

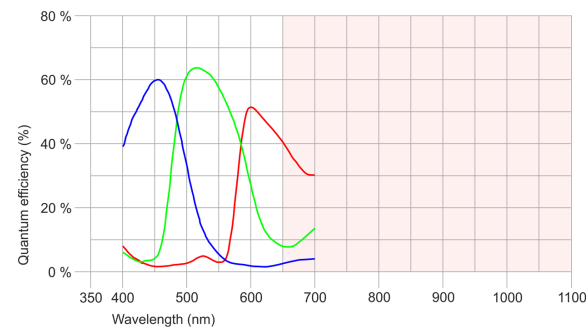
**In series**  
The model is in series and available for the long term.



Specification

Sensor

|                                         |                                           |
|-----------------------------------------|-------------------------------------------|
| Sensor type                             | CMOS Color                                |
| Shutter                                 | Rolling shutter / Global Start Shutter    |
| Sensor characteristic                   | Linear                                    |
| Pixel Class                             | 6 MP                                      |
| Resolution                              | 6.41 Mpix                                 |
| Resolution (h x v)                      | 3088 x 2076 Pixel                         |
| Aspect ratio                            | 3:2                                       |
| ADC                                     | 12 bit                                    |
| Color depth (camera)                    | 12 bit                                    |
| Optical sensor class                    | 1/1.8"                                    |
| Optical Size                            | 7.411 mm x 4.982 mm                       |
| Optical sensor diagonal                 | 8.93 mm 1/1.8"                            |
| Pixel size                              | 2.4 µm                                    |
| CRA (Chief Ray Angle)                   | 0 °                                       |
| Manufacturer                            | Sony                                      |
| Sensor Model                            | IMX178LQJ-C                               |
| Gain (master/RGB)                       | 16x/16x                                   |
| AOI horizontal                          | same frame rate                           |
| AOI vertical                            | increased frame rate                      |
| AOI image width / step width            | 256 / 2                                   |
| AOI image height / step width           | 2 / 2                                     |
| AOI position grid (horizontal/vertical) | 2 / 2                                     |
| Binning horizontal                      | same frame rate                           |
| Binning vertical                        | same frame rate                           |
| Binning method                          | Horizontal: addition / Vertical: addition |
| Binning factor                          | 2x2                                       |
| Decimation (subsampling) horizontal     | -                                         |
| Decimation (subsampling) vertical       | -                                         |
| Decimation (subsampling) method         | M/C automatic                             |



## Model

|                                    |                    |
|------------------------------------|--------------------|
| Frame rate freerun mode            | 58 fps             |
| Frame rate trigger (continuous)    | 56 fps             |
| Frame rate trigger (maximum)       | 56 fps             |
| Exposure time (minimum - maximum)  | 0.013 ms - 1063 ms |
| Long exposure (maximum)            | 60043 ms           |
| Line rate freerun mode (line scan) | 708 1/s            |
| Line rate trigger mode (line scan) | 1197 1/s           |
| Lines per frame (line scan)        | 8000               |
| Power consumption                  | 1.6 W - 3.1 W      |
| Image memory                       | 128 MB             |

## Ambient conditions

For PCB versions, refer to the separate hints in the respective documentation.

|                                             |                                 |
|---------------------------------------------|---------------------------------|
| Allowed device temperature during operation | 0 °C - 55 °C / 32 °F - 131 °F   |
| Allowed 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             | 45 g                        |
| Housing material | -                           |

## Features

List of on-camera image pre-processing features.

All features of the table are available via our IDS peak software for image pre-processing on the host computer (sensor model dependent).

|                   |                             |   |
|-------------------|-----------------------------|---|
| Image Acquisition | Freerun                     | ✓ |
|                   | Software trigger            | ✓ |
|                   | Hardware trigger            | ✓ |
|                   | Trigger controlled exposure | - |
|                   | Denoiser                    | ✓ |
|                   | Long exposure               | ✓ |
|                   | Line scan                   | ✓ |
|                   | Global start                | ✓ |

Subject to technical modifications (2026-09-11)

|                           |                                |                              |
|---------------------------|--------------------------------|------------------------------|
| 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                        |
|                           |                                | BayerRG8                     |
|                           |                                | BayerRG10                    |
|                           |                                | BayerRG10p                   |
|                           |                                | BayerRG12                    |
|                           |                                | BayerRG12p                   |
|                           |                                | BGR8                         |
|                           |                                | RGB8                         |
|                           |                                | BGR10p32                     |
|                           |                                | RGB10p32                     |
|                           | Region of interest             | ✓                            |
|                           | Decimation (FPGA)              | ✓                            |
|                           | Decimation (Sensor)            |                              |
|                           | Binning (FPGA)                 | ✓                            |
|                           | Binning (Sensor)               | 2x2<br>Increases frame rate. |
| Others                    | Chunks                         | ✓                            |
|                           | Sequencer                      | -                            |
|                           | Events                         | ✓                            |
|                           | Firmware update                | ✓                            |
|                           | 1st supported firmware version | 2.20.17746                   |