GETTING STARTED

Will your system support the camera?

Recommended System Configuration:

- **OS**—Windows or Linux (32- or 64-bit)
- **CPU**—3.1 GHz or equivalent
- **RAM**—4 GB
- **Ports**—USB3
- **Software**—Microsoft Visual Studio 2010, Visual Studio 2013, or Visual Studio 2015 (to run and compile example code)

See Recommended USB3 Components for information on recommended system components for USB 3.0.

Do you have a downloads account?

The FLIR machine vision products page has many resources to help you operate your camera effectively, including:

- Spinnaker® SDK software, including drivers (required for installation)
- Firmware updates and release notes
- Dimensional drawings and CAD models
- Documentation

To access these resources:

1. Go to FLIR machine vision.
2. Click on your product family.
3. Click on **Go to Support Page**.
   - **Overview** tab - links to software, knowledge base articles, and application notes.
   - **Resources** tab - links to camera references, technical references, getting started manuals, imaging performance results, drawings, PCNs, firmware, and software.

Do you have all the parts you need?

To install your camera you need the following components:

- USB3 cable
- GPIO cable
- S-mount Lens
- Tripod adapter (optional)
- Interface card

FLIR sells a number of the additional parts required for installation. To purchase, visit the Accessories page.

Camera Care

To clean the imaging surface of your camera, follow the steps outlined in Cleaning the imaging surface of your camera.
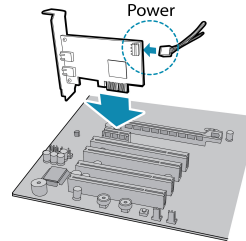
Extended exposure to bright sunlight, rain, dusty environments, etc. may cause problems with the electronics and optics of the system.

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

> **Warning!** 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® 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 page.
b. Click the Download button.
c. Select your operating system.
d. Select your version. You can also read release notes here.
   - Python
   - Full SDK - downloads all components
   - Web Installer - downloads only the installer and then retrieves components based on your selection during install. This version requires an internet connection for the installation.
e. Select your version. On the preview page, click Download.
f. After download is complete, open the file to start the Spinnaker setup wizard.
g. Follow the steps in each setup dialog.

Using the Spinnaker® 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.

FLIR® | The World's Sixth Sense®

Installing Your Firefly USB3

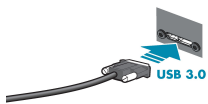**1. Install the Tripod Mounting Bracket (optional)**

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

2. Attach a Lens

Unscrew the dust cap from the 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.

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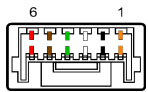
GPIO can be used for trigger, serial input output, and strobe.

5. Confirm Successful Installation

Run the SpinView application: **Start->All Programs-> Point Grey Spinnaker->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.

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[1]	Pin	Line	Function	Description
	Orange	1[2]	0	GPIO0	Non-isolated Input/Output TXD (output) for 1.8 V UART
	Black	2[2]	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

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 (1 blink)	USB1
Blinking Green (2 blinks)	USB2
Blinking Green (3 blinks)	USB3
Solid Green	Acquisition Started
Rapid Flashing Green	Firmware update in progress
Flashing Green and Red	General Error

For More Information

FLIR endeavors to provide the highest level of technical support possible to you. Most support resources can be accessed through your product's Support page. From the FLIR machine vision page, click on your product family and then click the **Go to Support Page** link.

Your camera's settings and capabilities—Technical Reference or Camera Reference

Spinnaker® SDK—API Reference / Programmer's Guide

Selecting a lens for your camera

Recommended USB3 System Components

Using USB 3.1 and Linux

Using third-party applications from our software partners

Getting Started with Firefly-DL in Linux

Neural Networks Supported by Firefly-DL

Tips for Creating Training Data for Deep Learning and Neural Networks

Troubleshooting Neural Network Conversion Errors

Contacting Us

For any questions, concerns or comments please contact us via the following methods:

Email	General questions
Support Ticket	Technical support
Chat	Go to the Support Page for any product on the FLIR machine vision page and click the chat icon
Website	Find specifications, support articles, downloads on the product page at FLIR machine vision

◆FLIR® | The World's Sixth Sense®