

MER3-2020-42U3DM/C

MERCURY3 Series 20MP CMOS USB3.2 Area Scan Camera



The MER3-2020-42U3DM/C camera is equipped with Sony IMX541 global shutter sensor and uses USB3.2 interface for high-speed transmission of image data, featuring high quality images, small housing, and flexible installation. The camera is capable of 10Gbps maximum transfer data rate. Four-side mounting holes provide maximum installation flexibility for camera and locking screw connectors can secure the reliability of cameras deployed in harsh industrial environments.

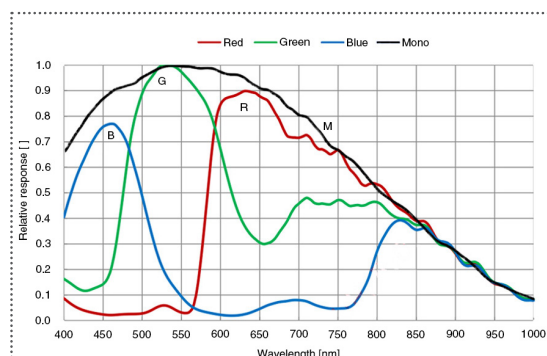
Applications

Suitable for machine vision applications such as industrial appearance inspection, 3D vision inspection, ophthalmic screening, biomedical, electronic component inspection and so on.

Features

- Two exposure modes: Standard / UltraShort
- Decimation, Binning, Gamma, Digital Shift, Black Level and Sensor Bit Depth
- Color models support Light Source Preset, Color Transformation Control, Saturation and MultiColor Adjustment
- Mono camera support Noise Reduction
- Timer, Counter, LUTs, User Set Control and Frame Buffer Control
- Sequencer Control supports multiple sets of parameters configuration
- Support Remove Parameter Limit to expand the range of exposure, gain and so on
- 512KB data storage area for saving algorithm coefficients and parameter configuration

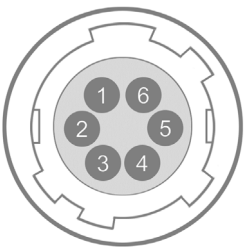
Spectral Response



Specifications

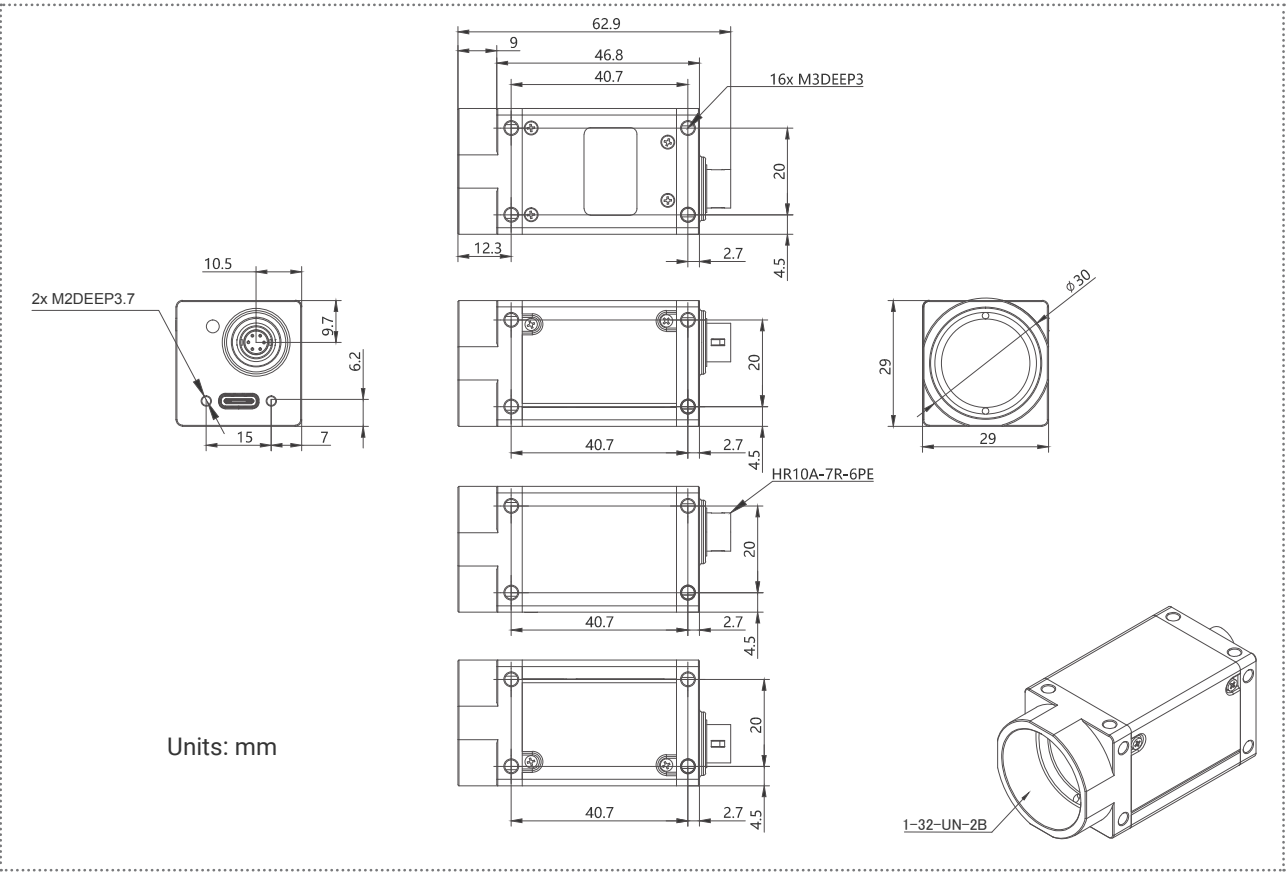
Model	MER3-2020-42U3DC	MER3-2020-42U3DM
Resolution	4504(H) × 4504(V)	
Sensor	Sony IMX541 Global shutter CMOS	
Sensor Format	1.1"	
Pixel Size	2.74μm × 2.74μm	
Frame Rate	42.0fps	
ADC	8 bit, 10 bit, 12 bit	
Pixel Bit Depth	8 bit, 10 bit, 12 bit	
Mono/Color	Color	Mono
Pixel Formats	BayerRG8 / BayerRG10 / BayerRG12 / BayerRG10p / BayerRG12p / RGB8 / BGR8 / Mono8 / Mono10 / Mono12	Mono8 / Mono10 / Mono12 / Mono10p / Mono12p
SNR	40.6 dB	40.1 dB
Exposure Time	UltraShort: 1μs~2.4μs, Actual Steps: 0.1μs, Standard: 3μs~1s, Actual Steps: 1μs (decimation enabled / exposure time: 3μs~20μs), 1 row period (exposure time: >20μs)	
Gain	AnalogALL: 0dB~24dB, Default: 0dB, Steps: 0.1dB DigitalALL: 0dB~24dB, Default: 0dB, Steps: 0.1dB	
Binning	FPGA: 1×1, 1×2, 1×4, 2×1, 2×2, 2×4, 4×1, 4×2, 4×4, Sensor: 1×1, 2×2 (MER3-U3DM only)	
Decimation	Sensor: 1×1, 2×2	
Synchronization	Hardware trigger, software trigger	
Acquisition Mode	Single frame, Continuous, Software trigger, Hardware trigger	
Reverse X/Y	Reverse X/Y	
I/O Interface	1 input with opto-isolated, 2 programmable GPIOs	
Data Interface	USB3.2 Gen2 × 1	
Power Supply	Power over USB3.2	
Typical Power	4.77W @ 5VDC	
Operating Temp.	0°C ~ +50°C	
Storage Temp.	-20°C ~ +70°C	
Operating Humidity	10% ~ 80%	
Lens Mount	C	
Dimensions	29(W) × 29(H) × 46.8(L) mm (without lens adapter or connectors)	
Weight	65 g	
Software	3rd-party software such as HALCON, MERLIC and LabVIEW	
OS	32bit / 64bit Windows	
Conformity	CE, RoHS, FCC, ICES, UKCA, USB3 Vision®, GenICam®	

I/O Interface



Pin	Definition	Description
1	POWER_IN	NC
2	Line0+	Opto-isolated input +
3	Line2	GPIO input/output
4	Line3	GPIO input/output
5	Line0-	Opto-isolated input -
6	GND	PWR GND & GPIO GND

Technical Drawing



China Daheng Group, Inc. Beijing Image Vision Technology Branch

12F Daheng Science & Technology Tower, No.3 Suzhou Street, Haidian District, Beijing China, 100080

Tel: +86 10 82828878

E-mail: isales@daheng-imaging.com