Datasheet
Iron0505 CoaXPress

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26.2 Megapixel, Small, Rugged,
Low Power with Large Feature Set

Key Features:

- 26.2 Megapixel up to 150.0 fps
- Monochrome, Color and IR Enhanced sensor variation
- Up to 11 W power at full rate
- Full image processing feature set
- CoaXPress v2.1 standard compliant
- Gen⟨i⟩Cam compliant
- Up to 2 CoaXPress links
- C lens mounts available
- Commercial and Industrial grade options
- Full EMVA1288 report
- Full built-in self-test (BIT)
- Full built-in voltage testing
- Customization as per user requirements

Innovative Approach

Iron0505 CoaXPress is an ultra-thin high speed, low-cost, low-power Global shutter CMOS camera with a Micro-BNC interface which supports 26.2 Megapixel high quality video at rates up to 150.0 fps.

Intelligent Design

With an extremely compact form factor, the **Iron0505 CoaXPress** fits into small spaces. The superior sensor performance provides high quality images with great dynamic range, low noise and excellent low-light vision capabilities.

Applications:

- Perimeter vision
- Low light surveillance
- Special Effects
- Virtual Reality
- 3D

TECHNICAL DATA

General	
Pixel Size	2.5 µm x 2.5 µm
Resolution	5120 (H) x 5120 (V)
Sensor Size	18.1 mm diagonal
Sensor	Gpixel GMAX0505
Sensor Type	CMOS
Output Interface	CoaXPress v2.1
Supported Interface rates	CXP-12, CXP-6 or CXP-3
Interface Connector	Micro-BNC
Number of Connectors	High Speed Version : 4 Normal Speed Version : 2
Output Resolution	8, 10 or 12 bit
Maximum Frame Rate	High Speed Version • 150 fps @8 bit resolution • 145 fps @10 bit resolution Normal Speed Version • 41 fps @8 bit resolution • 41 fps @10 bit resolution • 41 fps @12 bit resolution
Tap Geometry	1X-1Y
Image Acquisition	Continuous / Triggered
Camera Control	Gen<i>Cam
Electronic Shutter	Global
Monochrome / Color	Monochrome, Color or IR Enhanced
Temporal Noise	<1.6 e- at 25°C
Full Well Charge	6700 e-
Dynamic Range	>65 dB at 520 nm
Signal-to-Noise Ratio (SNR max)	38.1 dB at 520 nm
Quantum Efficiency (QE)	>65.5% at 520 nm
Shortest Exposure	2.5 µs
IR Filter (optional)	• UV cut below 400 nm • IR cut above 700 nm
Exposure control	Automatic/Manual
Gain control	Automatic/Manual
Color Control	• RGB offsets • Auto / Manual White balance • LUT
Image enhancement	• Defect pixel correction • Gain (Analog / Digital) • Auto / Manual black level • Binning • Auto Exposure / Gain • Flat field / Fixed pattern noise correction

Additional on camera processing	• ROI • Image flip • Frame counter • Operational Time Counter • Binning
Power Input	• PoCXP • External 11 V - 28 V input
Power Consumption	<11 W at 24 V DC
Configuration software	Gen<i>Cam Standard software
Synchronization	Protocol/External I/O Trigger
Exposure Strobe output	Yes

General Purpose Inputs and Outputs	
I/O lines	• 2 singled-ended TTL output • 2 singled-ended TTL/LVTTL input
Usage	• Any System I/O input lines can be connected to any I/O output line • Any I/O input line can generate any trigger event • Any I/O input line can trigger a timer • Any I/O input line can trigger a counter
Electrical specifications	• TTL lines: 5 V TTL compliant • LVTTL lines: 3.3 V LVTTL compliant • Isolated lines: opto-isolated lines with voltage range up to 30 V
Timers	• 4 general purpose timers • Configurable delay and duration • 32-bit accumulator
Counters	• 4 general purpose counters • Configurable value and duration • 32-bit counter

Mechanical	
Dimensions (including lens mount)	44 mm x 44 mm x 39 mm (1.7" x 1.7" x 1.5")
Weight (without lens)	100 g (3.5 oz)
Lens Mount	C
Sensor Alignment	Active
Ingress Protection	Optional IP67 (with protective lens tube)

Environmental Conditions	
Operating ambient air temperature	Commercial : 0 °C to +50 °C (32 °F to +122 °F) Industrial : -40.0 °C to +80 °C (-40 °F to +176 °F)
Operating ambient air humidity	10% to 90% RH non-condensing
Storage ambient air temperature	Commercial : 0 °C to +55 °C (32 °F to +131 °F) Industrial : -40.0 °C to +85 °C (-40 °F to +185 °F)
Storage ambient air humidity	10% to 90% RH 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
MTBF	2,100,000 hrs @ 50C (Telecordia)

Certifications	
Electromagnetic - EMC standards	• The European Council EMC Directive 2004/108/EC • The Unites States FCC rule 47 CFR 15
EMC - Emission	• EN 55022:2010 Class B • FCC 47 Part 15 Class B
EMC - Immunity	• EN 55024:2010 Class B • EN 61000-4-3 • EN 61000-4-4 • EN 61000-4-6
Flammability	PCB compliant with UL 94 V-0
RoHS	Compliant with the European Union Directive 2011/65/EU (RoHS2)
REACH	Compliant with the European Union Regulation No 1907/2006
WEEE	Must be disposed of separately from normal household waste and must be recycled according to local regulations

Iron0505HSM-SC

Speed

– Normal Speed
HS – High Speed

Color options

M – Monochrome
I – Mono with IR Filter
N – Color w/o IR Filter
C – Color
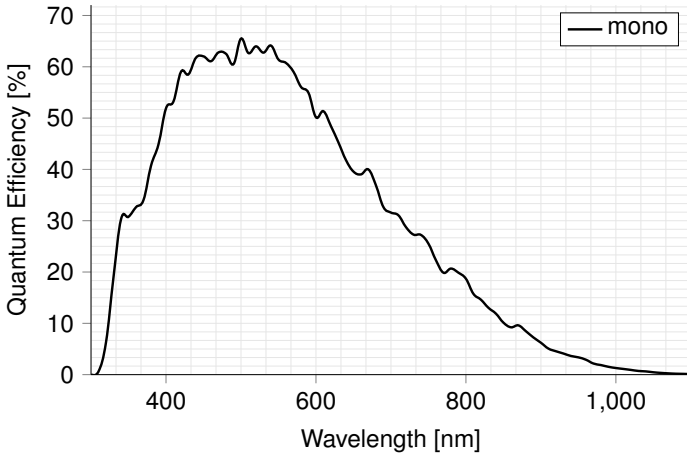Z – IR Enhanced

Grade

S – Commercial
R – Industrial

Lens mount

C – C-Mount

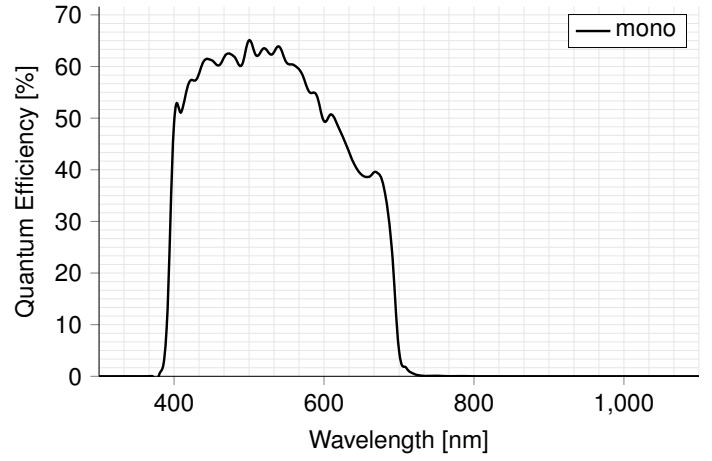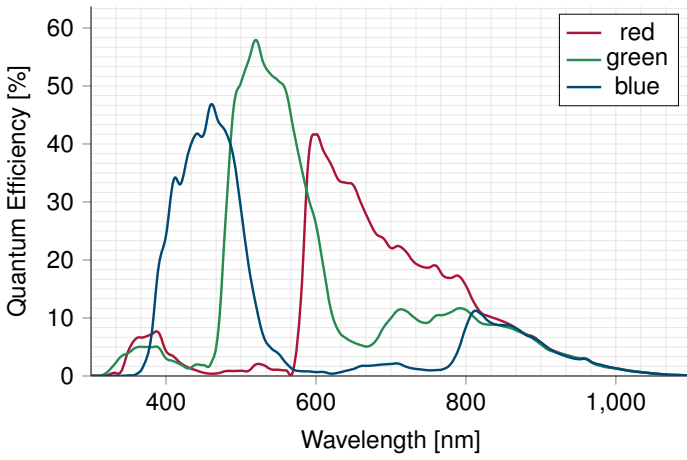**Custom options**

O – Open Frame
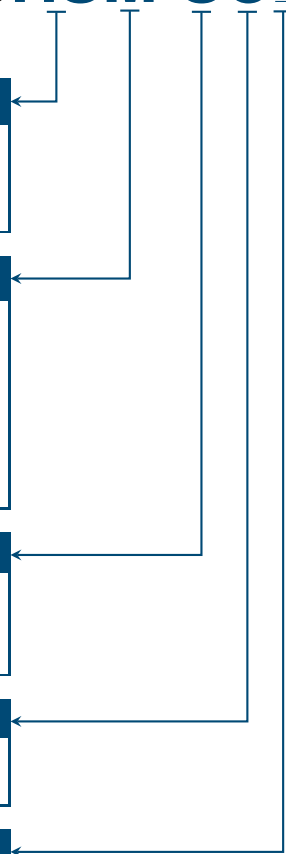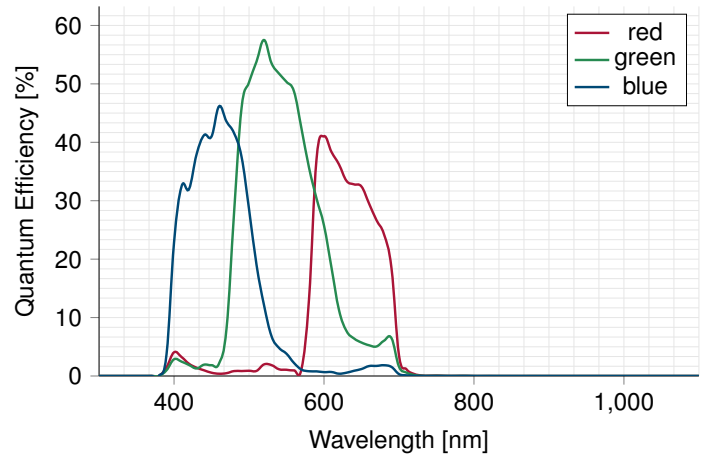
SPECTRAL RESPONSE

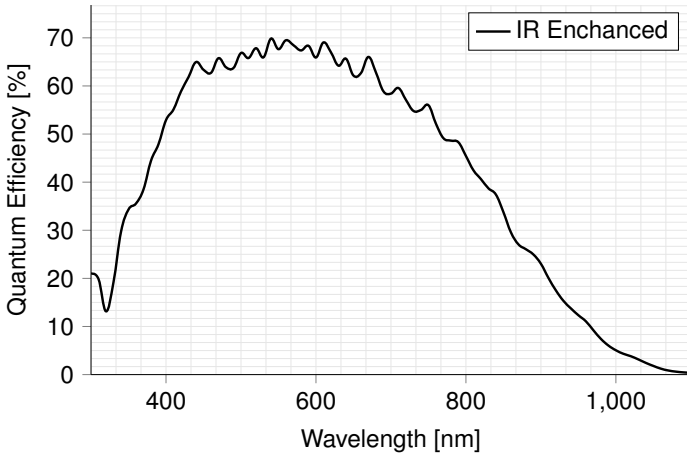### Monochrome

Monochrome with IR Cut Filter

Color

Color with IR Cut Filter
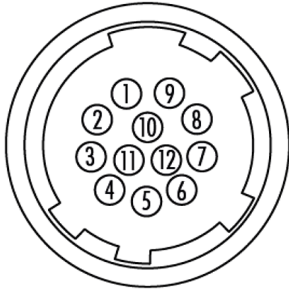

IR Enhanced

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
6. RS232 Return
7. OUT1 (TTL)
8. IN1 (TTL/LVTTL)
9. IN2 (TTL/LVTTL)
10. IN1 Return
11. IN2/OUT1 Return
12. OUT2 (LVTTL)

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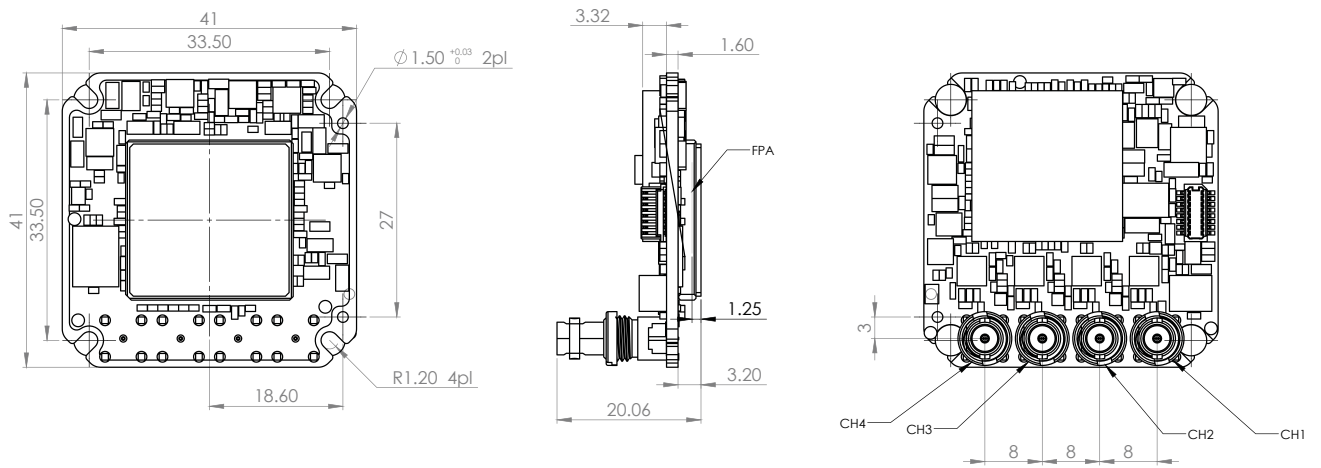
Product Name	Product Part Number
Hirose 12P connector, male	HR10A-10R-12PB
Hirose 12P connector, female	HR10A-10P-12S

MECHANICAL DRAWINGS

C-Mount
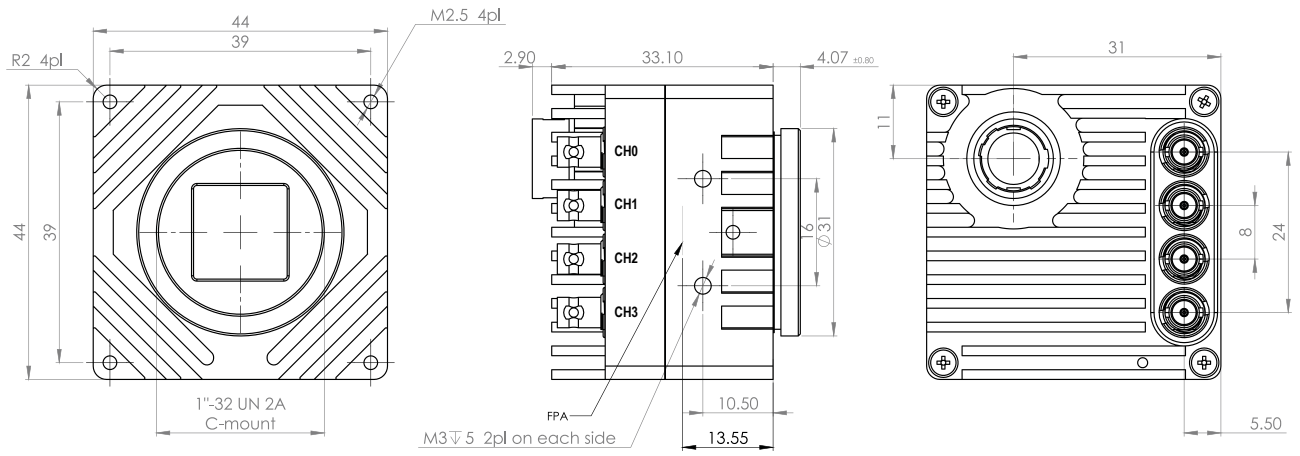
Board Level

Dimensions are in millimeters.

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   GEN‹i›CAM   CoaXPress over-Fiber   SMPTE

Supported vision libraries:

HALCON a product of MVTec   OpenCV   LabVIEW   MATLAB®   COGNEX   NORPIX

Supported operating systems:

Windows   LINUX   NVIDIA JetPack

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

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