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DATA SHEET

# V2D8509R-1MEMEXAL2SXXXX

Lector85x
Image-based code readers

SICK Sensor Intelligence




## IMAGE-BASED CODE READERS

# V2D8509R-1MEMEXAL2SXXXX

### ORDERING INFORMATION

| Type | part no. |
|---|---|
| V2D8509R-1MEMEXAL2SXXXX | 1144622 |

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 | Dynamic focus control |
| Sensor | CMOS monochrome |
| Sensor resolution | 4,096 px x 2,176 px (9 MP) |
| Illumination | Integrated |
| Illumination color | Red, LED, Visible, 660 nm, ± 20 nm |
| Anzahl LED | 32 |
| Aperture angle | 47°, 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 | |
| Focal length | 25 mm |
| Scanning frequency | 20 Hz, With resolution of 9 megapixels |
| Code resolution | ≥ 0.1 mm |
| Working range | 500 mm ... 2,400 mm |

### 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 male connector, A-coded (power, CAN)<br>3 x M12, 8-pin female connector, X-coded (Gigabit Ethernet) |

[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.

| | |
|---|---|
| Supply voltage | 24 V DC, ± 20 % [1] |
| Power consumption | Typ. 27 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 | 975 g, without lens and connection cables |
| Dimensions (L x W x H) | 143.4 mm x 90 mm x 106.1 mm |
| 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.

## 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 qualification | On the basis of ISO/IEC 16022, ISO/IEC 15415, ISO/IEC 18004 |
| Code printing process | Printed codes |

## INTERFACES

| | |
|---|---|
| Ethernet | ✓ (3) , 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 |
| 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) |
| Data transmission rate | 480 Mbit/s |
| 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) |
| Reading pulse | Digital inputs, CAN, auto pulse |
| 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 |

[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.

| | |
|---|---|
| Encoder resolution | 0.2 mm ... 10 mm, per pulse |
| 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

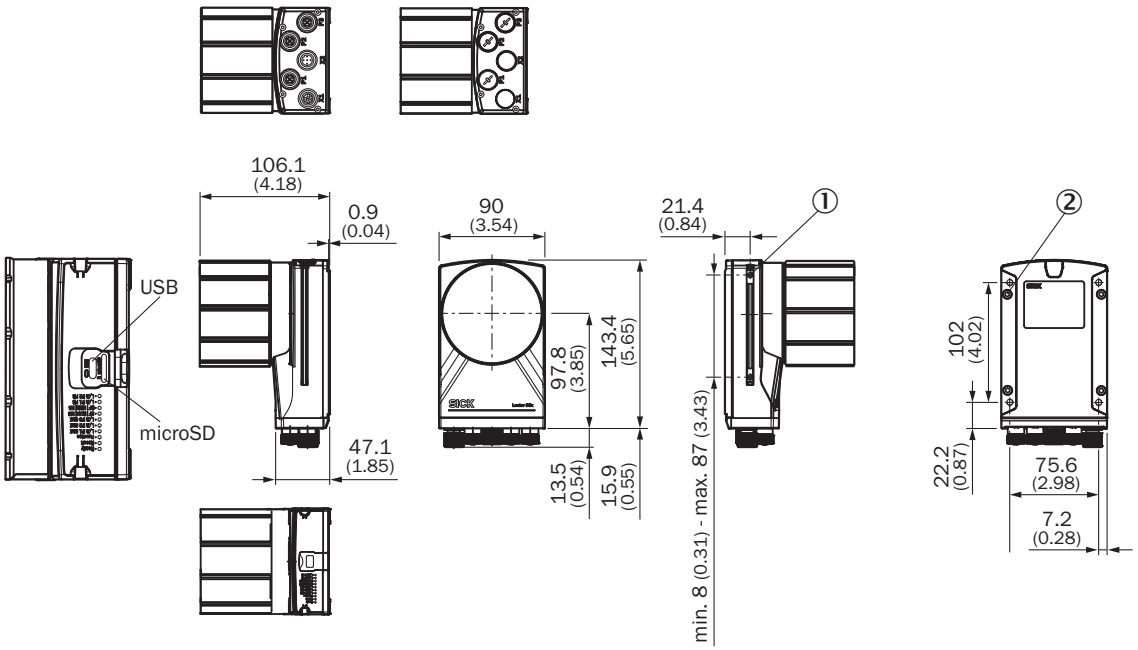
| | |
|---|---|
| Electromagnetic compatibility (EMC) | |
| Interference resistance | IEC 61000-6-2:2016 / EN IEC 61000-6-2:2019 |
| Interference emission | IEC 61000-6-4:2018 / EN IEC 61000-6-4:2019 |
| Vibration resistance | EN 60068-2-6:2007, EN 60068-2-64:2019 |
| Shock resistance | EN 60068-2-27:2008 |
| 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) |
| 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

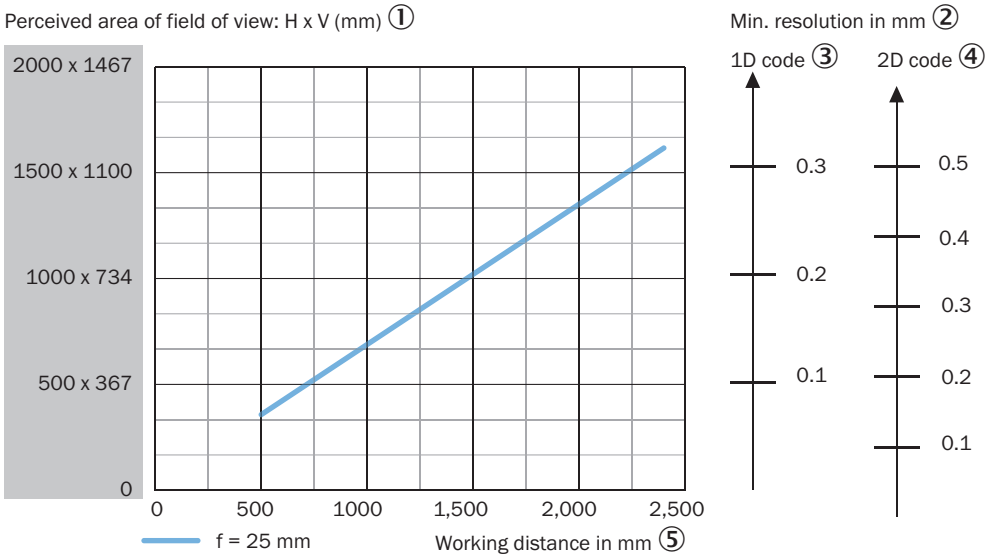
| | |
|---|---|
| EU declaration of conformity | ✓ |
| UK declaration of conformity | ✓ |
| ACMA declaration of conformity | ✓ |
| China RoHS | ✓ |
| cULus certificate | ✓ |
| BIS registration | ✓ |
| Information according to Art. 3 of Data Act (Regulation EU 2023/2854) | ✓ |

## 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 (inch)

**SELECTION GUIDE**

## FIELD OF VIEW

**V2D8509R-xxxxxxxxxx, focal length: 25 mm**

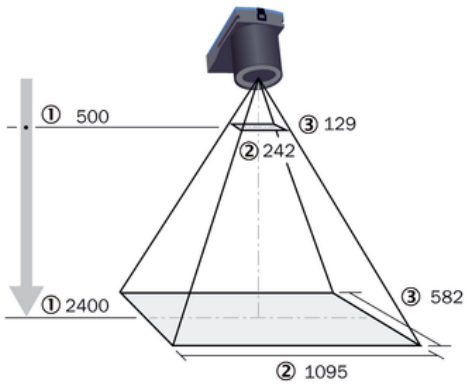



*Fig. 2: Field of view of V2D8509R-xxxxxxxxxx, focal length: 25 mm, dynamic focus control*

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

*Table 3: Perceived field of view area*

| Working distance (mm) | Horizontal (mm) | Vertical (mm) |
|---|---|---|
| 500 | 242 | 129 |
| 1000 | 467 | 248 |
| 1500 | 691 | 367 |
| 2000 | 916 | 486 |
| 2400 | 1095 | 582 |

*Table 4: Minimum resolution*

| Working distance (mm) | 1D code (mm) | 2D code (mm) |
|---|---|---|
| 500 | 0.07 | 0.12 |
| 1000 | 0.14 | 0.23 |
| 1500 | 0.20 | 0.34 |
| 2000 | 0.27 | 0.45 |
| 2400 | 0.32 | 0.53 |

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/1144622

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# SICK AT A GLANCE

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Since 1946, we have been developing innovative technologies with passion and a pioneering spirit. With a global network in around 40 countries, SICK has a global presence and is always close by. The company's headquarters are located in Waldkirch near Freiburg, Germany. Our customers benefit from our understanding of both local and global requirements, which enables us to deliver tailor-made solutions

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