

GO-5100C-USB

Technical Datasheet

IMX250



See the possibilities



Apex Series



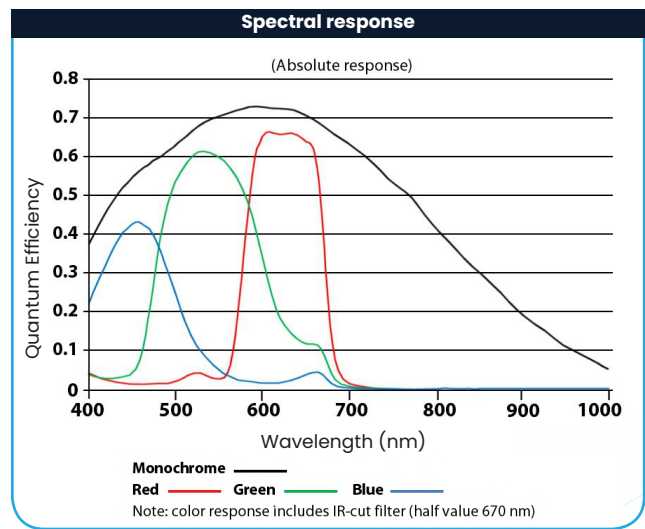
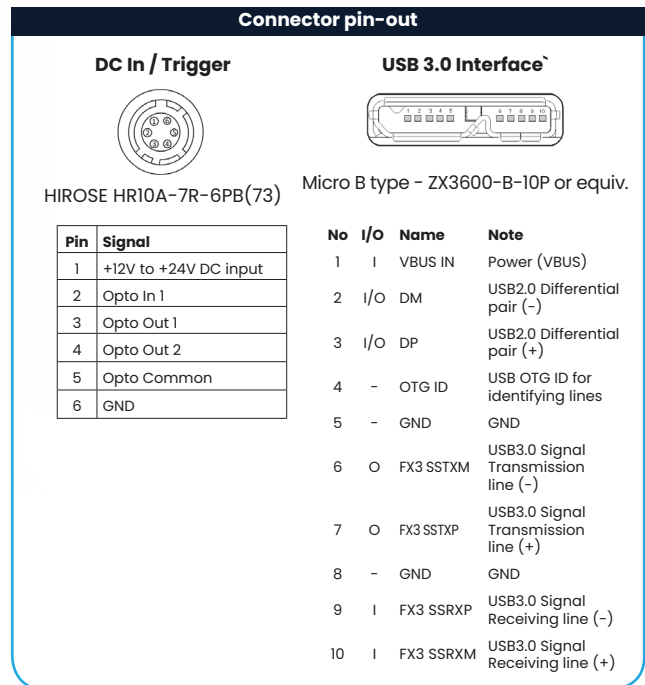
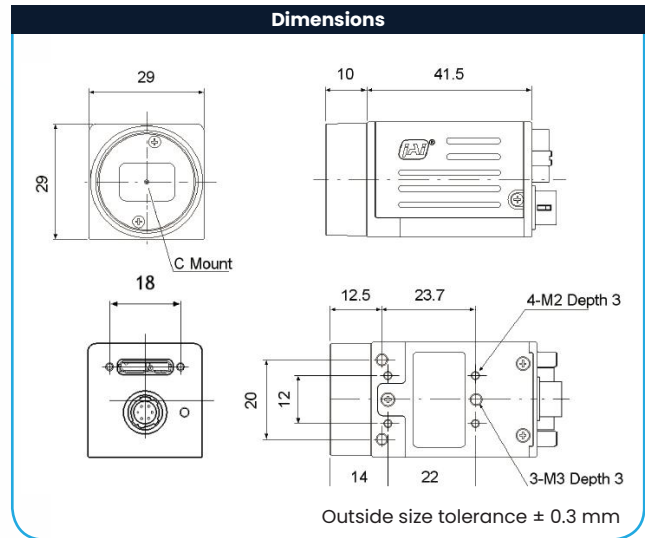
JAI's Go Series delivers an exceptional blend of small size, high versatility, and excellent performance, all at an entry-level price, making the cameras a perfect starting point for a wide range of machine vision applications.

CMOS technology, low-noise pixels, global shutters, sequencer functions, and other advanced features help ensure image quality and operational flexibility beyond entry-level expectations.

Specification Highlights

SENSOR:	IMX250	SHUTTER:	Global Shutter
FORMAT:	2/3"	FRAME RATE:	74 fps
PIXEL SIZE:	3.45 x 3.45 μ m	INTERFACE:	USB3 Vision (PoUSB)
LENS MOUNT:	C-Mount	RESOLUTION MP:	5.1 MP
SPECTRUM:	Color (Visible)	RESOLUTION WxH:	2464 x 2056 px

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
Binning		1x2, 2x1, 2x2 (monochrome only)
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	8/10/12-bit raw Bayer†
Gain control		Manual/auto 0 dB to +24 dB
White balance (GO-2400C)		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, Sequence (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 (EN61000-6-2, EN61000-6-3), 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 IP Bypass mode. See manual for details.

Product Highlights

- 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 choice of monochrome or raw Bayer models
- 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

Additional Product Images



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