or calibration is inaccurate

- Confirm that both the Fixed Overview Camera and PTZ camera channels have been added and are online.
- Confirm that the PTZ camera responds to manual PTZ controls.
- Adjust the Fixed Overview Camera lens to its final angle before calibrating.
- Delete existing calibration points before creating a new calibration.
- Create five calibration points distributed near the center and four corners of the Fixed Overview Camera image.
- Click **Finish**, and then test several locations across the image.
- Repeat calibration after moving the camera or adjusting the fixed lens.

See 6.2 *Linkage Calibration*, page 28.

14. The PTZ camera image is out of focus

- Use Auto Focus from the PTZ Advanced menu. See 5 *PTZ Controls*, page 19.
- Check the Zoom and Focus settings. See 7 *Zoom and Focus Settings*, page 34.
- If using Manual focus, adjust **Near Focus** or **Far Focus**.
- Use **Auto Focus Once** to perform a one-time focus adjustment.
- Run **Lens Initialization**.
- Clean the lens with a soft, slightly damp cloth.
- Avoid pointing the camera directly at intense light sources.

15. The image is too bright, too dark, or unclear at night

- Adjust brightness, contrast, and WDR settings on the NVR.
- Avoid pointing the camera directly at sunlight, spotlights, or headlights.
- Clean the camera lens area.
- Check for nearby walls, eaves, or other surfaces reflecting IR light into the lens.
- Check for rain, snow, fog, dust, or insects near the camera.
- Reposition the camera or add ambient lighting if necessary.
- The camera may use black-and-white IR night vision when there is not enough ambient light for color video.

16. Motion detection or event recording triggers constantly

- Camera movement caused by manual PTZ control, Smart Linkage Tracking, a Scan, a Tour, or PTZ linkage may be detected as video motion.
- Adjust motion-detection sensitivity or detection areas.
- Use Person or Vehicle filtering when available.
- Avoid aiming the camera at moving trees, flags, traffic, reflections, or other sources of repeated motion.

17. Audio or two-way talk is not working

- Confirm that audio is enabled on the NVR.
- Select the correct camera channel.
- Check the microphone, speaker, and volume settings.
- If using external audio devices, confirm that the Audio In and Audio Out connections are secure.
- Confirm that the NVR, app, or client software is not muted.



CAUTION

Audio recording is disabled by default and must be used in compliance with applicable laws and regulations.

18. The deterrence light, siren, or pre-recorded message does not activate

- Confirm that the deterrence action is enabled for the selected event.
- Check the event's **Event Actions** settings.
- Confirm that the event schedule is active.
- Make sure the event is being detected.
- If using a pre-recorded message, confirm that an audio file is selected.
- Test the deterrence feature manually, if supported by the NVR.

19. The microSD card is not detected or local recording is not working

- Confirm that the microSD card is inserted correctly.
- Make sure the microSD card capacity does not exceed 1 TB.
- Format the card through the camera interface, if required.
- Restart the camera after inserting the card.

See 9 *Inserting the microSD Card (Optional) and Resetting the Camera*, page 38.

20. The camera does not reset

- Confirm that the camera is receiving power and is powered on.
- Press and hold the reset button for five seconds.
- Allow several minutes for the camera to restart and reappear on the network.
- After resetting, camera settings return to their default values and may need to be configured again.
- If the camera was connected through the LAN, it may need to be added to the NVR again.

11.1 Technical Specifications

Camera

Image Sensor	PTZ Camera: 5MP 1/2.8" CMOS Overview Camera: 4MP 1/1.8" CMOS
Max Resolution	PTZ Camera: 5MP (2592 × 1944) Overview Camera: 4MP (2592 × 1520)
Max Frame Rate	30 fps
Aspect Ratio	PTZ Camera: 4:3 Overview Camera: 16:9
Wide Dynamic Range	120 dB True WDR
Min Illumination	PTZ Camera: Color: 0.005 lux Overview Camera: Color: 0.001 lux B/W (IR On): 0 lux
Signal-to-Noise Ratio	55 dB

Lens

Type	PTZ Camera: Motorized Varifocal Overview Camera: Fixed
Focal Length / Aperture	PTZ Camera: 5.3-159 mm / F1.6-F4.3 Overview Camera: 2.8mm / F1.0
Optical Zoom	30×
Field of View	PTZ Camera: Diagonal: 67.4°-3.28° Horizontal: 56.8°-2.6° Vertical: 42.7°-2.0° Overview Camera: Diagonal: 115.7° Horizontal: 112° Vertical: 60°

DORI Distance

Detect	PTZ Camera: 337.93-7157.8 ft (103-2181.7 m) Overview Camera: 213.3 ft (65 m)
Observe	PTZ Camera: 135.17-2886.2 ft (41.2-879.7 m) Overview Camera: 85.3 ft (26 m)
Recognize	PTZ Camera: 67.59-1431.56 ft (20.6-436.34 m) Overview Camera: 42.7 ft (13 m)
Identify	PTZ Camera: 33.79-715.78 ft (10.3-218.17 m) Overview Camera: 21.3 ft (6.5 m)

Video

Compression	Nano Codec (Enhanced H.265 Compression), H.265, H.264, MJPEG
Video Streams	Main / Sub / Third Stream
Bit Rate Control	CBR / VBR
Video Format	NTSC

Audio

Microphone	Yes
Speaker	Yes
Two-Way Talk	Yes

Night Vision	
IR Night Vision	Yes Up to 656 ft (200 m) in total darkness
Color Night Vision	Yes
AI Smart Features	
Detection	Person, Vehicle, Intrusion, Loitering, Wrong-Way, Unauthorized Parking, Smoke and Fire, Perimeter
Perimeter Protection	Line-Crossing, Dual-Line Crossing
Tracking & Monitoring	Smart Motion, Smart Linkage Tracking
Crowd Analytics	People Counting
Active Deterrence	White Light, Siren, Pre-Recorded Messages1
Network & Connectivity	
Interface	RJ45 (10/100 Base-T)
Protocols / Integration	ONVIF Profiles S/T/G/M, RTSP
Storage & Power	
Local SD Storage	MicroSD Slot (Up to 1 TB)*
Alarm I/O	2 Inputs / 2 Outputs
Power Supply	24V AC / 36V DC / PoE+ (IEEE 802.3at)
Power Consumption	Up to 40 W (PoE)
Power Adapter Input Cable Length	4.9 ft (1.5 m)
Power Adapter Output Cable Length	6.6 ft (2.0 m) ± 2 in (5 cm)
Physical	
Housing Material	Aluminum Alloy
Color	White
Camera Dimensions (W × D × H)	6.93 × 8.32 × 11.96 in (176.0 × 211.3 × 303.9 mm)
Camera Weight	9.92 lb (4.5 kg)
Environmental	
IP Rating	IP66
Operating Temperature	-40°F to 140°F (-40°C to 60°C)
Operating Humidity	≤ 90% RH

Disclaimers

1. For full camera functionality while using the heater, use the included power adapter or a PoE ++ switch.
2. Compatible with select Lorex Network Video Recorders. For a full list of compatible recorders visit: lorex.com/compatibility.
3. Color nighttime video typically switches to black & white IR night vision when there is not sufficient ambient light to ensure optimal low-light image quality.
4. Stated IR illumination range is based on ideal conditions in typical outdoor nighttime ambient lighting up to 656 ft / 200 m in total darkness. Actual range and image clarity depends on installation location, viewing area and light reflection/absorption.
5. Audio recording is disabled by default. Audio recording without consent is illegal in certain jurisdictions. Lorex Technology does not assume liability for any use of its product that fails to conform with local laws.
6. Not intended for submersion in water. Installation in a sheltered location recommended.

*A microSD card can be inserted for independent recording. Data can be accessed through the camera using a web browser but will not upload to the NVR or to the cloud for mobile app viewing.

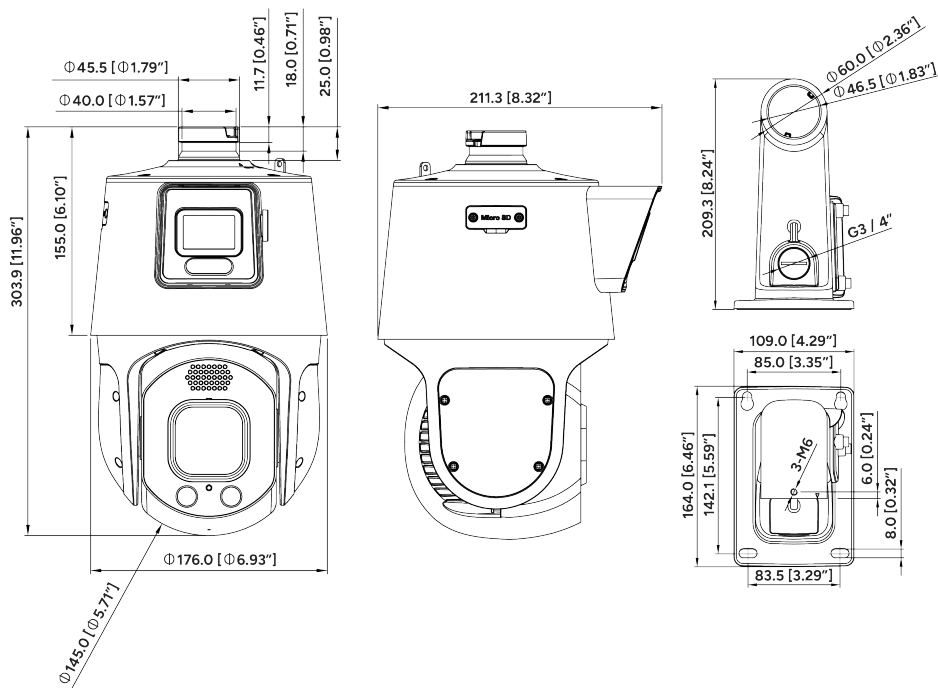
Lorex products are designed for consumer and business use only and not for US federal governments, federally-funded projects or contractors subject to NDAA.



CAUTION

- Fire detection may produce false positives or miss actual fire events and should not be relied upon as a sole or fully accurate life-safety solution.

11.2 Dimensions





Website

www.lorextechnology.com

Copyright

© 2026, Lorex Corporation

All rights reserved worldwide. Names and marks appearing herein are either registered trademarks or trademarks of Lorex Corporation and/or its subsidiaries. All other trademarks, trade names or company names referenced herein are used for identification only and are the property of their respective owners.

Legal disclaimer

As our product is subject to continuous improvement, Lorex Corporation & subsidiaries reserve the right to modify product design, specifications & prices without notice and without incurring any obligation.E&OE.

Publ. No.:
Release: 3.0
Commit: 63571
Head: 63571
Language: en-US
Modified: 2026-10-08
Formatted: 2026-10-08