



# V2D654P-2MCXXA6

InspectorP64x/InspectorP65x

2D MACHINE VISION

**SICK**  
Sensor Intelligence.



### Ordering information

| Type            | part no. |
|-----------------|----------|
| V2D654P-2MCXXA6 | 1082304  |

Other models and accessories → [www.sick.com/InspectorP64x\\_InspectorP65x](http://www.sick.com/InspectorP64x_InspectorP65x)



### 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>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 and 1040.11 except for conformance with IEC 60825-1 Ed.3., as described in "Laser Notice No. 56" dated May 8, 2019 (IEC 60825-1:2014, EN 60825-1:2014) |
| <b>Spectral range</b>       | Approx. 400 nm ... 900 nm  |
| <b>Lens</b>                 | C-mount  |
|                             | Optical format 1"  |
|                             | Note To be ordered separately as accessories   |
| <b>Task</b>                 | Detecting - Standard objects<br>Measuring - Dimension, contour and volume  |

Measuring - Number  
 Identifying - 2D code  
 Identifying - OCR  
 Identifying - Pattern  
 Identifying - Classifying  
 Identifying - Sorting  
 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>2 x M12, 8-pin socket (Gigabit Ethernet, only one connection used) |
| <b>Supply voltage</b>         | 24 V DC, $\pm 20\%$   |
| <b>Power consumption</b>      | Typ. 20 W, $\pm 20\%$   |
| <b>Enclosure rating</b>       | IP65 (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>        | Glass   |
| <b>Weight</b>                 | 635 g   |
| <b>Dimensions (L x W x H)</b> | 142 mm x 90 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 2,048 px x 2,048 px (4.2 MP) |
| <b>Scan/frame rate</b>   | 40 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)                                   |
| <b>Control elements</b>      | 2 buttons  |
| <b>Optical indicators</b>    | 21 LEDs (10 x status display, 10 x LED bar graph, 1 green 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. |
|-------------------------|---|

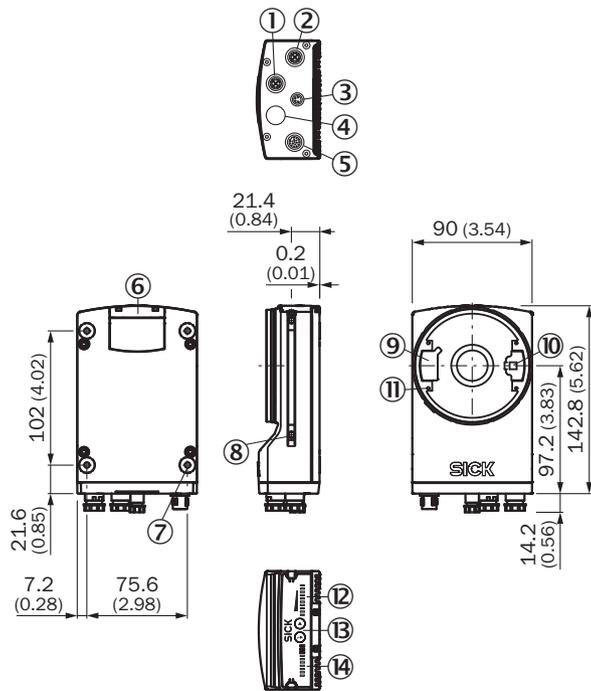
### Certificates

|  |   |
|--|---|
| <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>Profinet 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



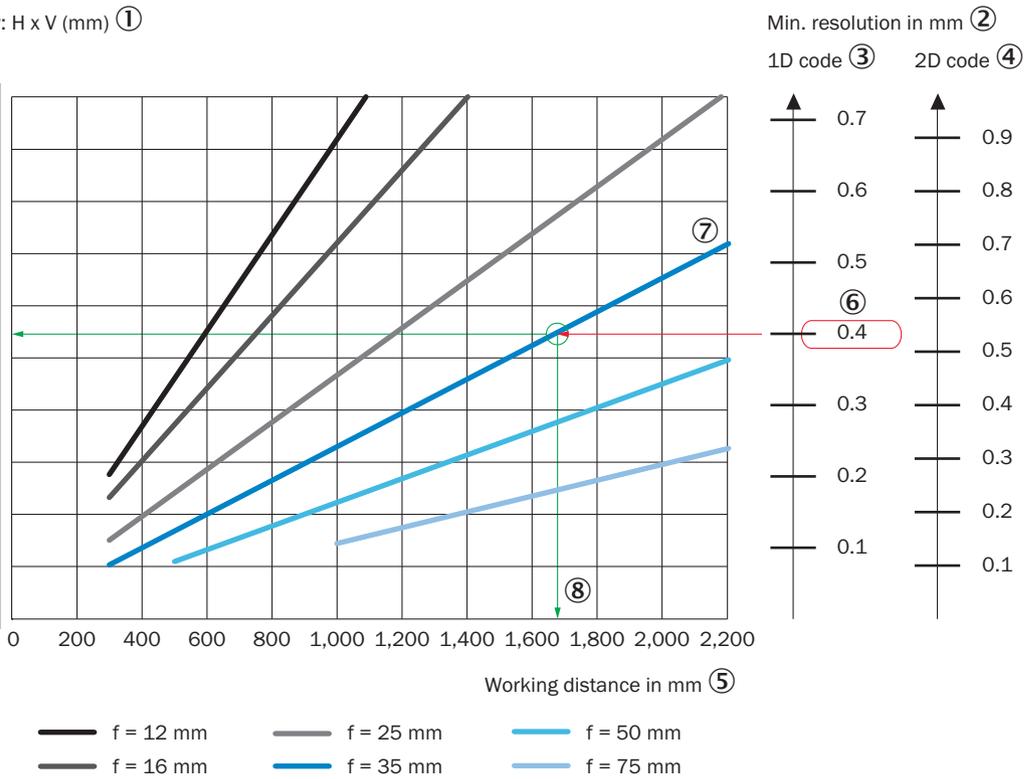
Dimensions in mm (inch)

- ① “Ethernet” P1 connection
- ② P3 connection “Ethernet”
- ③ X2 “USB” connection or “trigger external lighting”, depending on type
- ④ P2 connection “CAN OUT”, depending on type
- ⑤ X1 “Power/Serial Data/CAN/I/O” connection or “CAN IN”, depending on type
- ⑥ cover for the microSD memory card
- ⑦ M5 blind tapped holes, 5 mm deep (4 x), for mounting the sensor
- ⑧ sliding nut M5, 5.5 mm deep (2 x), for mounting (as alternative)
- ⑨ plug connector for connecting the integrated lighting
- ⑩ laser alignment aid exit
- ⑪ 2.5 mm blind tapped holes (4 x) for mounting the spacers for the integrable illumination
- ⑫ Bar graph display
- ⑬ Function button (2 x)
- ⑭ LED for status display (2 levels), 10 x

### Field of view

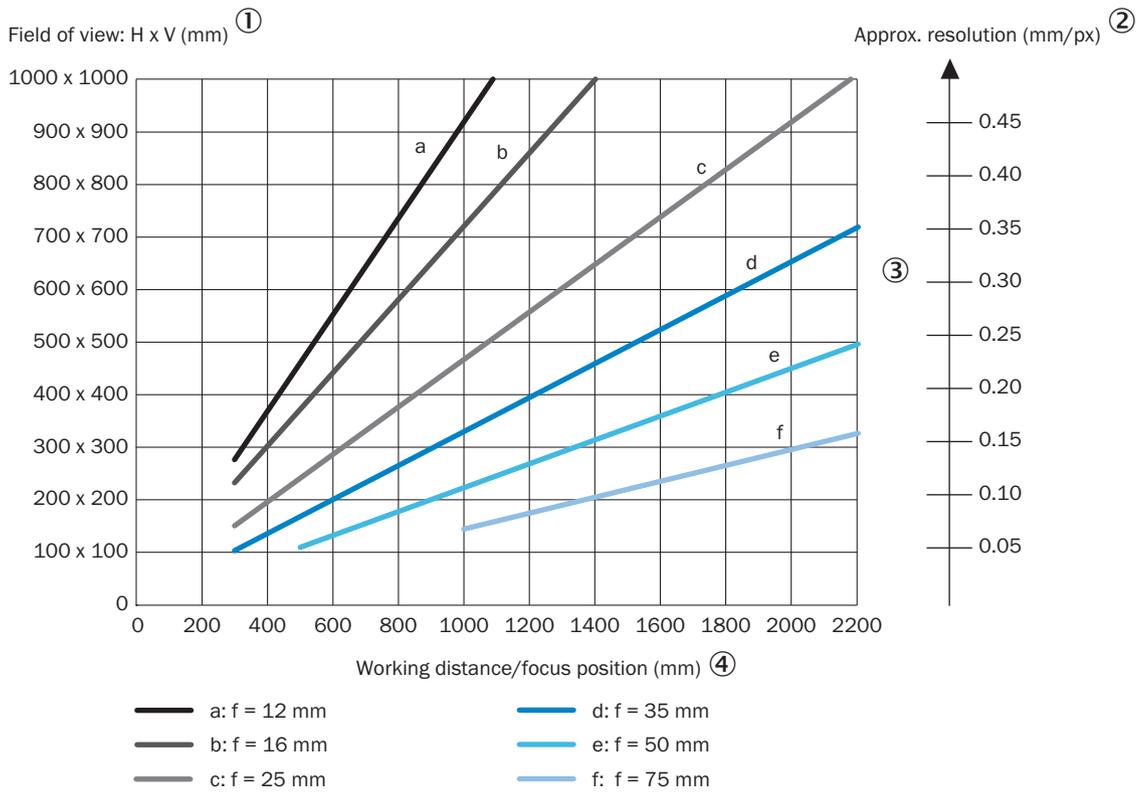
Perceived area of field of view: H x V (mm) ①

| V2D654P       | V2D652P     |
|---------------|-------------|
| 1,000 x 1,000 | 1,000 x 500 |
| 900 x 900     | 900 x 450   |
| 800 x 800     | 800 x 400   |
| 700 x 700     | 700 x 350   |
| 600 x 600     | 600 x 300   |
| 500 x 500     | 500 x 250   |
| 400 x 400     | 400 x 200   |
| 300 x 300     | 300 x 150   |
| 200 x 200     | 200 x 100   |
| 100 x 100     | 100 x 50    |
| 0             | 0           |



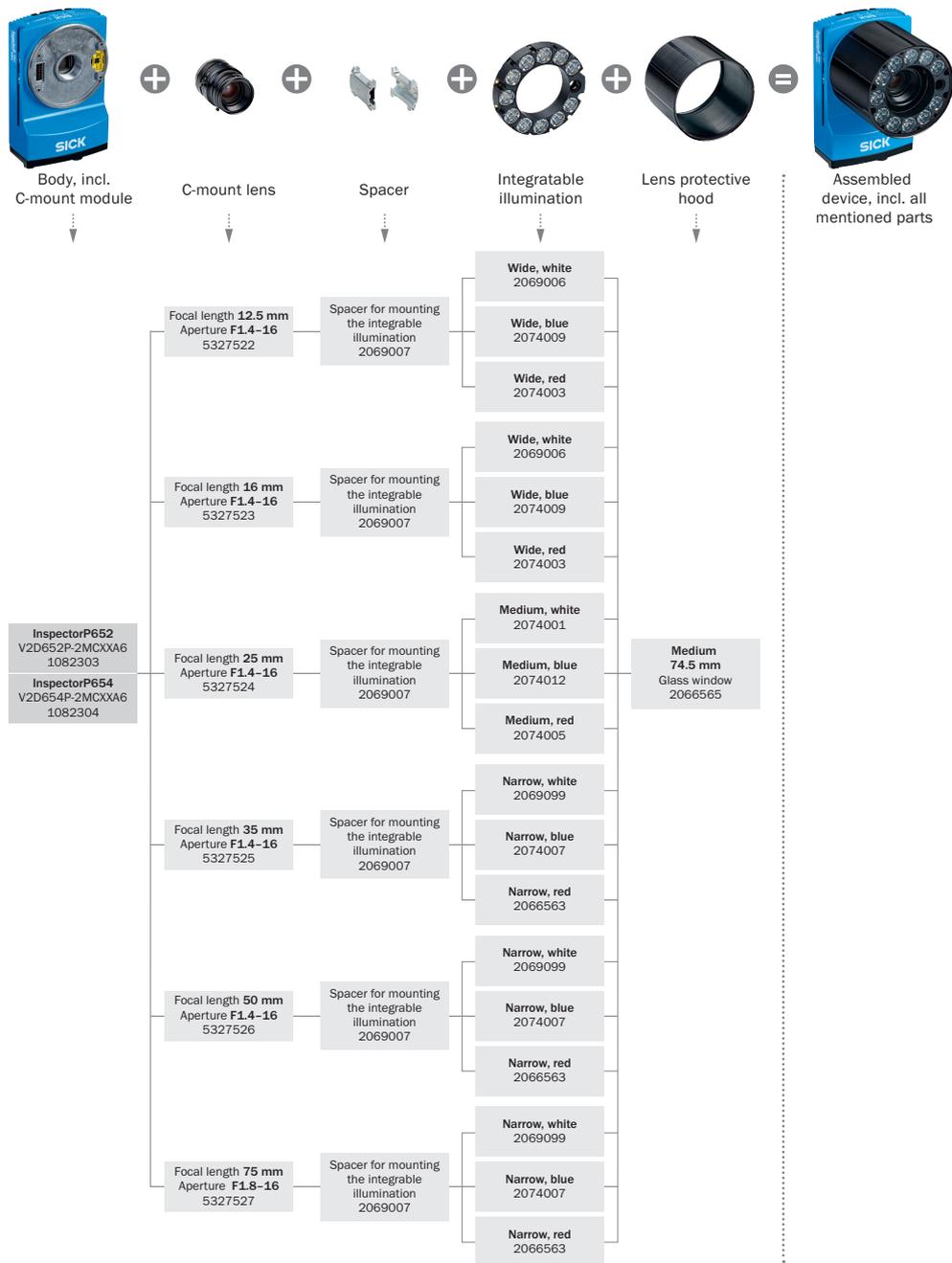
- ① perceived field of view area: horizontal x vertical (mm)
- ② Minimum resolution in mm
- ③ 1D code
- ④ 2D code
- ⑤ Working distance in mm
- ⑥ Selected code resolution
- ⑦ Focal length of lens, here example for f = 35.0 mm
- ⑧ Reading off: resultant maximum working distance
- ⑨ Reading off: Resulting perceived area of the field of view V2D652P (mm x mm)
- ⑩ Reading off: Resulting perceived area of the field of view V2D654P (mm x mm)

Field of view



- ① Field of view: Horizontal x vertical in mm
- ② approximate resolution in mm/px
- ③ Lens focal length
- ④ Working distance/Focus position in mm

### Selection Guide



Recommended accessories

Other models and accessories → [www.sick.com/InspectorP64x\\_InspectorP65x](http://www.sick.com/InspectorP64x_InspectorP65x)

|   | Brief description  | Type                 | part no. |
|---|--|----------------------|----------|
| 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 kit comprising mounting bracket, cooling plate and screws, including angle indicator for adjusting the tilt angle</li> </ul>   | Mounting bracket kit | 2069171  |
| 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  |
| reflectors and optics   |  |                      |          |
|  | <ul style="list-style-type: none"> <li><b>Description:</b> Optics kit 03 incl. lens with focal distance 25 mm, white illumination, spacer and optics protective hood</li> </ul>  | Optics kit 03        | 1064793  |

## 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)