

DRAGONFLY[®]S

USB3 Vision

Will your system support the camera?

Recommended System Configuration:

- **OS, CPU, RAM**—dependent on SDK requirements
- **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 Type A to Micro B
- Interface card
- GPIO cable (optional)
- For board-level models—Lens mount
- Lens
- For board-level models—Heatsink
- For board-level models—USB3 connector locking bracket (optional)
- Tripod adapter (optional)

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

Have you visited our website?

A downloads account is required to download software and firmware.

1. Go to <https://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 [Dragonfly S camera resources page](#) has many links to help you operate your camera effectively, including:

- Spinnaker[®] SDK software, including drivers (login required)
- Firmware updates and release notes (login required)
- Dimensional drawings and CAD models
- Documentation
- Knowledge Base articles

Contacting Teledyne FLIR

For any questions, concerns or comments please contact us:

Email	General questions
Support Ticket	Technical support
Support Forum	Teledyne FLIR Community
Website	Find specifications, support articles, downloads on the website Teledyne FLIR machine vision

Camera Care

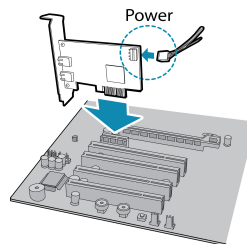
Extended exposure to bright sunlight, rain, dusty environments, etc. may cause problems with the electronics and optics of the system.

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[®] 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[®] 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.

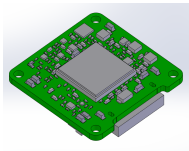
Installing Your Board-level Dragonfly S Camera

1. Prepare the Lens Mount



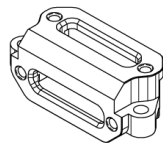
The board-level models can use CS-mounts or S-mounts.

2. Remove sticker and install Lens Mount



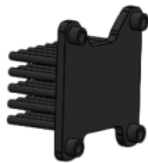
The sensor is covered with a protective sticker. Remove the sticker. If any residue is present, clean the sensor surface with a non-abrasive cotton swab and isopropyl alcohol cleaning solution. Immediately install the image board over the prepared lens mount.

3. Install the locking bracket (optional)



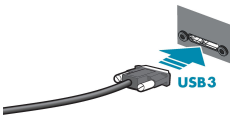
An optional bracket (ACC-01-0020) can be installed over the interface connector for locking the USB3 cable to the camera.

4. Install a Heatsink



A heatsink is mandatory for board-level and partial cased models.

5. Connect the interface Card and Cable to the camera



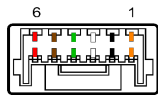
Plug the interface cable into the host controller card and the camera. If using a locking bracket, the cable jack screws can be used for a secure connection.

6. Attach a Lens



Unscrew the dust cap from the lens holder to install a lens.

7. Plug in the GPIO connector if required



GPIO can be used for trigger and strobe.

8. Confirm Successful Installation

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

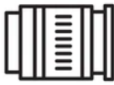
Installing Your Cased Dragonfly S Camera

1. Install the Tripod Mounting Bracket (optional)



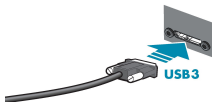
The ASA and ISO-compliant tripod mounting bracket attaches to the camera using the included screws.

2. Attach a Lens



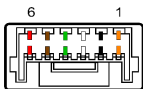
Unscrew the dust cap or remove the protective sticker from the lens holder to install a lens. If any residue is present, clean the surface with a non-abrasive cotton swab and isopropyl alcohol cleaning solution. Immediately attach the lens.

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 if required



GPIO can be used for trigger and strobe.

5. Confirm Successful Installation

When the camera is first connected, the operating system automatically installs the camera driver. Camera drivers are available with the Spinnaker SDK 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
Blinking Green (short, long, short)	Enumeration Issue
Solid Green	Acquisition Started
Rapid Flashing Green	Firmware update in progress
Flashing Green and Red	Camera Booting Up
Blinking Red	Camera Crash

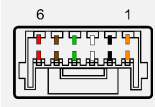
Camera Interface

USB3 Connector

The camera is equipped with a USB3 Micro-B connector that is used for power, data transmission, and camera control. For more detailed information, consult the USB3 specification available from <http://www.usb.org/developers/docs/>.

General Purpose I/O Connector

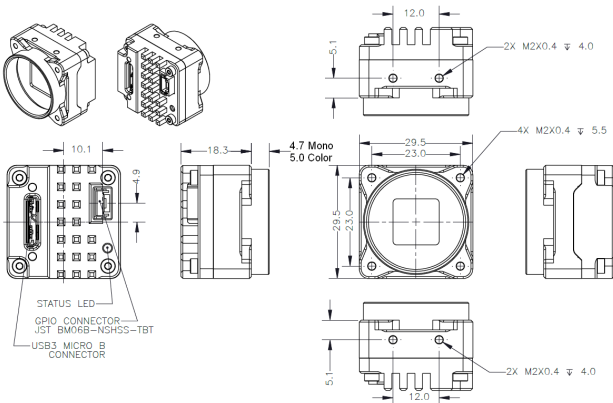
The camera is equipped with a 6-pin GPIO connector on the back of the case.

Diagram	Color ¹	Pin	Line	Function	Description
	Orange	1 ²	0	GPIO0	Non-isolated Input/Output TXD (output)
	Black	2 ²	1	GPIO1	Non-isolated Input/Output RXD (input)
	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

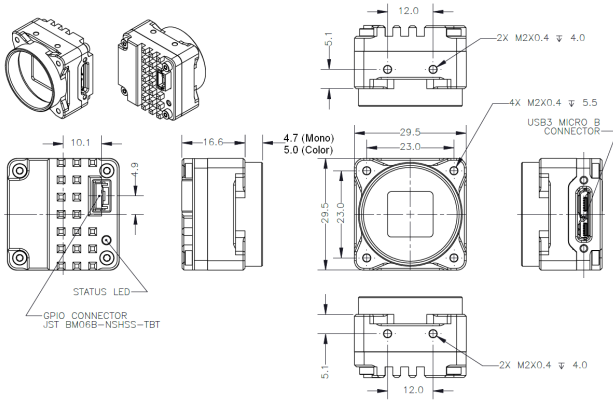
1—GPIO cable assembly wire colors
2—Dual function pin

Dragonfly S Camera Dimensions

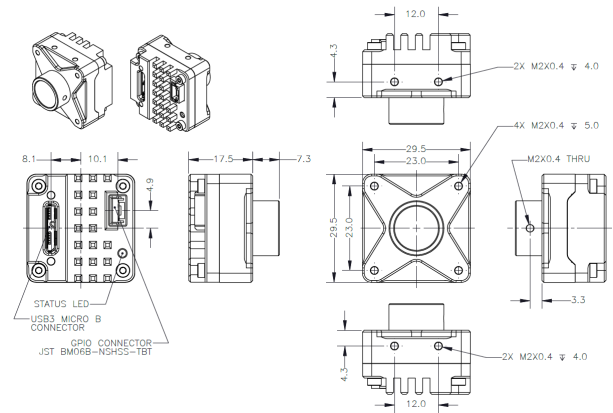
Dragonfly S Camera CS-mount Back Connector Drawing



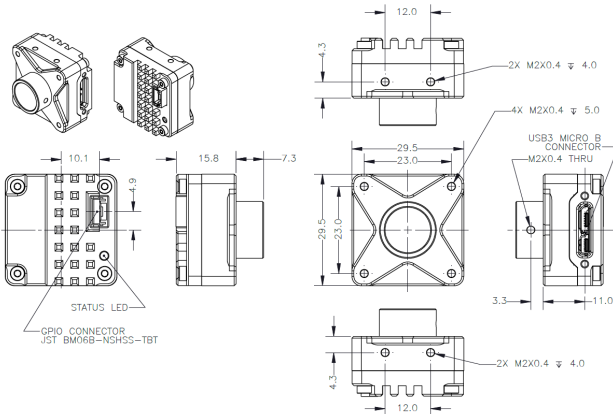
Dragonfly S Camera CS-mount Side Connector Drawing



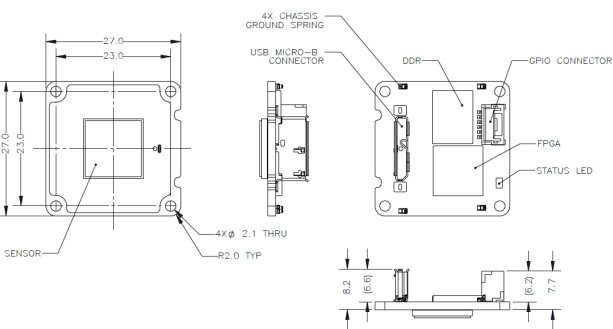
Dragonfly S Camera S-mount Back Connector Drawing



Dragonfly S Camera S-mount Side Connector Drawing



Dragonfly S Camera Board-level Back Connector Drawing



Dragonfly S Camera Board-level Side Connector Drawing

