# MV-SC3013XM

## 1.3 MP Mono Vision Sensor

## Introduction

With built-in high-precision vision algorithms, MV-SC3013XM 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-SC3013XM-08M-WBN
- 12 mm focal length: MV-SC3013XM-12M-WBN
- 16 mm focal length: MV-SC3013XM-16M-WBN

## Key Feature

- 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

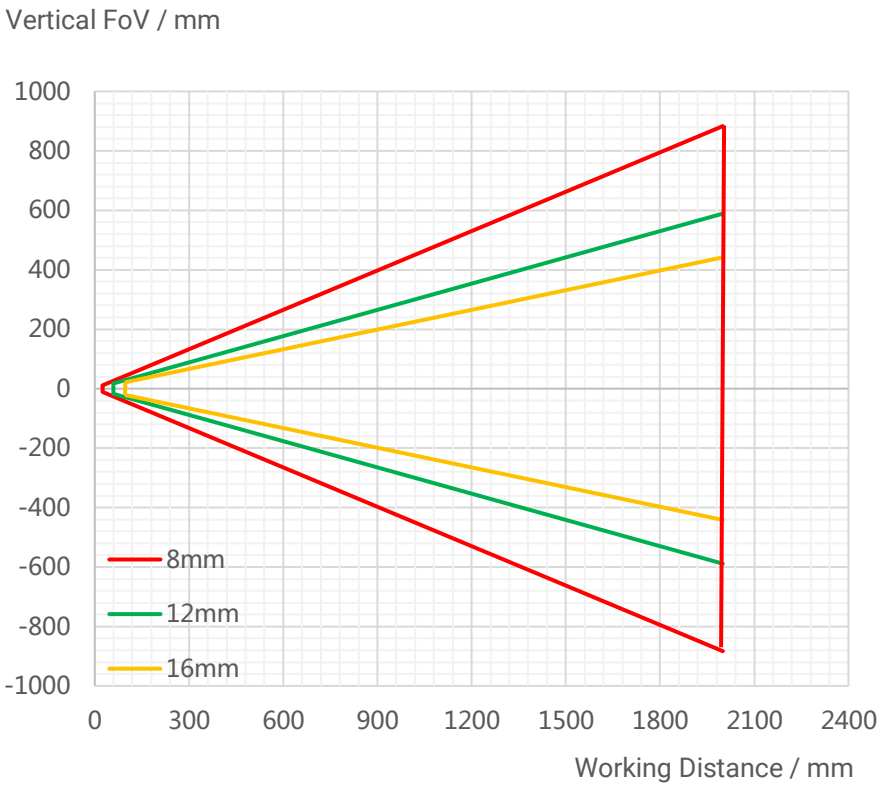
| Model | MV-SC3013XM-08M-WBN | MV-SC3013XM-12M-WBN | MV-SC3013XM-16M-WBN |
|---|---|---|---|
| ***Tool*** | | | |
| **Vision tool** | ● Count: Spot count, edge count, pattern count, contour count<br>● Defect detection: Exception detection<br>● Existence: Circle existence, line existence, spot existence, edge existence, pattern existence, contour existence<br>● Location: Match calibration, match location, position fixture<br>● Logic tool: If module, condition judge, logic judge, combination judge, string comparison, calculator<br>● Measurement: L2L angle, diameter measurement, brightness analysis, contrast measurement, width measurement, P2L measurement, greyscale size, line angle, edge width measurement<br>● Recognition: OCR, code recognition, classification registration, object detection registration<br>● Deep learning: DL object detection, DL classification | | |
| **Solution capacity** | Supports importing and exporting project, up to 32 projects 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** | 6.9 μm × 6.9 μm | | |
| **Sensor size** | 1/1.45" | | |
| **Resolution** | 1216 × 1024 | | |
| **Max. frame rate** | 60 fps | | |
| **Dynamic range** | 77.8 dB | | |
| **SNR** | 43 dB | | |
| **Gain** | 0 dB to 15 dB | | |
| **Exposure time** | 6 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 opto-isolated input (LINE 0/1/2) × 3, opto-isolated output (LINE 3/4/5) × 3, and RS-232 × 1<br>Supports triggering device via pressing top trigger button | | |
| **Power supply** | 24 VDC | | |
| **Power consumption** | Approx. 6.5 W@24 VDC | | |
| ***Mechanical*** | | | |
| **Lens mount** | M12-mount, mechanical autofocus supported | | |
| **Focal length** | 8 mm (0.3") | 12 mm (0.5") | 16 mm (0.6") |
| **Lens cap** | Polarized + diffused + full-transparent lens cap | | |
| **Light source** | White spot light source. Red/blue/IR point light source is optional | | |
| **Aiming system** | Orange LED | | |
| **Indicator** | 360° visual indicator | | |
| **Dimension** | Straight angle: 80.1 mm × 43 mm × 44.3 mm (3.2" × 1.7" × 1.7")<br>Right angle: 58.5 mm × 43 mm × 65.4 mm (2.3" × 1.7" × 2.6") | | |
| **Weight** | Approx. 190 g (0.4 lb.) | | |

# Specification

| Model | MV-SC3013XM-08M-WBN | MV-SC3013XM-12M-WBN | MV-SC3013XM-16M-WBN |
|---|---|---|---|
| **Ingress protection** | IP67 (under proper installation of waterproof lens cap) | | |
| **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, KC | | |

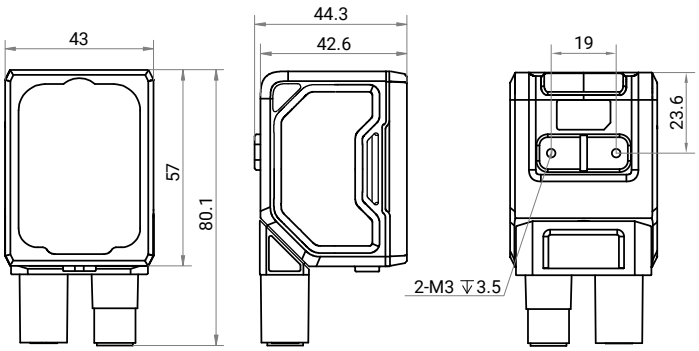
# Detection Range

| Lens focal length | Installation distance | Field of View | Single Pixel Accuracy |
|---|---|---|---|
| 8 mm | 25 mm | 27.6 mm × 22.08 mm | 0.023 mm |
| | 2000 mm | 2208 mm × 1766.4 mm | 1.82 mm |
| 12 mm | 60 mm | 44.16 mm × 35.33 mm | 0.036 mm |
| | 2000 mm | 1472 mm × 1177.6 mm | 1.21 mm |
| 16 mm | 100 mm | 55.2 mm × 44.16 mm | 0.045 mm |
| | 2000 mm | 1104 mm × 883.2 mm | 0.91 mm |



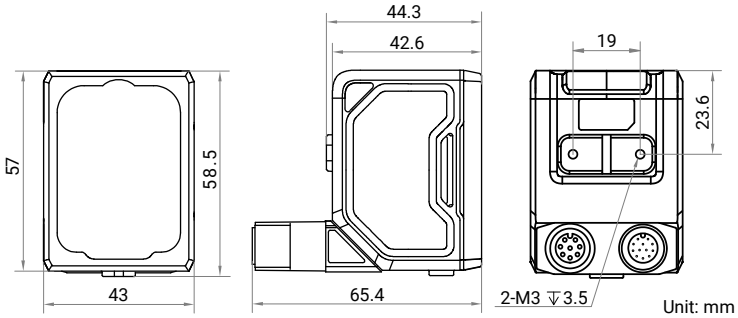
# Dimension

## Device (Straight Angle):



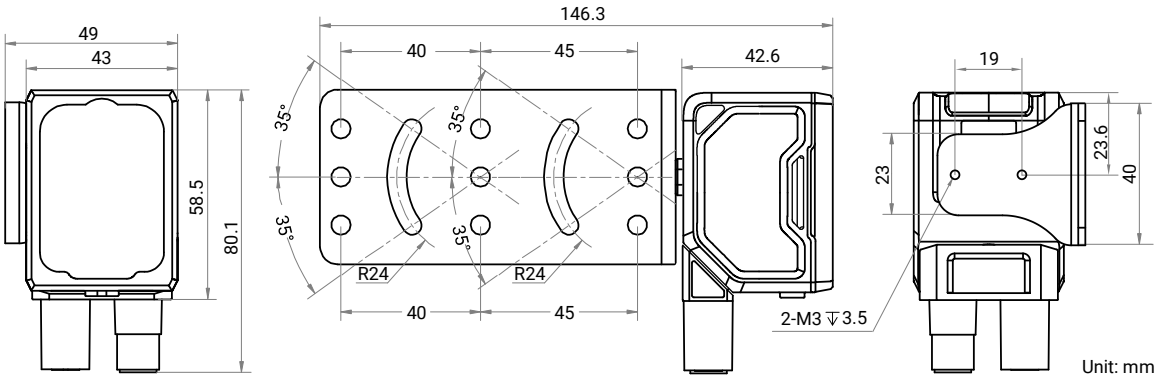

Unit: mm

## Device (Right Angle):



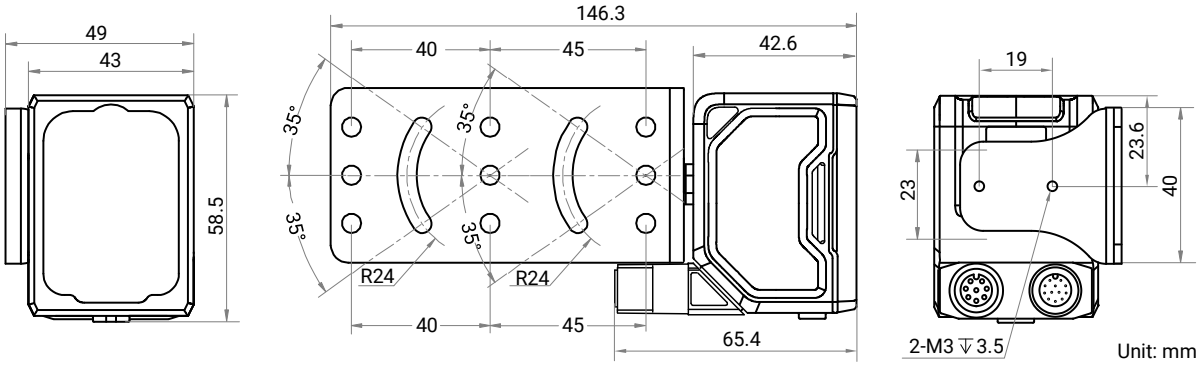

Unit: mm

## Device and Installation Bracket (Straight Angle):



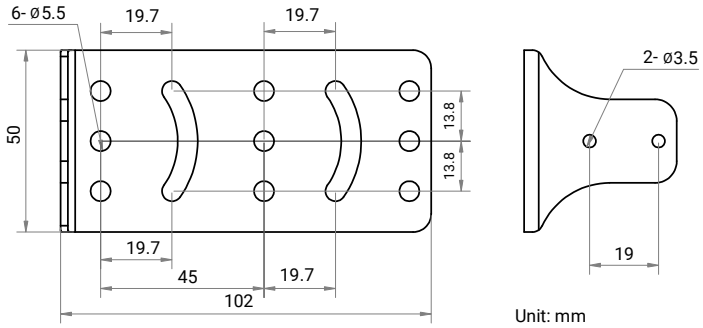

Unit: mm

## Device and Installation Bracket (Right Angle):




Unit: mm

## Installation Bracket:




Unit: mm

Hangzhou Hikrobot Co. Ltd.
en.hikrobotics.com

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