V2D631P-2MXSXB0

InspectorP63x

2D MACHINE VISION

SICK
Sensor Intelligence.

V2D631P-2MXSXB0 | InspectorP63x

2D MACHINE VISION

Ordering information

Type	part no.
V2D631P-2MXSXB0	1082299

Other models and accessories ➜ www.sick.com/InspectorP63x

Detailed technical data

Features

Technology	2D snapshot
Programmable	✓
Application software	Nova Inspector
License included	Quality Inspection License Optional upgrade with the Intelligent Inspection Upgrade License, which enables productive use of the complete toolset.
Toolkit	HALCON
Image sensor	CMOS monochrome
Shutter technology	Global-Shutter
Optical focus	Adjustable focus
Illumination	To be ordered separately as accessories
Illumination color	White Red Blue Infrared
Alignment aid	Laser, Red, 630 nm ... 680 nm
Laser class	1, complies with 21 CFR 1040.10 except for the conformance according to "Laser Notice No. 50" from June 24, 2007 (IEC 60825-1:2014, EN 60825-1:2014)
Spectral range	Approx. 400 nm ... 900 nm
Lens	S-mount
Optical format	1/1.8"
Note	To be ordered separately as accessories
Task	Detecting - Standard objects Measuring - Dimension, contour and volume

	Measuring - Number
	Identifying - 2D code
	Identifying - OCR
	Identifying - Pattern
	Identifying - Classifying
	Identifying - Sorting
	Determining position - 2D position determination

Mechanics/electronics

Connection type	1 x M12, 17-pin male connector (serial, I/Os, voltage supply)
	1 x M8, 4-pin female connector (USB, not used)
	1 x M12, 8-pin socket (Gigabit Ethernet)
	1 x M8, 4-pin female connector (external illumination)
Supply voltage	12 V DC ... 24 V DC, ± 20 %
Power consumption	Typ. 10 W, ± 20 %
Enclosure rating	IP67 (EN 60529 (1991-10), EN 60529/A2 (2002-02))
Protection class	III (EN 60950-1 (2014-08))
Housing material	Aluminum die cast
Window material	PMMA
Weight	430 g
Dimensions (L x W x H)	108 mm x 63 mm x 46 mm [1]

[1] Housing only, without lens and optics protection hood.

Performance

Sensor properties	
Sensor resolution	1,280 px x 1,024 px (1.3 Mpixel)
Scan/frame rate	50 Hz

Interfaces

Serial	✓ , RS-232, RS-422
Data transmission rate	300 Baud ... 115.2 kBaud
Ethernet	✓ , TCP/IP
Function	FTP, HTTP
Data transmission rate	10/100/1,000 Mbit/s
CAN	✓
Function	SICK CAN sensor network (CAN controller/CAN device)
EtherNet/IP™	✓
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
Operator interfaces	Web server
Configuration software	SICK AppStudio
Data storage and retrieval	Image and data logging via microSD memory card and external FTP
Inputs/outputs	2 opto-decoupled inputs, 4 inputs/outputs, configurable
Output current	≤ 100 mA
Maximum encoder frequency	Max. 1 kHz

External illumination	Via digital output (max. 24 V trigger) or external illumination connection
Control elements	2 buttons
Optical indicators	11 LEDs (5 status displays, 16 LEDs, 5 LED bar graphs, 1 green/red feedback spot)
Acoustic indicators	Beeper

Ambient data

Shock load	EN 60068-2-27:2009-05
Vibration load	EN 60068-2-6:2008-02
Ambient operating temperature	0 °C ... +50 °C [1]
Storage temperature	–20 °C ... +70 °C [1]

[1] Permissible relative humidity: 0% ... 90% (non-condensing).

Licenses

License included	Quality Inspection License Optional upgrade with the Intelligent Inspection Upgrade License, which enables productive use of the complete toolset.

Certificates

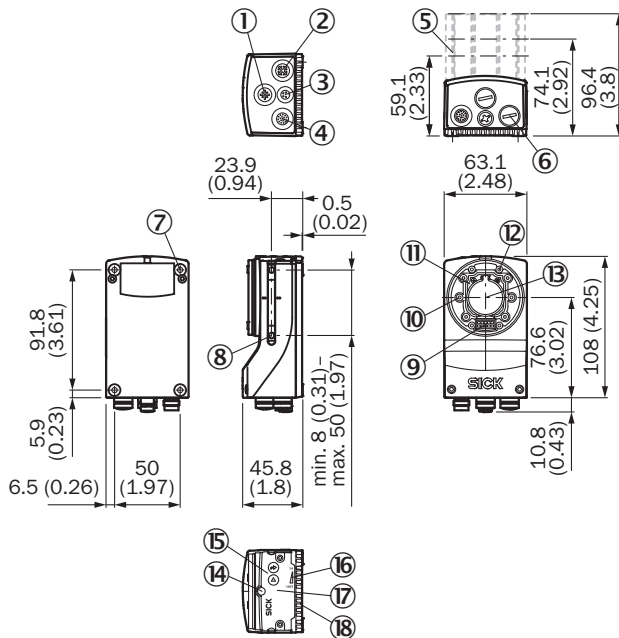|	
EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
China RoHS	✓
cULus certificate	✓
Profinet certificate	✓
Information according to Art. 3 of Data Act (Regulation EU 2023/2854)	✓
4Dpro	✓

Classifications

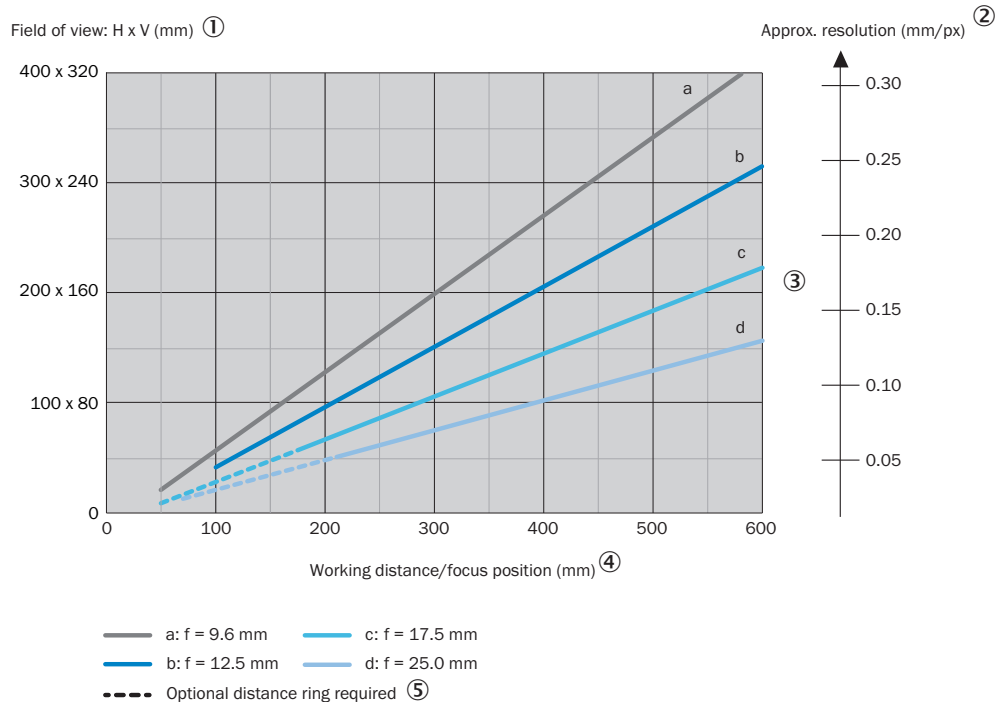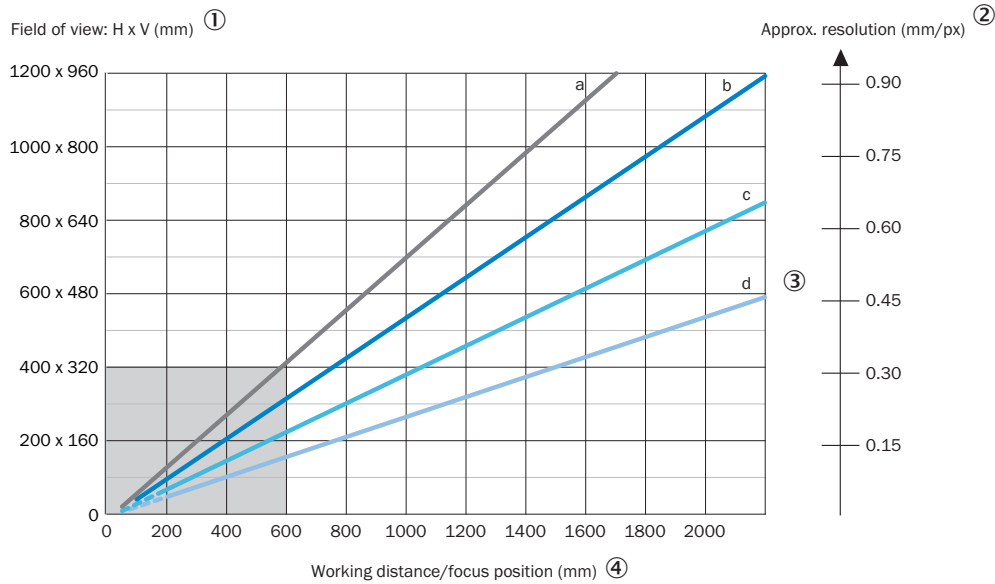|	
ECLASS 5.0	27310205
ECLASS 5.1.4	27310205
ECLASS 6.0	27310205
ECLASS 6.2	27310205
ECLASS 7.0	27310205
ECLASS 8.0	27310205
ECLASS 8.1	27310205
ECLASS 9.0	27310205
ECLASS 10.0	27310205
ECLASS 11.0	27310205
ECLASS 12.0	27310205
ETIM 5.0	EC001820
ETIM 6.0	EC001820
ETIM 7.0	EC001820
ETIM 8.0	EC001820
UNSPSC 16.0901	43211731

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)
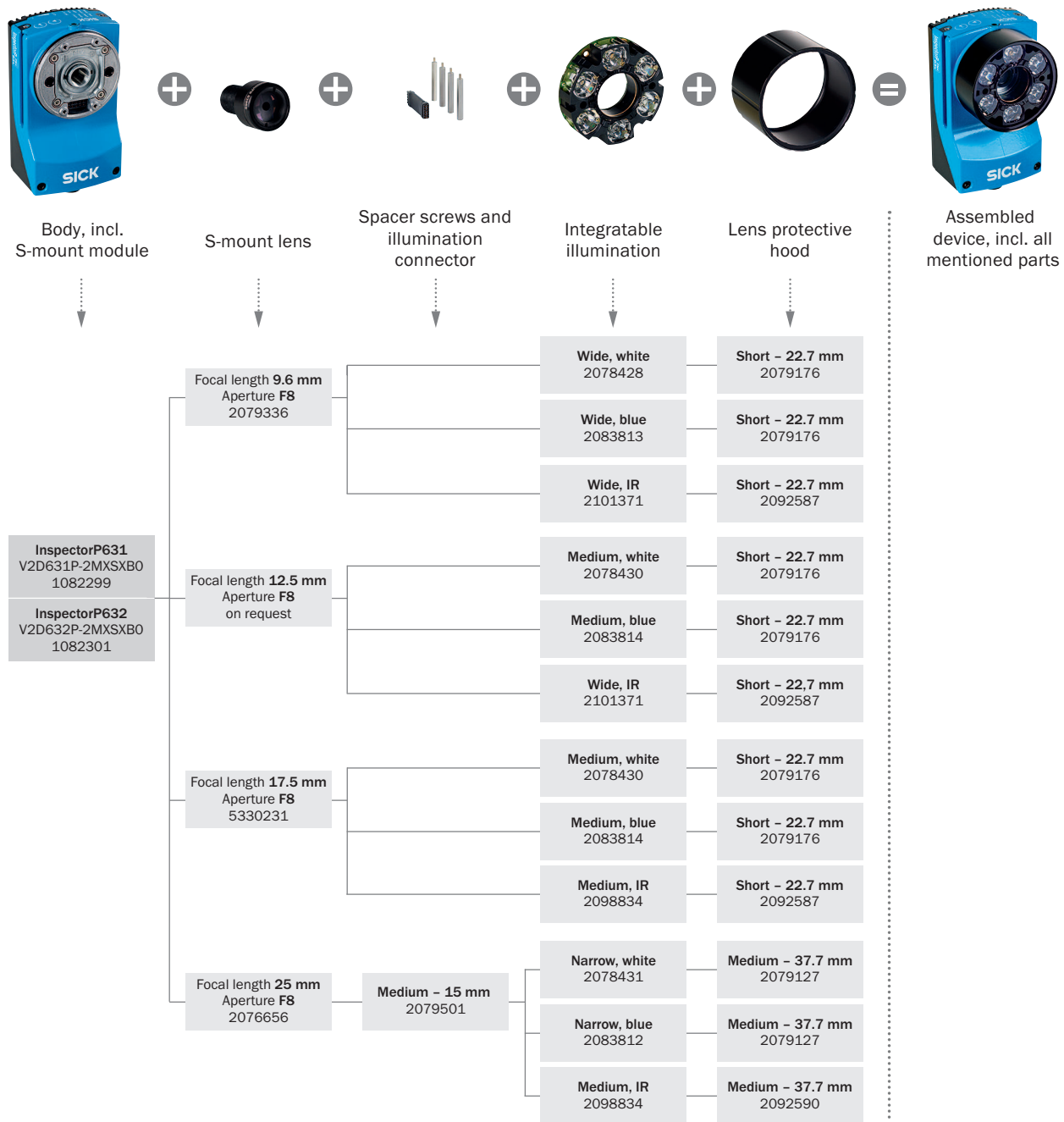
⑱ 5 status LEDs (2 levels)

Field of view

Field of view: H x V (mm) ①

Approx. resolution (mm/px) ②

Working distance/focus position (mm) ④

Field of view: H x V (mm) ①

Approx. resolution (mm/px) ②

Working distance/focus position (mm) ④

—— a: f = 9.6 mm	—— c: f = 17.5 mm		
—— b: f = 12.5 mm	—— d: f = 25.0 mm		
---- Optional distance ring required ⑤			

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 Field of view: Horizontal x vertical in mm
② approximate resolution in mm/px
③ Lens focal length
④ Working distance/Focus position in mm
⑤ Optional spacer rings required

Selection Guide

Body, incl. S-mount module	S-mount lens	Spacer screws and illumination connector	Integratable illumination	Lens protective hood	Assembled device, incl. all mentioned parts
	Focal length **9.6 mm** Aperture **F8** 2079336		Wide, white 2078428	Short – 22.7 mm 2079176	
			Wide, blue 2083813	Short – 22.7 mm 2079176	
			Wide, IR 2101371	Short – 22.7 mm 2092587	
InspectorP631 V2D631P-2MXSXB0 1082299	Focal length **12.5 mm** Aperture **F8** on request		Medium, white 2078430	Short – 22.7 mm 2079176	
InspectorP632 V2D632P-2MXSXB0 1082301			Medium, blue 2083814	Short – 22.7 mm 2079176	
			Wide, IR 2101371	Short – 22,7 mm 2092587	
	Focal length **17.5 mm** Aperture **F8** 5330231		Medium, white 2078430	Short – 22.7 mm 2079176	
			Medium, blue 2083814	Short – 22.7 mm 2079176	
			Medium, IR 2098834	Short – 22.7 mm 2092587	
	Focal length **25 mm** Aperture **F8** 2076656	Medium – 15 mm 2079501	Narrow, white 2078431	Medium – 37.7 mm 2079127	
			Narrow, blue 2083812	Medium – 37.7 mm 2079127	
			Medium, IR 2098834	Medium – 37.7 mm 2092590	

Overview SICK AppSpace

Recommended accessories

Other models and accessories → www.sick.com/InspectorP63x

	Brief description	Type	part no.
reflectors and optics			
	• **Description:** Optics protection hood, short, enclosure rating IP 67, length: 22.7 mm, PMMA, for use with S-mount lens with focal length 9.6 mm or 17.5 mm	Optics protection hood (PMMA)	2079176
	• **Description:** S-mount 1/1.8", focal length 9.6 mm, aperture 8	S-mount lens	2079336
	• **Description:** Integratable lighting, white lighting color, wide, suitable for S-mount and compact C-mount lenses with a focal length of 9.6 mm	VI55I-WH0766M0	2078428
Junction boxes			
		CDB650-204	1064114
Mounting systems			
	• **Description:** Sliding nut, M5, short • **Usable for:** Lector62x, EventCam	Sliding nut	5324896
	• **Description:** Mounting bracket set consisting of mounting bracket, cooling plate, includes angle display for setting the tilt angle • **Suitable for:** Lector63x, Inspector63x, Lector83x – up to 40 °C ambient operating temperature, Insepctor83x – up to 40 °C ambient operating temperature, Lector83x – up to 40 °C ambient operating temperature, Insepctor83x – up to 40 °C ambient operating temperature, Lector63x, Inspector63x	Mounting bracket set with inclination angle −40°- 40°	2076735
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:** 3 m, 17-wire • **Description:** Power, suitable for 2 A, shielded, Serial, CAN, Digital I/Os • **Application:** Drag chain operation	YM2A8D-030XXXF2A8D	6051194
	• **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

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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