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INDUSTRIAL/MACHINE VISION APPLICATIONS

FLIR FIREFLY® S

ULTRA-COMPACT MACHINE VISION CAMERA

The FLIR Firefly® S delivers the essential machine vision features you need in an ultra-compact body. Its small size, low power, and light weight make it ideal for embedding into portable devices. The Firefly S provides amazing value by combining powerful on-camera features with the latest CMOS sensors.

www.flir.com/products/firefly-s

FEATURES

SMALL, LIGHT AND LOW POWER

Ideal for embedding into compact, hand-held and portable devices with a footprint of 27 mm x 27 mm x 14 mm, 20 gram weight and 1.6 W power consumption.

EXCELLENT IMAGING PERFORMANCE

Capture clear, distortion-free images in challenging lighting conditions with Firefly's Sony Pregius global shutter CMOS sensor

CORE MACHINE VISION CAPABILITIES

GPIO for triggering and auxiliary power, partial image modes, auto-exposure, Sharpness and Gamma give you the tools to quickly develop high-performance vision enabled systems

APPLICATIONS

BIOMEDICAL

UNMANNED AERIAL SYSTEMS (UAS)

EYE TRACKING

3D SCANNING AND HAND-HELD DEVICES

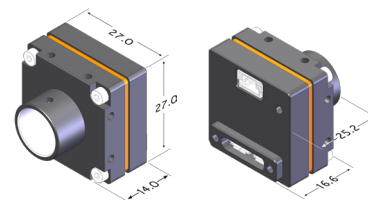


SPECIFICATIONS

SPECS	FFY-U3-16S2M	FFY-U3-16S2C
Resolution	1440 x 1080	
Frame Rate*	60 FPS	
Megapixels	1.6 MP	
Chroma	Mono	Color
Sensor	Sony IMX296, CMOS, 1/2.9"	
Readout Method	Global shutter	
Pixel Size	3.45 µm	
Lens Mount	S-mount / C-mount / CS-mount	
ADC	10-bit	
Minimum Frame Rate**	1 FPS	
Gain Range**	0 to 48 dB	
Exposure Range**	29 µs to 30 s	
Acquisition Modes	Continuous, Single Frame, Multi Frame	
Partial Image Modes	Pixel binning, ROI	
Image Processing	Gamma, denoise, lookup table, and sharpness	Gamma, denoise, lookup table, saturation, and sharpness
Image Buffer	32 MB	
User Sets	2 user configuration sets for custom camera settings	
Flash Memory	24 MB non-volatile memory	
Opto-isolated I/O	N/A	
Non-isolated I/O	4 bi-directional	
Serial Port	1 (over non-isolated I/O)	
Auxiliary Output	3.3 V, 120 mA maximum	
Interface	USB 3.1 Gen 1	
Power Requirements	5 V via USB3 interface	
Power Consumption	2.2 W maximum	
Dimensions/Mass	27 mm x 27 mm x 14.5 mm / 20 g	
Machine Vision Standard	USB3 Vision v1.0	
Compliance	CE, FCC, KCC, RoHS, REACH. The ECCN for this product is: EAR099.	
Temperature	Operating: 0°C to 85°C (case) Storage: -30°C to 60°C (ambient)	
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.



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The World's Sixth Sense®



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INDUSTRIAL/MACHINE VISION APPLICATIONS

FLIR FIREFLY® DL

P/N: FFY-U3-16S2-DL

ON-CAMERA INFERENCE

Deep learning is a powerful tool for system designers to quickly automate complex and subjective decision making and deliver higher quality products and improved productivity. Deploy your trained neural network to the FLIR Firefly DL camera with Neuro technology and reduce system cost and complexity by making decisions on-camera without host PC. With its very small size, low weight and power consumption, the Firefly DL camera is ideal for embedding into mobile, desktop, and handheld systems.

www.flir.com/firefly-dl

FEATURES

DEEP LEARNING FOR FASTER DEPLOYMENT & NEW POSSIBILITIES

Quickly develop and deploy AI solutions to challenging automation tasks

DEEP LEARNING INFERENCE ON-CAMERA

Reduce system cost and complexity by deploying your trained network to a Firefly DL camera, eliminating the need for a host system for classification tasks

IDEAL FOR EMBEDDING INTO COMPACT, PORTABLE DEVICES

Tiny package of 27 mm × 27 mm × 14 mm, only 2 W power consumption and 20 gram mass

APPLICATIONS

INFERENCE ON THE EDGE

ON-CAMERA QUALITY INSPECTION

OBJECT DETECTION AND TRACKING

DRONE AND ROBOT COLLISION AVOIDANCE



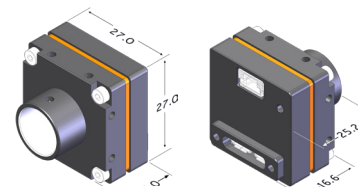
USB VISION **GEN*i*CAM**

SPECIFICATIONS

SPECS	FFY-U3-16S2M-DL	FFY-U3-16S2C-DL
Resolution	1440 x 1080	
Frame Rate*	60 FPS	
Megapixels	1.6 MP	
Chroma	Mono	Color
Sensor	Sony IMX296, CMOS, 1/2.9"	
Readout Method	Global shutter	
Pixel Size	3.45 µm	
Lens Mount	S-mount / C-mount / CS-mount	
ADC	10-bit	
Minimum Frame Rate**	1 FPS	
Gain Range**	0 to 48 dB	
Exposure Range**	29 µs to 30 s	
Acquisition Modes	Continuous, Single Frame, Multi Frame	
Partial Image Modes	Pixel binning, ROI	
Image Processing	Gamma, lookup table, denoise, and sharpness	Gamma, lookup table, saturation, denoise, and sharpness
Image Buffer	32 MB	
User Sets	2 user configuration sets for custom camera settings	
Flash Memory	24 MB non-volatile memory	
Opto-isolated I/O	N/A	
Non-isolated I/O	4 bi-directional	
Serial Port	1 (over non-isolated I/O)	
Auxiliary Output	3.3 V, 120 mA maximum	
Interface	USB 3.1 Gen 1	
Power Requirements	5 V via USB3 interface	
Power Consumption	2.2 W maximum	
Dimensions/Mass	27 mm x 27 mm x 14.5 mm / 20 g	
Machine Vision Standard	USB3 Vision v1.0	
Compliance	CE, FCC, KCC, RoHS, REACH. The ECCN for this product is: EAR099.	
Temperature	Operating: 0°C to 85°C (case) Storage: -30°C to 60°C (ambient)	
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.



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INDUSTRIAL/MACHINE VISION APPLICATIONS



FLIR FIREFLY® S

P/N: FFY-U3-04S2

TINY CAMERA, EXCEPTIONAL VALUE

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The Firefly S provides amazing value by combining powerful on-camera features with the latest CMOS sensors.

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SMALL, LIGHT, AND LOW POWER

Ideal for embedding into compact, hand-held and portable devices with a footprint of 27 mm x 27 mm x 14 mm, 20 gram weight and 1.6 W power consumption.



CORE MACHINE VISION CAPABILITIES

Essential machine vision features including GPIO, triggering, and partial image modes



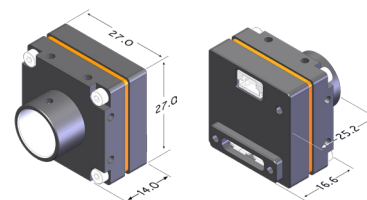
EXCEPTIONAL VALUE

Get access to the latest global shutter CMOS sensors at low starting prices of just \$199 USD

SPECIFICATIONS

SPECS	FFY-U3-04S2M	FFY-U3-04S2C
Resolution	720 x 540	
Frame Rate*	121 FPS	
Megapixels	0.4 MP	
Chroma	Mono	Color
Sensor	Sony IMX297, CMOS, 1/2.9"	
Readout Method	Global shutter	
Pixel Size	6.90 µm	
Lens Mount	S-mount / C-mount / CS-mount	
ADC	10-bit	
Minimum Frame Rate	1 FPS	
Gain Range	0 to 48 dB	
Exposure Range	29 µs to 30 s	
Acquisition Modes	Continuous, Single Frame, Multi Frame	
Partial Image Modes	ROI	
Image Processing	Gamma, denoise, lookup table, and sharpness	Gamma, denoise, lookup table, saturation, and sharpness
Image Buffer	32 MB	
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Flash Memory	24 MB non-volatile memory	
Opto-isolated I/O	N/A	
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