

# MV-SC2004EM

## 0.4 MP 1/2.9" Vision Sensor



### Introduction

With built-in positioning and measurement algorithms, MV-SC2004EM vision sensor can detect object's existence, count patterns and spots, etc. 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 detect object's existence, count patterns and spots, etc.
- Multiple IO interfaces for input and output signals.
- Multiple indicators for displaying device status.
- Adopts light source to ensure uniform brightness in the illuminated area.
- Supports multiple communication protocols, including Serial Port, TCP, UDP, FTP, Profinet, Modbus, Ethernet/IP, etc.

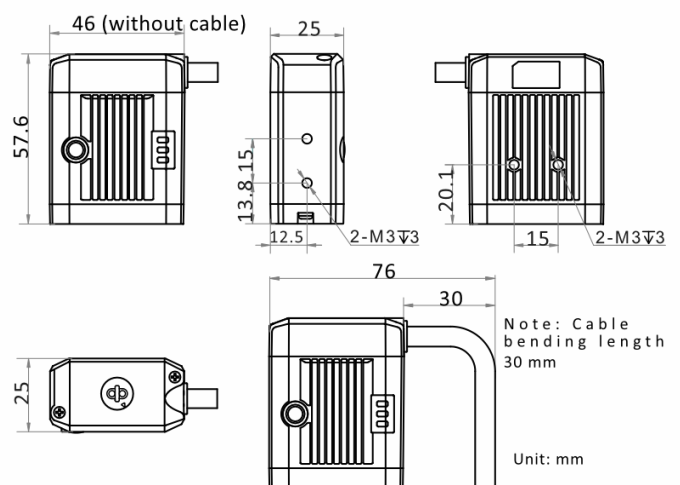
### Available Model

- 8 mm focal length: MV-SC2004EM-08S-WBN
- 12.4 mm focal length: MV-SC2004EM-12S-WBN
- 14.8 mm focal length: MV-SC2004EM-15S-WBN

### Applicable Industry

Consumer electronics, food and medical industry, automobile, etc.

### Dimension

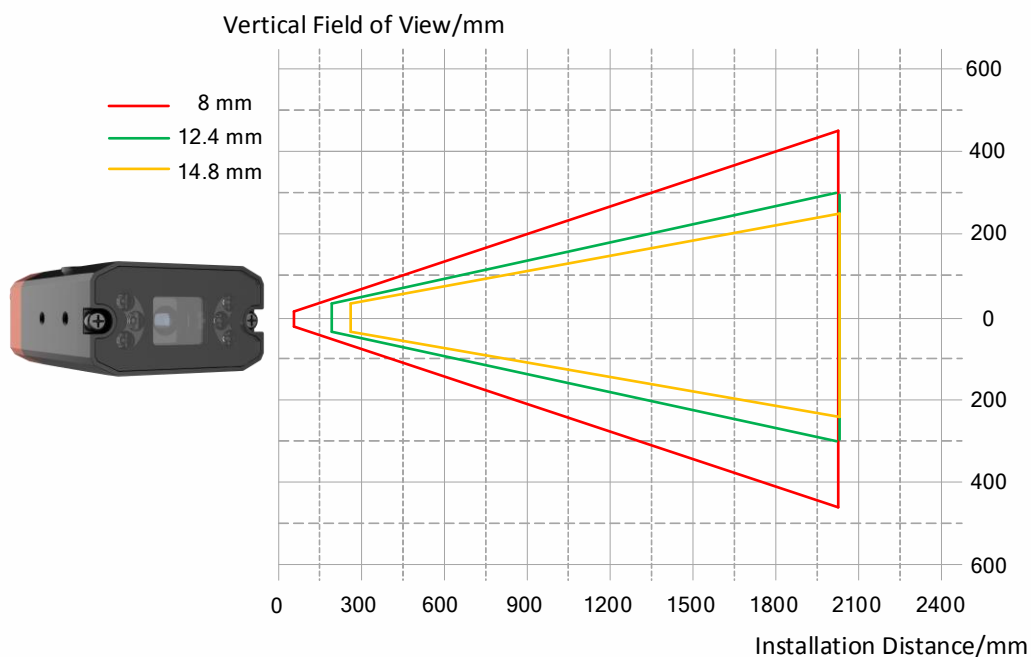


# Specification

Model	MV-SC2004EM-08S-WBN	MV-SC2004EM-12S-WBN	MV-SC2004EM-15S-WBN
<b>Tool</b>			
<b>Vision tool</b>	<ul style="list-style-type: none"> <li>● Count: Pattern count, edge count, and spot count</li> <li>● Existence: Circle existence, line existence, spot existence, edge existence, and pattern existence</li> <li>● Location: Fixture</li> <li>● Logic tool: Condition judge, character comparison, logic judge, and calculator</li> <li>● Measurement: L2L angle, diameter measurement, brightness average value, contrast measurement, width measurement, P2L measurement, greyscale size, line angle, and edge width measurement</li> <li>● Recognition: OCR, and classification registration</li> </ul>		
<b>Solution capacity</b>	Supports solution importing and exporting, up to 8 solutions and 40 modules can be stored.		
<b>Communication protocol</b>	Serial Port, TCP, UDP, FTP, Profinet, Modbus, Ethernet/IP		
<b>Camera</b>			
<b>Sensor type</b>	CMOS, global shutter		
<b>Pixel size</b>	6.9 μm × 6.9 μm		
<b>Sensor size</b>	1/2.9"		
<b>Resolution</b>	704 × 540		
<b>Max. frame rate</b>	60 fps		
<b>Dynamic range</b>	74 dB		
<b>SNR</b>	41 dB		
<b>Gain</b>	0 dB to 15 dB		
<b>Exposure time</b>	16 μs to 1 sec		
<b>Pixel format</b>	Mono 8		
<b>Mono/color</b>	Mono		
<b>Electrical features</b>			
<b>Data interface</b>	Fast Ethernet		
<b>Digital I/O</b>	17-pin M12 connector provides power, Ethernet, serial port, digital I/O, including configurable I/O × 2 (Line 0/1), input signal × 1 (Line 2), output signal × 1 (Line 3), and RS-232× 1. Device trigger via pressing button supported.		
<b>Power supply</b>	12 VDC to 24 VDC		
<b>Max. power consumption</b>	Approx. 22 W@24 VDC		
<b>Mechanical</b>			
<b>Lens mount</b>	M12-mount, adjusting focus manually supported		
<b>Focal length</b>	8 mm (0.3")	12.4 mm (0.5")	14.8 mm (0.6")
<b>Lens cap</b>	Transparent lens cap		
<b>Light source</b>	White LED lamp		
<b>Indicator</b>	Power indicator (PWR), network indicator (LNK), and status indicator (STS).		
<b>Dimension</b>	46 mm × 57.6 mm × 25 mm (1.8" × 2.3" × 1.0")		
<b>Weight</b>	Approx. 220 g (0.5 lb.)		
<b>Ingress protection</b>	IP65 (under proper installation of lens and wiring)		
<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% to 95% RH, non-condensing		
<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 (0.3")	80 mm (3.1")	47.62 mm × 36.53 mm (1.9" × 1.4")	0.068 mm
	2000 mm (78.7")	1190.59 mm × 913.24 mm (46.9" × 36.0")	1.691 mm
12.4 mm (0.5")	200 mm (7.9")	78.35 mm × 60.10 mm (3.1" × 2.4")	0.111 mm
	2000 mm (78.7")	783.48 mm × 600.97 mm (30.8" × 23.7")	1.113 mm
14.8 mm (0.6")	270 mm (10.6")	88.62 mm × 67.97 mm (3.5" × 2.7")	0.126 mm
	2000 mm (78.7")	656.43 mm × 503.51 mm (25.8" × 19.8")	0.932 mm



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Hangzhou Hikrobot Co., Ltd.  
en.hikrobotics.com

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