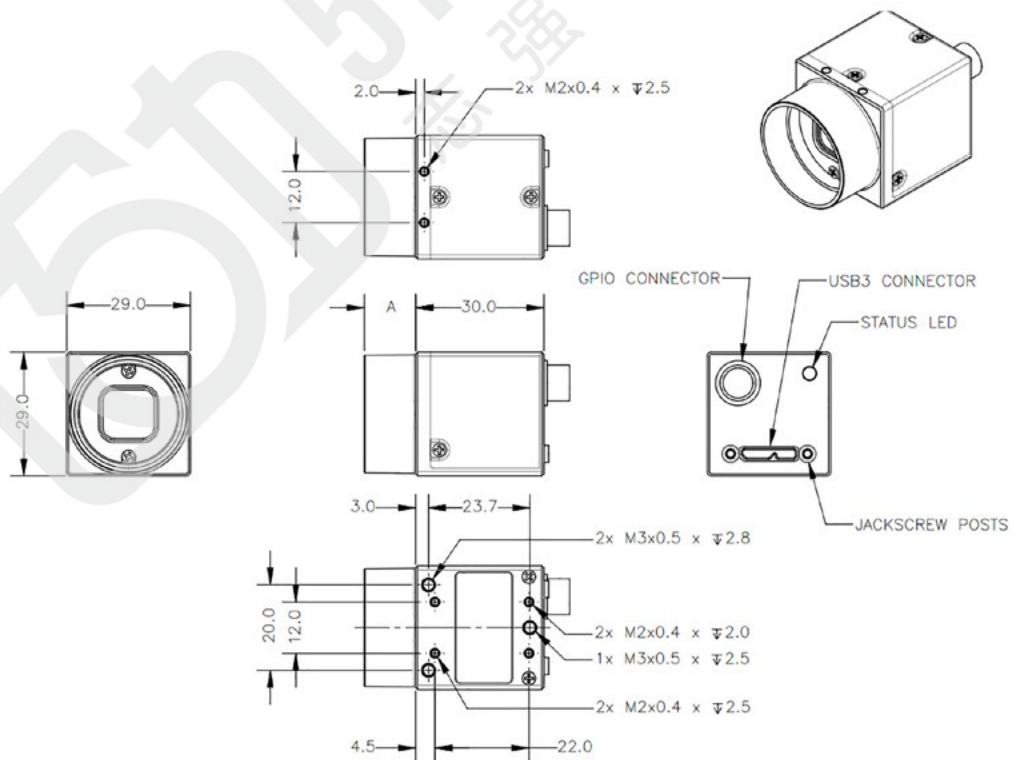# FLIR *BLACKFLY*®
USB3 VISION

UNBEATABLE VALUE + ULTRA-COMPACT

The Blackfly USB3 Vision camera line combines the throughput of USB 3.0, highly sensitive sensors, industry-leading affordability, and a host of unique features for uncompromising value. The ultra-compact Blackfly camera weighs just 36 grams, measures 29 x 29 x 30mm, uses 3 watts of power, and comes with a 3-year warranty.

KEY FEATURES

- Perfect analog camera replacement, only 29 x 29 x 30mm
- On-camera image processing: color interpolation, gamma, and LUT
- 16 MByte frame buffer; LED status indicator

◆FLIR® | The World's Sixth Sense®

Specifications

Model	Version	MP	Imaging Sensor
BFLY-U3-03S2C-CS BFLY-U3-03S2M-CS	Color Mono	0.3 MP	■ Sony ICX424, 1/3", 7.4 µm ■ Global shutter ■ 84 FPS at 648 x 488
BFLY-U3-05S2C-CS BFLY-U3-05S2M-CS	Color Mono	0.5 MP	■ Sony ICX693, 1/3", 6.0 µm ■ Global shutter ■ 50 FPS at 808 x 608
BFLY-U3-13S2C-CS BFLY-U3-13S2M-CS	Color Mono	1.3 MP	■ Sony ICX445, 1/3", 3.75 µm ■ Global shutter ■ 30 FPS at 1288 x 964
BFLY-U3-20S4C-CS BFLY-U3-20S4M-CS	Color Mono	2.0 MP	■ Sony ICX274, 1/1.8", 4.4 µm ■ Global shutter ■ 15 FPS at 1624 x 1224
BFLY-U3-23S6C-C BFLY-U3-23S6M-C	Color Mono	2.3 MP	■ Sony IMX249, 1/1.2", 5.86 µm ■ Global shutter ■ 41 FPS at 1920 x 1200
BFLY-U3-50H5C-C BFLY-U3-50H5M-C	Color Mono	5.0 MP	■ Sharp RJ32S3AA0DT, 2/3", 3.45 µm ■ Global shutter ■ 7.5 FPS at 2448 x 2048

Imaging Performance (EMVA 1288)	See the Imaging Performance Specification, which includes quantum efficiency, saturation capacity (full well depth), read noise, dynamic range and signal to noise ratio.
A/D Converter	12-bit; 10- and 12-bit (BFLY-U3-23S6)
Video Data Output	8, 12, 16 and 24-bit digital data
Image Data Formats	Mono8, Mono12, Mono16, Raw8, Raw12, Raw16 (all models); RGB, YUV411, YUV422, YUV 444 (color models)
Partial Image Modes	Pixel binning, decimation, and region of interest (ROI) modes
Image Processing	Gamma, lookup table, hue, saturation, and sharpness
Shutter	Global shutter; Automatic/manual/one-push See product webpage for specific model's range
Gain	Automatic/manual/one-push See product webpage for specific model's range
Gamma	0.50 to 3.99, programmable lookup table
White Balance	Automatic/manual/one-push
Color Processing	On-camera in YUV or RGB format, or on-PC in Raw format
Digital Interface	USB 3.0 interface with screw locks for camera control, data, and power
Transfer Rates	5 Gbit/s
GPIO	6-pin Hirose HR10A-7R-6PB GPIO connector for trigger, strobe, and power
External Trigger Modes	Standard, bulb, low smear, overlapped, multi shot
Image Buffer	16 MB frame buffer
Memory Channels	2 user configuration sets for custom camera settings
Flash Memory	1 MB non-volatile memory
Dimensions	29 mm x 29 mm x 30 mm excluding lens holder, without optics (metal case)
Mass	36 g (without optics)
Power Consumption	5-24 V via GPIO or 5 V via USB 3.0 interface, maximum <3 W
Machine Vision Standard	USB3 Vision
Camera Control	Via FlyCapture SDK or USB Vision third party software
Camera Updates	In-field firmware updates
Lens Mount	CS-mount; C-mount (BFLY-U3-23S6 and BFLY-U3-50H5)
Temperature	Operating: 0° to 45°C; Storage: -30° to 60°C
Humidity	Operating: 20 to 80% (no condensation); Storage: 20 to 95% (no condensation)
Compliance	CE, FCC, KCC, RoHS
Operating System	Windows, Linux (32- and 64-bit)
Warranty	3 years

FLIR Integrated Imaging Solutions

CANADA
12051 Riverside Way
Richmond, BC, Canada
V6W 1K7
T: +1 866.765.0827 (toll free)
T: +1 604.242.9937
F: +1 604.242.9938
E: mv-sales@flir.com
www.flir.com/iis

USA
T: +1 866.765.0827 (toll free)
E: mv-na-sales@ptgrey.com

EUROPE
T: +49 7141 488817-0
F: +49 7141 488817-99
E: mv-eusales@flir.com

CHINA
T: +86 10 8215 9938
F: +86 10 8215 9936
E: mv-chinasales@flir.com

ASIA
E: mv-asiasales@ptgrey.com

For a full list of international distributors and offices visit www.flir.com/contact-us

www.flir.com/mv

◆FLIR®   The World's Sixth Sense®