



# V2D654R-MCWFA6S50

Lector64x/Lector65x

IMAGE-BASED CODE READERS

**SICK**  
Sensor Intelligence.





### Ordering information

Type	part no.
V2D654R-MCWFA6S50	1107410

**Included in delivery:** V2D654R-MCXXA6 (1), Optics kit 04 (1)

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



### Detailed technical data

#### Features

<b>Variant</b>	Complete device
<b>Optical focus</b>	Adjustable focus (manual)
<b>Sensor</b>	CMOS monochrome
<b>Sensor resolution</b>	2,048 px x 2,048 px (4.2 Mpixel)
<b>Illumination</b>	Integrated
<b>Illumination color</b>	White, LED, Visible,
<b>Feedback spot</b>	LED, Visible, green, 525 nm, ± 15 nm
<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
Optical format	1"
Focal length	35 mm
Note	Focus 0.6 m
Aperture	11
<b>Scanning frequency</b>	40 Hz, With resolution of 4 megapixels
<b>Code resolution</b>	≥ 0.1 mm <sup>1)</sup>
<b>Working range</b>	300 mm ... 2,200 mm <sup>2) 3)</sup>

<sup>1)</sup> Depends on distance.

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

<sup>3)</sup> For details see field of view diagram.



## 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, $\pm 20\%$
<b>Power consumption</b>	Typ. 20 W, $\pm 20\%$
<b>Output current</b>	$\leq 100$ mA
<b>Housing material</b>	Aluminum die cast
<b>Housing color</b>	Light blue (RAL 5012)
<b>Window material</b>	Glass
<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>	963 g
<b>Dimensions (L x W x H)</b>	142.8 mm x 90 mm x 106.1 mm
<b>MTBF</b>	100,000 h

## 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>	Function	✓, TCP/IP
	Data transmission rate	Data interface (read result output), Service interface, FTP (image transmission) 10/100/1,000 Mbit/s
<b>PROFINET</b>	Function	✓ PROFINET Single Port (integrated), PROFINET Dual Port (optional via external connection module CDF600-2)
	Data transmission rate	✓ 10/100/1,000 Mbit/s
<b>Serial</b>	Function	✓, RS-232, RS-422 Data interface (read result output), Service interface
	Data transmission rate	0.3 kBaud ... 115.2 kBaud
<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
	Digital inputs	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

## Certificates

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

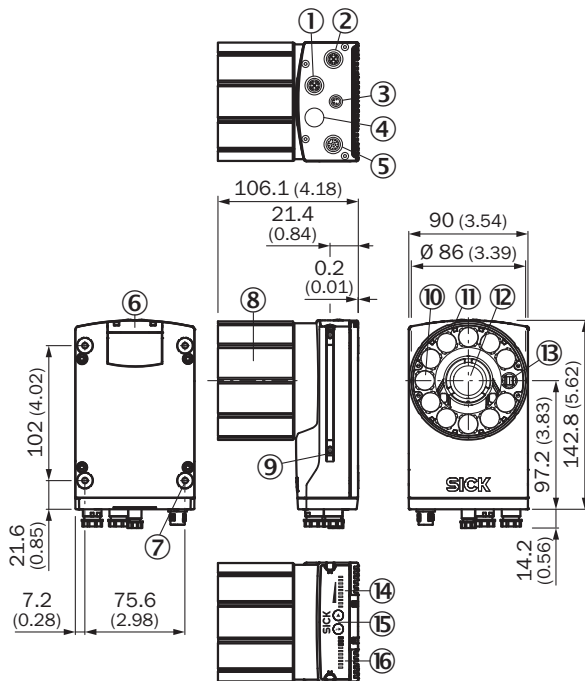
## Classifications

<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

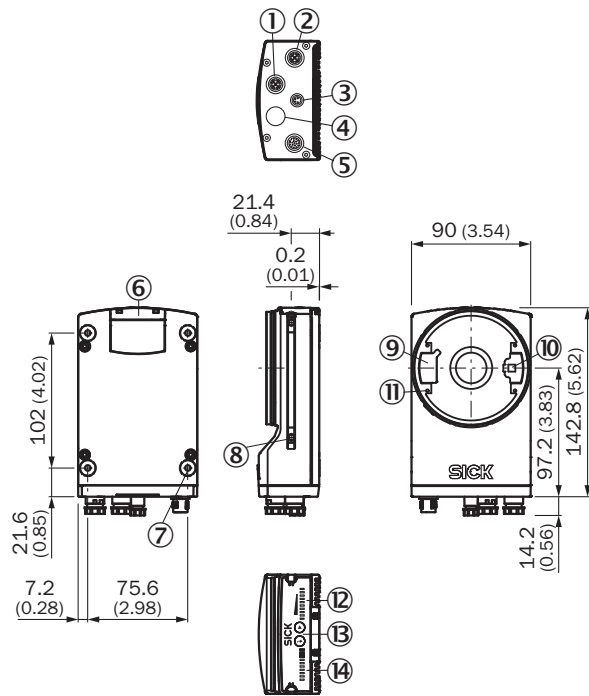


Dimensions in mm (inch)

- ① "Ethernet" P1 connection
- ② P3 connection "Ethernet"
- ③ X2 "USB" connection or "trigger external lighting", depending on type
- ④ P2 connection "CAN OUT", depending on type
- 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 optics protection hood
- ⑨ sliding nut M5, 5.5 mm deep (2 x), for mounting (as alternative)
- ⑩ green feedback LED
- ⑪ ring lighting
- ⑫ Lens
- ⑬ laser alignment aid exit
- ⑭ Bar graph display
- ⑮ Function button (2 x)
- ⑯ LED for status display (2 levels), 10 x



### Dimensional drawing



Dimensions in mm (inch)

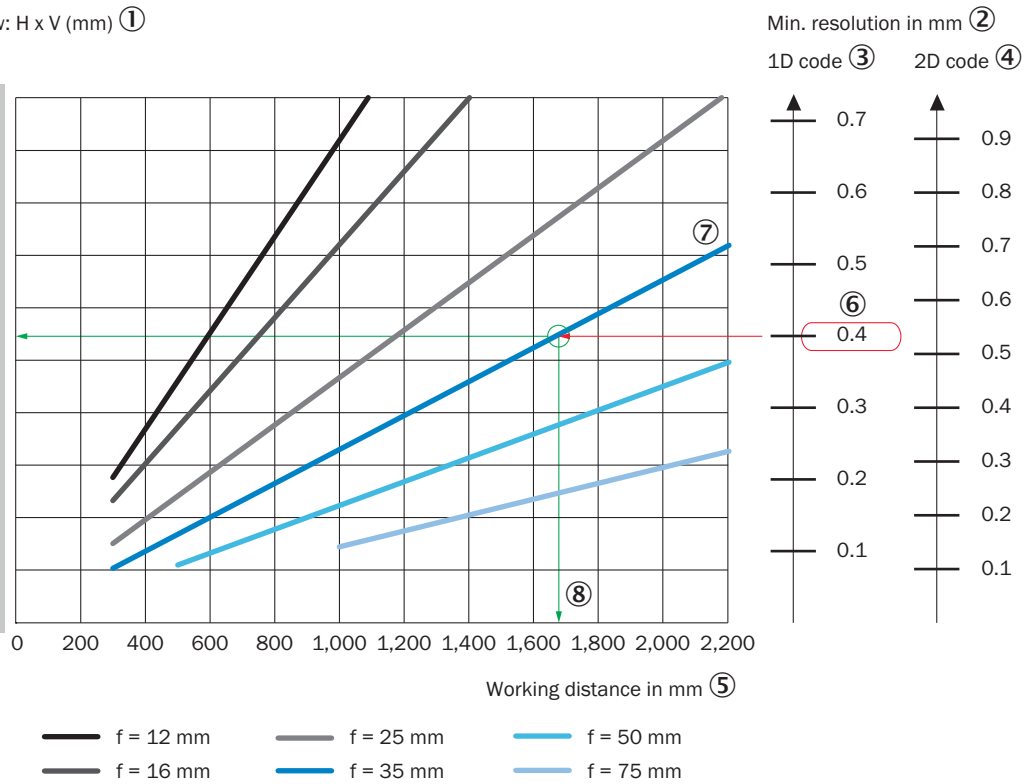
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- ⑤ X1 "Power/Serial Data/CAN/I/O" connection or "CAN IN", depending on type
- ⑥ cover for the microSD memory card
- ⑦ M5 blind tapped holes, 5 mm deep (4 x), for mounting the sensor
- ⑧ sliding nut M5, 5.5 mm deep (2 x), for mounting (as alternative)
- 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

V2D654R	V2D652R
1,000 x 1,000	1,000 x 500
900 x 900	900 x 450
800 x 800	800 x 400
700 x 700	700 x 350
600 x 600	600 x 300
500 x 500	500 x 250
400 x 400	400 x 200
300 x 300	300 x 150
200 x 200	200 x 100
100 x 100	100 x 50
0	0



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

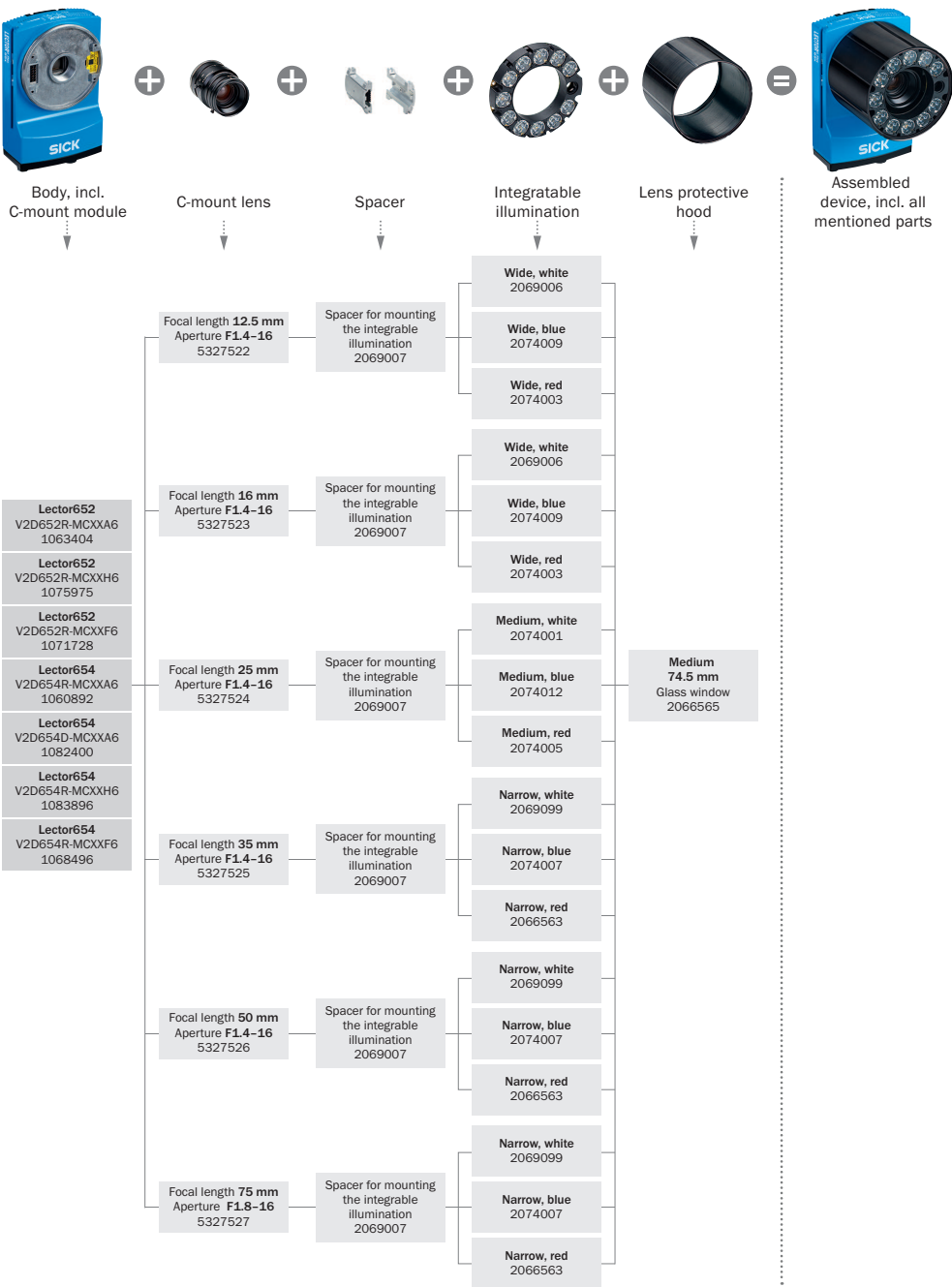
⑧ Reading off: resultant maximum working distance

⑨ Reading off: Resulting perceived area of the field of view V2D652R (mm x mm)

⑩ Reading off: Resulting perceived area of the field of view V2D654R (mm x mm)





Selection Guide





## Recommended accessories

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

	Brief description	Type	part no.
connectors and cables			
	<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, shielded, Gigabit Ethernet</li> <li>• <b>Application:</b> Zones with oils and lubricants</li> </ul>	YM2X18-020EG1M-RJA8	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, shielded, Gigabit Ethernet</li> <li>• <b>Application:</b> Zones with oils and lubricants</li> </ul>	YM2X18-030EG1M-RJA8	2145693



## 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)