



V2D8512R-1MCXXXAF0SXXXX

Lector85x

IMAGE-BASED CODE READERS

**SICK**  
Sensor Intelligence.



### Ordering information

Type	Part no.
V2D8512R-1MCXXXAF0SXXXX	1134611

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



### Detailed technical data

#### Features

<b>Variant</b>	Main unit
<b>Optical focus</b>	Adjustable focus (manually)
<b>Sensor</b>	CMOS matrix sensor, grayscale values
<b>Sensor resolution</b>	4,096 px x 3,008 px (12 Mpixel)
<b>Illumination</b>	To be ordered separately as accessories
<b>Feedback spot</b>	LED, Visible, green, 525 nm, ± 15 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"
	Focal length 12 mm, 16 mm, 25 mm
	Note To be ordered separately as accessories
<b>Scanning frequency</b>	15 Hz, With resolution of 12 megapixels
<b>Code resolution</b>	≥ 0.1 mm <sup>1)</sup>
<b>Working range</b>	500 mm ... 3,000 mm (depends on lens used)

<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 female connector, A-coded (power, external illumination, I/O) 2 x M12, 4-pin female connector, D-coded (Gigabit Ethernet)
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<sup>1)</sup> Voltage source in accordance with ES1 (EN 62368-1) or SELV (EN 60950-1).

<sup>2)</sup> For digital outputs without load.

<sup>3)</sup> Housing only, without lens and optics protection hood.

	1 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>	2 A
<b>Housing</b>	Aluminum die cast
<b>Housing color</b>	Anthracite gray (RAL 7016)
<b>Window material</b>	Glass
<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>Contamination rating</b>	2 (EN 61010-1)
<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>	143.3 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> For digital outputs without load.

<sup>3)</sup> Housing only, without lens and optics protection hood.

## Performance

<b>Readable code structures</b>	1D codes, 2D codes, Stacked
<b>Bar code types</b>	GS1-128 / EAN 128, UPC / GTIN / EAN, Interleaved 2 of 5, Code 39, Code 128, Codabar, Code 93
<b>2D code types</b>	Data Matrix ECC200, MaxiCode, QR code
<b>Stacked code types</b>	PDF417

## Interfaces

<b>Ethernet</b>	✓, 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>EtherNet/IP™</b>	✓ (2)
	Function Data interface (read result output), Trigger interface
	Data transmission rate 10/100 MBit/s
<b>CAN</b>	✓
	Function SICK CAN sensor network CSN (secondary), Data interface (read result output)
	Data transmission rate 500 kbit/s
<b>Serial</b>	✓, RS-232, RS-422
	Data transmission rate 1.2 kBaud ... 115.2 kBaud
<b>USB</b>	✓, USB 2.0
	Function Service interface (accessing the web server)
<b>PROFINET</b>	✓ (2)
	Function Data interface (read result output), Trigger interface
	Data transmission rate 10/100 MBit/s
<b>Digital inputs</b>	2 ("Sensor 1", "Sensor 2", encoder input, external trigger)
<b>Configurable digital inputs/outputs</b>	

	X1	3 („DIO 4“, „DIO 5“, „DIO 6“)
<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</b>		microSD memory card (parameter cloning)
<b>Data storage and retrieval</b>		Image and data storage via external FTP
<b>Maximum encoder frequency</b>		50 kHz
<b>External illumination control</b>		Via digital output (max. 24 V trigger) or external illumination connection

### Ambient data

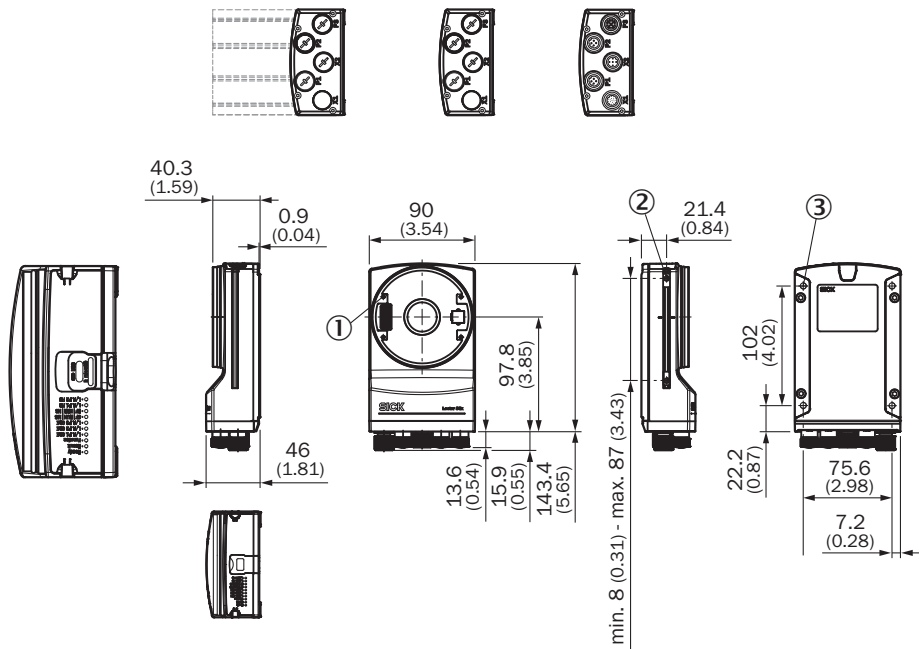
<b>Electromagnetic compatibility (EMC)</b>	
Interference resistance	IEC 61000-6-2:2016 / EN IEC 61000-6-2:2019
Interference emission	IEC 61000-6-4:2018 / EN IEC 61000-6-4:2019
<b>Vibration resistance</b>	EN 60068-2-6:2007, EN 60068-2-64:2019
<b>Shock resistance</b>	EN 60068-2-27:2008
<b>Ambient operating temperature</b>	0 °C ... +50 °C <sup>1)</sup>
<b>Storage temperature</b>	-20 °C ... +70 °C
<b>Permissible relative humidity</b>	≤ 90 %, Non-condensing
<b>Ambient light immunity</b>	2,000 lx, on code
<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.

### 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 sliding nuts, M5, 5.5 mm deep, as an alternative method of mounting the device
- ③ 4 tapped blind holes, M5, 5.5 mm deep for mounting the device

### Selection Guide

V2D8512R, focal length: 12mm

#### FIELD OF VIEW

V2D8512R-xxxxxxx, focal length: 12 mm

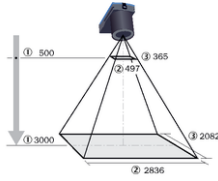


Figure 30: Field of view V2D8512R-xxxxxxx, focal length: 12 mm

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

Table 17: Perceived field of view area

Working distance (mm)	Horizontal (mm)	Vertical (mm)
500	497	365
1000	965	709
1500	1433	1052
2000	1900	1396
2500	2368	1739
3000	2836	2082

Table 18: 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

V2D8512R, focal length: 16mm

FIELD OF VIEW

V2D8512R-xxxxxxx, focal length: 16 mm

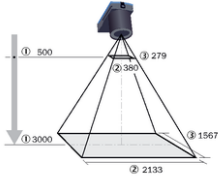


Figure 31: Field of view V2D8512R-xxxxxxx, focal length: 16 mm

- 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

V2D8512R, focal length: 25mm

### FIELD OF VIEW

V2D8512R-xxxxxxx, focal length: 25 mm

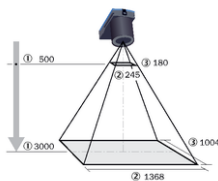


Figure 32: Field of view V2D8512R-xxxxxxx, focal length: 25 mm

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

Table 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

## Recommended services

Additional services → [www.sick.com/Lector85x](http://www.sick.com/Lector85x)

	Type	Part no.
<b>Performance check</b> <ul style="list-style-type: none"> <li>• <b>Product area:</b> Image-based code readers</li> <li>• <b>Range of services:</b> Inspection of defined functions, e.g., reading performance</li> <li>• <b>Travel expenses:</b> The prices do not include travel costs such as hotel, flight, travel time and expenses.</li> <li>• <b>Duration:</b> Additional work will be invoiced separately</li> </ul>	Performance check Lector	1608207
<b>Maintenance</b> <ul style="list-style-type: none"> <li>• <b>Product area:</b> Image-based code readers</li> <li>• <b>Range of services:</b> Inspection, analysis and restoring of defined functions, Inspection and adaptation of previously defined functions of possible Lector6xx illumination, code configuration, trigger and digital inputs, interfaces and digital outputs as well as data processing</li> <li>• <b>Duration:</b> Additional work will be invoiced separately</li> <li>• <b>Travel expenses:</b> The prices do not include travel costs such as hotel, flight, travel time and expenses.</li> </ul>	Maintenance Lector	1611421



	Type	Part no.
Commissioning		
<ul style="list-style-type: none"><li>• <b>Product area:</b> Image-based code readers</li><li>• <b>Range of services:</b> Inspection of connection, fine adjustment, optimization of parameters of SICK product as well as tests, Set-up of previously defined functions of possible illumination, code configuration, trigger and digital inputs, interfaces and digital outputs as well as data processing</li><li>• <b>Travel expenses:</b> The prices do not include travel costs such as hotel, flight, travel time and expenses.</li><li>• <b>Duration:</b> Additional work will be invoiced separately</li></ul>	Commissioning Lector	1608206

## 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)