

Flea[®] 3 GigE



ULTRA-COMPACT + VERSATILE + COST-EFFECTIVE

- Sony progressive scan CCD image sensors, mono or color
- GigE Vision 1.2 specifications, 1000 Mbit/s interface
- Compact 29 x 29 x 30 mm case



The Flea3 FL3-GE line of the world's smallest Gigabit Ethernet cameras offers a total of twelve monochrome and color CCD models, ranging from VGA to 5.0 MP. Measuring just 29 x 29 x 30 mm and weighing only 38 grams, the Flea3 has the same small, lightweight form factor as many industry-standard "ice cube" analog cameras. The Flea3 also offers a host of new features, including enhanced opto-isolated GPIO; an on-camera frame buffer; non-volatile user data storage; new trigger modes; and improved imaging performance.



MODEL	VERSION	MP	IMAGING SENSOR
FL3-GE-03S1C-C	Color	0.3 MP	<ul style="list-style-type: none"> ■ Sony ICX618 CCD, 1/4", 5.6 μm ■ Global Shutter ■ 648x488 at 120 FPS
FL3-GE-03S1M-C	Mono		
FL3-GE-03S2C-C	Color	0.3 MP	<ul style="list-style-type: none"> ■ Sony ICX424 CCD, 1/3", 7.4 μm ■ Global Shutter ■ 648x488 at 82 FPS
FL3-GE-03S2M-C	Mono		
FL3-GE-08S2C-C	Color	0.8 MP	<ul style="list-style-type: none"> ■ Sony ICX204 CCD, 1/3", 4.65 μm ■ Global Shutter ■ 1032x776 at 31 FPS
FL3-GE-08S2M-C	Mono		
FL3-GE-13S2C-C	Color	1.3 MP	<ul style="list-style-type: none"> ■ Sony ICX445 CCD, 1/3", 3.75 μm ■ Global Shutter ■ 1288x964 at 31 FPS
FL3-GE-13S2C-CS	Color		
FL3-GE-13S2M-C	Mono		
FL3-GE-14S3C-C	Color	1.4 MP	<ul style="list-style-type: none"> ■ Sony ICX267 CCD, 1/2", 4.65 μm ■ Global Shutter ■ 1384x1032 at 18 FPS
FL3-GE-14S3M-C	Mono		
FL3-GE-20S4C-C	Color	2.0 MP	<ul style="list-style-type: none"> ■ Sony ICX274 CCD, 1/1.8", 4.4 μm ■ Global Shutter ■ 1624x1224 at 15 FPS
FL3-GE-20S4M-C	Mono		
FL3-GE-28S4C-C	Color	2.8 MP	<ul style="list-style-type: none"> ■ Sony ICX687 CCD, 1/1.8", 3.69 μm ■ Global Shutter ■ 1928x1448 at 15 FPS
FL3-GE-28S4M-C	Mono		
FL3-GE-50S5C-C	Color	5.0 MP	<ul style="list-style-type: none"> ■ Sony ICX655 CCD, 2/3", 3.45 μm ■ Global Shutter ■ 2448x2048 at 8 FPS
FL3-GE-50S5M-C	Mono		
A/D Converter	12-bit		
Video Data Output	8, 12, 16 and 24-bit digital data		
Image Data Formats	Y8, Y16, Mono8, Mono12, Mono16, Raw8, Raw12, Raw16 (all models); RGB, YUV411, YUV422, YUV 444 (color models)		
Partial Image Modes	Pixel binning and region of interest (ROI) modes		
Image Processing	Gamma, lookup table, hue, saturation, and sharpness		
Gain	Automatic/Manual/One-Push Gain modes		
Gain	0 dB to 24 dB		
Gamma	0.50 to 4.00		
White Balance	Automatic/manual modes, programmable via software		
High Dynamic Range	Cycle 4 gain and exposure presets		
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		
Transfer Rates	10/100/1000 Mbit/s		
GPIO	8-pin Hirose HR25 GPIO connector for power, trigger, strobe, PWM, and serial I/O, 1 opto-isolated input, 1 opto-isolated output, 2 bi-directional I/O pins		
External Trigger Modes	IICD Trigger Modes 0, 1, 3, 4, 5, 13 (FL3-GE-13S2 only), 14 and 15		
Synchronization	Via external trigger or software trigger		
Shutter	Global Shutter		
Shutter	Automatic/Manual/One-Push/Extended Shutter modes		
Shutter	0.03 ms to 32 seconds (extended shutter mode)		
Image Buffer	32 MB frame buffer		
Memory Channels	2 memory channels for custom camera settings		
Flash Memory	1 MB		
Dimensions	29 mm x 29 mm x 30 mm excluding lens holder, without optics (metal case)		
Mass	38 grams (without optics)		
Power Consumption	12-24 V, <2.5 W, via GPIO		
Camera Specification	GigE Vision v1.2		
Camera Control	via FlyCapture SDK, CSRs, or third party software		
Camera Updates	In-field firmware updates		
Lens Mount	C-mount (FL3-GE-13S2 also available with CS-mount)		
Temperature	Operating: 0° to 45°C; Storage: -30° to 60°C		
Emissions Compliance	CE, FCC, RoHS		
Operating System	Windows 7, Linux Ubuntu		
Warranty	Two years		

Flea[®]3 GigE Specifications

GigE Benefits

The 1000Mb/s Gigabit Ethernet bus provides enough bandwidth to transmit over distances up to 100m. System costs are reduced with low-cost frame grabbers and by eliminating the need for cable repeaters. Scalability also reduces future costs as GigE Vision continues development for faster bandwidths.

Opto-Isolated GPIO

Opto-isolated GPIO protects the camera from noise on the ground pin generated by external devices as well as power issues caused by malfunctioning devices attached to the camera.

Secure Connector

Screw holes on each side of the camera's GigE connector enable secure connection to the camera, guaranteeing a reliable connection, and reducing stress on internal electronics caused by cable movement.

Industry Standard Design

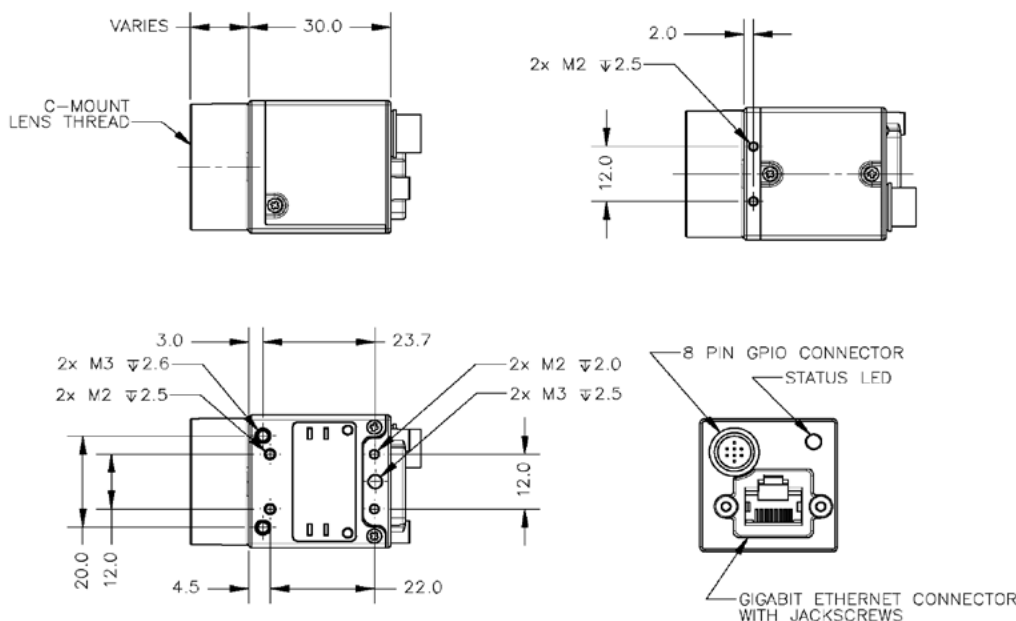
Every mechanical component of the Flea3 camera is designed to maximize usability, including the compact aluminum case, C-mount lens holder and ASA/ISO-compliant tripod mounting bracket, status LED and removable glass/IR filter system.

Triggering

Hardware and software triggering for synchronizing multiple cameras or coordinating with external devices. Supported modes include standard, bulb shutter, skip frames, multiple exposure (preset and pulse width), overlapped exposure/readout and multi-shot

Dimensional Drawings (in mm)

CAD models available at www.ptgrey.com/support/downloads.



Frame Buffer/Image Retransmit

The camera is equipped with a 32MB frame buffer that can be used to store multiple images for transmission, or retransmission, at a later time. This is useful in situations where the available GigE bandwidth must be maximized between multiple cameras, or where an image must be sent again.

Updatable FPGA

The field-programmable gate array chip controls all camera functionality, including on-camera color processing, pixel binning, user memory channels and more. It can also be updated with new firmware in the field.

Software

The FlyCapture[®] SDK is compatible with Microsoft[®] Windows[®] and Linux Ubuntu and a full software API library, demo programs and C/C++/C# example source code. It also includes the Point Grey filter driver, which provides enhanced data communication between the GigE bus and the CPU and the GigE Configurator tool for configuring IP addressing.

Accessories

Tripod adapter with every camera. All the accessories you need to get up and running, such as interface cards, cables, and power adapters are available from Point Grey.

GIG[®]
VISION

GEN<i>i>CAM

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