GOX-24505M-PGE
Technical Datasheet

IMX540 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:	IMX540 Pregius S	**SHUTTER:**	Global Shutter
FORMAT:	1.2"	**FRAME RATE:**	4 fps
PIXEL SIZE:	2.74 x 2.74 µm	**INTERFACE:**	GigE Vision 1-Cable (PoE)
LENS MOUNT:	C-Mount	**RESOLUTION MP:**	24.5 MP
SPECTRUM:	Monochrome (Visible + NIR)	**RESOLUTION WxH:**	5328 x 4608 px

Specifications	GOX-24505-PGE
Sensor	1.2" CMOS global shutter (IMX540)
Active pixels	5328 (h) x 4608 (v)
Frame rate, full frame	4 frames/sec. @ 8-bit mono/Bayer Supports higher fps via lossless compression (Xpress mode)[†]
Active area	14.6 mm (h) x 12.6 mm (v) - 19.3 mm diagonal
Pixel size	2.74 µm x 2.74 µm
Read-out modes	
Full ROI (single)	5328 (h) x 4608 (v) up to 4 fps H: 96 to 5328 pixels in 8 pixel steps V: 8 to 4608 lines in 2 line steps
ROI (multi)	Up to 64 scanning areas - no overlap
Binning	1x2, 2x1, 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	10-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 24/32-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
Time synchronization	Support for Precision Time Protocol (IEEE 1588)
Trigger input	Opto In, Pulse Generators (4), Software, NAND Out (2), User Output (4), Actions
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 250 ms at full resolution
Auto Level Control (ALC)	Shutter range from 100 µs to 250 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	+10V to +25V DC. 4.1 W typical @ +12 V
	PoE	+36V to +57 V DC. 4.1 W typical @ +48 V
Lens mount	C-mount
Dimensions (H x W x L)	29 mm x 29 mm x 55 mm
Weight	65 g

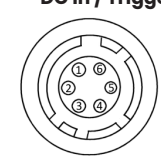| Ordering Information	
GOX-24505M-PGE	Monochrome camera with GigE Vision interface
GOX-24505C-PGE	Color camera with GigE Vision interface

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

[†]Part of free firmware upgrade scheduled for April 2023.

Dimensions

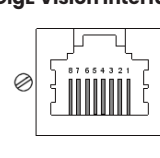
Outside size tolerance ± 0.3 mm
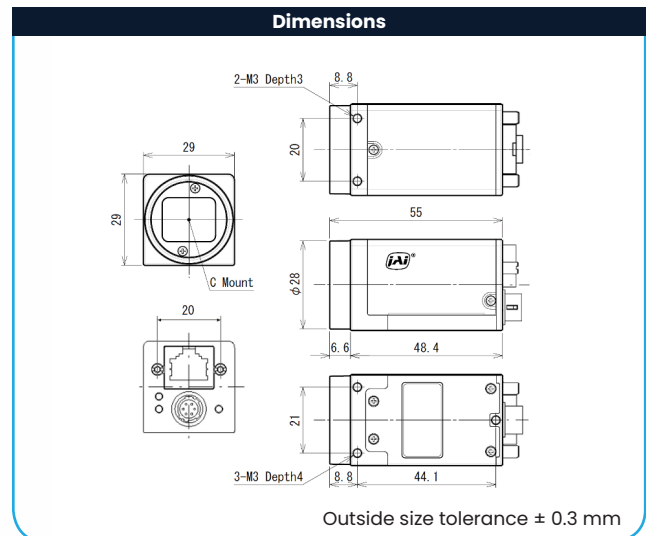
Connector pin-out

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)

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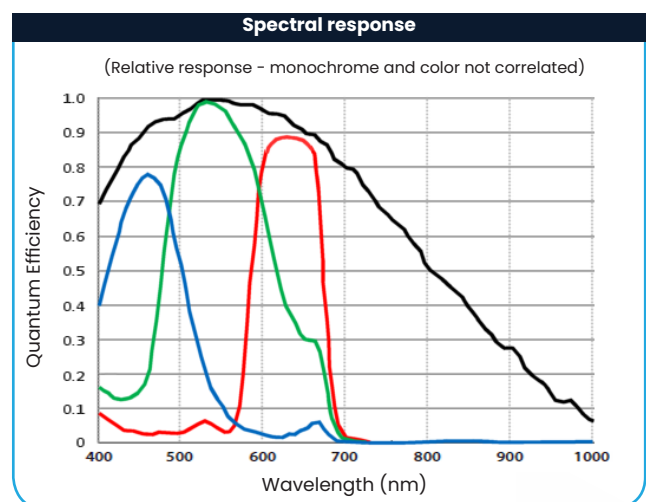
Product Highlights

- High performance camera with 24.5-megapixel resolution
- 1.2" CMOS imager (global shutter) features backside illuminated pixel technology
- 2.74 μm square pixels
- Up to 4 fps standard output at full resolution (5328 x 4608). Burst mode also available.
- Lossless compression function (Xpress) compresses image data to support higher frame rates*
- 8/10/12-bit output in choice of monochrome or raw Bayer color models
- Color model includes a 5 x 5 debayering capability for RGB output*
- Flexible ROI & rescaling function (Xscale) for sub-pixel color/mono binning and resolution matching
- Traditional 1x2, 2x1, or 2x2 binning also included on monochrome model
- Horizontal/vertical image flip function, plus blemish compensation and shading correction
- Includes Sequencer function and Automatic Level Control (ALC) for dynamic lighting conditions
- Compact size with excellent shock and vibration resistance
- Accepts power over GigE Vision interface or via separate 6-pin connector
- C-mount lens mount

* Part of free firmware upgrade scheduled for April 2023

Additional Product Images