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DATA SHEET

# V2D8512R-1MCKEXAF2SXXXX

Lector85x
Image-based code readers

SICK Sensor Intelligence




## IMAGE-BASED CODE READERS

# V2D8512R-1MCKEXAF2SXXXX

### ORDERING INFORMATION

| Type | part no. |
|---|---|
| V2D8512R-1MCKEXAF2SXXXX | 1144402 |

Further device versions and accessories at www.sick.com/Lector85x

## DETAILED TECHNICAL DATA

### FEATURES

| | |
|---|---|
| Application | Indoor area |
| Technology | 2D snapshot, Image-based code reading |
| Variant | Complete device |
| Optical focus | Adjustable focus (manual) |
| Sensor | CMOS monochrome |
| Sensor resolution | 4,096 px x 3,008 px (12 MP) |
| Illumination | Integrated |
| Illumination color | White, LED, Visible, |
| Anzahl LED | 32 |
| Aperture angle | 31°, Illumination |
| LED class | Risk group 1 (low risk) according to EC 62471-1: 2006-07 / EN 62471-1: 2008-09 |
| Feedback spot | LED, Visible, green, 530 nm, ± 15 nm<br>LED, Visible, Red, 660 nm, ± 20 nm |
| Alignment aid | Laser, Red, 630 nm ... 680 nm |
| Laser class | 1, complies with 21 CFR 1040.10 except for the conformance according to “Laser Notice No. 56” from May 8, 2019 (EN 60825-1:2014+A11:2021, IEC 60825-1:2014) |
| Lens | C-mount<br>Optical format: 1″<br>Focal length: 25 mm<br>Aperture: 1.8 ... 22 |
| Scanning frequency | 15 Hz, With resolution of 12 megapixels |
| Code resolution | ≥ 0.1 mm [1] |
| Working range | 500 mm ... 3,000 mm [1] |

[1] Depends on lens used.

## MECHANICS/ELECTRONICS

| | |
|---|---|
| Connection type | 1 x M12 ,17-pin male connector, A-coded (power, CAN, serial interface, I/O)<br>1 x M12, 5-pin female connector, A-coded (power, external illumination, I/O)<br>2 x M12, 4-pin socket, D-coded (100-megabit Ethernet, dual-port fieldbus)<br>1 x M12, 8-pin female connector, X-coded (Gigabit Ethernet) |
| Supply voltage | 24 V DC, ± 20 % [1] |
| Power consumption | Typ. 24 W [2] |
| Current consumption | ≤ max. 2 A |
| Housing material | Aluminum die cast |
| Housing color | Anthracite gray (RAL 7016) |
| Window material | Glass (2 mm thick, scratch-proof coating) |
| Enclosure rating | IP65 (IEC 60529:2013 +C1:2013 +C2:2015 +AMD2 C1:2019, EN 60529:1991 +A1:2010 +A2:2013 +AC:2019-02) |
| Electrical safety | EN 61010:2010 / EN 61010-1:2010/A1:2019/AC:2019-04 |
| Weight | 640 g, without lens and connection cables |
| Dimensions (L x W x H) | 143.4 mm x 90 mm x 46 mm [3] |
| MTBF | 100,000 h |

[1] Voltage source in accordance with ES1 (EN 62368-1) or SELV (EN 60950-1).

[2] The typical power consumption depends on the product configuration. The specified value applies to digital outputs without load.

[3] Only housing. Lens, integrated illumination unit, spacer and optics protection hood not included.

## SAFETY-RELATED PARAMETERS

| | |
|---|---|
| Conformities | Conformance Class B, “Conformance Test”, ET9400 EtherCAT Conformance Test Tool, CTT V2.7.6 |

## PERFORMANCE

| | |
|---|---|
| Readable code structures | 1D codes, 2D codes, Stacked |
| Bar code types | Code 128, GS1-128, EAN 128, EAN 8, EAN 13, UPC-A, UPC-E, Interleaved 2 of 5, Codabar, Code 93, Postal code |
| 2D code types | Data Matrix ECC200, GS1 Data-Matrix, MaxiCode, QR code, Aztec |
| Stacked code types | PDF417 |
| Code printing process | Printed codes |

## INTERFACES

| | | |
|---|---|---|
| Ethernet | | ✓ , TCP/IP |
| | Function | Data interface (read result output), service interface, FTP (image transmission) |
| | Data transmission rate | 10/100/1,000 Mbit/s, MAC address (device-specific), see type label |
| EtherNet/IP™ | | ✓ (2) |
| | Function | Data interface (read result output), Trigger interface |
| | Data transmission rate | 10/100 MBit/s |
| CAN | | ✓ |
| | Function | SICK CAN sensor network CSN (CAN controller/CAN device, multiplexer/server) |
| | Data transmission rate | 20 kbit/s ... 1 Mbit/s |
| Serial | | ✓ , RS-232, RS-422, RS-232 |
| | Function | Data interface<br>Service interface |
| | Data transmission rate | 1.2 kBaud ... 115.2 kBaud<br>57.6 kBaud |
| USB | | ✓ , USB 2.0 |
| | Function | Service interface (accessing the web server), Ethernet via USB (RNDIS) |

[1] Memory card is available as an optional accessory. To ensure that the memory card functions reliably, only use card types (industrial standard) approved by SICK. Other functions are available upon request.

| | |
|---|---|
| Data transmission rate | 480 Mbit/s |
| PROFINET | ✓ (2) |
| Function | Data interface (read result output), Trigger interface |
| Data transmission rate | 10/100 MBit/s |
| Fieldbus, industrial network (PROFINET) | |
| Supported protocol versions | PROFINET specification V2.43 |
| GSDML | According to GSDML specification V2.43 |
| Conformance | Conformance Class B |
| Network management | SNMP, MIB-2, LLDP, MRP client support |
| Switch properties | 2 port real-time switch compliant with IEEE 802 |
| Port properties | Baud rate 100 Mbit/s, full-duplex transmission, auto-negotiation, auto-crossover (MDIX), auto-polarity |
| Net load | Net load class III in accordance with security level 1 test |
| Fieldbus, industrial network (EtherNet/IP™) | |
| Data transmission rate | 10/100 MBit/s |
| Supported protocol versions | EtherNet/IP™ specification in accordance with CT21 |
| EDS | EDS in accordance with EZ-EDS 3.38 |
| Network management | DHCP, BOOTP, fixed IP, Address Conflict Detection (ACD), LLDP, SNMP, MIB-2, DLR client support (Media Redundancy) |
| Switch properties | 2-port real-time switch compliant with IEEE 802, including cut-through forwarding |
| Port properties | Baud rate 100 Mbit/s, full-duplex transmission, auto-negotiation, auto-crossover (MDIX), auto-polarity |
| Fieldbus, industrial network (EtherCAT®) | |
| Data transmission rate | 100 Mbit/s |
| Supported protocol versions | EtherCAT according to ETG.1000 Technology Specification, V1.0.4; ETG.1020 Protocol Enhancements, V1.5.0; ETG.1300 Indicator and Labeling, V1.1.1; ETG.9001 Marking Rules, V1.2.5; ETG.9003 Conformance Test Policy, V1.1 |
| ESI | ESI in accordance with ETG.2000 V1.0.18 |
| Conformance | “Conformance Test”, ET9400 EtherCAT Conformance Test Tool, CTT V2.7.6 |
| Switch properties | 2-port real-time switch compliant with IEEE 802, including cut-through forwarding |
| Port properties | Baud rate 100 Mbit/s, full-duplex transmission, auto-negotiation, auto-crossover (MDIX), auto-polarity |
| Digital inputs | 2 (“Sensor 1”, “Sensor 2”, insulated, encoder input, external trigger) |
| Configurable digital inputs/outputs | |
| X1 | 4 (DIO 3, DIO 4, DIO 5, DIO 6) |
| X2 | 2 (DIO 7, DIO 8) |
| Reading pulse | Digital inputs, CAN, PROFINET via trigger bit, EtherNet/IP™ via trigger bit |
| Optical indicators | 12 LEDs (10 x status displays, 2 x feedback spot) |
| Operator interfaces | Web server |
| Configuration software | SOPASair |
| Memory card slot | Micro SD memory card (not included with delivery) [1] |
| Parameter cloning | Micro SD memory card<br>Control software |
| Data storage and retrieval | Image and data storage via external FTP |
| EncoderFrequency | Max. 50 kHz |
| External illumination control | Via digital output (max. 24 V trigger) |

[1] Memory card is available as an optional accessory. To ensure that the memory card functions reliably, only use card types (industrial standard) approved by SICK. Other functions are available upon request.

## AMBIENT DATA

| | |
|---|---|
| Electromagnetic compatibility (EMC) | |
| Interference resistance | IEC 61000-6-2:2016 / EN IEC 61000-6-2:2019 |
| Interference emission | IEC 61000-6-4:2018 / EN IEC 61000-6-4:2019 |
| Vibration resistance | EN 60068-2-6:2007, EN 60068-2-64:2019 |
| Shock resistance | EN 60068-2-27:2008 |
| Ambient operating temperature | 0 °C ... +50 °C [1] |
| Storage temperature | –20 °C ... +70 °C |
| Relative humidity | ≤ 90 %, Non-condensing |
| Ambient light immunity | 2,000 lx, on code |
| Contamination rating | 2 (EN 61010-1) |

[1] If the ambient operating temperature will be ≥ 45 °C, ensure adequate heat dissipation when mounting the device.

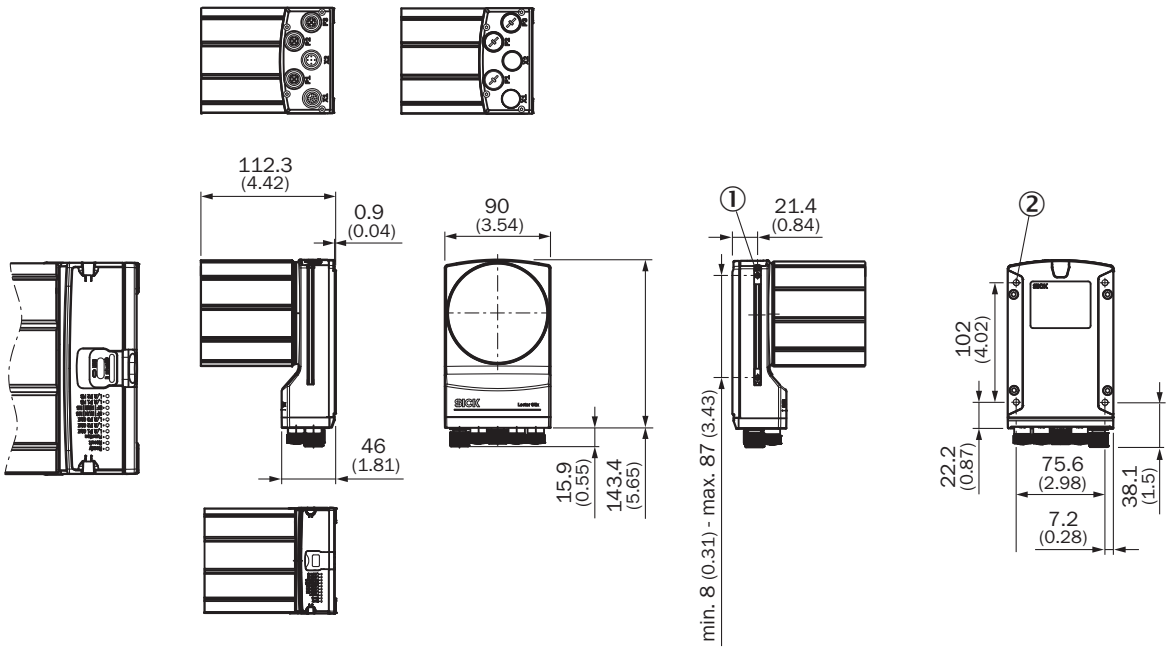
| | |
|---|---|
| Altitude (above sea level) | < 5,000 m |

[1] If the ambient operating temperature will be ≥ 45 °C, ensure adequate heat dissipation when mounting the device.

## CERTIFICATES

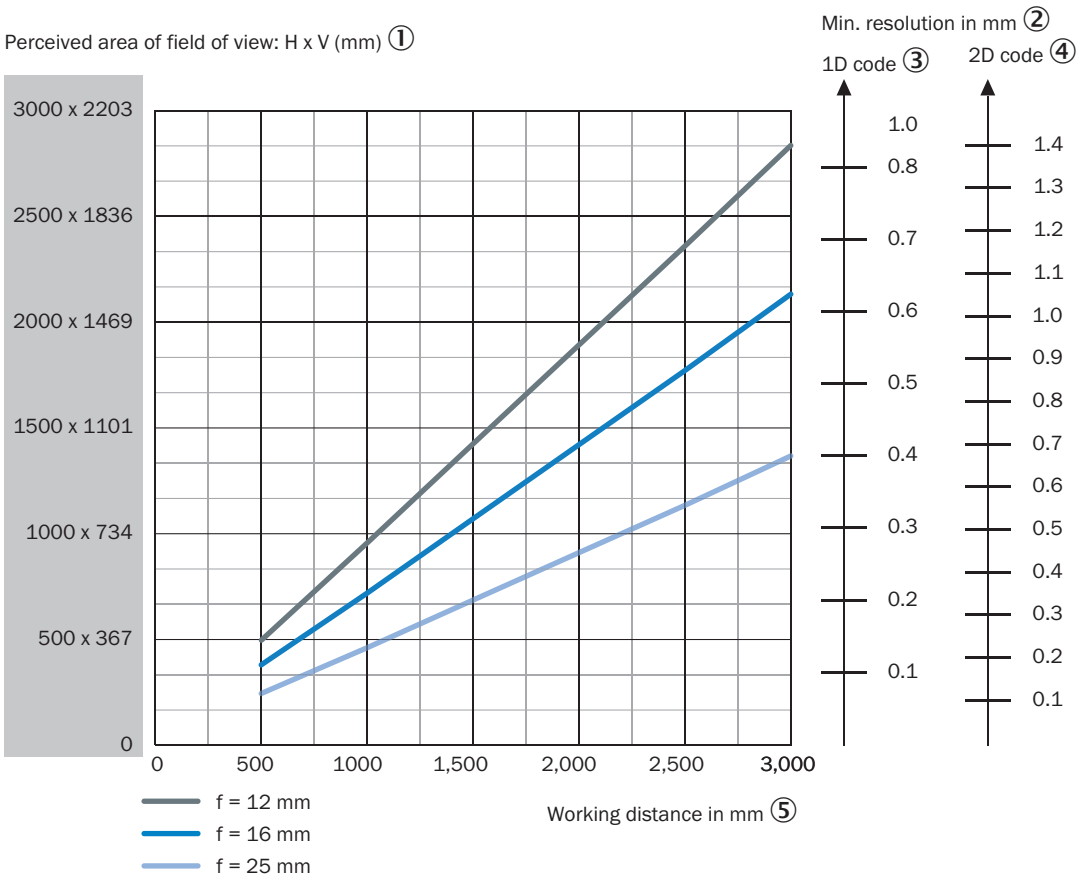
| | |
|---|---|
| EU declaration of conformity | ✓ |
| UK declaration of conformity | ✓ |
| ACMA declaration of conformity | ✓ |
| China RoHS | ✓ |
| cULus certificate | ✓ |
| Profinet certificate | ✓ |
| Ethernet/IP certificate | ✓ |
| BIS registration | ✓ |
| Information according to Art. 3 of Data Act (Regulation EU 2023/2854) | ✓ |

## DIMENSIONAL DRAWING



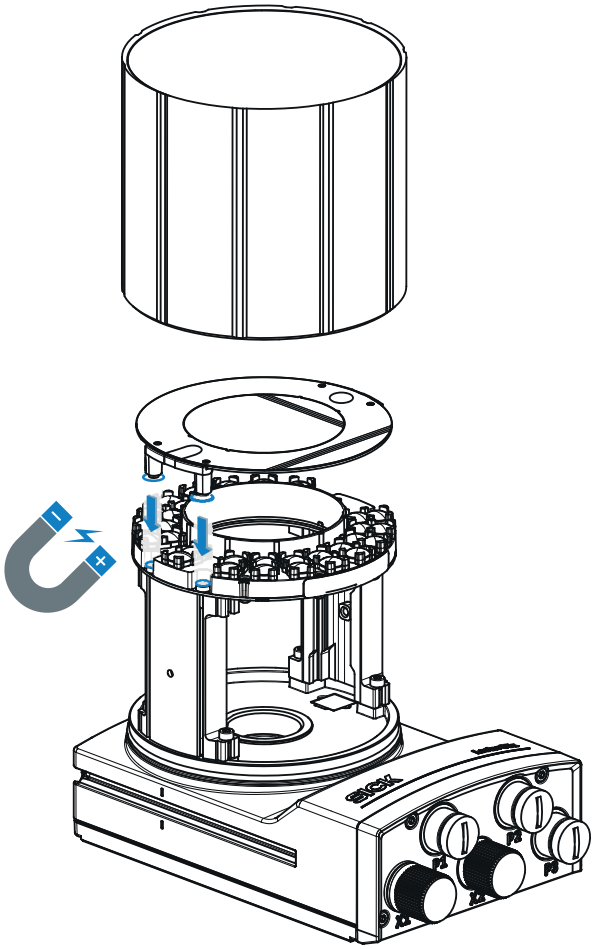

Dimensions in mm (inch)
① 2 M5 sliding nuts; 5.5 mm deep; pivoting; as an alternative method of mounting the product
② 4 tapped blind holes, M5, 5.5 mm deep for mounting the product

**FIELD OF VIEW**




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

**ASSEMBLY NOTE POLARIZING FILTER**



## SELECTION GUIDE V2D8512R, FOCAL LENGTH: 25MM

### FIELD OF VIEW

**V2D8512R-xxxxxxxxxx, focal length: 25 mm**

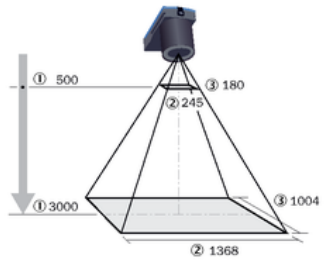



*Figure 32: Field of view V2D8512R-xxxxxxxxxx, focal length: 25 mm*

① Working distance in mm
② Perceived field of view area: horizontal (mm)
③ Perceived field of view area: vertical (mm)

*Table 21: Perceived field of view area*

| Working distance (mm) | Horizontal (mm) | Vertical (mm) |
|---|---|---|
| 500 | 245 | 180 |
| 1000 | 470 | 345 |
| 1500 | 694 | 510 |
| 2000 | 919 | 675 |
| 2500 | 1143 | 840 |
| 3000 | 1368 | 1004 |

*Table 22: Minimum resolution*

| Working distance (mm) | 1D code (mm) | 2D code (mm) |
|---|---|---|
| 500 | 0.07 | 0.12 |
| 1000 | 0.14 | 0.22 |
| 1500 | 0.20 | 0.34 |
| 2000 | 0.27 | 0.44 |
| 2500 | 0.33 | 0.56 |
| 3000 | 0.40 | 0.66 |

Further information as well as suitable accessories, example applications and downloads such as CAD dimensional models, operating instructions and software can be found at www.sick.com/1144402

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# SICK AT A GLANCE

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