



FLIR BLACKFLY[®]S

FOR EMBEDDED SYSTEMS

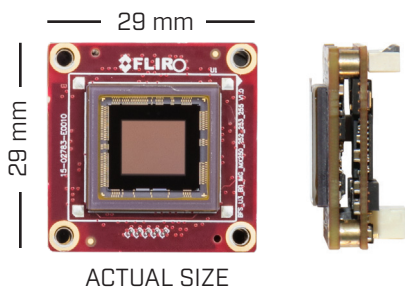
P/N: BFS-U3-51S5-BD2, USB3 Vision

BFS-U3-50S5-BD2, USB3 Vision

BFS-GE-16S2-BD2, GigE Vision

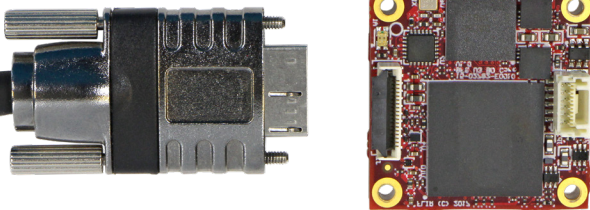
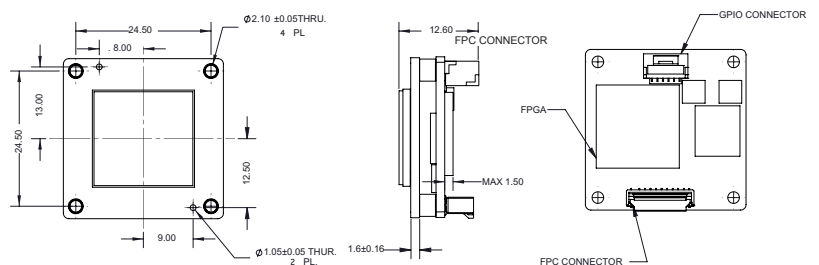
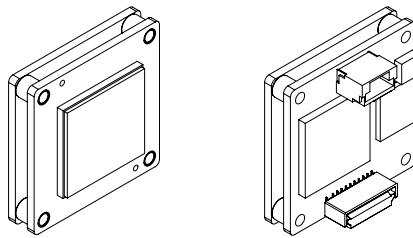
SHRINK YOUR PRODUCT'S SIZE, NOT ITS PERFORMANCE

The FLIR Blackfly S is a high performance, board level camera designed for embedded systems. It boasts a rich feature-set and the latest Sony Pregius CMOS sensors. It is ready for integration with proven compatibility with popular SBCs and operating systems. The Blackfly S enables you to build smaller, lighter, and lower cost solutions without sacrificing image quality or speed.



KEY FEATURES

- With its 29 x 29 mm board level footprint and low-profile **Flexible Printed Circuit (FPC)** connectors for **USB 3.1 or GigE**, the Blackfly S is ideal for embedding into mobile and handheld devices.
- FLIR Blackfly S cameras feature the latest **CMOS sensors** and advanced on-camera features including binning, **auto-exposure** and **color transformation** tools.
- Proven compatibility with popular **ARM** and **x64** SBCs, operating systems, and software ensures support for an entire ecosystem of **embedded systems**.



Specifications

	BFS-U3-50S5-BD2	BFS-U3-51S5-BD2	BFS-GE-16S2-BD2
Resolution	2448 x 2048		1440 x 1080
Frame Rate*	35 FPS	75 FPS	78 FPS
Megapixels	5.0 MP		1.6 MP
Sensor	Sony IMX264, CMOS, 2/3"	Sony IMX250, CMOS, 2/3"	Sony IMX273, CMOS, 1/2.9"
Readout Method	Global shutter		
Pixel Size	3.45 µm		
Lens Mount	Sold separately		
ADC	12-bit	10-bit / 12-bit	
Minimum Frame Rate**	1 FPS		
Gain Range**	0 to 47 dB		
Exposure Range**	13 µs to 30 s	6 µs to 30 s	21 µs to 30 s
Acquisition Modes	Continuous, Single Frame, Multi Frame		
Partial Image Modes	Pixel binning, decimation, ROI		
Image Processing	Mono: Gamma, lookup table, and sharpness / Color: Color correction matrix, gamma, lookup table, saturation, and sharpness		
Sequencer	Up to 8 sets using 6 features		
Time Synchronization	N/A		IEEE1588 PTP
Image Buffer	240 MB		
User Sets	2 user configuration sets for custom camera settings		
Flash Memory	1 MB non-volatile memory		
Non-isolated I/O	4 bi-directional		
Auxiliary Output	3.3 V, 120 mA maximum		
Serial Port	Supported		
Interface	USB 3.1 Gen 1		GigE
Interface Connector	Hirose TF38 FPC connector		
Power Requirements	5 V via USB3 interface		5 V via GPIO
Power Consumption	3 W maximum		2 W maximum
Dimensions/Mass	29 mm x 29 mm x 10 mm / 10 g		
Machine Vision Standard	USB3 Vision v1.0		GigE Vision v1.2
Compliance	CE, FCC, KCC, RoHS, REACH / ECCN is EAR099		
Temperature	Operating: 0°C to 50°C / Storage: -30°C to 60°C		
Humidity	Operating: 20% to 80% (no condensation) / Storage: 30% to 95% (no condensation)		
Warranty	3 years		

*Frame rates are measured with Device Link Throughput Limit of 380 MBps for USB3 and 125 MBps for GigE and Acquisition Frame Rate disabled. Values are rounded down to whole numbers.

**Values are the same in binning and no binning modes.

Lens mounts sold separately.

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