# V2D8512R-1MCIDXAL2SXXXX

Lector85x

**IMAGE-BASED CODE READERS**

**SICK**
Sensor Intelligence.

# V2D8512R-1MCIDXAL2SXXXX | Lector85x

IMAGE-BASED CODE READERS

## Ordering information

| Type | part no. |
|------|----------|
| V2D8512R-1MCIDXAL2SXXXX | 1134213 |

**Included in delivery:** V2D8512R-1MCXXXAL0SXXXX (1), Spacer (1), C-mount lens (1), Optics protection hood (glass) (1), VI83I-WH3047H0 (1)

Other models and accessories ➜ www.sick.com/Lector85x

## Detailed technical data

### Features

| | |
|---|---|
| **Application** | Indoor area |
| **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** | 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** | C-mount |
| Optical format | 1″ |
| Focal length | 16 mm |
| Aperture | 1.8 ... 16 |
| **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 male connector, A-coded (power, CAN) <br> 3 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.

## 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** | ✔ (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 | Data interface (read result output), Trigger interface |
| Data transmission rate | 500 kbit/s |
| **Serial** | ✔ , RS-232, RS-422, RS-232 |
| Function | Data interface |
| | Service interface |
| Data transmission rate | 1.2 kBaud … 115.2 kBaud |
| | 57.6 kBaud |
| **USB** | ✔ , USB 2.0 |
| Function | Service interface (accessing the web server), Ethernet via USB (RNDIS) |
| Data transmission rate | 480 Mbit/s |

[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.

| | |
|---|---|
| **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 |
| **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

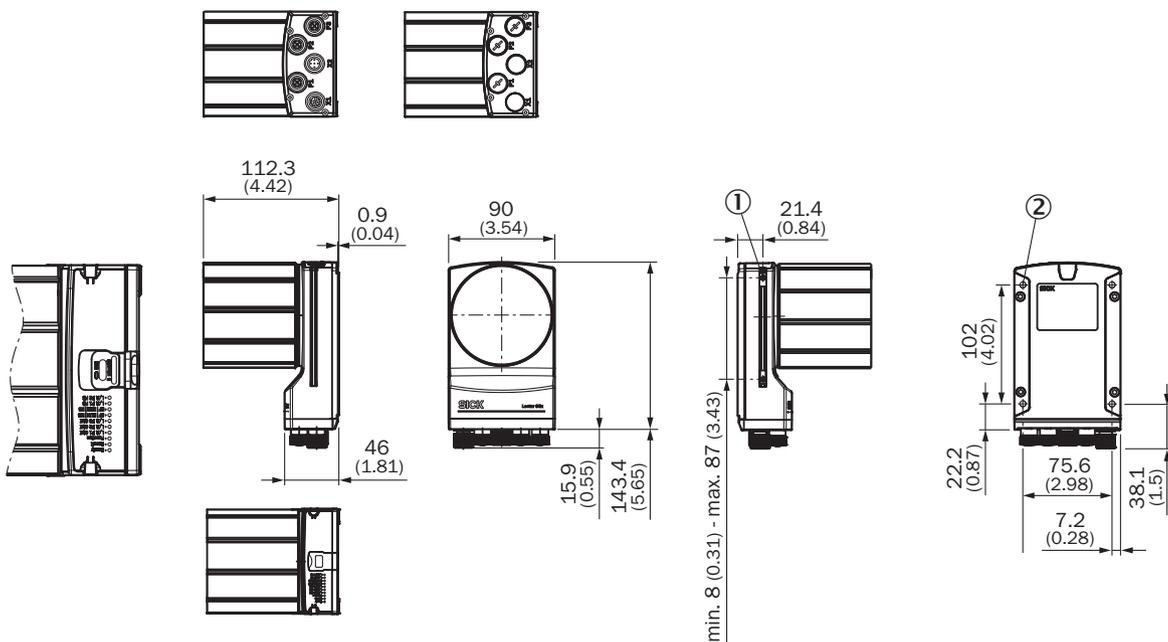| | |
|---|---|
| **EU declaration of conformity** | ✓ |
| **UK declaration of conformity** | ✓ |
| **ACMA declaration of conformity** | ✓ |
| **China RoHS** | ✓ |
| **cULus certificate** | ✓ |
| **BIS registration** | ✓ |
| **Information according to Art. 3 of Data Act (Regulation EU 2023/2854)** |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

## Classifications

| | |
|---|---|
| **ECLASS 5.0** | 27280103 |
| **ECLASS 5.1.4** | 27280103 |
| **ECLASS 6.0** | 27280103 |

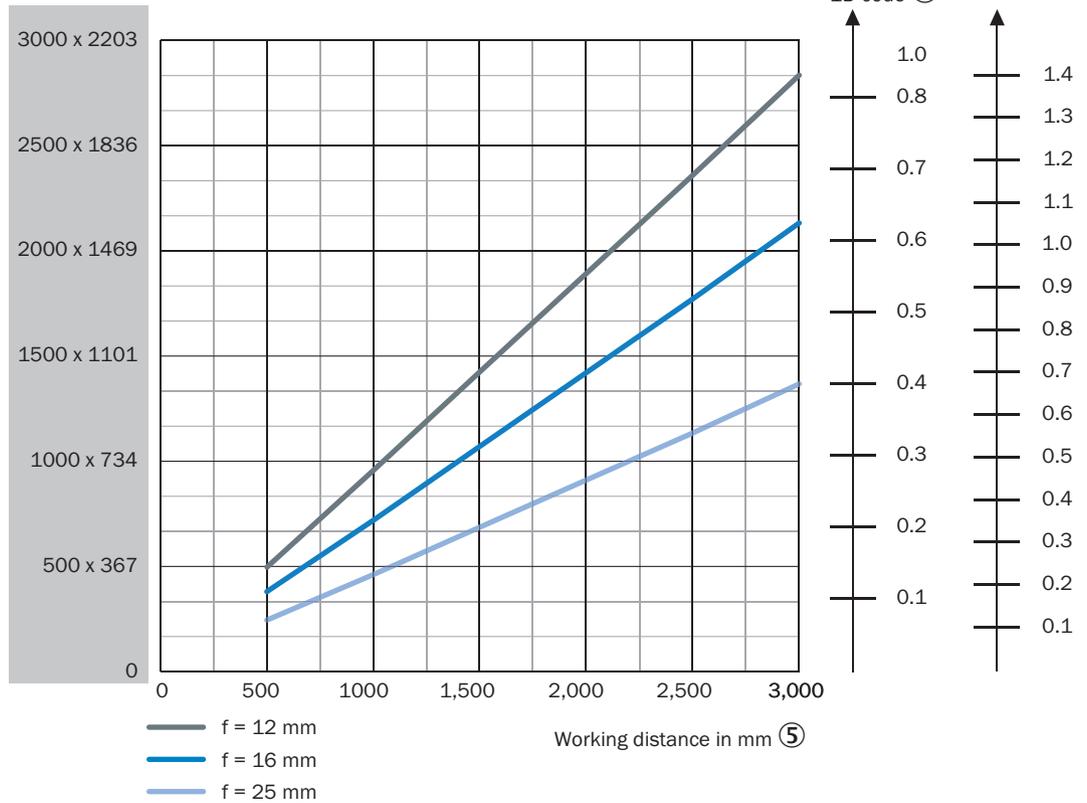| ECLASS 6.2 | 27280103 |
|---|---|
| ECLASS 7.0 | 27280103 |
| ECLASS 8.0 | 27280103 |
| ECLASS 8.1 | 27280103 |
| ECLASS 9.0 | 27280103 |
| ECLASS 10.0 | 27280103 |
| ECLASS 11.0 | 27280103 |
| ECLASS 12.0 | 27280103 |
| ETIM 5.0 | EC002550 |
| ETIM 6.0 | EC002550 |
| ETIM 7.0 | EC002999 |
| ETIM 8.0 | EC002999 |
| UNSPSC 16.0901 | 43211701 |

## Dimensional drawing



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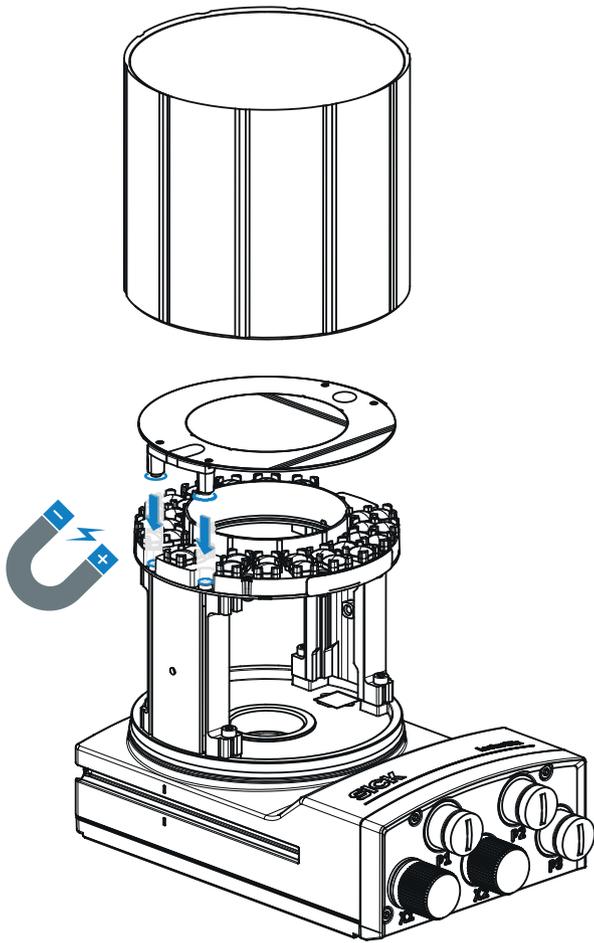② 4 tapped blind holes, M5, 5.5 mm deep for mounting the product

## Field of view

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

Min. resolution in mm ②

1D code ③　2D code ④



f = 12 mm
f = 16 mm
f = 25 mm

Working distance in mm ⑤

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: 16mm

FIELD OF VIEW

**V2D8512R-xxxxxxxxxx, focal length: 16 mm**



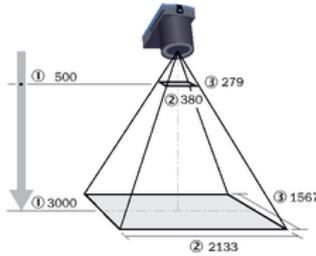*Figure 31: Field of view V2D8512R-xxxxxxxxxx, focal length: 16 mm*

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

*Table 19: Perceived field of view area*

| Working distance (mm) | Horizontal (mm) | Vertical (mm) |
|---|---|---|
| 500 | 380 | 279 |
| 1000 | 731 | 537 |
| 1500 | 1081 | 794 |
| 2000 | 1432 | 1052 |
| 2500 | 1783 | 1309 |
| 3000 | 2133 | 1567 |

*Table 20: Minimum resolution*

| Working distance (mm) | 1D code (mm) | 2D code (mm) |
|---|---|---|
| 500 | 0.11 | 0.18 |
| 1000 | 0.21 | 0.36 |
| 1500 | 0.32 | 0.52 |
| 2000 | 0.42 | 0.70 |
| 2500 | 0.52 | 0.88 |
| 3000 | 0.62 | 1.04 |

## 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**

SICK AG  |  Waldkirch  |  Germany  |  www.sick.com

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