



# IVC-3D21113

IVC-3D

3D MACHINE VISION

**SICK**  
Sensor Intelligence.



Illustration may differ

### Ordering information

Type	part no.
IVC-3D21113	1050157

Other models and accessories → [www.sick.com/IVC-3D](http://www.sick.com/IVC-3D)



### Detailed technical data

#### Features

<b>Task</b>	Presence inspection Quality inspection Measuring, 3D
<b>Technology</b>	3D line scanning
<b>Product category</b>	Programmable
<b>Working distance</b>	189 mm ... 273 mm <sup>1)</sup>
<b>Example field of view</b>	50 mm x 150 mm
<b>Light source</b>	
Internal lighting	Laser, Visible, Red, 658 nm, ± 15 nm
<b>Laser class</b>	2 (IEC 60825-1:2014, EN 60825-1:2014)
<b>Factory calibrated</b>	✓
<b>Width at minimum operating distance</b>	134 mm
<b>Width at maximum operating distance</b>	174 mm
<b>Maximum height range</b>	84 mm
<b>Imaging angle</b>	53°
<b>Offline support</b>	Emulator

<sup>1)</sup> The specified values are valid for single device installations. Please see operating instructions for details.

#### Mechanics/electronics

<b>Connection type</b>	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)
<b>Connector material</b>	Stainless steel
<b>Supply voltage</b>	24 V DC, ± 20 %
<b>Ripple</b>	< 5 V <sub>pp</sub>
<b>Current consumption</b>	< 1 A, without output load
<b>Enclosure rating</b>	IP67
<b>Protection class</b>	III
<b>Housing material</b>	Stainless steel
<b>Window material</b>	PMMA
<b>Weight</b>	5.5 kg

<b>Dimensions (L x W x H)</b>	311 mm x 103 mm x 187 mm
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## Performance

<b>Image sensor</b>	CMOS
<b>Processor</b>	800 MHz
<b>Scan/frame rate</b>	5,000 3D profiles/s
<b>Memory</b>	128 MB RAM, 16 MB flash
<b>Typical height resolution</b>	0.04 mm
<b>3D profile resolution</b>	2,048 points

## Interfaces

<b>Ethernet</b>	✓ , TCP/IP, UDP/IP
Remark	Including OPC server
Data transmission rate	10/100 MBit/s
<b>EtherNet/IP™</b>	✓
Data transmission rate	10/100 MBit/s
<b>Serial</b>	✓ , RS-422, RS-485
Function	Encoder (RS-422)
Data transmission rate	Maximum encoder frequency: 2 MHz
<b>Operator interfaces</b>	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.
<b>Configuration software</b>	IVC Studio
<b>Data storage and retrieval</b>	Images and data can be stored to and retrieved from flash and external FTP servers
<b>Digital input</b>	3 program controlled inputs (1 trigger input), HIGH = 10 V ... 28.8 V
<b>Digital output</b>	3 programmable type B digital outputs, Max. output current 100 mA, trigger output
<b>Encoder interface</b>	RS-422
<b>Maximum encoder frequency</b>	2 MHz

## Ambient data

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

## Certificates

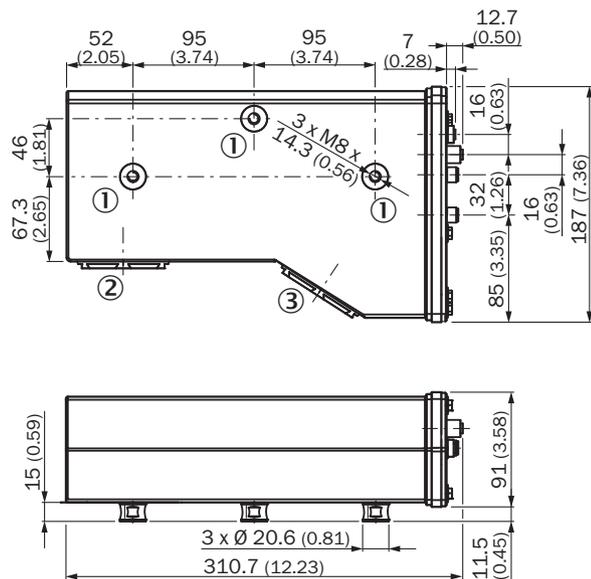
<b>EU declaration of conformity</b>	✓
<b>ACMA declaration of conformity</b>	✓
<b>China RoHS</b>	✓

## Classifications

<b>ECLASS 5.0</b>	27310205
<b>ECLASS 5.1.4</b>	27310205
<b>ECLASS 6.0</b>	27310205
<b>ECLASS 6.2</b>	27310205
<b>ECLASS 7.0</b>	27310205

<b>ECLASS 8.0</b>	27310205
<b>ECLASS 8.1</b>	27310205
<b>ECLASS 9.0</b>	27310205
<b>ECLASS 10.0</b>	27310205
<b>ECLASS 11.0</b>	27310205
<b>ECLASS 12.0</b>	27310205
<b>ETIM 5.0</b>	EC001820
<b>ETIM 6.0</b>	EC001820
<b>ETIM 7.0</b>	EC001820
<b>ETIM 8.0</b>	EC001820
<b>UNSPSC 16.0901</b>	43211731

### Dimensional drawing

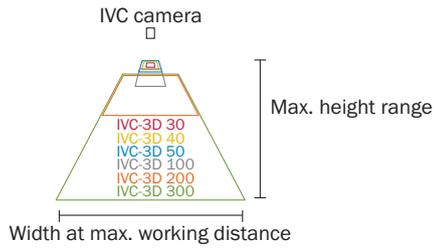


Dimensions in mm (inch)

- ① Fastening threads
- ② Laser unit
- ③ Image sensor

## field of view overview

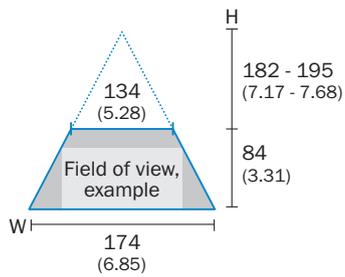
### Typical field of view



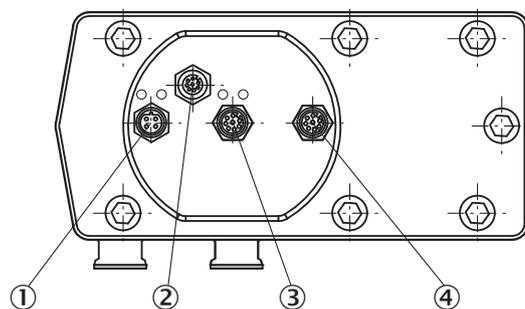
## Field of view

### IVC-3D 50

#### Typ. field of view in mm (inch)

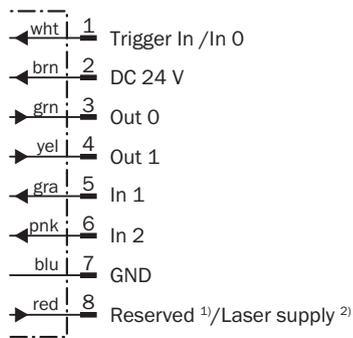


## Connection type



- ① Ethernet: M12, 4-pin, D-coded, female thread
- ② M12, 8-pin female connector (RS-485)
- ③ I/O voltage supply: M12, 8-pin, male thread
- ④ Encoder: M12, 5-pin, male

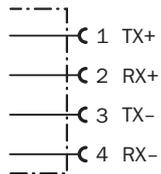
### Connection diagram, voltage I/O



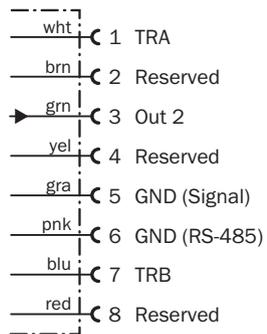
<sup>1)</sup> Do not connect for IVC-3D products with a type code as IVC-3Dxxx1x.

<sup>2)</sup> Only in IVC-3D products with a type code as IVC-3Dxxx2x.

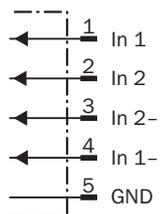
### Ethernet connection diagram



### Connection diagram RS-485



### Encoder connection diagram





### Recommended accessories

Other models and accessories → [www.sick.com/IVC-3D](http://www.sick.com/IVC-3D)

	Brief description	Type	part no.
connectors and cables			
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Male connector, M12, 4-pin, straight, D-coded</li> <li><b>Connection type head B:</b> Male connector, RJ45, 8-pin, straight</li> <li><b>Signal type:</b> PROFINET</li> <li><b>Cable:</b> 3 m, 4-wire, AWG22, PUR, halogen-free</li> <li><b>Description:</b> PROFINET, shielded</li> </ul>	SSL-2J04-G03MZ	6029630
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 4-pin, straight</li> <li><b>Connection type head B:</b> Male connector, M12, 4-pin, straight</li> <li><b>Signal type:</b> Ethernet</li> <li><b>Cable:</b> 4-wire</li> <li><b>Description:</b> Ethernet, unshielded</li> <li><b>Note:</b> Connection cable, extension cable 1:1, shielded, for TTK70 inspector</li> </ul>	EtherNet/IP adapter	2044264
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Male connector, M12, 8-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 2 m, 8-wire, PVC</li> <li><b>Description:</b> Sensor/actuator cable, shielded</li> <li><b>Application:</b> Untaminated zones, Zones with chemicals</li> </ul>	YM2A28-020VA6XLEAX	2096232
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 5-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 2 m, 5-wire, PVC</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Untaminated zones, Zones with chemicals</li> </ul>	YF2A15-020VB5XLEAX	2096239
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 8-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 2 m, 8-wire, PVC</li> <li><b>Description:</b> Sensor/actuator cable, shielded</li> <li><b>Application:</b> Untaminated zones, Zones with chemicals</li> </ul>	YF2A28-020VA6XLEAX	2096243
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 8-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 3 m, 8-wire, PVC</li> <li><b>Description:</b> Sensor/actuator cable, shielded</li> <li><b>Application:</b> Untaminated zones, Zones with chemicals</li> </ul>	YF2A28-030VA6XLEAX	2145695
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Male connector, M12, 8-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 0.6 m, 8-wire, PVC</li> <li><b>Description:</b> Sensor/actuator cable, shielded</li> <li><b>Application:</b> Untaminated zones, Zones with chemicals</li> </ul>	YM2A28-C60VA6XLEAX	2145392
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Male connector, M12, 8-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 1 m, 8-wire, PVC</li> <li><b>Description:</b> Sensor/actuator cable, shielded</li> <li><b>Application:</b> Untaminated zones, Zones with chemicals</li> </ul>	YM2A28-010VA6XLEAX	2145393
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Male connector, M12, 8-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 3 m, 8-wire, PVC</li> <li><b>Description:</b> Sensor/actuator cable, shielded</li> <li><b>Application:</b> Untaminated zones, Zones with chemicals</li> </ul>	YM2A28-030VA6XLEAX	2145394
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 5-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 0.6 m, 5-wire, PVC</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Untaminated zones, Zones with chemicals</li> </ul>	YF2A15-C60VB5XLEAX	2145570
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 5-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 3 m, 5-wire, PVC</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> </ul>	YF2A15-030VB5XLEAX	2145572

	Brief description	Type	part no.
	<ul style="list-style-type: none"> <li>• <b>Application:</b> Uncontaminated zones, Zones with chemicals</li> <li>• <b>Connection type head A:</b> Female connector, M12, 8-pin, straight, A-coded</li> <li>• <b>Connection type head B:</b> Flying leads</li> <li>• <b>Signal type:</b> Sensor/actuator cable</li> <li>• <b>Cable:</b> 0.6 m, 8-wire, PVC</li> <li>• <b>Description:</b> Sensor/actuator cable, shielded</li> <li>• <b>Application:</b> Uncontaminated zones, Zones with chemicals</li> </ul>	YF2A28-C60VA6XLEAX	2145385
	<ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 8-pin, straight, A-coded</li> <li>• <b>Connection type head B:</b> Flying leads</li> <li>• <b>Signal type:</b> Sensor/actuator cable</li> <li>• <b>Cable:</b> 1 m, 8-wire, PVC</li> <li>• <b>Description:</b> Sensor/actuator cable, shielded</li> <li>• <b>Application:</b> Uncontaminated zones, Zones with chemicals</li> </ul>	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](http://www.sick.com)