

❖ GO-5000-USB

5-megapixel CMOS global shutter

USBTM
VISION



- *Large format 5 MP CMOS imager (global shutter)*
- *Up to 62 fps at full resolution*
- *5.0 μm square pixels in a 5:4 aspect ratio*
- *Small size (29 x 29 x 41.5 mm, excluding lens mount)*
- *8/10/12-bit output in choice of monochrome or raw Bayer color models*
- *60 dB linear dynamic range with built-in HDR modes up to 100 dB (monochrome only)*
- *Analog and digital gain control for less quantized noise in low-light situations*
- *Exposure control from 10 μs to 8 seconds in 1 μs steps*
- *2X and 4X binning for increased sensitivity (monochrome only)*
- *Single and Multi-ROI modes for flexible windowing and use of 2/3" or smaller optics*
- *Accepts power over USB3 Vision interface or separate 6-pin connector*
- *C-mount lens mount*
- *Automatic Level Control (ALC) for dynamic lighting conditions*



Specifications for GO-5000-USB

Go Series

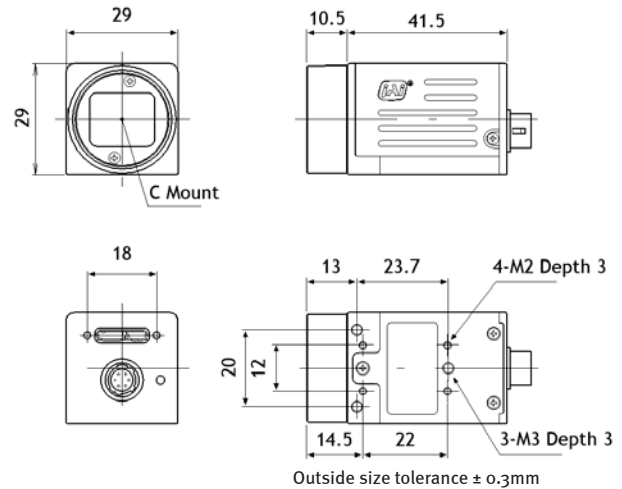
Specifications		GO-5000-USB
Sensor		1" CMOS global shutter (Lince5M)
Pixel clock		48 MHz
Frame rate, full frame		62 frames/sec. @ 8-bit
Active area		12.8 mm (h) x 10.2 mm (v), 16.39 mm diagonal
Cell size		5.0 μm (h) x 5.0 μm (v)
Active pixels		2560 (h) x 2048 (v)
Read-out modes	Full	2560 (h) x 2048 (v) up to 62 fps
	ROI (mono)	Any start line, any height in 1-line steps, with X offset and width in 16-pixel steps
	ROI (color)	Any start line, any height in 2-line steps, with X offset and width in 16-pixel steps
	Binning	1x2, 2x1, 1x4, 4x1, 2x2, 2x4, 4x2, 4x4 (mono only)
EMVA 1288 Parameters		10-bit output format
	Absolute sensitivity (mono)	20.17 p (λ = 525 nm)
	Absolute sensitivity (color)	51.25 p (λ = 525 nm)
	Maximum SNR (mono)	41.30 dB
	Maximum SNR (color)	38.12 dB
Traditional SNR*	mono	>55 dB (0 dB gain)
	color	>53 dB (0 dB gain, green)
Video signal output	mono	8/10/12-bit monochrome
	color (raw)	8/10/12-bit raw Bayer
Gain (digital)		Manual/automatic 0 dB to +24 dB
Gain (analog)		1x, 2x, 4x (mono or individual Bayer channels)
White balance (GO-5000C)		Manual, one-push auto, or continuous (3000K to 9000K)
Gamma		0.45, 0.6, 1.0 or 32-point LUT (16-pt. color)
Synchronization		Internal
Trigger input		Opto In, Pulse Generators, Software, User Output (NAND gates)
Trigger modes		EPS, Trigger Width, Timed RCT (with ALC), Sequence
Electronic shutter	Timed exposure	10 μs to 8 sec in 1 μs steps
	Auto shutter	1/62 to 1/10000 sec.
Auto Level Control (ALC)		Shutter range from 1/62 to 1/10000, gain range from 0 dB to +24 dB. Tracking speeds and max values adjustable.
High Dynamic Range function		4 built-in HDR slopes. Selectable up to ~100 dB (monochrome only).
Pre-processing functions		Flat field correction, color shading correction (GO-5000C), blemish compensation (256 pixels)
Operating temperature		-5°C to +45°C
Storage temperature		-25°C to +60°C
Humidity		20 – 80% non-condensing
Vibration		10 G (20Hz to 200Hz XYZ)
Shock		80 G
Regulations		CE (EN61000-6-2, EN61000-6-3), FCC Part 15 class B, RoHS/WEEE
Power	6-pin connector	12V to 24V DC ± 10%. 2.8W typical @ 12V
	USB 3.0	720mA, 3.6W 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-5000M-USB	Monochrome camera with USB3 Vision
GO-5000C-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.

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

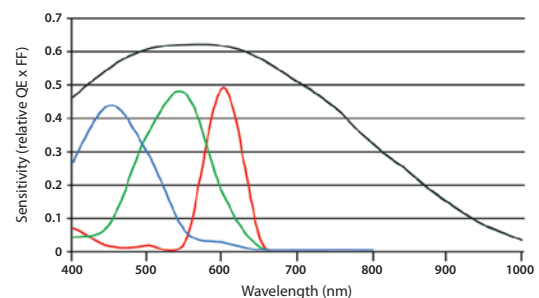
USB 3.0 Interface



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



Monochrome - —
Red - — Green - — Blue - —

Note: Color response includes IR-cut filter.

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