

# MARS-321-176GTM-TN-SWIR F02

## 3.2MP CMOS 10GigE Area Scan Camera



The MARS-321-176GTM-TN-SWIR F02 is a shortwave infrared 10 GigE camera. The camera is equipped with Sony IMX993 high-sensitivity sensor which adopts SenSWIR technology, it can capture wideband image information of visible light and shortwave infrared in the range of 400nm~1700nm. This camera can replace the traditional "visible light camera+shortwave infrared camera", and its broadband characteristics are suitable for multispectral applications. At the same time, the camera has a high frame rate, which is very suitable for semiconductor detection applications.

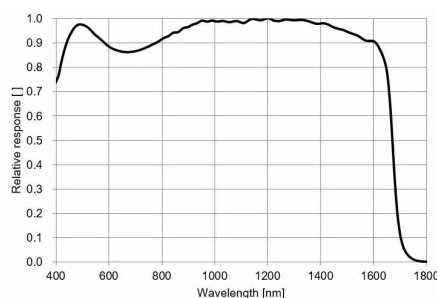
### Applications

Industrial testing, medical, scientific research, education and so on.

### Features

- Time Stamp, ROI, Binning, Decimation, Reverse X/Y
- Timer, Counter, LUTs and User Set Control
- Gamma, Black Level, Digital Shift
- Remove Parameter Limit to expand the range of Parameter
- Static Defect Correction, Sharpness, Noise Reduction
- Flat Field Correction, Dark Field Correction, Bright Field Correction

### Spectral Response



## Specifications

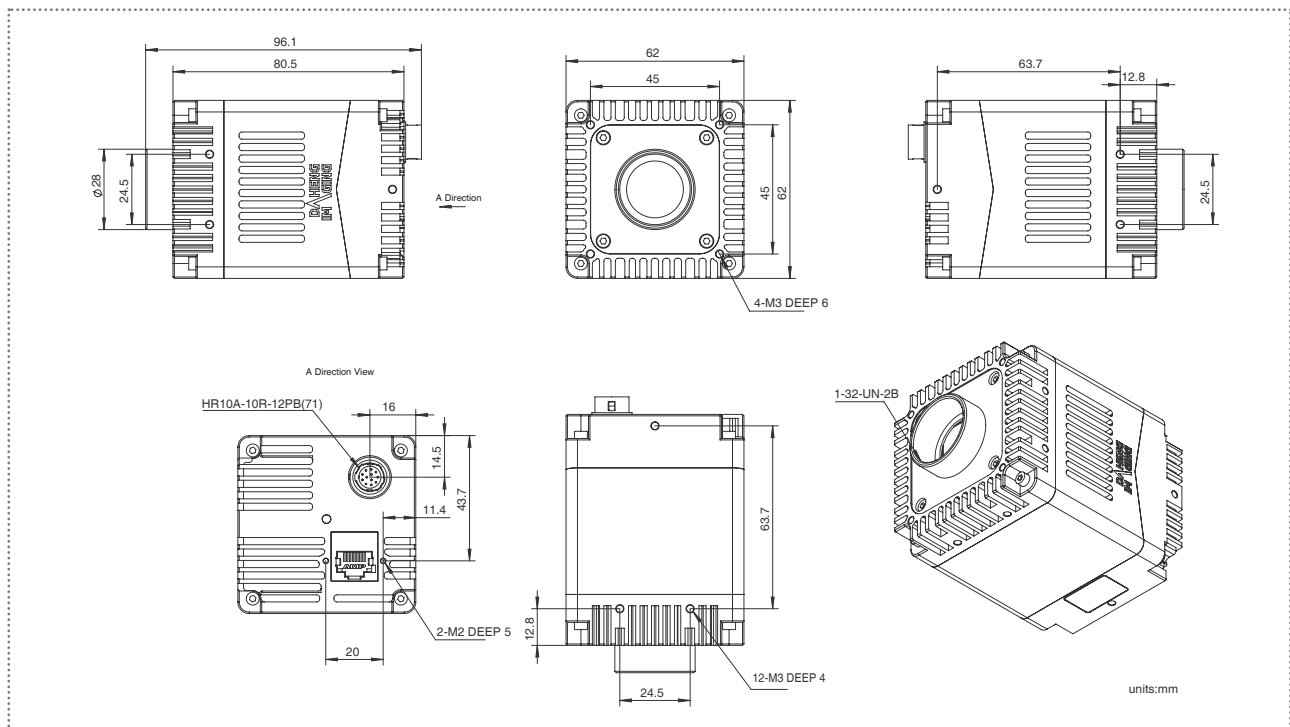
Model	MARS-321-176GTM-TN-SWIR F02
Resolution	2080(H) × 1544(V)
Sensor	Sony IMX993 Global shutter CMOS
Sensor Format	8.9mm
Pixel Size	3.45μm × 3.45μm
Frame Rate	176 fps
ADC	10 bit, 12 bit
Pixel Bit Depth	8 bit, 10 bit, 12 bit
Mono/Color	Mono, SWIR
Pixel Formats	Mono8 / Mono10 / Mono12 / Mono10Packed / Mono12Packed
SNR	46.3dB
Exposure Time	Ultra short: 8μs~100μs, Actual Steps: 1μs; Standard: 21μs~1s, Actual Steps: 2 row period
Gain	Analog Gain: 0dB~24dB, Default: 0dB, Steps: 0.1dB Digital Gain: 0dB~24dB, Default: 0dB, Steps: 0.1dB
Binning	1×1, 1×2, 1×4, 2×1, 2×2, 2×4, 4×1, 4×2, 4×4
Decimation	Sensor: 1×1, 2×2
Synchronization	Hardware trigger, software trigger
Acquisition Control	Single frame, Continuous, Software trigger, Hardware trigger
Reverse X/Y	Reverse X/Y
I/O Interface	1 input and 1 output with opto-isolated, 1 bidirectional programmable GPIO
Data Interface	10GigE
Power Supply	24VDC±10%
Power Consumption	10.5W@24VDC (Ambient@30° C, and TEC cooling@15° C)
Operating Temp.	0° C ~ +45° C
Storage Temp.	-20° C ~ +70° C
Operating Humidity	10% ~ 80%
Cooling	TEC
Cooling Temperature	Typical: 15° C ± 0.5° C lower than ambient temperature @ Normal environment
Lens Mount	C
Color filter/ translucent film	-
Dimensions	62(W) × 62(H) × 80.5(L) mm (without C mount)
Weight	495 g
Software	Support third-party software such as HALCON, VisionPro, LabVIEW
OS	Win10 32bit, 64bit OS, 64bit OS is recommended
Conformity	CE, RoHS, FCC, ICES, UKCA, GigE Vision®, GenICam®

I/O Interface



Pin	Definition	Description
1	Line 0+	Opto-isolated input +
2	GND	PWR GND & GPIO GND
3	Line 0-	Opto-isolated input -
4	POWER_IN	Camera external power 12V (-10%) ~ +24V (+10%)
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	PWR GND & GPIO GND
10	GND	PWR GND & GPIO GND
11	POWER_IN	Camera external power 12V (-10%) ~ +24V (+10%)
12	RS232 Tx	RS232 transmit

Technical Drawing



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