

## FIREFLY<sup>®</sup> USB3 Vision

### Will your system support the camera?

Recommended System Configuration:

- **OS**—Windows or Linux (32- or 64-bit)
- **CPU**— Intel i5 or greater
- **RAM**—4 GB
- **Ports**—USB3 host controller
- **Software**—Microsoft Visual Studio to run/compile example code

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

To install your camera you need the following components:

- USB3 cable
- GPIO cable
- Lens (type of lens mount is model dependent)
- Tripod adapter (optional)
- Interface card

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

### Have you visited our website?

A downloads account is required to download software and firmware.

1. Go to [www.flir.com/account](http://www.flir.com/account).
2. Enter your email address and click Continue.
3. Complete the Create an account form and click Continue.
4. You will receive an email with a link to activate your account.
5. Once activated, you can login using your credentials.

The [Firefly camera resources page](#) has many links to help you operate your camera effectively, including:

- Spinnaker<sup>®</sup> SDK software, including drivers (login required)
- Firmware updates and release notes (login required)
- Dimensional drawings and CAD models
- Documentation

### Contacting Us

For any questions, concerns or comments please contact us:

Email	<a href="#">General questions</a>
Support Ticket	<a href="#">Technical support</a>
Support Forum	<a href="#">Teledyne FLIR Community</a>
Website	Find specifications, support articles, downloads on the product page at <a href="#">Teledyne FLIR machine vision</a>

### Camera Care

To clean the imaging surface of your camera, follow the steps outlined in [Cleaning the imaging surface of your camera](#).

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

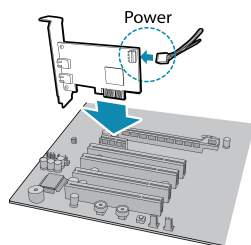
Avoid excessive shaking, dropping, or mishandling of the device.

**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. USB3 cards appear under **Universal Serial Bus Controllers**. An exclamation point (!) next to the card indicates the driver has not yet been installed.

#### 2. Install the Spinnaker<sup>®</sup> SDK Software

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

- a. Go to the [Spinnaker SDK Download](#) page. If you are not already logged in, you are prompted to login.
- b. Click the Download Now button.
- c. Select your operating system and version.
- d. After download is complete, open the file to start the Spinnaker setup wizard.
- e. Follow the steps in each setup dialog.

### Using the Spinnaker<sup>®</sup> SDK

You can monitor or control features of the camera through Spinnaker API examples provided in the Spinnaker SDK, or through the SpinView camera evaluation application. A *Programmer's Guide and API Reference* is included in the installation.

# Installing Your Firefly USB3 Camera

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



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

## 2. Attach a Lens

Install a lens.

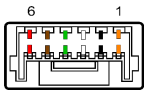
## 3. Connect the interface Card and Cable to the Camera



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

When the camera is first connected, the operating system automatically installs the camera driver. Camera drivers are available with the Spinnaker SDK installation.

## 4. Plug in the GPIO connector if required



GPIO can be used for trigger, serial input output, and strobe.

## 5. Confirm Successful Installation

Run the SpinView application: **Start**→**Teledyne Spinnaker SDK**→**SpinView**  
The SpinView application can be used to test the camera's image acquisition capabilities.

Changes to your camera's installation configuration can be made using the SpinView application.

# Status Indicator LED

LED	USB
No Light	No power or LED is in inactive state or LED is in error status state with no error
Blinking Green (3 blinks)	USB3
Solid Green	Acquisition Started
Rapid Flashing Green	Firmware update in progress
Flashing Green and Red	General Error

# Camera Interface

## USB 3.0 Connector

The camera is equipped with a USB 3.0 Micro-B connector that is used for power, data transmission, and camera control. For more detailed information, consult the USB 3.0 specification available from <http://www.usb.org/developers/docs/>.

## General Purpose I/O Connector

The camera is equipped with a 6-pin GPIO connector on the back of the case.

Diagram	Color <sup>1</sup>	Pin	Line	Function	Description
	Orange	1 <sup>2</sup>	0	GPIO0	Non-isolated Input/Output TXD (output) for 1.8 V UART
	Black	2 <sup>2</sup>	1	GPIO1	Non-isolated Input/Output RXD (input) for 1.8 V UART
	White	3	2	GPIO2	Non-isolated Input/Output
	Green	4	3	GPIO3	Non-isolated Input/Output
	Brown	5	N/A	GND	Camera Power Ground
	Red	6	N/A	Vout	Camera Power Output

1—GPIO cable assembly wire colors  
2—Dual function pin

# For More Information

Teledyne FLIR endeavors to provide the highest level of technical support possible to you.

Support resources can be accessed through the [Firefly resources page](#).

Your camera's settings and capabilities—Technical Reference or Camera Reference
<a href="#">Spinnaker® SDK—API Reference / Programmer's Guide</a>
<a href="#">Selecting a lens for your camera</a>
<a href="#">Using USB 3.1 and Linux</a>
<a href="#">Using third-party applications from our software partners</a>
<a href="#">Getting Started with Firefly-DL in Linux</a>
<a href="#">Neural Networks Supported by Firefly-DL</a>
<a href="#">Tips for Creating Training Data for Deep Learning and Neural Networks</a>
<a href="#">Troubleshooting Neural Network Conversion Errors</a>