



Iron SDI 305

Iron SDI Small Form Factor, Ruggedized Camera

Innovative Approach

The **Iron SDI 305** is a low-cost, low-power global shutter CMOS camera with an SDI interface which supports high quality video at rates of up to 60fps.

Intelligent Design

Our camera incorporates Pregius's IMX305 global shutter sensor with a 3.45 μ m pixel size. With an extremely compact outline the **Iron** can be fitted into tight spaces. Superior sensor performance allows very low light vision capabilities.

Applications:

- Perimeter vision
- Military/Defense systems
- Low light surveillance
- Special Effects
- Virtual Reality
- 3D

Key Features:

- Maximal frame rate of 60 fps
- Monochrome and Color models
- Up to 3.2W power at full rate
- Full image processing feature set
- Optional Pan/Tilt alignment of the sensor
- Up to 12G-SDI interface
- C mount / CS mount
- Full EMVA1288 report
- Full built-in self-test (BIT)
- Full built-in voltage testing
- Customization as per user requirements

Specifications

Feature	Description
Pixel Size	3.45 μm x 3.45 μm
Sensor	Pregius IMX305 CMOS sensor
Video Output	4k, UHD, 2k, 1080p, 1080i up to 60 fps
Output Interface	Single-Link HD-SDI, 3D-SDI, 6G-SDI or 12G-SDI
Output Format	10-bit 4:2:2(Y'Cb'Cr') / RAW (Bayer)
Interface Connector	Micro-BNC
Sensor Positioning	Full pan/tilt calibration for optical axes (optional)
Electronic Shutter	Global shutter
Monochrome / Color	Monochrome / Color
Temporal Noise	< 2.2 e^- @25°C
Full Well Charge	9828 e^-
Dynamic Range	> 70.8dB @520nm
Signal-to-Noise Ratio (SNR max)	40 dB @520nm
Quantum Efficiency (QE) X FF	> 63% @525nm
Shortest Exposure	10 μs
Exposure Control	Automatic Exposure/Gain, manual Exposure/Gain
Color Control	<ul style="list-style-type: none"> ▪ Auto/Manual White balance ▪ LUT ▪ RGB offsets, saturation control ▪ Color correction matrix
Image Enhancement	<ul style="list-style-type: none"> ▪ Defect pixel correction ▪ Auto/Manual black level ▪ Flat field / Fixed patter noise correction ▪ Operational Time Counter ▪ Binning ▪ Image flip
Camera Configuration	RS232 direct ASCII protocol
Synchronization	Tri-level sync input

Mechanical & Electrical

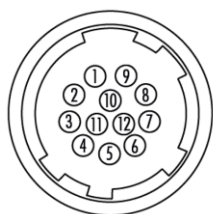
Feature	Description
Dimensions (including lens mount)	44 mm x 44 mm x 38.7 mm (Height x Width x Depth)
Lens Mount	C-mount, CS-mount, Active EF-mount or DC Auto Iris lenses
Weight (without lens)	~50g
Power Input	PoCXP full support (7-28V with external power option)
Power Consumption	<3.2W @ 12V DC
Operating Temperature	-40°C to 80°C, 20-85% humidity (non-condensing)
Storage Temperature	-40°C to 85°C, 10-90% humidity (non-condensing)
Ingress Protection	Optional IP67 (with protective lens tube)
Operational Shock	Tested per MIL-STD-810G Method 516.6, 3-axis Shock 75G
Operational Vibration	Tested per MIL-STD-810G Method 514.6, 3-axis Vibration Category 20

Iron SDI Supported Video Modes

Mode	Video Standard	Supported Resolution	Supported FPS
HD-SDI	ST 292 (ST 274)	1080i 10-bit 4:2:2/RAW	50, 59.94, 60
		1080p 10-bit 4:2:2/RAW	23.98, 24, 25, 29.97, 30
3G-SDI	ST 292 (ST 2048-2)	2K 10-bit 4:2:2/RAW	23.98, 24, 25, 29.97, 30
		ST 425-1 (ST 274)	1080p 10-bit 4:2:2/RAW
6G-SDI	ST 425-1 (ST 2048-2)	2K 10-bit 4:2:2/RAW	47.95, 48, 50, 59.94, 60
		ST 2081-10 M1, (ST 2036-1)	UHD 10-bit 4:2:2/RAW
12G-SDI	ST 2081-10 M1, (ST 2048-1)	4K 10-bit 4:2:2/RAW	23.98, 24, 25, 29.97, 30
		ST 2082-10 M1, ST 425-5 (ST 2036-1)	UHD 10-bit 4:2:2/RAW
	ST 2082-10 M1, ST 425-5 (ST 2048-1)	4K 10-bit 4:2:2/RAW	47.95, 48, 50, 59.94, 60

General Purpose Input Output

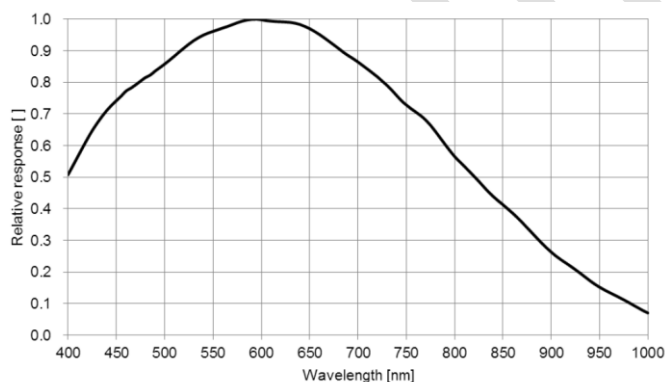
GPIO Pinout – 12 Pin Hirose Connector



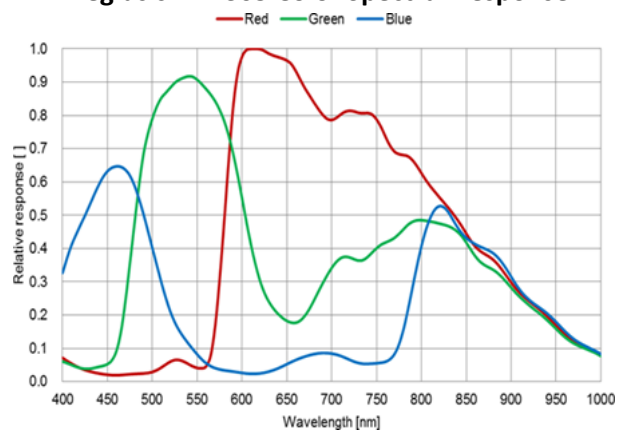
- | | |
|--------------------|-----------------|
| 1. 5 VDC Return | 7. OUT1 (TTL) |
| 2. +5 VDC | 8. IN1 (OPTO) |
| 3. Reserved | 9. IN2 (LVTTTL) |
| 4. Reserved | 10. IN1 RTN |
| 5. OUT2 RTN (OPTO) | 11. IN2 RTN |
| 6. OUT1 RTN | 12. OUT2 (OPTO) |

Absolute Quantum Efficiency

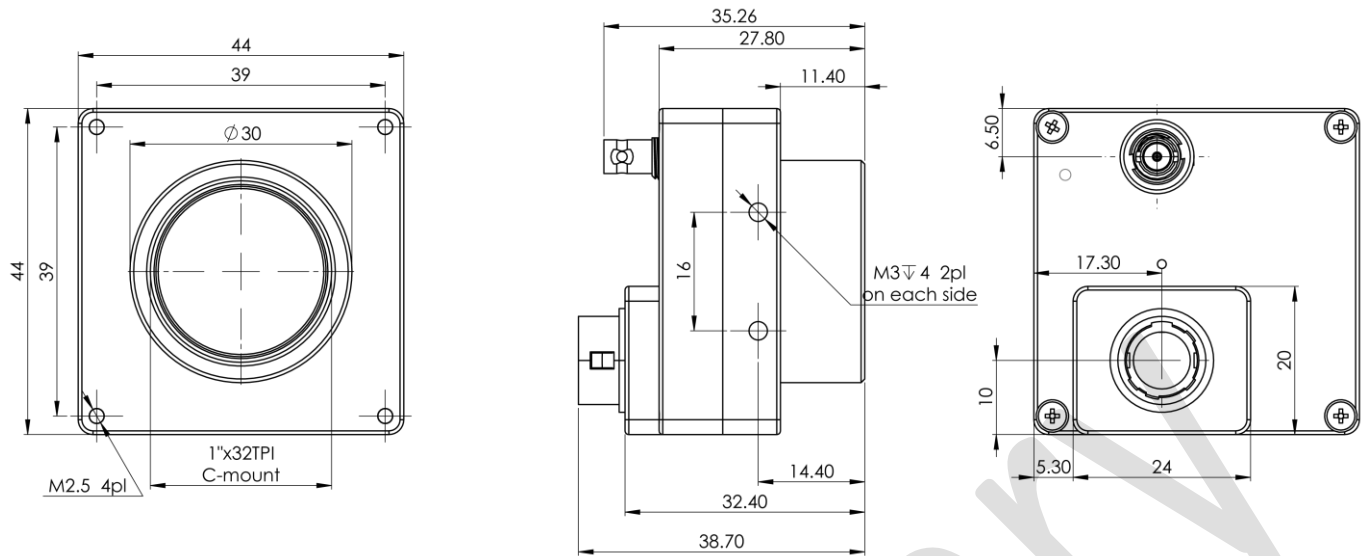
Pregius's IMX305 Mono Spectral Response



Pregius's IMX305 Color Spectral Response



Mechanical Drawings



Contact Us

Please feel free to contact our team with any question or further inquiry at info@kayainstruments.com – we will be happy to provide assistance and consultation.

KAYA Instruments

20 HaMesila St., Nesher 3688520, Israel
POB 25004, Haifa 3125001, Israel

Tel: +972-72-272-3500
Fax: +972-72-272-3511



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19 Avenue de Norvège
91140 Villebon sur Yvette
FRANCE

info@techway.fr
+33 (0)1 64 53 37 90

www.techway.fr