Data sheet

IVC-3D51121

IVC-3D

3D MACHINE VISION

SICK
Sensor Intelligence.

Illustration may differ

Ordering information

Type	part no.
IVC-3D51121	1046868

Other models and accessories ➜ www.sick.com/IVC-3D

Detailed technical data

Features

Task	Presence inspection Quality inspection Measuring, 3D
Technology	3D line scanning
Product category	Programmable
Working distance	265 mm ... 404 mm [1]
Example field of view	100 mm x 200 mm
Light source	
Internal lighting	Laser, Visible, Red, 658 nm, ± 15 nm
Laser class	3B (IEC 60825-1:2014, EN 60825-1:2014)
Factory calibrated	✓
Width at minimum operating distance	179 mm
Width at maximum operating distance	255 mm
Maximum height range	139 mm
Imaging angle	61°
Offline support	Emulator

[1] The specified values are valid for single device installations. Please see operating instructions for details.

Mechanics/electronics

Connection type	M12, 4-pin female connector, D-coded (Ethernet) M12, 8-pin female connector (RS-485) M12, 8-pin male connector, A-coded (voltage supply, I/O) M12, 5-pin male (Encoder)
Connector material	Nickel plated brass
Supply voltage	24 V DC, ± 20 %
Ripple	< 5 V_{pp}
Current consumption	< 1 A, without output load
Enclosure rating	IP65
Protection class	III
Housing material	Anodized aluminum
Window material	Safety glass
Weight	3.2 kg

Dimensions (L x W x H)	294 mm x 69 mm x 163 mm

Performance

Image sensor	CMOS
Processor	800 MHz
Scan/frame rate	5,000 3D profiles/s
Memory	128 MB RAM, 16 MB flash
Typical height resolution	0.05 mm
3D profile resolution	2,048 points

Interfaces

Ethernet	✓ , TCP/IP, UDP/IP
Remark	Including OPC server
Data transmission rate	10/100 MBit/s
EtherNet/IP™	✓
Data transmission rate	10/100 MBit/s
Serial	✓ , RS-422, RS-485
Function	Encoder (RS-422)
Data transmission rate	Maximum encoder frequency: 2 MHz
Operator interfaces	Application-specific user interfaces can be set up as stand-alone web pages. The integrated OPC server supports data exchange with SCADA systems, for example.
Configuration software	IVC Studio
Data storage and retrieval	Images and data can be stored to and retrieved from flash and external FTP servers
Digital input	3 program controlled inputs (1 trigger input), HIGH = 10 V ... 28.8 V
Digital output	3 programmable type B digital outputs, Max. output current 100 mA, trigger output
Encoder interface	RS-422
Maximum encoder frequency	2 MHz

Ambient data

Shock load	15 g, 3 x 6 directions
Vibration load	5 g, 58 Hz ... 150 Hz
Ambient operating temperature	0 °C ... +40 °C
Storage temperature	–20 °C ... +70 °C

Certificates

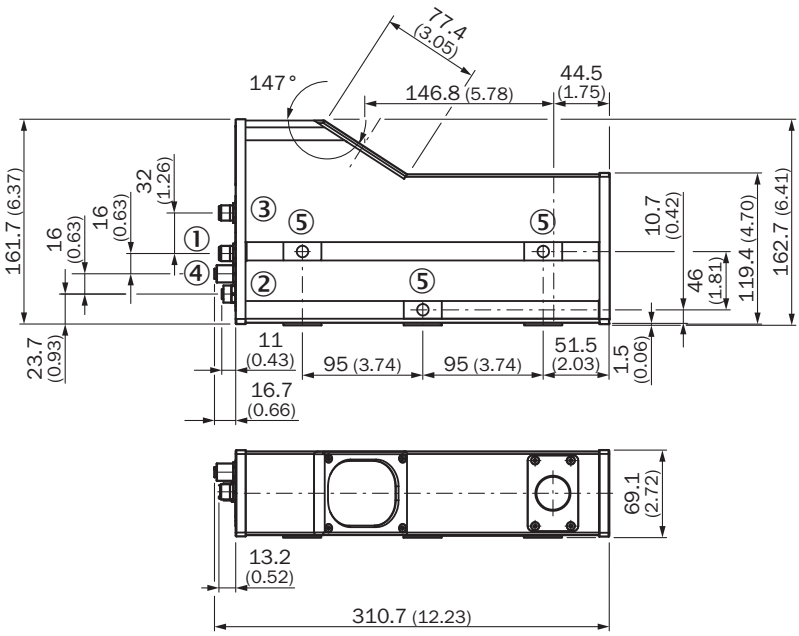
EU declaration of conformity	✓
ACMA declaration of conformity	✓
China RoHS	✓

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

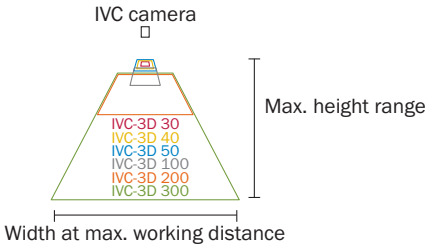
Dimensional drawing



Dimensions in mm (inch)
① Power I/O: M12, 8-pin, male
② Ethernet: M12, 4-pin, D-coded, female thread
③ Encoder: M12, 5-pin, male
④ M12, 8-pin female connector (RS-485)
⑤ Mounting holes M8 x 10

field of view overview

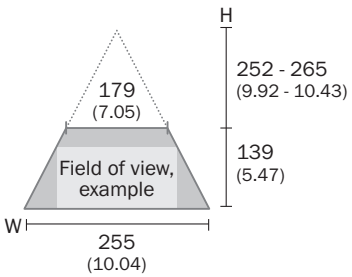
Typical field of view



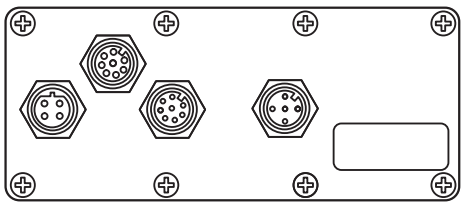
Field of view

IVC-3D 100

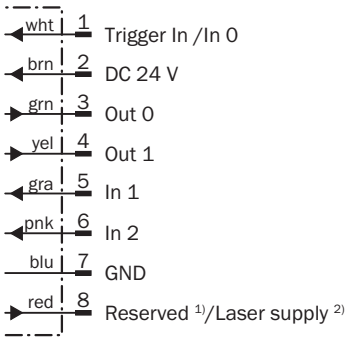
Typ. field of view in mm (inch)



Connection type

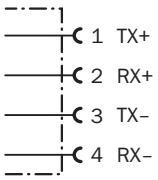


Connection diagram, voltage I/O

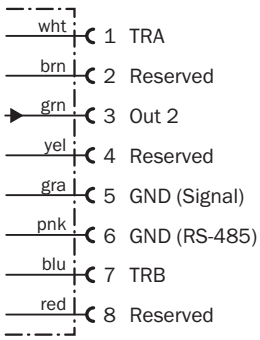


1) Do not connect for IVC-3D products with a type code as IVC-3Dxxx1x.
2) Only in IVC-3D products with a type code as IVC-3Dxxx2x.

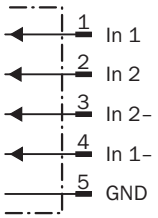
Ethernet connection diagram



Connection diagram RS-485



Encoder connection diagram



Recommended accessories

Other models and accessories ➜ www.sick.com/IVC-3D

	Brief description	Type	part no.
connectors and cables			
	• **Connection type head A:** Male connector, M12, 4-pin, straight, D-coded • **Connection type head B:** Male connector, RJ45, 8-pin, straight • **Signal type:** PROFINET • **Cable:** 3 m, 4-wire, AWG22, PUR, halogen-free • **Description:** PROFINET, shielded	SSL-2J04-G03MZ	6029630
	• **Connection type head A:** Female connector, M12, 4-pin, straight • **Connection type head B:** Male connector, M12, 4-pin, straight • **Signal type:** Ethernet • **Cable:** 4-wire • **Description:** Ethernet, unshielded • **Note:** Connection cable, extension cable 1:1, shielded, for TTK70 inspector	EtherNet/IP adapter	2044264
	• **Connection type head A:** Male connector, M12, 8-pin, straight, A-coded • **Connection type head B:** Flying leads • **Signal type:** Sensor/actuator cable • **Cable:** 2 m, 8-wire, PVC • **Description:** Sensor/actuator cable, shielded • **Application:** Uncontaminated zones, Zones with chemicals	YM2A28-020VA6XLEAX	2096232
	• **Connection type head A:** Female connector, M12, 5-pin, straight, A-coded • **Connection type head B:** Flying leads • **Signal type:** Sensor/actuator cable • **Cable:** 2 m, 5-wire, PVC • **Description:** Sensor/actuator cable, unshielded • **Application:** Uncontaminated zones, Zones with chemicals	YF2A15-020VB5XLEAX	2096239
	• **Connection type head A:** Female connector, M12, 8-pin, straight, A-coded • **Connection type head B:** Flying leads • **Signal type:** Sensor/actuator cable • **Cable:** 2 m, 8-wire, PVC • **Description:** Sensor/actuator cable, shielded • **Application:** Uncontaminated zones, Zones with chemicals	YF2A28-020VA6XLEAX	2096243
	• **Connection type head A:** Female connector, M12, 8-pin, straight, A-coded • **Connection type head B:** Flying leads • **Signal type:** Sensor/actuator cable • **Cable:** 3 m, 8-wire, PVC • **Description:** Sensor/actuator cable, shielded • **Application:** Uncontaminated zones, Zones with chemicals	YF2A28-030VA6XLEAX	2145695
	• **Connection type head A:** Male connector, M12, 8-pin, straight, A-coded • **Connection type head B:** Flying leads • **Signal type:** Sensor/actuator cable • **Cable:** 0.6 m, 8-wire, PVC • **Description:** Sensor/actuator cable, shielded • **Application:** Uncontaminated zones, Zones with chemicals	YM2A28-C60VA6XLEAX	2145392
	• **Connection type head A:** Male connector, M12, 8-pin, straight, A-coded • **Connection type head B:** Flying leads • **Signal type:** Sensor/actuator cable • **Cable:** 1 m, 8-wire, PVC • **Description:** Sensor/actuator cable, shielded • **Application:** Uncontaminated zones, Zones with chemicals	YM2A28-010VA6XLEAX	2145393
	• **Connection type head A:** Male connector, M12, 8-pin, straight, A-coded • **Connection type head B:** Flying leads • **Signal type:** Sensor/actuator cable • **Cable:** 3 m, 8-wire, PVC • **Description:** Sensor/actuator cable, shielded • **Application:** Uncontaminated zones, Zones with chemicals	YM2A28-030VA6XLEAX	2145394
	• **Connection type head A:** Female connector, M12, 5-pin, straight, A-coded • **Connection type head B:** Flying leads • **Signal type:** Sensor/actuator cable • **Cable:** 0.6 m, 5-wire, PVC • **Description:** Sensor/actuator cable, unshielded • **Application:** Uncontaminated zones, Zones with chemicals	YF2A15-C60VB5XLEAX	2145570
	• **Connection type head A:** Female connector, M12, 5-pin, straight, A-coded • **Connection type head B:** Flying leads • **Signal type:** Sensor/actuator cable • **Cable:** 3 m, 5-wire, PVC • **Description:** Sensor/actuator cable, unshielded	YF2A15-030VB5XLEAX	2145572

	Brief description	Type	part no.
	• **Application:** Uncontaminated zones, Zones with chemicals		
	• **Connection type head A:** Female connector, M12, 8-pin, straight, A-coded • **Connection type head B:** Flying leads • **Signal type:** Sensor/actuator cable • **Cable:** 0.6 m, 8-wire, PVC • **Description:** Sensor/actuator cable, shielded • **Application:** Uncontaminated zones, Zones with chemicals	YF2A28-C60VA6XLEAX	2145385
	• **Connection type head A:** Female connector, M12, 8-pin, straight, A-coded • **Connection type head B:** Flying leads • **Signal type:** Sensor/actuator cable • **Cable:** 1 m, 8-wire, PVC • **Description:** Sensor/actuator cable, shielded • **Application:** Uncontaminated zones, Zones with chemicals	YF2A28-010VA6XLEAX	2145386

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

SICK
Sensor Intelligence.