

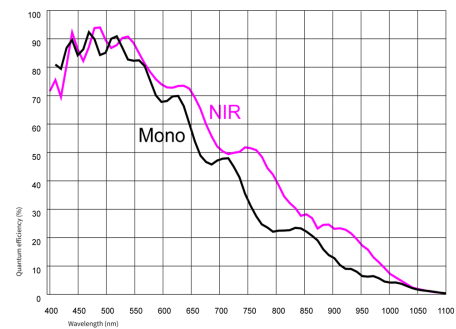
**In series**  
The model is in series and available for the long term.



Specification

Sensor

|                                         |                                           |
|-----------------------------------------|-------------------------------------------|
| Sensor type                             | CMOS Mono                                 |
| Shutter                                 | Rolling shutter / Global Start 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                            | AR0521SR2M09SURA0                         |
| 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) | 4 / 2                                     |
| Binning horizontal                      | increased frame rate                      |
| Binning vertical                        | increased frame rate                      |
| Binning method                          | Horizontal: addition / Vertical: addition |
| Binning factor                          | 2x2                                       |
| Decimation (subsampling) horizontal     | increased frame rate                      |
| Decimation (subsampling) vertical       | increased frame rate                      |
| Decimation (subsampling) method         | M/C automatic                             |



### Model

|                                   |                   |
|-----------------------------------|-------------------|
| Frame rate freerun mode           | 49 fps            |
| Frame rate trigger (continuous)   | 46 fps            |
| Frame rate trigger (maximum)      | 46 fps            |
| Exposure time (minimum - maximum) | 0.016 ms - 658 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.

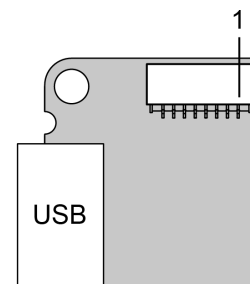
|                                             |                                 |
|---------------------------------------------|---------------------------------|
| Allowed device temperature during operation | 0 °C - 85 °C / 32 °F - 185 °F   |
| Allowed device temperature during storage   | -20 °C - 80 °C / -4 °F - 176 °F |
| Humidity (relative, non-condensing)         | 20 % - 80 %                     |

### Connectors

|                     |                        |
|---------------------|------------------------|
| Interface connector | USB 3.0 micro-B        |
| 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 | 32.5 mm x 32.5 mm x 14.0 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 | - |

## U3-3681XLS-M Rev.1.2 (1008349)

|                           |                                |                                       |
|---------------------------|--------------------------------|---------------------------------------|
| 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)            | -                                     |
|                           | Binning (FPGA)                 | -                                     |
|                           | Binning (Sensor)               | 2x2<br>Increases frame rate.          |
|                           |                                |                                       |
| Others                    | Chunks                         | -                                     |
|                           | Sequencer                      | -                                     |
|                           | Events                         | -                                     |
|                           | Firmware update                | ✓                                     |
|                           | 1st supported firmware version | 3.2                                   |