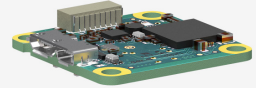
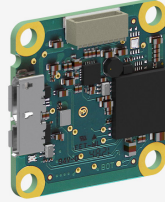
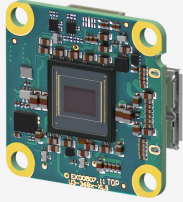


In series

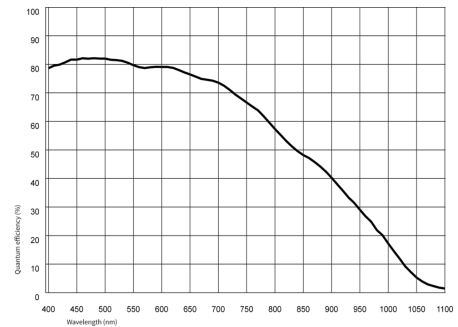
The model is in series and available for the long term.



Specification

Sensor

Sensor type	CMOS Mono
Shutter	Rolling shutter
Sensor characteristic	Linear
Readout mode	Progressive scan
Pixel Class	20 MP
Resolution	19.80 Mpix
Resolution (h x v)	5136 x 3856 Pixel
Aspect ratio	4:3
ADC	10 bit
Color depth (camera)	10 bit
Optical sensor class	1/1.8"
Optical Size	7.190 mm x 5.399 mm
Optical sensor diagonal	8.99 mm (1/1.78")
Pixel size	1.4 μ m
Micro lens shift	13.00
Manufacturer	Onsemi
Sensor Model	AR2020CSSM13SMTA0-DP
Gain (master/RGB)	8x/-
AOI horizontal	same frame rate
AOI vertical	increased frame rate
AOI image width / step width	276 / 12
AOI image height / step width	2 / 2
AOI position grid (horizontal/vertical)	4 / 2
Binning horizontal	increased frame rate
Binning vertical	increased frame rate
Binning method	M/C automatic
Binning factor	2
Subsampling horizontal	increased frame rate
Subsampling vertical	same frame rate
Subsampling method	M/C automatic
Subsampling factor	2



Model

Frame rate freerun mode (in 8-bit mode)	15 fps
Frame rate trigger (continuous)	14 fps
Frame rate trigger (maximum)	14 fps
Exposure time (minimum - maximum)	0.035 ms - 2000 ms
Power consumption	0.5 W - 1 W

Ambient conditions

The temperature values given below refer to the outer device temperature of the camera housing.
For PCB versions, refer to the separate hints in the respective documentation.

Device temperature during operation	0 °C - 55 °C / 32 °F - 131 °F
Device temperature during storage	-20 °C - 80 °C / -4 °F - 176 °F
Humidity (relative, non-condensing)	20 % - 80 %

Connectors

Interface connector	USB 3.0 micro-B
I/O connector	8-pin connector
Power supply	USB cable

Pin assignment I/O connector

1	Voltage output 3.3 V
2	Ground (GND)
3	Flash output without optocoupler
4	Trigger input without optocoupler
5	General Purpose I/O (GPIO) 1
6	General Purpose I/O (GPIO) 2
7	Ground (GND)
8	USB Power: 5 V, max. 400 mA



Design

Lens Mount	-
IP code	-
Dimensions H/W/L	29.0 mm x 29.0 mm x 6.4 mm
Mass	3 g

Features

Image Acquisition

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

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 Mono10g40IDS
	Region of interest	✓
	Decimation (FPGA)	-
	Decimation (Sensor)	2x2
	Binning (FPGA)	-
	Binning (Sensor)	2x2 Increases frame rate.
Others	Chunks	-
	Sequencer	-
	Events	-
	Firmware update	✓
	1st supported firmware version	3.21