GOX-5105M-CXP
Technical Datasheet

IMX547 Pregius S

jAi ®
See the possibilities

GigE VISION ®

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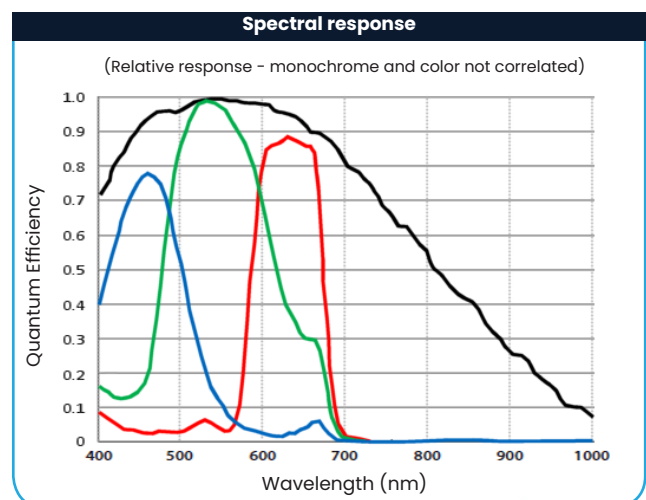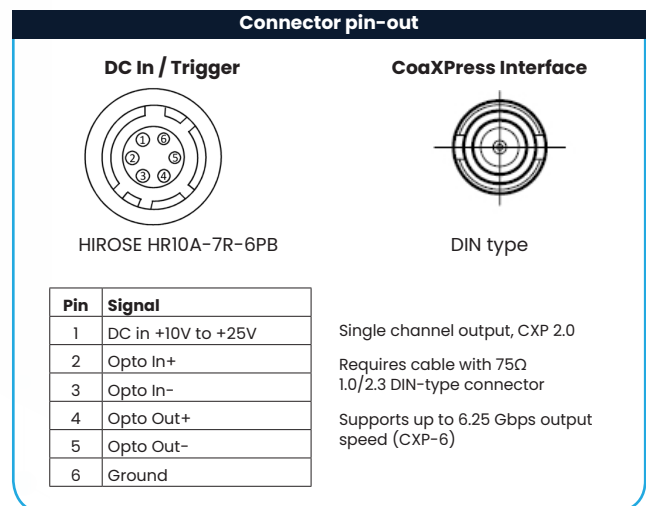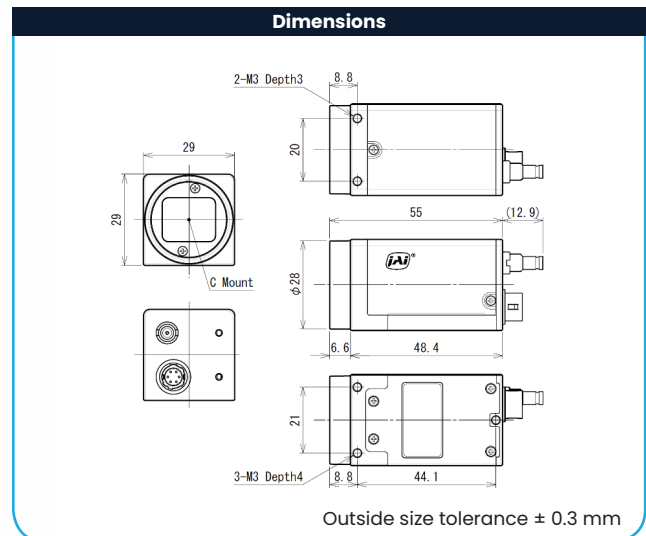
The Go-X Series incorporates the most popular Sony Pregius and Pregius S global shutter CMOS sensors, and several Starvis CMOS sensors with rolling shutter technology. Resolutions range from 2.3 to 24.5 megapixels with a choice of USB3 Vision, GigE Vision (1000BASE-T or 5GBASE-T), or CoaXPress interfaces.

Specification Highlights

SENSOR:	IMX547 Pregius S	**SHUTTER:**	Global Shutter
FORMAT:	1/1.8"	**FRAME RATE:**	112 fps
PIXEL SIZE:	2.74 x 2.74 μm	**INTERFACE:**	CoaXPress-1-Cable (PoCXP)
LENS MOUNT:	C-Mount	**RESOLUTION MP:**	5.1 MP
SPECTRUM:	Monochrome (Visible + NIR)	**RESOLUTION WxH:**	2472 x 2064 px

Specifications	GOX-5105-CXP
Sensor	1/1.8" CMOS global shutter (IMX547)
Active pixels	2472 (h) x 2064 (v)
Frame rate, full frame	112 frames/sec. @ 8-bit mono/Bayer
Active area	6.8 mm (h) x 5.7 mm (v) - 8.82 mm diagonal
Pixel size	2.74 µm x 2.74 µm
Read-out modes Full ROI (single)	2472 (h) x 2064 (v) up to 112 fps H: 96 to 2472 pixels in 8 pixel steps V: 8 to 2064 lines in 2 line steps
ROI (multi)	Up to 64 scanning areas - no overlap
Binning	1x2, 2x1, or 2x2 (mono only)
Image scaling (Xscale)	Supports independent, sub-pixel rescaling of H and/or V resolution (1/16 max.)
EMVA 1288 Parameters Absolute sensitivity Maximum SNR	12-bit output format Mono: TBD p Color: TBD p (λ = 527 nm) Mono: TBD dB Color: TBD dB
Traditional SNR (Dark)*	>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 or 24/30/36-bit RGB
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
Trigger input	CXP In, Opto In, Pulse Generators (4), Software, NAND Out (2), User Output (4)
Exposure modes	Timed/EPS, RCT, Trigger Width, Auto
Electronic shutter	Timed: 3.5 µs to 8 sec. in 1 µs steps Auto: 100 µs to 8.6 ms at full resolution
Auto Level Control (ALC)	Shutter range from 100 µs to 8.6 ms, gain range from 0 dB to +42 dB. Tracking speeds and min/max values adjustable.
Shading correction	Flat shading, color shading (color model)
Video processing functions	H & V flip (mirroring), blemish compensation, gradation compression, color enhancement & color conversion[†] (color model)
Operating temp. (ambient)	-5ºC to +45ºC (20 to 80% non-condensing)
Storage temp. (ambient)	-25ºC to +60ºC (20 to 80% non condensing)
Vibration	10G (20 Hz to 200 Hz, XYZ directions)
Shock	80 G
Regulations	CE(EN 55032:2015(CISPR32:2015), EN 55035:2017(CISPR35:2016)), FCC Part 15 Class A, RoHS/WEEE, KC
Power	6-pin PoCXP	+10V to +25V DC. 4.1 W typical @ +12 V Supported
Lens mount	C-mount
Dimensions (H x W x L)	29 mm x 29 mm x 55 mm
Weight	60 g
Ordering Information	
GOX-5105M-CXP	Monochrome camera with CoaXPress interface
GOX-5105M-CXP	Color camera with CoaXPress interface

Dimensions

2-M3 Depth3   8.8
29
29
C Mount
20
55   (12.9)
iAi*
Ø28
6.6   48.4
21
3-M3 Depth4   8.8
44.1

Outside size tolerance ± 0.3 mm

Connector pin-out

DC In / Trigger

HIROSE HR10A-7R-6PB

CoaXPress Interface

DIN type

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

Single channel output, CXP 2.0

Requires cable with 75Ω 1.0/2.3 DIN-type connector

Supports up to 6.25 Gbps output speed (CXP-6)

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.

Product Highlights

- High performance camera with 5.1-megapixel resolution
- 1/1.8" CMOS imager (global shutter) features backside illuminated pixel technology
- Up to 112 fps at full resolution (2472 x 2064)
- 2.74 µm square pixels
- 8/10/12-bit output in choice of monochrome or raw Bayer color models
- Flexible ROI & rescaling function (Xscale) for sub-pixel color/mono binning and resolution matching
- Traditional 1x2, 2x1, or 2x2 binning also included on monochrome models
- Horizontal/vertical image flip function, plus blemish compensation and shading correction
- Bayer model includes 5x5 debayering function plus built-in color conversion and temperature presets
- Includes Sequencer function and Automatic Level Control (ALC) for dynamic lighting conditions
- Compact size with excellent shock and vibration resistance
- Accepts power over CoaXPress interface or via separate 6-pin connector
- C-mount lens mount

Additional Product Images