

MV-SC3020XM

2 MP Mono Vision Sensor



Introduction

With built-in high-precision vision algorithms, MV-SC3020XM vision sensor can realize counting, existence, measurement, recognition and other functions. It can be easily configured and operated via the SCMVS client software, and it uses RS-232 and Ethernet to output vision tool results and customized results.

Available Models

- 8 mm focal length: MV-SC3020XM-08M-WBN
- 12 mm focal length: MV-SC3020XM-12M-WBN
- 16 mm focal length: MV-SC3020XM-16M-WBN

Applicable Industry

Consumer electronics, food and pharmaceutical, and automotive industries.

Key Features

- Adopts embedded hardware platform for high-speed image processing.
- Built-in high-precision positioning, measurement and recognition algorithms for counting, defects, existence, positioning and other functions.
- Supports RS-232, TCP, UDP, FTP, Modbus, PROFINET, EtherNet/IP and other communication modes.
- Adopts multiple IO interfaces for input and output signals.
- Supports viewing the device's status in real time via 360° visual indicator, convenient for debugging and maintenance.
- Rotatable cable tail design, suitable for narrow space.
- Adopts polarized and full-transparent multiple optical lighting with good environmental adaptability.
- IP67 protection without fear of harsh industrial application environments.

Specification

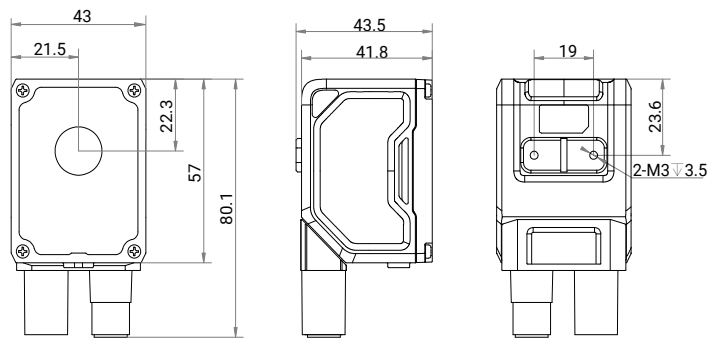
Model	MV-SC3020XM-08M-WBN	MV-SC3020XM-12M-WBN	MV-SC3020XM-16M-WBN
Tool			
Vision tool	● Measurement: P2P measurement, P2L measurement, contrast measurement, grayscale size, edge width measurement, width measurement, brightness average value, L2L angle, diameter measurement, line angle ● Existence: Spot existence, edge existence, contour existence, pattern existence, circle existence, line existence, anomaly judge, existence detection ● Count: Spot count, edge count, contour count, pattern count, learning-based count ● Recognition: Multi-object count, code recognition, category recognition, classification registration, object registration, OCR, learning-based OCR, character horizontal stripe detection ● Logic: Calculator, if module, logic judge, format output, condition judge, character comparison, combination judge ● Location: Calibration convert, single point alignment, point rectify, point grasp, scale transformation, fixture ● Deep learning: DL classification, DL object detection ● Defect detection: Anomaly detection ● Industry tools: OCR and defect detection		
Solution capacity	Supports importing and exporting solutions, up to 32 solutions can be stored.		
Communication protocol	RS-232, TCP, UDP, FTP, PROFINET, Modbus, EtherNet/IP, MELSEC/SLMP, FINS, Keyence KV		
Camera			
Sensor type	CMOS, global shutter		
Pixel size	3.45 μm × 3.45 μm		
Sensor size	1/2.53"		
Resolution	1536 × 1264		
Max. frame rate	100 fps		
Gain	0 dB to 37 dB		
Exposure time	35 μs to 1 sec		
Pixel format	Mono 8		
Mono/color	Mono		
Electrical feature			
Data interface	Fast Ethernet (100 Mbit/s)		
Digital I/O	12-pin M12 connector provides power and I/O, including isolated input (Line 0/1/2) × 3, isolated output (Line 3/4/5) × 3, RS-232 × 1 Supports device triggering via pressing top trigger button		
Power supply	24 VDC		
Power consumption	Avg.: 7 W @ 24 VDC (light source enabled) Max.: 24 W @ 24 VDC (light source enabled)		
Mechanical			
Lens mount	M12-mount, mechanical focus supported		
Focal length	8 mm	12 mm	16 mm
Lens cap	Polarized + diffuser + full-transparent lens cap		
Light source	Focused white light by default. Red/blue/IR light source is optional		
Aiming system	1 LED		
Indicator	360° visual indicator		
Dimension	Straight angle: 80.1 mm × 43 mm × 43.5 mm (3.2" × 1.7" × 1.7") Right angle: 58.5 mm × 43 mm × 64.6 mm (2.3" × 1.7" × 2.5")		

Weight	Approx. 190 g (0.4 lb.)
Ingress protection	IP67 (under proper installation of lens and wiring)
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)
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	
Client software	SCMVS
Certification	CE, KC

Detection Range

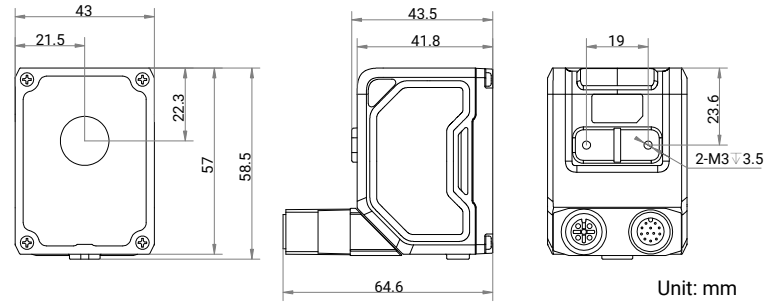
MV-SC3020XM (Unit: mm)					
Lens Focal Length	Working Distance	Field of View		Single Pixel Accuracy	Diagram of Field of View
		H	V		
8	30	19	16	0.01	
	100	65	53	0.04	
	200	130	107	0.08	
	300	195	160	0.13	
	600	390	321	0.25	
	1000	649	534	0.42	
	2000	1299	1069	0.85	
12	60	26	22	0.02	
	100	44	36	0.03	
	200	88	73	0.06	
	300	132	109	0.09	
	600	265	218	0.17	
	1000	442	363	0.29	
	2000	883	727	0.58	
16	110	36	30	0.02	
	200	66	55	0.04	
	300	99	82	0.06	
	600	199	164	0.13	
	1000	331	273	0.22	
	2000	662	545	0.43	

Device (Straight Angle)



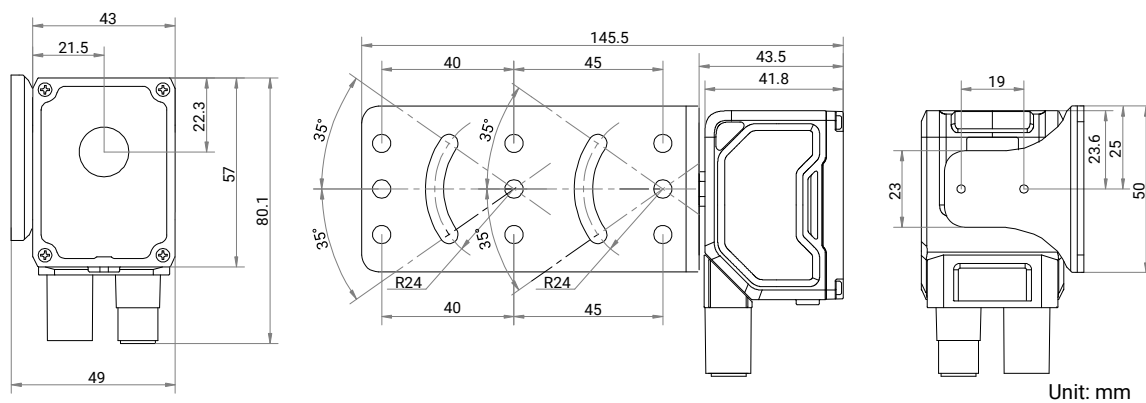
Unit: mm

Device (Right Angle)



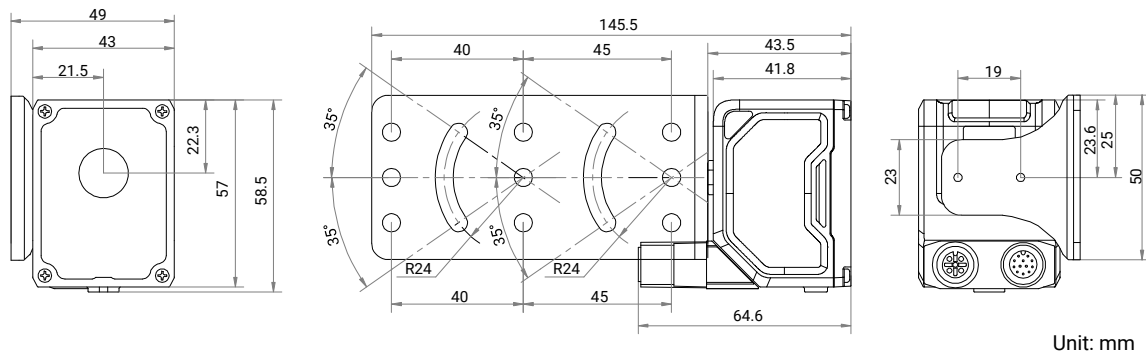
Unit: mm

Device and Installation Bracket (Straight Angle)



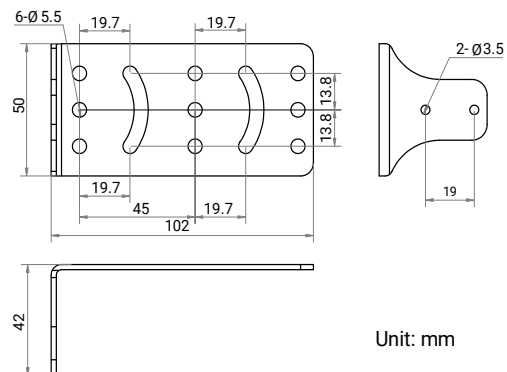
Unit: mm

Device and Installation Bracket (Right Angle)



Unit: mm

Installation Bracket:



Unit: mm