MV-SC2013XM

1.3 MP Mono Vision Sensor

With built-in positioning and measurement algorithms, MV-SC2013XM vision sensor can realize counting, existence, measurement detection, and recognition. It can be monitored and operated via the SCMVS client. It can output results via RS-232 and Ethernet, and cooperate with other processes via IO. The vision sensor supports multiple result output methods and customized result text output.



Key Features

- Adopts embedded hardware platform for high-speed image processing.
- Adopts built-in positioning and measurement algorithms to for counting, existence, measurement detection, and recognition.
- Provides multiple I/O interfaces for input and output signals.
- Provides multiple indicators for displaying device status.
- Adopts light source to ensure uniform brightness in the illuminated area.
- Supports multiple communication protocols, including RS-232, TCP, UDP, FTP, PROFINET, Modbus, Ethernet/IP, etc.

Available Models

- 5 mm focal length: MV-SC2013XM-05M-WBN
- 12 mm focal length: MV-SC2013XM-12M-WBN
- 16 mm focal length: MV-SC2013XM-16M-WBN

Typical Application

- Consumer electronics
- Food and pharmaceutical
- Automotive

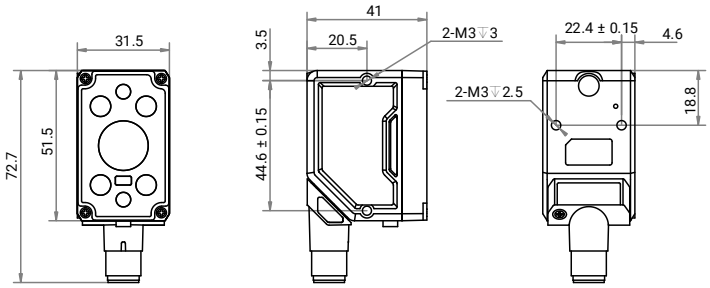
Specification

Model	MV-SC2013XM-05M-WBN	MV-SC2013XM-12M-WBN	MV-SC2013XM-16M-WBN
Tool			
Vision tool	• Measurement: P2P measurement, P2L measurement, contrast measurement, grayscale size, edge width measurement, width measurement, brightness analysis, L2L angle, diameter measurement, line angle • Existence: Existence detection, anomaly judge, spot existence, edge existence, contour existence, pattern existence, circle existence, line existence • Count: Learning-based count, spot count, edge count, contour count, pattern count • Recognition: Multi-object count, category recognition, code recognition, OCR • Logic: Calculator, if module, logic judge, condition judge, string comparison, combination judge, format output • Defect detection: Anomaly detection • Location: Calibration convert, single point alignment, point rectify, point grasp, scale transformation, fixture		
Solution capacity	Supports solution importing and exporting, up to 16 solutions and 40 modules can be stored.		
Communication protocol	RS-232, TCP, UDP, FTP, PROFINET, Modbus, EtherNet/IP, MELSEC/SLMP, FINS, Keyence KV		
Performance			
Sensor type	CMOS, global shutter		
Pixel size	2.7 μm × 2.7 μm		
Sensor size	1/4"		
Resolution	1280 × 1024		
Max. frame rate	55 fps		
Gain	0 dB to 29 dB (analog gain)		
Exposure time	35 μs to 100 ms		
Pixel format	Mono 8		
Mono/color	Mono		
Electrical feature			
Data interface	Fast Ethernet (100 Mbit/s)		
Digital I/O	17-pin M12 connector provides power and I/O, including isolated input (Line 0/1) × 2, isolated output (Line 2/3) × 2, RS-232 × 1 Supports device triggering via pressing side button.		
Power supply	24 VDC		
Power consumption	Avg.: 5 W @ 24 VDC (light source enabled) Max.: 12 W @ 24 VDC (light source enabled)		
Mechanical			
Lens mount	M12-mount, mechanical autofocus supported		
Focal length	5 mm	12 mm	16 mm
Lens cap	Transparent lens cap by default. Half-polarized and fully-polarized caps are optional.		
Light source	White light by default. Red, blue, IR, UV, and two-color (red/blue) lights are optional.		

Aiming system	2 green LED lights
Indicator	Power indicator (PWR), network indicator (LNK), result indicator (OK/NG), user-defined indicator (U1)
Dimension	Straight angle: 72.7 mm × 31.5 mm × 41 mm (2.9" × 1.2" × 1.6") Right angle: 51.5 mm × 31.5 mm × 61 mm (2.0" × 1.2" × 2.4")
Weight	118 g (0.3 lb.)
Ingress protection	IP65
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: 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: 30 g / 11 ms, half-sine wave, 500 shocks per axis (6 directions)
General	
Client software	SCMVS
Certification	CE, KC

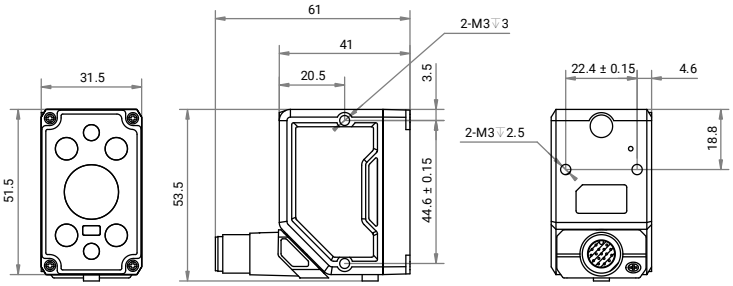
Dimension

Device (Straight Angle)



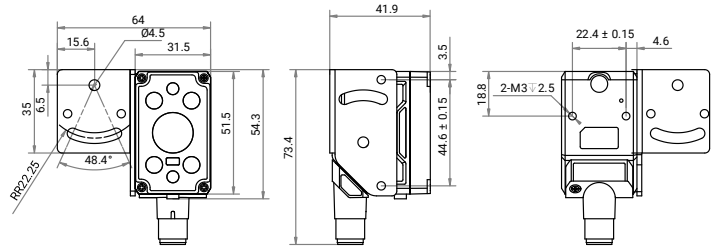
Unit: mm

Device (Right Angle)



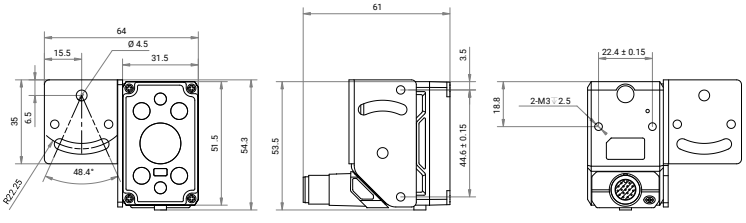
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Device and Installation Bracket 1 (Straight Angle)



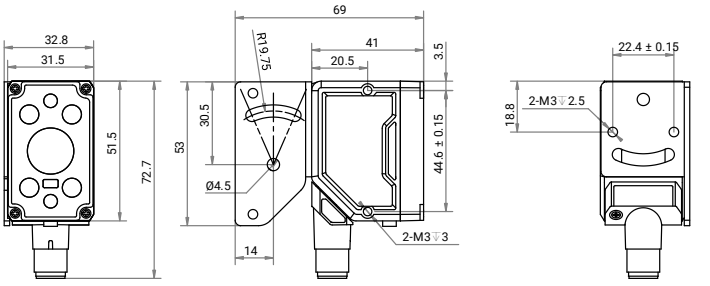
Unit: mm

Device and Installation Bracket 1 (Right Angle)



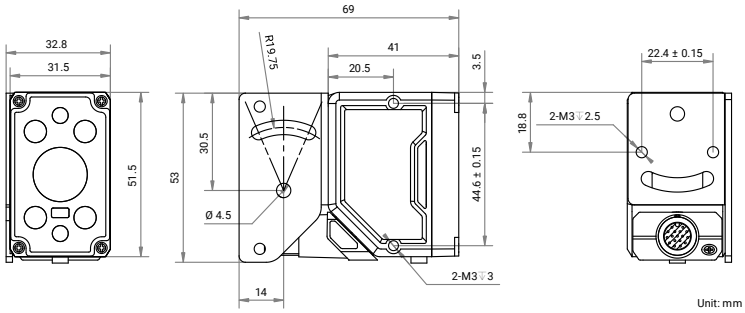
Unit: mm

Device and Installation Bracket 2 (Straight Angle)



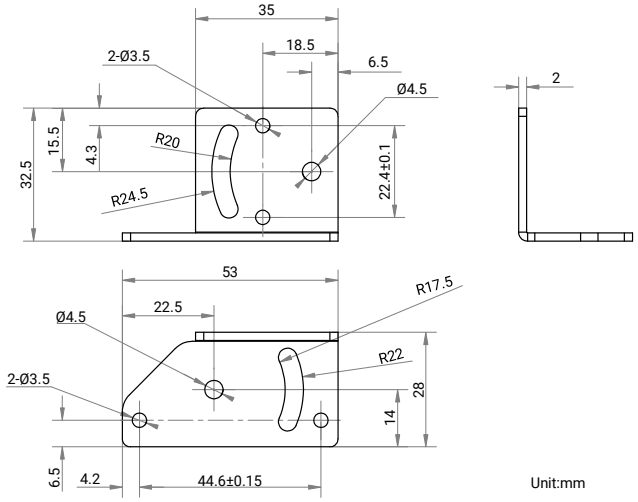
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Device and Installation Bracket 2 (Right Angle)



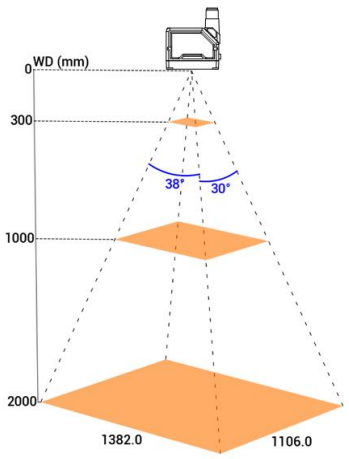
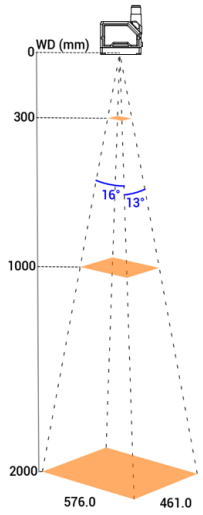
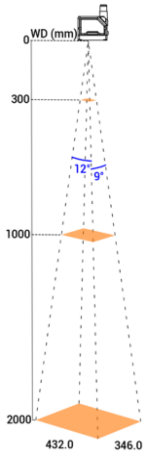
Unit: mm

Bracket



Unit:mm

Detection Range

MV-SC2013XM-05/12/16M-WBN (Unit: mm)					
Lens Focal Length	Working Distance	Field of View		Single Pixel Accuracy	Field of View Diagram
		H	V		
5	25	17	14	0.01	
	100	69	55	0.05	
	200	138	111	0.11	
	300	207	166	0.16	
	600	415	332	0.32	
	1000	691	553	0.54	
	2000	1382	1106	1.08	
12	60	17	14	0.01	
	100	29	23	0.02	
	200	58	46	0.05	
	300	86	69	0.07	
	600	173	138	0.14	
	1000	288	230	0.23	
	2000	576	461	0.45	
16	60	13	10	0.01	
	150	32	26	0.03	
	300	65	52	0.05	
	600	130	104	0.10	
	1000	216	173	0.17	
	2000	432	346	0.34	

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