

MARS-2021-102X2M/C

20MP CMOS CXP2.0 Area Scan Camera



The MARS-2021-102X2M/C camera is equipped with global shutter sensor and uses CoaXPress2.0 interface for high-speed transmission of image data, featuring high quality images, extremely low power, small housing, and stable operating capability. The camera is capable of 12.5Gbit/s maximum transfer data rate, support PoCXP and can secure the reliability of cameras deployed in harsh industrial environments. The cameras are industrial cameras with high reliability, high transmission speed and high image quality.

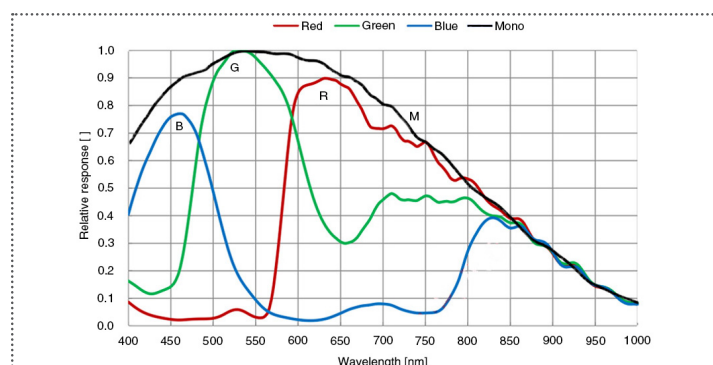
Applications

Suitable for machine vision applications such as new energy inspection, PCB inspection, assembly verification, consumer electronics and so on.

Features

- FFC
- The Sequencer Control supports multiple sets of parameters configuration
- Color models support Light Source Preset, Color Transformation Control, Saturation and Hue
- Brightness, Contrast, Gamma, Sharpness, Noise Reduction, Black Level, Timer, Counter, LUTs and User Set Control
- DAHENG IMAGING or third-party frame grabbers are available

Spectral Response



Specifications

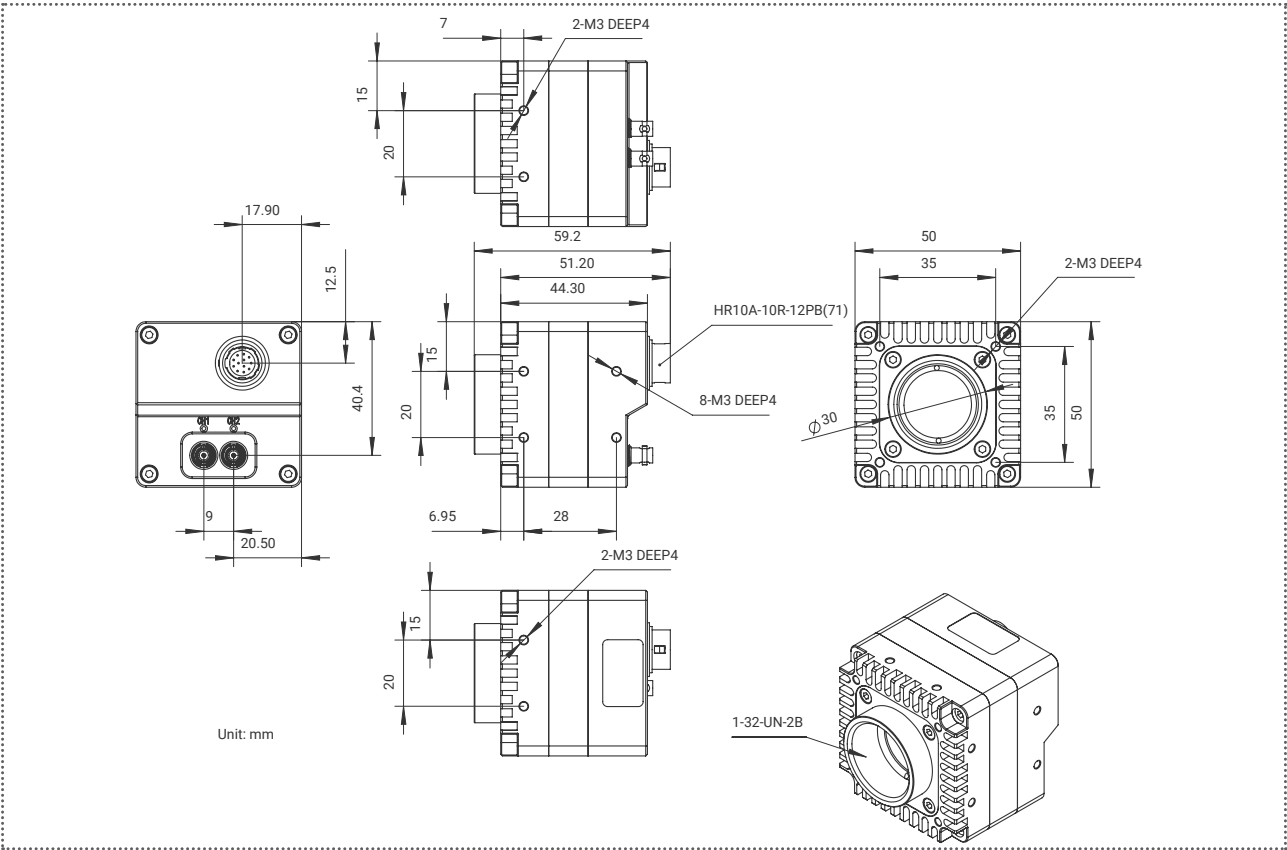
Model	MARS-2021-102X2C	MARS-2021-102X2M
Resolution	4512(H) × 4512(V)	
Sensor	IMX531 Global shutter CMOS	
Sensor Format	Diagonal 17.5 mm (Type 1.1)	
Pixel Size	2.74μm × 2.74μm	
Frame Rate	102.62fps	
ADC	10 bit, 12 bit	
Pixel Bit Depth	8 bit, 10 bit, 12 bit	
Mono/Color	Color	Mono
Pixel Formats	Bayer RG8 / Bayer RG10 / Bayer RG12	Mono8 / Mono10 / Mono12
SNR	41.13 dB	41.16 dB
Exposure Time	UltraShort: 1μs ~ 2.4μs, Actual Steps: 0.1 μs Standard: 3μs ~ 1s, Actual Steps: linetime	
Gain	Digital gain: 0dB~16dB, Default: 0dB, Steps: 0.1dB Analog digital: 10bit:1×, 12bit: 1× ~ 12.19×, Default: 1×	
Binning	-	2×2
Decimation	2×2	
Synchronization	Hardware trigger, software trigger	
Acquisition Mode	Single frame, Continuous, Software trigger, Hardware trigger, CXP trigger	
Reverse X/Y	Reverse X/Y	
I/O Interface	1 input and 1 output with opto-isolated, 1 bidirectional GPIO, 1 RS232	
Data Interface	CXP-12 × 2(HD-BNC)	
Power Supply	PoCXP	
Power Consumption	6.116W @ PoCXP	6.187W @ PoCXP
Operating Temp.	0°C ~ +45°C	
Storage Temp.	-20°C ~ +70°C	
Operating Humidity	10% ~ 80%	
Cooling	Passive Cooling, optional: Heat Dissipation Fins	
Lens Mount	C	
Dimensions	50mm × 50mm × 59.2mm	
Weight	183 g	
Software	DAHENG IMAGING or third-party frame grabbers supporting software	
OS	Win7 / Win8 / Win10 / Win11	
Conformity	CE, RoHS, FCC, ICES, UKCA, CoaXPress2.0, GenICam	

I/O Interface



PIN	Definition	Description
1	Line 0+	Opto-isolated input +
2	GND	GPIO GND
3	Line 0-	Opto-isolated input -
4	POWER_IN	-
5	Line 2	GPIO input/output
6	RS232 Rx	RS232 receive
7	Line 1-	Opto-isolated output -
8	Line 1+	Opto-isolated output +
9	GND	GPIO GND
10	GND	GPIO GND
11	POWER_IN	-
12	RS232 Tx	RS232 transmit

Technical Drawing



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