

## Iron3265 CoaXPress

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## Small Form Factor, Ruggedized Camera

### Innovative Approach

The **Iron 3265** is a low-cost, low-power, high resolution global CMOS camera with up to 50 Gbps CoaXPress v2.1 interface (Micro-BNC connector) which supports 65 MP high quality video at rates of up to 71fps.

### Intelligent Design

Iron3265 incorporates a GMAX3265 global shutter sensor with 3.2 $\mu$ m 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:

- 65 Megapixel up to 71 fps
- Monochrome and Color models
- Up to 9W power at full rate
- Full image processing feature set
- Up to 50 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 $\mu\text{m}$ x 3.2 $\mu\text{m}$
Resolution	9344 (H) x 7000 (V)
Sensor size	29.9 mm x 22.4 mm   7/3"
Sensor	Gpixel GMAX3265
Video output	x 4 channels CoaXPress v2.1 up to 50 (12.5 x 4) Gbps (CXP3, CXP6, CXP12)
Interface connector	x 4 Micro-BNC
Digitization	10 bit, 12 bit
Electronic shutter	Global shutter
Shutter speed	13.35 $\mu\text{s}$
Exposure control	Off / Internal / Auto
Image acquisition	Continuous / Triggered
Trigger input <sup>[1]</sup>	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	HS model:        71 fps @8 bit 58 fps @10 bit NS model:        31 fps @8 bit 31 fps @10 bit 31 fps @12 bit
Subsampling	1 x 2 / 2 x 1 / 2 x 2 (user configurable)
Monochrome/ color	Monochrome / color
Full well charge	10.9 ke <sup>-</sup> @ PGA gain x0.75
Dynamic range	65.0dB @ PGA gain x1.25
Dark current	5.3 e <sup>-</sup> pxl/sec @40°C
Quantum efficiency (QE) X FF	<65.3% @500 nm
Temporal noise	2.3 e <sup>-</sup> @ PGA gain x6
Angular response	15° (80% horizontal response)
Regulation	FCC Part 15 Class A, CE, RoHs2 (official certification optional)
On camera processing	<ul style="list-style-type: none"> <li>▪ Defect pixel correction</li> <li>▪ Digital binning (2 x 2)</li> <li>▪ ROI</li> <li>▪ Auto Exposure/Gain</li> <li>▪ LUT</li> <li>▪ Gain (Analog / Digital) – manual / auto</li> <li>▪ Auto/Manual black level</li> <li>▪ Image H/V flip</li> </ul>
Pulse generator	Yes, Programmable at 8 ns increments
Additional features	<ul style="list-style-type: none"> <li>▪ Over/under voltage protection</li> <li>▪ Three points of temperature sensing</li> <li>▪ Per-pixel FPN (optional)</li> <li>▪ Reverse voltage polarity protection</li> <li>▪ Frame-by-frame shutter speed change</li> <li>▪ Global reset</li> </ul>
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	375mA @ 24V
Power input	<ul style="list-style-type: none"> <li>PoCXP full support</li> <li>External 10-28V input</li> </ul>
Power consumption	<9W @ 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 <sup>[2]</sup>	MIL 810F

1. The output can be synchronized to the trigger on a frame by frame basis

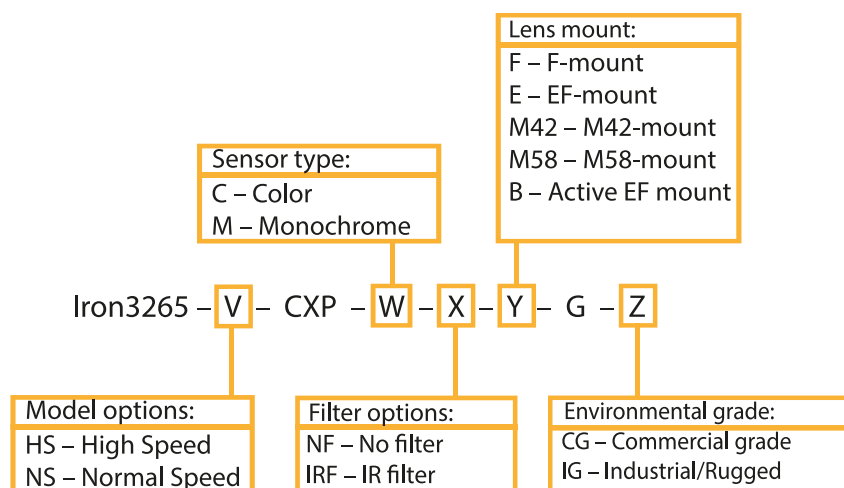
2. MIL 810F is only available for the Industrial/Rugged model and is not available in the commercial version

\* 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:



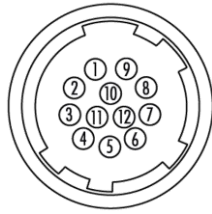
For example: a High-Speed Iron 3265 with a colored sensor, UV-IR cut filter and F-mount, rated for commercial use would go by **Iron3265-HS-CXP-C-IRF-F-G-CG**. It is also possible to buy peripheral equipment in addition to the camera as listed in the following table:

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

Please contact a sales representative over at [info@kayainstruments.com](mailto:info@kayainstruments.com) for a full list of peripherals including cables and frame grabbers.

# General Purpose Input Output

## GPIO Pinout – 12 Pin Hirose Connector



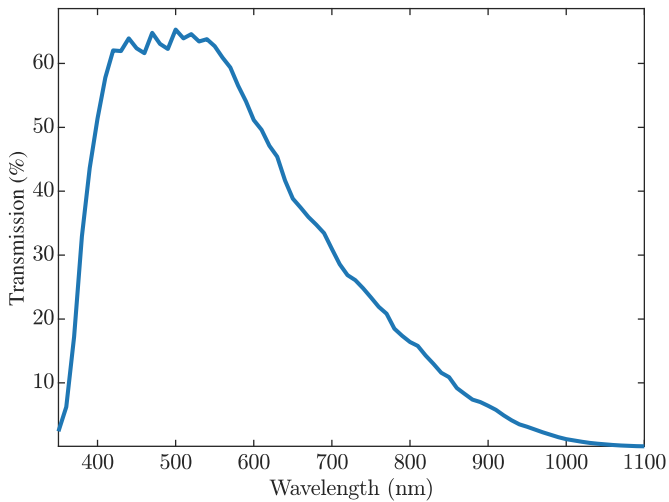
- |                       |                         |
|-----------------------|-------------------------|
| 1. DC Power return    | 7. OUT1 (TTL)           |
| 2. DC Power           | 8. IN1 (OPTO)           |
| 3. RS232 RX           | 9. IN2 (TTL)            |
| 4. RS232 TX           | 10. IN1/OUT1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

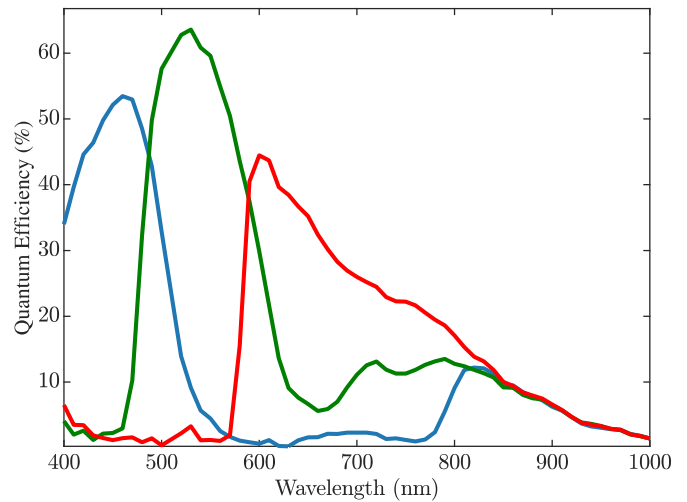
Product Name	Product Part Number
Hirose 12P connector, male	HR10A-10R-12PB
Hirose 12P connector, female	HR10A-10P-12S

## GMAX3265 Spectral Responses

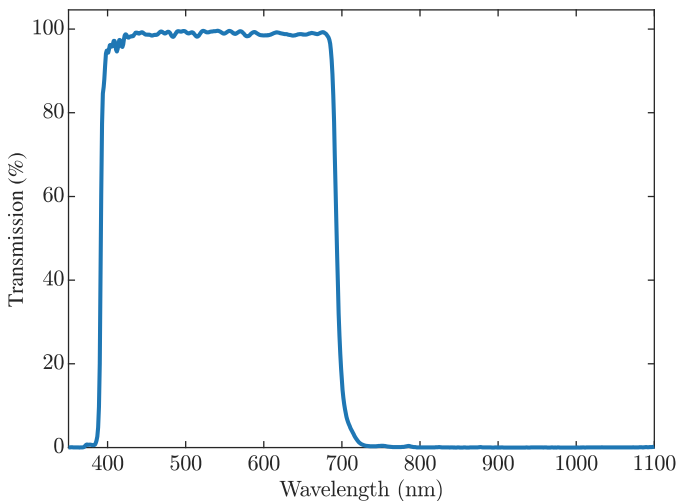
**GMAX3265 Mono**



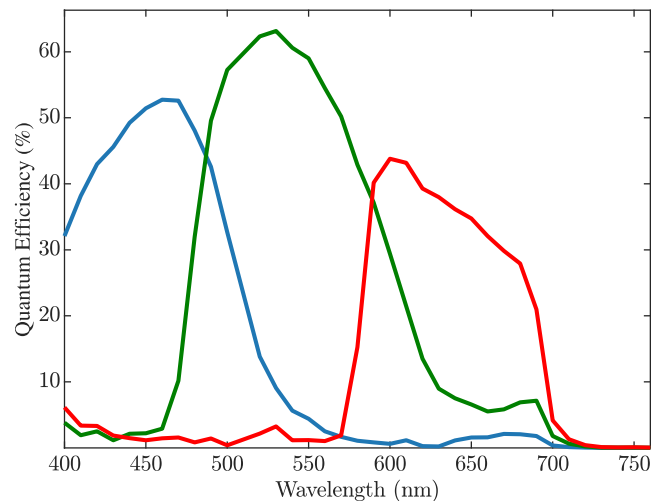
**GMAX3265 Color**



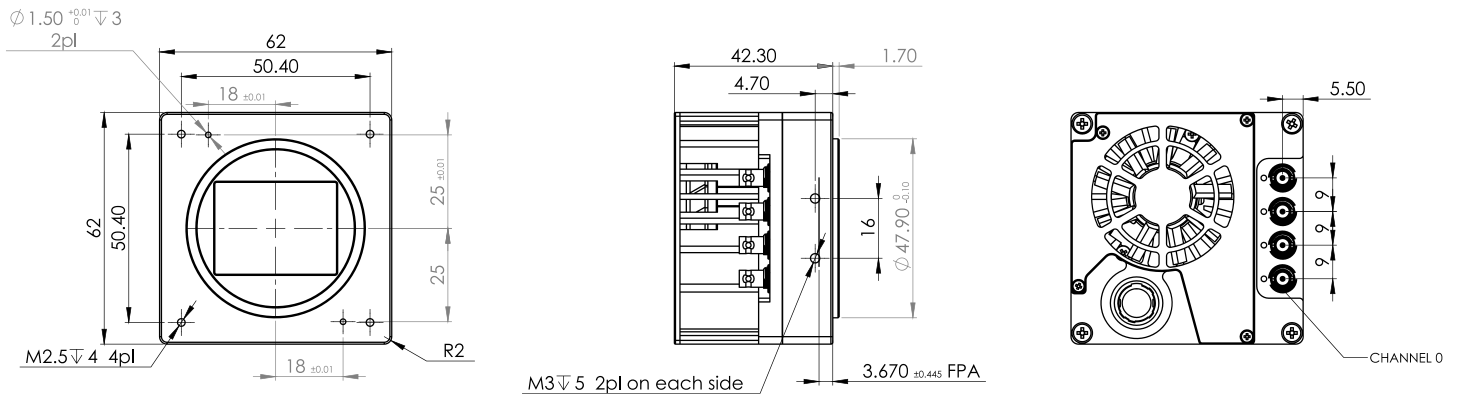
**UV-IR Cut Filter**



**GMAX3265 Color, UV-IR Cut filter**

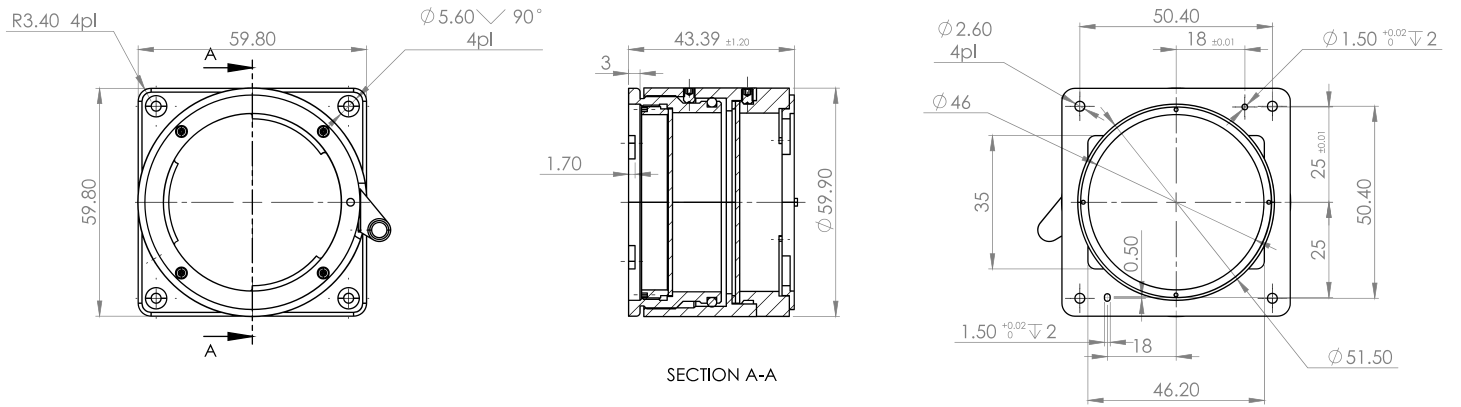


# Mechanical Drawings

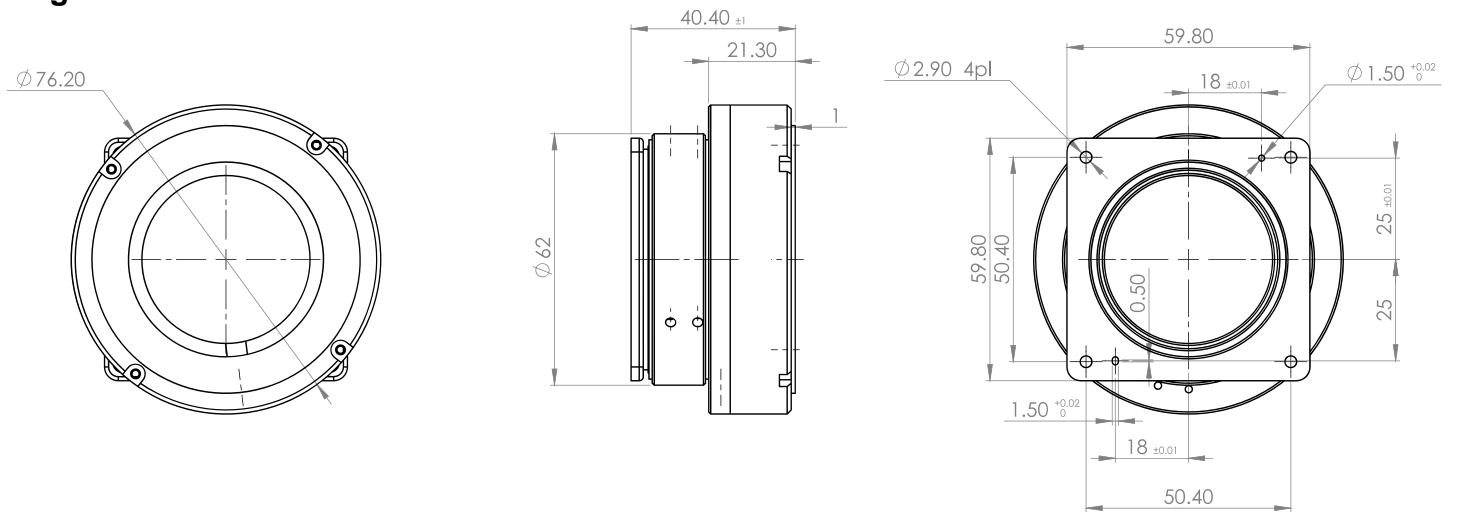


# Lens Mounts Mechanical Drawings

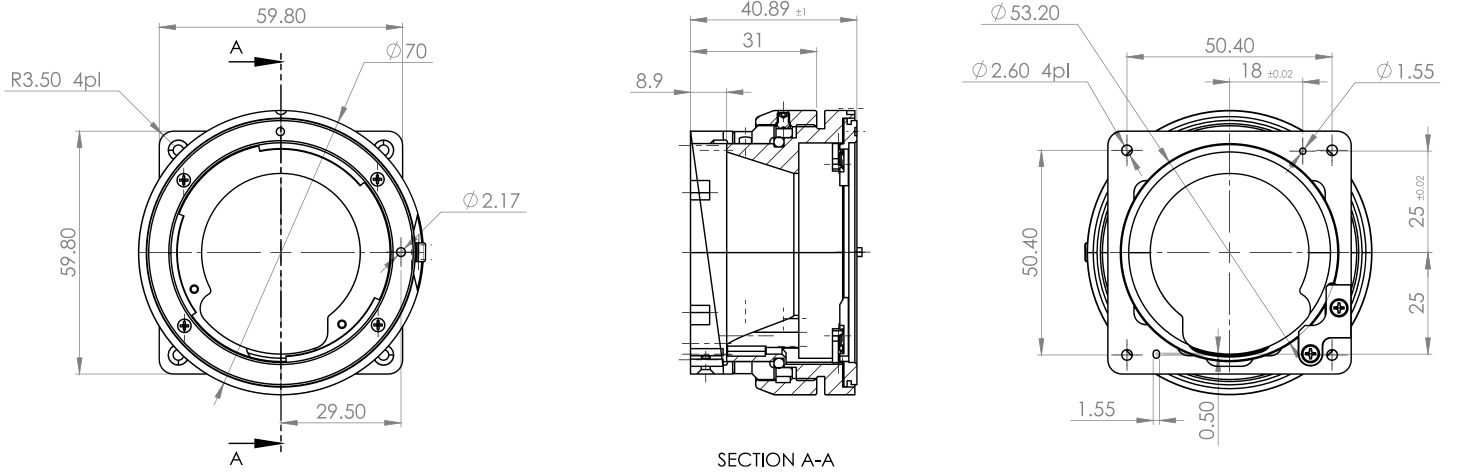
## Nikon F mount:



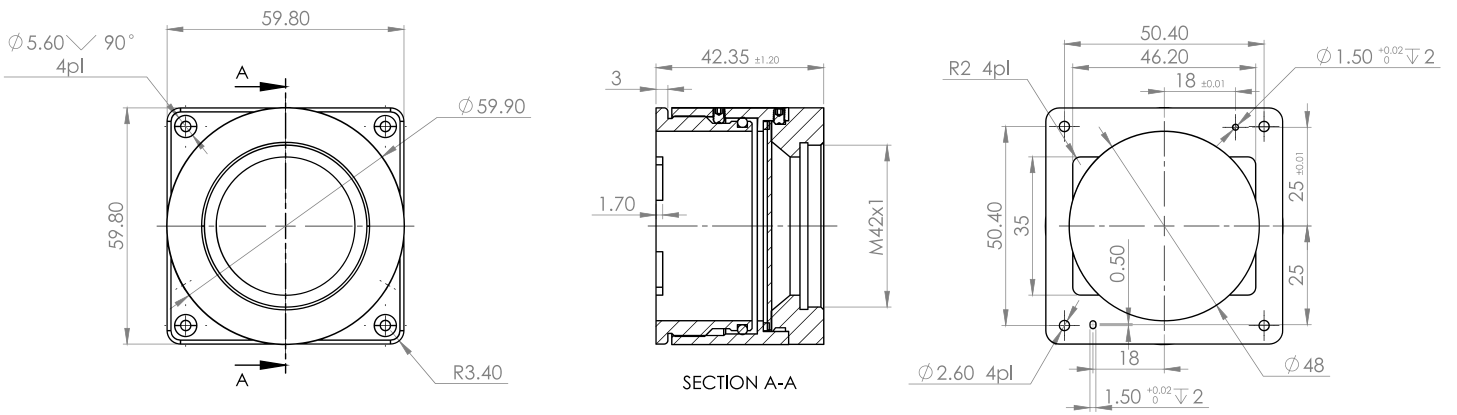
## Birger EF mount:



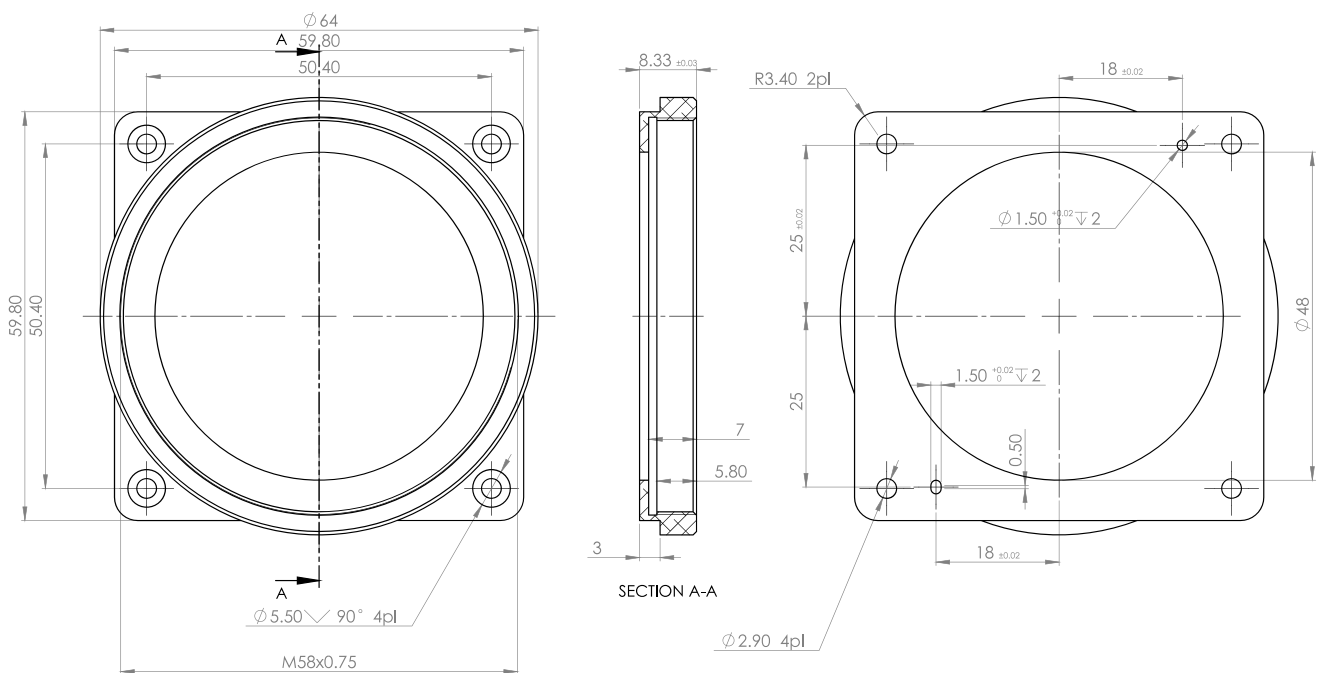
### Canon EF mount:



### 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:



❖ Supported vision libraries:



## Contact Us

Please feel free to contact our team with any questions or further inquiries at [info@kayainstruments.com](mailto:info@kayainstruments.com) – we will be happy to provide assistance and consultation.

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