



# V2D8505R-1MCXXXALOSXXXX

Lector85x

IMAGE-BASED CODE READERS

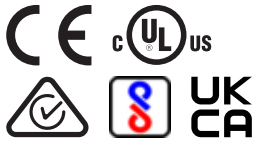
**SICK**  
Sensor Intelligence.



### Ordering information

Type	part no.
V2D8505R-1MCXXXALOSXXX	1130543

Other models and accessories → [www.sick.com/Lector85x](http://www.sick.com/Lector85x)



### Detailed technical data

#### Features

<b>Application</b>	Indoor area
<b>Variant</b>	Main unit
<b>Optical focus</b>	Adjustable focus (manual)
<b>Sensor</b>	CMOS monochrome
<b>Sensor resolution</b>	2,464 px x 2,048 px (5 MP)
<b>Illumination</b>	To be ordered separately as accessories
<b>Feedback spot</b>	LED, Visible, green, 530 nm, ± 15 nm LED, Visible, Red, 660 nm, ± 20 nm
<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. 56" from May 8, 2019 (EN 60825-1:2014+A11:2021, IEC 60825-1:2014)
<b>Lens</b>	C-mount
Optical format	1/1.8"
Focal length	8 mm, 12 mm, 16 mm, 25 mm
Note	To be ordered separately as accessories
<b>Scanning frequency</b>	30 Hz, With resolution of 5 megapixels
<b>Code resolution</b>	≥ 0.1 mm <sup>1)</sup>
<b>Working range</b>	500 mm ... 3,000 mm <sup>1)</sup>

<sup>1)</sup> Depends on lens used.

#### Mechanics/electronics

<b>Connection type</b>	1 x M12 ,17-pin male connector, A-coded (power, CAN, serial interface, I/O) 1 x M12, 5-pin male connector, A-coded (power, CAN)
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<sup>1)</sup> Voltage source in accordance with ES1 (EN 62368-1) or SELV (EN 60950-1).

<sup>2)</sup> The typical power consumption depends on the product configuration. The specified value applies to digital outputs without load.

<sup>3)</sup> Only housing. Lens, integrated illumination unit, spacer and optics protection hood not included.

	3 x M12, 8-pin female connector, X-coded (Gigabit Ethernet)
<b>Supply voltage</b>	24 V DC, $\pm 20\%$ <sup>1)</sup>
<b>Power consumption</b>	Typ. 24 W <sup>2)</sup>
<b>Current consumption</b>	$\leq$ max. 2 A
<b>Housing material</b>	Aluminum die cast
<b>Housing color</b>	Anthracite gray (RAL 7016)
<b>Window material</b>	Glass (2 mm thick, scratch-proof coating)
<b>Enclosure rating</b>	IP65 (IEC 60529:2013 +C1:2013 +C2:2015 +AMD2 C1:2019, EN 60529:1991 +A1:2010 +A2:2013 +AC:2019-02)
<b>Electrical safety</b>	EN 61010:2010 / EN 61010-1:2010/A1:2019/AC:2019-04
<b>Weight</b>	640 g, without lens and connection cables
<b>Dimensions (L x W x H)</b>	143.4 mm x 90 mm x 46 mm <sup>3)</sup>
<b>MTBF</b>	100,000 h

<sup>1)</sup> Voltage source in accordance with ES1 (EN 62368-1) or SELV (EN 60950-1).

<sup>2)</sup> The typical power consumption depends on the product configuration. The specified value applies to digital outputs without load.

<sup>3)</sup> Only housing. Lens, integrated illumination unit, spacer and optics protection hood not included.

## Performance

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

## Interfaces

<b>Ethernet</b>	✓ (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
<b>CAN</b>	✓
Function	Data interface (read result output), Trigger interface
Data transmission rate	500 kbit/s
<b>Serial</b>	✓, RS-232, RS-422, RS-232
Function	Data interface Service interface
Data transmission rate	1.2 kBaud ... 115.2 kBaud 57.6 kBaud
<b>USB</b>	✓, USB 2.0
Function	Service interface (accessing the web server), Ethernet via USB (RNDIS)
Data transmission rate	480 Mbit/s
<b>Digital inputs</b>	2 ("Sensor 1", "Sensor 2", insulated, encoder input, external trigger)
<b>Configurable digital inputs/outputs</b>	
X1	4 (DIO 3, DIO 4, DIO 5, DIO 6)

<sup>1)</sup> 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.

<b>Reading pulse</b>	Digital inputs, CAN, auto pulse
<b>Optical indicators</b>	12 LEDs (10 x status displays, 2 x feedback spot)
<b>Operator interfaces</b>	Web server
<b>Configuration software</b>	SOPASair
<b>Memory card slot</b>	Micro SD memory card (not included with delivery) <sup>1)</sup>
<b>Parameter cloning</b>	Micro SD memory card Control software
<b>Data storage and retrieval</b>	Image and data storage via external FTP
<b>EncoderFrequency</b>	Max. 50 kHz
<b>External illumination control</b>	Via digital output (max. 24 V trigger)

<sup>1)</sup> 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

<b>Electromagnetic compatibility (EMC)</b>	
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
<b>Vibration resistance</b>	EN 60068-2-6:2007, EN 60068-2-64:2019
<b>Shock resistance</b>	EN 60068-2-27:2008
<b>Ambient operating temperature</b>	0 °C ... +50 °C <sup>1)</sup>
<b>Storage temperature</b>	-20 °C ... +70 °C
<b>Relative humidity</b>	≤ 90 %, Non-condensing
<b>Ambient light immunity</b>	2,000 lx, on code
<b>Contamination rating</b>	2 (EN 61010-1)
<b>Altitude (above sea level)</b>	< 5,000 m

<sup>1)</sup> If the ambient operating temperature will be ≥ 45 °C, ensure adequate heat dissipation when mounting the device.

### Certificates

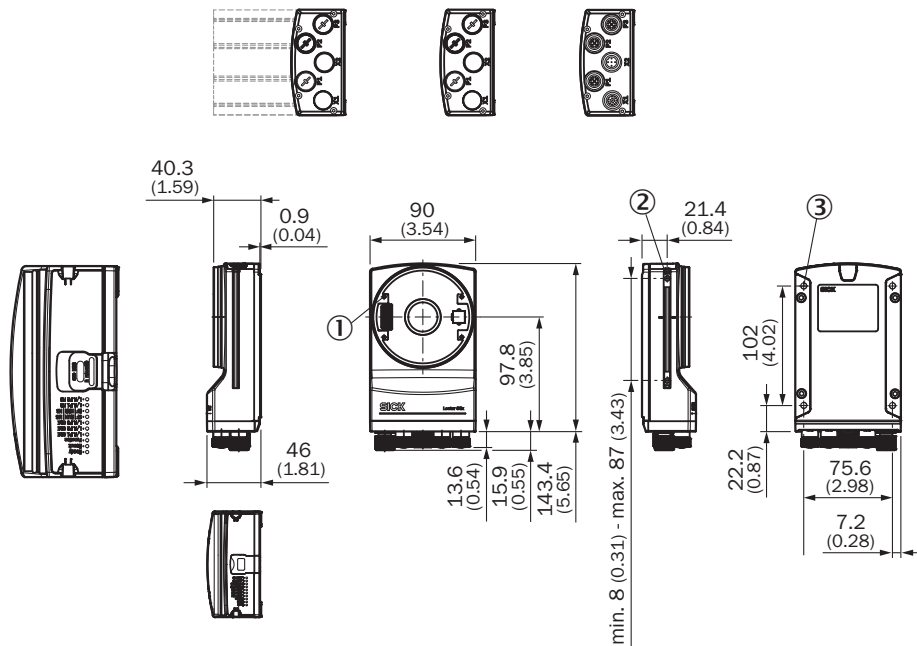
<b>EU declaration of conformity</b>	✓
<b>UK declaration of conformity</b>	✓
<b>ACMA declaration of conformity</b>	✓
<b>China RoHS</b>	✓
<b>cULus certificate</b>	✓
<b>BIS registration</b>	✓
<b>Information according to Art. 3 of Data Act (Regulation EU 2023/2854)</b>	✓

### Classifications

<b>ECLASS 5.0</b>	27280103
<b>ECLASS 5.1.4</b>	27280103
<b>ECLASS 6.0</b>	27280103
<b>ECLASS 6.2</b>	27280103
<b>ECLASS 7.0</b>	27280103
<b>ECLASS 8.0</b>	27280103

<b>ECLASS 8.1</b>	27280103
<b>ECLASS 9.0</b>	27280103
<b>ECLASS 10.0</b>	27280103
<b>ECLASS 11.0</b>	27280103
<b>ECLASS 12.0</b>	27280103
<b>ETIM 5.0</b>	EC002550
<b>ETIM 6.0</b>	EC002550
<b>ETIM 7.0</b>	EC002999
<b>ETIM 8.0</b>	EC002999
<b>UNSPSC 16.0901</b>	43211701

Dimensional drawing

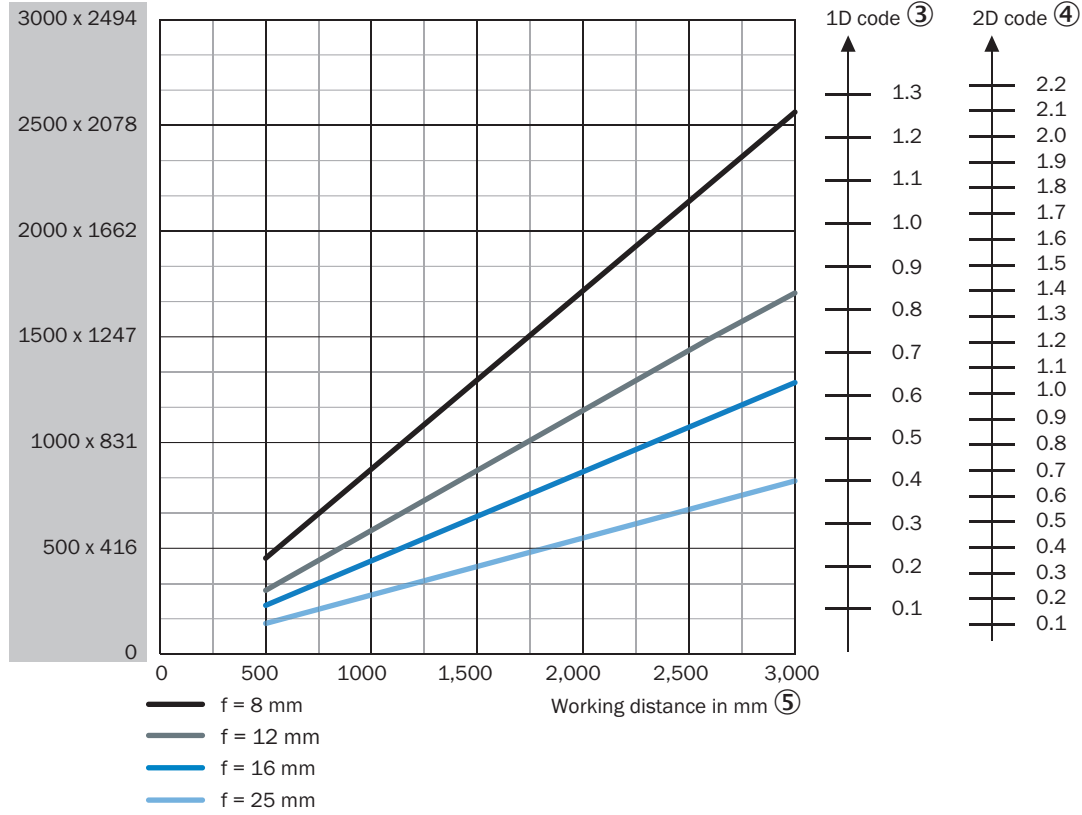


Dimensions in mm (inch)

- ① 4 tapped blind holes, M2.5, 5.5 mm deep, for mounting the spacer
- ② 2 M5 sliding nuts; 5.5 mm deep; pivoting; as an alternative method of mounting the product
- ③ 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



- 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

Selection Guide V2D8505R, focal length: 25mm

FIELD OF VIEW

V2D8505R-xxxxxxx, focal length: 25 mm

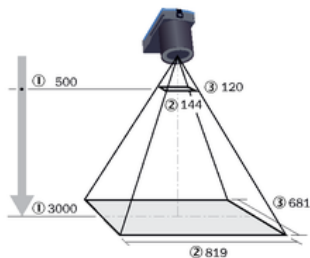


Figure 26: Field of view of V2D8505R-xxxxxxx, focal length: 25 mm

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

Table 9: Perceived field of view area

Working distance (mm)	Horizontal (mm)	Vertical (mm)
500	144	120
1000	279	232
1500	414	344
2000	549	456
2500	684	569
3000	819	681

Table 10: 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

### Selection Guide V2D8505R, focal length: 16mm

#### FIELD OF VIEW

V2D8505R-xxxxxxx, focal length: 16 mm

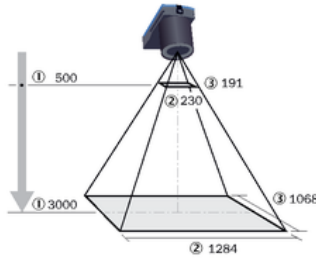


Figure 25: Field of view V2D8505R-xxxxxxx, focal length: 16 mm

- ① Working distance in mm
- ② Perceived field of view area: horizontal (mm)
- ③ Min. perceived field of view area: horizontal (mm)

Table 7: Perceived field of view area

Working distance (mm)	Horizontal (mm)	Vertical (mm)
500	230	191
1000	441	366
1500	652	542
2000	863	717
2500	1073	892
3000	1284	1068

Table 8: 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	0.7
2500	0.52	0.88
3000	0.63	1.04

Selection Guide V2D8505R, focal length: 12mm

FIELD OF VIEW

V2D8505R-xxxxxxx, focal length: 12 mm

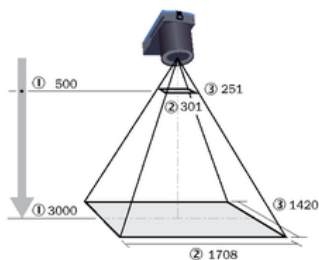


Figure 24: Field of view V2D8505R-xxxxxxx, focal length: 12 mm

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

Table 5: Perceived field of view area

Working distance (mm)	Horizontal (mm)	Vertical (mm)
500	301	251
1000	583	484
1500	864	718
2000	1145	952
2500	1427	1186
3000	1708	1420

Table 6: Minimum resolution

Working distance (mm)	1D code (mm)	2D code (mm)
500	0.15	0.24
1000	0.28	0.48
1500	0.42	0.70
2000	0.56	0.92
2500	0.69	1.16
3000	0.83	1.38

### Selection Guide V2D8505R, focal length: 8mm

#### FIELD OF VIEW

V2D8505R-xxxxxxx, focal length: 8 mm

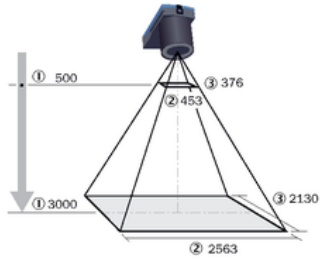


Figure 23: Field of view V2D8505R-xxxxxxx, focal length: 8 mm

- 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	453	376
1000	875	727
1500	1297	1078
2000	1719	1429
2500	2141	1779
3000	2563	2130

Table 4: Minimum resolution

Working distance (mm)	1D code (mm)	2D code (mm)
500	0.22	0.36
1000	0.43	0.72
1500	0.63	1.06
2000	0.84	1.4
2500	1.04	1.74
3000	1.25	2.08

## 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.”

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