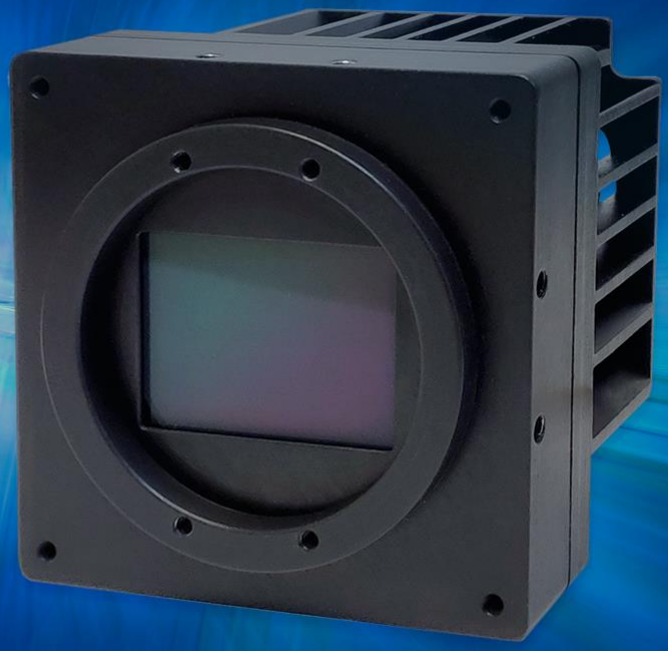
KAYA INSTRUMENTS



**Iron** CoaXPress 3265

# Iron CoaXPress
## 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 2.0 interface (Micro-BNC connector) which supports 65 MP high quality video at rates of up to 71fps.

### Intelligent Design

The GMAX3265 is a 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:

- 65 Megapixel up to 71 fps
- Monochrome and Color models
- Up to 7.5W power at full rate
- Full image processing feature set
- Pan/Tilt alignment of the sensor
- Up to 50 Gbps CoaXPress interface
- F / EF or DC Auto Iris 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 | 3.2 µm x 3.2 µm |
| 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 2.0 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 µs |
| Exposure control | Off / Internal / Auto |
| Image acquisition | Continuous / Triggered |
| Trigger input [1] | External, pulse generator, SW |
| Triger 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<br>61 fps @10 bit<br>51 fps @12 bit<br>NS model: 35.5 fps @10 bit<br>29.6 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$^-$ @ PGA gain x0.75 |
| Dynamic range | 66.0dB @ PGA gain x1.25 |
| Dark current | 5.3 e$^-$ pxl/sec @40°C |
| Quantum efficiency (QE) X FF | <65.3% @500 nm (according to sensor performance) |
| Temporal noise | 1.9 e$^-$ @ PGA gain x6 |
| Parasitic light sensitivity | <-89dB (angular dependence) |
| Angular response | 15° (80% response) |
| Latency | < 100 µs (on top of exposure time) |
| Communication latency | Gen<i>Cam – ~5 ms<br>Direct camera access – ~0.5 ms |
| Regulation | FCC Part 15 Class A, CE, RoHs2 (official certification optional) |
| On camera processing | ▪ Defect pixel correction<br>▪ Digital binning (2 x 2)<br>▪ ROI [2]<br>▪ Auto Exposure/Gain<br>▪ LUT<br>▪ Gain (Analog / Digital) – manual / auto<br>▪ Auto/Manual black level<br>▪ Image H/V flip |
| Pulse generator | Yes, Programmable at 8 ns increments |
| Additional features | ▪ Over/under voltage protection<br>▪ Three points of temperature sensing<br>▪ Per frame ROI change<br>▪ Per-pixel FPN (optional)<br>▪ Multi ROI Support (vertical only. Horizontal at full resolution)<br>▪ Reverse voltage polarity protection<br>▪ Frame-by-frame shutter speed change<br>▪ Global reset |
| GPIO connection | Two inputs, two outputs, external trigger & strobe controller |

## Mechanical & Electrical

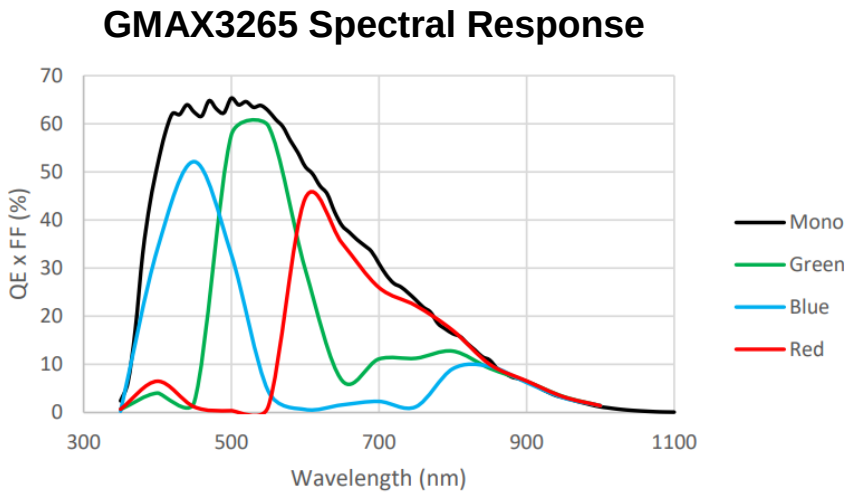
| Feature | Description |
|---|---|
| Dimensions (without lens mount) | 62 mm x 62 mm x 44.4 mm (Height x Width x Depth) |
| Lens mount | F-Mount, Canon EF-mount, Birger EF-mount |
| Weight (without lens or mount) | 185g |
| Typical current | 312mA @ 24V |
| Power input | PoCXP full support (10-28V with external power option) |
| Power consumption | <7.5W @ 24V DC |
| Mount | Front mount |
| Heat dissipation | Front heat dissipation, optional TEC cooling |
| Sensor Mechanical Positioning | ≤ 0.15° |
| Operating temperature | -40°C to 65°C, 10-90% humidity (non-condensing) |
| Storage temperature | -40°C to 70°C, 10-90% humidity (non-condensing) |
| Shock/Vibration | MIL 810F |

1. The output is synchronized to the trigger on a frame by frame basis
2. ROI position can change on a frame by frame basis

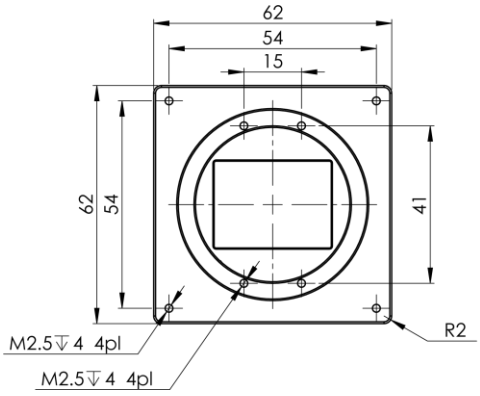
* Performance is measured at full resolution, maximum bitness and the maximum frame rate for that bitness

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

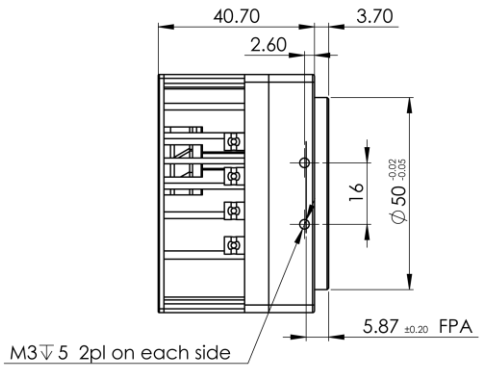
## Absolute Quantum Efficiency



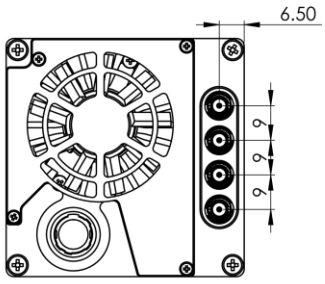

## Mechanical Drawings




Front View



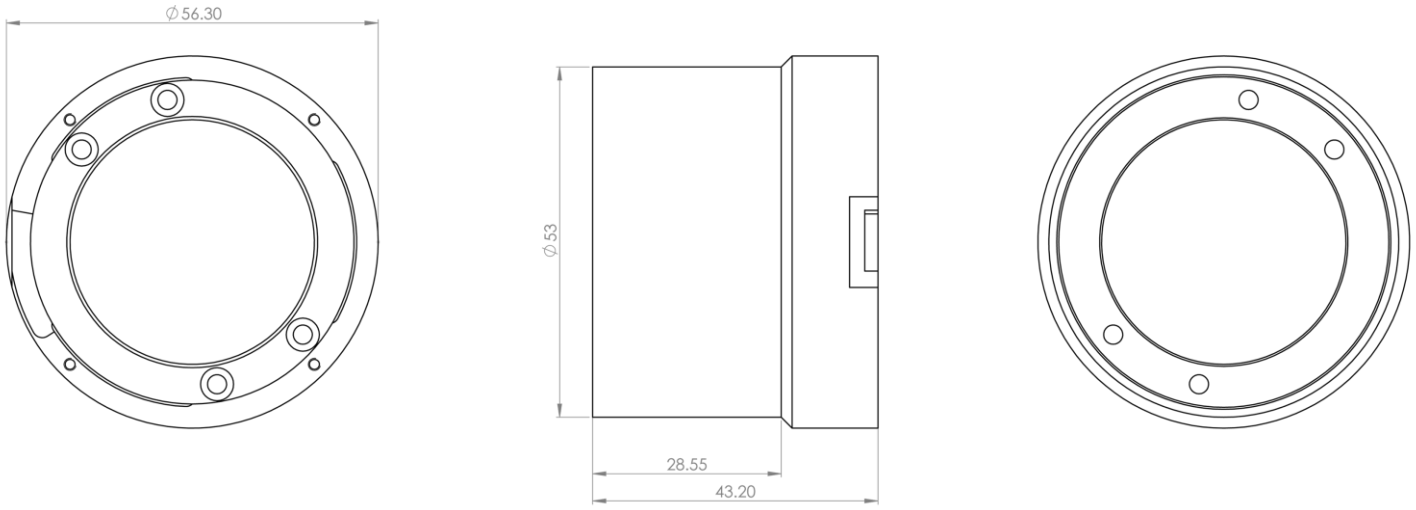

Side View



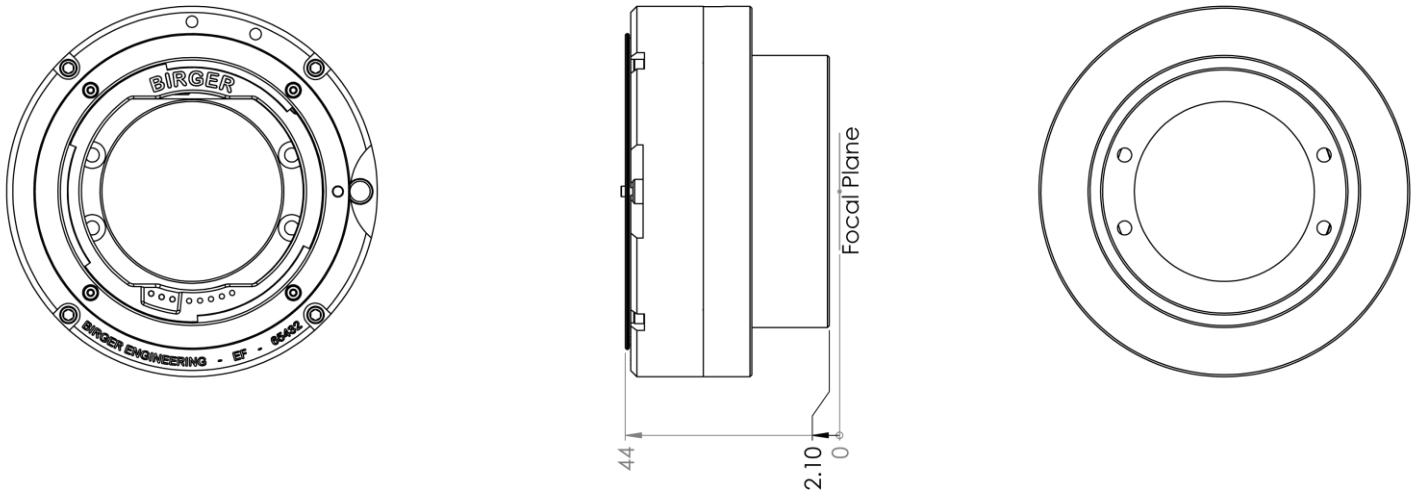

Back View

# Lens Mounts Mechanical Drawings

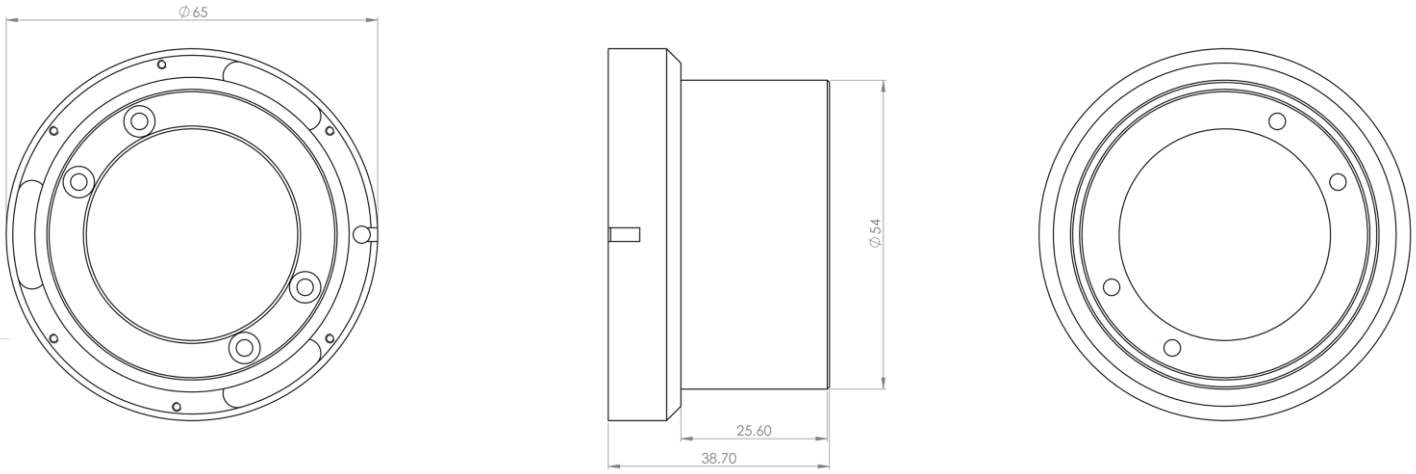
Nikon F mount:




Birger EF mount:

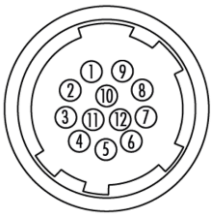



Canon EF mount:



## 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)

## 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

- Supported operating systems:

Windows, Linux

*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@kayainstruments.com** – we will be happy to provide assistance and consultation.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