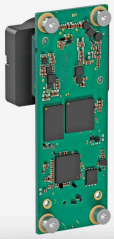
# U3-3131ACP-C-HQ Rev.1.2 (1008897)

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



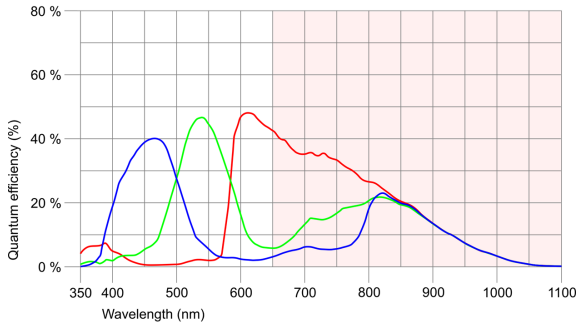




## Specification

### Sensor

| | |
|---|---|
| Sensor type | CMOS Color |
| Shutter | Global Shutter |
| Sensor characteristic | Linear |
| Pixel Class | 0.5 MP |
| Resolution | 0.53 Mpix |
| Resolution (h x v) | 832 x 632 Pixel |
| Aspect ratio | 4:3 |
| ADC | 10 bit |
| Color depth (camera) | 10 bit |
| Optical sensor class | 1/3.6" |
| Optical Size | 3.840 mm x 2.880 mm |
| Optical sensor diagonal | 4.8 mm 1/3.6" |
| Pixel size | 4.8 µm |
| CRA (Chief Ray Angle) | 1.7 ° |
| Manufacturer | Onsemi |
| Sensor Model | NOIP1SE0500A-QDI |
| 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 |







IDS Imaging Development Systems Inc.
800 W Cummings Park Ste 2950 · Woburn, MA 01801-7221 · Phone +1 (781) 787-0048 · E-Mail usasales@ids-imaging.com

# U3-3131ACP-C-HQ Rev.1.2 (1008897)

## Model

| | |
|---|---|
| Frame rate freerun mode | 408 fps |
| Frame rate trigger (continuous) | 408 fps |
| Frame rate trigger (maximum) | 408 fps |
| Exposure time (minimum - maximum) | 0.045 ms - 2000 ms |
| Line rate freerun mode (line scan) | 8035 1/s |
| Line rate trigger mode (line scan) | 8035 1/s |
| Lines per frame (line scan) | 8000 |
| Power consumption | 0 W - 0 W |
| Image memory | 128 MB |

## Ambient conditions

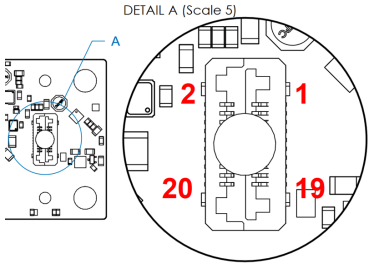
For PCB versions, refer to the separate hints in the respective documentation.

| | |
|---|---|
| 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 | Samtec LSHM 20-pin |
| I/O connector | 20-pin header (Samtec LSHM-110-L02.5-L-DV-A-N-K-TR) |
| Power supply | USB cable |

## Pin assignment I/O connector




| | |
|---|---|
| 1 | Input power supply (VCC), 5 V DC USB |
| 2 | Do not connect (for future use) |
| 3 | Input power supply (VCC), 5 V DC USB |
| 4 | Do not connect (for future use) |
| 5 | USB 2 data (-) |
| 6 | I2C SDA (signal data) 3.3 V |
| 7 | USB 2 data (+) |
| 8 | I2C SCL (signal clock) 3.3 V |
| 9 | Ground (GND) |
| 10 | Trigger input without optocoupler 3.3 V |
| 11 | USB 3 TX (-) |
| 12 | Flash output without optocoupler 3.3 V 8 mA |
| 13 | USB 3 TX (+) |
| 14 | General Purpose I/O (GPIO) 1, 3.3 V |
| 15 | Ground (GND) |
| 16 | General Purpose I/O (GPIO) 2, 3.3 V |
| 17 | USB 3 RX (-) |
| 18 | Do not connect (for future use) |
| 19 | USB 3 RX (+) |
| 20 | Output power voltage, 5 V (900 mA – camera current depending on sensor) |

## Design

| | |
|---|---|
| Lens Mount | C-Mount |
| IP code | - |
| Dimensions H/W/L | 84.0 mm x 40.0 mm x 29.7 mm |
| Mass | 41 g |
| Housing material | - |




IDS Imaging Development Systems Inc.
800 W Cummings Park Ste 2950 · Woburn, MA 01801-7221 · Phone +1 (781) 787-0048 · E-Mail usasales@ids-imaging.com

# 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 | ✓ |
| Flashing | Flashing | ✓ |
| | PWM flashing | ✓ |
| Image Adjustments | Auto exposure | ✓ |
| | Auto gain | ✓ |
| | Auto whitebalance | ✓ |
| | Color correction | - |
| | Gamma | ✓ |
| | LUT | ✓ |
| | Mirror/flip | Y |
| On-board Image Processing | Pixel formats | BayerRG8<br>BayerRG10<br>BayerRG10p |
| | Region of interest | ✓ |
| | Decimation (FPGA) | ✓ |
| | Decimation (Sensor) | |
| | Binning (FPGA) | ✓ |
| | Binning (Sensor) | |
| Others | Chunks | - |
| | Sequencer | - |
| | Events | ✓ |
| | Firmware update | ✓ |
| | 1st supported firmware version | 3.6 |


IDS Imaging Development Systems Inc.
800 W Cummings Park Ste 2950 · Woburn, MA 01801-7221 · Phone +1 (781) 787-0048 · E-Mail usasales@ids-imaging.com