

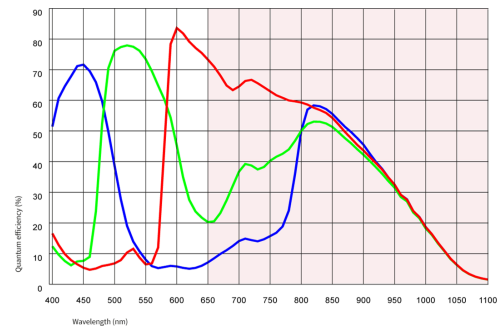
In series

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



Specification

|                                         |                                   |
|-----------------------------------------|-----------------------------------|
| Sensor                                  |                                   |
| Sensor type                             | CMOS Color                        |
| Shutter                                 | Rolling shutter                   |
| Sensor characteristic                   | Linear                            |
| Pixel Class                             | 20 MP                             |
| Resolution                              | 19.80 Mpix                        |
| Resolution (h x v)                      | 5136 x 3856 Pixel                 |
| Aspect ratio                            | 4:3                               |
| ADC                                     | 10 bit                            |
| Color depth (camera)                    | 10 bit                            |
| Optical sensor class                    | 1/1.8"                            |
| Optical Size                            | 7.168 mm x 5.376 mm               |
| Optical sensor diagonal                 | 8.96 mm 1/1.8"                    |
| Pixel size                              | 1.4 μm                            |
| CRA (Chief Ray Angle)                   | 13 °                              |
| Manufacturer                            | Onsemi                            |
| Sensor Model                            | AR2020CSSC13SMTA0                 |
| Gain (master/RGB)                       | 8x/16x                            |
| AOI horizontal                          | same frame rate                   |
| AOI vertical                            | increased frame rate              |
| AOI image width / step width            | 648 / 12                          |
| AOI image height / step width           | 2 / 2                             |
| AOI position grid (horizontal/vertical) | 8 / 2                             |
| Binning horizontal                      | increased frame rate              |
| Binning vertical                        | increased frame rate              |
| Binning method                          | Horizontal: mean / Vertical: mean |
| Binning factor                          | 2x2                               |
| Decimation (subsampling) horizontal     | -                                 |
| Decimation (subsampling) vertical       | -                                 |
| Decimation (subsampling) method         | -                                 |



### Model

|                                   |                    |
|-----------------------------------|--------------------|
| Frame rate freerun mode           | 14 fps             |
| Frame rate trigger (continuous)   | 14 fps             |
| Frame rate trigger (maximum)      | 14 fps             |
| Exposure time (minimum - maximum) | 0.017 ms - 1144 ms |
| Power consumption                 | 0.5 W - 1 W        |
| Image memory                      | -                  |

### Ambient conditions

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

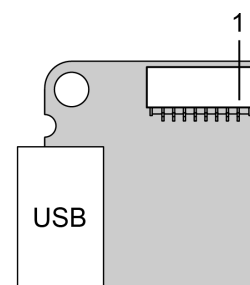
|                                             |                                 |
|---------------------------------------------|---------------------------------|
| Allowed device temperature during operation | 0 °C - 55 °C / 32 °F - 131 °F   |
| Allowed device temperature during storage   | -20 °C - 80 °C / -4 °F - 176 °F |
| Humidity (relative, non-condensing)         | 20 % - 80 %                     |

### Connectors

|                     |                        |
|---------------------|------------------------|
| Interface connector | USB 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       | CS- / C-Mount               |
| IP code          | -                           |
| Dimensions H/W/L | 32.5 mm x 32.5 mm x 14.0 mm |
| Mass             | 15 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 | - |

## U3-36P4XLS-C-HQ Rev.1.2 (1009711)

|                           |                                |                              |
|---------------------------|--------------------------------|------------------------------|
| Image Adjustments         | Auto exposure                  | -                            |
|                           | Auto gain                      | -                            |
|                           | Auto whitebalance              | -                            |
|                           | Color correction               | -                            |
|                           | Gamma                          | -                            |
|                           | LUT                            | -                            |
|                           | Mirror/flip                    | X/Y                          |
| On-board Image Processing | Pixel formats                  | BayerGR8<br>BayerGR10g40IDS  |
|                           | 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 | 3.21                         |