

MV-SC5020XM

2 MP Mono Smart Camera

MV-SC5020XM smart camera is developed based on high-performance embedded platform with strong calculation performance. It integrates VM functions and AI deep learning algorithm, and can use more than 140 algorithms. It adopts multiple interfaces for supporting display, keyboard, mouse, etc.



Key Features

- Adopts AI deep learning algorithm to achieve OCR, object recognition, defect detection, etc.
- Integrates VM functions, and supports more than 140 algorithms.
- Adopts multiple I/O interfaces, such as multiple input/output signals.
- Supports multiple communication protocols.
- Supports indicators displaying device status for easy debugging and maintenance.
- Supports ingress protection IP67.

Available Models

- Mechanical focusing, 6 mm focal length: MV-SC5020XM-06M-WBN
- Mechanical focusing, 12 mm focal length: MV-SC5020XM-12M-WBN
- Mechanical focusing, 16 mm focal length: MV-SC5020XM-16M-WBN
- Liquid lens focusing, 8 mm focal length: MV-SC5020XM-08L-WBN
- Liquid lens focusing, 12 mm focal length: MV-SC5020XM-12L-WBN
- Liquid lens focusing, 16 mm focal length: MV-SC5020XM-16L-WBN

Typical Application

- Consumer electronics
- Food and pharmaceutical
- Packaging



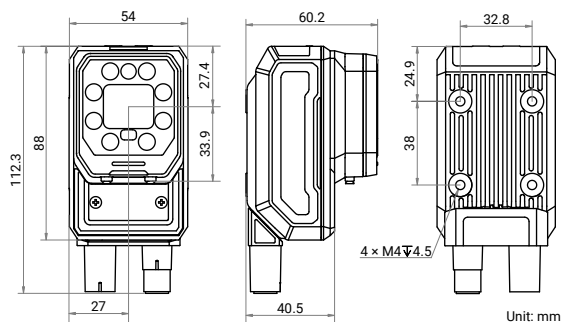
Specification

Model	MV-SC5020XM-**M-WBN		MV-SC5020XM-**L-WBN
Tool			
Function module	Vision Master Platform (include deep learning module)		
Communication protocol	TCP, UDP, Modbus, Serial Port, PROFINET, EtherNet/IP, Fins, MC, FTP, etc.		
Camera			
Sensor type	CMOS, global shutter		
Pixel size	3.45 μm × 3.45 μm		
Sensor size	1/2.53"		
Resolution	1600 × 1216		
Max. frame rate	100 fps		
Gain	0 dB to 37 dB		
Exposure time	15 μs to 1 sec		
Pixel format	Mono 8		
Mono/color	Mono		
Platform			
Memory	8 GB		
Storage	64 GB		
Electrical feature			
Data interface	Gigabit Ethernet (1000 Mbit/s)		
Digital I/O	12-pin M12 connector provides power and I/O, including opto-isolated input × 3 (Line 0/1/2), opto-isolated output × 3 (Line 3/4/5), and RS-232 × 1		
Power supply	24 VDC		
Power consumption	Avg. 12.3 W @ 24 VDC (with included light source on) Max. 48 W @ 24 VDC (with included light source on)		
Mechanical			
Lens mount	M12-mount, mechanical focusing	D14-mount, liquid lens focusing	
Focal length	6 mm / 12 mm / 16 mm	8 mm / 12 mm / 16 mm	
Lens cap	Half polarization lens cap by default. Transparent or full polarization lens cap is optional.		
Light source	White light source by default. Red, blue, or IR light source is optional.		
Indicator	Power indicator (PWR), network indicator (LNK), and user-defined indicator (U1/U2)		
Dimension	Straight angle: 112.3 mm × 54 mm × 60.2 mm (4.4" × 2.1" × 2.4") Right angle: 88.7 mm × 54 mm × 82.5 mm (3.5" × 2.1" × 3.2")		
Weight	Approx. 370 g (0.8 lb.)		
Ingress protection	IP67 (under proper installation of waterproof lens cap)		
Temperature	Working temperature: 0 °C to 50 °C (32 °F to 122 °F) Storage temperature: −30 °C to 70 °C (−22 °F to 158 °F)	Working temperature: 0 °C to 40 °C (32 °F to 104 °F) Storage temperature: −30 °C to 70 °C (−22 °F to 158 °F)	

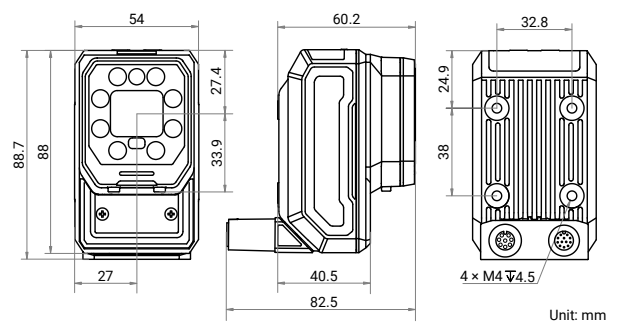
Humidity	20% RH to 95% RH (no condensation)
Vibration resistance	Meets standard IEC 60068-2-6:2007. Device only (without installation bracket): 10 Hz to 55 Hz, 1.5 mm peak-to-peak amplitude, 2 hours per axis (X, Y, Z)
Shock resistance	Meets standard IEC 60068-2-27:2008. Device only (without installation bracket): 30 g / 11 ms, half-sine wave, 500 shocks per axis (6 directions)
General	
Certification	CE, KC

Dimension

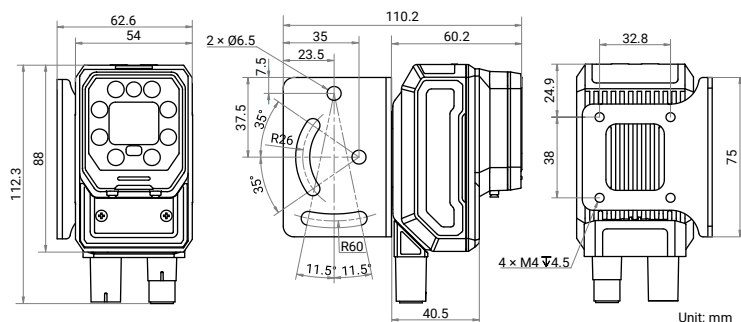
Device (Straight Angle):



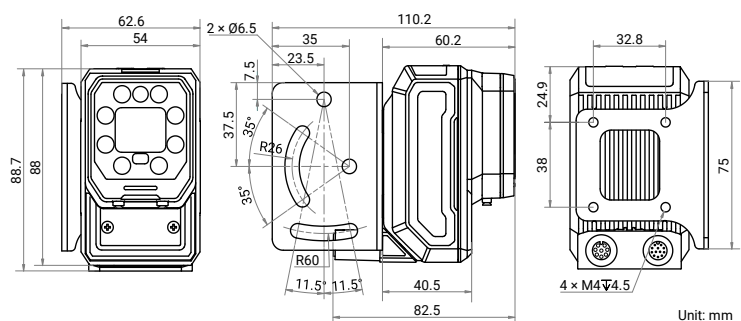
Device (Right Angle):



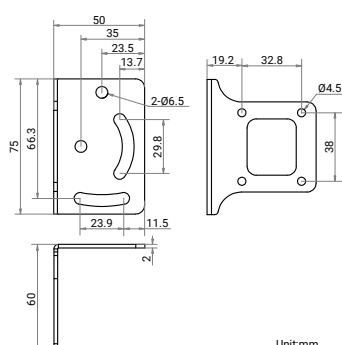
Device and Installation Bracket (Straight Angle):



Device and Installation Bracket (Right Angle):



Installation Bracket:



Detection Range

MV-SC5020XM-06/12/16M-WBN (Unit: mm)					
Lens Focal Length	Working Distance	Field of View		Single Pixel Accuracy	Field of View Diagram
		H	V		
6	25	23	17	0.01	
	100	90	69	0.06	
	200	181	138	0.11	
	300	271	206	0.17	
	500	452	344	0.28	
	1000	905	688	0.57	
	2000	1810	1375	1.13	
12	60	27	21	0.02	
	100	46	35	0.03	
	200	91	69	0.06	
	300	137	104	0.09	
	500	228	173	0.14	
	1000	456	347	0.29	
	2000	912	693	0.57	
16	100	35	26	0.02	
	200	69	52	0.04	
	300	104	79	0.06	
	400	138	105	0.09	
	500	173	131	0.11	
	1000	345	262	0.22	
	2000	690	524	0.43	

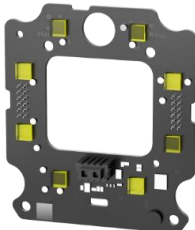
Detection Range

MV-SC5020XM-08/12/16L-WBN (Unit: mm)					
Lens Focal Length	Working Distance	Field of View		Single Pixel Accuracy	Field of View Diagram
		H	V		
8	100	69	52	0.04	
	200	138	105	0.09	
	300	207	157	0.13	
	500	345	262	0.22	
	1000	690	524	0.43	
	1500	1035	787	0.65	
	2000	1380	1049	0.86	
12	100	46	35	0.03	
	200	92	70	0.06	
	300	138	105	0.09	
	500	230	175	0.14	
	1000	460	350	0.29	
	1500	690	524	0.43	
	2000	920	699	0.58	
16	100	35	26	0.02	
	200	69	52	0.04	
	300	104	79	0.06	
	500	173	131	0.11	
	1000	345	262	0.22	
	1500	518	393	0.32	
	2000	690	524	0.43	

Note: For liquid lens models, the minimum working distance in Fast Focus (ToF autofocus) mode is 100 mm.

Accessories

Included

Bracket	Half-Polarized Lens Cap	White Light Board	Screws
			-

Required

24V Power Supply	24V Power Adapter	AC Power Cables	Type-C Adapter Cable
			
12-Pin M12 to Open Power & I/O Cable		8-Pin M12 to RJ45 Gigabit Ethernet Cable	
● Cable for static scenes: 3 m/5 m/7 m/10 m/15 m/30 m ● High-flex cable: 3 m/5 m/10 m/ 20 m		● Cable for static scenes: 3 m/5 m/7 m/10 m/15 m/30 m ● High-flex cable: 3 m/5 m/10 m/ 20 m	
			

Optional

Transparent/Fully-Polarized/ESD Protective Caps	Red/Blue/IR Light Board	Flash Light Source
	