Data sheet

V2D8305R-1MCXXXAF1SXXXX

Lector83x

IMAGE-BASED CODE READERS

SICK
Sensor Intelligence.

Ordering information

Type	part no.
V2D8305R-1MCXXXAF1SXXXX	1149550

Other models and accessories ➜ www.sick.com/Lector83x

Detailed technical data

Features

Variant	Main unit
Optical focus	Adjustable focus (manual)
Sensor	CMOS monochrome
Sensor resolution	2,464 px x 2,048 px (5 MP)
Illumination	To be ordered separately as accessories
Lens	C-mount
Optical format	1/1.8"
Note	To be ordered separately as accessories
Scanning frequency	30 Hz
Code resolution	≥ 0.1 mm [1]
Working range	200 mm ... 2,500 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) 1 x M8, 4-pin socket (external illumination, I/O) 2 x M12, 4-pin socket, D-coded (100-Megabit Ethernet, dual port fieldbus) 1 x M12, 8-pin female connector, X-coded (Gigabit Ethernet)
Supply voltage	24 V DC, ± 20 % [1]
Power consumption	Typ. 21 W [2]
Current consumption	≤ max. 2 A

[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] At 25 °C ambient operating temperature.

Housing material	Aluminum die cast
Housing color	Anthracite gray (RAL 7016)
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	471 g
Dimensions (L x W x H)	108 mm x 63.1 mm x 55.4 mm (Housing only, without lens and optics protection hood)
MTBF	100,000 h [3]

[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] At 25 °C ambient operating temperature.

Safety-related parameters

Conformities	Conformance Class B

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
CAN	✓
Function	Data interface (read result output), Trigger interface
Data transmission rate	500 kbit/s
Serial	✓ , RS-232, RS-422
Data transmission rate	1.2 kBaud ... 115.2 kBaud
USB	✓ , USB 2.0
Function	Service interface (accessing the web server), Ethernet via USB (RNDIS)
Data transmission rate	480 Mbit/s
EtherNet/IP™	✓ (2)
Function	Data interface (read result output), Trigger interface
Data transmission rate	10/100 MBit/s
PROFINET	✓ (2)
Function	Data interface (read result output), Trigger interface
Data transmission rate	10/100 MBit/s
Fieldbus, industrial network	
Supported protocol versions	PROFINET specification V2.43
GSDML	According to GSDML specification V2.43

[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.

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	100Base-TX, auto-negotiation, auto-crossover (MDIX), auto-polarity
Net load	Net load class III in accordance with security level 1 test
Digital inputs	2 (“Sensor 1”, “Sensor 2”, insulated, encoder input, external trigger)
Configurable digital inputs/outputs	
X1	3 pieces („DIO 4“, „DIO 5“, „DIO 6“)
Reading pulse	Digital inputs, CAN, auto pulse
Optical indicators	8 status LEDs
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 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 ≥ 40 °C, ensure adequate heat dissipation when mounting the device.

Certificates

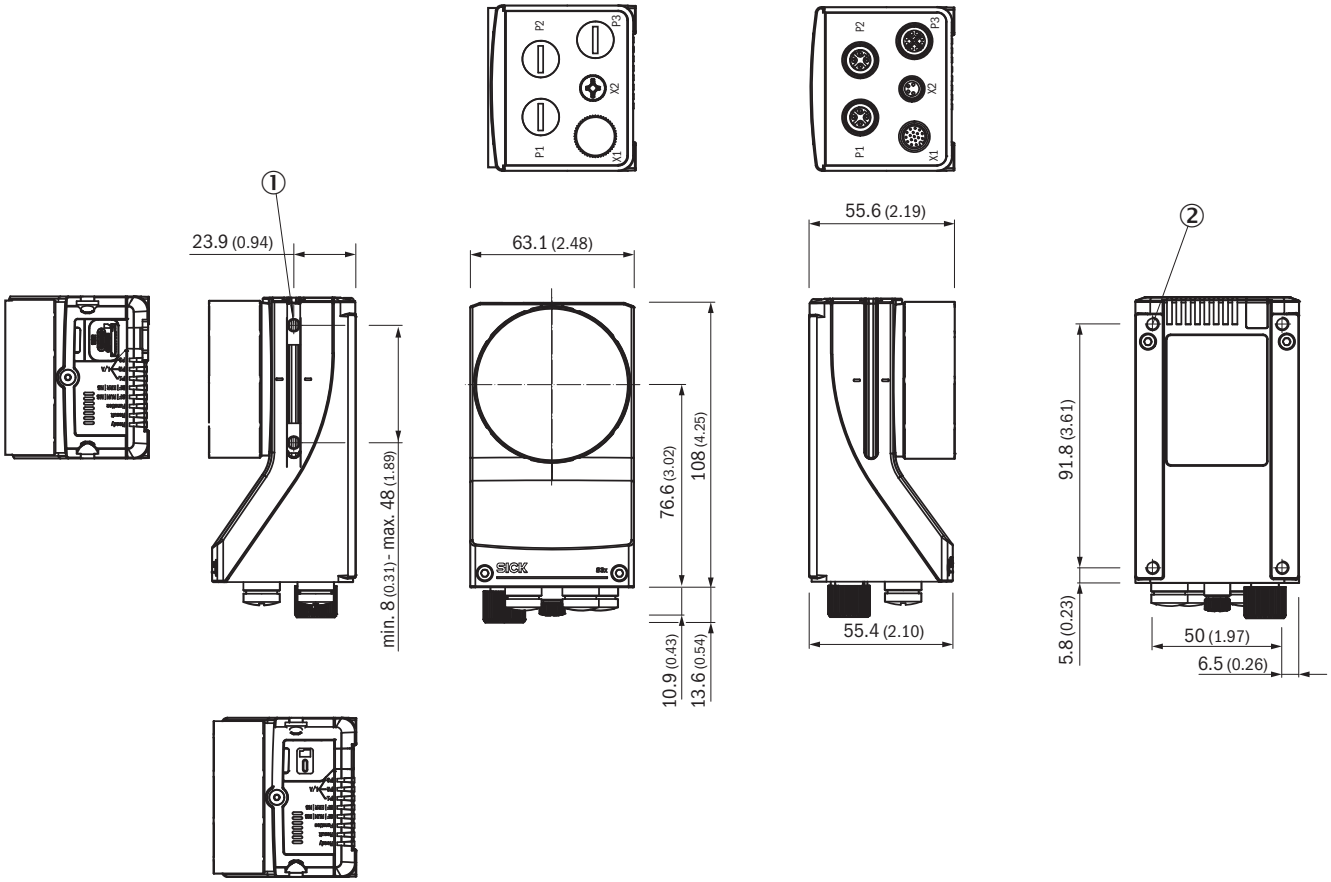
EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
China RoHS	✓
cULus certificate	✓
Profinet certificate	✓
Ethernet/IP certificate	✓

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

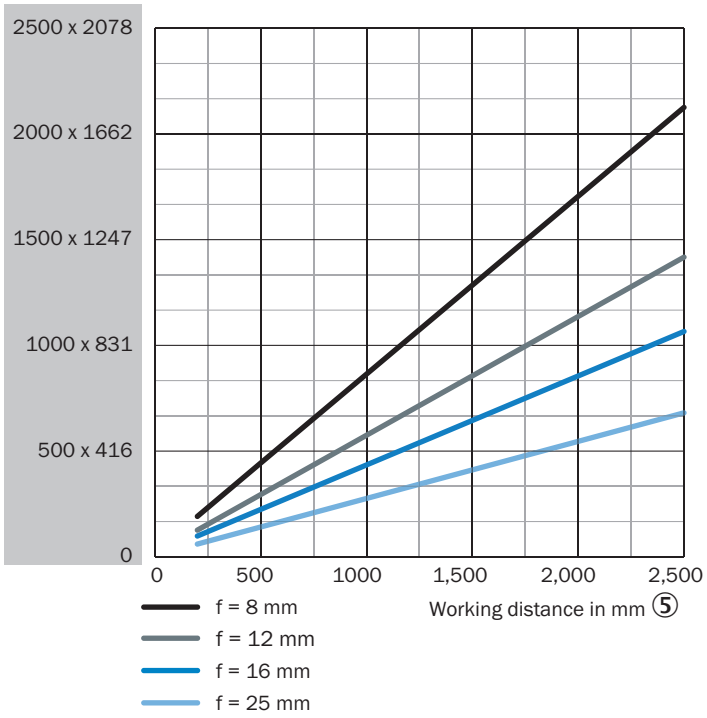
Dimensional drawing



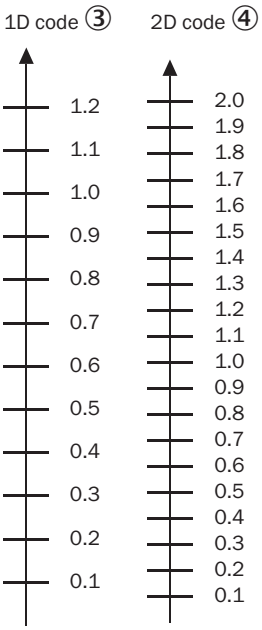
Dimensions in mm (inch)
① 2 M5 sliding nuts; 5.5 mm deep; pivoting; as an alternative method of mounting the product
② 4 tapped blind holes, M5, 5.5 mm deep for mounting the product

Field of view V2D8305x-xxxxxxxxxx

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



Min. resolution in mm ②



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 V2D8305R, focal length: 25 mm

FIELD OF VIEW

V2D8305R-xxxxxxxxxx, focal length: 25 mm

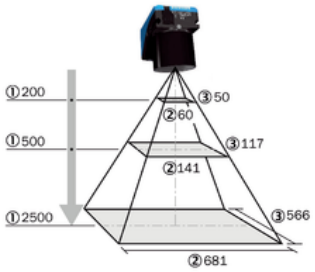


Fig. 8: Field of view of V2D8305R-xxxxxxxxxx, focal length: 25 mm

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

Table 15: Perceived field of view area

Working distance (mm)	Horizontal (mm)	Vertical (mm)
200	60	50
500	141	117
1000	276	230
1500	411	342
2000	546	454
2500	681	566

Table 16: Minimum resolution

Working distance (mm)	1D code (mm)	2D code (mm)
200	0.03	0.05
500	0.07	0.11
1000	0.13	0.22
1500	0.20	0.33
2000	0.27	0.44
2500	0.33	0.55

Selection Guide V2D8305R, focal length: 16 mm

FIELD OF VIEW

V2D8305R-xxxxxxxxxx, focal length: 16 mm

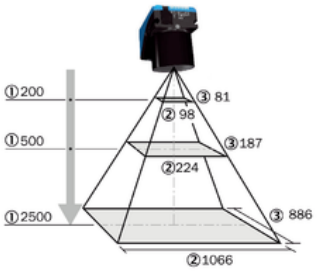


Fig. 6: Field of view of V2D8305R-xxxxxxxxxx, focal length: 16 mm

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

Table 11: Perceived field of view area

Working distance (mm)	Horizontal (mm)	Vertical (mm)
200	98	81
500	224	187
1000	435	361
1500	645	536
2000	855	711
2500	1066	886

Table 12: Minimum resolution

Working distance (mm)	1D code (mm)	2D code (mm)
200	0.05	0.08
500	0.11	0.18
1000	0.22	0.36
1500	0.31	0.52
2000	0.42	0.70
2500	0.52	0.86

Selection Guide V2D8305R, focal length: 12 mm

FIELD OF VIEW

V2D8305R-xxxxxxxxxx, focal length: 12 mm

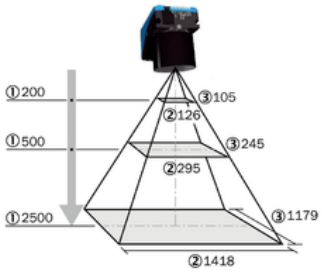


Fig. 4: Field of view of V2D8305R-xxxxxxxxxx, focal length: 12 mm

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

Table 7: Perceived field of view area

Working distance (mm)	Horizontal (mm)	Vertical (mm)
200	126	105
500	295	245
1000	575	478
1500	856	712
2000	1137	945
2500	1418	1179

Table 8: Minimum resolution

Working distance (mm)	1D code (mm)	2D code (mm)
200	0.06	0.10
500	0.14	0.24
1000	0.28	0.46
1500	0.42	0.70
2000	0.55	0.92
2500	0.70	1.16

Selection Guide V2D8305R, focal length: 8 mm

FIELD OF VIEW

V2D8305R-xxxxxxxxxx, focal length: 8 mm

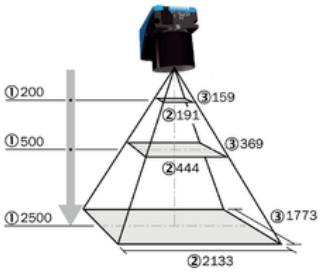


Fig. 2: Field of view of V2D8305R-xxxxxxxxxx, focal length: 8 mm

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)
200	191	159
500	444	369
1000	866	720
1500	1288	1071
2000	1710	1422
2500	2133	1773

Table 4: Minimum resolution

Working distance (mm)	1D code (mm)	2D code (mm)
200	0.10	0.16
500	0.22	0.36
1000	0.42	0.70
1500	0.62	1.04
2000	0.83	1.38
2500	1.04	1.74

SICK AT A GLANCE

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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.

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