



# V2D631P-2MXSXB0

InspectorP63x

2D MACHINE VISION

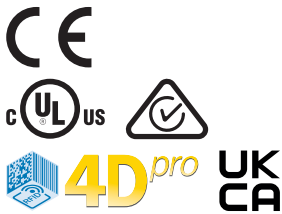
**SICK**  
Sensor Intelligence.



### Ordering information

| Type            | part no. |
|-----------------|----------|
| V2D631P-2MXSXB0 | 1082299  |

Other models and accessories → [www.sick.com/InspectorP63x](http://www.sick.com/InspectorP63x)



### Detailed technical data

#### Features

|                             |                                                                                                                                                       |
|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Technology</b>           | 2D snapshot                                                                                                                                           |
| <b>Programmable</b>         | ✓                                                                                                                                                     |
| <b>Application software</b> | Nova Inspector                                                                                                                                        |
| <b>License included</b>     | Quality Inspection License<br>Optional upgrade with the Intelligent Inspection Upgrade License, which enables productive use of the complete toolset. |
| <b>Toolkit</b>              | HALCON                                                                                                                                                |
| <b>Image sensor</b>         | CMOS monochrome                                                                                                                                       |
| <b>Shutter technology</b>   | Global-Shutter                                                                                                                                        |
| <b>Optical focus</b>        | Adjustable focus                                                                                                                                      |
| <b>Illumination</b>         | To be ordered separately as accessories                                                                                                               |
| <b>Illumination color</b>   | White<br>Red<br>Blue<br>Infrared                                                                                                                      |
| <b>Alignment aid</b>        | Laser, Red, 630 nm ... 680 nm                                                                                                                         |
| <b>Laser class</b>          | 1, complies with 21 CFR 1040.10 except for the conformance according to "Laser Notice No. 50" from June 24, 2007 (IEC 60825-1:2014, EN 60825-1:2014)  |
| <b>Spectral range</b>       | Approx. 400 nm ... 900 nm                                                                                                                             |
| <b>Lens</b>                 | S-mount                                                                                                                                               |
| <b>Optical format</b>       | 1/1.8"                                                                                                                                                |
| <b>Note</b>                 | To be ordered separately as accessories                                                                                                               |
| <b>Task</b>                 | Detecting - Standard objects<br>Measuring - Dimension, contour and volume<br>Measuring - Number<br>Identifying - 2D code                              |

|  |                                                                                                                                                      |
|--|------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | Identifying - OCR<br>Identifying - Pattern<br>Identifying - Classifying<br>Identifying - Sorting<br>Determining position - 2D position determination |
|--|------------------------------------------------------------------------------------------------------------------------------------------------------|

## Mechanics/electronics

|                               |                                                                                                                                                                                                                       |
|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Connection type</b>        | 1 x M12, 17-pin male connector (serial, I/Os, voltage supply)<br>1 x M8, 4-pin female connector (USB, not used)<br>1 x M12, 8-pin socket (Gigabit Ethernet)<br>1 x M8, 4-pin female connector (external illumination) |
| <b>Supply voltage</b>         | 12 V DC ... 24 V DC, $\pm 20\%$                                                                                                                                                                                       |
| <b>Power consumption</b>      | Typ. 10 W, $\pm 20\%$                                                                                                                                                                                                 |
| <b>Enclosure rating</b>       | IP67 (EN 60529 (1991-10), EN 60529/A2 (2002-02))                                                                                                                                                                      |
| <b>Protection class</b>       | III (EN 60950-1 (2014-08))                                                                                                                                                                                            |
| <b>Housing material</b>       | Aluminum die cast                                                                                                                                                                                                     |
| <b>Window material</b>        | PMMA                                                                                                                                                                                                                  |
| <b>Weight</b>                 | 430 g                                                                                                                                                                                                                 |
| <b>Dimensions (L x W x H)</b> | 108 mm x 63 mm x 46 mm <sup>1)</sup>                                                                                                                                                                                  |

<sup>1)</sup> Housing only, without lens and optics protection hood.

## Performance

|                          |                                  |
|--------------------------|----------------------------------|
| <b>Sensor properties</b> |                                  |
| Sensor resolution        | 1,280 px x 1,024 px (1.3 Mpixel) |
| <b>Scan/frame rate</b>   | 50 Hz                            |

## Interfaces

|                                   |                                                                                             |
|-----------------------------------|---------------------------------------------------------------------------------------------|
| <b>Serial</b>                     | ✓, RS-232, RS-422                                                                           |
| Data transmission rate            | 300 Baud ... 115.2 kBaud                                                                    |
| <b>Ethernet</b>                   | ✓, TCP/IP                                                                                   |
| Function                          | FTP, HTTP                                                                                   |
| Data transmission rate            | 10/100/1,000 Mbit/s                                                                         |
| <b>CAN</b>                        | ✓                                                                                           |
| Function                          | SICK CAN sensor network (CAN controller/CAN device)                                         |
| <b>EtherNet/IP™</b>               | ✓                                                                                           |
| Data transmission rate            | 10/100/1,000 Mbit/s                                                                         |
| <b>PROFINET</b>                   | ✓                                                                                           |
| Function                          | PROFINET Single Port, PROFINET Dual Port (optional via external connection module CDF600-2) |
| Data transmission rate            | 10/100 MBit/s                                                                               |
| <b>Operator interfaces</b>        | Web server                                                                                  |
| <b>Configuration software</b>     | SICK AppStudio                                                                              |
| <b>Data storage and retrieval</b> | Image and data logging via microSD memory card and external FTP                             |
| <b>Inputs/outputs</b>             | 2 opto-decoupled inputs, 4 inputs/outputs, configurable                                     |
| <b>Output current</b>             | $\leq 100$ mA                                                                               |
| <b>Maximum encoder frequency</b>  | Max. 1 kHz                                                                                  |
| <b>External illumination</b>      | Via digital output (max. 24 V trigger) or external illumination connection                  |

|                            |                                                                                   |
|----------------------------|-----------------------------------------------------------------------------------|
| <b>Control elements</b>    | 2 buttons                                                                         |
| <b>Optical indicators</b>  | 11 LEDs (5 status displays, 16 LEDs, 5 LED bar graphs, 1 green/red feedback spot) |
| <b>Acoustic indicators</b> | Beeper                                                                            |

### Ambient data

|                                      |                                 |
|--------------------------------------|---------------------------------|
| <b>Shock load</b>                    | EN 60068-2-27:2009-05           |
| <b>Vibration load</b>                | EN 60068-2-6:2008-02            |
| <b>Ambient operating temperature</b> | 0 °C ... +50 °C <sup>1)</sup>   |
| <b>Storage temperature</b>           | -20 °C ... +70 °C <sup>1)</sup> |

<sup>1)</sup> Permissible relative humidity: 0% ... 90% (non-condensing).

### Licenses

|                         |                                                                                                                                                       |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>License included</b> | Quality Inspection License<br>Optional upgrade with the Intelligent Inspection Upgrade License, which enables productive use of the complete toolset. |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|

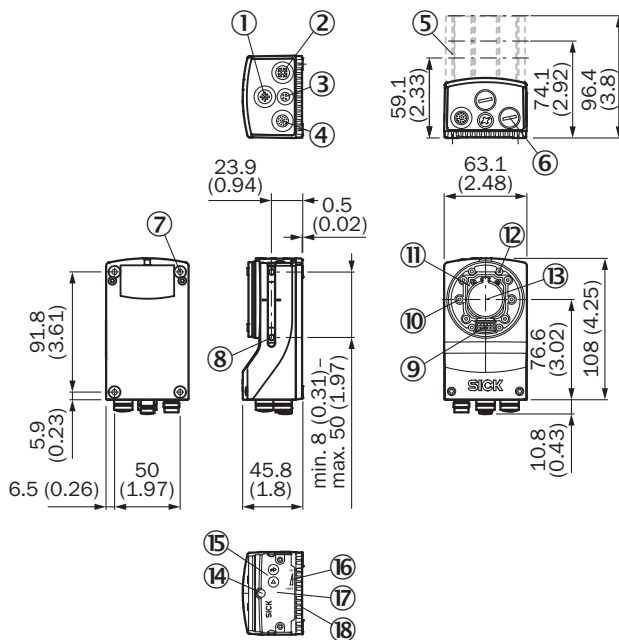
### Certificates

|                                                                              |   |
|------------------------------------------------------------------------------|---|
| <b>EU declaration of conformity</b>                                          | ✓ |
| <b>UK declaration of conformity</b>                                          | ✓ |
| <b>ACMA declaration of conformity</b>                                        | ✓ |
| <b>China RoHS</b>                                                            | ✓ |
| <b>cULus certificate</b>                                                     | ✓ |
| <b>Information according to Art. 3 of Data Act (Regulation EU 2023/2854)</b> | ✓ |
| <b>4Dpro</b>                                                                 | ✓ |

### Classifications

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

## Dimensional drawing

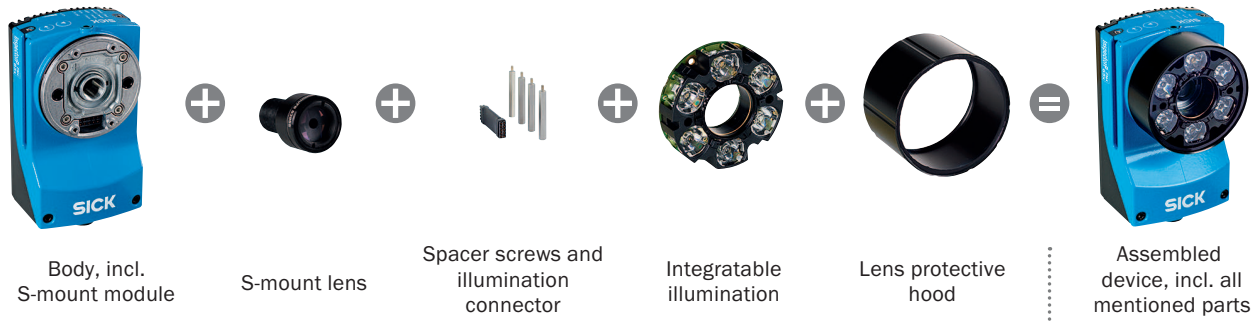


Dimensions in mm (inch)

- ① "External light" connection (external illumination unit, female connector, M12, 4-pin, A-coded)
- ② "Ethernet" connection (Gigabit Ethernet, female connector, M12, 8-pin, X-coded)
- ③ "USB" connection (female connector, type M8, 4-pin), for temporary use as a service interface only
- ④ "Power/Serial Data/CAN/I/O" connection (male connector, M12, 17-pin, A-coded)
- ⑤ Optics protection hood (length: 22.7 mm, 37.7 mm or 60 mm)
- ⑥ 4 protective caps for sealing off the electrical connections as required for enclosure rating IP67 (delivery condition)
- ⑦ 4 tapped blind holes, M5, 5.5 mm deep for mounting the product
- ⑧ 2 M5 sliding nuts; 5.5 mm deep; pivoting; as an alternative method of mounting the product
- ⑨ Connection for an integrable illumination unit (VI55I ring illumination unit)
- ⑩ 2 laser alignment aids
- ⑪ S-mount or C-mount optics module
- ⑫ 4 blind tapped holes, 2.5 mm for mounting the spacers for the integrable illumination (VI55I ring illumination unit)
- ⑬ Optical axis and center of the image sensor
- ⑭ Basic device: Manual focus screw for an S-mount lens, accessible via the round opening in the housing cover. To secure the focus setting, cover the round opening with a self-adhesive label. Complete device: The opening is already covered by a label.
- ⑮ 2 function keys
- ⑯ 5 bar graph LEDs
- ⑰ Hinged cover on the top side of the device, access to the microSD memory card and the manual focus screw (S-mount)
- ⑱ 5 status LEDs (2 levels)



# Selection Guide



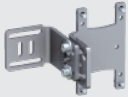
| Body, incl. S-mount module                                                                                   | S-mount lens                                                    | Spacer screws and illumination connector | Integratable illumination | Lens protective hood        |
|--------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|------------------------------------------|---------------------------|-----------------------------|
| <b>InspectorP631</b><br>V2D631P-2MXSXB0<br>1082299<br><br><b>InspectorP632</b><br>V2D632P-2MXSXB0<br>1082301 | Focal length <b>9.6 mm</b><br>Aperture <b>F8</b><br>2079336     |                                          | Wide, white<br>2078428    | Short – 22.7 mm<br>2079176  |
|                                                                                                              |                                                                 |                                          | Wide, blue<br>2083813     | Short – 22.7 mm<br>2079176  |
|                                                                                                              |                                                                 |                                          | Wide, IR<br>2101371       | Short – 22.7 mm<br>2092587  |
|                                                                                                              | Focal length <b>12.5 mm</b><br>Aperture <b>F8</b><br>on request |                                          | Medium, white<br>2078430  | Short – 22.7 mm<br>2079176  |
|                                                                                                              |                                                                 |                                          | Medium, blue<br>2083814   | Short – 22.7 mm<br>2079176  |
|                                                                                                              |                                                                 |                                          | Wide, IR<br>2101371       | Short – 22.7 mm<br>2092587  |
|                                                                                                              | Focal length <b>17.5 mm</b><br>Aperture <b>F8</b><br>5330231    |                                          | Medium, white<br>2078430  | Short – 22.7 mm<br>2079176  |
|                                                                                                              |                                                                 |                                          | Medium, blue<br>2083814   | Short – 22.7 mm<br>2079176  |
|                                                                                                              |                                                                 |                                          | Medium, IR<br>2098834     | Short – 22.7 mm<br>2092587  |
|                                                                                                              | Focal length <b>25 mm</b><br>Aperture <b>F8</b><br>2076656      | Medium – 15 mm<br>2079501                | Narrow, white<br>2078431  | Medium – 37.7 mm<br>2079127 |
|                                                                                                              |                                                                 |                                          | Narrow, blue<br>2083812   | Medium – 37.7 mm<br>2079127 |
|                                                                                                              |                                                                 |                                          | Medium, IR<br>2098834     | Medium – 37.7 mm<br>2092590 |

Overview SICK AppSpace



## Recommended accessories

Other models and accessories → [www.sick.com/InspectorP63x](http://www.sick.com/InspectorP63x)

|                                                                                     | Brief description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Type                                                   | part no. |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|----------|
| reflectors and optics                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                        |          |
|    | <ul style="list-style-type: none"> <li><b>Description:</b> Optics protection hood, short, enclosure rating IP 67, length: 22.7 mm, PMMA, for use with S-mount lens with focal length 9.6 mm or 17.5 mm</li> </ul>                                                                                                                                                                                                                                                                                            | Optics protection hood (PMMA)                          | 2079176  |
|    | <ul style="list-style-type: none"> <li><b>Description:</b> S-mount 1/1.8", focal length 9.6 mm, aperture 8</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                        | S-mount lens                                           | 2079336  |
|    | <ul style="list-style-type: none"> <li><b>Description:</b> Integratable lighting, white lighting color, wide, suitable for S-mount and compact C-mount lenses with a focal length of 9.6 mm</li> </ul>                                                                                                                                                                                                                                                                                                       | VI55I-WH0766M0                                         | 2078428  |
| Junction boxes                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                        |          |
|    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | CDB650-204                                             | 1064114  |
| Mounting systems                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                        |          |
|   | <ul style="list-style-type: none"> <li><b>Description:</b> Sliding nut, M5, short</li> <li><b>Usable for:</b> Lector62x, EventCam</li> </ul>                                                                                                                                                                                                                                                                                                                                                                 | Sliding nut                                            | 5324896  |
|  | <ul style="list-style-type: none"> <li><b>Description:</b> Mounting bracket set consisting of mounting bracket, cooling plate, includes angle display for setting the tilt angle</li> <li><b>Suitable for:</b> Lector63x, Inspector63x, Lector83x – up to 40 °C ambient operating temperature, Insepctor83x – up to 40 °C ambient operating temperature, Lector83x – up to 40 °C ambient operating temperature, Insepctor83x – up to 40 °C ambient operating temperature, Lector63x, Insepctor63x</li> </ul> | Mounting bracket set with inclination angle –40° - 40° | 2076735  |
| connectors and cables                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                        |          |
|  | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 17-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Male connector, M12, 17-pin, straight, A-coded</li> <li><b>Signal type:</b> Power, serial, CAN, digital I/Os</li> <li><b>Cable:</b> 3 m, 17-wire</li> <li><b>Description:</b> Power, suitable for 2 A, shielded, Serial, CAN, Digital I/Os</li> <li><b>Application:</b> Drag chain operation</li> </ul>                                       | YM2A8D-030XXXF2A8D                                     | 6051194  |
|  | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Male connector, M12, 8-pin, straight, X-coded</li> <li><b>Connection type head B:</b> Male connector, RJ45, 8-pin, straight</li> <li><b>Signal type:</b> Ethernet, Gigabit Ethernet</li> <li><b>Cable:</b> 2 m, 8-wire, PUR, halogen-free</li> <li><b>Description:</b> Ethernet, shielded, Gigabit Ethernet</li> <li><b>Application:</b> Zones with oils and lubricants</li> </ul>                                                     | YM2X18-020EG1M-RJA8                                    | 2106258  |
|  | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Male connector, M12, 8-pin, straight, X-coded</li> <li><b>Connection type head B:</b> Male connector, RJ45, 8-pin, straight</li> <li><b>Signal type:</b> Ethernet, Gigabit Ethernet</li> <li><b>Cable:</b> 3 m, 8-wire, PUR, halogen-free</li> <li><b>Description:</b> Ethernet, shielded, Gigabit Ethernet</li> <li><b>Application:</b> Zones with oils and lubricants</li> </ul>                                                     | YM2X18-030EG1M-RJA8                                    | 2145693  |

## 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](http://www.sick.com)