

FLIR BLACKFLY[®]

GIGE VISION



UNBEATABLE VALUE + ULTRA-COMPACT + POE

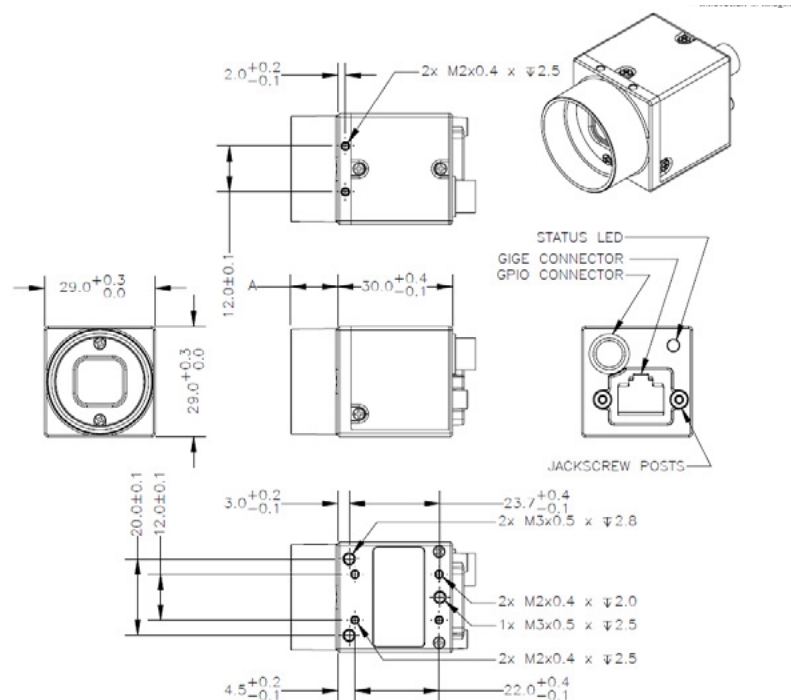
The Blackfly camera line combines Power over Ethernet, industry-leading affordability and a host of unique features for uncompromising value. Every Blackfly model comes packed with functionality designed to maximize performance and reliability, including a 16 MByte frame buffer; LED status indicators; and an on-camera image processing pipeline that provides color interpolation, gamma, and lookup table functionality. The Blackfly camera weighs just 36 grams, measures 29x29x30mm and uses 2 watts of power.

KEY FEATURES

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



SENSOR	BARREL LENGTH - "A" (+0.10/-0.15)	
	C-MOUNT	CS-MOUNT
ICX204	12.30	-
ICX424	12.30	7.27
ICX267	12.30	-
ICX274	12.30	7.27
ICX692	-	7.27
ICX693	-	7.27
ICX445	12.30	7.27
ICX655	12.30	-
ICX414	-	-
ICX618	-	-
EV76C560	-	6.94
EV76C570	-	6.94
IMX104	-	6.72
IMX136	-	6.72
AR0134	-	6.45
MT9P	-	6.45
RJ32	12.30	-
RJ33	-	7.083



Specifications

Model	Version	MP	Imaging Sensor
BFLY-PGE-03S2C-CS BFLY-PGE-03S2M-CS	Color Mono	0.3 MP	<ul style="list-style-type: none"> Sony ICX424, 1/3", 7.4 µm Global shutter 84 FPS at 648 x 488
BFLY-PGE-03S3C-CS BFLY-PGE-03S3M-CS	Color Mono	0.3 MP	<ul style="list-style-type: none"> Sony ICX414, 1/2", 9.9 µm Global shutter 90 FPS at 648 x 648
BFLY-PGE-05S2C-CS BFLY-PGE-05S2M-CS	Color Mono	0.5 MP	<ul style="list-style-type: none"> Sony ICX693, 1/3", 6.0 µm Global shutter 50 FPS at 808 x 608
BFLY-PGE-09S2C-CS BFLY-PGE-09S2M-CS	Color Mono	0.9 MP	<ul style="list-style-type: none"> Sony ICX692, 1/3", 4.08 µm Global shutter 30 FPS at 1288 x 728
BFLY-PGE-12A2C-CS BFLY-PGE-12A2M-CS	Color Mono	1.2 MP	<ul style="list-style-type: none"> Aptina AR0134, 1/3", 3.75 µm Global shutter 52 FPS at 1280 x 960
BFLY-PGE-13E4C-CS BFLY-PGE-13E4M-CS	Color Mono	1.3 MP	<ul style="list-style-type: none"> e2v EV76C560, 1/1.8", 5.3 µm Global shutter 60 FPS at 1280 x 1024
BFLY-PGE-13H2C-CS BFLY-PGE-13H2M-CS	Color Mono	1.3 MP	<ul style="list-style-type: none"> Sharp RJ3313CA3DE/Sharp RJ3314CA3DE, 1/3", 3.75 µm Global shutter 30 FPS at 1288 x 964
BFLY-PGE-13S2C-CS BFLY-PGE-13S2M-CS	Color Mono	1.3 MP	<ul style="list-style-type: none"> Sony ICX445, 1/3", 3.75 µm Global shutter 30 FPS at 1288 x 964
BFLY-PGE-14S2C-CS	Color	1.3 MP	<ul style="list-style-type: none"> Sony IMX104, 1/3", 3.75 µm Rolling shutter 60 FPS at 1296 x 1032
BFLY-PGE-20E4C-CS BFLY-PGE-20E4M-CS	Color Mono	2.0 MP	<ul style="list-style-type: none"> e2v EV76C570, 1/1.8", 4.5 µm Global shutter 50 FPS at 1600 x 1200
BFLY-PGE-23S2C-CS	Color	2.3 MP	<ul style="list-style-type: none"> Sony IMX136, 1/2.8", 2.8 µm Rolling shutter 27 FPS at 1920 x 1200
BFLY-PGE-23S6C-C BFLY-PGE-23S6M-C	Color Mono	2.3 MP	<ul style="list-style-type: none"> Sony IMX249, 1/1.2", 5.86 µm Global shutter 41 FPS at 1920 x 1200
BFLY-PGE-31S4C-C BFLY-PGE-31S4M-C	Color Mono	3.2 MP	<ul style="list-style-type: none"> Sony IMX265, 1/1.8", 3.45 µm Global shutter 35 FPS at 2048 x 1536
BFLY-PGE-50A2C-CS BFLY-PGE-50A2M-CS	Color Mono	5.0 MP	<ul style="list-style-type: none"> Aptina MT9P006/Aptina MT9P031, 1/2.5", 2.2 µm Rolling Shutter with Global Reset 13 FPS at 2592 x 1944
BFLY-PGE-50H5C-C BFLY-PGE-50H5M-C	Color Mono	5.0 MP	<ul style="list-style-type: none"> Sharp RJ32S3AA0DT/Sharp RJ32S4AA0DT, 2/3", 3.45 µm Global shutter 7.5 FPS at 2448 x 2048
BFLY-PGE-50S5C-C BFLY-PGE-50S5M-C	Color Mono	5.0 MP	<ul style="list-style-type: none"> Sony IMX264, 2/3", 3.45 µm Global shutter 22 FPS at 2448 x 2048

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DISTRIBUTORS

JAPAN

ViewPLUS Inc. (www.viewplus.co.jp)

KOREA

CYLOD Co., Ltd. (www.cylod.com)

CHINA

LUSTER LightVision (www.lusterinc.com)

SINGAPORE, THAILAND, MALAYSIA

Voltrium Systems (www.voltrium.com.sg)

TAIWAN

Apo Star Co., Ltd. (www.apostar.com.tw)

UNITED KINGDOM AND IRELAND

ClearView Imaging (www.clearviewimaging.co.uk)

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	10-bit BFLY-PGE-13E4/BFLY-PGE-20E4; 10- and 12-bit BFLY-PGE-23S6; 12-bit all others
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; Rolling shutter (BFLY-PGE-14S2/BFLY-PGE-23S2/BFLY-PGE-50A2); 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
High Dynamic Range	Not supported
Color Processing	On-camera in YUV or RGB format, or on-PC in Raw format
Digital Interface	Gigabit Ethernet interface with screw locks for camera control and data; Power over Ethernet
Transfer Rates	10/100/1000 Mbit/s
GPIO	6-pin Hirose HR10A-7R-6PB GPIO connector for trigger, strobe, and power
External Trigger Modes	Standard, bulb (BFLY-PGE-03S2/BFLY-PGE-03S3/BFLY-PGE-13H2/BFLY-PGE-13S2/BFLY-PGE-14S2/BFLY-PGE-23S2/BFLY-PGE-23S6/BFLY-PGE-31S4/BFLY-PGE-50A2/BFLY-PGE-50S5), low smear (BFLY-PGE-03S2/BFLY-PGE-03S3/BFLY-PGE-05S2/BFLY-PGE-09S2/BFLY-PGE-13H2/BFLY-PGE-13S2/BFLY-PGE-50H5), overlapped (BFLY-PGE-03S2/BFLY-PGE-03S3/BFLY-PGE-05S2/BFLY-PGE-09S2/BFLY-PGE-13H2/BFLY-PGE-13S2/BFLY-PGE-23S6/BFLY-PGE-31S4/BFLY-PGE-50S5), multi shot
Image Buffer	16 MB frame buffer
Memory Channels	2 user configuration sets for custom camera settings
Flash Memory	512 KB non-volatile memory
Dimensions	29 mm x 29 mm x 30 mm excluding lens holder, without optics (metal case)
Mass	36 grams (without optics)
Power Consumption	Power over Ethernet (PoE); or 12 V nominal (5 - 16 V) via GPIO interface, maximum 2.5 W (2 W BFLY-PGE-13E4)
Machine Vision Standard	GigE Vision v1.2
Camera Control	Via FlyCapture SDK or GigE Vision third party software
Camera Updates	In-field firmware updates
Lens Mount	CS-mount (C-mount BFLY-PGE-23S6/BFLY-PGE-31S4/BFLY-PGE-50H5/BFLY-PGE-50S5) (5 mm C-mount adapter not included)
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, RoHS
Operating System	Windows, Linux (32- and 64-bit)
Warranty	3 years

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