

**In series**

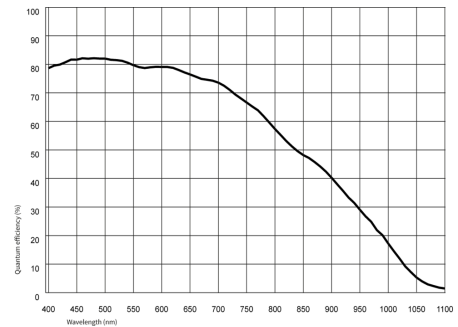
The model is in series and available for the long term.



## 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 µm
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	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 - 1.1 W

## Ambient conditions

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

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	USB 3.0 micro-B, screwable
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 - Line 1
4	Trigger input without optocoupler - Line 0
5	General Purpose I/O (GPIO) 1 - Line 2
6	General Purpose I/O (GPIO) 2 - Line 3
7	Ground (GND)
8	USB Power: 5 V, max. 400 mA



## Design

Lens Mount	C-Mount
IP code	IP30
Dimensions H/W/L	29.0 mm x 29.0 mm x 17.0 mm
Mass	60 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