Online data sheet



V2D631R-MKMDB4 Flex

Lector63x

IMAGE-BASED CODE READERS

SICK
Sensor Intelligence.



Illustration may differ

Ordering information

Type	Part no.
V2D631R-MKMDB4 Flex	1080075

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

Detailed technical data

Features

Focus	Adjustable focus (manually)
Sensor	CMOS matrix sensor, grayscale values
Sensor resolution	1,280 px x 1,024 px
Light source	Illumination LEDs: white (λ = 6,000 K ± 500 K) Feedback spot: visible green light (λ = 525 nm ± 15 nm), visible red light (λ = 630 ± 20 nm), RG 1 Aiming laser: visible red light (λ = 630 nm ... 680 nm)
Laser class	1, complies with 21 CFR 1040.10 except for the tolerance according to “Laser Notice No. 50” from June 24, 2007 (IEC 60825-1 (2007-3))
Scanning frequency	≤ 50 Hz, With resolution of 1.3 megapixels
Code resolution	≥ 0.1 mm [1)]
Reading distance	50 mm ... 2,200 mm [1)]

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

Performance

Readable code structures	1D, 2D, Stacked
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	✓, TCP/IP
Function	Host, AUX, FTP (image transmission)
Data transmission rate	10/100/1,000 Mbit/s

PROFINET	✓
Function	PROFINET Dual Port (optional via external connection module CDF600-2)
EtherNet/IP™	✓
Data transmission rate	10/100/1,000 Mbit/s
Serial	✓, RS-232, RS-422
Function	Host, AUX
Data transmission rate	0.3 kBaud ... 115.2 kBaud, AUX: 57.6 kBaud (RS-232)
CAN	✓
Function	SICK CAN sensor network (Master/Slave, Multiplexer/Server)
Data transmission rate	250 kbit/s ... 500 kbit/s
PROFIBUS DP	✓
Type of fieldbus integration	Optional over external fieldbus module CDF600-2
USB	✓
Remark	USB 2.0
Switching inputs	4 (“Sensor 1”, “Sensor 2”, 2 inputs via optional CMC600 parameter memory in CDB650/ CDM420)
Configurable inputs	Encoder input, external trigger
Switching 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	Switching inputs, non-powered, serial interface, Ethernet, CAN, auto pulse, presentation mode
Optical indicators	11 LEDs (5 x status display, 5 x LED bar graph, 1 green/red feedback spot)
Acoustic indicators	Beeper (configurable)
Operating elements	2 buttons (choose and start/stop functions)
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, internal storage and external FTP
Maximum encoder frequency	1 kHz
External illumination control	Via digital output (max. 24 V trigger) or via external illumination connector

Mechanics/electronics

Electrical connection	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)
Operating voltage	24 V DC, ± 20 %
Power consumption	Typ. 10 W, ± 20 %
Output current	≤ 100 mA
Housing	Aluminum die cast
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
Lens	C-mount, focal length 12 mm, aperture 8

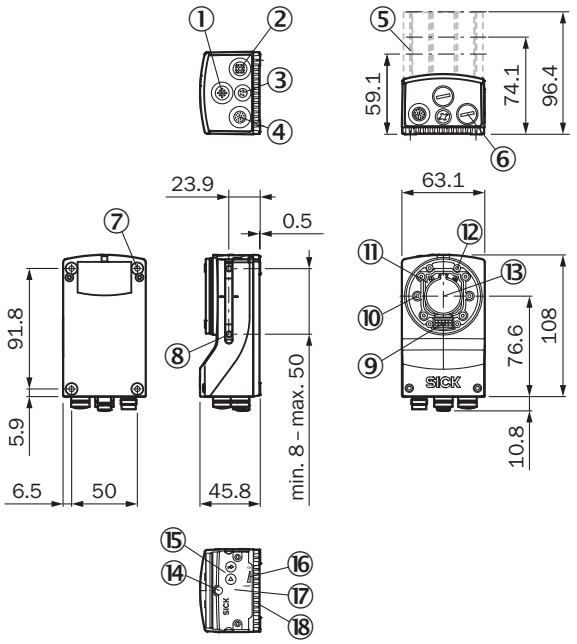
Ambient data

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

Classifications

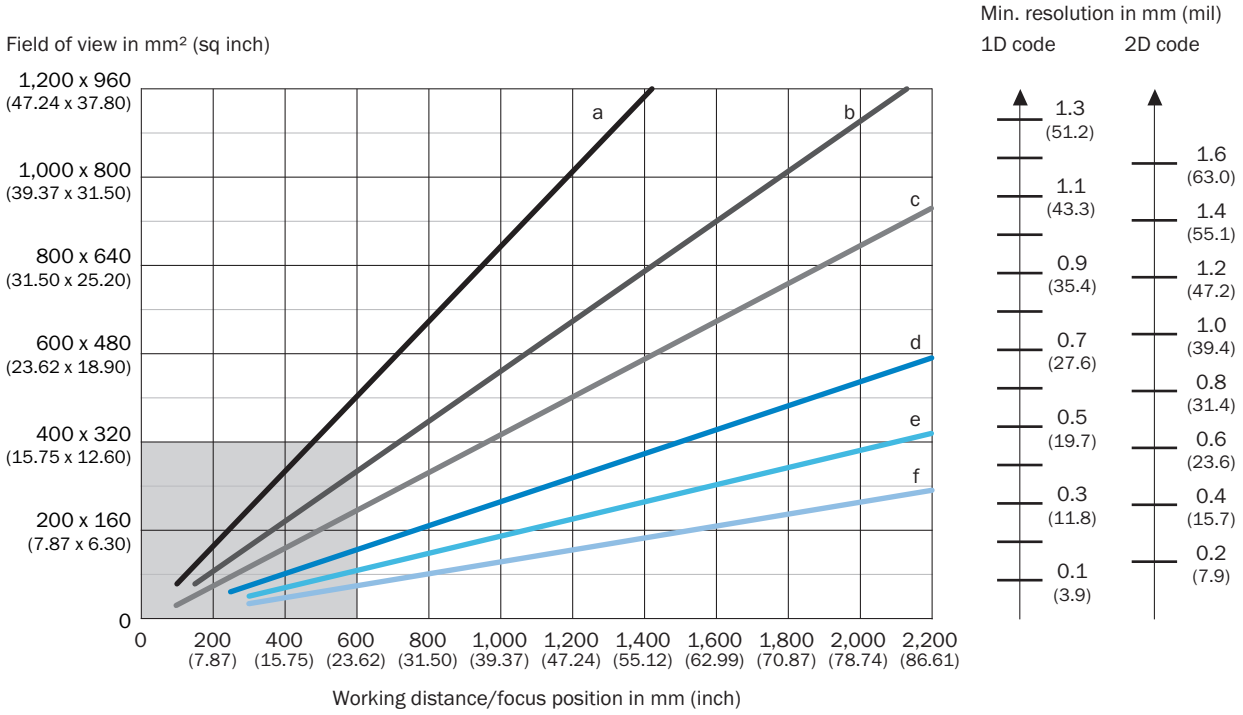
ECl@ss 5.0	27280103
ECl@ss 5.1.4	27280103
ECl@ss 6.0	27280103
ECl@ss 6.2	27280103
ECl@ss 7.0	27280103
ECl@ss 8.0	27280103
ECl@ss 8.1	27280103
ECl@ss 9.0	27280103
ETIM 5.0	EC002550
ETIM 6.0	EC002550
UNSPSC 16.0901	43211701

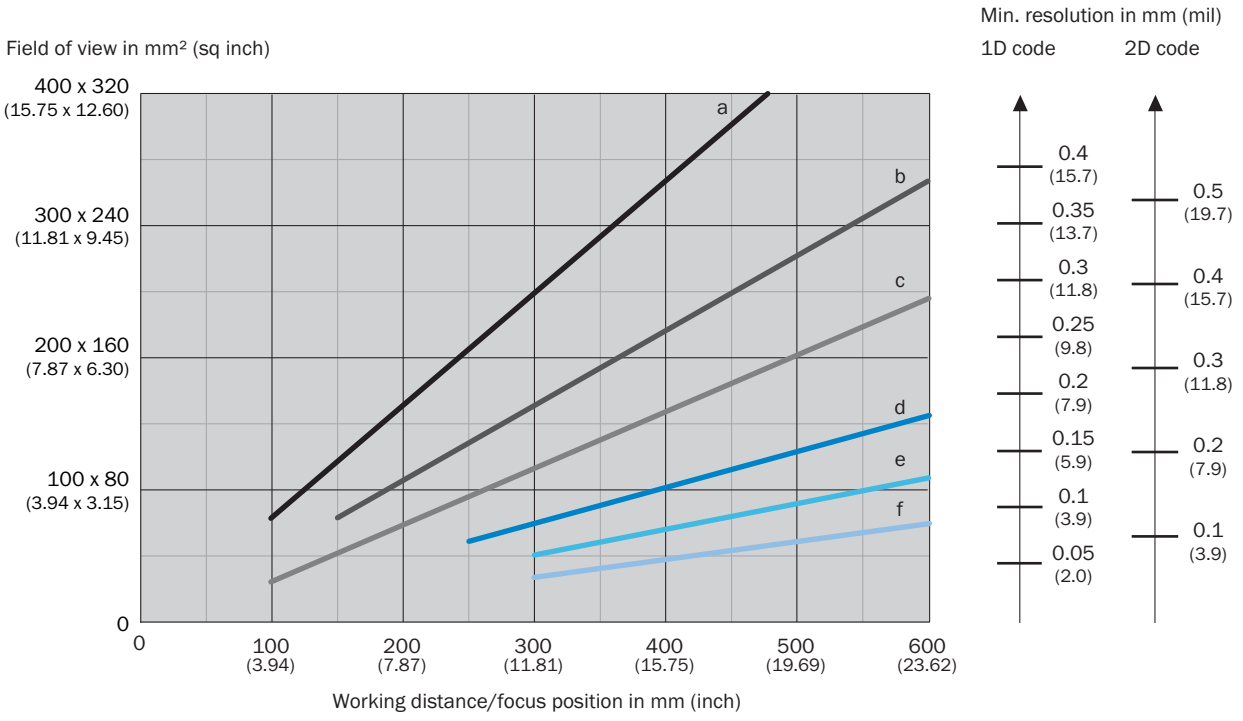
Dimensional drawing (Dimensions in mm (inch))



① External illumination connection
② Gigabit Ethernet port
③ USB port
④ Power, serial, CAN, and I/O connection
⑤ 22.7 mm, 37.7 mm, or 60 mm protective cover for optics
⑥ Protective caps/plugs to seal any electrical connections that are not in use
⑦ M5 blind tapped holes, 5 mm deep (4 x), for mounting the sensor
⑧ M5 sliding nut, 5.5 mm deep (4 x), pivoting, for an alternative method of mounting the sensor
⑨ Integrated illumination connection
⑩ Aiming laser (2 x)
⑪ S-mount or C-mount optics module
⑫ 2.5 mm blind tapped holes (4 x) for mounting the spacers for the integrable illumination
⑬ Optical axis and center of the image sensor
⑭ Manual focus screw, underneath cover/label (S-mount Flex)
⑮ Function button (2 x)
⑯ Bar graph display
⑰ Removable cover for microSD memory card slot and manual focus screw (S-mount)
⑱ LEDs for status display (2 levels), 5 x

Field of view



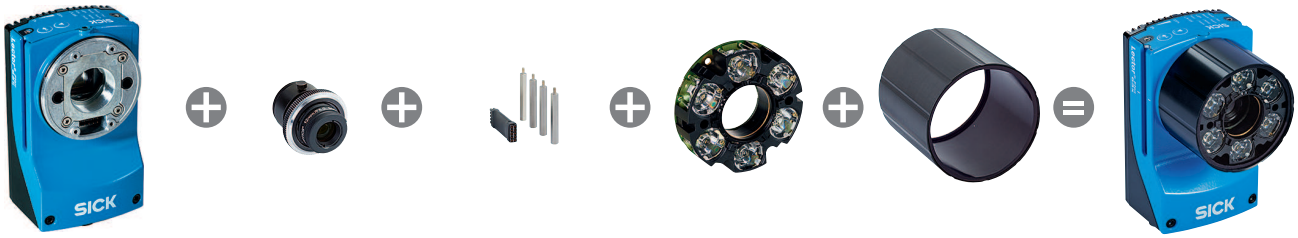


a: f = 8.0 mm (C-Mount standard onnly)
b: f = 12.0 mm
c: f = 16.0 mm
d: f = 25.0 mm
e: f = 35.0 mm
f: f = 50.0 mm

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.

Selection Guide

Lector63x Compact C-mount

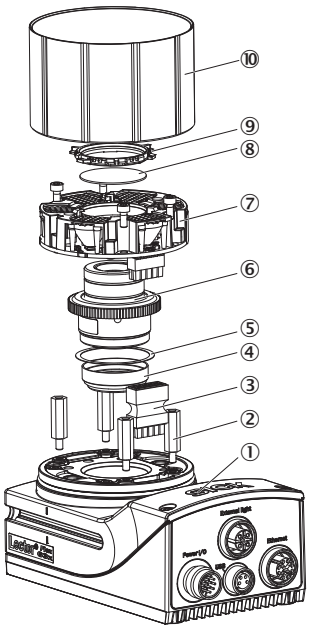


Body, incl. C-mount module	Lens	Distance bracket and light extension connector	Integratable lighting	Protective hood	Assembled device, incl. all mentioned parts
Lector631 V2D631R-MXCXB0 1078473 **Lector632** V2D632R-MXCXB0 1075881	Focal length **12 mm** Aperture **F8** 2079348	**Medium – 15 mm** 2079501	**Medium, white** 2078430	**Medium – 37.7 mm** 2079127	**Lector631, 12 mm, F8, white** V2D631R-MKMDB4 1080075 **Lector632, 12 mm, F8, white** V2D632R-MKMDB4 1074079
			Medium, blue 2083814	**Medium – 37.7 mm** 2079127	
	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 **Lector632, 16 mm, F8, white** V2D632R-MKMEB1 1074080
			Medium, blue 2083814	**Long – 60 mm** 2079204	
	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 **Lector632, 25 mm, F8, white** V2D632R-MWMFB4 1074081
			Narrow, blue 2083812	**Medium – 37.7 mm** 2079127	
	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 **Lector632, 35 mm, F8, white** V2D632R-MWMGB1 1074082
			Narrow, blue 2083812	**Long – 60 mm** 2079204	

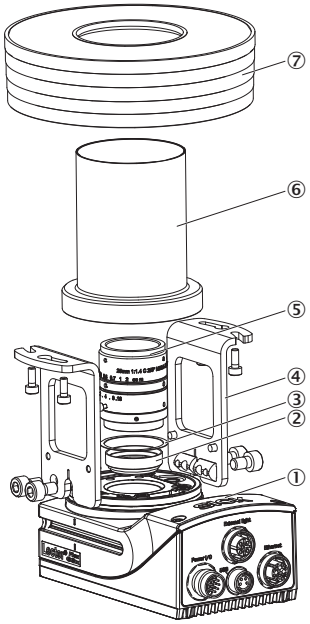


Body, incl. C-mount module	Lens	Mounting bracket	External lighting	Lens protective hood	Assembled device, incl. all mentioned parts
Lector631 V2D631R-MXCXB0 1078473 **Lector632** V2D632R-MXCXB0 1075881	Focal length **8 mm** Aperture **F1.4–16** 5325091	An external, application-specific lighting is required		**Medium – 37.7mm** 2079127	
	Focal length **12 mm** Aperture **F1.4–16** 5325403			**Long – 60 mm** 2079204	
	Focal length **16 mm** Aperture **F1.4–16** 5325404	Bracket for ICL mounting 2081187	ICL280, **red** 1052472	Hood to be used with ICL lighting 2081544	
			ICL280, **infrared** 1057645		
	Focal length **25 mm** Aperture **F1.4–16** 5325405	Bracket for ICL mounting 2081187	ICL260, **red** 1052495		
			ICL280, **infrared** 1057645		
	Focal length **35 mm** Aperture **F1.4–16** 5325406	Bracket for ICL mounting 2081187	ICL300, **red** 1046820		
			ICL300, **infrared** 1047957		
	Focal length **50 mm** Aperture **F1.4–16** 5325407	Bracket for ICL mounting 2081187	ICL300, **red** 1046820		
			ICL300, **infrared** 1047957		

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 Protective cover for optics



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 Protective cover for optics for ICL ring lighting
⑦ ICL ring lighting

Recommended accessories

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

	Brief description	Type	Part no.
Mounting brackets and plates			
	Mounting bracket with screws, L-shaped for mounting with sliding nuts, includes angle indicator for adjusting the tilt angle	Mounting bracket	2078970
Terminal and alignment brackets			
	Distance bracket and light extension connector (medium) for mounting integratable lighting, length 15 mm, used with compact C-mount lenses with focal length of 12 mm or 25 mm and S-mount lens with focal length 25mm	Distance bracket	2079501
Modules			
	Connection device basic for connecting one sensor with 2 A fuse, 5 cable glands and RS-232 interface to sensor via M12, 17-pin female connector, all outputs available on screw/spring-loaded terminals.	CDB650-204	1064114
Plug connectors and cables			
	Head A: female connector, M12, 17-pin, straight, A-coded Head B: male connector, M12, 17-pin, straight, A-coded Cable: Power, serial, CAN, digital I/Os, drag chain use, suitable for 2 A, suitable for re-frigeration, shielded, 2 m	Connection cable (male connector - female connector)	6053230

	Brief description	Type	Part no.
	Head A: male connector, M12, 8-pin, straight, X-coded Head B: male connector, RJ45, 8-pin, straight Cable: Gigabit Ethernet, shielded, 2 m	Connection cable (male connector-male connector)	6049728
Lenses and accessories			
	Compact C-mount lens 2/3", focal length 25 mm, mask 8	C-mount lens	2079343
	Lens protective hood medium, enclosure rating IP 67, length 37.7 mm, PMMA, used with compact C-mount lenses with focal length of 12 mm or 25 mm and S-mount lens with focal length 25mm	Optics protection cover	2079127
Illuminations			
	Integratable lighting, lighting color white, narrow, suitable for S-mount and compact C-mount lenses with a focal length of 25 mm and 35 mm	VI55I-WH2023M0	2078431

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