# VSPP-3F1122

Inspector

**2D MACHINE VISION**

**SICK**
Sensor Intelligence.

# VSPP-3F1122 | Inspector

## 2D MACHINE VISION



## Ordering information

| Type | part no. |
|---|---|
| VSPP-3F1122 | 1051982 |

Other models and accessories ➔ www.sick.com/Inspector

## Detailed technical data

### Features

| | |
|---|---|
| **Technology** | 2D snapshot |
| **Configurable** | ✔ |
| **Toolkit** | Blob Finder<br>Object Locator |
| **Image sensor** | CMOS monochrome |
| **Optical focus** | Adjustable focus (manually) |
| **Working range** | ≥ 50 mm |
| **Operating distance with internal illumination** | 50 mm ... 200 mm |
| **Field of view of internal illumination** | 20 mm x 20 mm  ... 72 mm x 72 mm |
| **Illumination** | Integrated |
| **Illumination color** | White |
| **LED class** | Risk group 1 (low risk, IEC62471 : 2006) |
| **Spectral range** | Approx. 400 nm ... 750 nm |
| **Offline support** | Emulator |
| **Lens** | S-mount |
| Optical format | 1/3" |
| Focal length | 6 mm |
| **Task** | Detecting - Standard objects<br>Measuring - Dimension, contour and volume<br>Measuring - Number<br>Identifying - OCR<br>Identifying - Pattern<br>Determining position - 2D position determination |

## Mechanics/electronics

| | |
|---|---|
| **Connection type** | M12, 12-pin male connector<br>M12, 4-pin female connector |
| **Supply voltage** | 24 V DC, ± 20 % |
| **Ripple** | < 5 $V_{pp}$ |
| **Current consumption** | < 450 mA, without output load |
| **Enclosure rating** | IP67 [1] |
| **Housing material** | Aluminum |
| **Window material** | PMMA |
| **Weight** | 350 g |
| **Dimensions (L x W x H)** | 100 mm x 53 mm x 38 mm |

[1] With front window mounted.

## Performance

| | |
|---|---|
| **Sensor properties** | |
| Sensor resolution | 384 px x 384 px |
| **Scan/frame rate** | 40 fps [1] |
| **Reference images** | 16 objects |

[1] Max. 750fps.

## Interfaces

| | |
|---|---|
| **Ethernet** | ✓ , TCP/IP |
| Data transmission rate | 100 Mbit/s |
| **Operator interfaces** | Inspector Viewer |
| **Configuration software** | SOPAS ET |
| **Data storage and retrieval** | Log for 30 images, record images on PC |
| **Ethernet communication** | TCP/IP |
| **Digital input** | 3 inputs (24 V) |
| **Configurable inputs** | External trigger, encoder input, External teach, reference object selection |
| **Digital output** | 4 digital outputs, 24 V |
| **Output current** | ≤ 100 mA |
| **Standard outputs** | Directional guidance |
| **Maximum encoder frequency** | Max. 40 kHz |
| **External illumination** | 5 V TTL |

## Ambient data

| | |
|---|---|
| **Shock load** | EN 60068-2-27 |
| **Vibration load** | IEC 60068-2-6 |
| **Ambient operating temperature** | 0 °C ... +45 °C [1] |
| **Storage temperature** | –20 °C ... +70 °C [1] |

[1] Relative humidity: 35% ... 85%, 95% in storage.

## Certificates

| | |
|---|---|
| **EU declaration of conformity** | ✓ |

| | |
|---|---|
| **ACMA declaration of conformity** | ✓ |
| **China RoHS** | ✓ |
| **cULus certificate** | ✓ |
| **Information according to Art. 3 of Data Act (Regulation EU 2023/2854)** | ✓ |

Classifications

| | |
|---|---|
| **ECLASS 5.0** | 27310205 |
| **ECLASS 5.1.4** | 27310205 |
| **ECLASS 6.0** | 27310205 |
| **ECLASS 6.2** | 27310205 |
| **ECLASS 7.0** | 27310205 |
| **ECLASS 8.0** | 27310205 |
| **ECLASS 8.1** | 27310205 |
| **ECLASS 9.0** | 27310205 |
| **ECLASS 10.0** | 27310205 |
| **ECLASS 11.0** | 27310205 |
| **ECLASS 12.0** | 27310205 |
| **ETIM 5.0** | EC001820 |
| **ETIM 6.0** | EC001820 |
| **ETIM 7.0** | EC001820 |
| **ETIM 8.0** | EC001820 |
| **UNSPSC 16.0901** | 43211731 |

## Dimensional drawing Standard
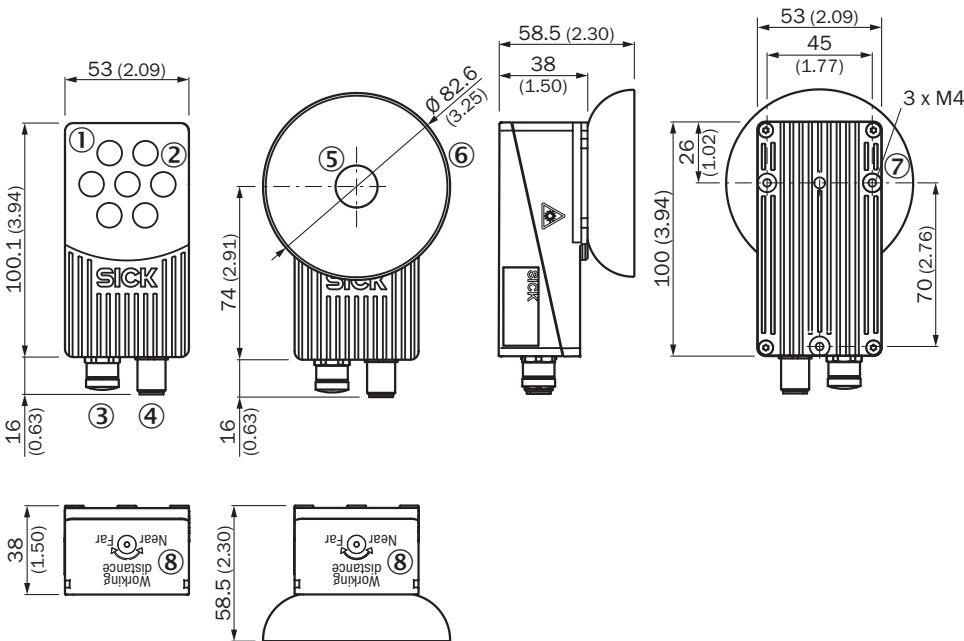


Dimensions in mm (inch)

① Front screen: standard, flex
② ring lighting
③ Ethernet connection M12, 4-pin, female
④ Power connection M12, 12-pin, male
⑤ Front screen: dome
⑥ dome light
⑦ Mounting hole M4
⑧ focus

## Field of view

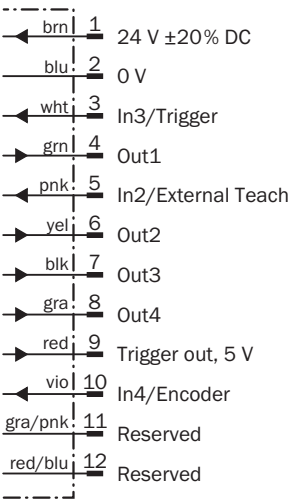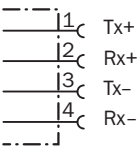Theoretical FOV size (384 x 384 pixels)



| | |
|---|---|
| —— | f = 4.3 mm |
| —— | f = 6.0 mm |
| —— | f = 8.0 mm |
| —— | f = 10.0 mm |
| —— | f = 16.0 mm |
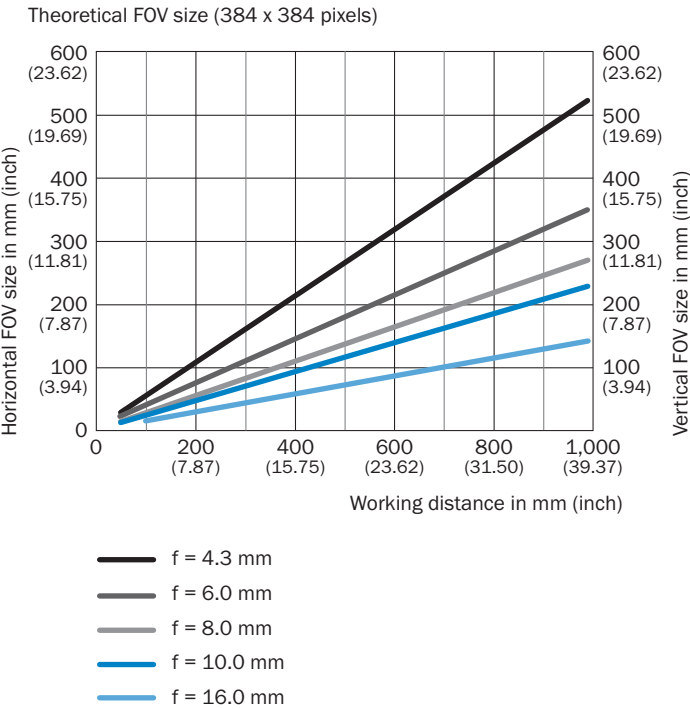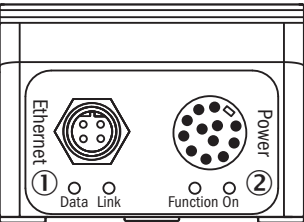
## Connection type



① Ethernet connection M12, 4-pin, female
② Power connection M12, 12-pin, male

## M12 connection diagram, 12-pin

| Pin | Wire | Signal |
|-----|------|--------|
| 1 | brn | 24 V ±20% DC |
| 2 | blu | 0 V |
| 3 | wht | In3/Trigger |
| 4 | grn | Out1 |
| 5 | pnk | In2/External Teach |
| 6 | yel | Out2 |
| 7 | blk | Out3 |
| 8 | gra | Out4 |
| 9 | red | Trigger out, 5 V |
| 10 | vio | In4/Encoder |
| 11 | gra/pnk | Reserved |
| 12 | red/blu | Reserved |

## Ethernet connection diagram

| Pin | Signal |
|-----|--------|
| 1 | Tx+ |
| 2 | Rx+ |
| 3 | Tx− |
| 4 | Rx− |

## Recommended accessories

Other models and accessories ➜ www.sick.com/Inspector

| | Brief description | Type | part no. |
|---|---|---|---|
| **reflectors and optics** | | | |
| | • **Description:** Color filter blue (468 nm ± 62 nm) for variants with exchangeable lens and front window, PMMA | Inspector Flex blue color filter | 2050676 |
| | • **Description:** Color filter green (544 nm ± 53 nm) for variants with exchangeable lens and front window, PMMA | Inspector Flex green color filter | 2050677 |
| | • **Description:** Exchangeable lens, focal length 6 mm | OBJ-B06025BA | 2049668 |
| | • **Description:** Replaces the front screen and generates even and uniform illumination, for glossy surfaces | Inspector Flex Dome | 2050678 |
| | • **Description:** Color filter red for variants with exchangeable lens and front window, PMMA | Inspector Flex red color filter | 2050675 |
| | • **Description:** Exchangeable lens, focal length 16 mm, including spacer ring | OBJ-B16018BA | 2049418 |
| **connectors and cables** | | | |
| | • **Connection type head A:** Male connector, M12, 4-pin, straight, D-coded<br>• **Connection type head B:** Male connector, RJ45, 4-pin, straight<br>• **Signal type:** Ethernet, PROFINET<br>• **Cable:** 2 m, 4-wire, PUR, halogen-free<br>• **Description:** Ethernet, shielded, PROFINET<br>• **Application:** Drag chain operation, Zones with oils and lubricants | YM2D24-020P-N1MRJA4 | 2106182 |
| | • **Connection type head A:** Female connector, M12, 12-pin, straight, A-coded<br>• **Connection type head B:** Flying leads<br>• **Signal type:** Sensor/actuator cable<br>• **Cable:** 5 m, 12-wire, PUR, halogen-free<br>• **Description:** Sensor/actuator cable, shielded<br>• **Application:** Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation | YF2A2B-050UD2XLEAX | 2130999 |

# SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

**For us, that is "Sensor Intelligence."**

# WORLDWIDE PRESENCE:

Contacts and other locations –**www.sick.com**

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Sensor Intelligence.