

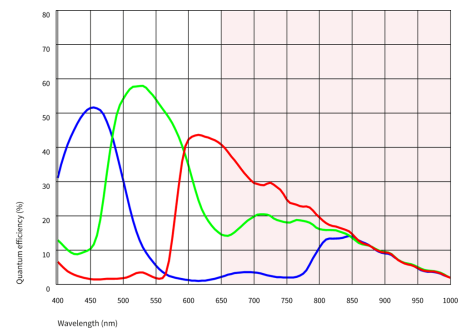
**In series**  
The model is in series and available for the long term.



Specification

Sensor

|                                         |                                           |
|-----------------------------------------|-------------------------------------------|
| Sensor type                             | CMOS Color                                |
| Shutter                                 | Global Shutter                            |
| Sensor characteristic                   | Linear                                    |
| Pixel Class                             | 12 MP                                     |
| Resolution                              | 12.42 Mpix                                |
| Resolution (h x v)                      | 4128 x 3008 Pixel                         |
| Aspect ratio                            | 4:3                                       |
| ADC                                     | 12 bit                                    |
| Color depth (camera)                    | 12 bit                                    |
| Optical sensor class                    | 1/1.1"                                    |
| Optical Size                            | 11.311 mm x 8.242 mm                      |
| Optical sensor diagonal                 | 14 mm 1/1.1"                              |
| Pixel size                              | 2.74 µm                                   |
| CRA (Chief Ray Angle)                   | 0 °                                       |
| Manufacturer                            | Sony                                      |
| Sensor Model                            | IMX545-AAQJ-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                      | -                                         |
| Binning vertical                        | -                                         |
| Binning method                          | Horizontal: addition / Vertical: addition |
| Binning factor                          | -                                         |
| Decimation (subsampling) horizontal     | -                                         |
| Decimation (subsampling) vertical       | -                                         |
| Decimation (subsampling) method         | M/C automatic                             |



## Model

|                                    |                    |
|------------------------------------|--------------------|
| Frame rate freerun mode            | 32 fps             |
| Frame rate trigger (continuous)    | 32 fps             |
| Frame rate trigger (maximum)       | 33 fps             |
| Exposure time (minimum - maximum)  | 0.012 ms - 2000 ms |
| Long exposure (maximum)            | 120000 ms          |
| Line rate freerun mode (line scan) | 801 1/s            |
| Line rate trigger mode (line scan) | 807 1/s            |
| Lines per frame (line scan)        | 8000               |
| Power consumption                  | 1.7 W - 3.8 W      |
| Image memory                       | 128 MB             |

## HDR

|      |           |
|------|-----------|
| Mode | Sequencer |
|------|-----------|

## 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             | 47 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).

## U3-31L1SE-C-HQ Rev.1.2 (1009181)

|                           |                             |                                |
|---------------------------|-----------------------------|--------------------------------|
| Image Acquisition         | Freerun                     | ✓                              |
|                           | Software trigger            | ✓                              |
|                           | Hardware trigger            | ✓                              |
|                           | Trigger controlled exposure | ✓                              |
|                           | Denoiser                    | ✓                              |
|                           | Long exposure               | ✓                              |
|                           | Line scan                   | ✓                              |
| 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)              | ✓                              |
| Others                    |                             | Binning (Sensor)               |
|                           |                             | Chunks                         |
|                           |                             | Sequencer                      |
|                           |                             | Events                         |
|                           |                             | Firmware update                |
|                           |                             | 1st supported firmware version |
|                           |                             | 3.6                            |