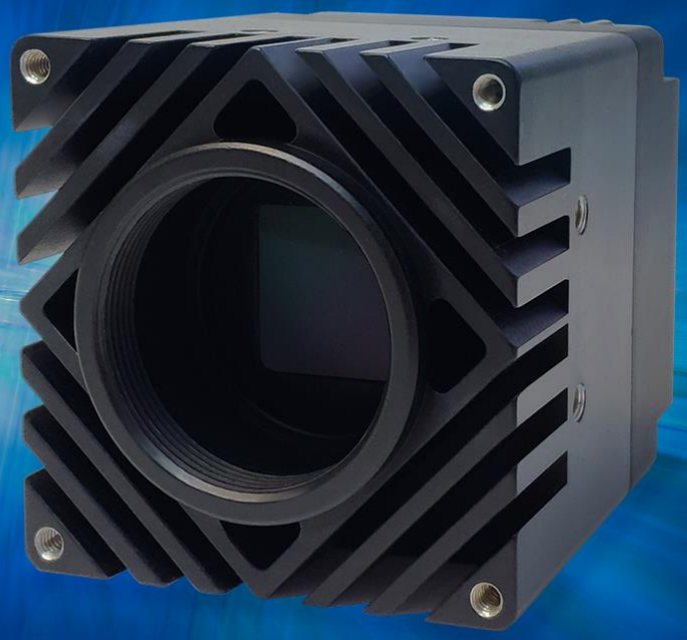
KAYA INSTRUMENTS



Iron CoaXPress 2011E

Iron CoaXPress
Small Form Factor, Ruggedized Camera

Innovative Approach

The ***Iron 2011E*** is a high-speed, low-cost, low-power global shutter CMOS camera with up to 12.5 Gbps CoaXPress 2.0 interface (Micro-BNC connector) which supports 2 MP high quality video at rates of up to 513fps.

Intelligent Design

The Iron 2011e is a global shutter camera with a 6.5µm pixel size. With a compact outline the camera 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:

- 2 Megapixel up to 513 fps
- Up to 4W power at full rate
- Full image processing feature set
- Up to 12.5 Gbps CoaXPress interface
- C / CS / EF lens 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	6.5 µm x 6.5 µm
Resolution	2048 (H) x 1152 (V)
Sensor Size	13.3 mm x 7.5 mm | 1”
Sensor	Gpixel GSENSE2011e
Output Interface	CoaXPress 2.0 up to 12.5 Gbps (CXP3, CXP6, CXP12)
Interface connector	Micro-BNC
Output Resolution	10 bit, 8 bit
Max Frame Rate	513 fps @ 8 bit 405 fps @ 10 bit
Image acquisition	Continuous / Triggered
Camera Control	Gen<i>Cam
Electronic shutter	Global shutter
Monochrome/ color	Monochrome
Temporal noise	<6.2 e-
Full well charge	19 ke-
Dynamic range	> 70dB
Signal-to-Noise Ratio (SNR max)	41.5dB
Quantum efficiency (QE) X FF	<72% @595nm
Shortest Exposure	2.6 µs
On camera processing	▪ Defect pixel correction ▪ ROI ▪ Frame counter ▪ Flat field / Fixed patter noise correction ▪ Auto/Manual black level ▪ Auto Exposure/Gain ▪ Auto/Manual White balance ▪ Image flip ▪ LUT ▪ Gain (Analog / Digital) ▪ Binning ▪ Operational Time Counter
GPIO connection	Two inputs, two outputs, external trigger & strobe controller

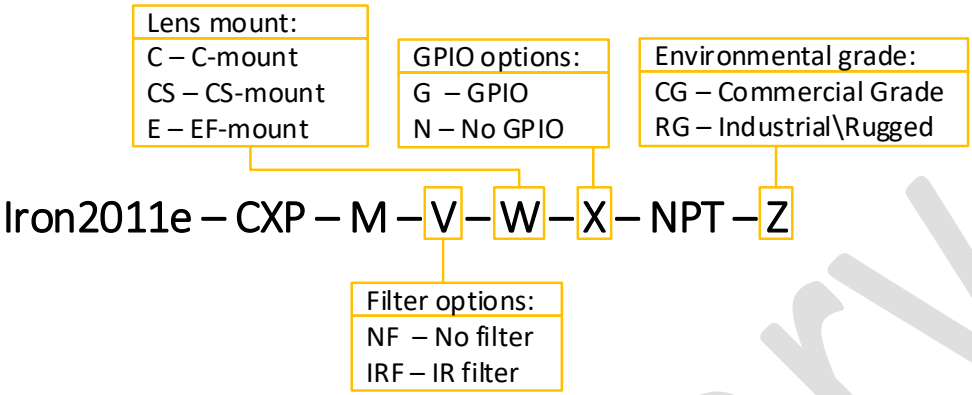
Mechanical & Electrical

Feature	Description
Dimensions	44 mm x 44 mm x 53 mm (Height x Width x Depth)
Weight (without lens)	<100g
Typical current	<170mA @ 24V
Operating Temperature	-40°C to 80°C, 20-85% humidity (non-condensing)
Storage Temperature	-40°C to 85°C, 20-85% humidity (non-condensing)
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
Ingress Protection	Optional IP67 (with protective lens tube)
Lens Mount	C-mount, CS-mount, EF-mount
Power Input	PoCXP full support (11-28V with external power option)
Power Consumption	<4W @ 24V DC

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

Ordering Information

KAYA's Part Numbers are intuitive and derived directly from the product's properties. Each index represents a different property of the camera, according to the following diagram:



For example: an Iron 2011E with a monochrome sensor, UV-IR cut filter and F-mount, rated for commercial use would go by Iron2011e-CXP-M-IRF-F-G-NPT-CG. It is also possible to buy peripheral equipment in addition to the camera as listed in the following table:

Product Name	Product Part Number
Cable, 12P Hirose connector (f)	KY-CBL-006

Please contact a sales representative over at **info@skyblue.de** for a full list of peripherals including cables and frame grabbers.

General Purpose Input Output

GPIO Pinout – 12 Pin Hirose Connector

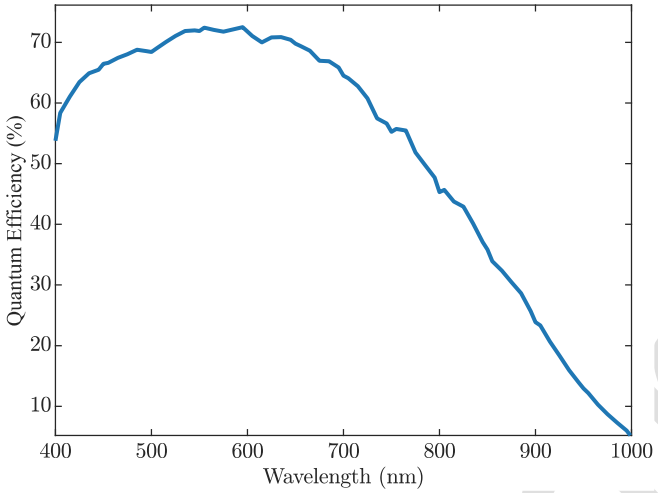
1. DC Power return
2. DC Power
3. RS232 RX
4. RS232 TX
5. OUT2 Return (OPTO)
6. RS232 Return
7. OUT1 (TTL)
8. IN1 (TTL)
9. IN2 (LVTTL)
10. IN1/OUT1 Return
11. IN2 Return (LVTTL)
12. OUT2 (OPTO)

The GPIO connector used on the camera is a 12 pin male Hirose connector. It is recommended to use a cable with a matching Hirose 12 pin female connector. Hirose's manufacturer's part number is listed below:

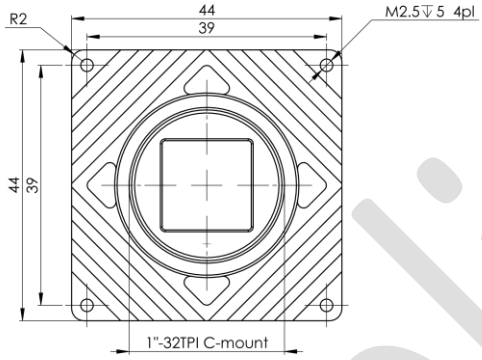
Product Name	Product Part Number
Hirose 12P connector, male	HR10A-10R-12PB
Hirose 12P connector, female	HR10A-10P-12S

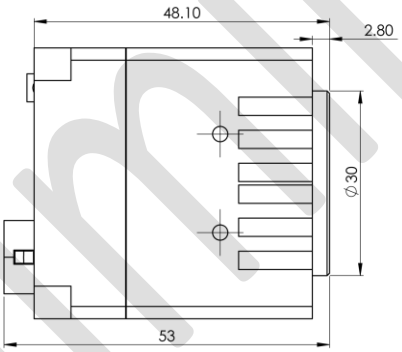
Absolute Quantum Efficiency

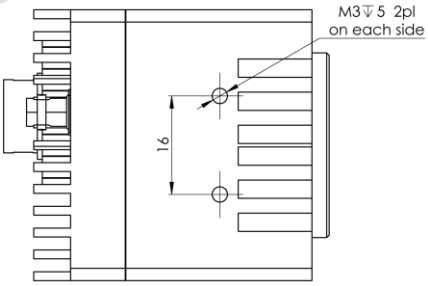
GSENSE2020e Spectral Response



Mechanical Drawings







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:

CoaXPress®

- Supported vision libraries:

HALCON a product of MVTec · OpenCV · NATIONAL INSTRUMENTS LabVIEW™ · COGNEX

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

Contact Us

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

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