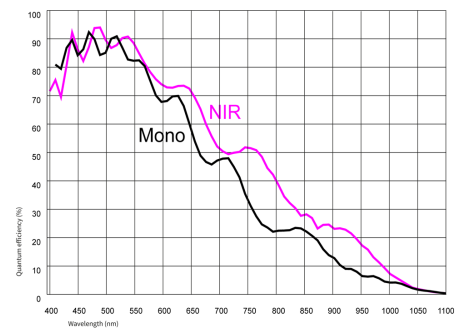


**In series**  
The model is in series and available for the long term.



Specification

|                                         |                             |
|-----------------------------------------|-----------------------------|
| Sensor                                  |                             |
| Sensor type                             | CMOS Mono                   |
| Shutter                                 | Rolling shutter             |
| Sensor characteristic                   | Linear                      |
| Pixel Class                             | 5 MP                        |
| Resolution                              | 5.04 Mpix                   |
| Resolution (h x v)                      | 2592 x 1944 Pixel           |
| Aspect ratio                            | 4:3                         |
| ADC                                     | 12 bit                      |
| Color depth (camera)                    | 12 bit                      |
| Optical sensor class                    | 1/2.5"                      |
| Optical Size                            | 5.702 mm x 4.277 mm         |
| Optical sensor diagonal                 | 7.13 mm 1/2.5"              |
| Pixel size                              | 2.2 µm                      |
| CRA (Chief Ray Angle)                   | 9 °                         |
| Manufacturer                            | Onsemi                      |
| Sensor Model                            | AR0522SRSM09SURA0           |
| Gain (master/RGB)                       | 15x/-                       |
| AOI horizontal                          | same frame rate             |
| AOI vertical                            | increased frame rate        |
| AOI image width / step width            | 48 / 12                     |
| AOI image height / step width           | 4 / 2                       |
| AOI position grid (horizontal/vertical) | 8 / 2                       |
| Binning horizontal                      | same frame rate             |
| Binning vertical                        | increased frame rate        |
| Binning method                          | Horizontal: - / Vertical: - |
| Binning factor                          | 2x2                         |
| Decimation (subsampling) horizontal     | same frame rate             |
| Decimation (subsampling) vertical       | increased frame rate        |
| Decimation (subsampling) method         | Color                       |
| Decimation (subsampling) factor         | 2x2_4                       |



## Model

|                                   |                  |
|-----------------------------------|------------------|
| Frame rate freerun mode           | 48 fps           |
| Frame rate trigger (continuous)   | 44 fps           |
| Frame rate trigger (maximum)      | 44 fps           |
| Exposure time (minimum - maximum) | 0.01 ms - 635 ms |
| Power consumption                 | 0.6 W - 1.2 W    |
| Image memory                      | -                |

## Ambient conditions

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

|                                             |                                 |
|---------------------------------------------|---------------------------------|
| Allowed device temperature during operation | 0 °C - 85 °C / 32 °F - 185 °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       | 8-pin Wuerth connector |
| Power supply        | USB cable              |

## Pin assignment I/O connector

|   |                                            |
|---|--------------------------------------------|
| 1 | Voltage output 3.3 V                       |
| 2 | Ground (GND)                               |
| 3 | Flash output without optocoupler - Line 1  |
| 4 | Trigger input without optocoupler - Line 0 |
| 5 | General Purpose I/O (GPIO) 1 - Line 2      |
| 6 | General Purpose I/O (GPIO) 2 - Line 3      |
| 7 | Ground (GND)                               |
| 8 | USB Power: 5 V, max. 400 mA                |



## Design

|                  |                             |
|------------------|-----------------------------|
| Lens Mount       | S-Mount                     |
| IP code          | -                           |
| Dimensions H/W/L | 36.0 mm x 36.0 mm x 26.3 mm |
| Mass             | 13 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                | - |

### Flashing

|              |   |
|--------------|---|
| Flashing     | ✓ |
| PWM flashing | - |

## U3-3681XLE-NIR-GL-VU Rev.1.2 (1009381)

### Image Adjustments

|                   |     |
|-------------------|-----|
| Auto exposure     | -   |
| Auto gain         | -   |
| Auto whitebalance | -   |
| Color correction  | -   |
| Gamma             | -   |
| LUT               | -   |
| Mirror/flip       | X/Y |

### On-board Image Processing

|                     |                                       |
|---------------------|---------------------------------------|
| Pixel formats       | Mono8<br>Mono10g40IDS<br>Mono12g24IDS |
| Region of interest  | ✓                                     |
| Decimation (FPGA)   | -                                     |
| Decimation (Sensor) | 2x(2,4)                               |
| Binning (FPGA)      | -                                     |
| Binning (Sensor)    | 2x2<br>Increases frame rate.          |

### Others

|                                |     |
|--------------------------------|-----|
| Chunks                         | -   |
| Sequencer                      | -   |
| Events                         | -   |
| Firmware update                | ✓   |
| 1st supported firmware version | 3.1 |