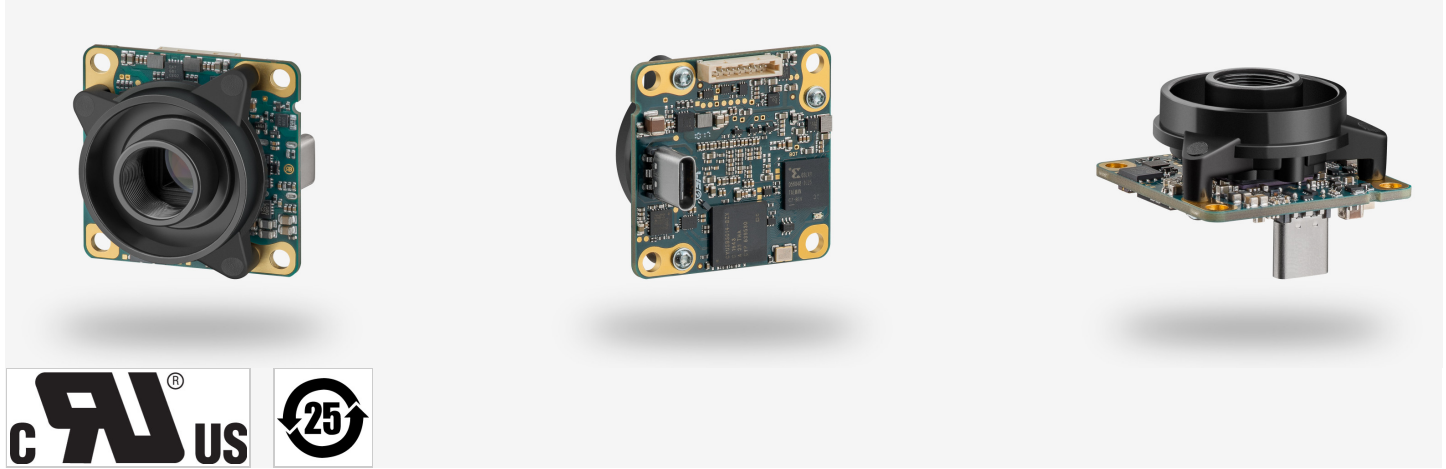
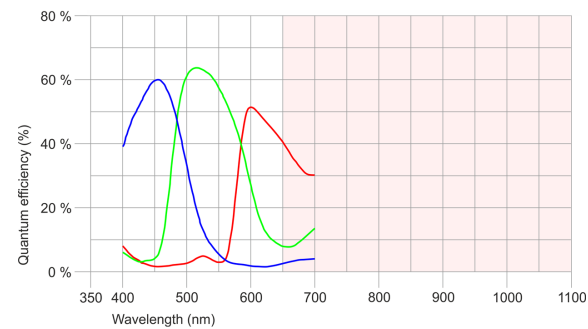


**In series**  
The model is in series and available for the long term.



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)                       | 11.1x/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                      | increased frame rate                      |
| Binning vertical                        | increased 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           |
| Power consumption                 | 0.8 W - 1.7 W      |
| Image memory                      | -                  |

### 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 - 80 °C / -4 °F - 176 °F |
| Humidity (relative, non-condensing)         | 20 % - 80 %                     |

### Connectors

|                     |                                          |
|---------------------|------------------------------------------|
| Interface connector | USB Type-C                               |
| I/O connector       | 10-pin Wuerth connector (WR-WTB 1.00 mm) |
| Power supply        | USB cable                                |

### Pin assignment I/O connector

|    |                                                                |
|----|----------------------------------------------------------------|
| 1  | Voltage output 5 V, max. 400 mA                                |
| 2  | Ground (GND)                                                   |
| 3  | General Purpose I/O (GPIO) 2, 3.3 V - Line 3                   |
| 4  | General Purpose I/O (GPIO) 1, 3.3 V - Line 2                   |
| 5  | I2C clock signal - requires USB3 Vision Firmware 3.2 or higher |
| 6  | I2C data signal - requires USB3 Vision Firmware 3.2 or higher  |
| 7  | Trigger input without optocoupler 3.3 V - Line 0               |
| 8  | Flash output without optocoupler 3.3 V - Line 1                |
| 9  | Ground (GND)                                                   |
| 10 | Voltage output 3.3 V                                           |



### Design

|                  |                             |
|------------------|-----------------------------|
| Lens Mount       | S-Mount                     |
| IP code          | -                           |
| Dimensions H/W/L | 36.0 mm x 36.0 mm x 26.0 mm |
| Mass             | 16 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                | ✓ |

## U3-3881LE-C-HQ-VU Rev.1.2 (1007995)

|                           |                                |                                                                |
|---------------------------|--------------------------------|----------------------------------------------------------------|
| 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                  | BayerRG8<br>BayerRG10p<br>BayerRG12<br>BayerRG12p<br>BayerRG10 |
|                           | 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                                                           |