

Firefly[®] MV

SMALL + INEXPENSIVE + USB OR 1394

- 14 different combinations of form factor and interface
- 1394a or USB 2.0 digital interface
- Ultra compact at 44 x 34 x 24.4 mm
- Under \$200* USD

The Firefly MV line offers a total of 14 different combinations of form factor and interface that are designed to address a wide variety of applications in industrial and non-industrial imaging, such as object and gesture tracking, optical character recognition (OCR), augmented reality, and multitouch interface technology.

*0.3MP model only, when purchasing 5 or more cameras.



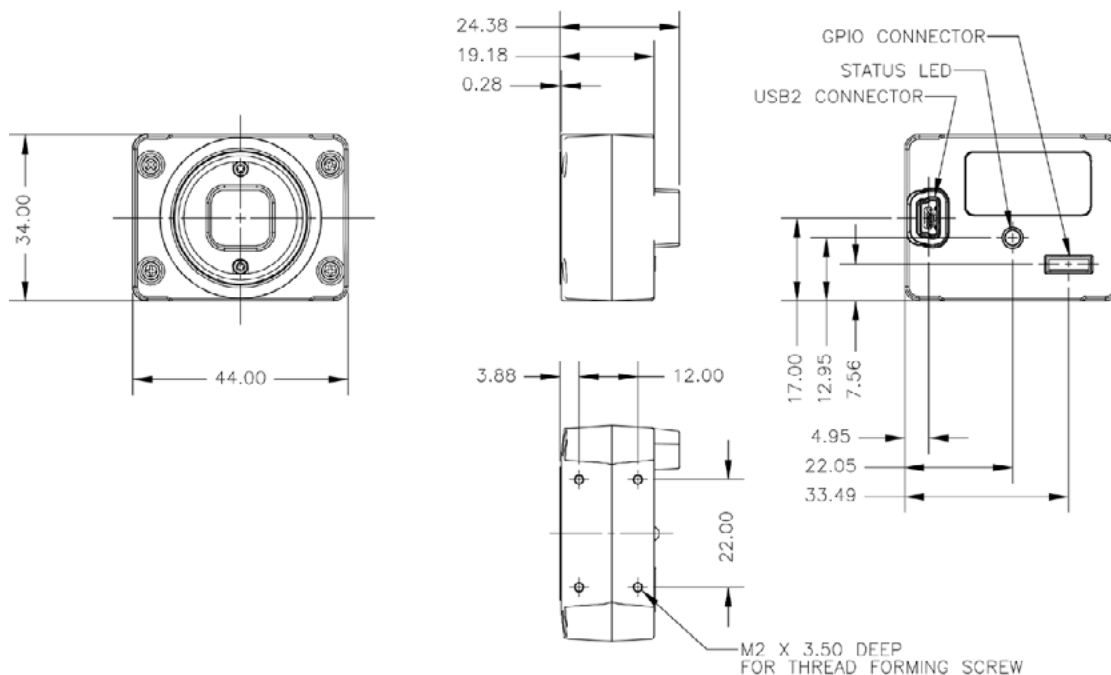
MODEL	VERSION	MP	IMAGING SENSOR
FFMV-03M2C-CS	Color	0.3 MP	<ul style="list-style-type: none">■ Micron MT9V022 CMOS, 1/3", 6.0 μm■ Global Shutter■ 752x480 at 60 FPS
FFMV-03M2M-CS	Mono		
A/D Converter	On chip 10-bit		
Image Data Output	8, 16-bit digital data		
Image Data Formats	Y8, Y16 (mono), 8-bit and 16-bit raw Bayer data (color)		
Partial Image Modes	Pixel binning and region of interest (ROI) modes		
Image Processing	Gamma, lookup table, hue, saturation, and sharpness		
Gain	Automatic/Manual Gain modes		
	0 dB to 12 dB		
Gamma	0 to 1		
White Balance	Automatic/manual modes, programmable via software		
Color Processing	On-camera in YUV or RGB format, or on-PC in Raw format		
Digital Interface	6-pin IEEE 1394a for camera control, video data, and power		
Transfer Rates	400 Mb/s		
GPIO	7-pin JST GPIO connector, 4 pins for trigger and strobe, 1 pin +3.3 V, 1 VEXT pin for external power		
External Trigger Modes	IIDC Trigger Modes 0 and 3		
Synchronization	Via external trigger or software trigger (on same bus only), or free-running (using standard video formats/modes operating at 30 FPS and 60 FPS only)		
	Global Shutter		
Shutter	Automatic/Manual/Extended Shutter modes		
	0.03 ms to 512 ms (extended shutter mode)		
Memory Channels	3 memory channels for custom camera settings		
Flash Memory	N/A		
Dimensions	44 x 34 x 24.4 mm (excluding lens holder and connectors)		
Mass	37 g (without optics or tripod mounting bracket)		
Power Consumption	8 to 30 V, 1 W at 12 V via 1394a interface		
Camera Specification	IIDC v1.31		
Camera Control	via FlyCapture SDK, CSRs, or third party software		
Camera Updates	In-field firmware updates		
Lens Mount	CS-mount		
Temperature	Operating: 0° to 40°C; Storage: -30° to 60°C		
Emissions Compliance	CE, FCC, RoHS		
Operating System	Windows XP SP1		
Warranty	One year		

¹ Using standard non-Format_7 video formats and modes operating at 30 FPS and 60 FPS only.

² For qualified OEMs

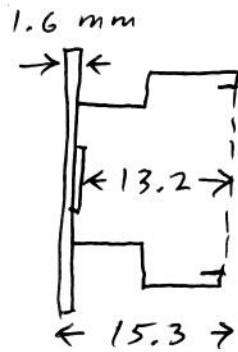
USB 2.0 MODEL SPECS ON NEXT PAGE

MODEL	VERSION	MP	IMAGING SENSOR
FMVU-03MTC-CS	Color	0.3 MP	<ul style="list-style-type: none"> ■ Micron MR9V022 CMOS, 1/3", 6.0 μm ■ Global Shutter ■ 752x480 at 60 FPS
FMVU-03MTM-CS	Mono		
FMVU-13S2C-CS	Color	1.3 MP	<ul style="list-style-type: none"> ■ Sony IMX035 CMOS, 1/3", 3.63 μm ■ Rolling Shutter ■ 1328x1048 at 23 FPS
A/D Converter	On chip 10-bit/12-bit		
Image Data Output	8, 16-bit digital data		
Image Data Formats	Y8, Y16 (mono), 8-bit and 16-bit raw Bayer data (color)		
Partial Image Modes	Pixel binning and region of interest (ROI) modes		
Image Processing	Gamma, lookup table, hue, saturation, and sharpness		
Gain	Automatic/Manual Gain modes		
	0 dB to 12 dB (FMVU-03MT)/0 dB to 24 dB (FMVU-13S2)		
Gamma	0 to 1 (FMVU-03MT)/0.50 to 4.00 (FMVU-13S2)		
White Balance	Automatic/manual modes, programmable via software		
Color Processing	On-camera in YUV or RGB format, or on-PC in Raw format		
Digital Interface	5-pin Mini-B USB2.0 for camera control, video data, and power		
Transfer Rates	480 Mb/s		
GPIO	7-pin JST GPIO connector, 4 pins for trigger and strobe, 1 pin +3.3 V, 1 VEXT pin for external power		
External Trigger Modes	IIDC Trigger Modes 0, and 3		
Synchronization	Via external trigger		
Shutter	Global Shutter (FMVU-03MT)/Rolling Shutter (FMVU-13S2)		
	Automatic/Manual modes		
	0.12 ms to 512 ms (FMVU-03MT)/0.03 ms to 8000 ms (FMVU-13S2)		
Memory Channels	2 memory channels for custom camera settings		
Flash Memory	N/A		
Dimensions	24.4 x 44 x 34 mm (excluding lens holder and connectors)		
Mass	37 g (without optics or tripod mounting bracket)		
Power Consumption	4.75 to 5.25 V via GPIO or USB 2.0 interface, less than 1 W		
Camera Specification	IIDC v1.31		
Camera Control	via FlyCapture SDK, CSRs, or third party software		
Camera Updates	In-field firmware updates		
Lens Mount	CS-mount		
Temperature	Operating: 0° to 45°C; Storage: -30° to 60°C		
Emissions Compliance	CE, FCC, RoHS		
Operating System	Windows XP SP1		
Warranty	One year		



Firefly MV camera CS mount

Approximate sensor spacing
(neglecting optical path length of window)



Measured by E³, 9/13/12