

# MV-SC3050XC

## 5 MP Color Vision Sensor



### Introduction

With built-in high-precision vision algorithms, MV-SC3050XC 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.

### Applicable Industry

Consumer electronics, food and pharmaceutical, automobile, etc.

### Available Model

- 8 mm focal length: MV-SC3050XC-08M-WBN
- 12 mm focal length: MV-SC3050XC-12M-WBN
- 16 mm focal length: MV-SC3050XC-16M-WBN

### Key Features

- Adopts embedded hardware platform to realize 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, diffused, and full-transparent multiple optical lighting with good environmental adaptability.
- IP67 protection without fear of harsh industrial application environments.

## Specification

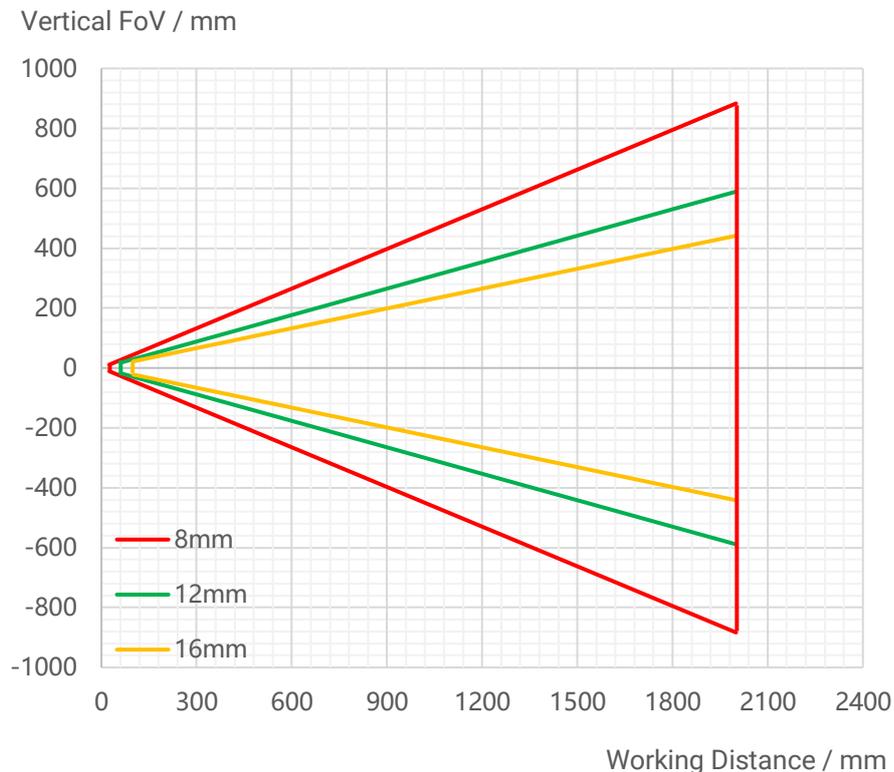
Model	MV-SC3050XC-08M-WBN	MV-SC3050XC-12M-WBN	MV-SC3050XC-16M-WBN
<b>Tool</b>			
<b>Vision tool</b>	<ul style="list-style-type: none"> <li>● Measurement: P2P measurement, P2L measurement, contrast measurement, grayscale size, edge width measurement, width measurement, brightness analysis, L2L angle, color measurement, color size, diameter measurement, line angle</li> <li>● Existence: Spot existence, edge existence, contour existence, pattern existence, circle existence, line existence, anomaly judge, existence detection</li> <li>● Count: Spot count, edge count, contour count, pattern count, learning-based count, color count</li> <li>● Recognition: Multi-object count, code recognition, color contrast, color recognition, category recognition, classification registration, object detection registration, OCR</li> <li>● Logic: Calculator, If module, logic judge, format output, condition judge, character comparison, combination judge</li> <li>● Location: Calibration convert, single point alignment, point rectify, point grasp, scale transformation, fixture</li> <li>● Deep learning: DL classification, DL object detection</li> <li>● Defect detection: Anomaly detection</li> </ul>		
<b>Solution capacity</b>	Supports importing and exporting project, up to 32 projects can be stored		
<b>Communication protocol</b>	RS-232, TCP, UDP, FTP, PROFINET, Modbus, EtherNet/IP, MELSEC/SLMP, FINS, Keyence KV		
<b>Camera</b>			
<b>Sensor type</b>	CMOS, global shutter		
<b>Pixel size</b>	3.45 μm × 3.45 μm		
<b>Sensor size</b>	1/1.45"		
<b>Resolution</b>	2432 × 2048		
<b>Max. frame rate</b>	40 fps		
<b>Dynamic range</b>	77.8 dB		
<b>SNR</b>	43 dB		
<b>Gain</b>	0 dB to 15 dB		
<b>Exposure time</b>	6 μs to 1 sec		
<b>Pixel format</b>	RGB 8, Mono 8		
<b>Mono/color</b>	Color		
<b>Electrical feature</b>			
<b>Data interface</b>	Fast Ethernet (100 Mbit/s)		
<b>Digital I/O</b>	12-pin M12 connector provides power and I/O, including opto-isolated input (LINE 0/1/2) × 3, opto-isolated output (LINE 3/4/5) × 3, and RS-232 × 1 Supports triggering device via pressing top trigger button		
<b>Power supply</b>	24 VDC		
<b>Power consumption</b>	Approx. 6.5 W @ 24 VDC		
<b>Mechanical</b>			
<b>Lens mount</b>	M12-mount, mechanical autofocus supported		
<b>Focal length</b>	8 mm (0.3")	12 mm (0.5")	16 mm (0.6")
<b>Lens cap</b>	Polarized + diffused + full-transparent lens cap		
<b>Light source</b>	White spot light source. Red/blue/IR point light source is optional		
<b>Aiming system</b>	Orange LED		
<b>Indicator</b>	360° visual indicator		
<b>Dimension</b>	Straight angle: 80.1 mm × 43 mm × 44.3 mm (3.2" × 1.7" × 1.7") Right angle: 58.5 mm × 43 mm × 65.4 mm (2.3" × 1.7" × 2.6")		
<b>Weight</b>	Approx. 190 g (0.4 lb.)		

## Specification

<b>Model</b>	<b>MV-SC3050XC-08M-WBN</b>	<b>MV-SC3050XC-12M-WBN</b>	<b>MV-SC3050XC-16M-WBN</b>
<b>Ingress protection</b>	IP67 (under proper installation of waterproof lens cap)		
<b>Temperature</b>	Working temperature: 0 °C to 50 °C (32 °F to 122 °F) Storage temperature: -30 °C to 70 °C (-22 °F to 158 °F)		
<b>Humidity</b>	20% RH to 95% RH (no condensation)		
<b>General</b>			
<b>Client software</b>	SCMVS		
<b>Certification</b>	CE, KC		

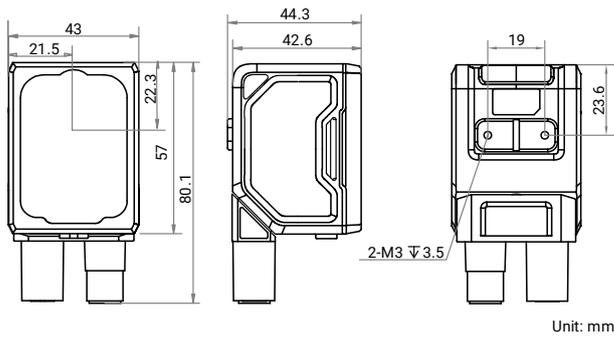
## Detection Range

Lens focal length	Installation distance	Field of View	Single Pixel Accuracy
8 mm	25 mm	26.22 mm × 22.08 mm	0.011 mm
	2000 mm	2097.6 mm × 1766.4 mm	0.863 mm
12 mm	60 mm	41.95 mm × 35.33 mm	0.017 mm
	2000 mm	1398.4 mm × 1177.6 mm	0.575 mm
16 mm	100 mm	52.44 mm × 44.16 mm	0.022 mm
	2000 mm	1048.8 mm × 883.2 mm	0.431 mm

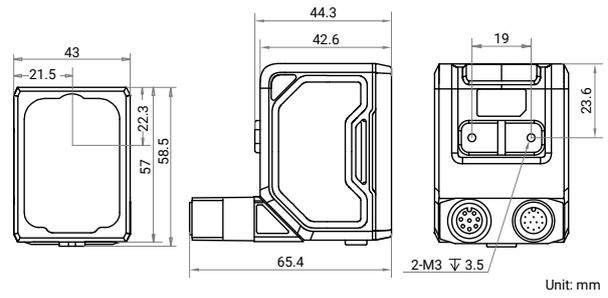


**Dimension**

Device (Straight Angle):



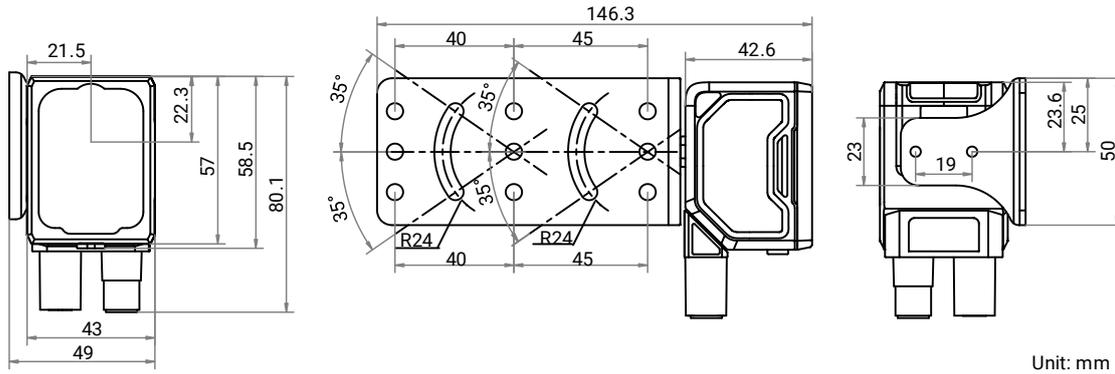
Device (Right Angle):



Unit: mm

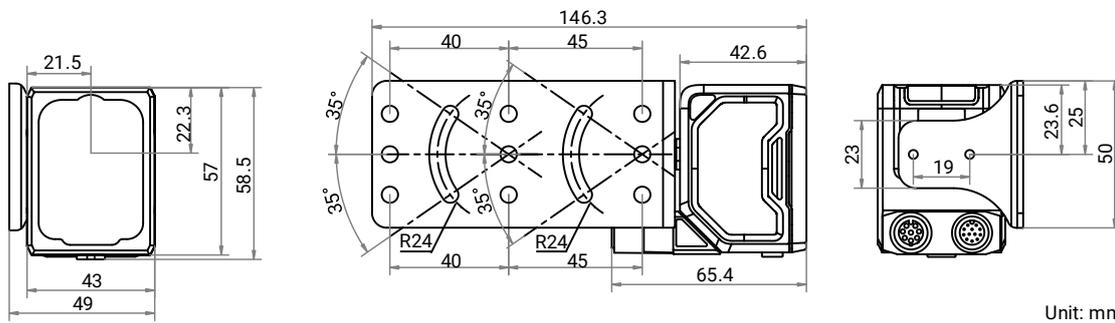
Unit: mm

Device and Installation Bracket (Straight Angle):



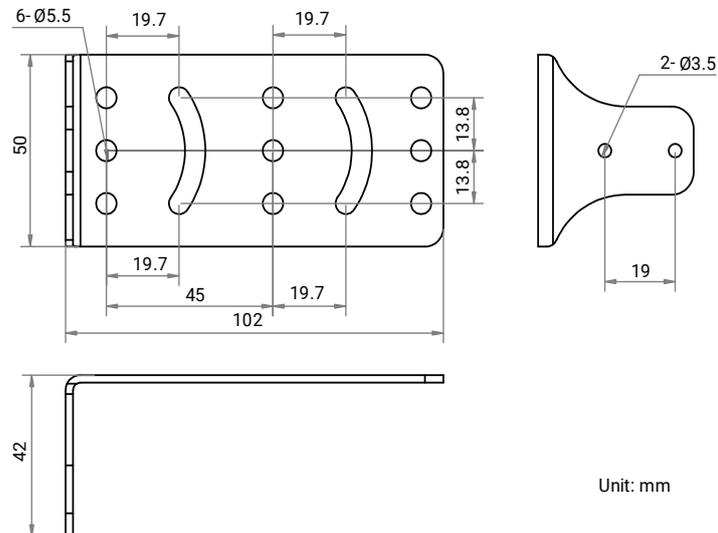
Unit: mm

Device and Installation Bracket (Right Angle):



Unit: mm

Installation Bracket:



Unit: mm