

➤ **GO-5100-USB**
5.1 megapixel CMOS global shutter

USB[™]
VISION



- **5.1-megapixel 2/3" CMOS imager (global shutter)**
- **Up to 74 fps at full resolution**
- **3.45 μm square pixels**
- **Small size (29 x 29 x 41.5 mm, excluding lens mount)**
- **8/10-bit output in a choice of monochrome or raw Bayer color**
- **Exposure control from 7 μs to 8 seconds in 1 μs steps**
- **2X binning for increased sensitivity (monochrome only)**
- **Single and multi-ROI modes for flexible windowing and use of smaller optics**
- **Automatic Level Control (ALC) for dynamic lighting conditions**
- **Accepts power over USB3 Vision interface or via separate 6-pin connector**
- **C-mount lens mount**

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Specifications for GO-5100-USB

Go Series

Specifications	GO-5100-USB	
Sensor	2/3" CMOS global shutter (IMX250)	
System clock	74.25 MHz (for pulse generator)	
Frame rate, full frame	74 frames/sec. @ 8-bit	
Active area	8.5 mm (h) x 7.09 mm (v), 11.1 mm diagonal	
Cell size	3.45 μm (h) x 3.45 μm (v)	
Active pixels	2464 (h) x 2056 (v)	
Read-out modes	Full ROI (mono)	2464 (h) x 2056 (v) up to 74 fps H: 16 to 2464 pixels in 16 pixel steps V: 1 to 2056 lines in 1 line steps
	ROI (color)	H: 16 to 2464 pixels in 16 pixel steps V: 2 to 2056 lines in 2 line steps 1x2, 2x1, 2x2 (monochrome only)
	Binning	
EMVA 1288 Parameters	12-bit output format	
Absolute sensitivity (mono)	3.65 p (λ = 525 nm)	
Absolute sensitivity (color)	4.10 p (λ = 525 nm)	
Maximum SNR (mono)	40.34 dB	
Maximum SNR (color)	40.21 dB	
Traditional SNR*	mono	>60 dB (0 dB gain)
	color	>60 dB (0 dB gain, green)
Video signal output	mono	8/10/12-bit monochrome†
	color (raw)	8/10/12-bit raw Bayer†
Gain control	Manual/auto 0 dB to +24 dB	
White balance (GO-5100C)	Manual, one-push auto, or continuous (3000K to 9000K)	
Gamma	0.45, 0.6, 1.0 or 256-point LUT	
Synchronization	Internal	
Video modes	Normal, Single ROI, Multi ROI, Sequencer (Trigger & Command), Delayed Readout	
Trigger input	Opto In, Pulse Generator, Software, NAND Out (2), Action Commands (2)	
Trigger modes	Timed/EPs, Trigger Width, Sequencer	
Electronic shutter	Timed exposure	7 μs to 8 sec., in 1 μs steps (8-bit)
	Auto shutter	100 μs to 8 sec.
Auto Level Control (ALC)	Shutter range from 100 μs to 8 sec., gain range from 0 dB to +24 dB Tracking speeds and max values adjustable.	
Pre-processing functions	Flat-field correction, color shading correction (GO-5100C-USB), blemish compensation (512 pixels)	
Operating temperature	-5°C to +45°C	
Storage temperature	-25°C to +60°C	
Humidity	20 – 80% non-condensing	
Vibration	10 G (20 Hz to 200 Hz XYZ)	
Shock	80 G	
Regulations	CE (EN 61000-6-2, EN 61000-6-3), FCC Part 15 Class B, RoHS/WEEE	
Power	6-pin connector	12V to 24V DC ± 10%. 4.2 W typical @ +12V
	USB 3.0	Bus power: 4.35 W typical @ +5V
Lens mount	C-mount	
Dimensions (H x W x L)	29 mm x 29 mm x 41.5 mm (excl. lens mount)	
Weight	46 g	

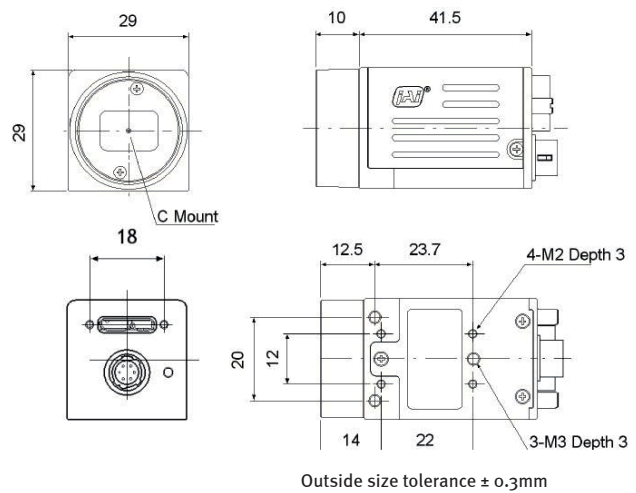
Ordering Information

GO-5100M-USB	Monochrome camera with USB3 Vision
GO-5100C-USB	Color camera with USB3 Vision

*Traditional SNR is based on random noise in a single frame, where EMVA SNR measurements consider more comprehensive noise sources and variance over time. For a more complete description, see the manual.

†12-bit output available in video processing bypass mode. See manual for details.

Dimensions



Connector pin-out

DC In / Trigger



HIROSE HR10A-7R-6PB(73)

Pin	Signal
1	+12V to +24V DC input
2	Opto In 1
3	Opto Out 1
4	Opto Out 2
5	Opto Common
6	GND

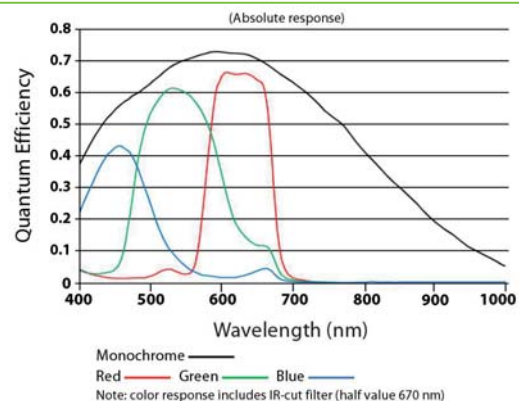
USB 3.0 Interface



Micro B type - ZX3600-B-10P or equiv.

No	I/O	Name	Note
1	I	VBUS IN	Power (VBUS)
2	I/O	DM	USB2.0 Differential pair (-)
3	I/O	DP	USB2.0 Differential pair (+)
4		OTG ID	USB OTG ID for identifying lines
5		GND	GND
6	O	FX3 SSTXM	USB3.0 Signal Transmission line (-)
7	O	FX3 SSTXP	USB3.0 Signal Transmission line (+)
8		GND	GND
9	I	FX3 SSRXP	USB3.0 Signal Receiving line (-)
10	I	FX3 SSRXM	USB3.0 Signal Receiving line (+)

Spectral Response



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