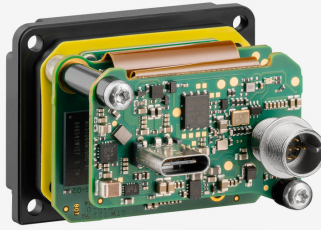
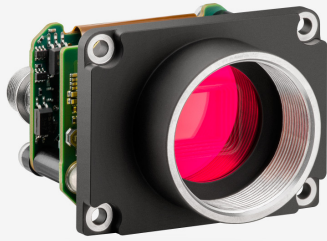


## U3-31J1SE-M-GL Rev.1.2 (1009190)

### In series

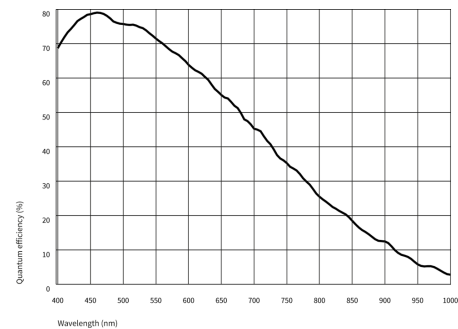
The model is in series and available for the long term.



## Specification

### Sensor

|   |                      |
|---|----------------------|
| Sensor type                             | CMOS Mono            |
| Shutter                                 | Global Shutter       |
| Sensor characteristic                   | Linear               |
| Readout mode                            | Progressive scan     |
| Pixel Class                             | 8 MP                 |
| Resolution                              | 8.13 Mpix            |
| Resolution (h x v)                      | 2856 x 2848 Pixel    |
| Aspect ratio                            | 1:1                  |
| ADC                                     | 12 bit               |
| Color depth (camera)                    | 12 bit               |
| Optical sensor class                    | 2/3"                 |
| Optical Size                            | 7.825 mm x 7.804 mm  |
| Optical sensor diagonal                 | 11.05 mm (1/1.45")   |
| Pixel size                              | 2.74 $\mu$ m         |
| Micro lens shift                        | 0.00                 |
| Manufacturer                            | Sony                 |
| Sensor Model                            | IMX546AAMJ-C         |
| Gain (master/RGB)                       | 15.9x/-              |
| AOI horizontal                          | same frame rate      |
| AOI vertical                            | increased frame rate |
| AOI image width / step width            | 256 / 2              |
| AOI image height / step width           | 1 / 1                |
| AOI position grid (horizontal/vertical) | 2 / 1                |
| Binning horizontal                      | same frame rate      |
| Binning vertical                        | same frame rate      |
| Binning method                          | M/C automatic        |
| Binning factor                          | 2 / 4 / 8            |
| Subsampling horizontal                  | same frame rate      |
| Subsampling vertical                    | same frame rate      |
| Subsampling method                      | M/C automatic        |
| Subsampling factor                      | 2, 4, 8              |



Subject to technical modifications (2023-12-14)

## Model

|   |                    |
|---|--------------------|
| Frame rate freerun mode (in 8-bit mode) | 47 fps             |
| Frame rate trigger (continuous)         | 47 fps             |
| Frame rate trigger (maximum)            | 48 fps             |
| Exposure time (minimum - maximum)       | 0.009 ms - 2000 ms |
| Long exposure (maximum)                 | 120000 ms          |
| Power consumption                       | 1.7 W - 3.5 W      |
| Image memory                            | 128 MB             |

## Ambient conditions

The temperature values given below refer to the outer device temperature of the camera housing.  
For PCB versions, refer to the separate hints in the respective documentation.

|                                     |                                 |
|-------------------------------------|---------------------------------|
| Device temperature during operation | 0 °C - 55 °C / 32 °F - 131 °F   |
| Device temperature during storage   | -20 °C - 60 °C / -4 °F - 140 °F |
| Humidity (relative, non-condensing) | 20 % - 80 %                     |

## Connectors

|                     |   |
|---------------------|---|
| Interface connector | USB Type-C                                |
| I/O connector       | 8-pin Hirose connector (HR25-7TR-8PA(73)) |
| Power supply        | USB cable                                 |

## Pin assignment I/O connector

|   |  |
|---|--|
| 1 | Ground (GND)                                 |
| 2 | Flash output with optocoupler (-) - Line 1   |
| 3 | General Purpose I/O (GPIO) 1, 3.3 V - Line 2 |
| 4 | Trigger input with optocoupler (-) - Line 0  |
| 5 | Flash output with optocoupler (+) - Line 1   |
| 6 | General Purpose I/O (GPIO) 2, 3.3 V - Line 3 |
| 7 | Trigger input with optocoupler (+) - Line 0  |
| 8 | Output supply voltage, 5 V (100 mA)          |



## Design

|                  |                             |
|------------------|-----------------------------|
| Lens Mount       | C-Mount                     |
| IP code          | -                           |
| Dimensions H/W/L | 34.0 mm x 44.0 mm x 31.0 mm |
| Mass             | 47 g                        |

## Features

|                   |                             |   |
|-------------------|-----------------------------|---|
| Image Acquisition | Freerun                     | ✓ |
|                   | Software trigger            | ✓ |
|                   | Hardware trigger            | ✓ |
|                   | Trigger controlled exposure | ✓ |
|                   | Denoisier                   | ✓ |
|                   | Long exposure               | ✓ |
|                   | Line scan                   | ✓ |
|                   | Line scan highspeed         | - |
| Flashing          | Flashing                    | ✓ |
|                   | PWM flashing                | ✓ |

|                           |                                |   |
|---------------------------|--------------------------------|---|
| Image Adjustments         | Auto exposure                  | ✓   |
|                           | Auto gain                      | ✓   |
|                           | Auto whitebalance              | -   |
|                           | Color correction               | -   |
|                           | Gamma                          | ✓   |
|                           | LUT                            | ✓   |
|                           | Mirror/flip                    | X/Y   |
| On-board Image Processing | Pixel formats                  | Mono8<br>Mono10<br>Mono10p<br>Mono12<br>Mono12p |
|                           | Region of interest             | ✓   |
|                           | Decimation (FPGA)              | ✓   |
|                           | Decimation (Sensor)            | 2x2   |
|                           | Binning (FPGA)                 | ✓   |
|                           | Binning (Sensor)               | 2x2<br>Increases frame rate.                    |
|                           |                                |   |
| Others                    | Chunks                         | ✓   |
|                           | Sequencer                      | ✓   |
|                           | Events                         | ✓   |
|                           | Firmware update                | ✓   |
|                           | 1st supported firmware version | 3.6   |