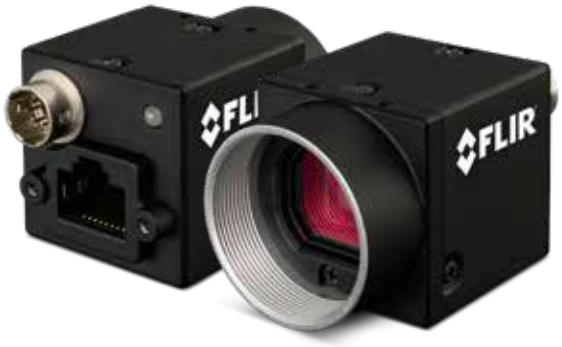


INDUSTRIAL/MACHINE VISION APPLICATIONS

FLIR BLACKFLY® S

P/N BFS-PGE-04S2

SMALL PACKAGE, POWERFUL RESULTS

The Blackfly S is a compact, high performance machine vision camera that allows designers to easily produce the exact images they need. With both automatic and precise manual control over image capture and on-camera pre-processing, the Blackfly S accelerates application development.

FEATURES

THE LATEST CMOS SENSORS
Switch between high sensitivity and low noise, and high saturation capacity and dynamic range with selectable conversion gain.

IMPROVE CYCLE TIMES
Automate more with advanced camera controls, event notifications, chunk data, counters and timers.

ACCELERATE YOUR TIME TO MARKET
FLIR's GenICam3 API with GUI library, and detailed event logging is supported by comprehensive documentation.

APPLICATIONS

AUTOMATED OPTICAL INSPECTION

MICROSCOPY

ROBOT GUIDANCE

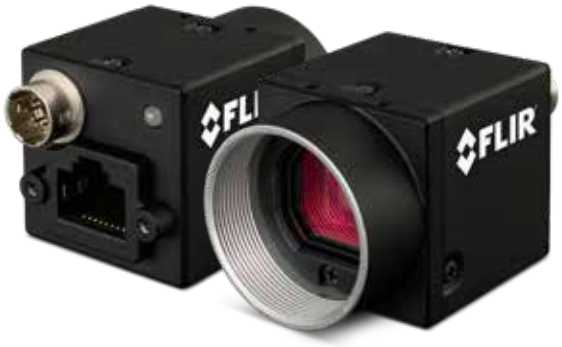
LASER BEAM PROFILING

AUTONOMOUS VEHICLE GUIDANCE

	BFS-PGE-04S2M-CS	BFS-PGE-04S2C-CS
Resolution	720 x 540	
Frame Rate*	291 FPS	
Megapixels	0.4 MP	
Chroma	Mono	Color
Sensor	Sony IMX287, CMOS, 1/2.9"	
Readout Method	Global shutter	
Pixel Size	6.9 µm	
Lens Mount	CS-mount	
ADC	8-bit, 10-bit, and 12-bit	
Minimum Frame Rate**	1 FPS	
Gain Range**	0 to 47 dB	
Exposure Range**	4 µs to 30 s	
Acquisition Modes	Continuous, Single Frame, Multi Frame	
Partial Image Modes	Pixel binning, decimation, ROI	
Image Processing	Gamma, lookup table, and sharpness	Color correction matrix, gamma, lookup table, saturation, and sharpness
Sequencer	Up to 8 sets using 2 features	
Image Buffer	240 MB	
User Sets	2 user configuration sets for custom camera settings	
Flash Memory	6 MB non-volatile memory	
Opto-isolated I/O	1 input, 1 output	
Non-isolated I/O	1 bi-directional, 1 input	
Auxiliary Output	3.3 V, 120 mA maximum	
Interface	GigE PoE	
Power Requirements	Power over Ethernet (PoE), or 12 V nominal (8 - 24 V) via GPIO	
Power Consumption	3 W maximum (2.8 W nominal)	
Dimensions/Mass	29 mm x 29 mm x 30 mm / 36 g	
Machine Vision Standard	Gige Vision v1.2	
Compliance	CE, FCC, KCC, RoHS, REACH. The ECCN for this product 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 125 MBps and Acquisition Frame Rate disabled. Values are rounded down to whole numbers.

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



INDUSTRIAL/MACHINE VISION APPLICATIONS

FLIR BLACKFLY® S

P/N BFS-PGE-13Y3

SMALL PACKAGE, POWERFUL RESULTS

The Blackfly S is a compact, high performance machine vision camera that allows designers to easily produce the exact images they need. With both automatic and precise manual control over image capture and on-camera pre-processing, the Blackfly S accelerates application development.

FEATURES

THE LATEST CMOS SENSORS
Switch between high sensitivity and low noise, and high saturation capacity and dynamic range with selectable conversion gain.

IMPROVE CYCLE TIMES
Automate more with advanced camera controls, event notifications, chunk data, counters and timers.

ACCELERATE YOUR TIME TO MARKET
FLIR's GenICam3 API with GUI library, and detailed event logging is supported by comprehensive documentation.

APPLICATIONS

AUTOMATED OPTICAL INSPECTION

MICROSCOPY

ROBOT GUIDANCE

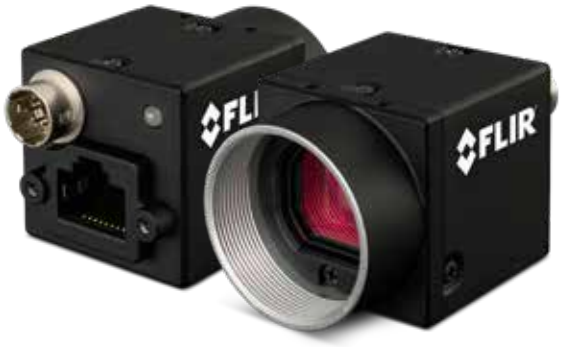
LASER BEAM PROFILING

AUTONOMOUS VEHICLE GUIDANCE

SPECS	BFS-PGE-13Y3M-C	BFS-PGE-13Y3C-C
Resolution	1280 x 1024	
Frame Rate*	85 FPS	
Megapixels	1.3 MP	
Chroma	Mono	Color
Sensor	On Semi P1300, CMOS, 1/2"	
Readout Method	Global shutter	
Pixel Size	4.8 µm	
Lens Mount	C-mount	
ADC	10-bit	
Minimum Frame Rate**	1 FPS	
Gain Range**	0 to 18 dB	
Exposure Range**	11 µs to 30 s	
Acquisition Modes	Continuous, Single Frame, Multi Frame	
Partial Image Modes	Pixel binning, decimation, ROI	
Image Processing	Gamma, lookup table, and sharpness	Color correction matrix, gamma, lookup table, hue, saturation, and sharpness
Sequencer	Up to 8 sets using 6 features, including image size	
Image Buffer	240 MB	
User Sets	2 user configuration sets for custom camera settings	
Flash Memory	6 MB non-volatile memory	
Opto-isolated I/O	1 input, 1 output	
Non-isolated I/O	1 bi-directional, 1 input	
Auxiliary Output	3.3 V, 120 mA maximum	
Interface	GigE PoE	
Power Requirements	Power over Ethernet (PoE), or 12 V nominal (8 - 24 V) via GPIO	
Power Consumption	3 W maximum	
Dimensions/Mass	29 mm x 29 mm x 30 mm / 36 g	
Machine Vision Standard	Gige Vision v1.2	
Compliance	CE, FCC, KCC, RoHS, REACH. The ECCN for this product 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 and Acquisition Frame Rate disabled. Values are rounded down to whole numbers.

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



INDUSTRIAL/MACHINE VISION APPLICATIONS

FLIR BLACKFLY® S

P/N BFS-PGE-16S2

SMALL PACKAGE, POWERFUL RESULTS

The Blackfly S is a compact, high performance machine vision camera that allows designers to easily produce the exact images they need. With both automatic and precise manual control over image capture and on-camera pre-processing, the Blackfly S accelerates application development.

FEATURES

THE LATEST CMOS SENSORS
Switch between high sensitivity and low noise, and high saturation capacity and dynamic range with selectable conversion gain.

IMPROVE CYCLE TIMES
Automate more with advanced camera controls, event notifications, chunk data, counters and timers.

ACCELERATE YOUR TIME TO MARKET
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APPLICATIONS

AUTOMATED OPTICAL INSPECTION

MICROSCOPY

ROBOT GUIDANCE

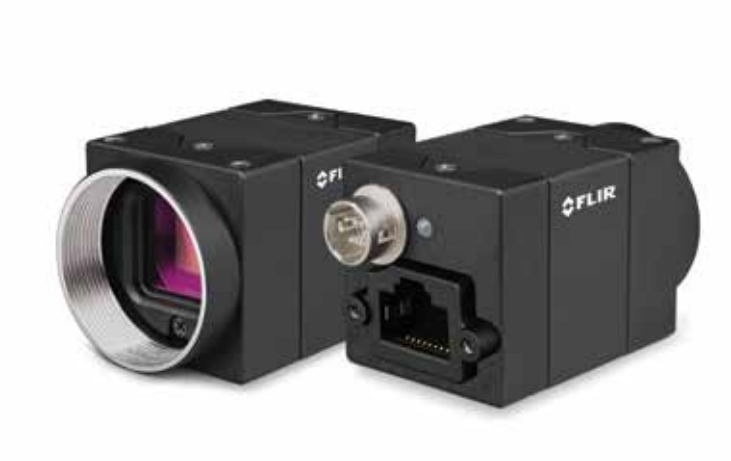
LASER BEAM PROFILING

AUTONOMOUS VEHICLE GUIDANCE

SPECS	BFS-GE-16S2M-BD2	BFS-GE-16S2C-BD2
Resolution	1440 x 1080	
Frame Rate*	78 FPS	
Megapixels	1.6 MP	
Chroma	Mono	Color
Sensor	Sony IMX273, CMOS, 1/2.9"	
Readout Method	Global shutter	
Pixel Size	3.45 µm	
Lens Mount	Sold separately	
ADC	10-bit, 12-bit	
Minimum Frame Rate**	1 FPS	
Gain Range**	0 to 47 dB	
Exposure Range**	21 us to 30 s	
Acquisition Modes	Continuous, Single Frame, Multi Frame	
Partial Image Modes	Pixel binning, decimation, ROI	
Image Processing	Gamma, lookup table, and sharpness	Color correction matrix, gamma, lookup table, saturation, and sharpness
Sequencer	Up to 8 sets using 6 features	
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	
Serial Port	Supported	
Auxiliary Output	3.3 V, 120 mA maximum	
Interface	GigE	
Interface Connector	Hirose TF38 FPC connector	
Power Requirements	5 V via GPIO	
Power Consumption	2 W maximum	
Dimensions/Mass	29 mm x 29 mm x 10 mm / 10 g	
Machine Vision Standard	GigE Vision v1.2	
Compliance	CE, FCC, RoHS, REACH. The ECCN for this product 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 125 MBps and Acquisition Frame Rate disabled. Values are rounded down to whole numbers.

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



INDUSTRIAL/MACHINE VISION APPLICATIONS

FLIR BLACKFLY® S

P/N: BFS-PGE-16S7

SMALL PACKAGE, POWERFUL RESULTS

The Blackfly S is a compact, high performance machine vision camera that allows designers to easily produce the exact images they need. With both automatic and precise manual control over image capture and on-camera pre-processing, the Blackfly S accelerates application development.

FEATURES

THE LATEST CMOS SENSORS
Switch between high sensitivity and low noise, and high saturation capacity and dynamic range with selectable conversion gain.

IMPROVE CYCLE TIMES
Automate more with advanced camera controls, event notifications, chunk data, counters and timers.

ACCELERATE YOUR TIME TO MARKET
FLIR's GenICam3 API with GUI library, and detailed event logging is supported by comprehensive documentation.

APPLICATIONS

AUTOMATED OPTICAL INSPECTION

MICROSCOPY

ROBOT GUIDANCE

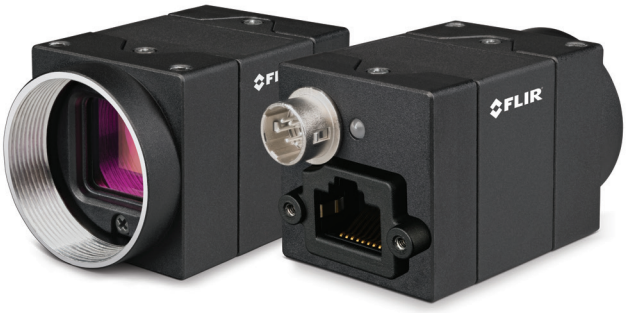
LASER BEAM PROFILING

AUTONOMOUS VEHICLE GUIDANCE

SPECS	BFS-PGE-16S7M-C	BFS-PGE-16S7C-C
Resolution	1600 x 1100	
Frame Rate*	69 FPS	
Megapixels	1.7 MP	
Chroma	Mono	Color
Sensor	Sony IMX432, CMOS, 1.1"	
Readout Method	Global shutter	
Pixel Size	9 µm	
Lens Mount	C-mount	
ADC	12-bit	
Minimum Frame Rate**	1 FPS	
Gain Range**	0 to 47 dB	
Exposure Range**	14 us to 30 s	
Acquisition Modes	Continuous, Single Frame, Multi Frame	
Partial Image Modes	Pixel binning, decimation, ROI	
Image Processing	Gamma, lookup table, and sharpness	Color correction matrix, gamma, lookup table, saturation, and sharpness
Sequencer	Up to 8 sets using 6 features	
Image Buffer	240 MB	
User Sets	2 user configuration sets for custom camera settings	
Flash Memory	6 MB non-volatile memory	
Opto-isolated I/O	1 input, 1 output	
Non-isolated I/O	1 bi-directional, 1 input	
Serial Port	1 (over non-isolated I/O)	
Auxiliary Output	3.3 V, 120 mA maximum	
Interface	GigE	
Power Requirements	Power over Ethernet (PoE); or 12 V nominal (8 - 24 V)	
Power Consumption	4.2 W maximum)	
Dimensions/Mass	29 mm x 29 mm x 39 mm / 53 g	
Machine Vision Standard	GigE Vision v1.2	
Compliance	CE, FCC, KCC, RoHS, REACH. The ECCN for this product 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 125 MBps and Acquisition Frame Rate disabled. Values are rounded down to whole numbers.

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



INDUSTRIAL/MACHINE VISION APPLICATIONS

FLIR BLACKFLY® S GIGE

P/N: BFS-PGE-19S4

SMALL PACKAGE, POWERFUL RESULTS

The BFS-PGE-19S4 leverages the 2 MP IMX430 a third generation Sony Pregius global shutter CMOS sensor with 4.5 um pixel and improved saturation capacity and dynamic range. The IMX430 maintains a similar optical format and pixel size as the ICX274 and is much faster with much improved absolute sensitivity threshold, read noise, quantum efficiency and dynamic range.

The Blackly S Gige camera family offers high performance machine vision cameras that allow designers to easily produce the exact images they need. With both automatic and precise manual control over image capture and on-camera pre-processing, the Blackfly S Gige cameras accelerate application development.

FEATURES

THE LATEST CMOS SENSORS
Choice of CMOS global shutter, polarization, and high-sensitivity BSI sensors.

IMPROVE CYCLE TIMES
Automate more with advanced camera controls, event notifications, chunk data, counters and timers.

ACCELERATE YOUR TIME TO MARKET
FLIR's GenICam3 API with GUI library, and detailed event logging is supported by comprehensive documentation.

APPLICATIONS

AUTOMATED OPTICAL INSPECTION

MICROSCOPY

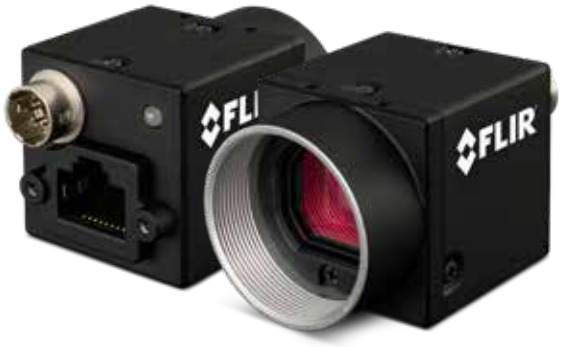
ROBOT GUIDANCE

METROLOGY

SPECS	BFS-PGE-19S4M-C	BFS-PGE-19S4C-C
Resolution	1616 x 1240	
Frame Rate*	60 FPS	
Megapixels	2.0 MP	
Chroma	Mono	Color
Sensor	Sony IMX430, CMOS, 1/1.7"	
Readout Method	Global shutter	
Pixel Size	4.5 µm	
Lens Mount	C-mount	
ADC	12-bit	
Minimum Frame Rate**	1 FPS	
Gain Range**	0 to 47 dB	
Exposure Range**	14 µs to 30 s	
Acquisition Modes	Continuous, Single Frame, Multi Frame	
Partial Image Modes	Pixel binning, decimation, ROI	
Image Processing	Gamma, lookup table, and sharpness	Color correction matrix, gamma, lookup table, saturation, and sharpness
Sequencer	Up to 8 sets using 6 features	
Image Buffer	240 MB	
User Sets	2 user configuration sets for custom camera settings	
Flash Memory	6 MB non-volatile memory	
Opto-isolated I/O	1 input, 1 output	
Non-isolated I/O	1 bi-directional, 1 input	
Serial Port	1 (over non-isolated I/O)	
Auxiliary Output	3.3 V, 120 mA maximum	
Interface	GigE	
Power Requirements	Power over Ethernet (PoE); or 12 V nominal (8 - 24 V)	
Power Consumption	4.2 W maximum	
Dimensions/Mass	29 mm x 29 mm x 39 mm / 53 g	
Machine Vision Standard	GigE Vision v1.2	
Compliance	CE, FCC, KCC, RoHS, REACH. The ECCN for this product 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 125 MBps and Acquisition Frame Rate disabled. Values are rounded down to whole numbers.

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



INDUSTRIAL/MACHINE VISION APPLICATIONS

FLIR BLACKFLY® S

P/N BFS-PGE-23S3

SMALL PACKAGE, POWERFUL RESULTS

The Blackfly S is a compact, high performance machine vision camera that allows designers to easily produce the exact images they need. With both automatic and precise manual control over image capture and on-camera pre-processing, the Blackfly S accelerates application development.

FEATURES

THE LATEST CMOS SENSORS
Switch between high sensitivity and low noise, and high saturation capacity and dynamic range with selectable conversion gain.

IMPROVE CYCLE TIMES
Automate more with advanced camera controls, event notifications, chunk data, counters and timers.

ACCELERATE YOUR TIME TO MARKET
FLIR's GenICam3 API with GUI library, and detailed event logging is supported by comprehensive documentation.

APPLICATIONS

AUTOMATED OPTICAL INSPECTION

MICROSCOPY

ROBOT GUIDANCE

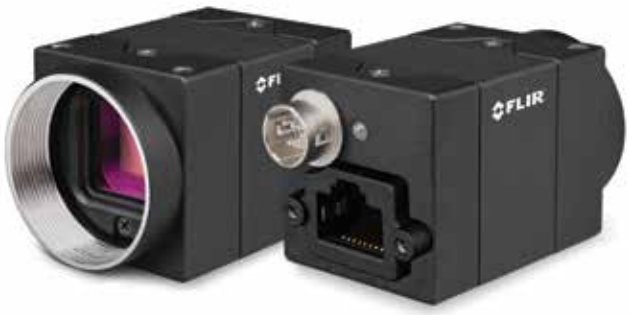
LASER BEAM PROFILING

AUTONOMOUS VEHICLE GUIDANCE

SPECS	BFS-PGE-23S3M-C	BFS-PGE-23S3C-C
Resolution	1920 x 1200	
Frame Rate*	53 FPS	
Megapixels	2.3 MP	
Chroma	Mono	Color
Sensor	Sony IMX392, CMOS, 1/2.3"	
Readout Method	Global shutter	
Pixel Size	3.45 µm	
Lens Mount	C-mount	
ADC	10-bit / 12-bit	
Minimum Frame Rate**	1 FPS	
Gain Range**	0 to 47 dB	
Exposure Range**	9 µs to 30 s	
Acquisition Modes	Continuous, Single Frame, Multi Frame	
Partial Image Modes	Pixel binning, decimation, ROI	
Image Processing	Gamma, lookup table, and sharpness	Color correction matrix, gamma, lookup table, saturation, and sharpness
Sequencer	Up to 8 sets using 2 features, exposure and gain	
Image Buffer	240 MB	
User Sets	2 user configuration sets for custom camera settings	
Flash Memory	6 MB non-volatile memory	
Opto-isolated I/O	1 input, 1 output	
Non-isolated I/O	1 bi-directional, 1 input	
Auxiliary Output	3.3 V, 120 mA maximum	
Interface	GigE PoE	
Power Requirements	Power over Ethernet (PoE), or 12 V nominal (8 - 24 V) via GPIO	
Power Consumption	3 W maximum	
Dimensions/Mass	29 mm x 29 mm x 30 mm / 36 g	
Machine Vision Standard	Gige Vision v1.2	
Compliance	CE, FCC, KCC, RoHS, REACH. The ECCN for this product 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 125 MBps and Acquisition Frame Rate disabled. Values are rounded down to whole numbers.

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



INDUSTRIAL/MACHINE VISION APPLICATIONS

FLIR BLACKFLY® S

P/N BFS-PGE- 27S5

SMALL PACKAGE, POWERFUL RESULTS

The Blackfly S is a compact, high performance machine vision camera that allows designers to easily produce the exact images they need. With both automatic and precise manual control over image capture and on-camera pre-processing, the Blackfly S accelerates application development.

FEATURES

THE LATEST CMOS SENSORS
Switch between high sensitivity and low noise, and high saturation capacity and dynamic range with selectable conversion gain.

IMPROVE CYCLE TIMES
Automate more with advanced camera controls, event notifications, chunk data, counters and timers.

ACCELERATE YOUR TIME TO MARKET
FLIR's GenICam3 API with GUI library, and detailed event logging is supported by comprehensive documentation.

APPLICATIONS

AUTOMATED OPTICAL INSPECTION

MICROSCOPY

ROBOT GUIDANCE

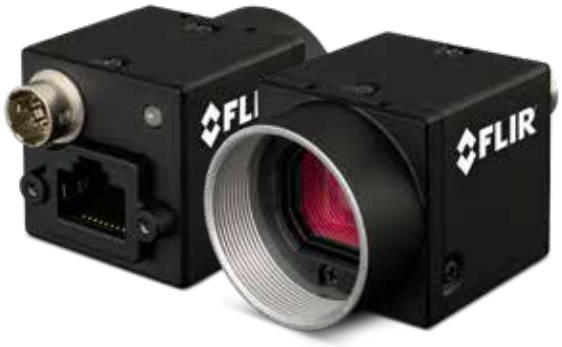
LASER BEAM PROFILING

AUTONOMOUS VEHICLE GUIDANCE

SPECS	BFS-PGE-27S5M-C	BFS-PGE-27S5C-C
Resolution	1936 x 1464	
Frame Rate*	43 FPS	
Megapixels	2.8 MP	
Chroma	Mono	Color
Sensor	Sony IMX429, CMOS, 2/3"	
Readout Method	Global shutter	
Pixel Size	4.5 µm	
Lens Mount	C-mount	
ADC	12-bit	
Minimum Frame Rate**	1 FPS	
Gain Range**	0 to 47 dB	
Exposure Range**	15 µs to 30 s	
Acquisition Modes	Continuous, Single Frame, Multi Frame	
Partial Image Modes	Pixel binning, decimation, ROI	
Image Processing	Gamma, lookup table, and sharpness	Color correction matrix, gamma, lookup table, saturation, and sharpness
Sequencer	Up to 8 sets using 6 features, exposure and gain	
Image Buffer	240 MB	
User Sets	2 user configuration sets for custom camera settings	
Flash Memory	6 MB non-volatile memory	
Opto-isolated I/O	1 input, 1 output	
Non-isolated I/O	1 bi-directional, 1 input	
Auxiliary Output	3.3 V, 120 mA maximum	
Interface	GigE PoE	
Power Requirements	Power over Ethernet (PoE), or 12 V nominal (8 - 24 V) via GPIO	
Power Consumption	4.2 W maximum	
Dimensions/Mass	29 mm x 29 mm x 39 mm / 53 g	
Machine Vision Standard	Gige Vision v1.2	
Time Synchronization Protocol	IEEE 1588 Precision Time Protocol	
Compliance	CE, FCC, KCC, RoHS, REACH. The ECCN for this product 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 125 MBps and Acquisition Frame Rate disabled. Values are rounded down to whole numbers.

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



INDUSTRIAL/MACHINE VISION APPLICATIONS

FLIR BLACKFLY® S

P/N BFS-PGE-31S4

SMALL PACKAGE, POWERFUL RESULTS

The Blackfly S is a compact, high performance machine vision camera that allows designers to easily produce the exact images they need. With both automatic and precise manual control over image capture and on-camera pre-processing, the Blackfly S accelerates application development.

FEATURES

THE LATEST CMOS SENSORS
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IMPROVE CYCLE TIMES
Automate more with advanced camera controls, event notifications, chunk data, counters and timers.

ACCELERATE YOUR TIME TO MARKET
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APPLICATIONS

AUTOMATED OPTICAL INSPECTION

MICROSCOPY

ROBOT GUIDANCE

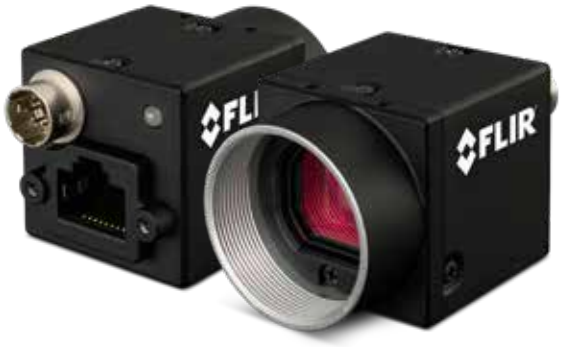
LASER BEAM PROFILING

AUTONOMOUS VEHICLE GUIDANCE

SPECS	BFS-PGE-31S4M-C	BFS-PGE-31S4C-C
Resolution	2048 x 1536	
Frame Rate*	35 FPS	
Megapixels	3.1 MP	
Chroma	Mono	Color
Sensor	Sony IMX265, CMOS, 1/1.8"	
Readout Method	Global shutter	
Pixel Size	3.45 µm	
Lens Mount	C-mount	
ADC	12-bit	
Minimum Frame Rate**	1 FPS	
Gain Range**	0 to 48 dB	
Exposure Range**	11 µs to 30 s	
Acquisition Modes	Continuous, Single Frame, Multi Frame	
Partial Image Modes	Pixel binning, decimation, ROI	
Image Processing	Gamma, lookup table, and sharpness	Color correction matrix, gamma, lookup table, hue, saturation, and sharpness
Sequencer	Up to 8 sets using 2 features, exposure and gain	
Image Buffer	240 MB	
User Sets	2 user configuration sets for custom camera settings	
Flash Memory	6 MB non-volatile memory	
Opto-isolated I/O	1 input, 1 output	
Non-isolated I/O	1 bi-directional, 1 input	
Auxiliary Output	3.3 V, 120 mA maximum	
Interface	GigE PoE	
Power Requirements	Power over Ethernet (PoE), or 12 V nominal (8 - 24 V) via GPIO	
Power Consumption	3 W maximum	
Dimensions/Mass	29 mm x 29 mm x 30 mm / 36 g	
Machine Vision Standard	Gige Vision v1.2	
Compliance	CE, FCC, KCC, RoHS, REACH. The ECCN for this product 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 125MBps and Acquisition Frame Rate disabled. Values are rounded down to whole numbers.

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



INDUSTRIAL/MACHINE VISION APPLICATIONS

FLIR BLACKFLY® S

P/N BFS-PGE-50S5

SMALL PACKAGE, POWERFUL RESULTS

The Blackfly S is a compact, high performance machine vision camera that allows designers to easily produce the exact images they need. With both automatic and precise manual control over image capture and on-camera pre-processing, the Blackfly S accelerates application development.

FEATURES

THE LATEST CMOS SENSORS
Switch between high sensitivity and low noise, and high saturation capacity and dynamic range with selectable conversion gain.

IMPROVE CYCLE TIMES
Automate more with advanced camera controls, event notifications, chunk data, counters and timers.

ACCELERATE YOUR TIME TO MARKET
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APPLICATIONS

AUTOMATED OPTICAL INSPECTION

MICROSCOPY

ROBOT GUIDANCE

LASER BEAM PROFILING

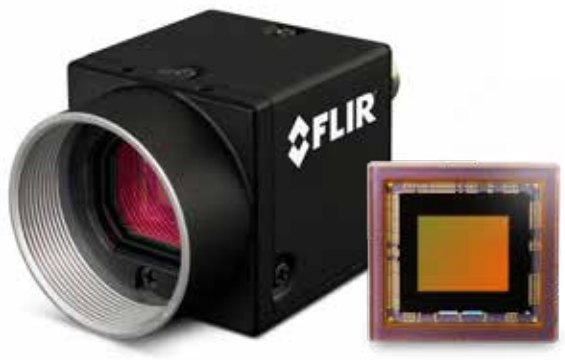
AUTONOMOUS VEHICLE GUIDANCE

SPECS	BFS-PGE-50S5M-C	BFS-PGE-50S5C-C
Resolution	2448 x 2048	
Frame Rate*	24 FPS	
Megapixels	5.0 MP	
Chroma	Mono	Color
Sensor	Sony IMX264, CMOS, 2/3"	
Readout Method	Global shutter	
Pixel Size	3.45 µm	
Lens Mount	C-mount	
ADC	12-bit	
Minimum Frame Rate**	1 FPS	
Gain Range**	0 to 48 dB	
Exposure Range**	13 µs to 30 s	
Acquisition Modes	Continuous, Single Frame, Multi Frame	
Partial Image Modes	Pixel binning, decimation, ROI	
Image Processing	Gamma, lookup table, and sharpness	Color correction matrix, gamma, lookup table, hue, saturation, and sharpness
Sequencer	Up to 8 sets using 2 features, exposure and gain	
Image Buffer	240 MB	
User Sets	2 user configuration sets for custom camera settings	
Flash Memory	6 MB non-volatile memory	
Opto-isolated I/O	1 input, 1 output	
Non-isolated I/O	1 bi-directional, 1 input	
Auxiliary Output	3.3 V, 120 mA maximum	
Interface	GigE PoE	
Power Requirements	Power over Ethernet (PoE), or 12 V nominal (8 - 24 V) via GPIO	
Power Consumption	3 W maximum	
Dimensions/Mass	29 mm x 29 mm x 30 mm / 36 g	
Machine Vision Standard	Gige Vision v1.2	
Compliance	CE, FCC, KCC, RoHS, REACH. The ECCN for this product is: EAR099.	
MTBF***	2,506,000 hours @20°C, GB environment 626,500 hours @20°C, GM environment	
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 125 MBps and Acquisition Frame Rate disabled. Values are rounded down to whole numbers.

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

***Ambient temperature; internal camera temperature is not considered.



INDUSTRIAL/MACHINE VISION APPLICATIONS

FLIR BLACKFLY® S

P/N BFS-PGE-51S5P

ENABLE NEW APPLICATIONS WITH ON-SENSOR POLARIZING FILTERS

See the world in a whole new way with the FLIR BFS-PGE-51S5P-C. Sony's new IMX250MZR with on-sensor polarizing filters adds polarimetry to the FLIR Blackfly S already powerful feature-set. The GigE interface enables a global shutter readout at 24 FPS in a compact, low power package. This camera is ideal for building the next generation of polarimetry based industrial, traffic and UAS applications.

FEATURES

Dynamically remove reflections from multiple light sources to improve the contrast of transparent and reflective objects.

FLIR's Spinnaker SDK supports visualization and output of polarimetric image data.

Proven combability with popular ARM and x64 SBCs, operating systems, and software ensures support for an entire ecosystem of embedded systems.

APPLICATIONS

SURFACE INSPECTION

QUALITY INSPECTION OF COMPOSITE MATERIALS

DRIVER MONITORING FOR TRAFFIC ENFORCEMENT

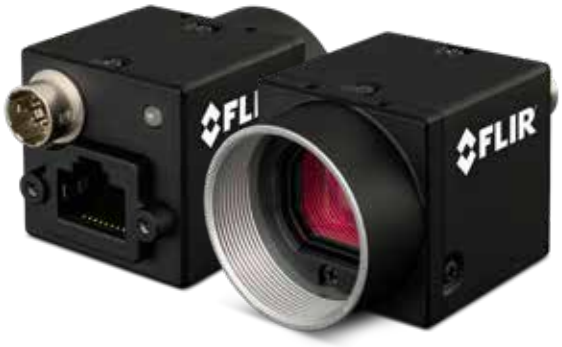
MEASURING INTERNAL STRESSES IN PLASTIC PARTS

POLARIZED GiGE VISION GEN<i>CAM Pregius

SPECS	BFS-PGE-51S5P-C	BFS-PGE-51S5PC-C
Resolution	2448 x 2048	
Frame Rate*	24 FPS	
Megapixels	5.0 MP	
Chroma	Polarized	Polarized Color
Sensor	Sony IMX250MZR, CMOS, 2/3"	Sony IMX250MYR, CMOS, 2/3"
Readout Method	Global shutter	
Pixel Size	3.45 µm	
Lens Mount	C-mount	
ADC	10-bit and 12-bit	
Minimum Frame Rate**	1 FPS	
Gain Range**	0 to 47 dB	
Exposure Range**	11 µs to 30 s	
Acquisition Modes	Continuous, Single Frame, Multi Frame	
Partial Image Modes	Pixel binning, decimation, ROI	
Image Processing	Gamma	
Sequencer	Up to 8 sets using 6 features	
Image Buffer	240 MB	
User Sets	2 user configuration sets for custom camera settings	
Flash Memory	6 MB non-volatile memory	
Opto-isolated I/O	1 input, 1 output	
Non-isolated I/O	1 bi-directional, 1 input	
Serial Port	Supported	
Time Synchronization	IEEE 1588 PTP	
Auxiliary Output	3.3 V, 120 mA maximum	
Interface	GigE PoE	
Power Requirements	Power over Ethernet (PoE), or 12 V nominal (8 - 24 V) via GPIO	
Power Consumption	3 W maximum	
Dimensions/Mass	29 mm x 29 mm x 30 mm / 36 g	
Machine Vision Standard	Gige Vision v1.2	
Compliance	CE, FCC, KCC, RoHS, REACH. The ECCN for this product 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 125 MBps and Acquisition Frame Rate disabled. Values are rounded down to whole numbers.

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



INDUSTRIAL/MACHINE VISION APPLICATIONS

FLIR BLACKFLY® S

P/N BFS-PGE-63S4

SMALL PACKAGE, POWERFUL RESULTS

The Blackfly S is a compact, high performance machine vision camera that allows designers to easily produce the exact images they need. With both automatic and precise manual control over image capture and on-camera pre-processing, the Blackfly S accelerates application development.

FEATURES

THE LATEST CMOS SENSORS
Switch between high sensitivity and low noise, and high saturation capacity and dynamic range with selectable conversion gain.

IMPROVE CYCLE TIMES
Automate more with advanced camera controls, event notifications, chunk data, counters and timers.

ACCELERATE YOUR TIME TO MARKET
FLIR's GenICam3 API with GUI library, and detailed event logging is supported by comprehensive documentation.

APPLICATIONS

AUTOMATED OPTICAL INSPECTION

MICROSCOPY

ROBOT GUIDANCE

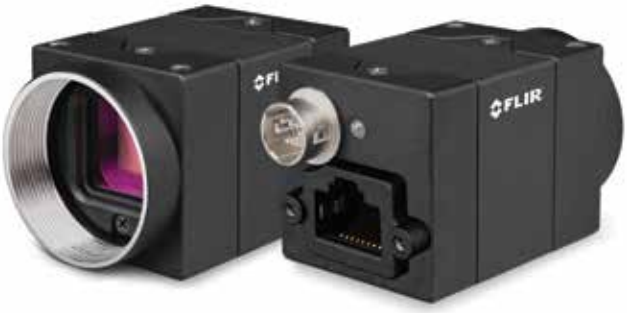
LASER BEAM PROFILING

AUTONOMOUS VEHICLE GUIDANCE

SPECS	BFS-PGE-63S4M-C	BFS-PGE-63S4C-C
Resolution	3072 x 2048	
Frame Rate*	19 FPS	
Megapixels	6.3 MP	
Chroma	Mono	Color
Sensor	Sony IMX178, CMOS, 1/1.8"	
Readout Method	Rolling shutter with global reset	
Pixel Size	2.4 µm	
Lens Mount	C-mount	
ADC	10-bit / 12-bit / 14-bit	
Minimum Frame Rate**	1 FPS	
Gain Range**	0 to 47 dB	
Exposure Range**	25 µs to 30 s	
Acquisition Modes	Continuous, Single Frame, Multi Frame	
Partial Image Modes	Pixel binning, decimation, ROI	
Image Processing	Gamma, lookup table, and sharpness	Color correction matrix, gamma, lookup table, saturation, and sharpness
Sequencer	Up to 8 sets using 2 features, exposure and gain	
Image Buffer	240 MB	
User Sets	2 user configuration sets for custom camera settings	
Flash Memory	6 MB non-volatile memory	
Opto-isolated I/O	1 input, 1 output	
Non-isolated I/O	1 bi-directional, 1 input	
Auxiliary Output	3.3 V, 120 mA maximum	
Interface	GigE PoE	
Power Requirements	Power over Ethernet (PoE), or 12 V nominal (8 - 24 V) via GPIO	
Power Consumption	3 W maximum	
Dimensions/Mass	29 mm x 29 mm x 30 mm / 36 g	
Machine Vision Standard	Gige Vision v1.2	
Compliance	CE, FCC, KCC, RoHS, REACH. The ECCN for this product 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 125MBps and Acquisition Frame Rate disabled. Values are rounded down to whole numbers.

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



INDUSTRIAL/MACHINE VISION APPLICATIONS

FLIR BLACKFLY® S

P/N BFS-PGE-70S7

SMALL PACKAGE, POWERFUL RESULTS

The Blackfly S is a compact, high performance machine vision camera that allows designers to easily produce the exact images they need. With both automatic and precise manual control over image capture and on-camera pre-processing, the Blackfly S accelerates application development.

FEATURES

THE LATEST CMOS SENSORS
Switch between high sensitivity and low noise, and high saturation capacity and dynamic range with selectable conversion gain.

IMPROVE CYCLE TIMES
Automate more with advanced camera controls, event notifications, chunk data, counters and timers.

ACCELERATE YOUR TIME TO MARKET
FLIR's GenICam3 API with GUI library, and detailed event logging is supported by comprehensive documentation.

APPLICATIONS

AUTOMATED OPTICAL INSPECTION

MICROSCOPY

ROBOT GUIDANCE

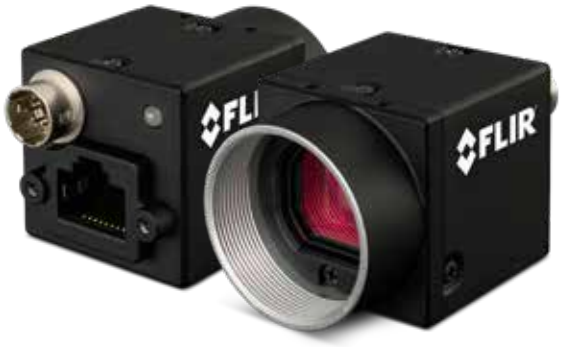
LASER BEAM PROFILING

AUTONOMOUS VEHICLE GUIDANCE

SPECS	BFS-PGE-70S7M-C	BFS-PGE-70S7C-C
Resolution	3208 x 2200	
Frame Rate*	17.4 FPS	
Megapixels	7.1 MP	
Chroma	Mono	Color
Sensor	Sony IMX428, CMOS, 1.1"	
Readout Method	Global shutter	
Pixel Size	4.5 µm	
Lens Mount	C-mount	
ADC	12-bit	
Minimum Frame Rate**	1 FPS	
Gain Range**	0 to 47 dB	
Exposure Range**	22 µs to 30 s	
Acquisition Modes	Continuous, Single Frame, Multi Frame	
Partial Image Modes	Pixel binning, decimation, ROI	
Image Processing	Gamma, lookup table, and sharpness	Color correction matrix, gamma, lookup table, saturation, and sharpness
Sequencer	Up to 8 sets using 6 features	
Image Buffer	240 MB	
User Sets	2 user configuration sets for custom camera settings	
Flash Memory	6 MB non-volatile memory	
Opto-isolated I/O	1 input, 1 output	
Non-isolated I/O	1 bi-directional, 1 input	
Auxiliary Output	3.3 V, 120 mA maximum	
Interface	GigE PoE	
Power Requirements	Power over Ethernet (PoE), or 12 V nominal (8 - 24 V) via GPIO	
Power Consumption	4.2 W maximum	
Dimensions/Mass	29 mm x 29 mm x 39 mm / 53 g	
Machine Vision Standard	Gige Vision v1.2	
Compliance	CE, FCC, KCC, RoHS, REACH. The ECCN for this product 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 125 MBps and Acquisition Frame Rate disabled.

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



INDUSTRIAL/MACHINE VISION APPLICATIONS

FLIR BLACKFLY® S

P/N BFS-PGE-88S6

SMALL PACKAGE, POWERFUL RESULTS

The Blackfly S is a compact, high performance machine vision camera that allows designers to easily produce the exact images they need. With both automatic and precise manual control over image capture and on-camera pre-processing, the Blackfly S accelerates application development.

FEATURES

THE LATEST CMOS SENSORS
Switch between high sensitivity and low noise, and high saturation capacity and dynamic range with selectable conversion gain.

IMPROVE CYCLE TIMES
Automate more with advanced camera controls, event notifications, chunk data, counters and timers.

ACCELERATE YOUR TIME TO MARKET
FLIR's GenICam3 API with GUI library, and detailed event logging is supported by comprehensive documentation.

APPLICATIONS

AUTOMATED OPTICAL INSPECTION

MICROSCOPY

ROBOT GUIDANCE

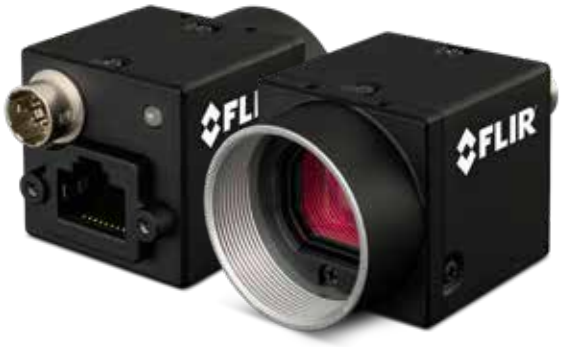
LASER BEAM PROFILING

AUTONOMOUS VEHICLE GUIDANCE

SPECS	BFS-PGE-88S6M-C	BFS-PGE-88S6C-C
Resolution	4096 x 2160	
Frame Rate*	13.8 FPS	
Megapixels	8.9 MP	
Chroma	Mono	Color
Sensor	Sony IMX267, CMOS, 1"	
Readout Method	Global shutter	
Pixel Size	3.45 µm	
Lens Mount	C-mount	
ADC	12-bit	
Minimum Frame Rate**	1 FPS	
Gain Range**	0 to 47 dB	
Exposure Range**	22 µs to 30 s	
Acquisition Modes	Continuous, Single Frame, Multi Frame	
Partial Image Modes	Pixel binning, decimation, ROI	
Image Processing	Gamma, lookup table, and sharpness	Color correction matrix, gamma, lookup table, saturation, and sharpness
Sequencer	Up to 8 sets using 2 features	
Image Buffer	240 MB	
User Sets	2 user configuration sets for custom camera settings	
Flash Memory	6 MB non-volatile memory	
Opto-isolated I/O	1 input, 1 output	
Non-isolated I/O	1 bi-directional, 1 input	
Auxiliary Output	3.3 V, 120 mA maximum	
Interface	GigE PoE	
Power Requirements	Power over Ethernet (PoE), or 12 V nominal (8 - 24 V) via GPIO	
Power Consumption	3 W maximum (2.8 W nominal)	
Dimensions/Mass	29 mm x 29 mm x 30 mm / 36 g	
Machine Vision Standard	Gige Vision v1.2	
Compliance	CE, FCC, KCC, RoHS, REACH. The ECCN for this product 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 125 MBps and Acquisition Frame Rate disabled.

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



INDUSTRIAL/MACHINE VISION APPLICATIONS

FLIR BLACKFLY® S

P/N BFS-PGE-120S4

SMALL PACKAGE, POWERFUL RESULTS

The Blackfly S is a compact, high performance machine vision camera that allows designers to easily produce the exact images they need. With both automatic and precise manual control over image capture and on-camera pre-processing, the Blackfly S accelerates application development.

FEATURES

THE LATEST CMOS SENSORS
Switch between high sensitivity and low noise, and high saturation capacity and dynamic range with selectable conversion gain.

IMPROVE CYCLE TIMES
Automate more with advanced camera controls, event notifications, chunk data, counters and timers.

ACCELERATE YOUR TIME TO MARKET
FLIR's GenICam3 API with GUI library, and detailed event logging is supported by comprehensive documentation.

APPLICATIONS

AUTOMATED OPTICAL INSPECTION

MICROSCOPY

ROBOT GUIDANCE

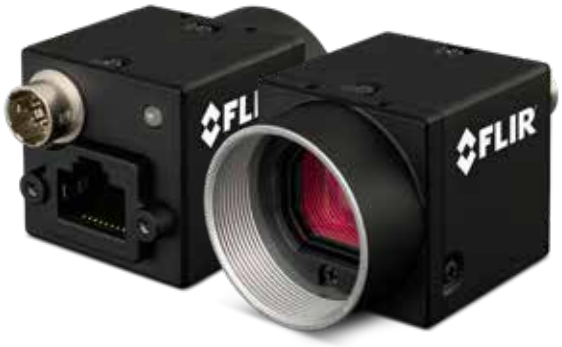
LASER BEAM PROFILING

AUTONOMOUS VEHICLE GUIDANCE

SPECS	BFS-PGE-120S4M-CS	BFS-PGE-120S4C-CS
Resolution	400 x 3000	
Frame Rate*	8.5 FPS	
Megapixels	12 MP	
Chroma	Mono	Color
Sensor	Sony IMX226, CMOS, 1/1.7"	
Readout Method	Rolling shutter with global reset	
Pixel Size	1.85 µm	
Lens Mount	CS-mount	
ADC	10-bit / 12-bit	
Minimum Frame Rate**	1 FPS	
Gain Range**	0 to 47 dB	
Exposure Range**	10 µs to 30 s	
Acquisition Modes	Continuous, Single Frame, Multi Frame	
Partial Image Modes	Pixel binning, decimation, ROI	
Image Processing	Gamma, lookup table, and sharpness	Color correction matrix, gamma, lookup table, saturation, and sharpness
Sequencer	Up to 8 sets using 5 features	
Image Buffer	240 MB	
User Sets	2 user configuration sets for custom camera settings	
Flash Memory	6 MB non-volatile memory	
Opto-isolated I/O	1 input, 1 output	
Non-isolated I/O	1 bi-directional, 1 input	
Auxiliary Output	3.3 V, 120 mA maximum	
Interface	GigE PoE	
Power Requirements	Power over Ethernet (PoE), or 12 V nominal (8 - 24 V) via GPIO	
Power Consumption	3 W maximum (2.8 W nominal)	
Dimensions/Mass	29 mm x 29 mm x 30 mm / 36 g	
Machine Vision Standard	Gige Vision v1.2	
Compliance	CE, FCC, KCC, RoHS, REACH. The ECCN for this product 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 125 MBps and Acquisition Frame Rate disabled.

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



INDUSTRIAL/MACHINE VISION APPLICATIONS

FLIR BLACKFLY® S

P/N BFS-PGE-122S6

SMALL PACKAGE, POWERFUL RESULTS

The Blackfly S is a compact, high performance machine vision camera that allows designers to easily produce the exact images they need. With both automatic and precise manual control over image capture and on-camera pre-processing, the Blackfly S accelerates application development.

FEATURES

THE LATEST CMOS SENSORS
Switch between high sensitivity and low noise, and high saturation capacity and dynamic range with selectable conversion gain.

IMPROVE CYCLE TIMES
Automate more with advanced camera controls, event notifications, chunk data, counters and timers.

ACCELERATE YOUR TIME TO MARKET
FLIR's GenICam3 API with GUI library, and detailed event logging is supported by comprehensive documentation.

APPLICATIONS

AUTOMATED OPTICAL INSPECTION

MICROSCOPY

ROBOT GUIDANCE

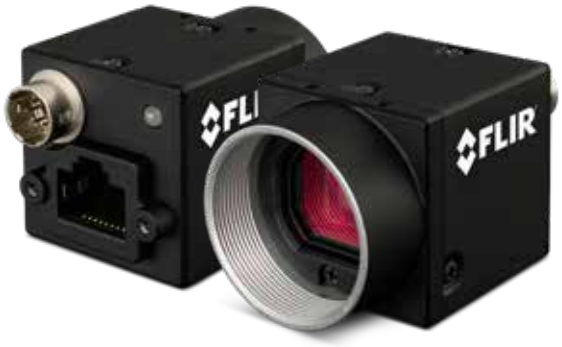
LASER BEAM PROFILING

AUTONOMOUS VEHICLE GUIDANCE

SPECS	BFS-PGE-122S6M-C	BFS-PGE-122S6C-C
Resolution	4096 x 3000	
Frame Rate*	9.9 FPS	
Megapixels	12.3 MP	
Chroma	Mono	Color
Sensor	Sony IMX304, CMOS, 1.1"	
Readout Method	Global shutter	
Pixel Size	3.45 µm	
Lens Mount	C-mount	
ADC	12-bit	
Minimum Frame Rate**	1 FPS	
Gain Range**	0 to 47 dB	
Exposure Range**	22 µs to 30 s	
Acquisition Modes	Continuous, Single Frame, Multi Frame	
Partial Image Modes	Pixel binning, decimation, ROI	
Image Processing	Gamma, lookup table, and sharpness	Color correction matrix, gamma, lookup table, saturation, and sharpness
Sequencer	Up to 8 sets using 2 features	
Image Buffer	240 MB	
User Sets	2 user configuration sets for custom camera settings	
Flash Memory	6 MB non-volatile memory	
Opto-isolated I/O	1 input, 1 output	
Non-isolated I/O	1 bi-directional, 1 input	
Auxiliary Output	3.3 V, 120 mA maximum	
Interface	GigE PoE	
Power Requirements	Power over Ethernet (PoE), or 12 V nominal (8 - 24 V) via GPIO	
Power Consumption	3 W maximum (2.8 W nominal)	
Dimensions/Mass	29 mm x 29 mm x 30 mm / 36 g	
Machine Vision Standard	Gige Vision v1.2	
Compliance	CE, FCC, KCC, RoHS, REACH. The ECCN for this product 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 125 MBps and Acquisition Frame Rate disabled.

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



INDUSTRIAL/MACHINE VISION APPLICATIONS

FLIR BLACKFLY® S

P/N BFS-PGE-200S6

SMALL PACKAGE, POWERFUL RESULTS

The Blackfly S is a compact, high performance machine vision camera that allows designers to easily produce the exact images they need. With both automatic and precise manual control over image capture and on-camera pre-processing, the Blackfly S accelerates application development.

FEATURES

THE LATEST CMOS SENSORS
Switch between high sensitivity and low noise, and high saturation capacity and dynamic range with selectable conversion gain.

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APPLICATIONS

AUTOMATED OPTICAL INSPECTION

MICROSCOPY

ROBOT GUIDANCE

LASER BEAM PROFILING

AUTONOMOUS VEHICLE GUIDANCE

SPECS	BFS-PGE-200S6M-C	BFS-PGE-200S6C-C
Resolution	5472 x 3648	
Frame Rate*	6.1 FPS	
Megapixels	20.0 MP	
Chroma	Mono	Color
Sensor	Sony IMX183, CMOS, 1"	
Readout Method	Rolling shutter with global reset	
Pixel Size	2.4 µm	
Lens Mount	C-mount	
ADC	10-bit / 12-bit	
Minimum Frame Rate**	1 FPS	
Gain Range**	0 to 27 dB	
Exposure Range**	44 µs to 30 s	
Acquisition Modes	Continuous, Single Frame, Multi Frame	
Partial Image Modes	Pixel binning, decimation, ROI	
Image Processing	Gamma, lookup table, and sharpness	Color correction matrix, gamma, lookup table, saturation, and sharpness
Sequencer	Up to 8 sets using 5 features	
Image Buffer	240 MB	
User Sets	2 user configuration sets for custom camera settings	
Flash Memory	6 MB non-volatile memory	
Opto-isolated I/O	1 input, 1 output	
Non-isolated I/O	1 bi-directional, 1 input	
Auxiliary Output	3.3 V, 120 mA maximum	
Interface	GigE PoE	
Power Requirements	Power over Ethernet (PoE), or 12 V nominal (8 - 24 V) via GPIO	
Power Consumption	3 W maximum	
Dimensions/Mass	29 mm x 29 mm x 30 mm / 36 g	
Machine Vision Standard	Gige Vision v1.2	
Compliance	CE, FCC, KCC, RoHS, REACH. The ECCN for this product 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 125 MBps and Acquisition Frame Rate disabled.

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