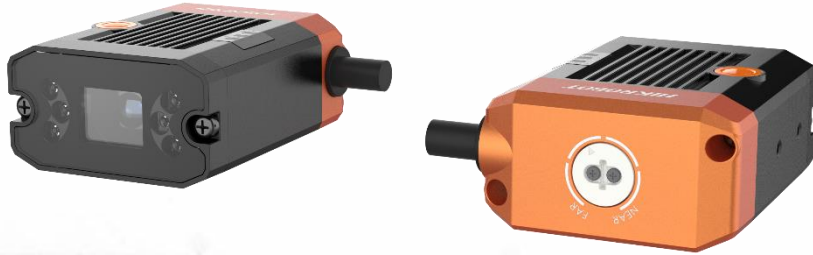


# MV-SC2004EC

0.4 MP 1/2.9" Vision Sensor



## Introduction

With built-in positioning and measurement algorithms, MV-SC2004EC 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.

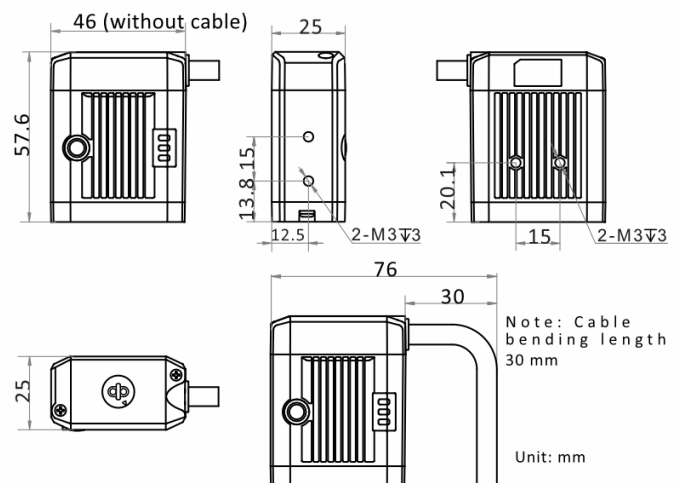
## Available Model

- 8 mm focal length:  
MV-SC2004EC-08S-WBN
- 12.4 mm focal length:  
MV-SC2004EC-12S-WBN
- 14.8 mm focal length:  
MV-SC2004EC-15S-WBN

## Applicable Industry

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

## Dimension



# Specification

| Model                  | MV-SC2004EC-08S-WBN                                                                                                                                                                                                                                               | MV-SC2004EC-12S-WBN | MV-SC2004EC-15S-WBN |
|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|---------------------|
| Tool                   |                                                                                                                                                                                                                                                                   |                     |                     |
| Vision tool            | <ul style="list-style-type: none"><li>● Existence: Pattern existence, spot existence</li><li>● Count: Pattern count, spot count</li><li>● Measurement: Brightness average value, contrast measurement, color size</li><li>● Recognition: Color contrast</li></ul> |                     |                     |
| Solution capacity      | Supports solution importing and exporting, up to 8 solutions and 40 modules can be stored.                                                                                                                                                                        |                     |                     |
| Communication protocol | Serial Port, TCP, UDP, FTP, Profinet, Modbus, Ethernet/IP                                                                                                                                                                                                         |                     |                     |
| Camera                 |                                                                                                                                                                                                                                                                   |                     |                     |
| Sensor type            | CMOS, global shutter                                                                                                                                                                                                                                              |                     |                     |
| Pixel size             | 6.9 μm × 6.9 μm                                                                                                                                                                                                                                                   |                     |                     |
| Sensor size            | 1/2.9"                                                                                                                                                                                                                                                            |                     |                     |
| Resolution             | 704 × 540                                                                                                                                                                                                                                                         |                     |                     |
| Max. frame rate        | 60 fps                                                                                                                                                                                                                                                            |                     |                     |
| Dynamic range          | 74 dB                                                                                                                                                                                                                                                             |                     |                     |
| SNR                    | 41 dB                                                                                                                                                                                                                                                             |                     |                     |
| Gain                   | 0 dB to 15 dB                                                                                                                                                                                                                                                     |                     |                     |
| Exposure time          | 16 μs to 1 sec                                                                                                                                                                                                                                                    |                     |                     |
| Pixel format           | Mono 8, RGB 8                                                                                                                                                                                                                                                     |                     |                     |
| Mono/color             | Color                                                                                                                                                                                                                                                             |                     |                     |
| Electrical features    |                                                                                                                                                                                                                                                                   |                     |                     |
| Data interface         | Fast Ethernet                                                                                                                                                                                                                                                     |                     |                     |
| Digital I/O            | 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.<br>Device trigger via pressing button supported.                        |                     |                     |
| Power supply           | 12 VDC to 24 VDC                                                                                                                                                                                                                                                  |                     |                     |
| Max. power consumption | Approx. 22 W@24 VDC                                                                                                                                                                                                                                               |                     |                     |
| Mechanical             |                                                                                                                                                                                                                                                                   |                     |                     |
| Lens mount             | M12-mount, adjusting focus manually supported                                                                                                                                                                                                                     |                     |                     |
| Focal length           | 8 mm (0.3")                                                                                                                                                                                                                                                       | 12.4 mm (0.5")      | 14.8 mm (0.6")      |
| Lens cap               | Transparent lens cap                                                                                                                                                                                                                                              |                     |                     |
| Light source           | White LED lamp                                                                                                                                                                                                                                                    |                     |                     |
| Indicator              | Power indicator (PWR), network indicator (LNK), and status indicator (STS).                                                                                                                                                                                       |                     |                     |
| Dimension              | 46 mm × 57.6 mm × 25 mm (1.8" × 2.3" × 1.0")                                                                                                                                                                                                                      |                     |                     |
| Weight                 | Approx. 220 g (0.5 lb.)                                                                                                                                                                                                                                           |                     |                     |
| Ingress protection     | IP65 (under proper installation of lens and wiring)                                                                                                                                                                                                               |                     |                     |
| Temperature            | Working temperature: 0 °C to 50 °C (32 °F to 122 °F)<br>Storage temperature: -30 °C to 70 °C (-22 °F to 158 °F)                                                                                                                                                   |                     |                     |
| Humidity               | 20% to 95% RH, non-condensing                                                                                                                                                                                                                                     |                     |                     |
| General                |                                                                                                                                                                                                                                                                   |                     |                     |
| Client software        | SCMVS                                                                                                                                                                                                                                                             |                     |                     |
| Certification          | CE, FCC, 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              |

