

ISSI

INNOVATIVE SCIENTIFIC SOLUTIONS, INC.

EF Zoom Lens Controller (LC-PZA2)

Operation Manual (Version 1.4)



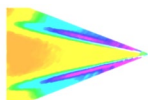


Table of Contents

Description	2
Specifications.....	2
Environmental Specifications.....	2
Connections	3
Lens Adapters	4
Installation and Operation.....	5
Maintenance	9
Network Setup.....	10
Software Operation.....	12
Firmware Upgrade.....	17
Troubleshooting.....	19
Lenses Tested with LC-PZA2.....	23
Dimensions.....	24
Export Disclaimer.....	27

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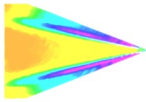
Website: <https://innssi.com/ef-zoom-controller/>



Made in
U.S.A.



Revision Date: 10/14/2021

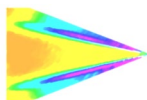


Description

The EF Zoom Lens Controller is designed to operate EF zoom lenses, giving full control of the zoom, focus and aperture of a lens. The controller is designed to operate Canon® EF, EF-S and L series IS auto focus lenses as well as Sigma® and Tamron® EF lenses. Commands for the controller can be written into existing software for both Windows and Linux via API commands. The controller pairs with a LC-2A lens adapter to connect to a variety of camera mounts.



The device is operated via a graphical user interface and allows for preset positions of the lens to be saved and then recalled at any time. It can also be integrated into existing software via TCP/IP API commands in Windows and Linux operating systems. The presets will save the position of the focus and aperture. Since the LC-PZA2 is an Ethernet device, it can be networked with other LC-PZA2s or Ethernet devices. This makes communication and physical cable connections much simpler than traditional serial lens controllers and also allows them to be operated over a longer distance than serial devices. The IP address of the LC-PZA2 can be configured to match the local network.



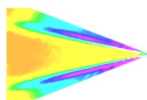
Specifications

Power	100-240 V, 50-60Hz
Input	12VDC, 1.5A
Interface	10/100 Mbps Ethernet, RS-232/422/485, I ² C
Lens Adapter	c, M42, T, M58 (customization available) – Sold Separately
Lens inputs	1
Presets	Programmable
Software	Windows GUI
Warranty	1 year
ECCN	EAR99



Environmental Specifications

Uses	Indoor, Outdoor
Altitude	2,000 m
Operating Temperature	2- 60 °C
Relative Humidity	80% (up to 31°C), 50% (40°C)



The LC-PZA2 is shipped with:

1. DC Power adapter
2. Ethernet cable
3. LC-2A lens adapter
4. LC-PZA2 lens control box
5. USB drive with software and instruction manual



Connections

The EF zoom lens control system consists of the zoom controller (LC-PZA2) and adapter (LC-2A-C/M42/T/T18/M58). The adapter should be selected to match the desired camera body connection.

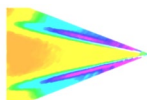
LC-PZA2 Controller Connections Panel

Power	Device is powered on
Ethernet	Ethernet communication connection
Lens	Connection for lens adapter
Reset	Reset switch (underneath)

On the connections panel, the lens adapter, power and Ethernet communication connections are made. If the IP address is changed and forgotten, the reset switch will set the device back to its default IP address of **192.168.2.252**. Use a paper clip to reset the device, holding for 3 seconds. Restart the software and the LC-PZA2 will connect with its default IP address.



Lens Connection / Ethernet / Power Connection



Lens Adapters

Choosing the right lens adapter for your camera is important to maintain proper flange focal distance so that the lens can focus to infinity. A variety of standard adapter options are available as well as customization.



EF-c Lens Adapter (LC-2A-C)

A popular mount for lower resolution image sensors, the c-mount is a 25 mm threaded optics mount. The front side of the adapter features an EF adapter ring to lock the lens in place and pins to make contact with the pads on the lens. The back side is a male c-mount threaded screw mount which threads directly into a camera lens mount.



EF-M42x1 Lens Adapter (LC-2A-M42)

A popular mount for medium to high resolution image sensors, the M42-mount is a 42 mm threaded optics mount. The front side of the adapter features an EF adapter ring to lock the lens in place and pins to make contact with the pads on the lens. The back side is a male M42x1.0 metric threaded screw mount which threads directly into a camera lens mount.



EF-M42x0.75 Lens Adapter (LC-2A-T)

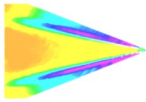
The "T" mount is a common lens mount for astronomy cameras and other optical assemblies. The front side of the adapter features an EF adapter ring to lock the lens in place and pins to make contact with the pads on the lens. The back side is a male M42x0.75 metric threaded screw mount which threads directly into a camera lens mount. Also available in short 18mm thickness (LC-2A-T18).



EF-M58x0.75 Lens Adapter (LC-2A-M58-75)

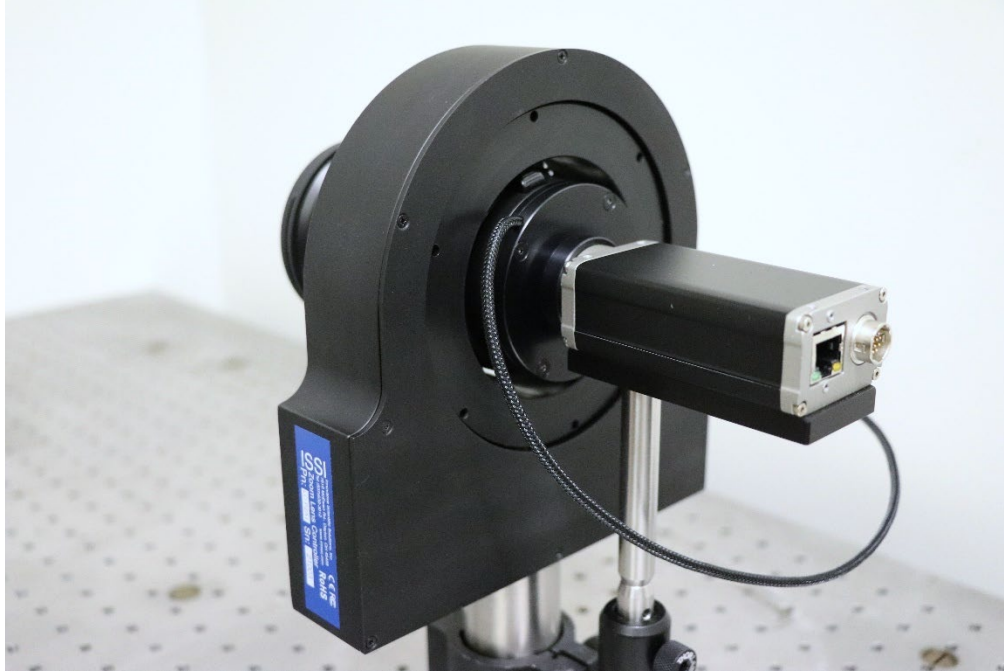
The M58 adapter is used on cameras with large format, high-resolution imaging sensors. The front side of the adapter features an EF adapter ring to lock the lens in place and pins to make contact with the pads on the lens. The back side is a male M58x0.75 metric threaded screw mount which threads directly into a camera lens mount.





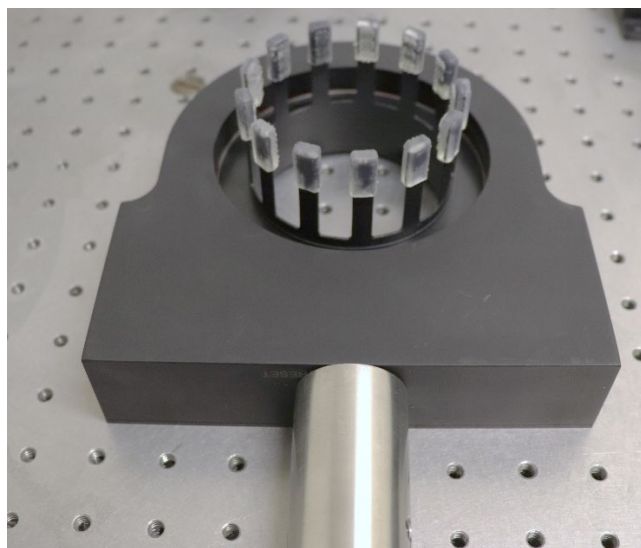
Installation and Operation

Begin by mounting the lens adapter to the camera body itself and securing tightly. If the lens adapter is a screw-mount, it can come unscrewed by the LC-PZA2 if not secure.

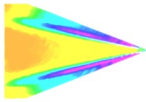


Connection of LC-PZA2 to EF Lens using LC-2A-C lens adapter on c-mount camera

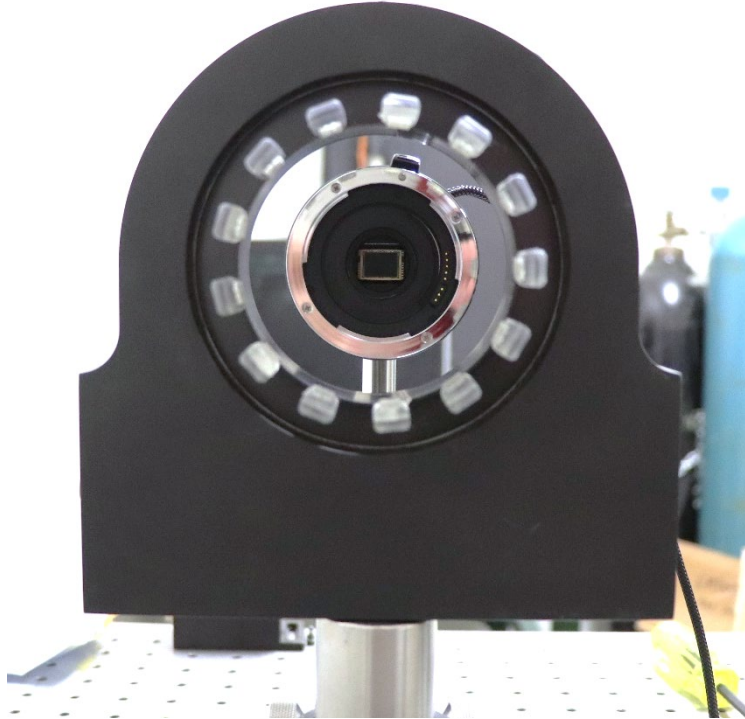
The LC-PZA2 has a 1/4"-20 threaded mounting hole on the underside so that it can be attached to a mounting post as shown below. The controller is shipped with a 1/4"-20 to M6 adapter for users where metric mounting hardware is preferred.



Mounting Post Attached to LC-PZA2 Body

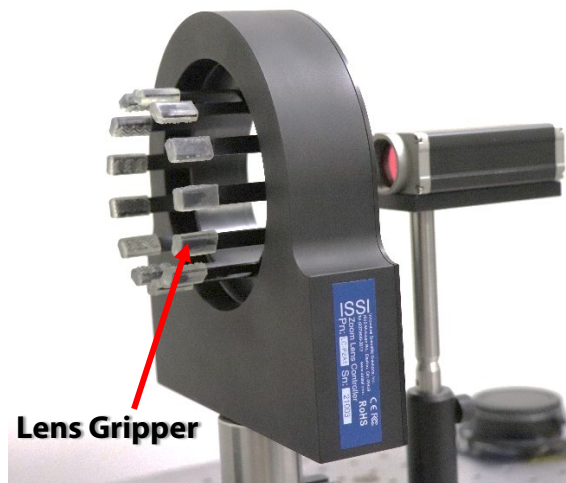


Attach the lens adapter to the camera. Mount the camera on the appropriate mounting post or bracket. Next, align the LC-PZA2 gripper with the lens adapter which is connected to the camera as shown below. The gripper fingers are flexible so there is some margin for error in aligning the two pieces.

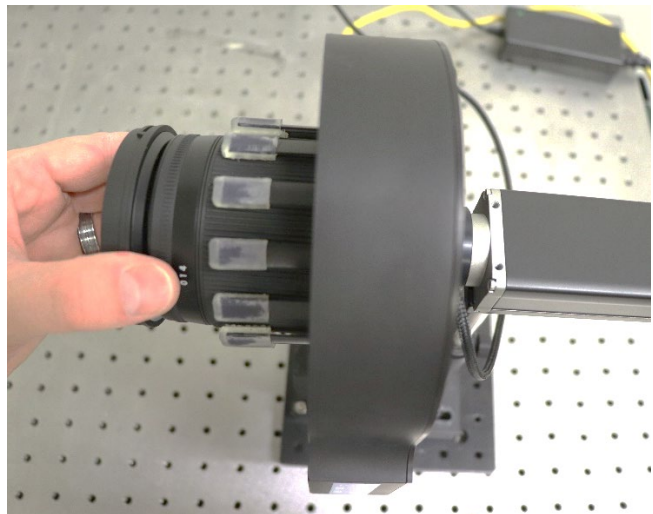


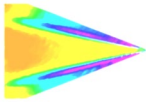
Camera and Lens Adapter Aligned with LC-PZA2 Lens Gripper

Once aligned, insert the lens through the front of the gripper and connect to the lens adapter.



Lens Gripper





After inserting the lens, attach to lens adapter and make sure it locks in place with a click. The lens will have a red dot indicating the position of the lens to correctly install to the adapter. Line up the red dot on the lens with the one on the adapter and insert lens into adapter.



Align Red Dots



Push Lens Into Adapter

Twist the lens clockwise until it clicks and locks. To release the lens, push down (toward the camera) on the release button (pictured on next page) and twist the lens counterclockwise.



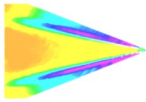
Lens in Lock Position



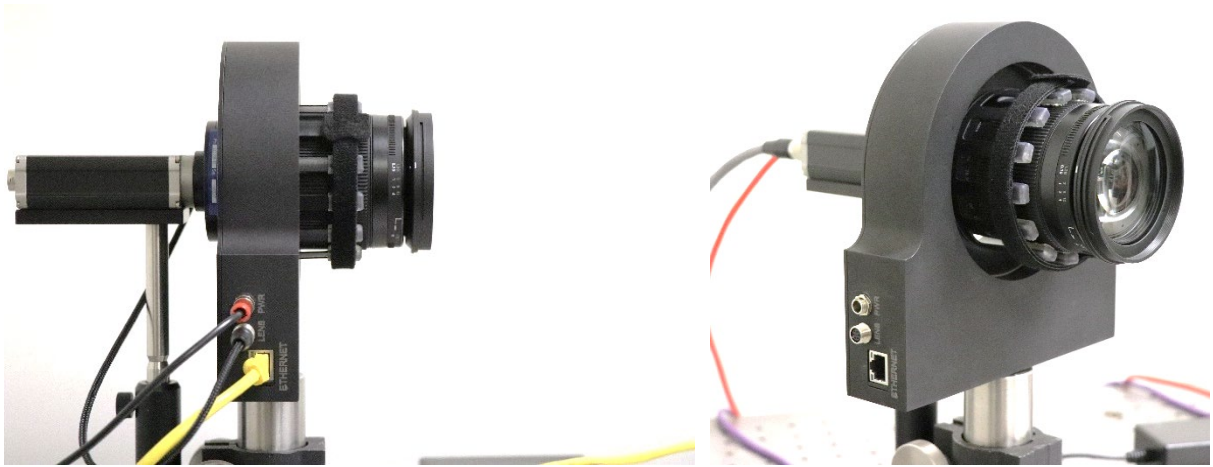
Push Button to Release

Adjust the camera position relative to the zoom controller so that the lens gripper pads make contact with the rubber grip on the lens.

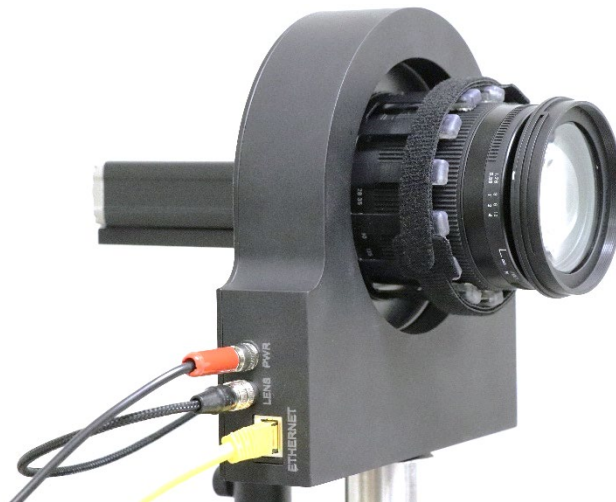




Verify the zoom ring is not locked and can freely rotate by hand before installing into the LC-PZA2. Install the provided Velcro strap around the gripper to secure the gripper to the lens. Make sure the gripper's rubber pads are connected to the zoom ring on the lens and **NOT** the focus ring.

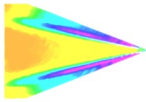


Next, the controller power and communication can be connected. Plug the power adapter to the LC-PZA2 control box in the receptacle labeled **POWER**. Seat the plug so it is fully inserted in the power receptacle. Screw the locking connector clockwise until tight. When mounting the control box, do not position it so that the power plug is difficult to plug in or unplug. Connect the power adapter to universal power (110-240 VAC).



Connect the Ethernet cable to the connection labeled **ETHERNET**. Make sure the connector clicks into place securely. Connect the lens adapter cable to the connection labeled **LENS**. This is a keyed connector and it should be rotated until it slides over the receptacle on the LC-PZA2 controller housing. Once fully inserted, turn clockwise until tightened.

Connect the other end of the Ethernet cable to the NIC of the control computer or local network switch. Connect the other end of the Ethernet cable to the **ETHERNET** receptacle on the LC-PZA2. The green and orange lights on the Ethernet receptacle will flash once communication has been established.

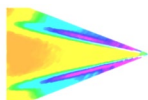


Failure to install and operate the LC-PZA2 according to instructions may result in impairment or damage to the controller and attached lens.

Maintenance

Inspect all connections and ensure they are free of debris that could prevent electrical contact from being made. Make sure no debris is present that could cause an electrical short. Always disconnect the device from power when performing routine maintenance inspections.

Make sure all gripper pads are properly contacting the lens when installed.



Network Setup

The network on the PC NIC (network interface card) needs to be properly configured for communication over the network. To do this, navigate to the 'Network Connections' page on the control panel where the local networks of the computer is displayed. Right-click on the network where the LC-PZA2 is connected and select 'Properties.'

TCP/IP Address

IP address: 192 . 168 . 2 . 100

Subnet mask: 255 . 255 . 255 . 0

Add Cancel

From the 'Local Area Connection X Properties' window, click on 'Internet Protocol Version 4 (TCP/IPv4)' and then press the 'Properties' button, now useable. This will open the 'Internet Protocol Version 4 (TCP/IPv4) Properties' window. This is where the IP addresses are entered so that LC-PZA2 can be reached over the local network. The settings needed for communication are **IP Address** and **Subnet mask**.

The IP address of the NIC should use the following conventions:

IP Format: **Network.Network.Subnet.Host**

- LC-PZA2 IP: 192.168.2.252
- NIC IP: 192.168.2.XXX

Ethernet 2 Properties

Networking Sharing

Connect using:

Intel(R) Ethernet Connection (2) I219-V

Configure...

This connection uses the following items:

- ☒ Client for Microsoft Networks
- ☒ File and Printer Sharing for Microsoft Networks
- ☒ eBUS Universal Pro Driver
- ☒ QoS Packet Scheduler
- ☒ Internet Protocol Version 4 (TCP/IPv4)
- ☐ Microsoft Network Adapter Multiplexor Protocol
- ☒ Microsoft LLDP Protocol Driver

Install... Uninstall Properties

Description

Allows your computer to access resources on a Microsoft network.

OK Cancel

Internet Protocol Version 4 (TCP/IPv4) Properties

General

You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.

☐ Obtain an IP address automatically

☒ Use the following IP address:

IP address: 192 . 168 . 2 . 84

Subnet mask: 255 . 255 . 255 . 0

Default gateway: 192 . 168 . 1 . 1

☐ Obtain DNS server address automatically

☒ Use the following DNS server addresses:

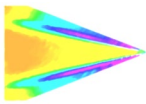
Preferred DNS server: . . .

Alternate DNS server: | . . .

☐ Validate settings upon exit

Advanced...

OK Cancel

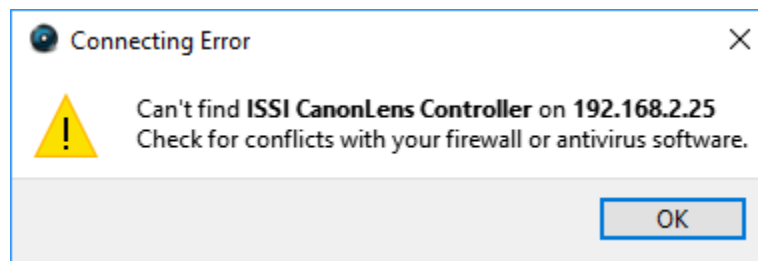


The NIC IP address should have the same network and subnet addresses but a unique host, the last line of the IP address. The host can be any value 1-254 but different from the host address of the LC-PZA2. The subnet mask should be set to match that of the LC-PZA2 which, by default is 255.255.255.0. The **Default Gateway** and all other fields can be left blank.

Additional subnetworks can be configured for the same NIC. In the '*Internet Protocol Version 4 (TCP/IPv4)*' window, the **Advanced** button will open the '*Advanced TCP/IP Settings*' window. IP addresses of any subnetwork can be added for that NIC here. If multiple devices are being used on the same network and they have differing subnetworks, this option provides communication for all devices without the need to change IP addresses for each device.

***Note:** Verify that lens controller default subnetwork (192.168.2.XXX) is configured on the NIC as well as any other subnetwork that may be used to communicate with the LC-PZA2. Failure to do so will prevent the software interface from finding any connected LC-PZA2.

If the lens controller is not connected properly a connection error (below) will be displayed. First, reset the device via the reset switch which will restore the default IP address.

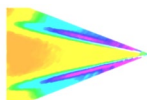


If connection problems persist, check the connection of the Ethernet cable between the computer NIC and the LC-PZA2. To check that there is a physical connection, ping the IP address of the LC-PZA2 from the Command Prompt. To do this, open the command prompt window and enter: **Ping XXX.XXX.XXX.XXX -t**

```
C:\Windows\system32\cmd.exe - ping 192.168.2.109 -t
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

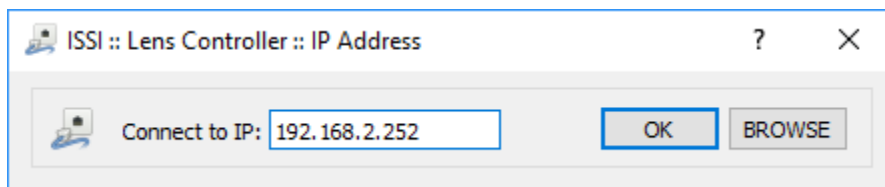
C:\Users\Steve>ping 192.168.2.109 -t

Pinging 192.168.2.109 with 32 bytes of data:
Reply from 192.168.2.109: bytes=32 time<1ms TTL=128
Reply from 192.168.2.109: bytes=32 time<1ms TTL=128
Reply from 192.168.2.109: bytes=32 time<1ms TTL=128
Reply from 192.168.2.109: bytes=32 time<1ms TTL=128
Reply from 192.168.2.109: bytes=32 time<1ms TTL=128
Reply from 192.168.2.109: bytes=32 time<1ms TTL=128
```

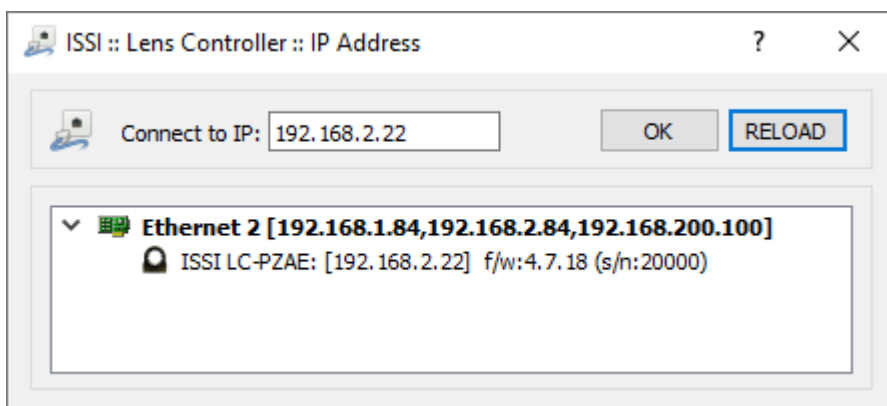



Software Operation

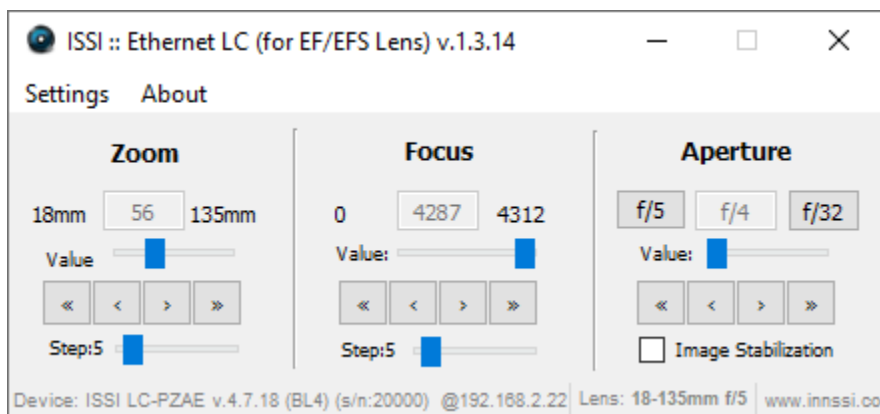
Open the software for the LC-PZA2 from the desktop and it will ask for the IP of the connected LC-PZA2. Enter the IP address of the LC-PZA2 connected to the network.



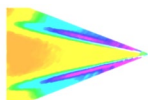
If the IP address is unknown, press '**Browse**' to search through all IP addresses on the network under the subnet(s) of the NIC.



Once connected, the GUI will learn the limits on the attached lens and show the current position of each motor of the lens. For the preset capability, this determines the minimum and maximum motor positions. The firmware version, serial number and IP address are displayed at the bottom of the GUI. The lens information (focal length and F number) are displayed as well. To communicate with multiple LC-PZA2s over this network (through a network switch), open up another instance of the program on the desktop.



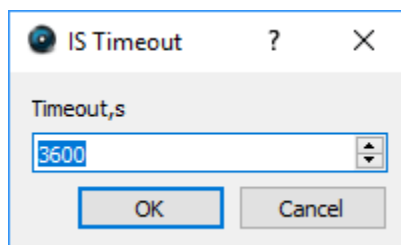
The user interface displays the current positions of the Focus and Aperture. There are two sets of arrows below this which are used to move the position of the motor. The single-arrow moves the focus one step



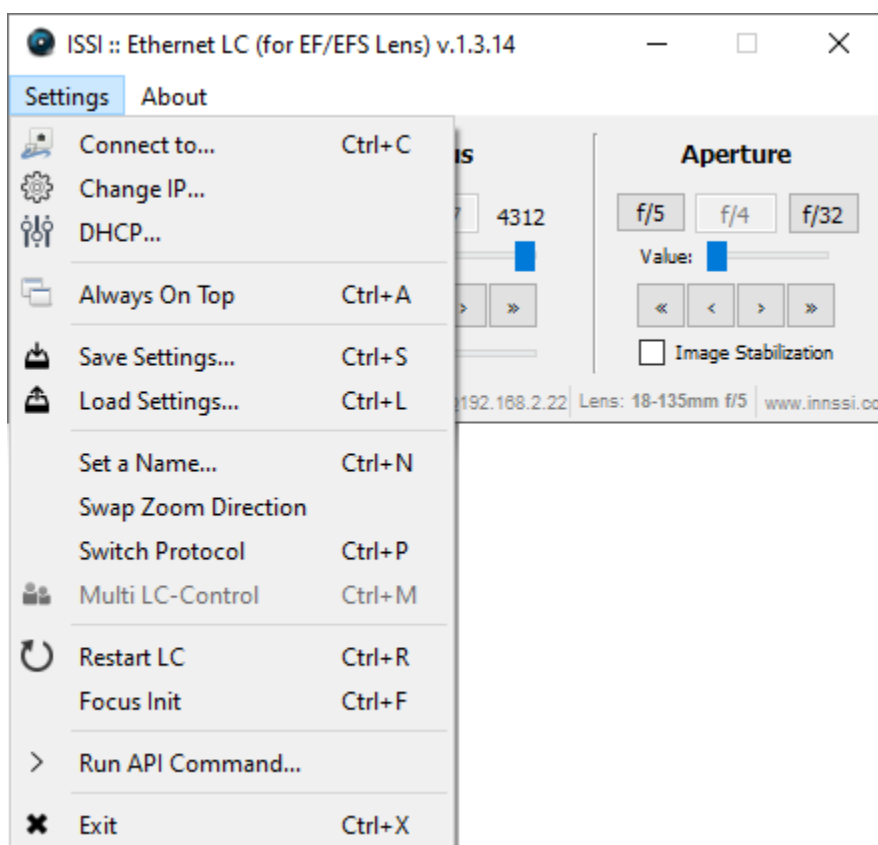
increment and the double-arrow moves the focus 2x one step size for coarse adjustments. Step size can be set from 1 to 50. The focus and aperture can also be moved to points within its range using the sliding adjustment labeled '**Value**'.

To enable focus control of the connected lens, the lens must be switched to autofocus (AF) mode. If the lens is switched to manual focus (MF) mode, the focus tab will no longer be operable via the GUI.

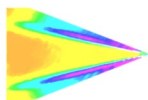
Image stabilization (IS) can be enabled and disabled for lenses that have the IS feature. The IS switch on the lens must be switched ON to use this feature. Check '**Image Stabilization**' to enable and leave unchecked to disable. Once checked, a pop-up window will appear so the timeout can be set. The maximum timeout is 3600 seconds (1 hour). This feature will be disabled for lenses without IS capability. If a longer timeout is needed, the API commands can be set so that the IS stays on continuously although continuous operation is not recommended.



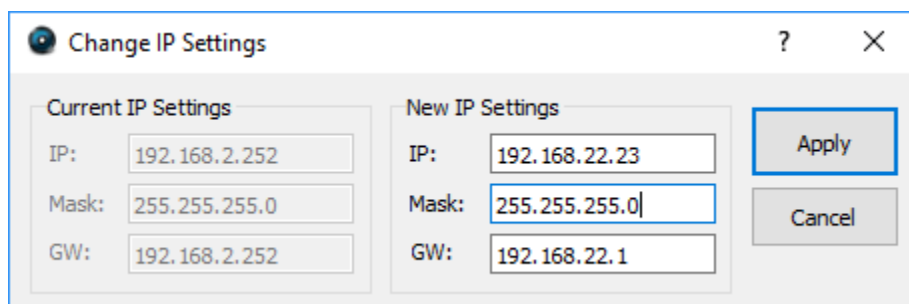
Settings



To connect to a different lens controller, select '**Connect to**' from the **Settings** menu.

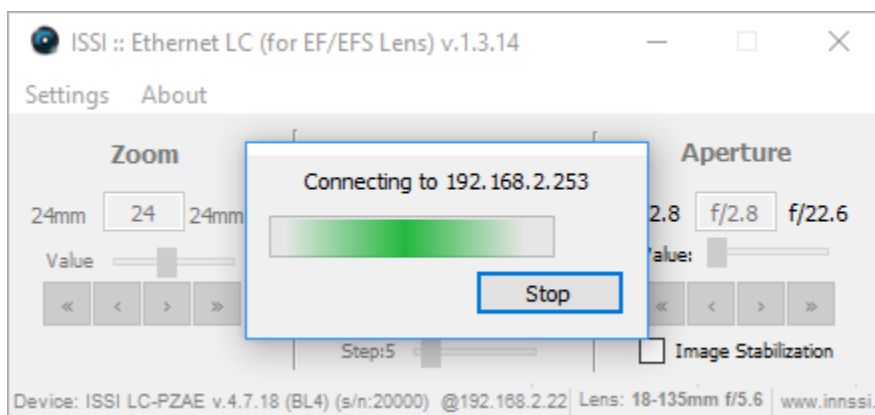


Once connected, the IP address, mask and gateway (if being used through a router) of the lens controller can be changed if desired. Under the **Change IP** window the settings can be updated. If networking multiple LC-PZA2s the IP address of each must be unique.

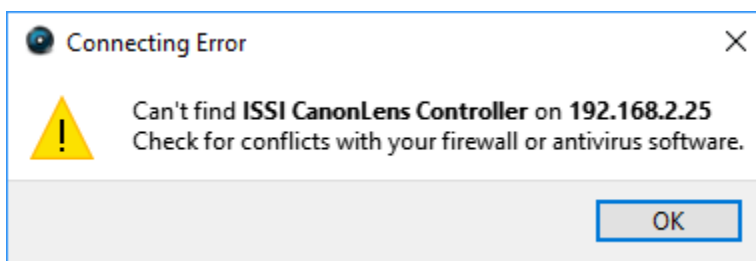


If the toolbar is red, that means it is not a valid IP address. Type in the desired IP address and click **Apply** to implement.

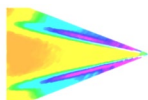
The new IP address will automatically be connected:



If the IP address does not change and the following message is displayed after the IP is changed, it may need to be run as administrator.

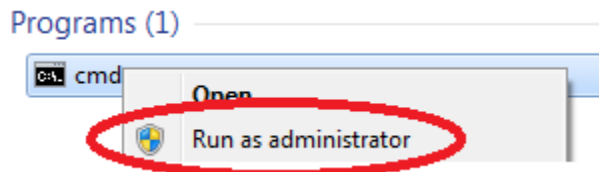


When the IP address is changed, the software will automatically attempt to switch communication to the new address. If it can't find that address, it is likely to be because the IP address previously used is stored on the computer and needs to be cleared before the new address can take hold. The timeout for this to occur by itself can sometimes be 10-20 seconds. To do this, there are two options:



1. Run the lens control software as the administrator
2. Clear the list of IP addresses in the computer through the command prompt (shown below):

Open the Command Prompt (Start > Search > cmd) as administrator:



Once the command prompt is open, type “**arp -a**” to display the IP address and Physical Address of all devices on the local network.

```
C:\Windows\system32\cmd.exe
C:\Users\Steve>arp -a

Interface: 192.168.1.25 --- 0xc
Internet Address      Physical Address      Type
192.168.1.1           6c-41-6a-48-78-2b     dynamic
192.168.1.2           6c-62-6d-a6-65-26     dynamic
192.168.1.3           14-18-77-6f-9d-76     dynamic
192.168.1.22          b4-b5-2f-d9-f3-4f     dynamic
192.168.1.30          14-dd-a9-d5-e8-9f     dynamic
192.168.1.32          00-1d-73-19-ef-86     dynamic
192.168.1.40          00-21-b7-ba-0a-84     dynamic
192.168.1.42          00-1e-c9-d5-05-91     dynamic
192.168.1.43          00-11-1c-f6-31-7b     dynamic
192.168.1.44          7c-05-07-8a-5d-d8     dynamic
192.168.1.48          c0-7c-d1-fc-98-68     dynamic
192.168.1.53          00-1f-bc-09-39-03     dynamic
```

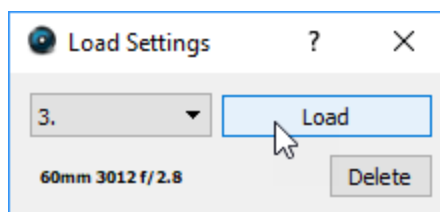
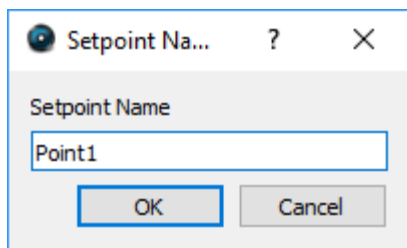
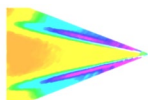
To clear the table so the lens controller IP is reset to the new address entered, type “**arp -d**”. Running the lens control software as administrator will automatically clear the ARP table.

```
C:\Windows\system32>arp -d
```

DHCP will allow the program to run connected to a dynamic IP address on the connected PC rather than a static IP address.

Always on Top makes the LC-PZA2 software always appear as the front window for all windows open on the desktop.

The save and load settings are used to save positions and recall them on each motor of the lens. When the lens parameters are at their desired location, those positions on each motor can be saved and later recalled. To save new settings, select **Save Settings** and enter a name for those lens settings. Settings are saved to the computer in which the interface is open, not the lens controller itself.



To recall those lens settings, select **Load Settings** and the lens will return each motor to those positions. The lens focal length, position of the focus motor and F number will be displayed for each saved set point.

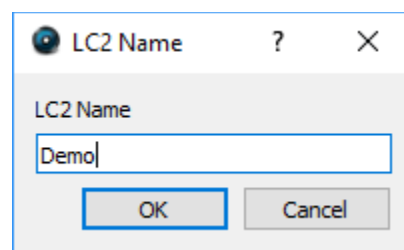
When the position of the lens is being set, the above status window will show the progress.

Keyboard Commands

For faster access to preset positions, keyboard commands can be used to recall saved positions. If a preset is saved with any single digit integer (0-9) it can be recalled by the command *Ctrl+0, 2.....9*. Individually recall these commands by holding *Ctrl* + the number of the preset. To recall these presets, they must have the name of the single digit integer being recalled. For example, if a preset is saved as 1, then pressing *Ctrl+1* will recall that preset.

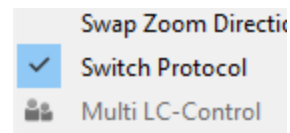
Set Name will allow a device name to be entered for the connected lens controller. If multiple lens controllers are being used over the same network, this will aid in distinguishing them.

This name will then be displayed in the bottom right corner of the user interface.



Swap Zoom Direction will switch the direction of the zoom orientation in the user interface to match the zoom direction of the lens. Some lenses zoom clockwise while other zoom counter-clockwise.

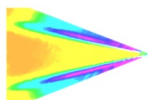
Switch Protocol will switch between lens communication protocols so that the connected lens may work properly. A select number of Canon EF-S lenses use a different protocol to communicate with the camera requiring a selectable mode for proper operation with the lens controller so that it may mimic camera communication.



Restart LC will perform a software reset. This should be used to fix connection problems or if the software becomes unresponsive.

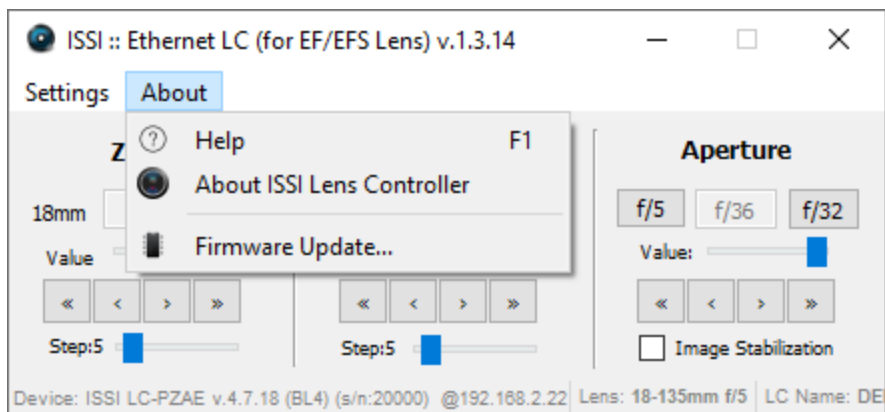
Focus Init will find the limits again. This can be used if the lens limits need to be re-learned for lenses will multiple focal range settings.

Exit will disconnect from the lens controller and exit the program.

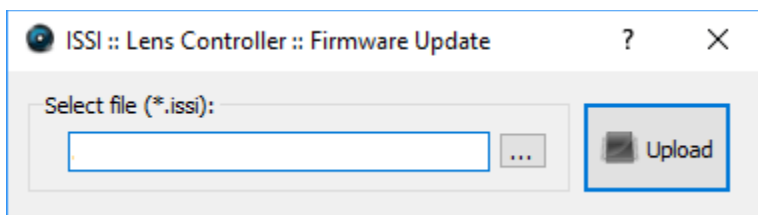


Firmware Upgrade

Firmware can be upgraded over the Ethernet connection. When a firmware update is available, download from the ISSI website (<https://innssi.com/ef-zoom-controller/>) and save. The firmware update tool can be found in the '**About**' menu. Firmware updates will be issued if needed and will always be posted to the ISSI website under the ISSI products page in the download section for the LC-PZA2. Always use the software version recommended for the firmware.

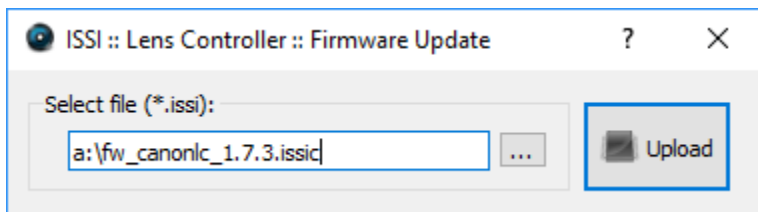


Click on **Firmware Update** to open the window to select the firmware file to upload.



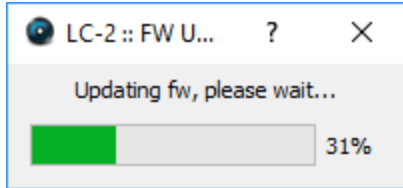
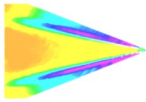
Select the file to upload.

Once the file is loaded into the Firmware Upload tool, click **Upload**.

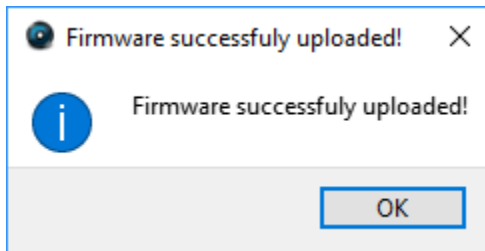


The following warning will appear to notify the user to cycle the power by the power connection before uploading the firmware update.

When the firmware is uploading the status will be displayed.



Once the firmware is successfully uploaded, the following message will appear.



Troubleshooting

Communication

The lights on the Ethernet port should be flashing if communication is established. If the device is locked and the lights are not flashing, it is locked in firmware upgrade mode.

Check the lens to assure the lens is locked in place. If the lens is not locked in place, the pins may not be correctly aligned, which can cause the device to lose power.



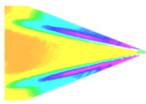
Firmware Upgrade

If the lens controller firmware update fails to initialize, it may appear that the lens controller is locked and communication can't be established. Start by pinging the IP address in the command prompt to assure there is communication.

```
Pinging 192.168.2.251 with 32 bytes of data:
Reply from 192.168.2.251: bytes=32 time<1ms TTL=128
Reply from 192.168.2.251: bytes=32 time<1ms TTL=128
Reply from 192.168.2.251: bytes=32 time<1ms TTL=128
Reply from 192.168.2.251: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.2.251:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

If there is no communication and a general failure message is displayed, there may be another issue like the Windows Firewall or antivirus blocking the program.



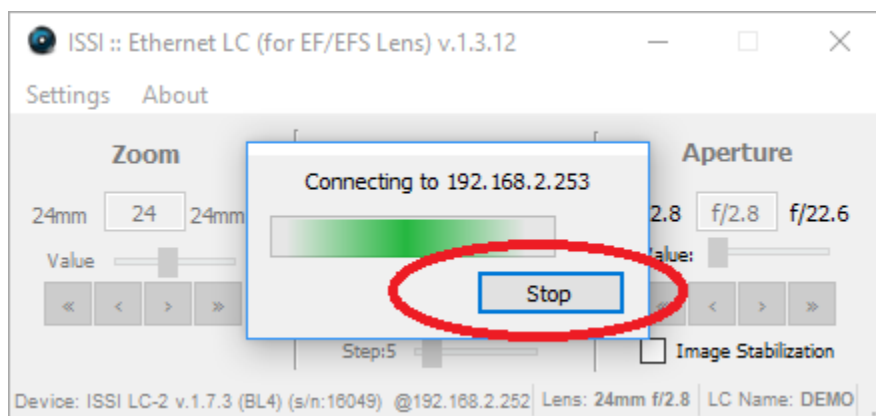
```
Pinging 172.0.0.21 with 32 bytes of data:  
PING: transmit failed. General failure.  
PING: transmit failed. General failure.  
PING: transmit failed. General failure.  
PING: transmit failed. General failure.
```

The firewall or antivirus will either need to be turned off or an exception for the software will have to be made to allow it through.

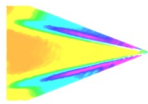
In this case, try connecting to the lens controller in the software interface. It won't connect so press the **STOP** button.

Another solution to communication issues is to clear the associated IP addresses to the LC-PZA2. This problem can occur when the IP address is changed. There are two methods to clear the IP addresses.

- 1.) Run the lens control interface as administrator
- 2.) Open the command prompt (as administrator) and type "**arp -d**".

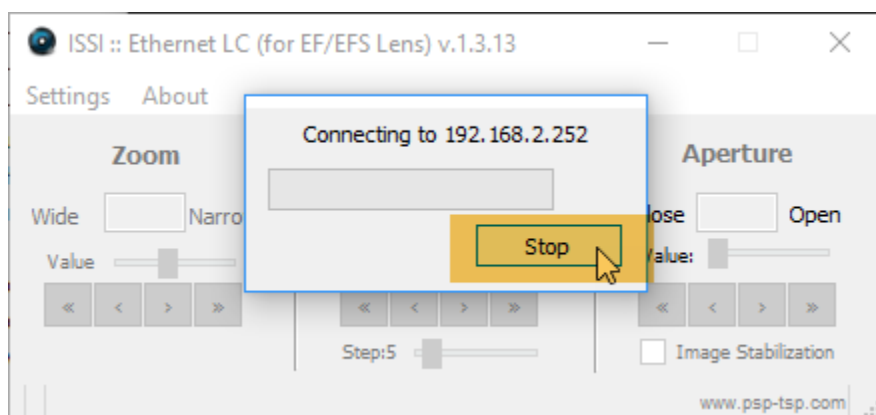
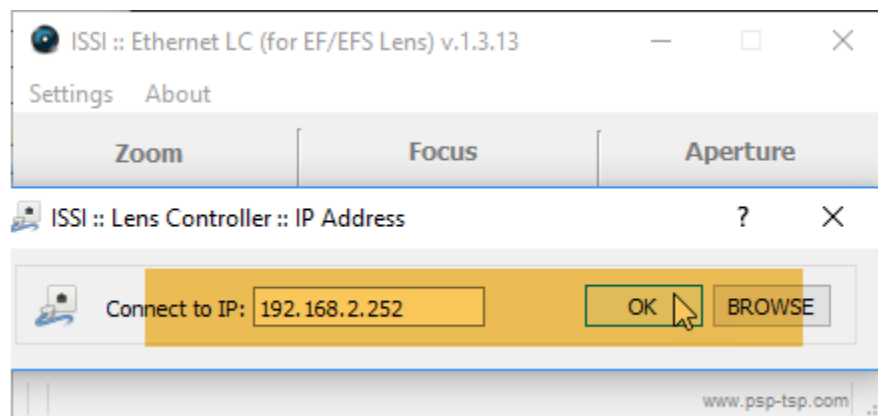
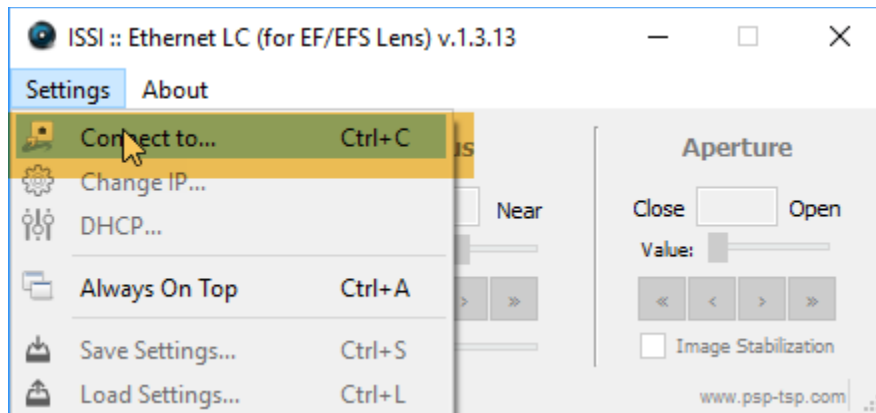


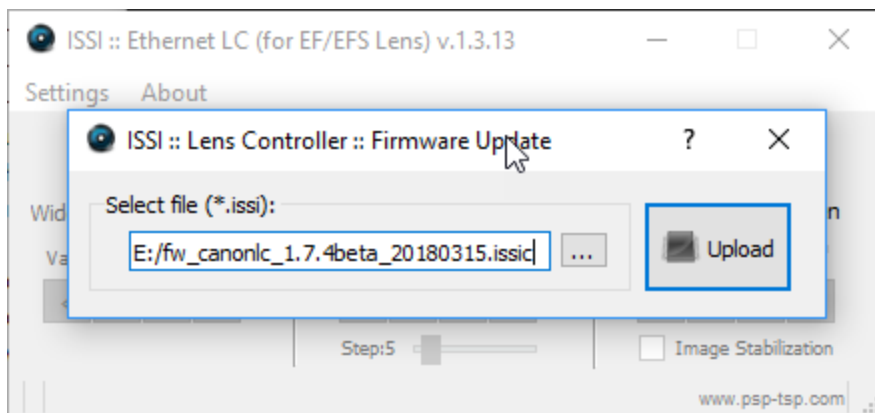
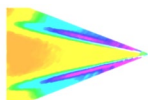
Next, go to the firmware update and load the firmware again. Even though the communication is not established with the software interface, it is still connected to the NIC, which means the firmware can still be updated. Once the firmware is uploaded, the controller should connect via the interface.



Locked In Programming Mode

If the controller can be pinged but not connected via software, it could be in programming mode, awaiting firmware. In that case, follow the steps below to gain control back:





If it does not start automatically (after 1-2 sec), restart by power.

Recovery and Reset

Once all network settings have been verified to be correct and if resetting the controller doesn't solve communication problems, the following steps can be performed to reset the controller by power and recover communications.

1.) Connect a lens to the adapter to allow the controller to find the lens. It may be in a loop looking for a lens.

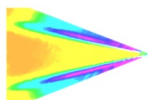
If that does not work:

2.) Open the software and go to the firmware update. Select the firmware and load (even if the lens won't connect). Disconnect the power. Hold the reset button down. While continuing to hold down the reset button, re-connect power. Continue to hold the reset button down until the lights on the Ethernet port begin to flash. Connect lens and try connecting to the controller again.

Focus Drift

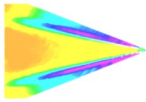
Many lenses experience drift in the focus motor position. This causes the encoder position associated with a particular focus point to change. This is not an effect of the controller, but the lens encoder itself.

Lenses will drift a few encoder counts once they hit a stop. The higher-quality lenses (L-series and with USM) will have far less drift than the cheaper lenses. To account for drift, the focus range needs to be re-learned by the controller. This can be done using the **Focus Init** function in the software (or "refRange" command for API). After the focus range is re-learned, load the saved preset and it will move to the correct position.



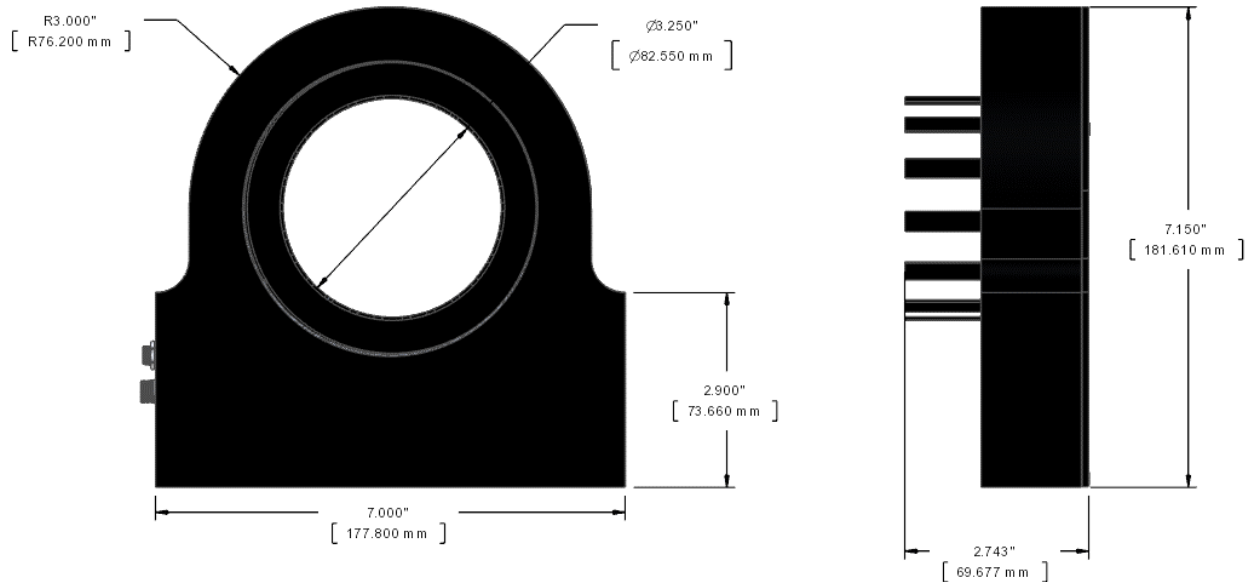
Lenses Tested with LC-PZA2

- Canon EF-S 18-55mm f/4-5.6 IS STM
- Canon EF-S 15-85mm f/3.5-5.6 IS USM
- Canon EF-S 18-135mm f/3.5-5.6 IS USM
- Canon EF 20mm f/2.8 USM
- Canon EF-S 24mm f/2.8 IS USM
- Canon EF 28mm f/1.8 USM
- Canon EF 35mm f/2.0 IS USM
- Canon EF 35mm f/1.4 L USM
- Canon EF 50mm f/1.4 USM
- Canon EF 50mm f/1.2 L USM
- Canon EF-S 60mm f/2.8 USM
- Canon EF 85mm f/1.8 USM
- Canon EF 100mm f/2.8 USM
- Canon EF 100mm f/2.8L Macro IS USM
- Canon EF 100mm f/2.0 USM
- Canon EF 135mm f/2.8 STM
- Canon EF 180mm f/3.5 L USM
- Canon EF 70-200mm f/2.8 L IS II USM
- Canon EF 70-200mm f/4 L USM
- Canon EF 200mm f/2.8 L USM
- Canon EF 400mm f/5.6L USM
- Canon EF 600mm f/4L IS II USM
- Tamron SP 85mm f/1.8 Di VC USD
- Sigma 18-300mm f/3.5-6.3 DC OS HSM Contemporary



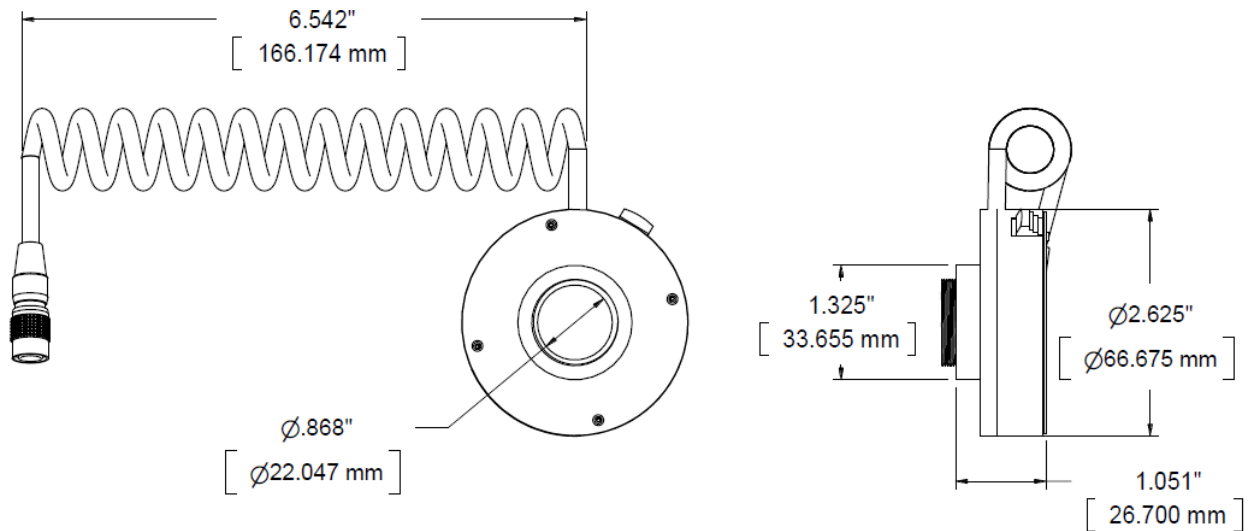
Dimensions

Controller Housing

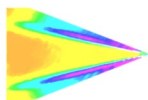


LC-PZA2 (Shown with Smaller Lens Grip – Larger Grip can accommodate 4.0" (101.6mm))

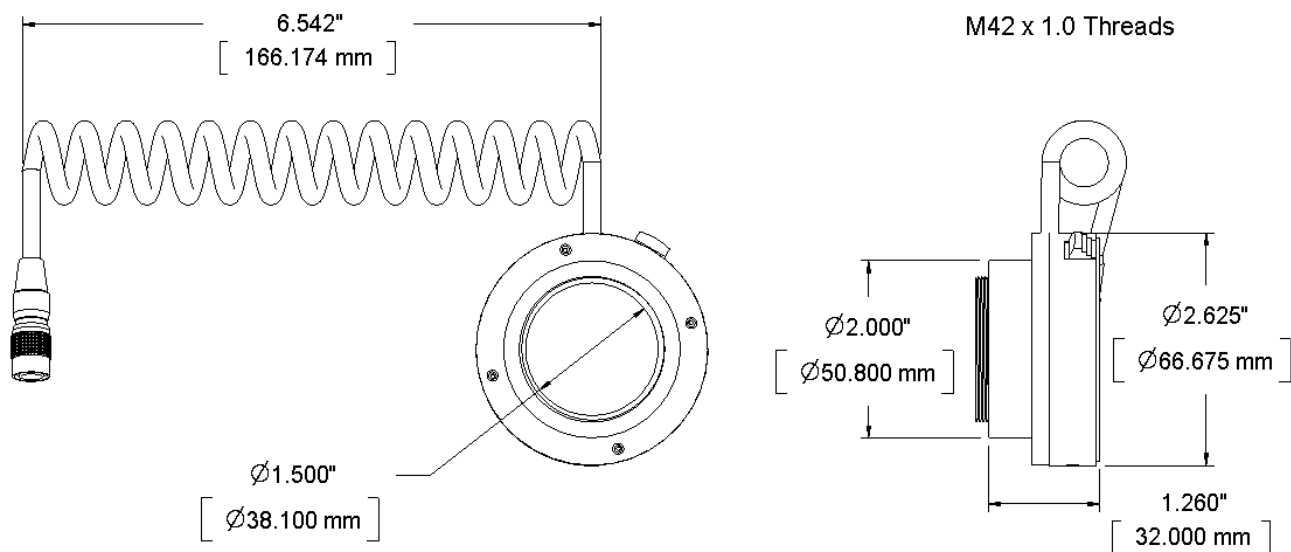
C-Mount Lens Adapter



LC-2A-C Lens Adapter (EF-C lens adapter)

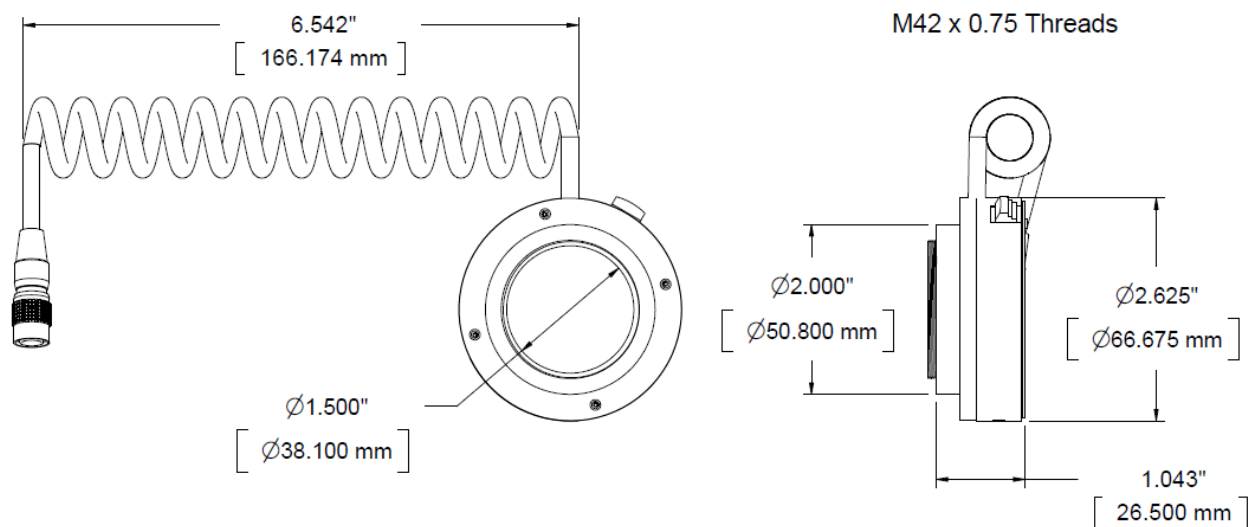


M42-Mount Lens Adapter

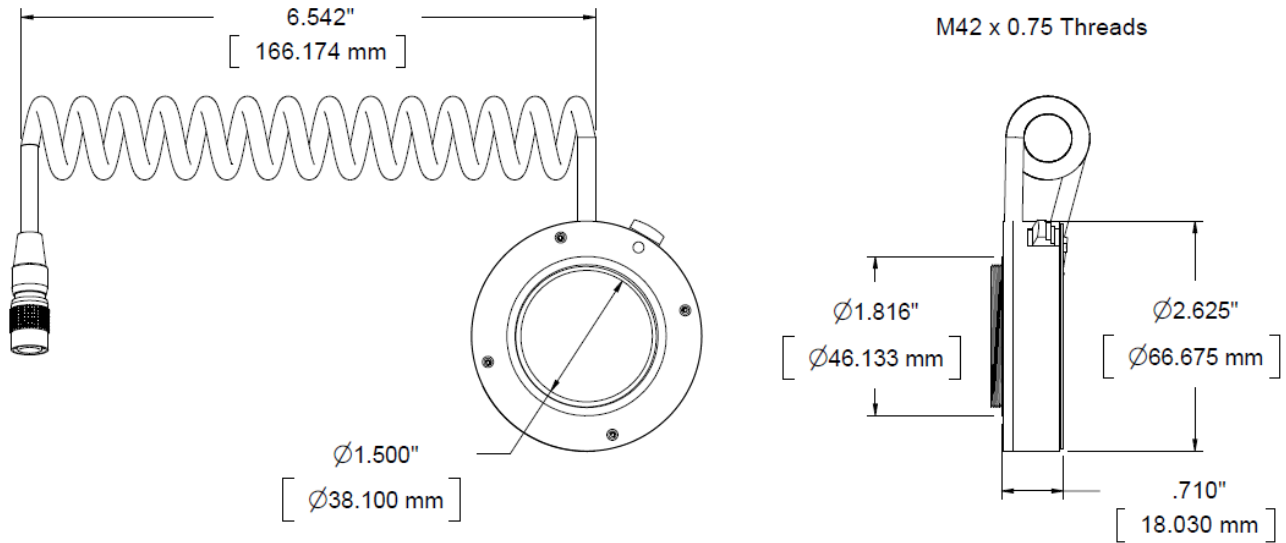
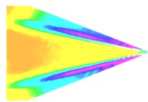


LC-2A-M42 Lens Adapter (EF-M42x1 lens adapter)

T-Mount Lens Adapters

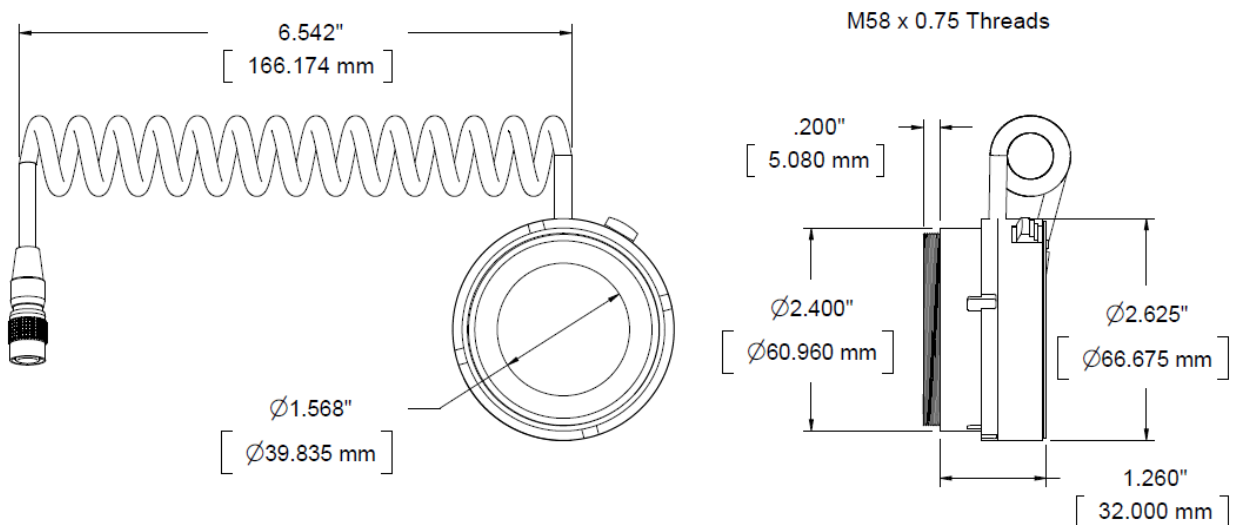


LC-2A-T (EF-T lens adapter)



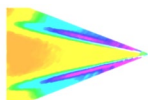
LC-2A-T18 (EF-T lens adapter)

M58 Lens Adapters



LC-2A-M58-75 Lens Adapter (EF-M58x0.75 lens adapter)

Custom adapters are available. Call or email us to get a quote.



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