Iron CoaXPress 250

Iron CoaXPress
Small Form Factor, Ruggedized Camera

Innovative Approach

The ***Iron CoaXPress 250*** is an ultra-thin high speed, low-cost, low-power global shutter CMOS camera with a micro-BNC interface which supports 5.01 MP high quality video at rates up to 155.5 fps.

Intelligent Design

Our camera incorporates Pregius's IMX250 global shutter sensor with a 3.45µm 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
- Low light surveillance
- Special Effects
- Virtual Reality
- 3D

Key Features:

- 3.15 Megapixel up to 155.5 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 12.5 Gbps CoaXPress interface
- C / CS / EF or DC Auto Iris mounts available
- Full EMVA1288 report
- Full built-in self-test (BIT)
- Full built-in voltage testing
- Customization as per user requirements

Technical Data

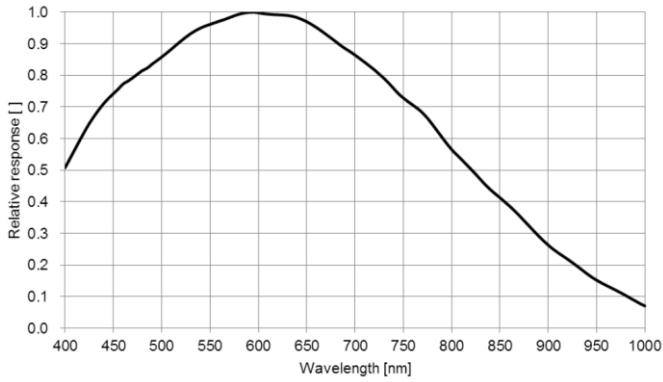| Feature	Description
Pixel Size	3.45 µm x 3.45 µm
Resolution	2448 (H) x 2048 (V)
Sensor Size	11.0 mm diagonal
Sensor	Sony Pregius IMX250 CMOS sensor
Output Interface	6.25 Gbps CoaXPress 1.1, 12.5 Gbps CoaXPress 2.0
Interface Connector	Micro-BNC
Output Resolution	8, 10 or 12 bit
Max Frame Rate	155.5 fps @8 bit resolution 133.3 fps @10 bit resolution 84.8 fps @12 bit resolution
Image Acquisition	Continuous / Triggered
Camera Control	Gen<i>Cam
Electronic Shutter	Global shutter
Sensor Positioning	Full pan/tilt calibration for optical axes **(optional)**
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	10µs
On camera processing	• Defect pixel correction • Auto/Manual White balance • ROI • Image flip • Frame counter • LUT • Flat field / Fixed patter noise correction • Gain (Analog / Digital) • Auto/Manual black level • Binning • Auto Exposure/Gain • Operational Time Counter
GPIO Connection	Two inputs, two outputs, external trigger & strobe controller **(optional)**

Mechanical & Electrical

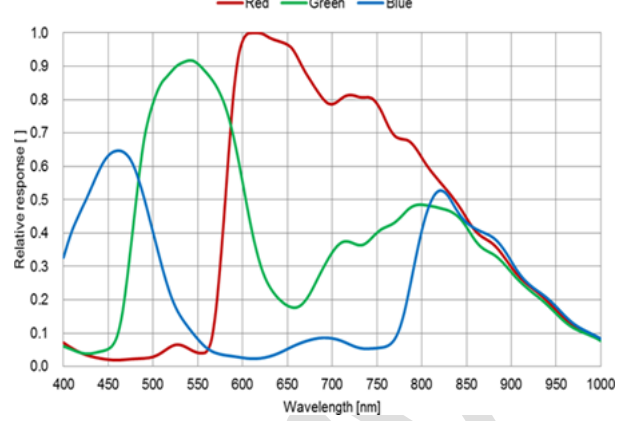| Feature	Description
Dimensions (including lens mount)	44 mm x 44 mm x 35.3 mm (Height x Width x Depth)
Lens Mount	C-mount, CS-mount, EF-mount or DC Auto Iris lenses
Weight (without lens)	~50g
Power Input	PoCXP full support (7-28V with external power option)
Power Consumption	<3.2W @ 24V DC
Operating Temperature	-30°C to 70°C, 20-85% humidity (non-condensing)
Storage Temperature	-30°C to 75°C, 20-85% 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

* KAYA Instruments reserves the right to update the data sheet from time to time without prior notice.
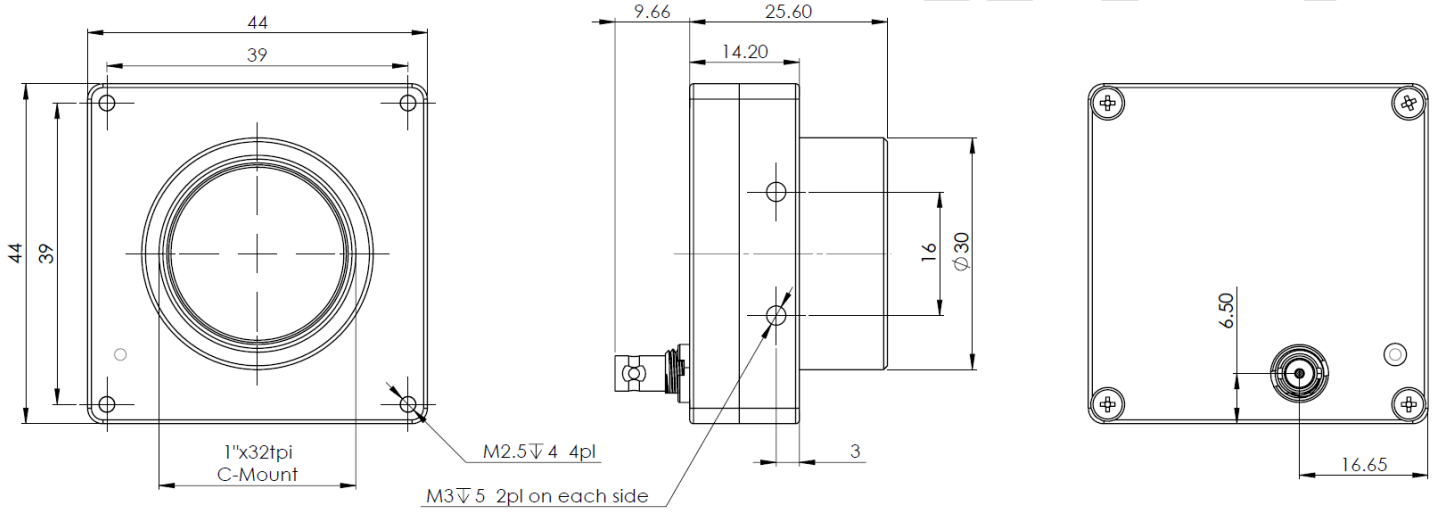
Absolute Quantum Efficiency

Pregius's IMX250 Mono Spectral Response

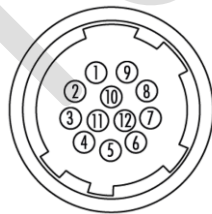

Pregius's IMX250 Color Spectral Response

Mechanical Drawings

1"x32tpi
C-Mount

M2.5↓4 4pl

M3↓5 2pl on each side

General Purpose Input Output**

GPIO Pinout – 12 Pin Hirose Connector

1. 5 VDC Return
2. +5 VDC
3. Reserved
4. Reserved
5. OUT2 RTN (OPTO)
6. OUT1 RTN

7. OUT1 (TTL)
8. IN1 (OPTO)
9. IN2 (LVTTL)
10. IN1 RTN
11. IN2 RTN
12. OUT2 (OPTO)

** GPIO is optional and will affect the mechanical dimensions of the camera, adding about 3.5 mm to its thickness.

Compatibility

KAYA Instruments creates and maintains compatibility and interfaces for the most common and advanced vision image processing libraries and applications. Major support is available for **MVTec Halcon, National Instruments' LabVIEW** and **MathWorks' MATLAB**.

❖ Supported vision standards:

❖ Supported vision libraries:

❖ Supported operating systems:

Please check our website for an up-to-date list of other supported libraries and software package

Contact Us

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