



## INDUSTRIAL/MACHINE VISION APPLICATIONS

# FLIR BLACKFLY S

P/N BFS-U3-51S5

### 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.

[www.flir.com/mv](http://www.flir.com/mv)

### 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



GEN*i*CAM

Pregius

| SPECS                   | BFS-U3-51S5M-C   | BFS-U3-51S5C-C   |
|-------------------------|--|--|
| Resolution              | 2448 x 2048  |  |
| Frame Rate*             | 75 FPS   |  |
| Megapixels              | 5.0 MP   |  |
| Chroma                  | Mono   | Color  |
| Sensor                  | Sony IMX250, CMOS, 2/3"  |  |
| Readout Method          | Global shutter   |  |
| Pixel Size              | 3.45 $\mu$ m   |  |
| Lens Mount              | C-mount  |  |
| ADC                     | 10-bit / 12-bit  |  |
| Minimum Frame Rate**    | 1 FPS  |  |
| Gain Range**            | 0 to 47 dB   |  |
| Exposure Range**        | 6 $\mu$ s 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            | 1 MB non-volatile memory   |  |
| Opto-isolated I/O       | 1 input, 1 output  |  |
| Non-isolated I/O        | 1 bi-directional   |  |
| Auxiliary Output        | 3.3 V, 150 mA maximum  |  |
| Interface               | USB 3.1 Gen 1  |  |
| Power Requirements      | 5 - 24 V via GPIO or 5 V via USB3 interface                                      |  |
| Power Consumption       | 3 W maximum  |  |
| Dimensions/Mass         | 29 mm x 29 mm x 30 mm / 36 g   |  |
| Machine Vision Standard | USB3 Vision v1.0   |  |
| Compliance              | CE, FCC, KCC, RoHS, REACH. The ECCN for this product is: EAR099.                 |  |
| MTBF***                 | 4,706,000 hours @20°C, GB environment<br>1,177,000 hours @20°C, GM environment   |  |
| Temperature             | Operating: 0°C to 50°C<br>Storage: -30°C to 60°C                                 |  |
| Humidity                | Operating: 20% to 80% (no condensation)<br>Storage: 30% to 95% (no condensation) |  |
| Warranty                | 3 years  |  |

\*Frame rates are measured with Device Link Throughput Limit of 500 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.

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VN: BFS-U3-51S5-v2

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FOR YOUR NEEDS



The World's Sixth Sense®