U3-31F2ACP-C Rev.1.2 (1009225)

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

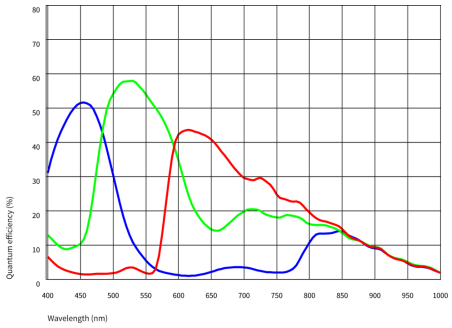




Specification

Sensor

Sensor type	CMOS Color
Shutter	Global Shutter
Sensor characteristic	Linear
Pixel Class	5 MP
Resolution	5.10 Mpix
Resolution (h x v)	2472 x 2064 Pixel
Aspect ratio	5:4
ADC	12 bit
Color depth (camera)	12 bit
Optical sensor class	1/1.8"
Optical Size	6.773 mm x 5.655 mm
Optical sensor diagonal	8.82 mm 1/1.8"
Pixel size	2.74 µm
CRA (Chief Ray Angle)	0 °
Manufacturer	Sony
Sensor Model	IMX547-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	increased frame rate
Decimation (subsampling) vertical	increased frame rate
Decimation (subsampling) method	M/C automatic



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Model

Frame rate freerun mode	75 fps
Frame rate trigger (continuous)	75 fps
Frame rate trigger (maximum)	75 fps
Exposure time (minimum - maximum)	0.0085 ms - 2000 ms
Long exposure (maximum)	120000 ms
Line rate freerun mode (line scan)	1118 1/s
Line rate trigger mode (line scan)	1126 1/s
Lines per frame (line scan)	8000
Power consumption	2 W - 3.9 W
Image memory	128 MB

Ambient conditions

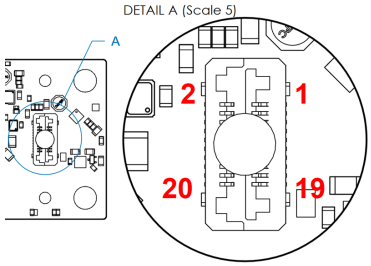
For PCB versions, refer to the separate hints in the respective documentation.

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	No mount
IP code	-
Dimensions H/W/L	84.0 mm x 30.0 mm x 9.8 mm
Mass	20 g
Housing material	-

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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)	2x2
	Binning (FPGA)	✓
	Binning (Sensor)	
Others	Chunks	✓
	Sequencer	✓
	Events	✓
	Firmware update	✓
	1st supported firmware version	3.6

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