Iron2518 CoaXPress

Iron CoaXPress
Small Form Factor, Ruggedized Camera

Innovative Approach

The *Iron2518* is a high speed, low-cost, low-power global shutter CMOS camera with up to 50 Gbps CoaXPress v2.1 interface (Micro-BNC connector) which supports 18 MP high quality video at rates of up to 139fps.

Intelligent Design

Our camera incorporates Gpixel's GMAX2518 sensor – manufactured in Israel by the company's Belgian branch. The GMAX2518 is a global shutter sensor with a 2.5µm 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
- Military/Defense systems
- Low light surveillance
- Special Effects
- Virtual Reality
- 3D

Key Features:

- 18 Megapixel up to 139 fps
- Monochrome and Color models
- Up to 11W power at full rate
- Full image processing feature set
- Up to 50 Gbps CoaXPress interface
- C, CS, F or EF 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	2.5 µm x 2.5 µm
Resolution	4508 (H) x 4096 (V)
Sensor Size	11.27 mm x 10.24 mm | 1"
Sensor	Gpixel GMAX2518
Output Interface	x 4 channels CoaXPress v2.1 up to 50 (12.5 x 4) Gbps (CXP3, CXP6, CXP12)
Interface Connector	x 4 Micro-BNC
Output Resolution	10 bit, 12 bit
Max Frame Rate	139 fps @ 10 bit 64 fps @ 12 bit
Image acquisition	Continuous / Triggered
Camera Control	Gen<i>Cam
Electronic shutter	Global shutter
Monochrome/ color	Monochrome / Color
Temporal noise	<1.6 e$^-$
Full well charge	6.5 ke$^-$
Dynamic range	> 61.9dB @ 10 bit > 66.9dB @ 12 bit
Signal-to-Noise Ratio (SNR max)	39.0dB
Quantum efficiency (QE) X FF	<65.5% @500nm
Shortest Exposure	2.5 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 [1]	44 mm x 44 mm x 39 mm (Height x Width x Depth)
Weight (without lens)	<100 g
Typical current	460 mA @ 24 V
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, F-mount or EF-mount
Power Input	PoCXP full support (11-28 V with external power option)
Power Consumption	<11 W @ 24 VDC

1. Mechanical dimensions are subject to change

* 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:

Color or Mono w/Filter:
C – Color (always has IR Cutoff filter)
M – Monochrome
N – Color w/No IR Cut Filter
G – Mono with AR Coated Glass
R – IR Cutoff on Mono Sensor

Lens mount:
C – C-mount
S – CS-Mount
F – F-mount
E – EF-mount

Iron 2518C – CXP – Fc

CoaXPress type:
CXP – CoaXPress

Custom options:
G – Add GPIO (CXP option), standard for CoF or SDI
I – Add GPIO w/DC-Iris
P – Pan Tilt Calibration
C – Custom
OF – Board level

For example: a High-Speed Iron2518 CXP with a colored sensor, UV-IR cut filter and F-mount, would go by Iron2518C-CXP-F*c*. Please contact a sales representative over at info@kayainstruments.com for a full list of peripherals including cables and frame grabbers.

GMAX2518 Spectral Responses

GMAX2518 Color

GMAX2518 Color, IR Cut Filter

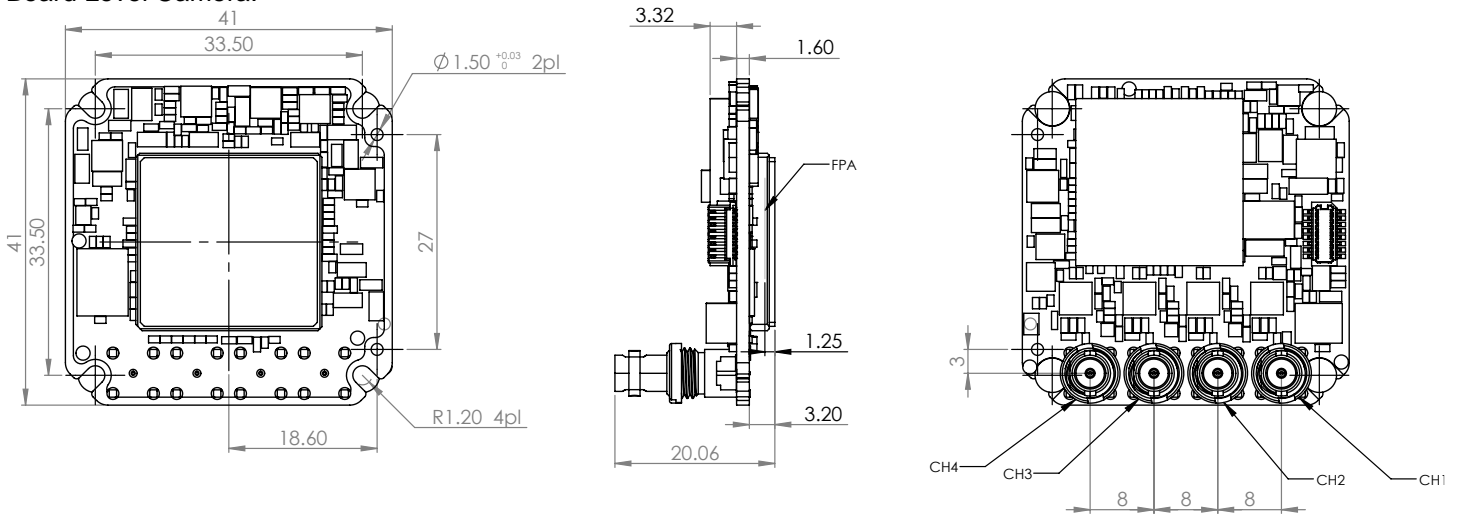### IR Cut Filter

GMAX2518 Mono
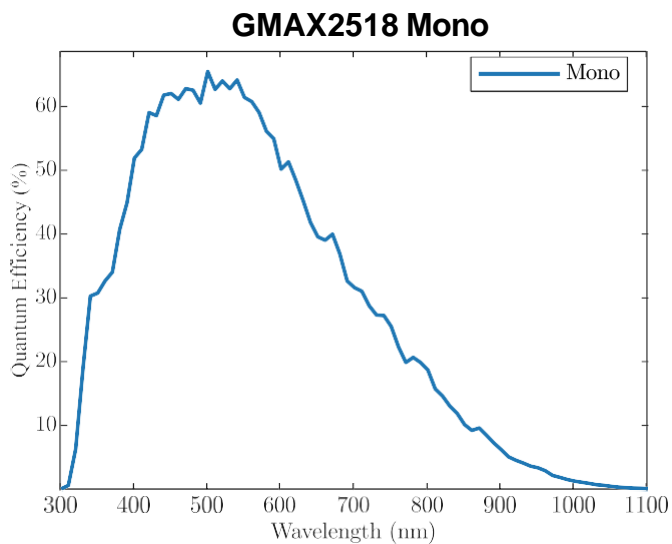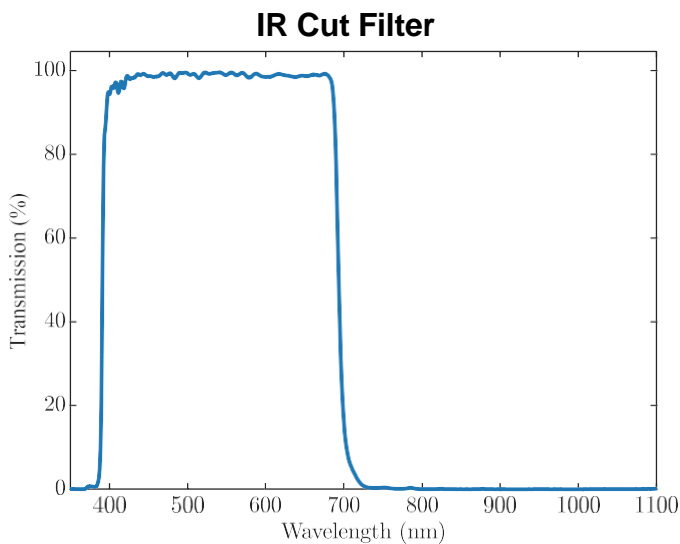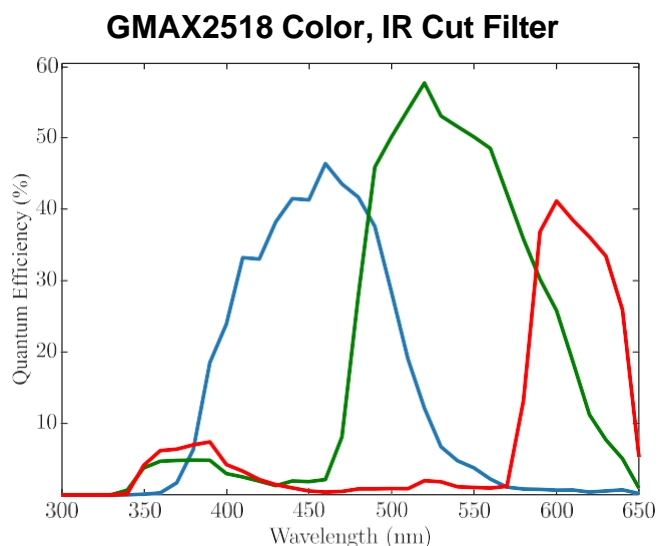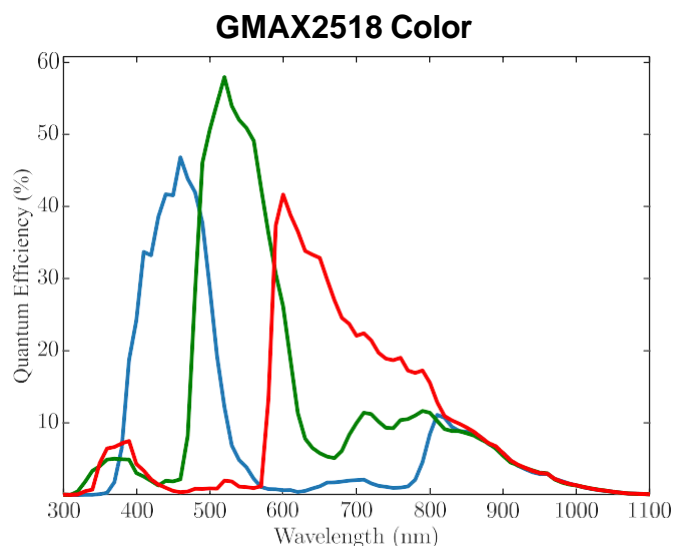
Mechanical Drawings*

Enclosed camera:
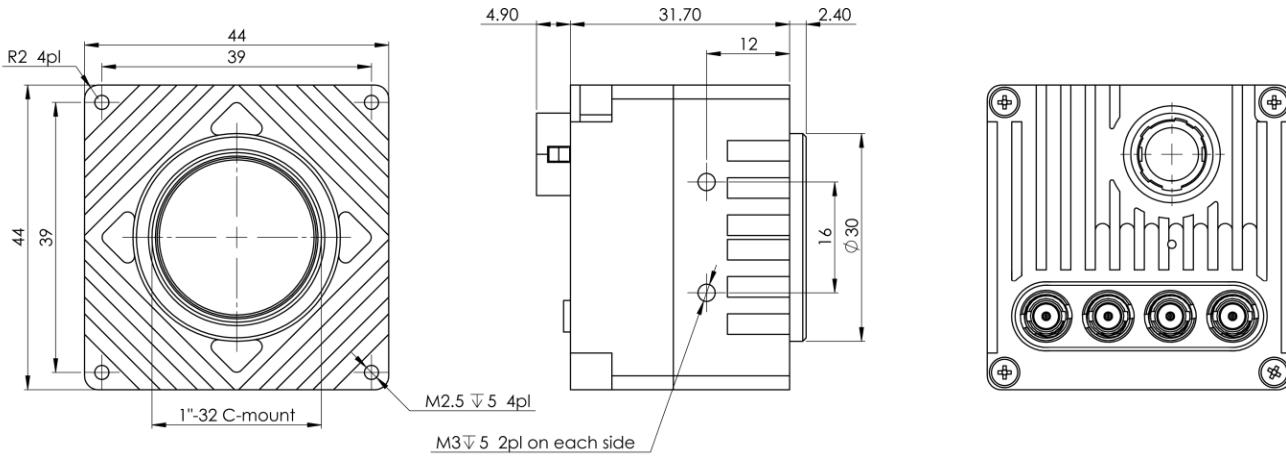
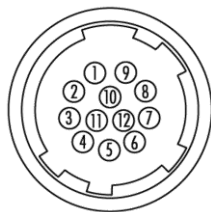* Mechanical Dimensions are subject to change

Board Level Camera:

NOTE: 1. For NS version channels CH3 and CH4 are not assembled. 2. For board level, Sensor glass with is 0.7mm with RI=1.5

General Purpose Input Output

GPIO Pinout – 12 Pin Hirose Connector

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

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:
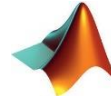
❖ Supported operating systems:

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

Contact Us

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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