



500 Series Fisheye
IP-Enabled HD Surveillance Camera

Installation Manual

Important!

Ensure your NVR
has the latest
firmware!

Read this page *before* you go to the job site!

For maximum control and convenience, **install your camera with a connection to the Internet** via your NVR or through a local network router. **This allows you to use OvrC**, a powerful remote maintenance tool. See OvrC.com for details. In addition, your client can use the Luma Surveillance mobile app to check on the camera from anywhere.

For installation using this guide, you must be able to access this camera through a personal computer. If your surveillance system is not on a network, you'll have to use the NVR's local interface for installation. See the NVR user's manual for details.

Required Equipment

- A network connection (and an NVR, if desired)
- Admin rights to a computer that can access the network
- Power source: either PoE or 12V DC
- Phillips screwdriver

Additional Resources

If desired, you can add an SD card (up to 128 GB) to the camera. An SD card or a network drive is required if you want to keep a log of the camera's activities.

You can acquire a PDF of the web interface manual and other materials from the product page at SnapAV.com.


Preparation

Before you start, ensure that the device is in good condition and all the assembly parts are included. **Also ensure that your recorder has the very latest firmware.** Use OvrC to update the firmware, or consult your NVR manual.

- Ensure the mounting surface is strong enough to hold three times the weight of the camera plus the mount.
- If the mounting surface is cement, use the included expansion screws to install the camera. If mounting to a wood surface, use self-tapping wood screws (not included) to secure the camera.
- If the product does not function properly, please contact technical support. Do not disassemble the camera for repair or maintenance.

Box Contents

- Camera
- Self-adhesive mounting template
- 3 x wall anchors with screws (+1 spare)
- Hex wrench
- Weatherproofing kit for PoE cable



Important!
Before attaching this to your Luma NVR, **update the recorder to the latest firmware!** If you don't, essential features of your camera **may not function.**

Safety Tips

- Handle this device with care.
- Do not strike or shake this device.
- Do not operate this device beyond its specified power source ratings.
- Protect the power cord from being stepped on or pinched, particularly where it connects to the device and to the power outlet.
- Do not use this device near any heat sources such as radiators, heat registers, stoves, or other such heat-generating equipment.
- The performance and lifespan of the SD card (if used) is affected by temperature. For best results, use this device in temperatures ranging from -20–140 °F.
- Clean this device with a dry cloth. Do not use strong or abrasive detergents when cleaning the device, especially the lens. If dirt is hard to remove, use a mild detergent and wipe gently.
- Make a note of the configuration settings and save them. This helps when changing the configuration, when upgrading the device, or with recovery if unexpected failure or trouble occurs.

Physical Components

Before installing, familiarize yourself with the parts of your camera.

With skirt attached



With skirt removed



The Camera Interior

To remove the camera skirt, pry open the rubber cover over the set screw. Use the included hex wrench to loosen the set screw. Do not remove the screw completely.

The cover is held in place by a trio of friction locks. Carefully pry the case off the camera body. An internal lanyard keeps the skirt attached to the camera body.

To replace the skirt, snap it into place, tighten the set screw, and replace the set screw cover.

The Utility Port

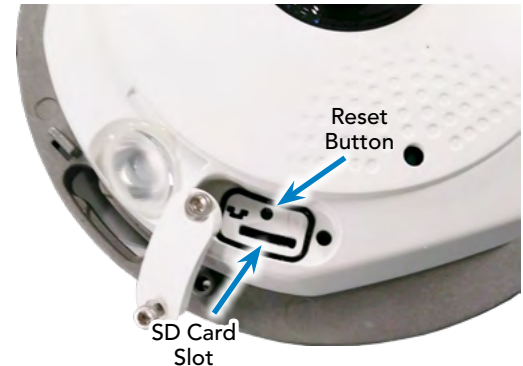
To access the utility port, use the included hex wrench to loosen both screws that hold the cover in place. Loosen one screw so that it detaches from the body; leave the other one in place. It is not necessary (or recommended) to remove either screw completely. Swing the cover to one side to expose the utility port. It has the following items:

SD Card Slot

This holds one SD card of up to 128 GB. See our website for a list of compatible cards.

Reset Button

To perform a factory default on your camera, power off the camera, press and hold this button, restore power, and keep the button pressed for 30 seconds. You will have to reactivate the camera by creating a new password.



The Camera's Capabilities

This fisheye camera has only one camera: the main 360° lens in the center. Every other view employed by the fisheye is created on the fly via the camera's software.

Persistent PTZ Views

The camera has three PTZ views that can be treated as permanent cameras. The camera tracks the settings of these three virtual PTZs, and creates separate streams and substreams for them.

You can set how to view these under **Configuration > System Settings > Hardware Settings > Display Mode**.

Camera Streams

This camera has a limit of 6 outgoing video streams. Each camera (the fisheye lens and each of the three persistent streams) has 2 streams: the main stream and substream. The NVR grid view uses the substream. If a substream is not available, you must use the main stream (as bandwidth allows) or be resigned to a blank screen.

There are six camera modes for your fisheye camera:

Fisheye

- Stream 1 = Fisheye main stream
- Stream 2 = Fisheye substream

Panorama 180 (This splits the fisheye view into two stacked 180° panoramas)

- Stream 1 = Panorama main stream
- Stream 2 = Panorama substream

2 PTZs

- Stream 1 = PTZ 1 main stream
- Stream 2 = PTZ 1 substream
- Stream 3 = PTZ 2 main stream
- Stream 4 = PTZ 2 substream

Fisheye + 3 PTZ (requires your NVR and network to have the bandwidth to handle 3 main streams)

- Stream 1 = Fisheye main stream
- Stream 2 = Fisheye substream
- Stream 3 = PTZ 1 main stream
- Stream 4 = PTZ 2 main stream
- Stream 5 = PTZ 3 main stream

Fisheye + 2 PTZ (this is the default mode)

- Stream 1 = Fisheye main stream
- Stream 2 = Fisheye substream
- Stream 3 = PTZ 1 main stream
- Stream 4 = PTZ 1 substream
- Stream 5 = PTZ 2 main stream
- Stream 6 = PTZ 2 substream

Fisheye + 1 PTZ

- Stream 1 = Fisheye main stream
- Stream 2 = Fisheye substream
- Stream 3 = PTZ 1 main stream
- Stream 4 = PTZ 1 substream

Provisional PTZ Views

While the display mode sets the default view and uses the persistent PTZ cameras, you can create a new view by using the flyout menu (see page 18). All PTZ views in the flyout menu are generated in real time; they do not use the persistent PTZ cameras. While the angles and zooms can be adjusted in the live view, when you change the view or leave the live page, all adjustments are immediately lost.

In the live page, to return to the default view (which uses the persistent PTZs), simply press F5.

Controlling the Views

You can click the PTZ icon to open the PTZ control menu (see the manual for details).

Alternatively, and more efficiently, you can click and drag within the camera view to move the camera's view.

With the persistent PTZs, you can click on the fisheye view. The persistent PTZ then tries to center its view on the location you clicked.

Physical Components

While the fisheye camera does some amazing things, we want to be clear on its limitations.

Infrared Lamps

While the fisheye camera has infrared emitters, these are neither long-range emitters like those in bullet cameras, nor do they have powerful and broad emitters like those in dome cameras. The infrared emitters are designed to illuminate at close range and in the center of the fisheye's view.

Built-In Speaker

The speaker built in to the camera is extremely limited in size, and therefore limited in output and quality. If having high quality audio is essential to your install, we urge you to use a dedicated speaker.

Installation via an NVR PoE Port

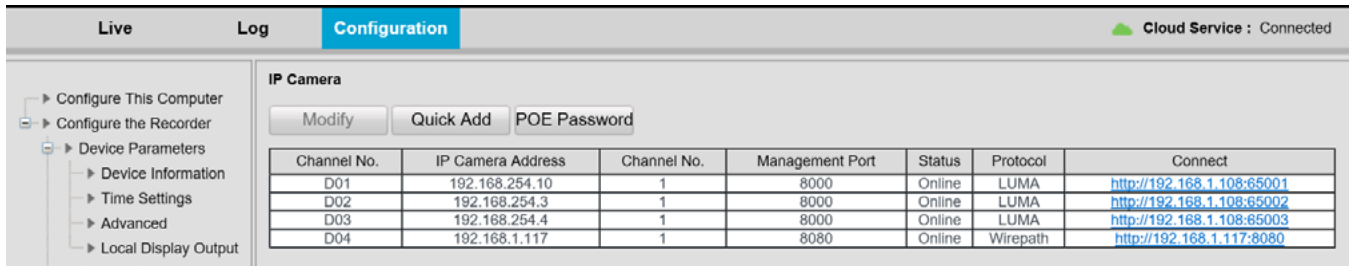
If you are installing with an NVR via one of its PoE ports, follow these instructions. Otherwise, follow the instructions starting on page 13. [Where possible, we recommend changing settings using your NVR.](#)

1. Ensure your NVR has the latest firmware. If it does not, your NVR may be unable to locate and activate your camera if you are plugging your fisheye into the PoE ports of the NVR.
2. Perform the physical installation of your camera by following the instructions that start on page 16.
3. Plug your camera into your recorder. The NVR autodetects your camera, activates it (giving it the same admin password that it has), and assigns it an IP address. [This may take a few minutes; be patient.](#)
4. The fisheye camera has a circular view and 2 virtual PTZ cameras. By default, only the circular view shows on the NVR channel. Each virtual camera must be added manually.

Adding the Virtual PTZs

You must configure the NVR to use the Luma Fisheye camera's virtual PTZs.

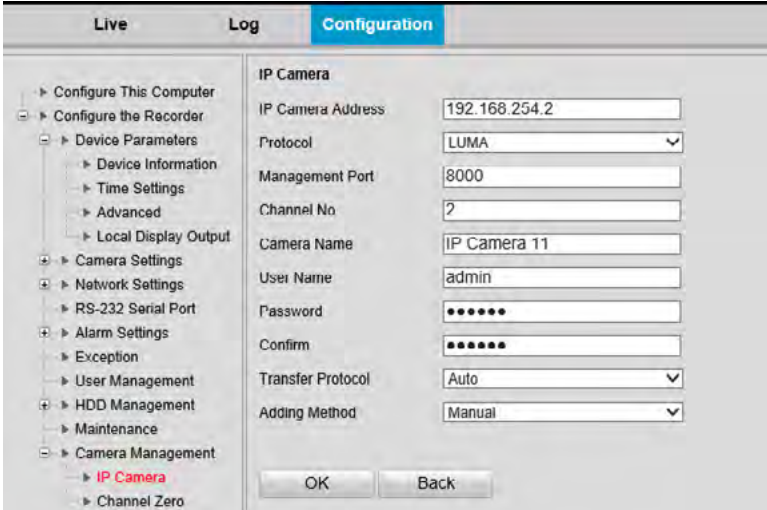
On the Luma NVR's web UI, navigate to **Configure the Recorder > Camera Management > IP Camera.**



Channel No.	IP Camera Address	Channel No.	Management Port	Status	Protocol	Connect
D01	192.168.254.10	1	8000	Online	LUMA	http://192.168.1.108:65001
D02	192.168.254.3	1	8000	Online	LUMA	http://192.168.1.108:65002
D03	192.168.254.4	1	8000	Online	LUMA	http://192.168.1.108:65003
D04	192.168.1.117	1	8080	Online	Wirepath	http://192.168.1.117:8080

Click the channel's row in the table (not the hotlink) where you want to add the virtual PTZ camera, then click **Modify**. Fill out the form as described below.

- **IP Camera Address:** Enter the IP address of the fisheye camera.
- **Protocol:** Select LUMA.
- **Management Port:** Enter the server port of the fisheye camera. The default port is 8000.
- **Channel No.:** Use the internal channel the PTZ uses in the fisheye camera. The fisheye has 4 channels: channel 1 is the circular view, and channels 2–4 are the three virtual PTZ cameras.
- **Camera Name:** Use whatever is most helpful to you.
- **User Name:** Enter the user name of the fisheye.
- **Password & Confirm:** Enter the password for that fisheye user account.
- **Transfer Protocol:** Leave this set to Auto.
- **Adding Method:** Set this to Manual.



Field	Value
IP Camera Address	192.168.254.2
Protocol	LUMA
Management Port	8000
Channel No	2
Camera Name	IP Camera 11
User Name	admin
Password	••••••
Confirm	••••••
Transfer Protocol	Auto
Adding Method	Manual

Press **OK** to save your entries. The virtual PTZ should now be available to your NVR.

Optional Extra Setup

This camera has advanced detection features that are not available on your NVR: line crossing and area intrusion. After completing installation, see the camera's web interface manual to set these up.

In addition, you may wish to set up the aim and zoom of your three persistent PTZ views.

Installation Without Direct Connection to an NVR

Use these steps if you have no NVR, or if you are connecting your camera to a network switch.

Install and Run the Luma Utility



Use the Luma Utility to locate your camera and set it up.

Visit your product page at SnapAV.com and download the Luma Utility installer from the Support tab. **You must use v3.0.0.53 build 20170209 or later! Earlier versions of the utility will not work!**

Run the installer. You can click through and accept the defaults.

Pre-Installation Camera Configuration



You'll find installation to be easiest if you connect the camera to your PC prior to physical installation, making most adjustments to the camera from the convenience of your table, rather than from atop a ladder.

Use a network cable to connect your camera to a PoE port on your switch (the network should consist of a router, a switch, your laptop and of course the IP camera). Run the Luma Utility on your PC. The Luma Utility searches for attached Luma Surveillance devices. If your camera does not appear, check the connection, ensure the camera is powered up, then click the **Refresh** button.

Activate the Camera

Click on the entry for your camera to view its details. If the camera is inactive, use the text boxes at the lower right of the Luma utility window to activate the camera by creating a new secure password.

Alternatively, double-click on the IP address in your camera's entry (or copy the address in your browser) to launch the web interface. Since the camera is still inactive, the window prompts you for a new secure password.

- Passwords cannot be longer than 16 characters. To ensure compatibility with the local interface, only use numbers, letters, spaces, and the following special characters: . , : - /
- Use a password that is long and easy to remember. A password like *parinthespring* is more secure and easier to remember than a password like *D3x-7b*.

<input type="checkbox"/>	003	LUM-500-DVR-16C...	Luma 16C...	Active	192.168.8.193	80	8000	554	V3.0.4build 1...	snapavTest
<input type="checkbox"/>	004	LUM-501-DVR-8CH	Luma 8CH...	Active	192.168.8.133	80	8000	554	V3.0.4build 1...	snapavTest
<input type="checkbox"/>	005	LUM-500-DVR-16...	Luma 16C...	Active	192.168.8.110	80	8000	554	V3.0.4build 1...	snapavTest
<input checked="" type="checkbox"/>	006	LUM-500-FISH-IP-...	IP CAMERA	Inactive	192.168.8.113	80	8000	554	V3.0.4build 1...	snapavTest
<input type="checkbox"/>	007	LUM-700-BUL-IPH...	IP CAMERA	Active	192.168.8.144	80	8000	554	V5.4.1build 1...	
<input type="checkbox"/>	008	LUM-500-TUR-IP-...	IP CAMERA	Active	192.168.8.145	8019	8000	554	V5.4.1build 1...	
<input type="checkbox"/>	009	LUM-500-TUR-IP-...	SaadTuret	Active	192.168.8.104	8025	8000	554	V5.3.6build 1...	snapavTest
<input type="checkbox"/>	010	LUM-500-BUL-IP-...	IP CAMERA	Active	192.168.254.3	80	8000	554	V5.4.1build 1...	
<input type="checkbox"/>	011	LUM-500-BUL-IP-GR	IP CAMERA	Active	192.168.8.112	80	8000	554	V5.4.1build 1...	
<input type="checkbox"/>	012	LUM-700-DOM-IP...	IP CAMERA	Active	192.168.8.126	8016	8000	554	V5.4.1build 1...	
<input type="checkbox"/>	013	LUM-700-BUL-IPH...	IP CAMERA	Active	192.168.254.4	80	8000	554	V5.4.1build 1...	

The device is not activated.

You can modify the network parameters after the device activation.

Cancel OK

New Password:

Confirm Password:

Activate

Edit the Network Settings

Modify Network Parameters

Enable DHCP

Device Serial No.: 0420150626AAWR0932017

Device Name: Luma 4CH DVR

IP Address: 10.102.155.64

Server Port: 8000

Subnet Mask: 255.255.0.0

Gateway: 10.102.0.1

IPv6 Address: fe80::d66a:91ff:fe12:5aa

IPv6 Gateway: ::

IPv6 Prefix Length: 64

HTTP Port: 80

RTSP Port: 554

Admin Password:

Modify

[Forgot Password](#)

Suggested Best Practices: Ensure the **Enable DHCP** box is activated. In your router, reserve an IP address and assign it to the camera's MAC address (found on its box). See your router's documentation for details.

The HTTP port defaults to 80. It lets you to access your camera through the web. The server port defaults to 8000. The Luma mobile app uses it.

For security reasons, change your ports and record the new numbers. Consult your manual for reserved port numbers to avoid.

To confirm changes, enter the password that you created and then click **Save**.

Complete Port Forwarding

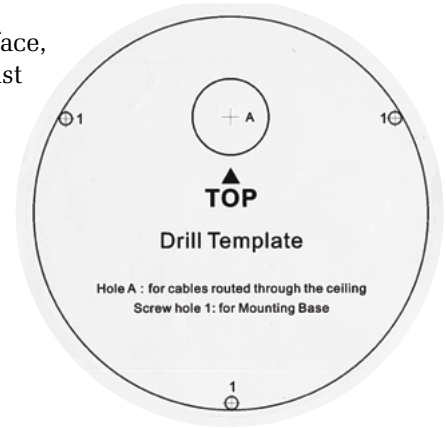
Port forwarding allows you to access the camera from the internet for remote operations. These settings are entered in your network router, typically in a menu called *Port Forwarding* or *Applications and Gaming*. Refer to your router manual for help. Find the settings you need, then log in to the router and enter the new ports.

Port	Default	New Value	Protocol
HTTP	80		TCP/UDP
Server	8000		TCP/UDP
RTSP	554		TCP/UDP

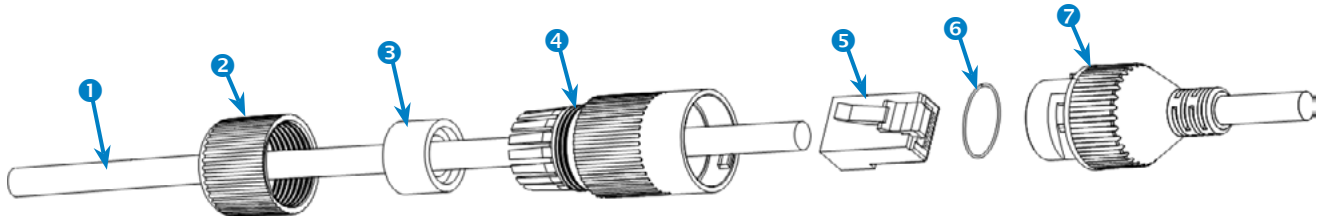
Camera IP Address
<input type="text"/>
Admin Password
<input type="password"/>

Physical Installation

1. Drill a cable hole and pilot holes for your screws in the mounting surface, using the supplied template shown. The cable hole needs to be at least 1 inch wide.
2. Insert the screws into the pilot holes. Leave the screw heads sticking 3/8" out of the wall.
3. Pry off the set screw cover. Loosen the set screw and remove the skirt. The skirt snaps into place with friction locks, so pry it off carefully.
4. **CAUTION! Before terminating your RJ45 for an outdoor install, you must weatherproof it! See the next page for details.**
5. Attach power to the camera.
 - If using PoE, attach the RJ45 cable to the connector.
 - If using 12V DC for power, locate the red and black wire bundle. Attach the hot line to the red wire, and the ground to the black wire.
6. Route the cables through the cable hole.
7. Place the camera in position, slipping the screws through the keyholes of the mounting grooves. Rotate the camera into place, then tighten the mounting screws.
8. Replace the camera skirt and tighten the set screw. Replace the set screw cover.



Weatherproofing the PoE Cable



1. Before terminating the RJ45 cable **1**, slide it through the lock nut **2**, the thick rubber gasket **3**, and the weatherproof endcap **4** as shown. Ensure the notched side of the rubber gasket **3** faces the endcap **4**.
2. Terminate the RJ45 cable **1** with a network plug **5**.
3. Place the O-ring **6** onto the end of the camera's network interface socket **7** with the flat side toward the camera. Push it past the locking teeth as far as it easily goes.
4. Connect the RJ45 plug **5** to the camera's network socket **7**.
5. Align the teeth on the weatherproof endcap **4** with the gaps on the camera's network interface socket **7**, then insert the socket into the endcap. Twist until they click into position (the O-ring **6** gives you a little flexibility while still weatherproofing the connection).
6. Slide the thick rubber gasket **3** into the weatherproof endcap **4**, and secure it by screwing the lock nut **2** tightly onto the endcap **4**.

Start the Web Interface

Open your browser and navigate to the camera's IP address.



Below the login area, you may see: "Please click here to download and install the plug-in. Close the browser when installing the plug-in." If so, download the plug-in and close all browser windows.

Install the *LumaWebComponents* plug-in, restart your browser and go to your camera's login window. Log in as *admin* using the password you created.

You might get a pop-up message that asks whether you want to run the Luma Web Components plug-in. You must allow the plug-in to access your system over the web.

Be sure to save your camera's web page as a favorite in your browser.

Check the Camera

After logging in, your screen shows the live page, which should look similar to the illustration below. If it does not appear, check the connection to your network, and ensure that the camera is powered up.

Click the **Settings Menu** icon to access the web interface tools and finish setup.



Set Up Dynamic DNS

DDNS allows you to connect to your surveillance system from anywhere, via the Internet, using a web address that's easy to remember.

Configure This Computer

System Settings

Maintenance

Security

User Management

Basic Network Settings

Advanced Network Settings

Video/Audio

Image

Basic Events

Smart Events

Storage Schedule

Storage Management

Click on the **Settings Menu** icon (page 18) and navigate to **Basic Network Settings > DDNS**.

Click **Enable DDNS**, then choose a type from the DDNS Type drop-down menu. [We recommend WirepathDDNS](#). Next, choose a server address. [We recommend ns2.wirepathdns.com](#).

Enter your desired domain in the Domain box. This creates a personalized server address, which is shown under Device URL. If someone has already registered your desired domain, the system adds two to four digits to your domain.

Example: If you choose the domain myhome, your system's custom URL would become myhome.wirepathdns.com. If someone already had claimed the myhome URL, then your system's URL would look like myhome13.wirepathdns.com.

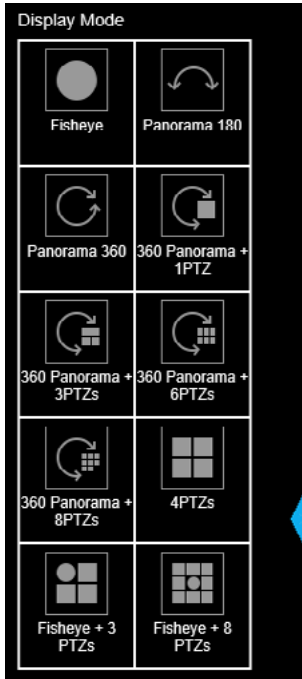
If you changed your HTTP port (see page 15), add a colon and the port number to the URL (e.g., myhome.wirepathdns.com:8402).

NOTE: All your network devices now use this same DNS (with appropriate port numbers)!

Click **Save** to finalize the settings.

TCP/IP	DDNS	PPPoE	Ports	NAT
<input checked="" type="checkbox"/>	Enable DDNS			
	DDNS Type			
	Server Address			
	Domain			
	User Name			
	Port			
	Password			
	Confirm			
	Device URL			

Select Your View



To the left of the main camera views is a small blue triangle. Click this triangle to activate the view flyout menu.

The flyout menu lets you choose which of the views you wish to see in the live view page. Selecting these views does not affect the feeds sent to the NVR.

Note that all of these views use provisional PTZs. To restore the default view (and use the persistent PTZs) press the F5 key on your computer.

Add Additional Users

Click on **User Management**.

Click the **Add** button. Enter the new account's user name and password. Account names can be up to 32 characters long. If you are using an NVR, to ensure compatibility with the NVR's local interface, user names should contain numbers and letters only.

[We recommend that you add accounts by individual users' names, so that you always know which user is involved with any activity.](#)

Passwords cannot be longer than 16 characters. To ensure compatibility with the NVR's local interface, passwords can only contain numbers, letters, spaces, and the following special characters: . , : - /

Choose the account's level. There are two levels for users: operator and user. The only difference is the default permissions they are given. You can customize permissions for each account individually. See the camera web interface manual (available online on your camera's product page) for more details.

Calibrate the Camera's Clock

Click on **System Settings** > **Time Settings**.

Synchronize the Time

At the top, choose your time zone.

By default, the system uses network time protocol (NTP) to synchronize your system to Coordinated Universal Time. [We strongly recommend using NTP to keep your system well calibrated.](#)

If you want to use manual time sync, or if your system is isolated from the Internet, see the camera web interface manual (available online).

Disable DST if Necessary

If you are in a location that does not observe daylight saving time, click the **Enable DST** checkbox to deselect it. Click **Save** to confirm changes.

Fisheye Capabilities of the Luma App

The fisheye camera is, of course, fully compatible with the Luma Surveillance app. In addition, it can use the Fisheye button.



When the fisheye button is tapped, it turns blue to indicate that it is active. While active, you can tap-and-drag in any of the PTZ views to maneuver that camera (just like you can click-and-drag in the web interface). Note that the camera may be slow to respond, due to communication lags.

Tap the fisheye button again to deactivate it.

Support

Need Help? Contact Tech Support!

If you need further clarification, please email support@SnapAV.com. For more information, instructional videos, support documentation, or ideas, visit our website and view your item's product page.

3-Year Limited Warranty

This Luma Surveillance™ product has a 3-Year Limited Warranty. This warranty includes parts and labor repairs on all components found to be defective in material or workmanship under normal conditions of use. This warranty shall not apply to products that have been abused, modified or disassembled. Products to be repaired under this warranty must be returned to a designated service center with an assigned return authorization (RA) number. Contact technical support for an RA number.

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Version 180110-1300