

# GETTING STARTED

## FLIR FLEA<sup>®</sup>3 USB3 Vision

### Will your system support the camera?

Recommended System Configuration:

- **OS**—Windows 7, Linux (32- or 64-bit)
- **CPU**—Intel Core i3 3.1 GHz or equivalent
- **RAM**—2 GB
- **Video**—128 MB RAM
- **Ports**—PCIe 2.0 compatible host controller with USB 3.1 connector
- **Software**—Microsoft Visual Studio 2005 SP1 and SP1 Update (to compile and run example code)

See [Technical Application Note 10359](#) for information on recommended system components for USB 3.0.

### Do you have a downloads account?

Our [downloads](#) page has many resources to help you operate your camera effectively, including:

- Software, including Drivers (required for installation)
- Firmware updates and release notes
- Dimensional drawings and CAD models
- Documentation

To access the downloads resources you must have a downloads account.

1. Go to our website: [www.flir.com/iis](http://www.flir.com/iis).
2. In the upper right corner, click **Register**.
3. Complete the form, then click **Register**.

After you submit your registration, you will receive an email with instructions on how to activate your account.

### Do you have all the parts you need?

To install your camera you will need the following components:

- USB 3.1 cable
- 8-pin GPIO cable
- CS-mount (or C-mount with adaptor)/C-mount (FL3-U3-13Y3) Lens
- Tripod adapter (optional)
- Interface card

FLIR sells a number of the additional parts required for installation. To purchase, visit our [Accessories page](#).

### Camera Care

To clean the imaging surface of your camera, follow the steps outlined in [Knowledge Base Article 10243](#).

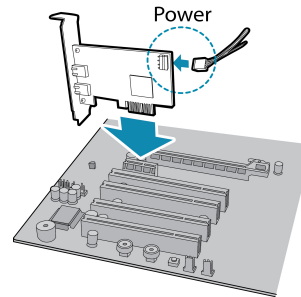
Extended exposure to bright sunlight, rain, dusty environments, etc. may cause problems with the electronics and optics of the system.

Avoid excessive shaking, dropping, or mishandling of the device.

**Warning!** Do not open the camera housing. Doing so voids the Hardware Warranty.  
Avoid electrostatic charging.

### Installing Your Interface Card and Software

#### 1. Install your Interface Card



Ensure the card is installed per the manufacturer's instructions.

Connect the internal IDE or SATA power connector on the card to the computer power supply.

Alternatively, use your PC's built-in host controller, if equipped.

Open the Windows Device Manager. Ensure the card is properly installed under **Universal Serial Bus Controllers**. An exclamation point (!) next to the card indicates the driver has not yet been installed.

#### 2. Install the FlyCapture<sup>®</sup> Software

**Note:** For existing users who already have FlyCapture installed, we recommend ensuring you have the latest version for optimal performance of your camera. If you do not need to install FlyCapture, use the DriverControlGUI to install and enable drivers for your card.

- a. Login to our [downloads](#) page.
- b. Select your **Camera** and **Operating System** from the drop-down lists and click the **Search** button.
- c. Click on the **Software** search results to expand the list.
- d. Click the appropriate link to begin the download and installation.

After the download is complete, the FlyCapture setup wizard begins. If the wizard does not start automatically, double-click the .exe file to open it. Follow the steps in each setup dialog.

#### 3. Enable the Drivers for the card

During installation, you are prompted to select your interface driver.

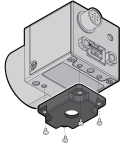
In the **Interface Driver Selection** dialog, select the **I will use USB cameras**.

This selection ensures the pgrxhci (USBPro) and pgrusbcam drivers are installed.

To uninstall or reconfigure the driver at any time after setup is complete, use the DriverControlGUI.

## Installing Your Camera

### 1. Install the Tripod Mounting Bracket (optional)



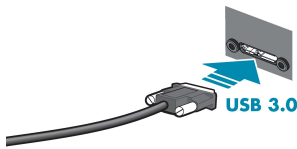
The ASA and ISO-compliant tripod mounting bracket attaches to the camera using the included metal screws.

### 2. Attach a Lens

For FL3-U3-13S2/FL3-U3-32S2: Unscrew the dust cap from the CS-mount lens holder to install a lens. Note: the camera can be used with a removable 5 mm C-mount adapter.

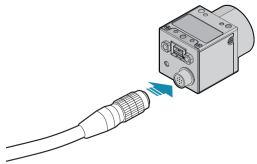
For FL3-U3-13Y3: Unscrew the dust cap from the C-mount lens holder to install a lens.

### 3. Connect the interface Card and Cable to the Camera



Plug the interface cable into the host controller card and the camera. The cable jack screws can be used for a secure connection.

### 4. Plug in the GPIO connector (optional)



GPIO can be used for power, trigger, pulse width modulation, serial input output, and strobe.

The wiring harness must be compatible with a Hirose HR25 8-pin female GPIO connector.

### 5. Confirm Successful Installation

Check Device Manager to confirm that installation was successful.

- Go to the **Start menu**, select **Run**, and enter **devmgmt.msc**.

Verify the camera is listed under "**Point Grey Research Devices**."

- Run the FlyCap program: **All Programs->Point Grey FlyCapture2 SDK-> FlyCap**

The FlyCap program can be used to test the camera's image acquisition capabilities.

Changes to your camera's installation configuration can be made using utilities available in the FlyCapture SDK.

## Camera Interface

### USB 3.1 Connector

The camera is equipped with a USB 3.1 Micro-B connector that is used for power, data transmission, and camera control. For more detailed information, consult the USB 3.1 specification available from <http://www.usb.org/developers/docs/>.

## General Purpose I/O Connector

The camera has an 8-pin GPIO connector on the back of the case; refer to the diagram for wire color-coding.

Diagram	Color	Pin	Function	Description
	Black	1	I0	Opto-isolated input (default Trigger in)
	White	2	O1	Opto-isolated output
	Red	3	IO2	Input/Output/serial transmit (TX)
	Green	4	IO3	Input/Output/serial receive (RX)
	Brown	5	GND	Ground for bi-directional IO, V <sub>EXT</sub> , +3.3 V pins
	Blue	6	OPTO_GND	Ground for opto-isolated IO pins
	Orange	7	V <sub>EXT</sub>	Allows the camera to be powered externally
	Yellow	8	+3.3 V	Power external circuitry up to 150 mA
To configure the GPIO pins, consult the General Purpose Input/Output section of your camera's Technical Reference Manual.				

## Status Indicator LED

LED Status	Description
Off	Not receiving power
Steady green	Receiving power
Flashing yellow/Steady yellow	Initializing FPGA
Steady yellow-green	Sensor powered down Insufficient power
Steady bright green	Acquiring and transmitting images
Flashing bright, then brighter green	Accessing camera registers (no image acquisition)
Flashing green and red	Updating firmware
Flashing red	Temporary problem
Steady red	Serious problem

## For More Information

For more information about...	See...
Your camera's settings and capabilities	Technical Reference Manual
Using the FlyCap demo program	the Online Help included with the tool
Accessing customer downloads	<a href="#">Knowledge Base Article 10142</a>
Selecting a lens	<a href="#">Knowledge Base Article 10269</a>
Recommended and unsupported system components for USB 3.1	<a href="#">Technical Application Note 10359</a>
Using USB 3.1 and Linux	<a href="#">Technical Application Note 10685</a>
Setting up multiple USB 3.1 cameras	<a href="#">Technical Application Note 10350</a>

The FlyCapture SDK help and other technical references can be found in: **All Programs>Point Grey FlyCapture2 SDK>Documentation**

Our online [Knowledge Base](#) also addresses many questions.

## Contacting Us

For general questions and sales inquiries contact us at [mv-sales@flir.com](mailto:mv-sales@flir.com)

For technical support contact us at [www.ptgrey.com/support/ticket/](http://www.ptgrey.com/support/ticket/)  
[www.flir.com/iis](http://www.flir.com/iis)