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GOX-20409M-PGE

Technical Datasheet

See the possibilities

IMX183 (Rolling)

Apex Series

The Go-X Series offers compact, attractively-priced area scan cameras with a blend of features, image quality and industrial grade reliability that is in high demand for the next generation of machine vision systems.

The Go-X Series incorporates the most popular Sony Pregius and Pregius S global shutter CMOS sensors, and several Starvis CMOS sensors with rolling shutter technology. Resolutions range from 2.3 to 24.5 megapixels with a choice of USB3 Vision, GigE Vision (1000BASE-T or 5GBASE-T), or CoaXPress interfaces.

Specification Highlights

SENSOR:	IMX183 (Rolling)	**SHUTTER:**	Global Shutter
FORMAT:	1”	**FRAME RATE:**	5 fps
PIXEL SIZE:	2.4 x 2.4 µm	**INTERFACE:**	GigE Vision 1-Cable (PoE)
LENS MOUNT:	C-Mount	**RESOLUTION MP:**	20 MP
SPECTRUM:	Monochrome (Visible + NIR)	**RESOLUTION WxH:**	5472 x 3648 px

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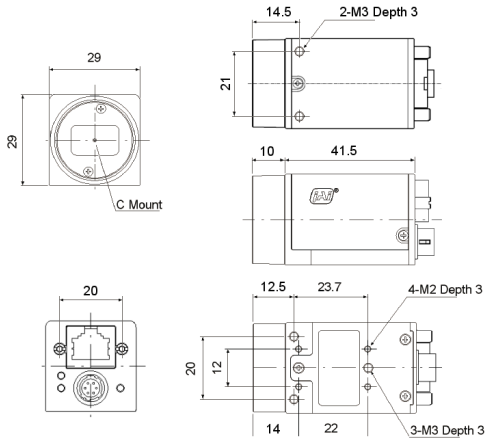
Specifications	GOX-20409-PGE
Sensor	1" CMOS rolling shutter (IMX183)
Active pixels	5472 (h) x 3648 (v)
Frame rate	5 frames/sec. @ 8-bit mono/Bayer
Active area	13.13 mm (h) x 8.75 mm (v) - 15.78 mm diagonal
Pixel size	2.4 µm x 2.4 µm
System clock	74.25 MHz (for pulse generator)
Read-out modes Full ROI (single)	 5472 (h) x 3648 (v) up to 5 fps H: 96 - 5472 pixels in 16-pixel steps V: 8 to 3648 lines in 2-line steps
Binning	1x2, 2x1, 2x2 (mono only)
EMVA 1288 Parameters Absolute sensitivity Maximum SNR	10-bit output format Mono: TBD p Color: TBD p (λ = 527 nm) Mono: TBD dB Color: TBD dB
Traditional SNR*	>60 dB mono, >60 dB color (0 dB gain, 10-bit)
Video signal output	Monochrome: 8-bit† Color: 8-bit Bayer†
Gain control	Manual/auto 0 dB to +24 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
Trigger input	Opto In, Pulse Generator, Software, NAND Out (2), User Output (4)
Exposure modes	Timed/EPS, Auto
Electronic shutter (TriggerMode OFF)	Timed: 106.17 µs to 1.7 s in 1 µs steps Auto: 106 µs to 175 ms at full resolution
Auto Level Control (ALC)	Shutter range from 106 µs to 175 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	Blemish compensation (256 user definable)
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	+10V to +25V DC. 2.7 W typical @ +12 V
Power — PoE	+36V to +57 V DC. 3.7 W typical @ +48 V
Lens mount	C-mount
Dimensions (H x W x L)	29 mm x 29 mm x 51.5 mm
Weight	65 g
Ordering Information	
GOX-20409M-PGE	Monochrome camera with GigE Vision interface
GOX-20409C-PGE	Color camera with GigE Vision interface

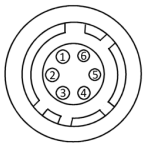
Dimensions



Outside size tolerance ± 0.3 mm

Connector pin-out

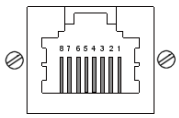
DC In / Trigger



HIROSE HR10A-7R-6PB(73)

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

GigE Vision Interface

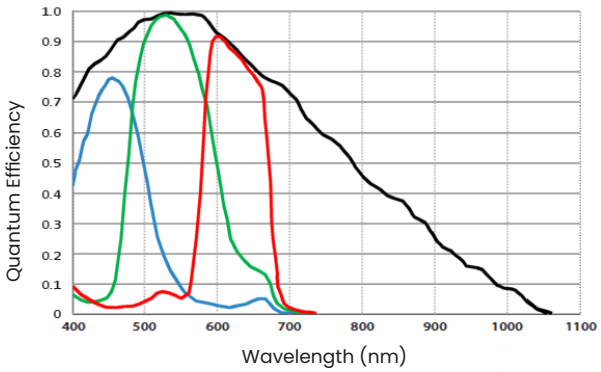


RJ45 with locking screws

Pin	Signal
1	TRD+(0)
2	TRD-(0)
3	TRD+(1)
4	TRD+(2)
5	TRD -(2)
6	TRD-(1)
7	TRD+(3)
8	TRD-(3)

Spectral response

(Relative response - monochrome and color not correlated)



*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 only available in video processing bypass mode. See manual for details.

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Product Highlights

- 1" CMOS imager (rolling shutter with global reset)
- Up to 5 fps at full resolution (5472 x 3648)
- 2.4 µm square pixels
- Backside illuminated (BSI) sensor technology for enhanced low-light performance
- 8/10/12-bit* output in choice of monochrome or raw Bayer color models
- ROI settings for added flexibility
- Includes Automatic Level Control (ALC) to maintain exposure in dynamic lighting conditions
- Compact size with excellent shock and vibration resistance
- Accepts power over GigE Vision interface or separate 6-pin connector
- C-mount lens mount

* Not all processing functions supported with 12-bit output.

Additional Product Images