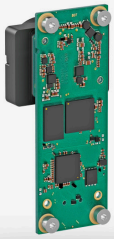
U3-31L1ACP-C-HQ Rev.1.2 (1009204)

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



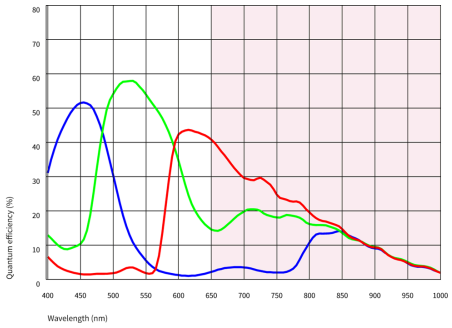




Specification

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



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

U3-31L1ACP-C-HQ Rev.1.2 (1009204)

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	2 W - 4.1 W
Image memory	128 MB

Ambient conditions

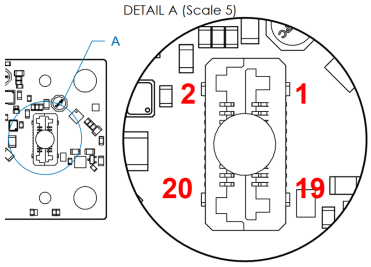
For PCB versions, refer to the separate hints in the respective documentation.

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	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)	✓
	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