Instruction Manual
X PTZ 4K — CNX01P-DPW-AB1

Instruction Manual
X PTZ 4K — CNX01P-DPW-AB1

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

CNX01P-DPW-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
4 Installation 4
4.1 Installation notes 4
4.2 Mounting the Camera 4
4.3 Installing the Weather-Resistant RJ45 Cable Gland 10
4.4 Removing the Camera 11
4.5 Connect the Camera 12
4.5.1 Option 1: Connecting the Camera to an NVR 12
4.5.2 Option 2: Connecting the Camera to the Local Area Network (LAN) 13
5 PTZ Controls 16
5.1 Open PTZ Controls 16
5.2 Switch Between PTZ Menus 17
5.3 Use Advanced PTZ Controls 17
5.4 Create and Use Presets 18
5.5 Create and Run a Scan 19
5.6 Create and Run a Tour 21
6 Auto Tracking 24
6.1 Auto Tracking Configuration 24
7 Zoom and Focus Settings 26
8 IVS / AI Analytics and PTZ Linkage 27
8.1 Link PTZ Presets to IVS Analytics Events 27
8.2 Configure PTZ Linkage for an IVS Event 27
9 Inserting the microSD Card (Optional) and Resetting the Camera 29
10 Troubleshooting 30
11 Technical Specifications 34
11.1 Technical Specifications 34
11.2 Dimensions 36

1 Introduction

1.1 Overview

The X PTZ 4K Camera is a high-performance surveillance solution designed for advanced security applications. Featuring remote pan, tilt, and zoom (PTZ) functionality, the camera enables wide-area monitoring with precision control.

The camera supports Auto Tracking, AI analytics, and long-range optical zoom, making it ideal for commercial and industrial environments.

1.2 Key Features

- 4K Ultra HD resolution (3840 × 2160)
- 30× optical zoom with motorized lens
- Remote PTZ control (pan / tilt / zoom)
- Auto tracking for person and vehicle detection
- AI analytics (intrusion, line crossing, etc.)
- IR night vision range up to 250 m (820 ft)
- Active deterrence (red and blue light, siren)
- PoE+ (Power over Ethernet)
- MicroSD local storage (up to 1 TB, not included)

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.

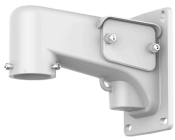
2 Safety Instructions

- 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 34.
- 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.
- 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 Getting Started

3.1 Package Contents

Your PTZ camera package includes the following accessories:

PTZ Camera			
 Wall Mount	Camera Safety Cable	Power Adapter and Cable	4 × Expansion Bolts
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		

4 Installation

Before permanent installation, connect the camera to the NVR and test video and PTZ control operation. See 4.5 *Connect the Camera* , page 12.

4.1 Installation notes

- Ensure the mounting surface can support the weight of the camera, wall mount, and mounting hardware. The camera weighs 8.82 lb (4 kg).
- This camera is rated for outdoor use (IP66) when properly installed.
- Do not install the camera in areas exposed to direct, intense light sources.
- Plan cable routing in advance and ensure all cables are protected from moisture and physical damage.
- It is recommended to install the camera in a sheltered location (for example, under eaves) to prolong product life.
- Use appropriate safety equipment when installing at height.

NOTE

Always connect the included camera safety cable during installation to prevent accidental drops.

4.2 Mounting the Camera

Follow these steps to install the camera:

CAUTION

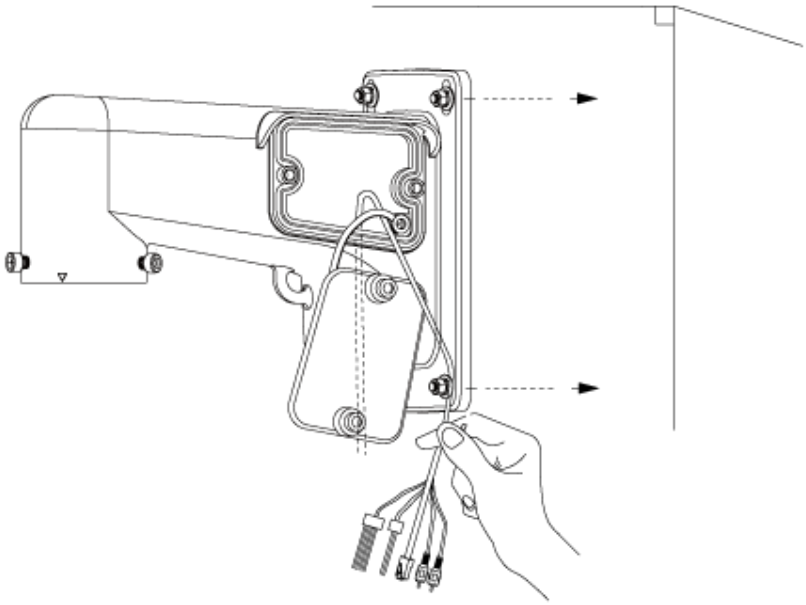
- Do not connect power until installation is complete.
- The camera may begin moving automatically when powered on.

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.

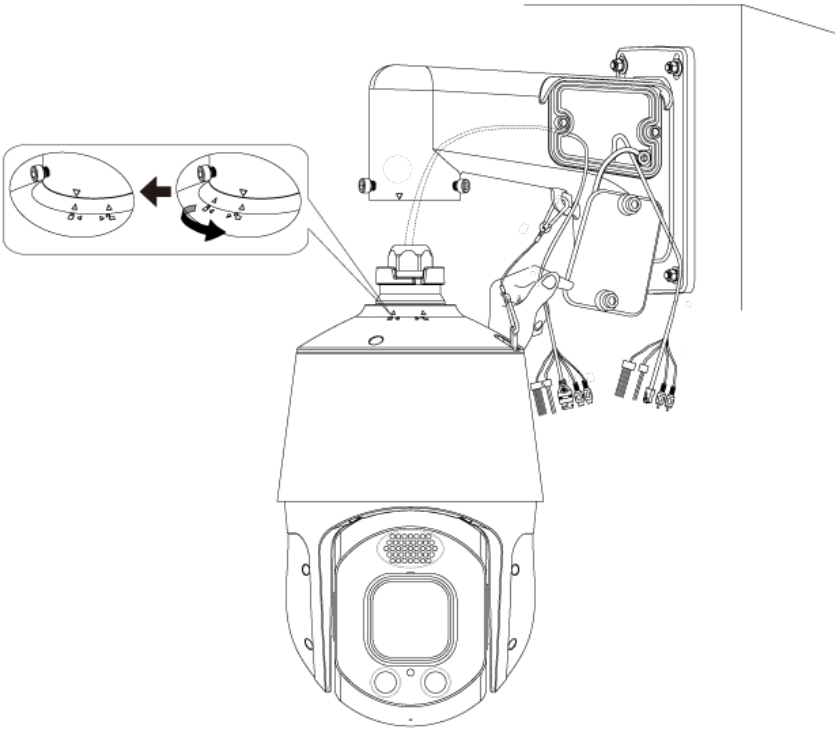
1. Use the wall mount to mark the mounting holes on the installation surface.
2. Drill holes at the marked positions. Ensure the hole diameter and depth match the size of the included expansion bolts.
3. Prepare the expansion bolts:
   - Remove the nut and washers from each bolt.
   - Keep the washers and nuts for reinstallation.
4. 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.)

5. 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.



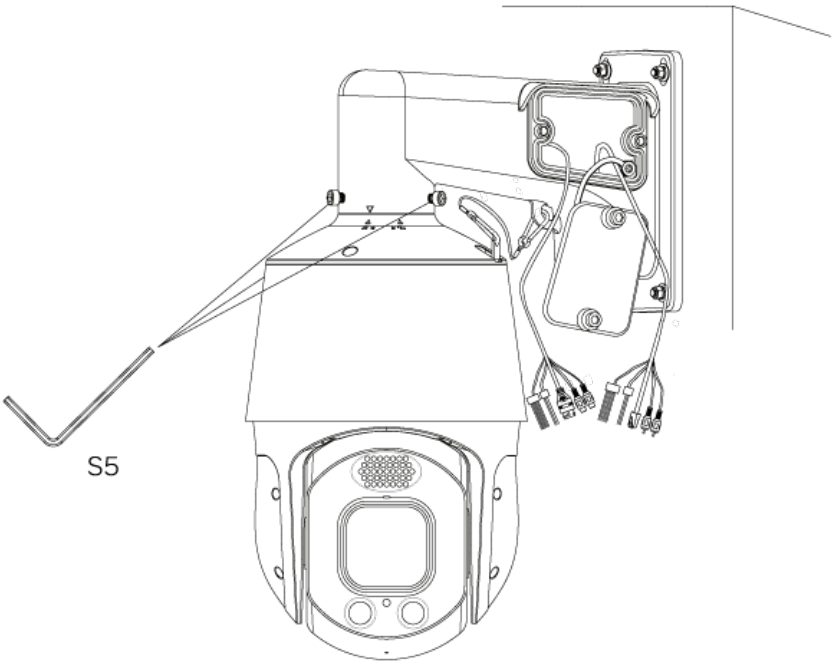
6. Use the included **Torx key** to open the cable compartment on the side of the wall mount. The cover will remain attached to the mount.
7. Pull the required cables from the mounting surface through the wall mount opening and into the cable compartment.

8. Attach the included **camera safety cable** between the camera and the wall mount.

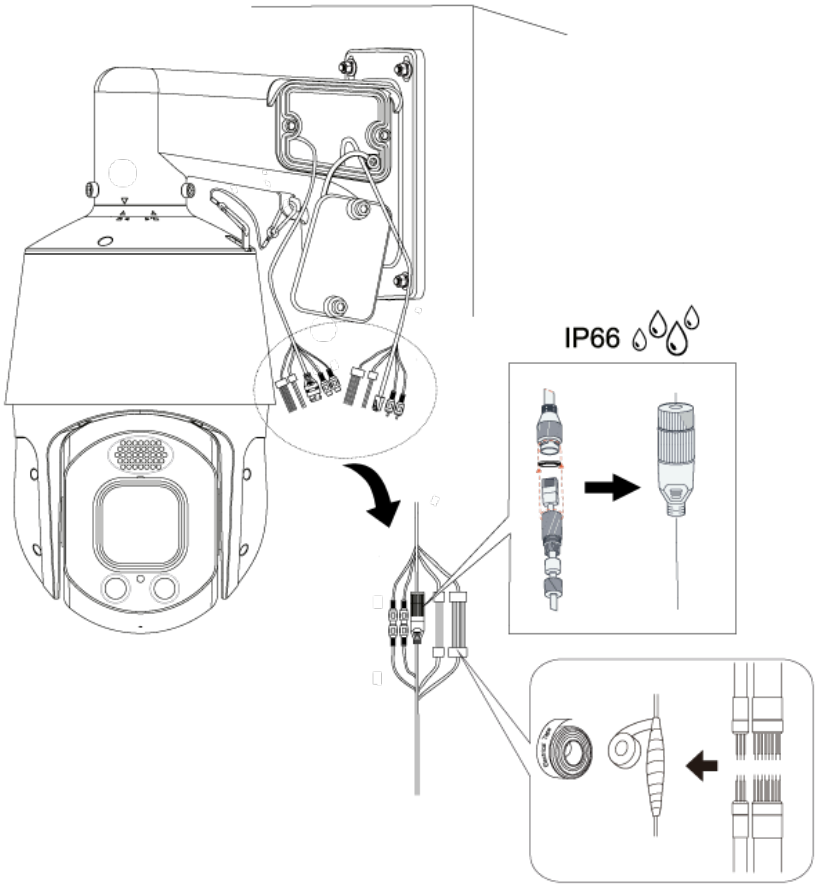


9. Lift the camera and insert the top of the camera into the wall mount bracket.
10. Pull the camera cables through the wall mount so they extend out of the cable compartment.
11. Align the **unlock symbol** on the camera with the arrow on the wall mount.
12. Slide the camera until the **lock symbol**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

13. Secure the camera to the wall mount using the included **3 wall mount screws** and the Torx key.

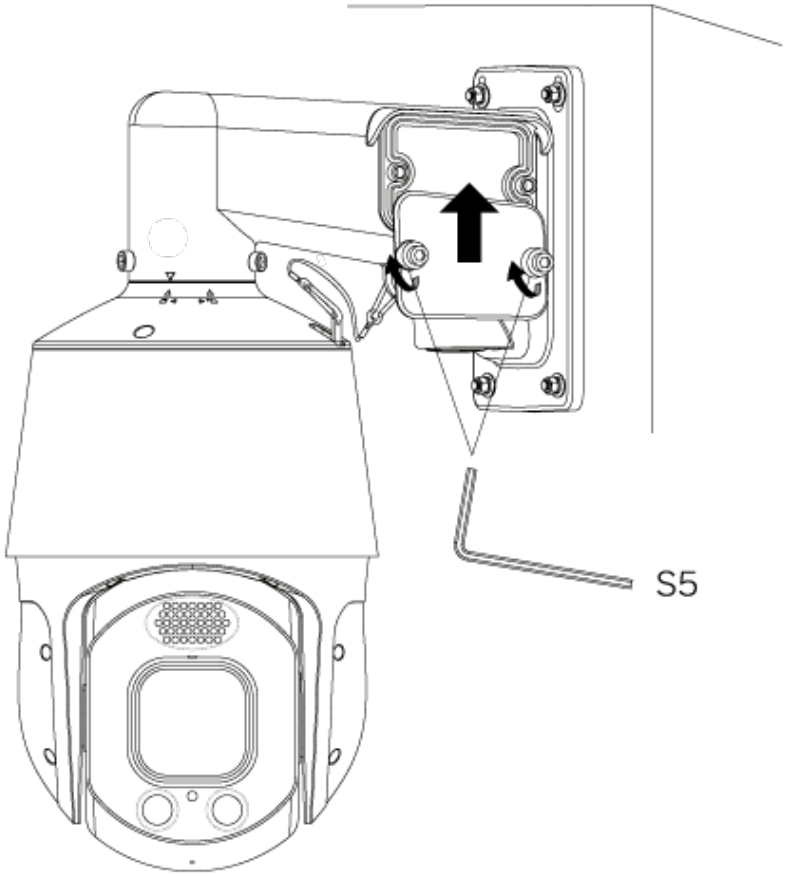


14. Connect all required cables, including PoE, power, and optional I/O connections as needed.
    - If using the Ethernet connection outdoors or in a damp location, install the included **weather-resistant RJ45 cable gland** over the Ethernet connection to help protect it from moisture. Refer to 4.3 *Installing the Weather-Resistant RJ45 Cable Gland*, page 10.



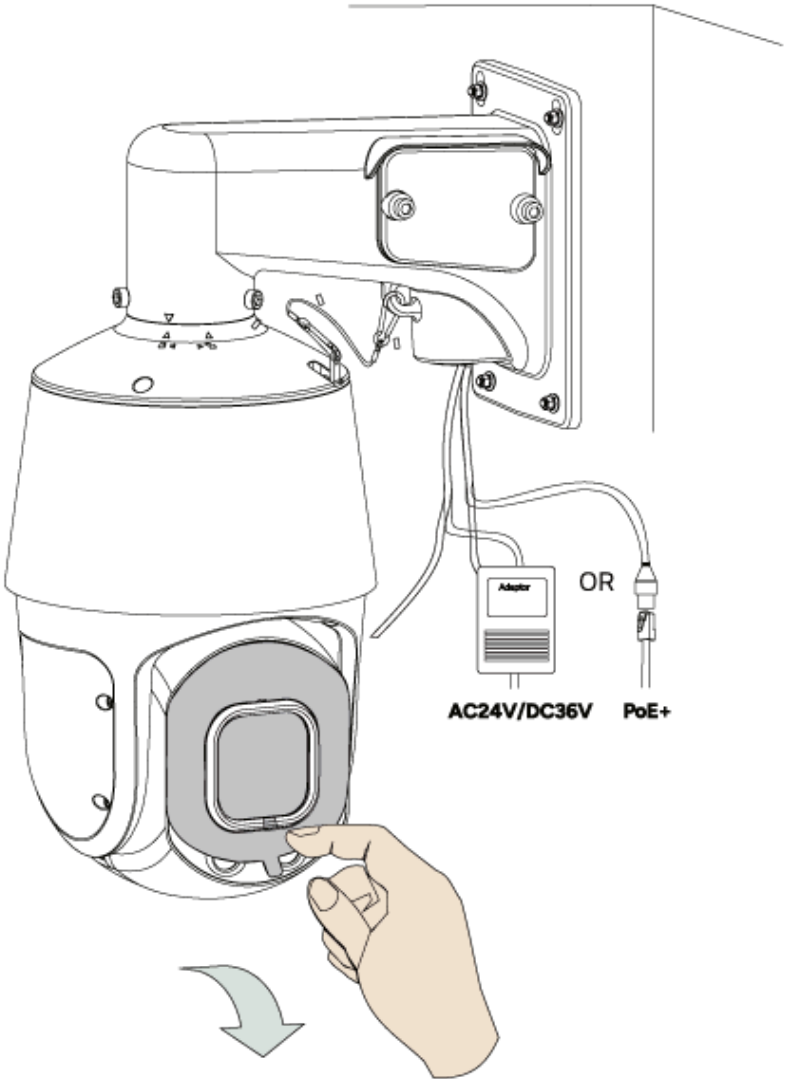
15. Carefully push excess cable back into the wall mount.

16. Close the cable compartment and tighten the screws using the Torx key.



17. Remove the protective vinyl film from the camera.

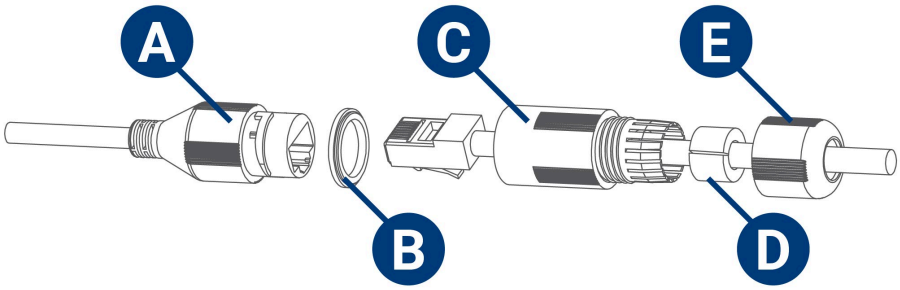
18. Connect power to the camera. Refer to 4.5 *Connect the Camera* , page 12.



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 to protect the connection from water intrusion and corrosion.

Cable gland components:



A: Camera Ethernet Connector

B: O-ring

C: Barrel

D: Rubber Grommet

E: End Cap

To 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 camera.
4. Place the O-ring over the camera's Ethernet connector.
5. Connect the Ethernet cable to the camera's Ethernet connector.
6. Slide the barrel over the connection and tighten it onto the camera connector so that the O-ring is compressed between the barrel and the camera connector.
7. Insert the rubber grommet into the back of the barrel.
8. Slide the end cap forward and tighten it onto the barrel until the cable is sealed securely. Do not overtighten.

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

4.4 Removing the Camera

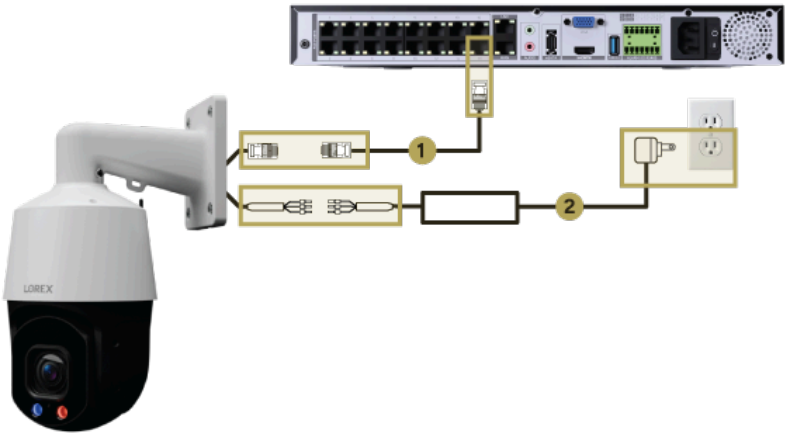
1. Disconnect power and all connected cables.
2. Open the wall mount cable compartment using the Torx key.
3. Disconnect all cable connections.
4. Support the camera securely.
5. Remove the 3 mounting screws using the Torx key.
6. Slide the camera to align the lock symbol with the unlock position.
7. Pull the camera downward to detach it from the mount.
8. Disconnect the safety chain.

4.5 Connect the Camera

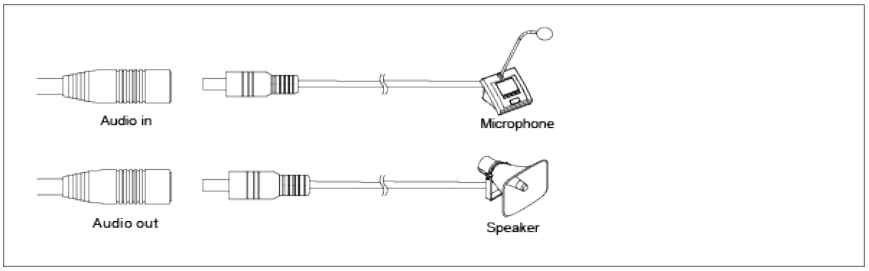
NOTE
It is recommended to connect the camera to your recorder and test PTZ controls before permanent installation.

4.5.1 Option 1: Connecting the Camera to an NVR

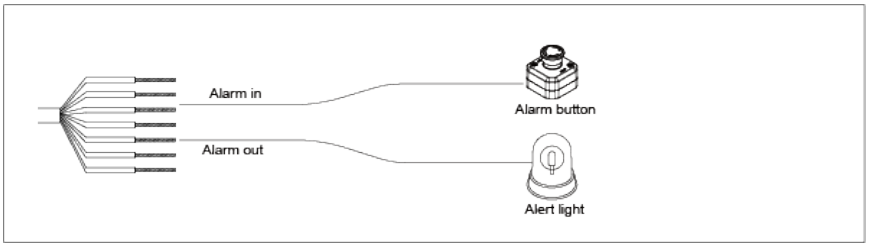
For the simplest installation, connect the camera directly to a compatible NVR with PoE+ ports. This allows the camera to receive power and transmit video and control data through a single Ethernet cable.



1. Connect the camera Ethernet cable to an Ethernet extension cable.
   Connect the Ethernet extension cable to one of the PoE+ ports on the back panel of the NVR.
   - 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 10.
2. (Optional) Connect additional cables as needed:
   - **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.



NOTE

- You can use a CAT5e or higher Ethernet cable of up to 300 ft (91 m), not included.
- For the most up-to-date list of compatible NVRs, visit lorex.com/compatibility.

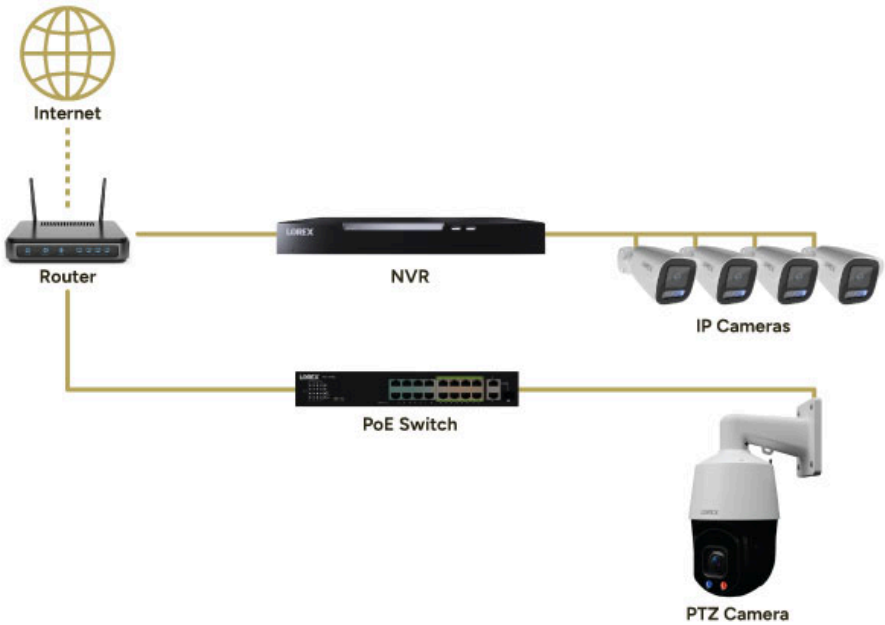
After connecting the camera, verify that live video appears and that PTZ controls respond correctly. See 5 *PTZ Controls*, page 16.

4.5.2 Option 2: Connecting the Camera to the Local Area Network (LAN)

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, the camera must be connected through an external PoE+ switch or powered separately using the included power adapter.

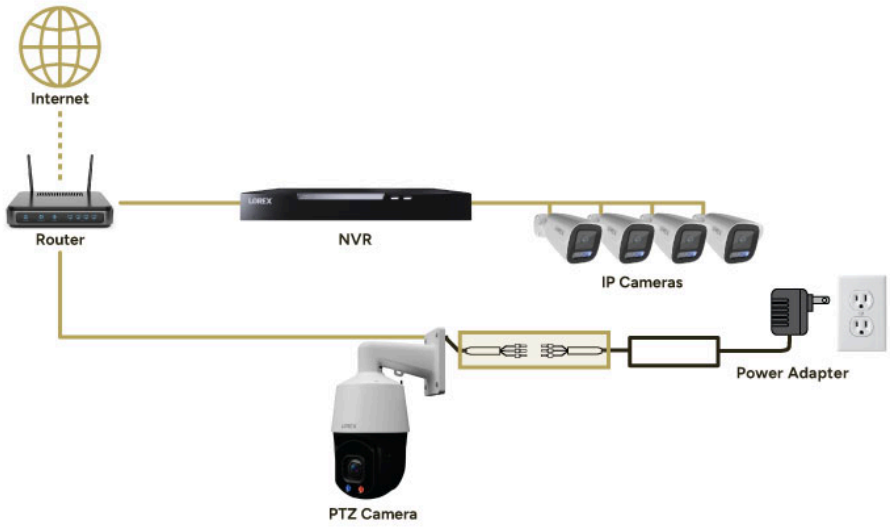
Cameras connected through the LAN must be added manually to the NVR before they will appear in Live View or record to the system.

Step 1 of 2 — Option A: Connecting the Camera Using a PoE+ Switch

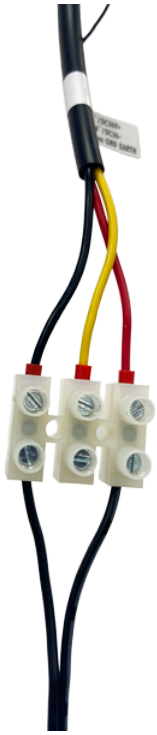


1. Connect the PoE+ switch to your router using an Ethernet cable.
2. Connect the PoE+ switch to a power outlet or surge protector.
3. Connect the PTZ camera to the PoE+ switch using an Ethernet cable.
4. Add the PTZ camera to the NVR. Refer to *Step 2 of 2 — Adding the Camera to the NVR*, page 15.

Step 1 of 2 — Option B: Connecting the Camera Using the Included Power Adapter



1. Connect the power cable to the included power adapter.
2. Locate the camera power wires and the included 6-pin wire connector.



3. Insert the camera wires into the appropriate openings on the 6-pin wire connector and tighten each terminal screw using a small screwdriver to secure the wires in place.
4. Identify the positive wire from the power adapter. This is the wire marked with white stripes.
5. Insert the positive wire from the power adapter into the terminal opposite the camera's red power wire, then tighten the terminal screw.
6. Insert the remaining wire from the power adapter into the terminal opposite the camera's black power wire, then tighten the terminal screw.
7. Connect the camera to a router on the same network as the NVR using an Ethernet cable.
8. Add the camera to the NVR. Refer to *Step 2 of 2 — Adding the Camera to the NVR*, page 15.

NOTE

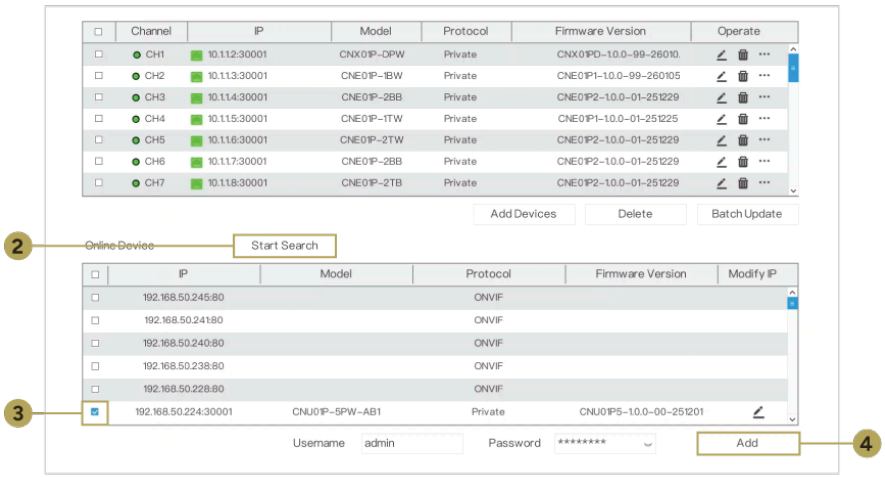
Match the power adapter polarity correctly. Connect the striped positive wire from the power adapter to the terminal opposite the camera's red wire, and connect the remaining power adapter wire to the terminal opposite the camera's black wire.

Step 2 of 2 — Adding the Camera to the NVR

These instructions apply only to cameras connected through the LAN, such as through a PoE+ switch or router.

You must have at least one empty channel before adding the camera to the NVR.

1. In Live View, click + on an empty camera channel.
   - You can also navigate to **Main Menu > Settings > Channel > Camera**.
2. Click **Search Device**. The NVR will search the network for compatible cameras.



3. Select the camera you want to add.
4. Click **Add**.

The status indicator will turn green when the camera is successfully connected.

If the camera does not appear in the device search results, see 10 *Troubleshooting*, page 30.

5 PTZ Controls

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.

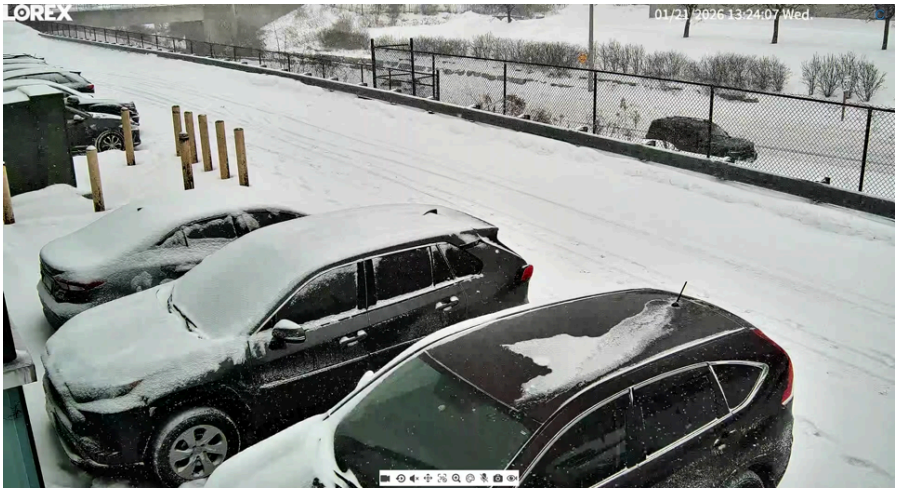
NOTE
Preset, Scan, or Tour functions are disabled while Auto Tracking is active. See 6 *Auto Tracking*, page 24.

5.1 Open PTZ Controls

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

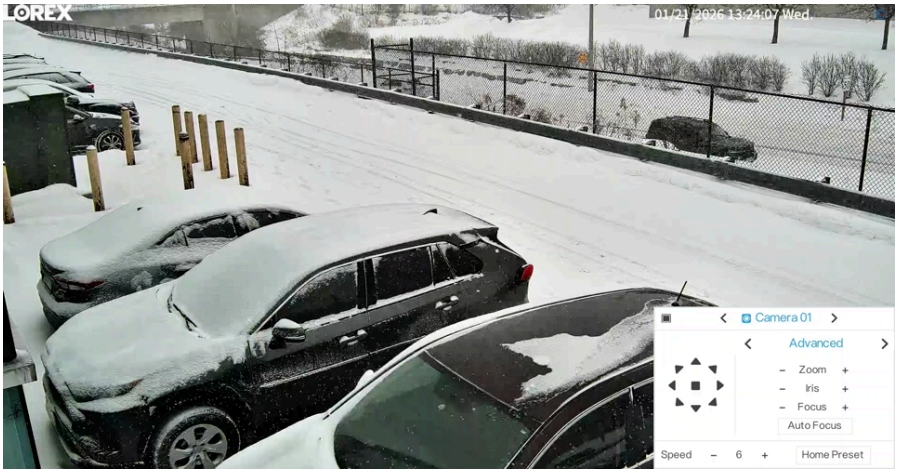
Open PTZ Controls

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



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

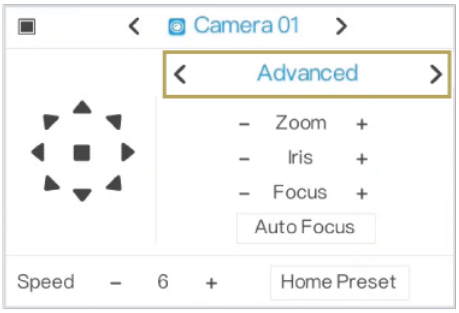
3. The PTZ control panel appears in the bottom-right corner of the screen.



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

5.2 Switch Between PTZ Menus

To move between PTZ menus

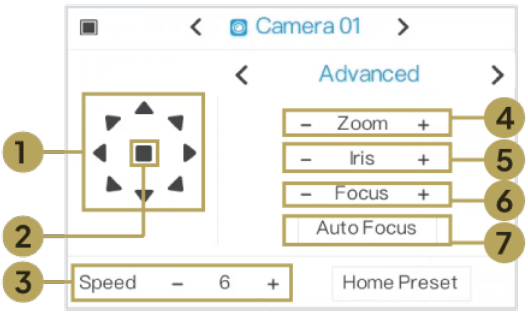


- Click the **arrow button next to the menu name** to cycle through:
  - **Advanced**
  - **Preset**
  - **Scan**
  - **Tour**

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

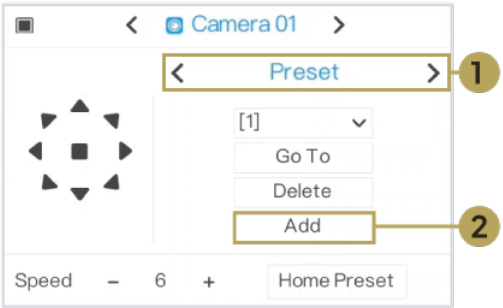
If the PTZ camera is configured with **AI motion detection or auto tracking**, the camera may move automatically when events are triggered. Manual controls may not override this behavior.

5.4 Create and Use Presets

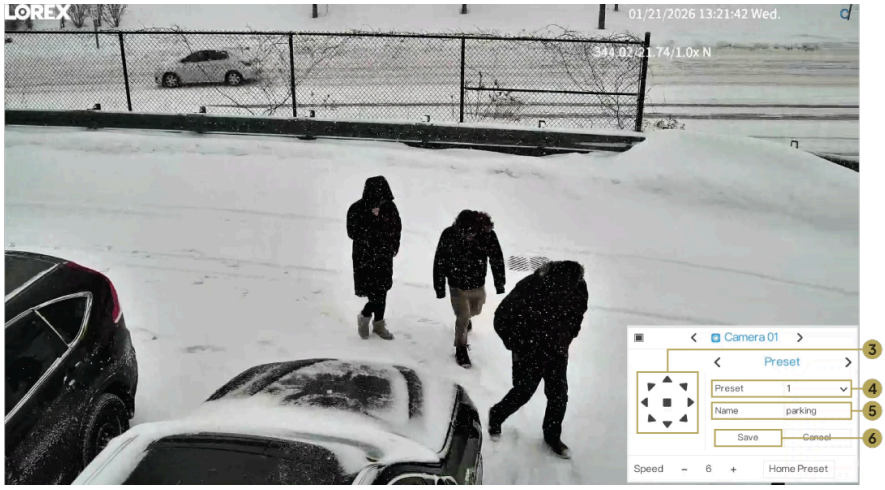
A **Preset** saves a specific camera position for quick access.

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.

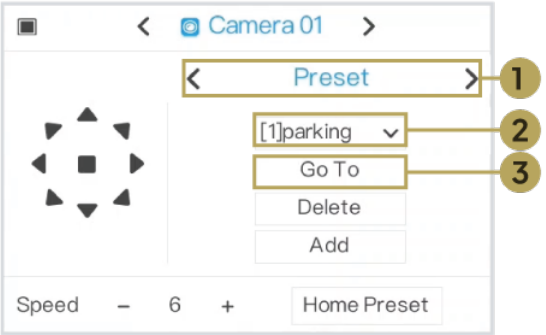
5. Enter a **Name**.

> **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**.

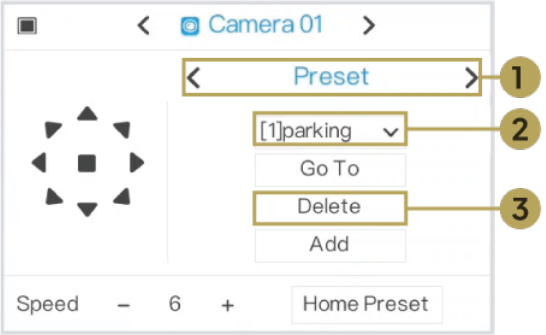
PTZ presets can also be linked to AI detection events. Refer to 8 *IVS / AI Analytics and PTZ Linkage*, page 27.

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



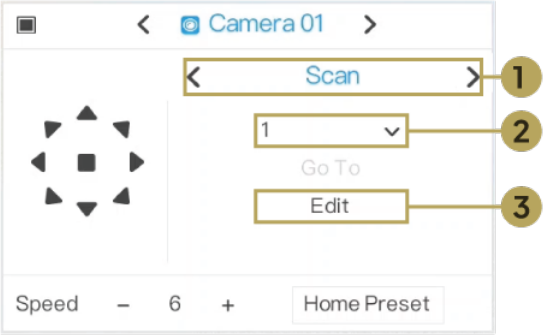
1. Open the **Preset** menu.
2. Select a preset.
3. Click **Delete**.

5.5 Create and Run a Scan

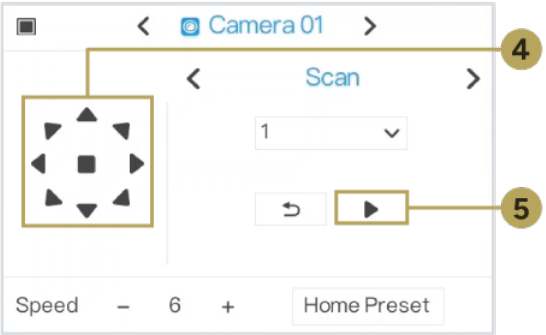
A **Scan** moves the camera automatically between two positions.

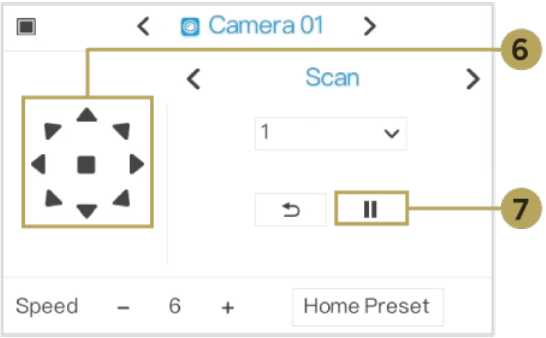
This is useful for scanning wide areas such as parking lots, driveways, hallways, or perimeters.

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.



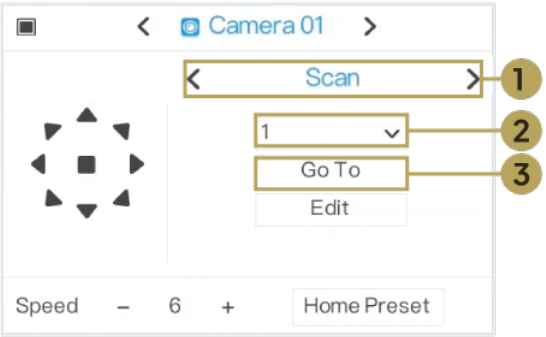


6. Use the directional arrows to move the camera to the next position.
7. Click **Pause** to set the second position and save the scan.

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.

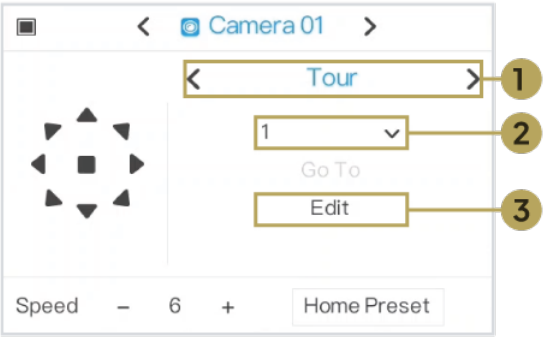
NOTE
Go To is only available if a scan has already been created for the selected scan number.

5.6 Create and Run a Tour

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

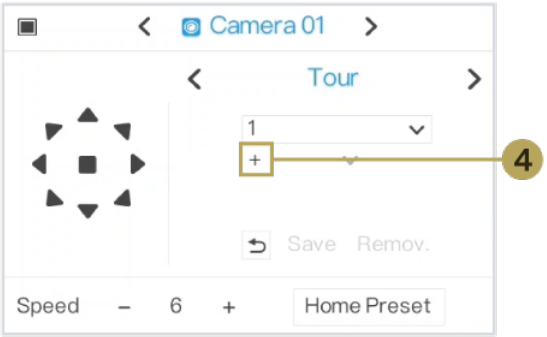
This allows the camera to monitor several areas in sequence.

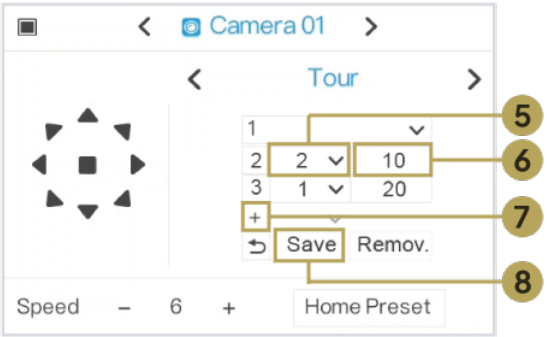
To create or edit a tour



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

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





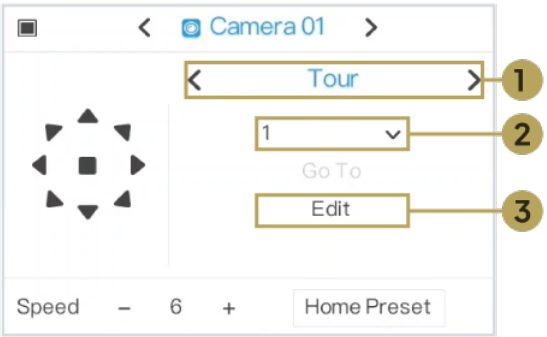
5. Select a **Preset** from the list.
6. Set the **dwell time (in seconds)** for how long the camera will remain at that preset.
7. Repeat steps 4–6 to add additional presets to the tour.
8. Click **Save**.

To start a tour

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

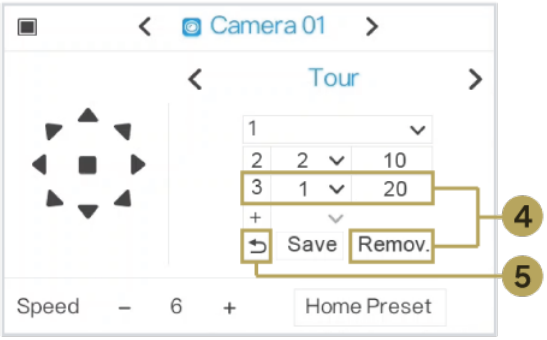
The camera will begin cycling through the saved presets.

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.

6 Auto Tracking

Auto Tracking enables the PTZ camera to automatically detect, follow, and maintain focus on moving targets within the camera's field of view. This feature combines AI-based object detection with PTZ motion control to dynamically track subjects such as people or vehicles.

When Auto Tracking is enabled, the camera will:

- Detect supported object types (person and/or vehicle)
- Automatically pan, tilt, and zoom to center the target
- Adjust zoom level dynamically based on subject distance
- Return to a predefined position when tracking ends

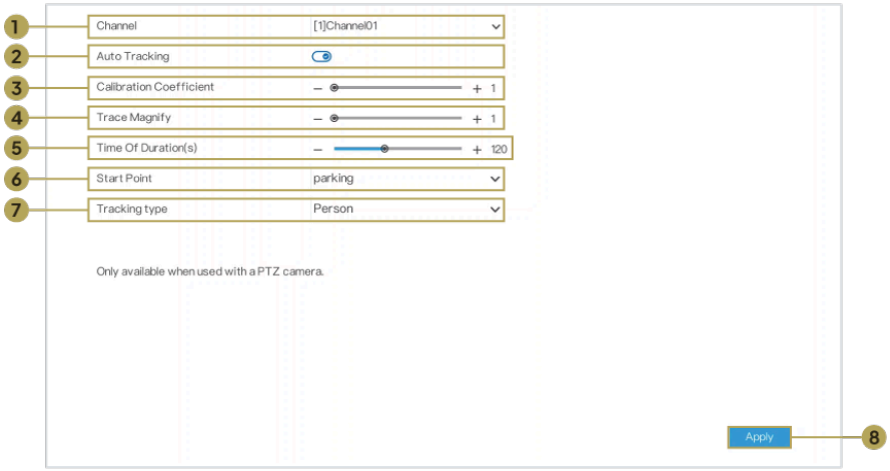
NOTE
Auto Tracking is disabled when Presets, Scan, or Tour functions are active.

6.1 Auto Tracking Configuration

Open Auto Tracking Settings

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **Channel** tab at the top of the menu.
4. Click **Auto Tracking** from the left-side menu.

Auto Tracking Settings

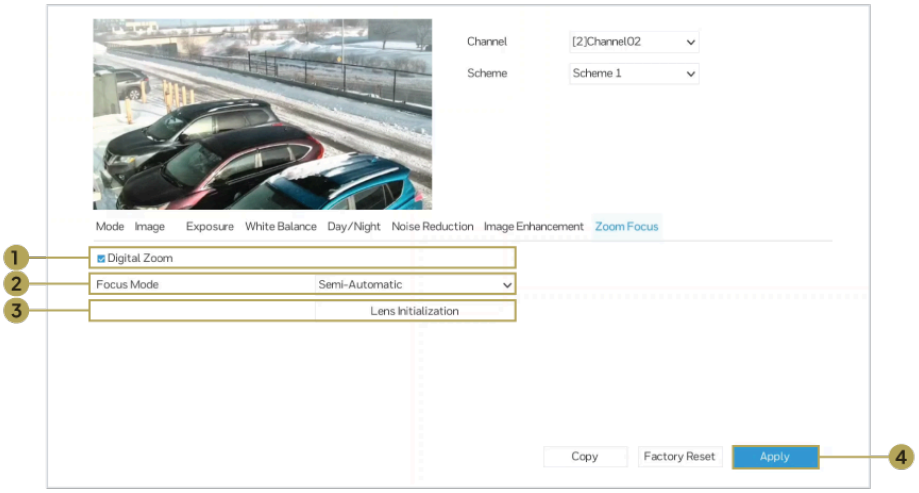


1. **Channel:** Select the channel where a PTZ camera is connected.
2. **Auto Tracking:** Enable or disable automatic tracking for the selected camera.
3. **Calibration Coefficient:** Adjust the tracking sensitivity using the slider. This setting helps the system determine how accurately the camera follows a moving object.
4. **Trace Magnify:** Adjust the zoom level used while tracking a target.
5. **Time of Duration (s):** Set how long the camera continues tracking a detected target before returning to its original position.
6. **Start Point:** Select the preset position where the PTZ camera will return after tracking is completed. This preset must be created before it can be selected as the Start Point. See 5 *PTZ Controls*, page 16.
7. **Tracking Type:** Select the type of object the camera should track, such as **Person**.
8. **Apply:** Click **Apply** to save the settings.

7 Zoom and Focus Settings

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.

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 *Troubleshooting*, page 30.

8 IVS / AI Analytics and PTZ Linkage

The camera supports integration between IVS / AI analytics and PTZ functionality. This allows the camera to automatically move to predefined positions when specific events are triggered.

For detailed instructions on configuring IVS detection areas, lines, schedules, and event actions, refer to your compatible NVR's instruction manual.

8.1 Link PTZ Presets to IVS Analytics Events

You can link a PTZ camera preset position to an IVS analytics event so that the camera automatically moves to a predefined view when the event is detected. This is useful for business installations where one PTZ camera is used to monitor multiple areas, such as entrances, loading bays, parking lots, fence lines, or restricted zones.

Before configuring PTZ linkage, make sure the following setup is complete:

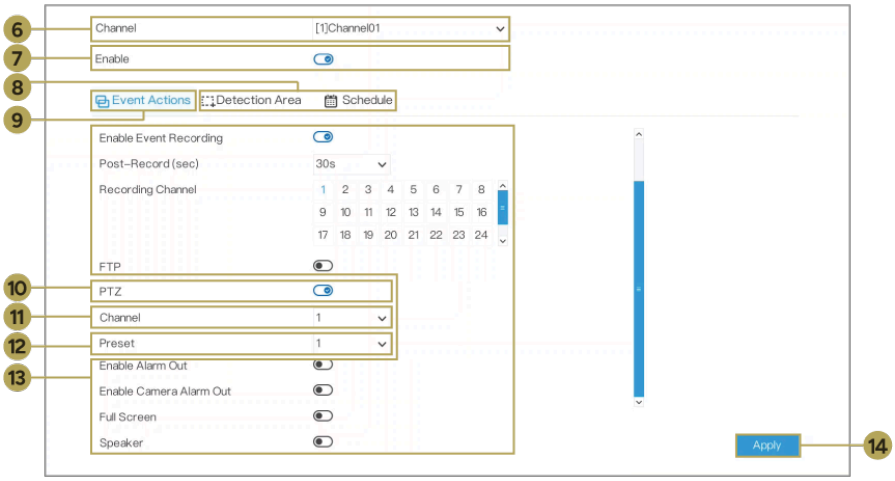
- The PTZ camera is connected to a compatible Lorex Network Video Recorder.
- The PTZ camera has been added to the recorder and is displaying video.
- One or more PTZ preset positions have already been created. See 5.4 *Create and Use Presets*, page 18.
- The IVS analytics feature you want to use has been enabled and configured.
- The camera view, detection area, or detection line has been adjusted for the intended scene.

For best detection performance, position the camera so that targets move across the detection area or line rather than directly toward the camera. IVS features require defining a detection area or line and selecting the actions that occur when the event is triggered.

8.2 Configure PTZ Linkage for an IVS Event

When an event is detected, the recorder triggers the PTZ action and moves the selected PTZ camera to the configured preset position.

1. From live view, right-click twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **IVS** tab.
4. Open the analytics menu that contains the detection type you want to configure. For most event-based analytics, click **Smart Analysis**.
5. Select the detection type you want to use, such as **Intrusion**, **Smart Motion**, **Single Line Crossing**, **Double Line Crossing**, **Loitering**, **Wrong Way**, **Illegal Parking**, or **People Counting**.



6. Select the camera **Channel**.
7. Enable the detection type.

8. Configure the detection area, detection line, target type, direction, sensitivity, or time threshold as required for the selected detection type.
9. Click the **Event Actions** tab.
10. Enable **PTZ**.
11. Under **Channel**, select the PTZ camera channel that should respond to the event.
12. Under **Preset**, select the preset position that the PTZ camera should move to when the event is triggered.
13. Configure any other event actions as needed, such as recording, email, buzzer, FTP upload, alarm output, full screen display, speaker message, or deterrence light.
14. Click **Apply** to save the settings.

NOTE

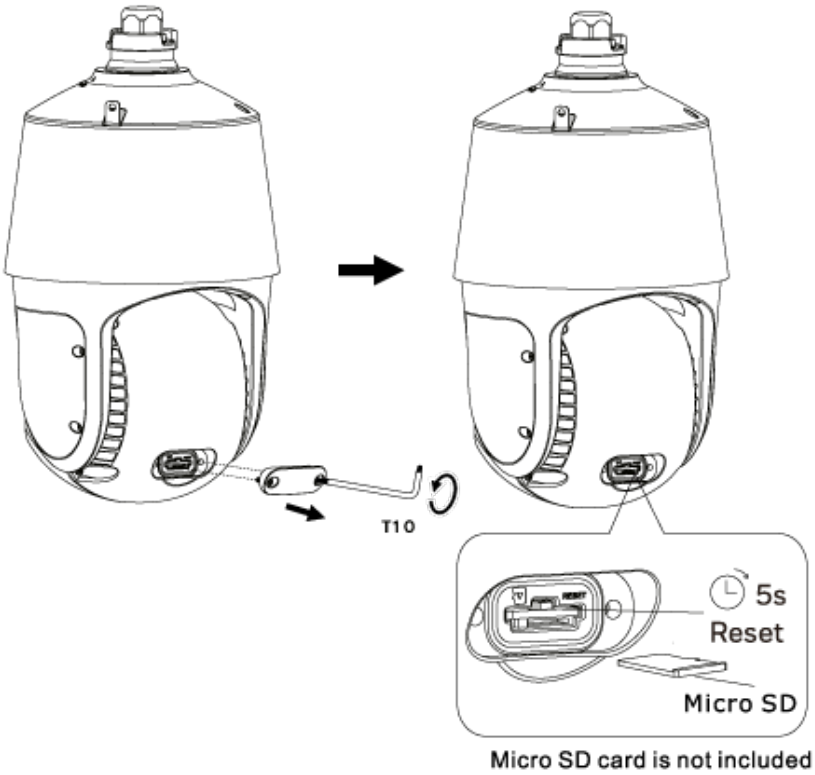
If PTZ linkage is not working, confirm that the preset exists, the correct PTZ channel is selected, the IVS event is enabled, and the event schedule is active.

9 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 Camera* , page 12. 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.

10 Troubleshooting

1. **No image at startup.**
   - The camera may take a few minutes to start after power is connected. Wait at least 2 minutes before continuing troubleshooting.
   - Check that the camera is properly connected. See 4.5 *Connect the Camera* , page 12.
   - If the camera is connected directly to an NVR, make sure it is connected to a PoE+ port on a compatible NVR.
   - If using a PoE switch, make sure the switch supports PoE+ power output. Standard PoE switches may not provide enough power for the camera.
   - If using the included power adapter, make sure the power adapter wires are connected with the correct polarity. The striped positive wire from the power adapter must connect to the terminal opposite the camera's red wire, and the remaining power adapter wire must connect to the terminal opposite the camera's black wire.
   - 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 *Step 2 of 2 — Adding the Camera to the NVR*, page 15.
   - 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.
   - Reset the camera to factory default settings. See 9 *Inserting the microSD Card (Optional) and Resetting the Camera*, page 29.
2. **The camera does not appear when searching for devices on the NVR.**
   - Make sure the camera is powered on.
   - Make sure the camera and NVR are connected to the same local network.
   - Make sure there is at least one empty channel available on the NVR.
   - 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 search again from the NVR.
   - For the most up-to-date list of compatible NVRs, visit lorex.com/compatibility.
3. **PTZ controls are not responding.**
   - Make sure the selected channel is the PTZ camera channel.
   - Wait until the camera finishes its startup sequence before using PTZ 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.
   - If a Scan or Tour is running, stop the automatic PTZ action before using manual controls.
   - Check the network connection and Ethernet cable.
4. **The camera moves on its own.**
   - Auto Tracking may be enabled. The camera can automatically pan, tilt, and zoom to follow supported targets. See 6 *Auto Tracking*, page 24.
   - A Scan or Tour may be running. Stop the Scan or Tour from the PTZ controls. See 5 *PTZ Controls*, page 16.
   - IVS / AI analytics may be linked to a PTZ preset. When an event is detected, the camera can automatically move to the selected preset. See 8 *IVS / AI Analytics and PTZ Linkage*, page 27.

5. **Auto Tracking is not working.**
   - Make sure Auto Tracking is enabled for the correct camera channel. See 6 *Auto Tracking*, page 24.
   - Make sure the correct Tracking Type is selected.
   - Confirm that the target is within the camera's field of view.
   - Adjust the Calibration Coefficient if the camera is not following the target accurately.
   - Adjust Trace Magnify if the camera is zooming too far in or not zooming enough while tracking.
   - Make sure the Start Point preset has been created. See 5 *PTZ Controls*, page 16.
   - Auto Tracking is disabled when Presets, Scan, or Tour functions are active. Stop the active PTZ function and try again.
6. **The camera does not return to the correct position after Auto Tracking.**
   - Make sure the Start Point is set to the correct preset in the Auto Tracking settings.
   - Confirm that the selected preset still exists.
   - Recreate the preset if the saved position is no longer accurate.
   - Check the Time of Duration setting. The camera returns to the Start Point after tracking ends or after the configured tracking duration.
7. **A preset does not work.**
   - Make sure the preset has been saved. See 5 *PTZ Controls*, page 16.
   - Select the preset from the Preset menu and click Go To.
   - If the camera does not move, try creating the preset again.
   - Make sure the camera is not currently running a Scan, Tour, Auto Tracking action, or IVS-triggered PTZ action.
   - Restart the camera and try again.
8. **PTZ linkage is not working with IVS / AI analytics.**
   - Make sure the IVS detection type is enabled.
   - Make sure the detection area or detection line has been configured correctly.
   - Make sure the IVS event schedule is active for the current day and time.
   - Confirm that PTZ is enabled in the Event Actions tab.
   - Confirm that the correct PTZ camera channel is selected.
   - Confirm that the selected preset exists.
   - Test the preset manually from the PTZ controls. See 5 *PTZ Controls*, page 16.
   - If using target filtering, make sure the selected target type matches the object being detected, such as Person, Vehicle, or Person or Vehicle.
   - For line-crossing detection, make sure the detection direction is configured correctly.
   - For loitering or unauthorized parking, make sure the time threshold is not set too high.
   - Refer to the compatible NVR manual for detailed IVS event configuration.
9. **IVS / AI analytics are not detecting events.**
   - Make sure the selected detection type is supported by the connected camera and compatible NVR.
   - Make sure the detection type is enabled.
   - Make sure the detection area or detection line covers the correct part of the scene.
   - Position the camera so that people or vehicles move across the detection area or line rather than directly toward the camera.
   - If available, adjust sensitivity, target type, direction, or time threshold settings.
   - Make sure the event schedule is active.
   - Check lighting conditions and image clarity. Poor lighting, glare, heavy rain, snow, fog, or obstructions may affect detection performance.
   - Clean the camera lens area with a soft, slightly damp cloth.

10. **The image is out of focus.**
    - Use Auto Focus from the PTZ Advanced menu.
    - Check the Zoom and Focus settings. See 7 *Zoom and Focus Settings*, page 26.
    - If using Manual focus, adjust Near Focus or Far Focus until the image is clear.
    - Use Auto Focus Once to perform a one-time focus adjustment.
    - Run Lens Initialization to recalibrate the lens position.
    - Clean the camera lens area with a soft, slightly damp cloth.
    - Avoid pointing the camera directly at intense light sources.
11. **The image is too bright.**
    - Make sure the camera is not pointed directly at the sun, spotlights, headlights, or other intense light sources.
    - Adjust the image settings on the NVR, such as brightness and contrast.
    - Reposition the camera if possible.
    - Enable or adjust Wide Dynamic Range / WDR settings on the NVR, if available.
12. **The image is too dark.**
    - Check the NVR image settings, such as brightness and contrast.
    - Make sure the camera lens area is clean.
    - Check that the camera is installed within the specified operating conditions.
    - Reposition the camera if the monitored area has very low light or uneven lighting.
    - Enable or adjust Wide Dynamic Range / WDR settings on the NVR, if available.
13. **There is no color image at night.**
    - The camera may switch to black-and-white IR night vision when there is not enough ambient light for color nighttime video.
    - Add ambient lighting to the scene if color nighttime video is required.
    - Make sure the camera is not installed in a location where nearby surfaces reflect IR light back into the lens.
    - Actual night vision range and image clarity depend on the installation location, viewing area, and light reflection or absorption.
14. **The night image is unclear.**
    - Clean the camera lens area with a soft, slightly damp cloth.
    - Make sure there are no nearby objects, walls, eaves, or mounting surfaces reflecting IR light into the camera.
    - Reposition the camera if the scene contains highly reflective surfaces.
    - Check for rain, snow, fog, dust, or insects near the camera.
15. **Motion detection or event recording is constantly triggering.**
    - If the camera is moving because of manual PTZ control, Auto Tracking, Scan, Tour, or PTZ linkage, the NVR may detect the camera movement as video motion.
    - Adjust motion detection sensitivity or detection areas on the NVR.
    - Use AI-based detection filters, such as Person or Vehicle, when available.
    - Avoid aiming the camera at moving trees, flags, traffic, reflections, or other sources of repeated motion.
    - If using PTZ movement frequently, consider limiting basic video motion detection on that channel and using IVS / AI analytics instead.
16. **Audio or two-way talk is not working.**
    - Make sure audio is enabled on the NVR.
    - Make sure the correct camera channel is selected.
    - Check microphone and speaker settings on the NVR.
    - If using external audio devices, confirm that the Audio In and Audio Out connections are secure.
    - Confirm that the NVR, app, or client software volume is not muted.
    - Audio recording is disabled by default and must be used in compliance with local laws and regulations.

17. **The deterrence light, siren, or pre-recorded message does not activate.**
    - Make sure the deterrence action is enabled for the selected event.
    - Check the Event Actions settings for the IVS detection type.
    - Make sure the selected schedule is active.
    - Confirm that the event is actually being detected.
    - If using a pre-recorded message, make sure an audio file has been selected.
    - Test the deterrence feature manually, if supported by the NVR.
18. **The microSD card is not detected or local recording is not working.**
    - Make sure the microSD card is inserted correctly. See 9 *Inserting the microSD Card (Optional) and Resetting the Camera*, page 29.
    - Make sure the microSD card capacity does not exceed 1 TB.
    - Format the microSD card using the camera interface, if required.
    - Restart the camera after inserting the card.
    - microSD recording is independent local recording. Data can be accessed through the camera using a web browser, but it will not upload to the NVR or to the cloud for mobile app viewing.
19. **The camera does not reset.**
    - Make sure the camera is powered on before pressing the reset button.
    - Press and hold the reset button for 5 seconds.
    - Wait a few minutes for the camera to restart and reappear on the network.
    - After reset, camera settings return to default values and may need to be configured again.
    - If the camera was connected through the LAN, you may need to add it to the NVR again. See *Step 2 of 2 — Adding the Camera to the NVR*, page 15.

11 Technical Specifications

11.1 Technical Specifications

Camera

Image Sensor	8MP 1/1.8” CMOS
Max Resolution	4K (3840 × 2160)
Max Frame Rate	30 fps
Aspect Ratio	16:9
Wide Dynamic Range	120 dB True WDR
Min Illumination	Color: 0.005 lux / B/W: 0.0005 lux
Signal-to-Noise Ratio	55 dB

Lens

Type	Motorized Varifocal
Focal Length / Aperture	7–210 mm, F1.61–F5.15
Optical Zoom	30×
Field of View	Diagonal: 67.6°-3° Horizontal: 60.4°-2.6° Vertical: 36.5°-1.5°
PTZ Control	Remote Pan / Tilt / Zoom Operation

DORI Distance

Distance	433.1-10456 ft (132-3187 m)
Observe	173.2-4215.87 ft (52.8-1285 m)
Recognize	86.6-2089.9 ft (26.4-637 m)
Identify	43.3-1045.6 ft (13.2-318.7 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 820 ft / 250 m in total darkness)
AI Color Night Vision	Yes

AI Smart Features

Detection	Person, Vehicle, Intrusion, Loitering, Wrong-Way, Unauthorized Parking
Perimeter Protection	Line-Crossing, Dual-Line Crossing
Tracking & Monitoring	Smart Motion
Crowd Analytics	People Counting
Active Deterrence	Red and Blue Light, Siren, Pre-Recorded Messages1

Network

Interface	RJ45 (10/100 Base-T)
Interoperability	ONVIF, 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)
Max Power Consumption	25 W (PoE)

Physical

Housing Material	Aluminum Alloy
Color	White
Camera Dimensions (D × H)	Ø 6.93 × 11.96 in (Ø 176 × 303.9 mm)
Camera Weight	8.82 lb (4 kg)

Environmental

IP Rating	IP66
Operating Temperature	-40°F to 140°F (-40°C to 60°C)
Operating Humidity	≤ 90% RH

Disclaimers

1. Compatible with select Lorex Network Video Recorders. For a full list of compatible recorders visit: lorex.com/compatibility.
2. 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.
3. Stated IR illumination range is based on ideal conditions in typical outdoor nighttime ambient lighting up to 820 ft / 250 m in total darkness. Actual range and image clarity depends on installation location, viewing area and light reflection/absorption.
4. 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.
5. Not intended for submersion in water. Installation in a sheltered location recommended.

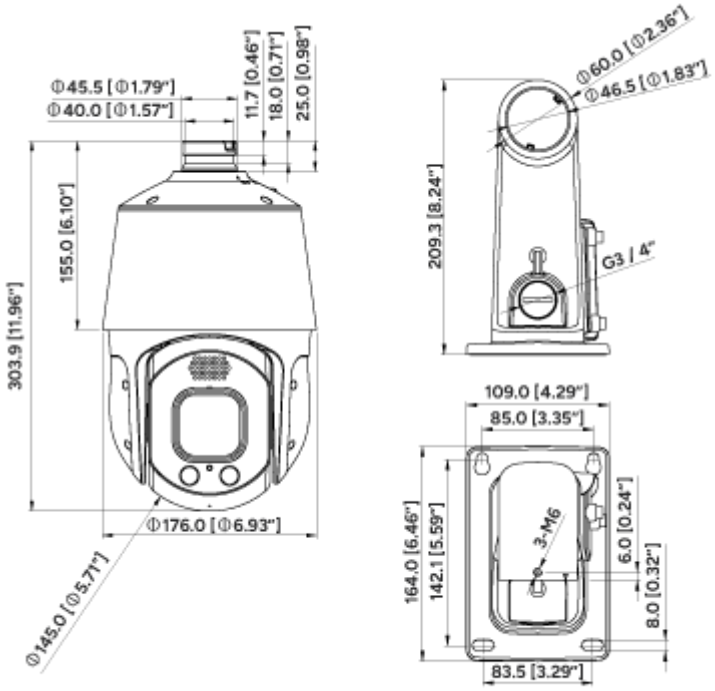
*A microSD card can be inserted for independent recording. Data can be accessed through the camera using a web browser but will not upload to the NVR or to the cloud for mobile app viewing.

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



Unit: mm [inch]

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