Data sheet

V2D632R-MKMDB4

Lector63x

IMAGE-BASED CODE READERS

SICK
Sensor Intelligence.

Illustration may differ

Ordering information

Type	part no.
V2D632R-MKMDB4	1074079

Included in delivery: V2D632R-MXCXB0 (1), Distance bracket (1), C-mount lens (1), Optics protection hood (PMMA) (1), VI55I-WH1441M0 (1)

Other models and accessories ➜ www.sick.com/Lector63x

Detailed technical data

Features

Variant		Complete device
Optical focus		Adjustable focus (manual)
Sensor		CMOS monochrome
Sensor resolution		1,600 px x 1,200 px (1.9 MP)
Illumination		Integrated
Illumination color		White, LED, Visible,
Feedback spot		LED, Visible, green, 525 nm, ± 15 nm LED, Visible, Red, 630 nm, ± 20 nm
Alignment aid		Laser, Red, 630 nm ... 680 nm
Laser class		1, Complies with 21 CFR 1040.10 and 1040.11 except for conformance with IEC 60825-1 Ed.3., as described in “Laser Notice No. 56” dated May 8, 2019 (IEC 60825-1:2014, EN 60825-1:2014+A11:2021)
Lens		C-mount (compact)
	Optical format	1/1.8"
	Focal length	12 mm
	Aperture	8
Scanning frequency		≤ 50 Hz, at 1.9 megapixels resolution
Code resolution		≥ 0.1 mm [1]
Working range		50 mm ... 2,200 mm [2] [3]

[1] Depends on lens used, for details see field of view diagram.
[2] Depends on lens used.
[3] For details see field of view diagram.

Mechanics/electronics

Connection type	1 x M12, 17-pin plug (serial, CAN, I/Os, power supply) 1 x M12, 8-pin socket (Ethernet, 1 GBit/s) 1 x M8, 4-pin socket (USB) 1 x M12, 4-pin socket (external illumination control)
Supply voltage	12 V DC ... 24 V DC, ± 20 %
Power consumption	Typ. 10 W, ± 20 %
Output current	≤ 100 mA
Housing material	Aluminum die cast
Window material	Plastic
Enclosure rating	IP67 (EN 60529 (1991-10), EN 60529/A2 (2002-02))
Electrical safety	EN 60950-1 (2011-01)
Weight	500 g
Dimensions (L x W x H)	108 mm x 63.1 mm x 74.1 mm

Performance

Readable code structures	1D codes, Stacked, 2D codes
Bar code types	GS1-128 / EAN 128, UPC / GTIN / EAN, Interleaved 2 of 5, Pharmacode, GS1 DataBar, Code 39, Code 128, Codabar, Code 32, Code 93, USPS (Postnet, Planet, USPS4SCB), Australian Post, Dutch KIX Post, Royal Mail, Swedish Post
2D code types	Data Matrix ECC200, GS1 Data-Matrix, MaxiCode, QR code
Stacked code types	PDF417
Code qualification	On the basis of ISO/IEC 16022, ISO/IEC 15415, ISO/IEC 18004

Interfaces

Ethernet	✓ , TCP/IP
Function	Data interface (read result output), Service interface, FTP (image transmission)
Data transmission rate	10/100/1,000 Mbit/s
PROFINET	✓
Function	PROFINET Single Port (integrated), PROFINET Dual Port (optional via external connection module CDF600-2)
Data transmission rate	10/100 MBit/s
EtherNet/IP™	✓
Data transmission rate	10/100/1,000 Mbit/s
Serial	✓ , RS-232, RS-422
Function	Data interface (read result output), Service interface
Data transmission rate	0.3 kBaud ... 115.2 kBaud, AUX: 57.6 kBaud (RS-232)
CAN	✓
Function	SICK CAN sensor network CSN (CAN controller/CAN device, multiplexer/server)
Data transmission rate	250 kbit/s ... 500 kbit/s
PROFIBUS DP	✓
Type of fieldbus integration	Optional over external fieldbus module CDF600-2
Digital inputs	4 (“Sensor 1”, “Sensor 2”, 2 inputs via optional CMC600 parameter memory in CDB650/CDM420)
Configurable inputs	Encoder input, external trigger

Digital outputs	6 (CDB650: “Result 1”, “Result 2”, “Result 3”, “Result 4”, 2 external outputs via CMC600 or CDM420: “Result 1”, “Result 2”, 2 external outputs via CMC600 or cable with open end: “Result 1”, “Result 2”, “Result 3”, “Result 4”)
Configurable outputs	Good read, External illumination control, free configurable output condition, "device ready"
Reading pulse	Digital inputs, non-powered, serial interface, Ethernet, CAN, auto pulse, presentation mode
Optical indicators	11 LEDs (5 status displays, 16 LEDs, 5 LED bar graphs, 1 green/red feedback spot)
Acoustic indicators	Beeper (configurable)
Control elements	2 buttons (choose and start/stop functions)
Operator interfaces	Web server
Configuration software	SOPAS ET
Memory card	Micro SD memory card (flash card) max. 32 GB, optional
Data storage and retrieval	Image and data storage via microSD memory card and external FTP
EncoderFrequency	Max. 1 kHz
External illumination control	Via digital output (max. 24 V trigger) or external illumination connection

Ambient data

Electromagnetic compatibility (EMC)	EN 61000-6-2:2005-08 / EN 61000-6-4 (2007-01) + A1 (2011)
Vibration resistance	EN 60068-2-6:2008-02
Shock resistance	EN 60068-2-27:2009-05
Ambient operating temperature	0 °C ... +50 °C
Storage temperature	–20 °C ... +70 °C
Permissible relative humidity	90 %, Non-condensing

Certificates

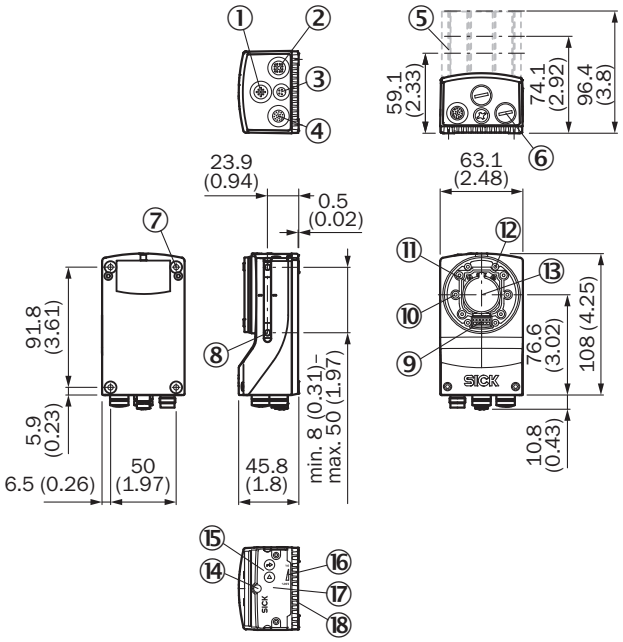
EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
China RoHS	✓
cULus certificate	✓
BIS registration	✓
Information according to Art. 3 of Data Act (Regulation EU 2023/2854)	✓
4Dpro	✓

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

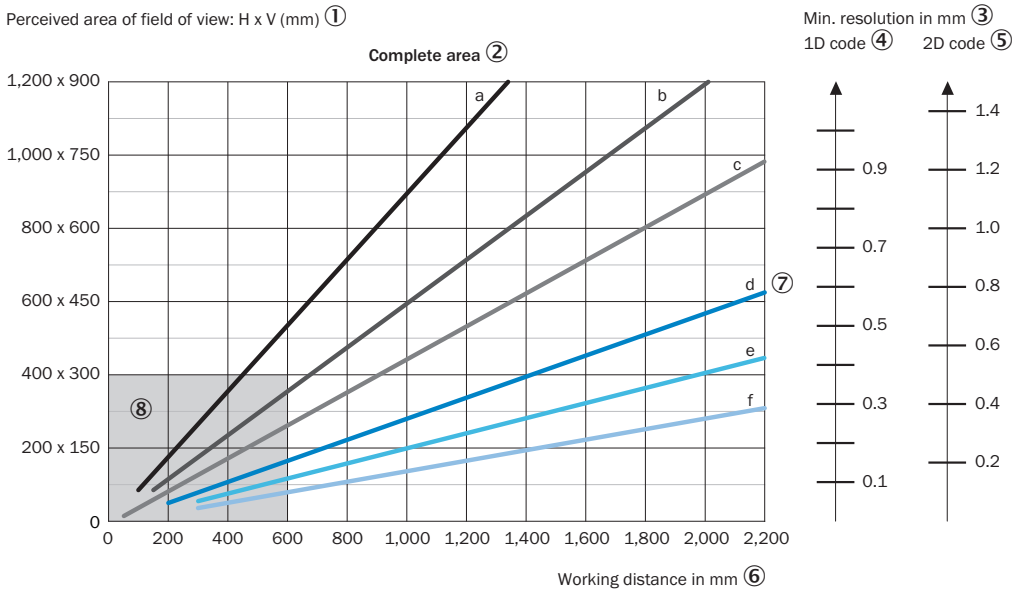
ECLASS 12.0	27280103
ETIM 5.0	EC002550
ETIM 6.0	EC002550
ETIM 7.0	EC002999
ETIM 8.0	EC002999
UNSPSC 16.0901	43211701

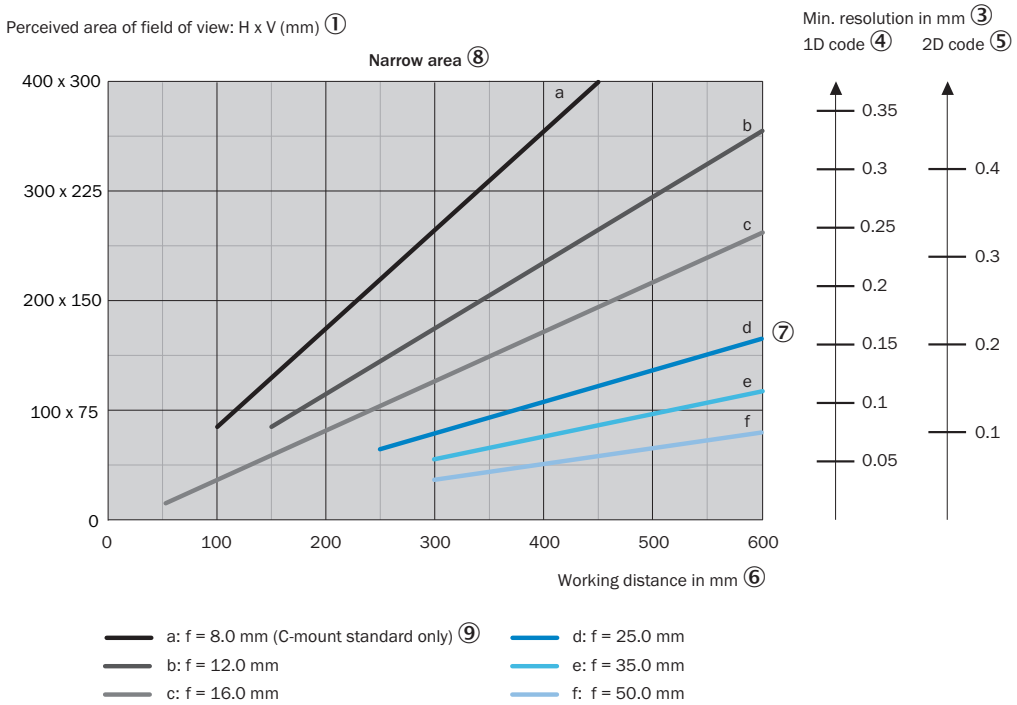
Dimensional drawing



Dimensions in mm (inch)
① “External light” connection (external illumination unit, female connector, M12, 4-pin, A-coded)
② “Ethernet” connection (Gigabit Ethernet, female connector, M12, 8-pin, X-coded)
③ “USB” connection (female connector, type M8, 4-pin), for temporary use as a service interface only
④ “Power/Serial Data/CAN/I/O” connection (male connector, M12, 17-pin, A-coded)
⑤ Optics protection hood (length: 22.7 mm, 37.7 mm or 60 mm)
⑥ 4 protective caps for sealing off the electrical connections as required for enclosure rating IP67 (delivery condition)
⑦ 4 tapped blind holes, M5, 5.5 mm deep for mounting the product
⑧ 2 M5 sliding nuts; 5.5 mm deep; pivoting; as an alternative method of mounting the product
⑨ Connection for an integrable illumination unit (VI55I ring illumination unit)
⑩ 2 laser alignment aids
⑪ S-mount or C-mount optics module
⑫ 4 blind tapped holes, 2.5 mm for mounting the spacers for the integrable illumination (VI55I ring illumination unit)
⑬ Optical axis and center of the image sensor
⑭ Basic device: Manual focus screw for an S-mount lens, accessible via the round opening in the housing cover. To secure the focus setting, cover the round opening with a self-adhesive label. Complete device: The opening is already covered by a label.
⑮ 2 function keys
⑯ 5 bar graph LEDs
⑰ Hinged cover on the top side of the device, access to the microSD memory card and the manual focus screw (S-mount)
⑱ 5 status LEDs (2 levels)

Field of view



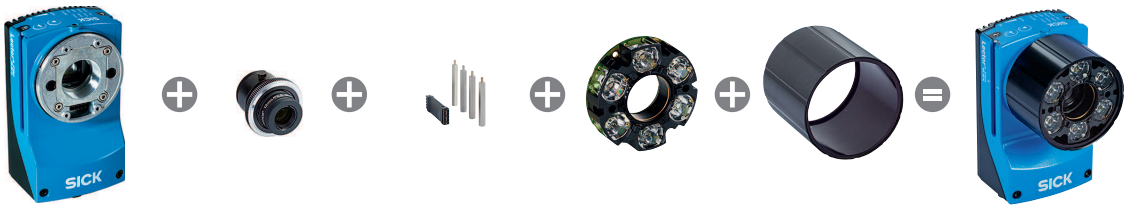


a: f = 8.0 mm (C-mount standard only) ⑨
b: f = 12.0 mm
c: f = 16.0 mm
d: f = 25.0 mm
e: f = 35.0 mm
f: f = 50.0 mm

For S-mount and standard C-mount lenses, spacer rings are needed for working distances shorter than approximately 10 times the focal length. For compact C-mount lenses, spacer rings are not needed, but the built-in illumination cannot be used for distances shorter than 300 mm.

① perceived field of view area: horizontal x vertical (mm)
② complete area
③ Minimum resolution in mm
④ 1D code
⑤ 2D code
⑥ Working distance in mm
⑦ Focal length of lens, here example for f = 25.0 mm
⑧ Close range
⑨ Standard C-mount only

Selection Guide Lector63x Compact C-mount



Body, incl. C-mount module	Compact C-mount lens	Spacer screws and illumination connector	Integratable illumination	Lens protective hood	Assembled device, incl. all mentioned parts
Lector631 V2D631R-MXCXB0 1078473	Focal length **12 mm** Aperture **F8** 2079348	**Medium – 15 mm** 2079501	**Medium, white** 2078430	**Medium – 37.7 mm** 2079127	**Lector631, 12 mm, F8, white** V2D631R-MKMDB4 1080075
			Medium, red 2098650	**Medium – 37.7 mm** 2079127	**Lector632, 12 mm, F8, white** V2D632R-MKMDB4 1074079
			Medium, blue 2083814	**Medium – 37.7 mm** 2079127	
			Wide, IR 2101371	**Medium – 37.7 mm** 2092590	
Lector632 V2D632R-MXCXB0 1075881	Focal length **16 mm** Aperture **F8** 2079346	**Long – 37 mm** 2079502	**Medium, white** 2078430	**Long – 60 mm** 2079204	**Lector631, 16 mm, F8, white** V2D631R-MKMEB1 1080076
			Medium, red 2098650	**Long – 60 mm** 2079204	**Lector632, 16 mm, F8, white** V2D632R-MKMEB1 1074080
			Medium, blue 2083814	**Long – 60 mm** 2079204	
			Medium, IR 2098834	**Long – 60 mm** 2092592	
Lector631 V2D631D-MXCXB0 1082394	Focal length **25 mm** Aperture **F8** 2079343	**Medium – 15 mm** 2079501	**Narrow, white** 2078431	**Medium – 37.7 mm** 2079127	**Lector631, 25 mm, F8, white** V2D631R-MWMFB4 1080077
			Narrow, red 2084247	**Medium – 37.7 mm** 2079127	**Lector632, 25 mm, F8, white** V2D632R-MWMFB4 1074081
			Narrow, blue 2083812	**Medium – 37.7 mm** 2079127	
Lector632 V2D632D-MXCXB0 1082396	Focal length **35 mm** Aperture **F8** 2079344	**Long – 37 mm** 2079502	**Narrow, white** 2078431	**Long – 60 mm** 2079204	**Lector631, 35 mm, F8, white** V2D631R-MWMGB1 1080078
			Narrow, red 2084247	**Long – 60 mm** 2079204	**Lector632, 35 mm, F8, white** V2D632R-MWMGB1 1074082
			Narrow, blue 2083812	**Long – 60 mm** 2079204	

Selection Guide

Body, incl. C-mount module | C-mount lens | Mounting bracket | External illumination | Lens protective hood | Assembled device, incl. all ICL parts

Lector631
V2D631R-MXCXB0
1078473

Lector632
V2D632R-MXCXB0
1075881

Lector631
V2D631D-MXCXB0
1082394

Lector632
V2D632D-MXCXB0
1082396

- Focal length **8 mm** Aperture **F1.4–16** 5325091
- Focal length **12 mm** Aperture **F1.4–16** 5325403

→ An external, application-specific illumination is required

→ **Medium – 37.7mm** 2079127

→ **Long – 60 mm** 2079204

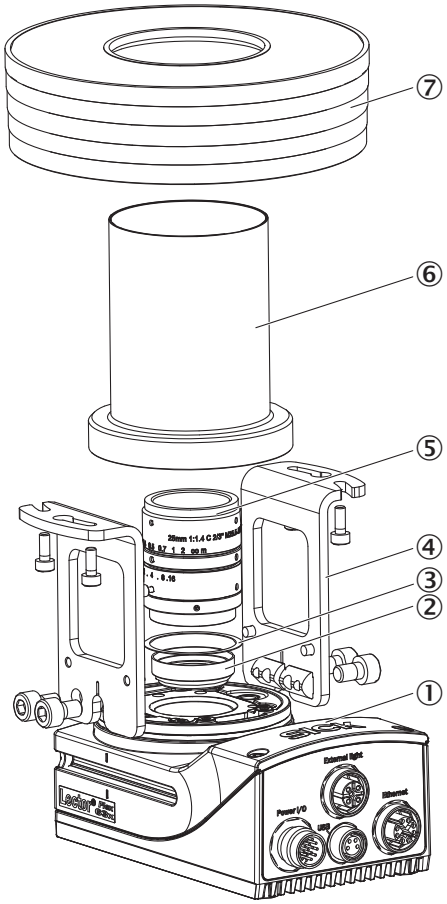
- Focal length **16 mm** Aperture **F1.4–16** 5325404
- Focal length **25 mm** Aperture **F1.4–16** 5325405
- Focal length **35 mm** Aperture **F1.4–16** 5325406
- Focal length **50 mm** Aperture **F1.4–16** 5325407

→ Bracket for ICL mounting 2081187

- ICL280, **red** 1052472
- ICL280, **infrared** 1057645
- ICL260, **red** 1052495
- ICL280, **infrared** 1057645
- ICL300, **red** 1046820
- ICL300, **infrared** 1047957

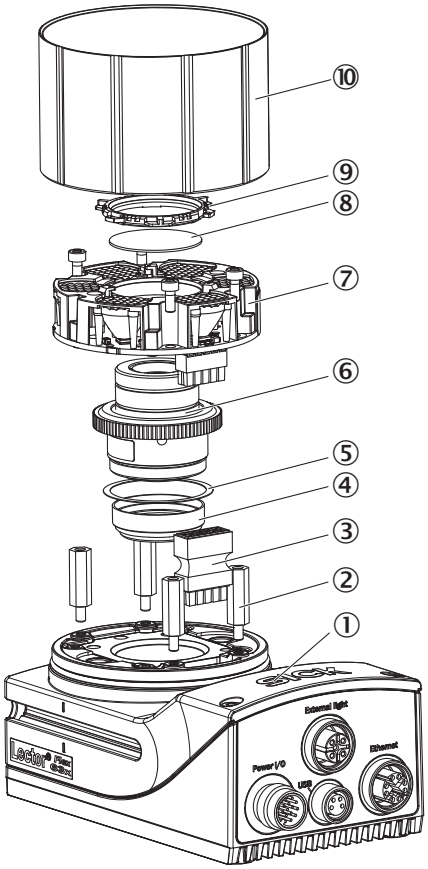
→ Hood to be used with ICL illumination 2081544

Exploded view



① Camera housing
② C-mount filter (optional)
③ Spacer disk (included with delivery of filter)
④ C-mount lens
⑤ Mounting bracket for ICL ring lighting
⑥ optics protection hood for ICL ring lighting
⑦ ICL ring lighting

Exploded view



① Camera housing
② Spacer for built-in illumination
③ Plug connector for illumination
④ Optical filter (optional)
⑤ Spacer disk (included with delivery of filter)
⑥ Compact C-mount lens
⑦ Built-in illumination
⑧ C-mount filter (optional), cannot be used with 15 mm lenses (2080213)
⑨ Filter holder
⑩ optics protection hood

Recommended accessories

Other models and accessories ➜ www.sick.com/Lector63x

	Brief description	Type	part no.
connectors and cables			
	• **Connection type head A:** Female connector, M12, 17-pin, straight, A-coded • **Connection type head B:** Male connector, M12, 17-pin, straight, A-coded • **Signal type:** Power, serial, CAN, digital I/Os • **Cable:** 2 m, suitable for refrigeration • **Description:** Power, suitable for 2 A, shielded, Serial, CAN, Digital I/Os	YM2A8D-020XXXF2A8D	6053230
	• **Connection type head A:** Male connector, M12, 8-pin, straight, X-coded • **Connection type head B:** Male connector, RJ45, 8-pin, straight • **Signal type:** Ethernet, Gigabit Ethernet • **Cable:** 2 m, 8-wire, PUR, halogen-free • **Description:** Ethernet, shielded, Gigabit Ethernet • **Application:** Zones with oils and lubricants	YM2X18-020EG1M-RJA8	2106258
	• **Connection type head A:** Male connector, M12, 8-pin, straight, X-coded • **Connection type head B:** Male connector, RJ45, 8-pin, straight • **Signal type:** Ethernet, Gigabit Ethernet • **Cable:** 3 m, 8-wire, PUR, halogen-free • **Description:** Ethernet, shielded, Gigabit Ethernet • **Application:** Zones with oils and lubricants	YM2X18-030EG1M-RJA8	2145693
Junction boxes			
		CDB650-204	1064114
Mounting systems			
	• **Description:** Mounting bracket with screws, L-shaped for mounting with sliding nuts, includes angle indicator for adjusting the tilt angle • **Suitable for:** Lector83x, Inspector83x, Lector63x, InspectorP63x, Lector83x, Inspector83x, Lector63x, InspectorP63x, Lector83x, Inspector83x, Lector63x, InspectorP63x, Lector83x, Inspector83x, Lector63x	Mounting bracket	2078970

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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