

**In series**

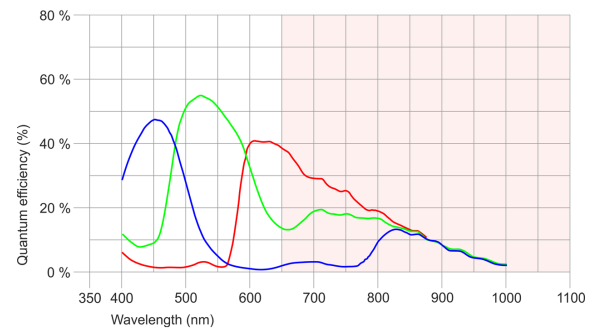
The model is in series and available for the long term.



## Specification

### Sensor

Sensor type	CMOS Color
Shutter	Global Shutter
Sensor characteristic	Linear
Readout mode	Progressive scan
Pixel Class	20 MP
Resolution	20.36 Mpix
Resolution (h x v)	4512 x 4512 Pixel
Aspect ratio	1:1
ADC	12 bit
Color depth (camera)	12 bit
Optical sensor class	1.1"
Optical Size	12.363 mm x 12.363 mm
Optical sensor diagonal	17.48 mm
Pixel size	2.74 $\mu$ m
Manufacturer	Sony
Sensor Model	IMX541AAQJ-C
Gain (master/RGB)	15.9x/-
AOI horizontal	same frame rate
AOI vertical	increased frame rate
AOI image width / step width	256 / 8
AOI image height / step width	2 / 2
AOI position grid (horizontal/vertical)	8 / 2
Binning horizontal	same frame rate
Binning vertical	same frame rate
Binning method	M/C automatic
Binning factor	2 / 4 / 8
Subsampling horizontal	same frame rate
Subsampling vertical	same frame rate
Subsampling method	M/C automatic
Subsampling factor	2, 4, 8



## Model

Frame rate freerun mode (in 8-bit mode)	19 fps
Frame rate trigger (continuous)	19 fps
Frame rate trigger (maximum)	20 fps
Exposure time (minimum - maximum)	0.013 ms - 2000 ms
Long exposure (maximum)	104000 ms
Power consumption	2.7 W - 4.4 W
Image memory	128 MB

## Ambient conditions

The temperature values given below refer to the outer device temperature of the camera housing.

Device temperature during operation	0 °C - 55 °C / 32 °F - 131 °F
Device temperature during storage	-20 °C - 60 °C / -4 °F - 140 °F
Humidity (relative, non-condensing)	20 % - 80 %

## Connectors

Interface connector	USB 3.0 micro-B, screwable
I/O connector	8-pin Hirose connector (HR25-7TR-8PA(73))
Power supply	USB cable

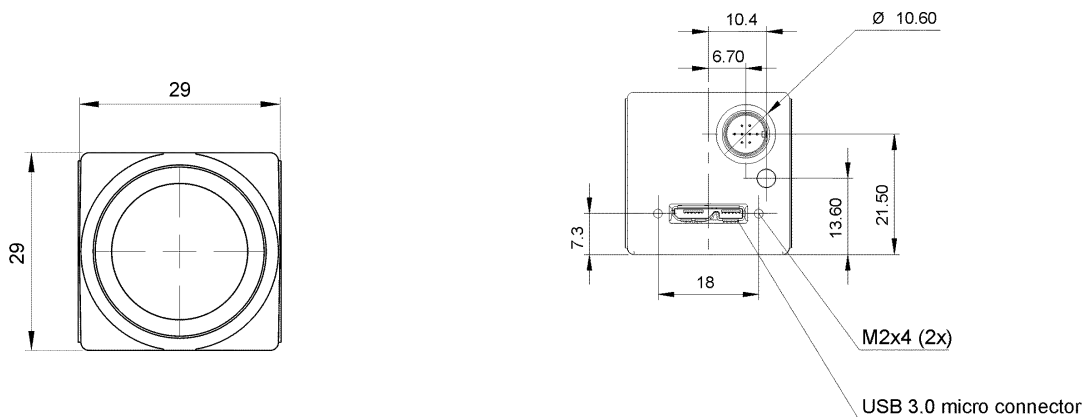
## Pin assignment I/O connector

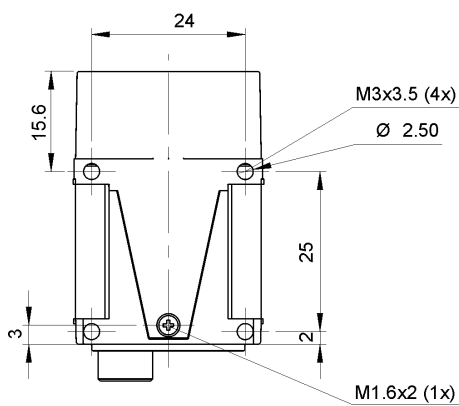
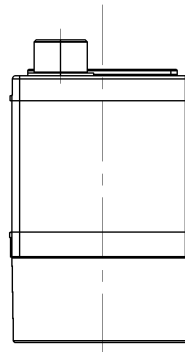
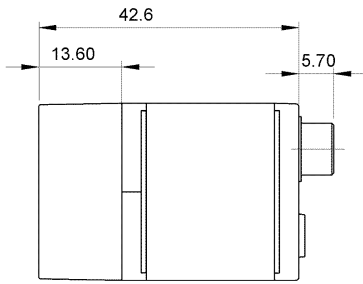
1	Ground (GND)
2	Flash output with optocoupler (-) - Line 1
3	General Purpose I/O (GPIO) 1 - Line 2
4	Trigger input with optocoupler (-) - Line 0
5	Flash output with optocoupler (+) - Line 1
6	General Purpose I/O (GPIO) 2
7	Trigger input with optocoupler (+) - Line 0
8	Output supply voltage, 5 V (100 mA)



## Design

Lens Mount	C-Mount
IP code	IP30
Dimensions H/W/L	29.0 mm x 29.0 mm x 29.0 mm
Mass	46 g





## Features

### Image Acquisition

Freerun	✓
Software trigger	✓
Hardware trigger	✓
Trigger controlled exposure	✓
Denoisier	✓
Long exposure	✓
Line scan	-
Line scan highspeed	-

### 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	3.20