



# VSPI-1R111

Inspector

2D VISION

**SICK**  
Sensor Intelligence.



### Ordering information

Type	Part no.
VSPI-1R111	1042779

Other models and accessories → [www.sick.com/Inspector](http://www.sick.com/Inspector)

### Detailed technical data

#### Features

<b>Task</b>	Inspection
<b>Technology</b>	2D, snapshot, image analysis
<b>Product category</b>	Configurable devices
<b>Toolkit</b>	Object locator, contour, pixel count, edge pixel count
<b>Sensor</b>	CMOS matrix sensor, grayscale values
<b>Focus</b>	Adjustable focus (manually)
<b>Working distance</b>	≥ 50 mm
<b>Operating distance with internal illumination</b>	50 mm ... 200 mm
<b>Field of view of internal illumination</b>	20 mm x 20 mm ... 72 mm x 72 mm
<b>Internal lighting</b>	White
<b>LED class</b>	Risk group 1 (low risk, IEC62471 : 2006)
<b>Spectral range</b>	Approx. 400 nm ... 750 nm
<b>Offline support</b>	Emulator
<b>Lens</b>	Integrated
Optical format	1/3"
Focal length	6 mm

#### Mechanics/electronics

<b>Connections</b>	M12, 12-pin male connector M12, 4-pin female connector
<b>Supply voltage</b>	24 V DC, ± 20 %
<b>Ripple</b>	< 5 V <sub>pp</sub>
<b>Current consumption</b>	< 450 mA, without output load
<b>Enclosure rating</b>	IP67
<b>Housing material</b>	Aluminum
<b>Window material</b>	PMMA

<b>Weight</b>	350 g
<b>Dimensions (L x W x H)</b>	100 mm x 53 mm x 38 mm

## Performance

<b>Sensor resolution</b>	384 px x 384 px
<b>Scan/frame rate</b>	40 fps <sup>1)</sup>
<b>Number of inspections</b>	32
<b>Reference images</b>	16 objects

<sup>1)</sup> Max. 250 fps.

## Interfaces

<b>Ethernet</b>	✓, TCP/IP
Data transmission rate	100 Mbit/s
<b>Operator interfaces</b>	Inspector Viewer
<b>Configuration software</b>	SOPAS ET
<b>Data storage and retrieval</b>	Log for 30 images, record images on PC
<b>Digital input</b>	4 inputs (24 V)
<b>Configurable inputs</b>	External trigger, encoder input, External teach, reference object selection
<b>Digital output</b>	3 digital outputs, 24 V (B-type)
<b>Output current</b>	≤ 100 mA
<b>Standard outputs</b>	No object detected, Everything OK, Detail error
<b>Maximum encoder frequency</b>	40 kHz
<b>External illumination control</b>	5 V TTL

## Ambient data

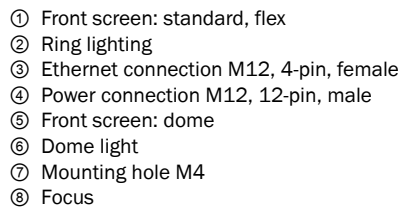
<b>Shock load</b>	EN 60068-2-27
<b>Vibration load</b>	IEC 60068-2-6
<b>Ambient operating temperature</b>	0 °C ... +45 °C <sup>1)</sup>
<b>Ambient storage temperature</b>	-20 °C ... +70 °C <sup>1)</sup>

<sup>1)</sup> Relative humidity: 35% ... 85%, 95% in storage.

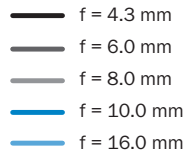
## Classifications

<b>ECI@ss 5.0</b>	27310205
<b>ECI@ss 5.1.4</b>	27310205
<b>ECI@ss 6.0</b>	27310205
<b>ECI@ss 6.2</b>	27310205
<b>ECI@ss 7.0</b>	27310205
<b>ECI@ss 8.0</b>	27310205
<b>ECI@ss 8.1</b>	27310205
<b>ECI@ss 9.0</b>	27310205
<b>ETIM 5.0</b>	EC001820
<b>ETIM 6.0</b>	EC001820
<b>UNSPSC 16.0901</b>	43211731

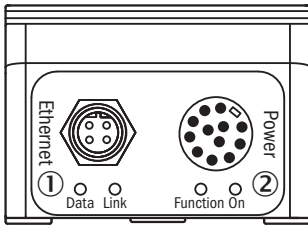
## Standard



## Theoretical FOV size (384 x 384 pixels)



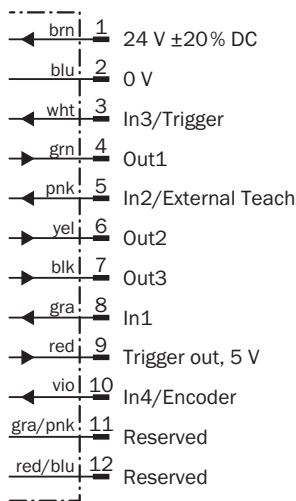
## Connection type



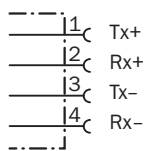
- ① Ethernet connection M12, 4-pin, female
- ② Power connection M12, 12-pin, male

## Connection diagram

M12 connection diagram, 12-pin





Ethernet connection diagram



## Recommended accessories

Other models and accessories → [www.sick.com/Inspector](http://www.sick.com/Inspector)

	Brief description	Type	Part no.
Plug connectors and cables			
	Head A: female connector, M12, 12-pin, straight Head B: Flying leads Cable: PUR, halogen-free, shielded, 5 m	DOL-1212-G05MAS01	6036556

	Brief description	Type	Part no.
	Head A: male connector, M12, 4-pin, straight, D-coded Head B: male connector, RJ45, 8-pin, straight Cable: Ethernet, twisted pair, PUR, halogen-free, shielded, 2 m	YM2D24-020EA1MRJA4	6034414

## Recommended services

Additional services → [www.sick.com/Inspector](http://www.sick.com/Inspector)

	Type	Part no.
Warranty extensions		
<ul style="list-style-type: none"> <li>• <b>Product area:</b> Identification solutions, Vision, Distance sensors, Detection and ranging solutions</li> <li>• <b>Range of services:</b> The services correspond to the scope of the statutory manufacturer warranty (SICK general terms and conditions of purchase), Long-term protection for calculable lump sum.</li> <li>• <b>Duration:</b> Five-year warranty from date of purchase.</li> </ul>	Five-year extended warranty	1680671
Commissioning		
<ul style="list-style-type: none"> <li>• <b>Product area:</b> 2D vision</li> <li>• <b>Range of services:</b> Inspection of connection, fine adjustment, optimization of parameters of SICK product as well as verification tests, set-up of previously defined functions of image settings, object locator, detailed inspections, output settings and results</li> <li>• <b>Documentation:</b> Archiving of product parameters in a SICK database, Documentation of performance, Creation of a commissioning log</li> <li>• <b>Duration:</b> Additional work will be invoiced separately based on time spent</li> <li>• <b>Travel expenses:</b> The prices do not include expenses or costs for the travel time, travel costs, such as flight or hotel expenses, are not included</li> </ul>	Inspector commissioning	1612238
Maintenance		
<ul style="list-style-type: none"> <li>• <b>Product area:</b> 2D vision</li> <li>• <b>Range of services:</b> Inspection, analysis and restoring of defined functions, set-up of previously defined functions of image settings, object locator, detailed inspections, output settings and results</li> <li>• <b>Documentation:</b> Documentation of operating hours and archiving of parameters in a SICK database, Documentation of performance, Creation of a maintenance log</li> <li>• <b>Duration:</b> Additional work will be invoiced separately based on time spent</li> <li>• <b>Travel expenses:</b> The prices do not include expenses or costs for the travel time, travel costs, such as flight or hotel expenses, are not included</li> </ul>	Inspector maintenance	1612242
Feasibility study		
<ul style="list-style-type: none"> <li>• <b>Product area:</b> 2D vision, 3D vision</li> <li>• <b>Range of services:</b> Recommendations based on tests at SICK, description of the field of application, consideration of specifications of SICK products, identification of performance factors, temporary analysis of influencing factors, acceptance tests, adjustments to application-specific parameters, test scans for initial verification at SICK, documentation and archiving</li> <li>• <b>Documentation:</b> Description of the application, suggestion for a solution, proof of concept, mounting instructions, results and summary</li> <li>• <b>Duration:</b> Additional work will be invoiced separately based on time spent</li> <li>• <b>Travel expenses:</b> The prices do not include expenses or costs for the travel time, travel costs, such as flight or hotel expenses, are not included</li> </ul>	Vision Gold feasibility study	1612805

## 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)