V2D631R-MXSXB0

Lector63x

IMAGE-BASED CODE READERS

SICK
Sensor Intelligence.

V2D631R-MXSXB0 | Lector63x

IMAGE-BASED CODE READERS

Ordering information

Type	Part no.
V2D631R-MXSXB0	1078472

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

Detailed technical data

Features

Variant	Main unit
Focus	Adjustable focus (manually)
Sensor	CMOS matrix sensor, grayscale values
Sensor resolution	1,280 px x 1,024 px
Internal lighting	To be ordered separately as accessories
Light source	To be ordered separately as accessory 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 60825-1:2014, EN 60825-1:2014)
Scanning frequency	≤ 50 Hz, With resolution of 1.3 megapixels
Code resolution	≥ 0.1 mm [1]
Reading distance	50 mm … 2,200 mm [1]
Lens	S-mount
Note	To be ordered separately as accessories

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

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)
Supply voltage	12 V DC … 24 V DC, ± 20 %
Power consumption	Typ. 10 W, ± 20 %
Output current	≤ 100 mA

[1] Only housing without lens and protective hood.

Housing	Aluminum die cast
Enclosure rating	IP67 (EN 60529 (1991-10), EN 60529/A2 (2002-02))
Electrical safety	EN 60950-1 (2011-01)
Weight	+ 430 g, without lens and connection cables
Dimensions (L x W x H)	108 mm x 63.1 mm x 45.8 mm [1]

[1] Only housing without lens and protective hood.

Performance

Readable code structures	1D, Stacked, 2D
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	Host, AUX, FTP (image transmission)
Data transmission rate	10/100/1,000 Mbit/s
PROFINET	✓
Function	PROFINET Single Port, 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	Host, AUX
Data transmission rate	0.3 kBaud ... 115.2 kBaud, AUX: 57.6 kBaud (RS-232)
CAN	✓
Function	SICK CAN sensor network CSN (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 (for parameterization only)
Function	AUX
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 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 and external FTP
Maximum encoder frequency	1 kHz
External illumination control	Via digital output (max. 24 V trigger) or via external illumination connector

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))
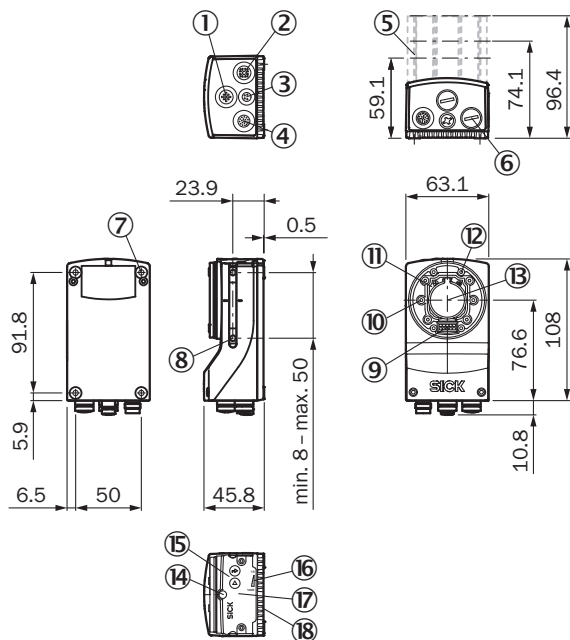
① External illumination connection
② Gigabit Ethernet port
③ USB port
④ Power, serial, CAN, and I/O connection
⑤ 22.7 mm, 37.7 mm, or 60 mm protective cover for optics
⑥ Protective caps/plugs to seal any electrical connections that are not in use
⑦ M5 blind tapped holes, 5 mm deep (4 x), for mounting 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
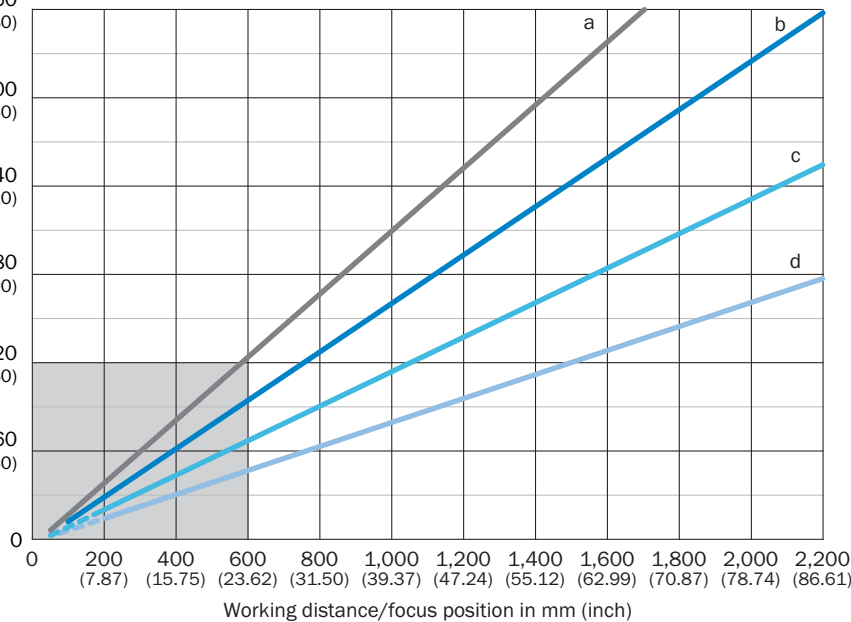
Field of view

Field of view in mm² (sq inch)

Min. resolution in mm (mil)

1D code | 2D code

Working distance/focus position in mm (inch)

Field of view in mm² (sq inch)

Min. resolution in mm (mil)

1D code | 2D code

Working distance/focus position in mm (inch)
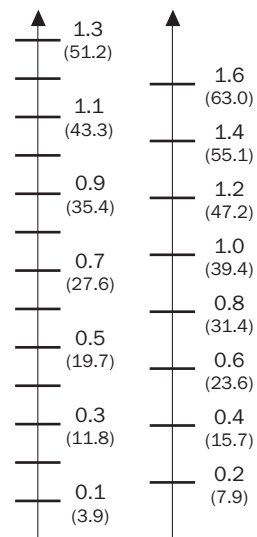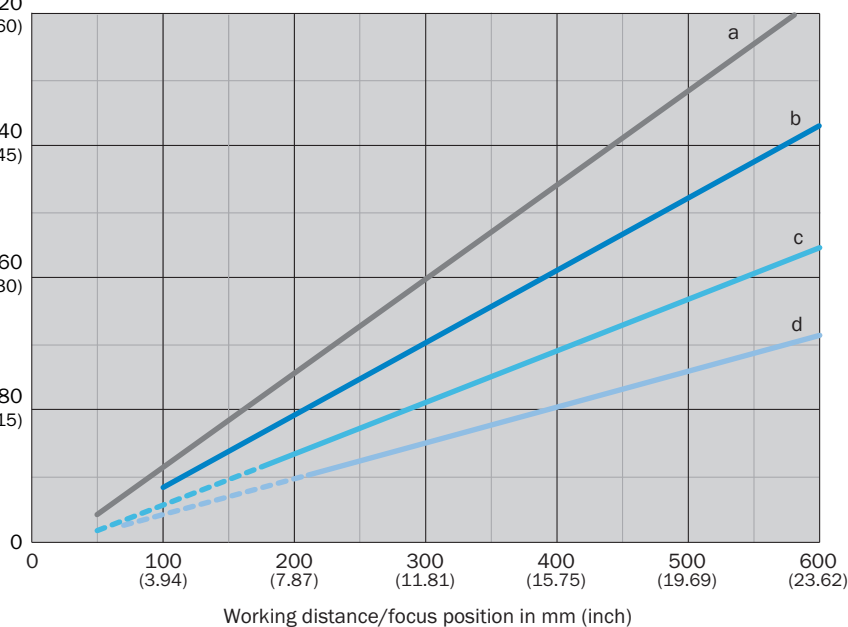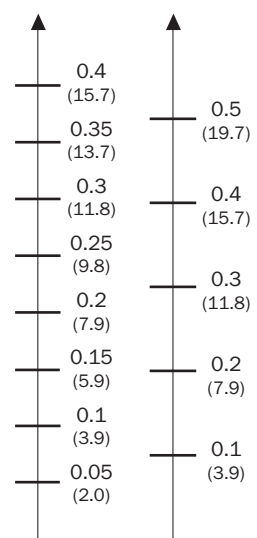
- a: f = 9.6 mm
- c: f = 17.5 mm
- b: f = 12.5 mm
- d: f = 25.0 mm

∎∎∎∎ Optional spacer rings required

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 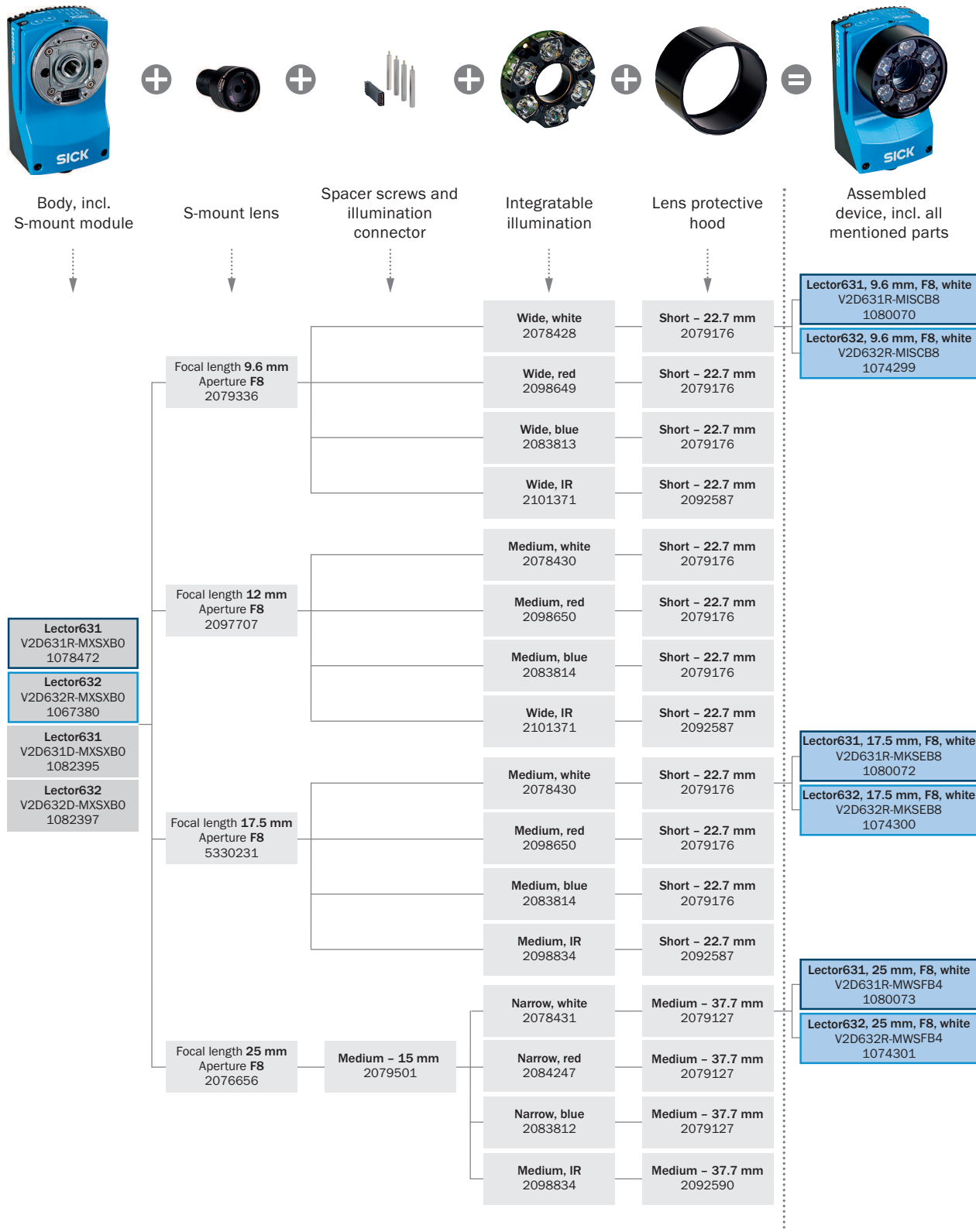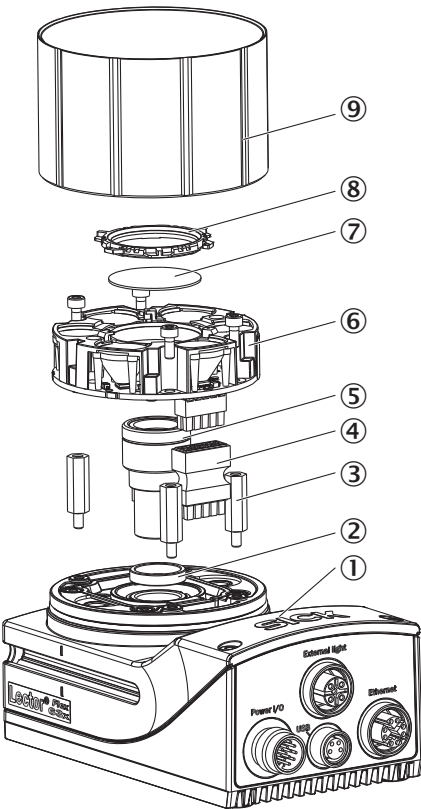C-mount lenses, spacer rings are not needed, but the built-in illumination cannot be used for distances shorter than 300 mm.
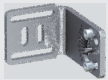
Selection Guide

Lector63x S-mount

Body, incl. S-mount module	+	S-mount lens	+	Spacer screws and illumination connector	+	Integratable illumination	+	Lens protective hood	=	Assembled device, incl. all mentioned parts

Body, incl. S-mount module

Lector631
V2D631R-MXSXB0
1078472

Lector632
V2D632R-MXSXB0
1067380

Lector631
V2D631D-MXSXB0
1082395

Lector632
V2D632D-MXSXB0
1082397

S-mount lens

Focal length 9.6 mm
Aperture F8
2079336

Focal length 12 mm
Aperture F8
2097707

Focal length 17.5 mm
Aperture F8
5330231

Focal length 25 mm
Aperture F8
2076656

Spacer screws and illumination connector

Medium – 15 mm
2079501

Integratable illumination

Wide, white — 2078428
Wide, red — 2098649
Wide, blue — 2083813
Wide, IR — 2101371

Medium, white — 2078430
Medium, red — 2098650
Medium, blue — 2083814
Wide, IR — 2101371

Medium, white — 2078430
Medium, red — 2098650
Medium, blue — 2083814
Medium, IR — 2098834

Narrow, white — 2078431
Narrow, red — 2084247
Narrow, blue — 2083812
Medium, IR — 2098834

Lens protective hood

Short – 22.7 mm — 2079176
Short – 22.7 mm — 2079176
Short – 22.7 mm — 2079176
Short – 22.7 mm — 2092587

Short – 22.7 mm — 2079176
Short – 22.7 mm — 2079176
Short – 22.7 mm — 2079176
Short – 22.7 mm — 2092587

Short – 22.7 mm — 2079176
Short – 22.7 mm — 2079176
Short – 22.7 mm — 2079176
Short – 22.7 mm — 2092587

Medium – 37.7 mm — 2079127
Medium – 37.7 mm — 2079127
Medium – 37.7 mm — 2079127
Medium – 37.7 mm — 2092590

Assembled device, incl. all mentioned parts

Lector631, 9.6 mm, F8, white
V2D631R-MISCB8
1080070

Lector632, 9.6 mm, F8, white
V2D632R-MISCB8
1074299

Lector631, 17.5 mm, F8, white
V2D631R-MKSEB8
1080072

Lector632, 17.5 mm, F8, white
V2D632R-MKSEB8
1074300

Lector631, 25 mm, F8, white
V2D631R-MWSFB4
1080073

Lector632, 25 mm, F8, white
V2D632R-MWSFB4
1074301

Exploded view

① Camera housing
② Spacer for built-in illumination
③ Spacer ring (optional)
④ Plug connector for illumination
⑤ S-mount lens
⑥ Built-in illumination
⑦ Optical filter (optional)
⑧ Filter holder
⑨ Protective cover for optics

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

	Brief description	Type	Part no.
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, suitable for 2 A, shielded, 2 m	YM2A8D-020XXXF2A8D	6053230
	Head A: male connector, M12, 8-pin, straight, X-coded Head B: male connector, RJ45, 8-pin, straight Cable: Gigabit Ethernet, twisted pair, PUR, halogen-free, shielded, 2 m	YM2X18-020EG2MRJA8	6049728
Lenses and accessories			
	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 protective hood (PMMA)	2079127
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

Recommended services

Additional services ➜ www.sick.com/Lector63x

	Type	Part no.
Warranty extensions		
• **Product area:** Identification solutions, Vision, Distance sensors, Detection and ranging solutions • **Range of services:** The services correspond to the scope of the statutory manufacturer warranty (SICK general terms and conditions of purchase), Long-term protection for calculable lump sum. • **Duration:** Five-year warranty from date of purchase.	Five-year extended warranty	1680671
Training		
• **Range of services:** SICK offers training courses for numerous target groups ranging from basic to expert levelsthe training format and location can be worked out in collaboration with SICK • **Note:** A minimum and maximum number of participants is determined based on the training formatdepending on the training format, content and location, a training course may take place over the course of one or more work days • **Duration:** The fixed price includes the specific training services agreed upon with the customerthe fixed price includes the work time required for the training servicesthe required work time depends on the range of servicesAdditional work will be invoiced separately based on time spent • **Travel expenses:** The prices include costs for the travel time and expensestravel costs, such as flight or hotel expenses, are not included	Lector® series training	1612232
Commissioning		
• **Product area:** Image-based code readers • **Range of services:** Inspection of connection, fine adjustment, optimization of parameters of SICK product as well as verification tests, Set-up of previously defined functions of possible Lector6xx illumination, code configuration, trigger and digital inputs, interfaces and digital outputs as well as data processing • **Documentation:** Archiving of product parameters in a SICK database, Documentation of reading performance, Creation of a commissioning log • **Duration:** Additional work will be invoiced separately based on time spent • **Note:** The prices do not include expenses or costs for the travel time	Commissioning Lector6xx	1608206

	Type	Part no.
Maintenance		
• **Product area:** Image-based code readers • **Range of services:** 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 • **Documentation:** Documentation of operating hours and archiving of parameters in a SICK database, Documentation of reading performance, Creation of a maintenance log • **Duration:** Additional work will be invoiced separately based on time spent • **Note:** The prices do not include expenses or costs for the travel time	Maintenance Lector6xx	1611421
Performance check		
• **Product area:** Image-based code readers • **Range of services:** Inspection of defined functions, e.g., reading performance • **Documentation:** Documentation of reading performance, Creation of a performance check log • **Duration:** Additional work will be invoiced separately based on time spent • **Note:** The prices do not include expenses or costs for the travel time	Performance check Lector6xx	1608207

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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