

■ 1920 X 1200

■ 162 fps

Go-X Series 

USB[™]
VISION

➤ **GOX-2402-USB** 2.3-megapixel CMOS global shutter



- *Go-X Series delivers exceptional combination of price and performance*
- *2.3-megapixel, 1/2.3" CMOS imager (global shutter)*
- *Up to 162 fps at full resolution (1920 x 1200)*
- *3.45 μ m square pixels*
- *8/10/12-bit* output in choice of monochrome or raw Bayer color models*
- *ROI settings for added flexibility*
- *Horizontal/vertical image flip function, plus blemish correction and shading compensation*
- *Includes Sequencer function and Automatic Level Control (ALC) for dynamic lighting conditions*
- *Compact size with excellent shock and vibration resistance*
- *Accepts power over USB3 Vision interface or via separate 6-pin connector*
- *C-mount lens mount*

* Not all processing functions supported with 12-bit output

Specifications for GOX-2402-USB

Go-X Series

Specifications

GOX-2402-USB

Sensor	1/2.3" CMOS global shutter (IMX392)
Active pixels	1920 (h) x 1200 (v)
Frame rate, full frame	162 frames/sec. @ 8-bit mono/Bayer
Active area	6.62 mm (h) x 4.14 mm (v) - 7.81 mm diagonal
Pixel size	3.45 µm x 3.45 µm
System clock	74.25 MHz (for pulse generator)
Read-out modes	
Full ROI (single)	1920 (h) x 1200 (v) up to 162 fps H: 96 to 1904 pixels in 16 pixel steps V: 8 to 1198 lines in 2 line steps
Binning	1x2, 2x1, 2x2
EMVA 1288 Parameters	10-bit output format
Absolute sensitivity	Mono: 3.71 p Color: 4.86 p ($\lambda = 527$ nm)
Maximum SNR	Mono: 39.7 dB Color: 39.7 dB
Traditional SNR*	>60 dB mono, >60 dB color (0 dB gain, 10-bit)
Video signal output	Monochrome: 8/10/12-bits [†] Color: 8/10/12-bit Bayer [†]
Gain	Manual/auto 0 dB to +42 dB
White balance	Off, presets, or one-push/continuous AWB
Gamma/LUT	0.45 to 1.0 (9 steps) or 257-point programmable LUT
Synchronization	Internal
Video modes	Normal/Single ROI, Sequencer (Trigger & Command)
Trigger input	Opto In, Pulse Generators (4), Software, NAND Out (2), User Output (4)
Exposure modes	Timed/EPS, RCT, Trigger Width, Auto
Electronic shutter	Timed: 14.73 µs to 8 sec. in 1 µs steps Auto: 100 µs to 6.1 ms at full resolution
Auto Level Control (ALC)	Shutter range from 100 µs to 6.1 ms, gain range from 0 dB to +42 dB. Tracking speeds and max. values adjustable.
Shading correction	Flat shading, color shading (color model)
Pre-processing functions	H & V flip (mirroring), blemish compensation, H & V decimation
Operating temp. (ambient)	-5°C to +45°C (20 to 80% non-condensing)
Storage temp. (ambient)	-25°C to +60°C (20 to 80% non condensing)
Vibration	10G (20 Hz to 200 Hz, XYZ directions)
Shock	80G
Regulations	CE(EN 55032:2015(CISPR32:2015), EN 55035:2017(CISPR35:2016)), FCC Part 15 Class A, RoHS/WEEE, KC
Power	6-pin USB 3.0 +10V to +25V DC. 4.3 W typical @ +12 V +5V DC. 4.2 W typical @ +5 V
Lens mount	C-mount
Dimensions (H x W x L)	29 mm x 29 mm x 51.5 mm
Weight	62 g

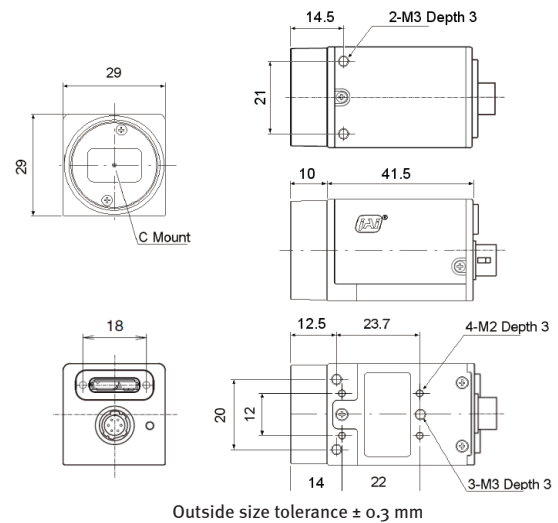
Ordering Information

GOX-2402M-USB	Monochrome camera with USB3 Vision interface
GOX-2402C-USB	Color camera with USB3 Vision interface

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

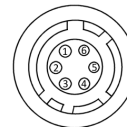
[†]12-bit output available in video processing bypass mode. See manual for details.

Dimensions



Connector pin-out

DC In / Trigger



HIROSE HR10A-7R-6PB(73)

Pin	
1	DC in +10V to +25V
2	Opto In+
3	Opto In-
4	Opto Out+
5	Opto Out-
6	Ground

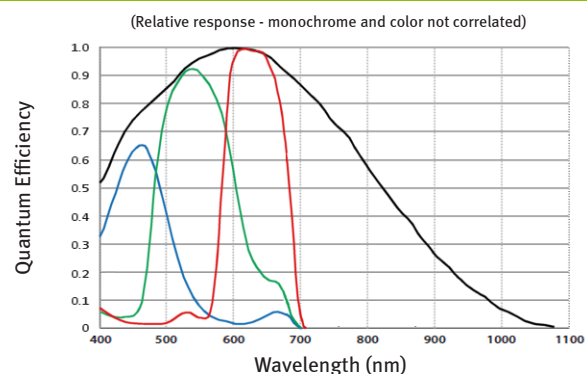
USB 3.0 Interface



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 (+)

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