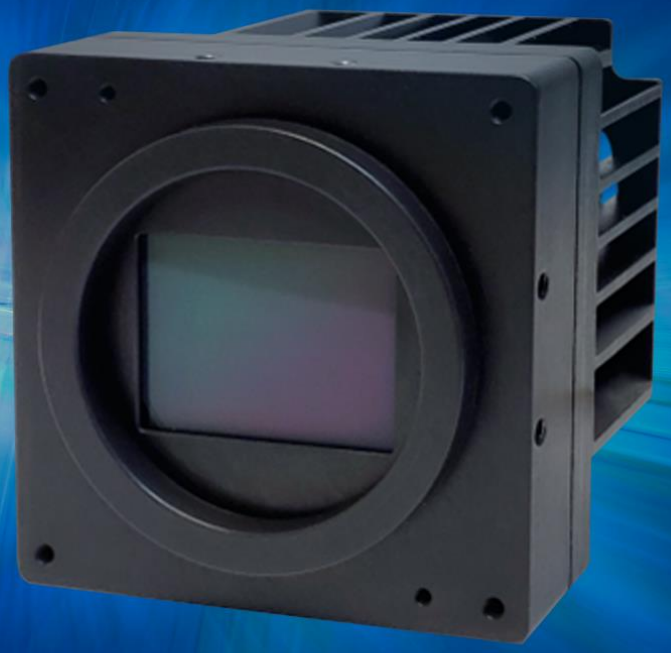
KAYA INSTRUMENTS



Iron3249 CoaXPress

Iron3249 CoaXPress
Small Form Factor, Ruggedized Camera

Innovative Approach

The ***Iron 3249*** is a low-cost, low-power, high resolution global CMOS camera with up to 25 Gbps CoaXPress 2.0 interface (Micro-BNC connector) which supports 49 MP high quality video at rates of up to 35 fps.

Intelligent Design

Iron 3249 incorporates a GMAX3249 global shutter sensor with a 3.2µm 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:

- 49 Megapixel up to 35 fps
- Up to 7.5W power at full rate
- Full image processing feature set
- Up to 25 Gbps CoaXPress interface
- F, EF, Birger EF, M42 or M58 mounts are available
- Commercial and rugged industrial grade options
- 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	3.2 µm x 3.2 µm
Resolution	7008 (H) x 7000 (V)
Sensor size	19.7 mm x 19.7 mm | 1.75”
Sensor	Gpixel GMAX3249
Video output	x 2 channels CoaXPress 2.0 up to 25 (12.5 x 2) Gbps (CXP3, CXP6, CXP12)
Interface connector	x 2 Micro-BNC
Digitization	12 bit
Electronic shutter	Global shutter
Shutter speed	13.35 µs
Exposure control	Off / Internal / Auto
Image acquisition	Continuous / Triggered
Trigger input [1]	External, pulse generator, SW
Trigger mode	Free run, externally or internally triggered
Trigger options	Edge, de-bounce
Output resolution	8 bit, 10 bit, 12 bit
Maximal Frame rate	35 fps
Subsampling	1 x 2 / 2 x 1 / 2 x 2 (user configurable)
Monochrome/ color	Monochrome
Full well charge	10.9 ke^- @ PGA gain x0.75
Dynamic range	65.0dB @ PGA gain x1.25
Dark current	5.3 e^- pxl/sec @40°C
Quantum efficiency (QE) X FF	<65.3% @500 nm
Temporal noise	2.3 e^- @ PGA gain x6
Angular response	15° (80% horizontal response)
Regulation	FCC Part 15 Class A, CE, RoHs2 (official certification optional)
On camera processing	▪ Defect pixel correction ▪ Digital binning (2 x 2) ▪ ROI ▪ Auto Exposure/Gain ▪ LUT ▪ Gain (Analog / Digital) – manual / auto ▪ Auto/Manual black level ▪ Image H/V flip
Pulse generator	Yes, Programmable at 8 ns increments
Additional features	▪ Over/under voltage protection ▪ Three points of temperature sensing ▪ Per-pixel FPN (optional) ▪ Reverse voltage polarity protection ▪ Frame-by-frame shutter speed change ▪ Global reset
GPIO connection	Two inputs, two outputs, external trigger & strobe controller

Mechanical & Electrical

Feature	Description
Dimensions (without lens mount)	62 mm x 62 mm x 44 mm (Height x Width x Depth)
Lens mount	F-Mount, Canon EF-mount, Birger EF-mount, M42-mount or M58-mount
Weight (without lens or mount)	450g
Typical current	300mA @ 24V
Power input	▪ PoCXP full support ▪ External 10-28V input
Power consumption	<7.5W @ 24V DC
Mount	Front mount
Heat dissipation	Active airflow (Fan)
Sensor Mechanical Positioning	≤ 0.15°
Operating temperature	Commercial: 0°C to 50°C, 20-85% humidity (non-condensing) Industrial: -40°C to 70°C, 20-85% humidity (non-condensing)
Storage temperature	Commercial: 0°C to 55°C, 20-85% humidity (non-condensing) Industrial: -40°C to 75°C, 20-85% humidity (non-condensing)
Shock/Vibration [2]	MIL 810F

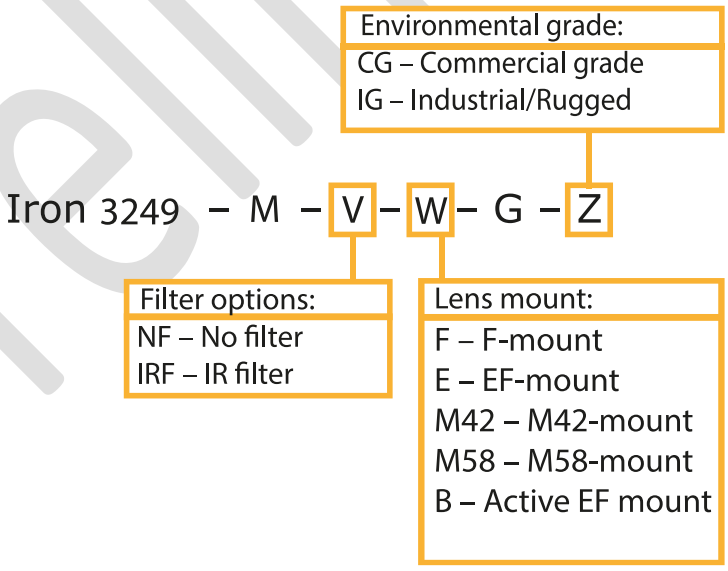
1. The output can be synchronized to the trigger on a frame by frame basis
2. MIL 810F is only available for the Industrial\Rugged model and is not available in the commercial version

* Performance is measured at full resolution, maximum bitness and the maximum frame rate for that bitness

** 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:



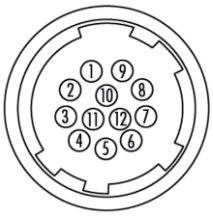
For example: an Iron 3249 with a UV-IR cut filter and F-mount, rated for commercial use would go by Iron3249-M-IRF-F-G-CG. It is also possible to buy peripheral equipment in addition to the camera as listed in the following table:

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

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

General Purpose Input Output

GPIO Pinout – 12 Pin Hirose Connector

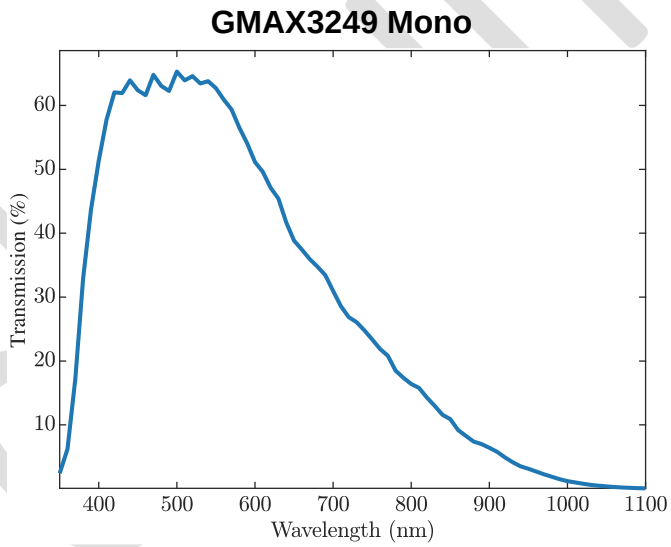


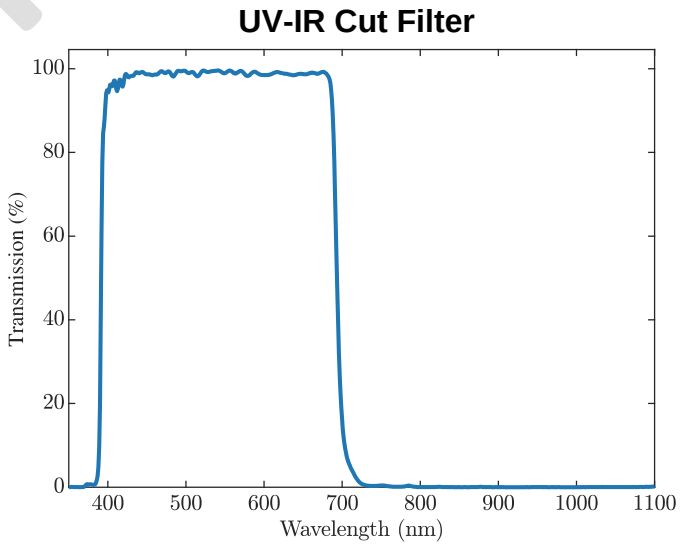
1. DC Power return
2. DC Power
3. RS232 RX
4. RS232 TX
5. OUT2 Return (OPTO)
6. RS232 Return
7. OUT1 (TTL)
8. IN1 (OPTO)
9. IN2 (TTL)
10. IN1/OUT1 Return
11. IN2 Return (LVTTL)
12. OUT2 (OPTO)

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:

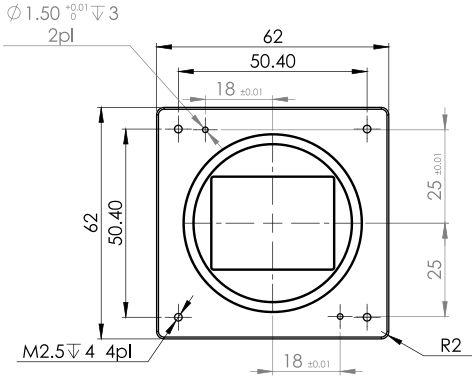
Product Name	Product Part Number
Hirose 12P connector, male	HR10A-10R-12PB
Hirose 12P connector, female	HR10A-10P-12S

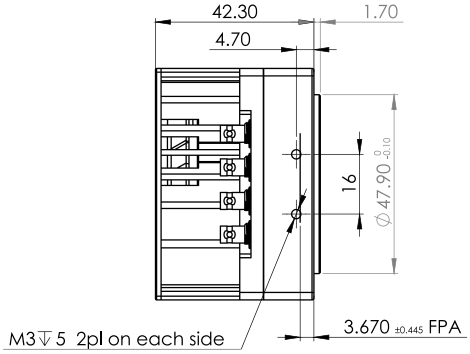
GMAX3249 Spectral Responses

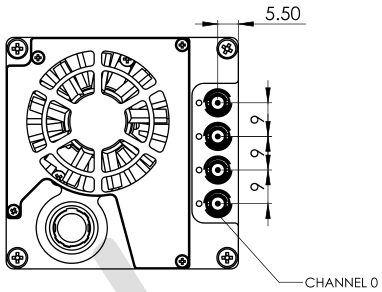




Mechanical Drawings

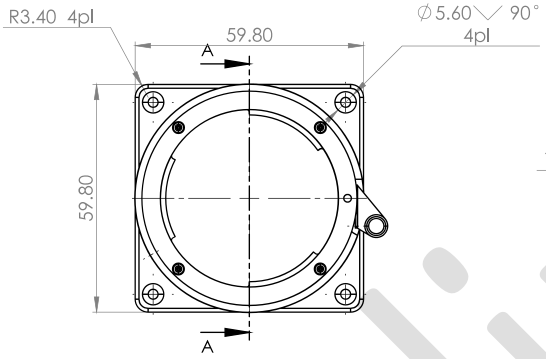


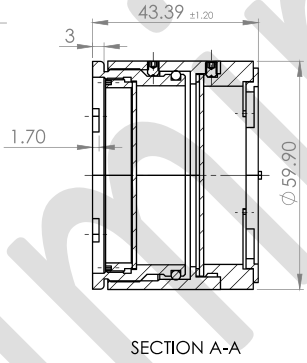


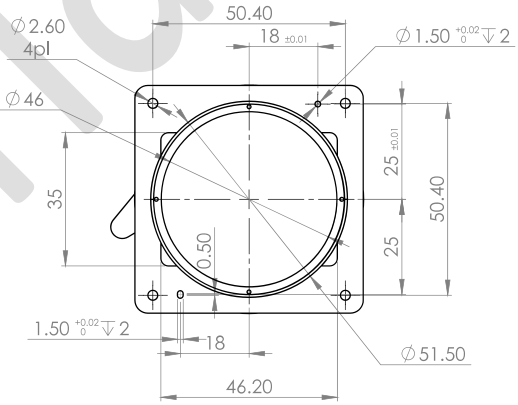


Lens Mounts Mechanical Drawings

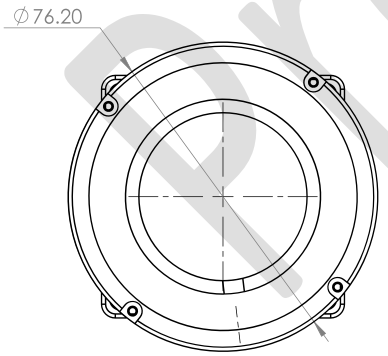
Nikon F mount:

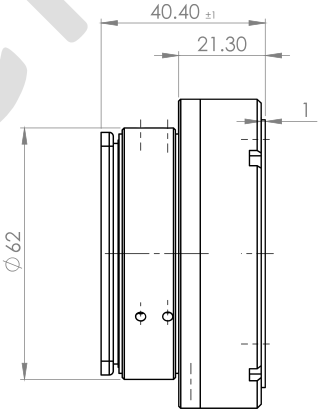


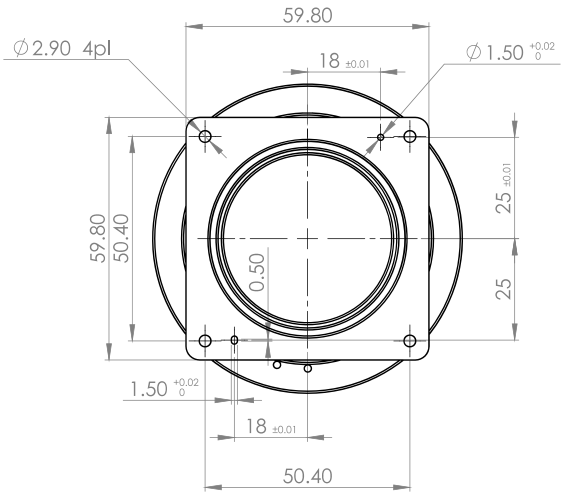




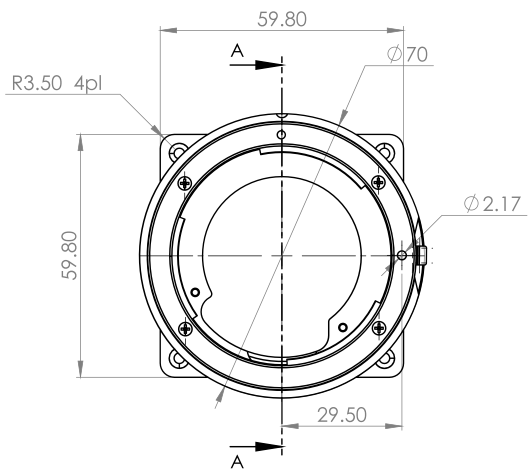
Birger EF mount:

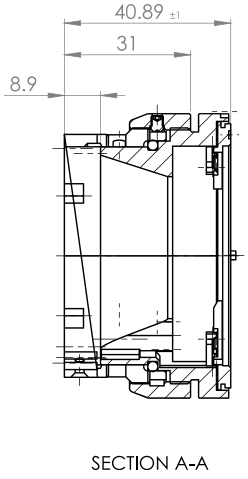


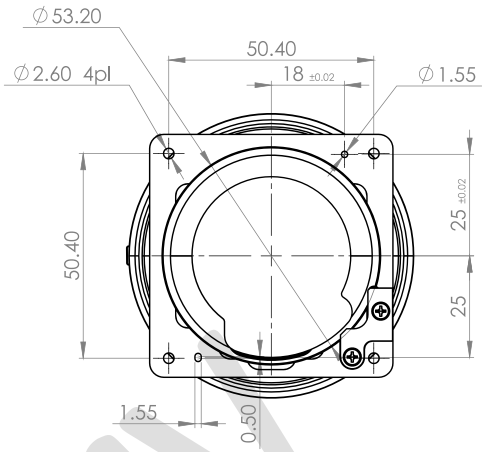




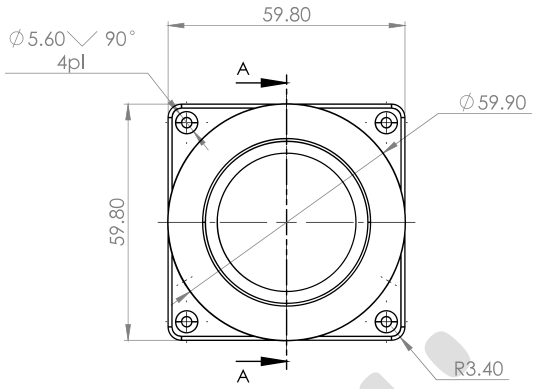
Canon EF mount:

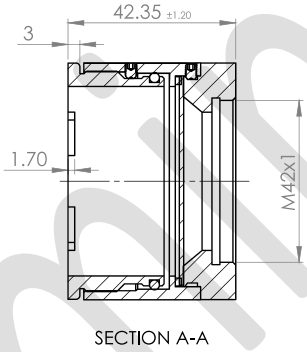


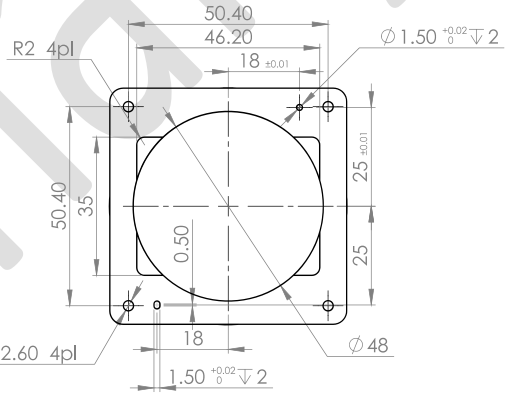




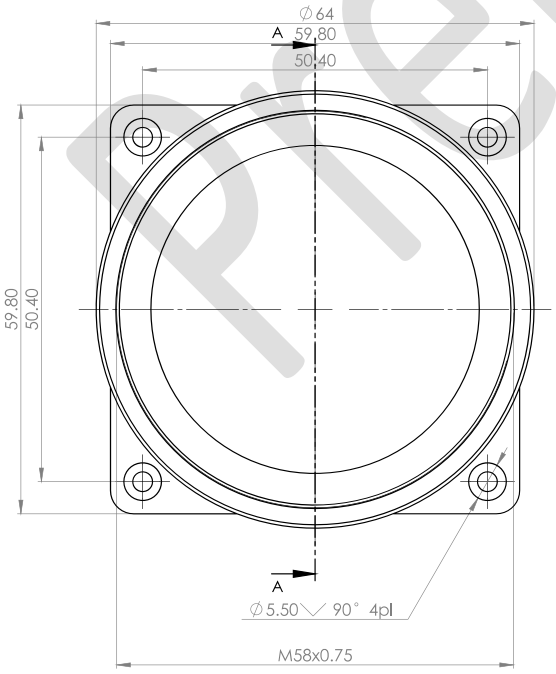
M42 mount:

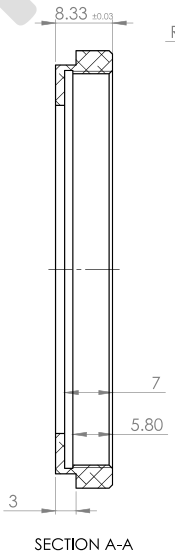


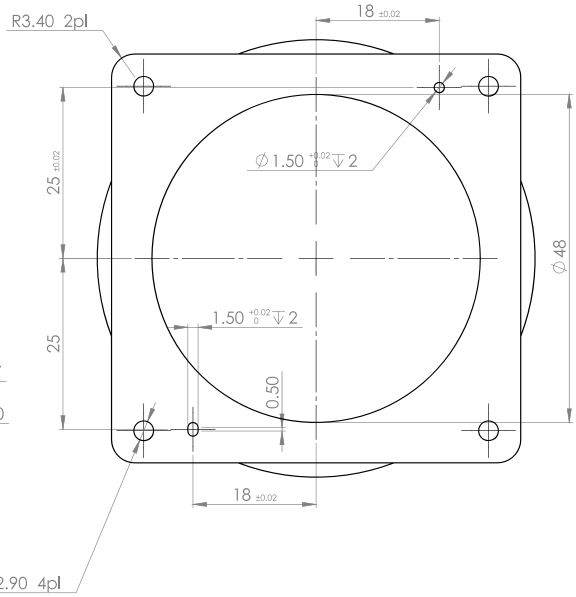




M58 mount:







Compatibility

KAYA Instruments creates and maintains compatibility and interfaces for the most common and advanced vision image processing libraries and applications.

- Supported vision standards:

CoaXPress® GEN<i>CAM TRANSPORT LAYER

- Supported vision libraries:

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

Contact Us

International Distributors

sky blue microsystems

Sky Blue Microsystems GmbH
Geisenhausenerstr. 18
81379 Munich, Germany
+49 89 780 2970, info@skyblue.de
www.skyblue.de

ZERIF TECHNOLOGIES LTD.
A SKY BLUE COMPANY, FOUNDED 1999

In Great Britain:
Zerif Technologies Ltd.
Winnington House, 2 Woodberry Grove
Finchley, London N12 0DR
+44 115 855 7883, info@zerif.co.uk
www.zerif.co.uk