

❖ **GO-2400-USB**  
2.35-megapixel CMOS global shutter

**USB**<sup>TM</sup>  
VISION



- *2.35-megapixel 1/1.2" CMOS imager (global shutter)*
- *Up to 159 fps at full resolution*
- *5.86  $\mu\text{m}$  square pixels*
- *Small size (29 x 29 x 41.5 mm, excluding lens mount)*
- *8/10-bit output in choice of monochrome or raw Bayer models*
- *Exposure control from 6  $\mu\text{s}$  to 8 seconds in 1  $\mu\text{s}$  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 USB<sub>3</sub> Vision interface or via separate 6-pin connector*
- *C-mount lens mount*

# Specifications for GO-2400-USB

# Go Series

Specifications		GO-2400-USB
Sensor		1/1.2" CMOS global shutter (IMX174)
System clock		74.25 MHz (for pulse generator)
Frame rate, full frame		159 frames/sec. @ 8-bit
Active area		11.3 mm (h) x 7.13 mm (v), 13.4 mm diagonal
Cell size		5.86 μm (h) x 5.86 μm (v)
Active pixels		1936 (h) x 1216 (v)
Read-out modes	Full	1936 (h) x 1216 (v) up to 159 fps
	ROI (mono)	H: 16 to 1936 pixels in 16 pixel steps V: 1 to 1216 lines in 1 line steps
	ROI (color)	H: 16 to 936 pixels in 16 pixel steps V: 2 to 1216 lines in 2 line steps
Binning		1x2, 2x1, 2x2 (monochrome only)
EMVA 1288 Parameters		12-bit output format
Absolute sensitivity (mono)		9.44 p (λ = 525 nm)
Absolute sensitivity (color)		10.86 p (λ = 525 nm)
Maximum SNR (mono)		45.16 dB
Maximum SNR (color)		45.23 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
Gamma		0.45, 0.6, 1.0 or 256-point LUT
White balance (GO-2400C)		Manual, one-push auto, or continuous (3000K to 9000K)
Synchronization		Internal
Video modes		Normal, Single ROI, Multi ROI, Sequencer (Trigger & Command), Delayed Readout
Trigger input		Opto In, Pulse Generator, Software, NAND Out (2), User Output (2), Action Commands (2)
Trigger modes		EPS, Trigger Width, Sequencer
Electronic shutter		Timed exposure 6 μs to 8 sec in 1 μs steps Auto shutter 100 μs to 8 sec
Auto Level Control (ALC)		Shutter range from 100 μs to 8 sec, gain range for 0 dB to +24 dB Tracking speeds and max values adjustable.
Pre-processing functions		Flat-field correction, color shading correction (GO-2400C), 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 (20 Hz to 200 Hz 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%. 4.08 W @ 12V USB 3.0 Bus power: 4.1 W @ 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

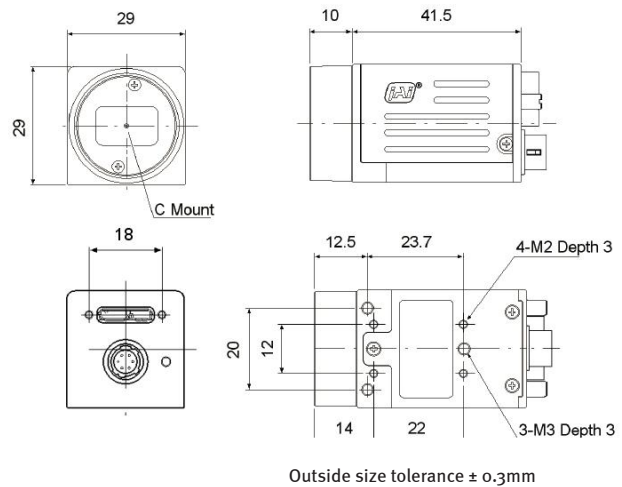
## Ordering Information

GO-2400M-USB	Monochrome camera with USB3 Vision
GO-2400C-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.

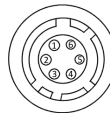
†12-bit output available in IP Bypass mode. See manual for details.

## Dimensions



## Connector pin-out

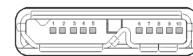
### DC In / Trigger



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

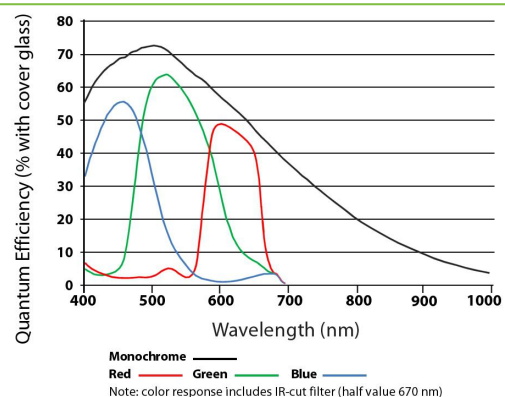
### USB 3.0 Interface



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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