



# V2D642R-MCXXH6

Lector64x/Lector65x

IMAGE-BASED CODE READERS

**SICK**  
Sensor Intelligence.



### Ordering information

Type	Part no.
V2D642R-MCXXH6	1071472

Other models and accessories → [www.sick.com/Lector64x\\_Lector65x](http://www.sick.com/Lector64x_Lector65x)



### 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>	1,600 px x 1,088 px
<b>Illumination</b>	To be ordered separately as accessories
<b>Alignment aid</b>	Laser, Red, 630 nm ... 680 nm
<b>Laser class</b>	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)
<b>Lens</b>	C-mount
<b>Optical format</b>	2/3"
<b>Note</b>	To be ordered separately as accessories
<b>Reading distance</b>	300 mm ... 2,200 mm, depends on lens used <sup>1)</sup>
<b>Scanning frequency</b>	40 Hz, at 1.7 megapixels resolution
<b>Code resolution</b>	≥ 0.1 mm <sup>2)</sup>

<sup>1)</sup> Depends on lens used, for details see field of view diagram.

<sup>2)</sup> Depends on lens used.

#### Mechanics/electronics

<b>Connection type</b>	1 x M12, 17-pin plug (serial, CAN, I/Os, power supply) 2 x M12, 8-pin socket (Ethernet, P1 not yet with function) 1 x M8, 4-pin socket (USB)
<b>Supply voltage</b>	24 V DC, ± 20 %
<b>Power consumption</b>	Typ. 20 W, ± 20 %

<sup>1)</sup> Housing only, without lens and optics protection hood.

<b>Output current</b>	≤ 100 mA
<b>Housing material</b>	Aluminum die cast
<b>Housing color</b>	Light blue (RAL 5012)
<b>Window material</b>	Plastic (To be ordered separately as accessories) Glass (To be ordered separately as accessories)
<b>Enclosure rating</b>	IP65 (EN 60529 (1991-10), EN 60529/A2 (2002-02))
<b>Protection class</b>	III
<b>Electrical safety</b>	EN 60950-1 (2011-01)
<b>Weight</b>	635 g
<b>Dimensions (L x W x H)</b>	142 mm x 89 mm x 46 mm <sup>1)</sup>
<b>MTBF</b>	100,000 h

<sup>1)</sup> Housing only, without lens and optics protection hood.

## Performance

<b>Readable code structures</b>	1D codes, Stacked, 2D codes
<b>Bar code types</b>	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
<b>2D code types</b>	Data Matrix ECC200, GS1 Data-Matrix, MaxiCode, QR code
<b>Stacked code types</b>	PDF417
<b>Code qualification</b>	On the basis of ISO/IEC 16022, ISO/IEC 15415, ISO/IEC 18004
<b>Internal image storage</b>	512 MB

## Interfaces

<b>Ethernet</b>	✓, TCP/IP, TCP/IP
Function	Data interface (read result output), Service interface, FTP (image transmission)
Data transmission rate	10/100/1,000 Mbit/s
<b>EtherNet/IP™</b>	✓
Data transmission rate	10/100/1,000 Mbit/s
<b>Serial</b>	✓, 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)
<b>CAN</b>	✓
Function	SICK CAN sensor network CSN (CAN controller/CAN device, multiplexer/server)
Data transmission rate	20 kbit/s ... 1 Mbit/s
<b>PROFIBUS DP</b>	✓
Type of fieldbus integration	Optional over external fieldbus module CDF600-2
<b>PROFINET</b>	✓
Function	PROFINET Single Port (integrated), PROFINET Dual Port (optional via external connection module CDF600-2)
<b>Digital inputs</b>	4 ("Sensor 1", "Sensor 2", 2 inputs via optional CMC600 parameter memory in CDB650/CDM420)
<b>Configurable inputs</b>	Encoder input, external trigger
<b>Digital outputs</b>	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")

<b>Configurable outputs</b>	Good read, External illumination control, free configurable output condition, "device ready"
<b>Reading pulse</b>	Digital inputs, non-powered, serial interface, Ethernet, CAN, auto pulse, presentation mode
<b>Optical indicators</b>	21 LEDs (10 x status display, 10 x LED bar graph, 1 green feedback spot)
<b>Acoustic indicators</b>	Beeper/buzzer (can be switched off, can be assigned a function to signal a result)
<b>Control elements</b>	2 buttons (choose and start/stop functions)
<b>Operator interfaces</b>	Web server
<b>Configuration software</b>	SOPAS ET
<b>Memory card</b>	Micro SD memory card (flash card) max. 16 GB, optional
<b>Data storage and retrieval</b>	Image and data storage via microSD memory card and external FTP
<b>EncoderFrequency</b>	Max. 1 kHz
<b>External illumination control</b>	Via digital output (max. 24 V trigger) or external illumination connection

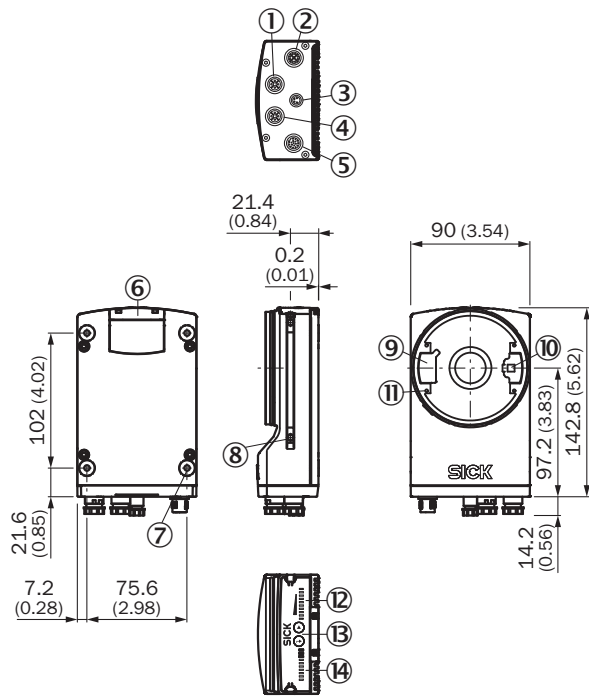
### Ambient data

<b>Electromagnetic compatibility (EMC)</b>	EN 61000-6-2:2005-08 / EN 61000-6-3 (2007-01)
<b>Vibration resistance</b>	EN 60068-2-6:2008-02
<b>Shock resistance</b>	EN 60068-2-6
<b>Ambient operating temperature</b>	0 °C ... +50 °C
<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

### 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))

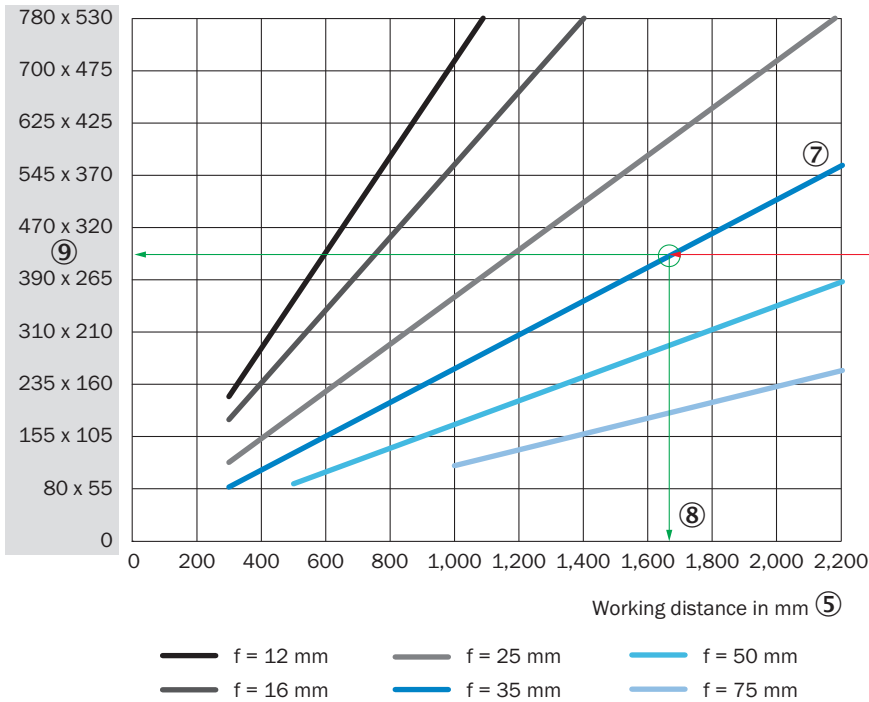


- ① P1/P2 connection "Ethernet", 100 mBit/s
- ② P3 connection "Ethernet", 1 GBit/s
- ③ X2 "USB" connection or "trigger external lighting", depending on type
- ④ P1/P2 connection "Ethernet", 100 mBit/s
- ⑤ X1 "Power/Serial Data/CAN/I/O" connection or "CAN IN", depending on type
- ⑥ Cover for the microSD memory card
- ⑦ M5 blind tapped holes, 5 mm deep (4 x), for mounting the sensor
- ⑧ Sliding nut M5, 5.5 mm deep (2 x), for mounting (as alternative)
- ⑨ Plug connector for connecting the integrated lighting
- ⑩ Laser alignment aid exit
- ⑪ 2.5 mm blind tapped holes (4 x) for mounting the spacers for the integrable illumination
- ⑫ Bar graph display
- ⑬ Function button (2 x)
- ⑭ LED for status display (2 levels), 10 x

### Field of view

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

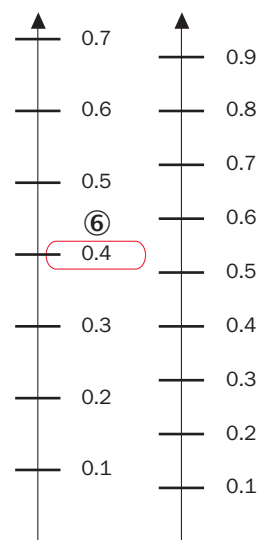
V2D642R



Min. resolution in mm ②

1D code ③

2D code ④

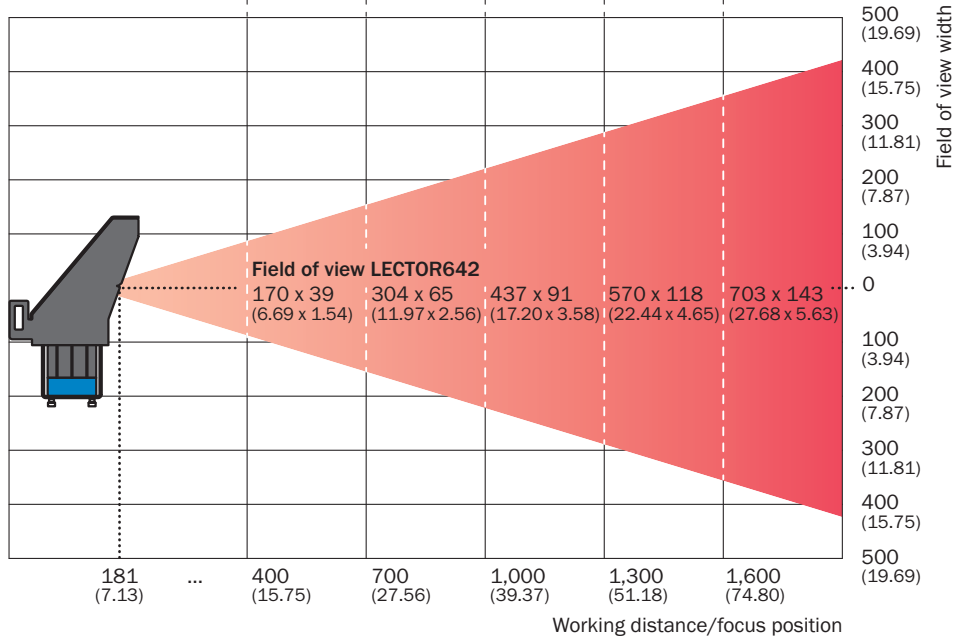


- ① Perceived field of view area: horizontal x vertical (mm)
- ② Minimum resolution in mm
- ③ 1D code
- ④ 2D code
- ⑤ Working distance in mm
- ⑥ Selected code resolution
- ⑦ Focal length of lens, here example for  $f = 35.0$  mm
- ⑧ Reading off: resultant maximum working distance
- ⑨ Reading off: Resulting perceived area of the field of view (mm x mm)

Field of view, Lector642 Flex with Panorama 35 mm/40 mm

Dimensions in mm (inch/\*mil)

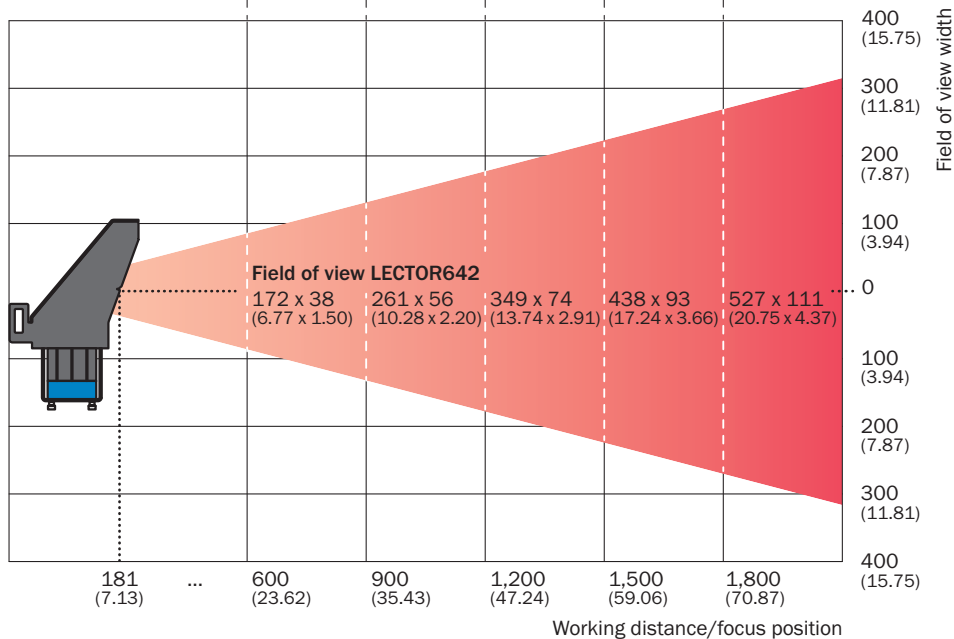
Max. code size	35 (1.38)	59 (2.32)	77 (3.03)	91 (3.58)	105 (4.13)
Min. resolution 1D-Code	0.11 (*4.2)	0.18 (*7.1)	0.25 (*9.9)	0.33 (*12.8)	0.40 (*15.6)
Min. resolution 2D-Code	0.14 (*5.7)	0.24 (*9.4)	0.34 (*13.2)	0.43 (*17.1)	0.53 (*20.8)



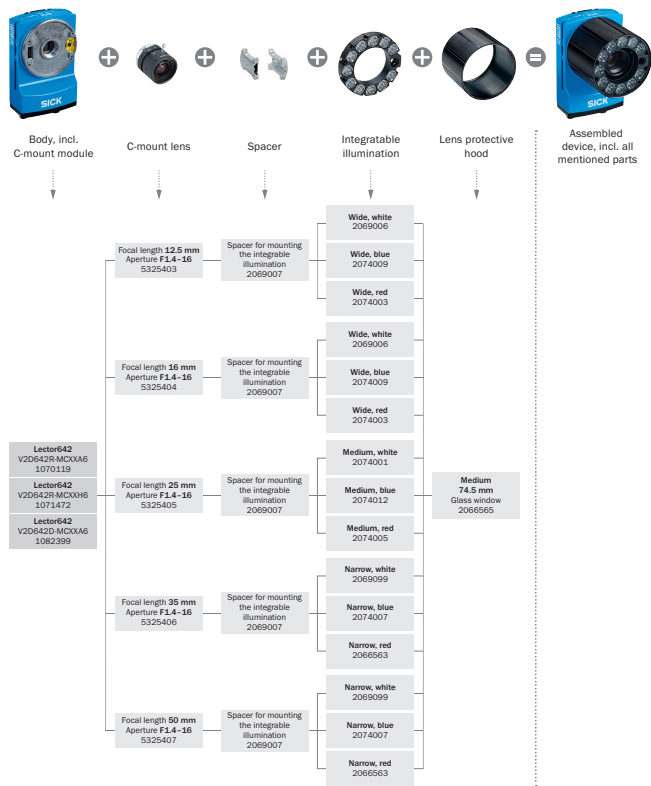
Field of view, Lector642 Flex with Panorama 50 mm

Dimensions in mm (inch/\*mil)

Max. code size	35 (1.38)	55 (2.17)	70 (2.76)	85 (3.35)	100 (3.94)
Min. resolution 1D-Code	0.11 (*4.2)	0.15 (*6.1)	0.21 (*8.1)	0.26 (*10.1)	0.30 (*12.0)
Min. resolution 2D-Code	0.14 (*5.5)	0.21 (*8.1)	0.27 (*10.8)	0.34 (*13.5)	0.41 (*16.0)



### Selection Guide













### Recommended accessories

Other models and accessories → [www.sick.com/Lector64x\\_Lector65x](http://www.sick.com/Lector64x_Lector65x)

	Brief description	Type	Part no.
<b>Lenses and accessories</b>			
	C-mount 2/3", focal length 12 mm, aperture 1.4 – 16, 37 mm (Without C-mount thread)	C-mount lens	5325403
	C-mount lens 1/1.8", focal length 16 mm, aperture 1.4 – 16, 24.1 mm (Without C-mount thread)	C-mount lens	5325404
	C-mount 1/1.8", focal length 25 mm, aperture 1.4 – 16, 35 mm (Without C-mount thread)	C-mount lens	5325405
	C-mount 2/3", focal length 35 mm, aperture 1.4 – 16, 36.5 mm (Without C-mount thread)	C-mount lens	5325406
	C-mount 1/1.8", focal length 50 mm, aperture 1.4 – 16, 62.6 mm (Without C-mount thread)	C-mount lens	5325407
	Optics protection hood, enclosure rating IP 65, length: 74.5 mm, glass window	Protective cover for optics	2066565
	Spacer for mounting the integratable illumination, length: 51.3 mm	Spacer	2069007



	Brief description	Type	Part no.
<b>Modules</b>			
	<ul style="list-style-type: none"> <li>• <b>Accessory group:</b> 4DproConnectivity</li> <li>• <b>Product family:</b> Connection Device Basic</li> <li>• <b>Sub product family:</b> CDB650</li> <li>• <b>Supported products:</b> Lector seriesCLV62x - CLV64x (depending on type)CLV69xRFID read/write deviceInspectorP series</li> <li>• <b>Brief description:</b> 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.</li> </ul>	CDB650-204	1064114
<b>Illuminations</b>			
	Integratable lighting, lighting color blue, wide, suitable for lenses with a focal length of 12.5 mm and 16 mm	VI83I-BU0766M0	2074009
	Integratable lighting, lighting color blue, medium, suitable for lenses with a focal length of 25 mm	VI83I-BU1441M0	2074012
	Integratable lighting, lighting color blue, narrow, suitable for lenses with a focal length of 35 mm, 50 mm and 75 mm	VI83I-BU2023M0	2074007
	Integratable lighting, lighting color white, wide, suitable for lenses with a focal length of 12.5 mm and 16 mm	VI83I-WH0766M0	2069006
	Integratable lighting, lighting color white, medium, suitable for lenses with a focal length of 25 mm	VI83I-WH1441M0	2074001
	Integratable lighting, lighting color white, narrow, suitable for lenses with a focal length of 35 mm, 50 mm and 75 mm	VI83I-WH2023M0	2069099
<b>Others</b>			
	<ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Male connector, M12, 8-pin, straight, X-coded</li> <li>• <b>Connection type head B:</b> Male connector, RJ45, 8-pin, straight</li> <li>• <b>Signal type:</b> Ethernet, Gigabit Ethernet</li> <li>• <b>Cable:</b> 2 m, 8-wire, PUR, halogen-free</li> <li>• <b>Description:</b> Ethernet, Gigabit Ethernet, shielded</li> <li>• <b>Application:</b> Zones with oils and lubricants</li> </ul>	YM2X18-020EG1MRJA8	2106258
	<ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Male connector, M12, 8-pin, straight, X-coded</li> <li>• <b>Connection type head B:</b> Male connector, RJ45, 8-pin, straight</li> <li>• <b>Signal type:</b> Ethernet, Gigabit Ethernet</li> <li>• <b>Cable:</b> 3 m, 8-wire, PUR, halogen-free</li> <li>• <b>Description:</b> Ethernet, Gigabit Ethernet, shielded</li> <li>• <b>Application:</b> Zones with oils and lubricants</li> </ul>	YM2X18-030EG1MRJA8	2145693
	<ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Male connector, M8, 4-pin, straight</li> <li>• <b>Connection type head B:</b> Male connector, USB-A, 4-pin, straight</li> <li>• <b>Signal type:</b> USB 2.0</li> <li>• <b>Cable:</b> 2 m, PVC</li> <li>• <b>Description:</b> USB 2.0, shielded</li> </ul>	YM8U24-020VG3MUSA	6051164

Recommended services

Additional services → [www.sick.com/Lector64x\\_Lector65x](http://www.sick.com/Lector64x_Lector65x)

	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>Duration:</b> Additional work will be invoiced separately</li> </ul>	Performance check Lector	1608207

	Type	Part no.
Maintenance		
<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> </ul>	Maintenance Lector	1611421
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>Duration:</b> Additional work will be invoiced separately</li> </ul>	Commissioning Lector	1608206
Extended warranty		
<ul style="list-style-type: none"> <li>• <b>Product area:</b> Machine vision, LiDAR sensors, safety camera sensors, Safety laser scanners, Safety radar sensors, Radar sensors, Fixed mount barcode scanners, Image-based code readers, RFID, Mobile handheld scanners</li> <li>• <b>Range of services:</b> The services correspond to the scope of the statutory manufacturer warranty (SICK general terms of delivery).</li> <li>• <b>Duration:</b> Five-year warranty from delivery date.</li> </ul>	Extended warranty for a total of five years from delivery date	1680671
Service agreements		
<ul style="list-style-type: none"> <li>• <b>Product area:</b> Robot guidance systems, Track and trace systems, Driver assistance systems, Object detection systems, Profiling systems, Gateway systems, Quality control systems</li> <li>• <b>Range of services:</b> Maintenance, Troubleshooting, extended warranty, 8/5 remote support, 8/5 help desk</li> <li>• <b>Duration:</b> Duration is arranged individually with the customer and defined in the contract</li> </ul>	Bronze service agreements for Systems	1616164

## 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)