



# VSPM-6F2113

Inspector

2D MACHINE VISION

**SICK**  
Sensor Intelligence.



### Ordering information

Type	Part no.
VSPM-6F2113	1062407

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



### Detailed technical data

#### Features

<b>Task</b>	Presence inspection Quality inspection Measuring, 2D Positioning Robot guidance
<b>Technology</b>	2D snapshot, image analysis
<b>Product category</b>	Configurable
<b>Toolkit</b>	Object locator Pixel count Edge pixel count Pattern Blob locator Polygon Edge Circle Distance Angle Edge counter Find maximum
<b>Sensor</b>	CMOS matrix sensor, grayscale values
<b>Optical focus</b>	Adjustable focus (manually)
<b>Calibration</b>	Perspective and lens distortion correction, mm results
<b>Robot coordinate alignment</b>	✓
<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>	22 mm x 15 mm ... 79 mm x 58 mm
<b>Light source</b>	Internal lighting 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>		Exchangeable (S-mount)
	Optical format	1/3"
	Focal length	10 mm

### Mechanics/electronics

<b>Connection type</b>	M12, 12-pin male connector M12, 4-pin female connector
<b>Supply voltage</b>	24 V DC, $\pm 20\%$
<b>Ripple</b>	$< 5 V_{pp}$
<b>Current consumption</b>	$< 450$ mA, without output load
<b>Enclosure rating</b>	IP67 <sup>1)</sup>
<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

<sup>1)</sup> With front window mounted.

### Performance

<b>Sensor resolution</b>	640 px x 480 px
<b>Scan/frame rate</b>	40 fps <sup>1)</sup>
<b>Number of inspections</b>	64
<b>Reference images</b>	32 objects

<sup>1)</sup> Max. 200 fps.

### Interfaces

<b>Ethernet</b>	✓, TCP/IP
Data transmission rate	100 Mbit/s
<b>EtherNet/IP™</b>	✓
Data transmission rate	100 Mbit/s
<b>Operator interfaces</b>	Web server
<b>Configuration software</b>	SOPAS ET
<b>Data storage and retrieval</b>	Log for 30 images, record images on PC, store images to FTP
<b>Ethernet communication</b>	Web API
<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>Configurable outputs</b>	Output by logical expressions, Additional image storage possibility via FTP
<b>Output current</b>	$\leq 100$ 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
<b>I/O box extension</b>	5 x inputs for object selection, 16 outputs

### 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>Storage temperature</b>	-20 °C ... +70 °C <sup>1)</sup>

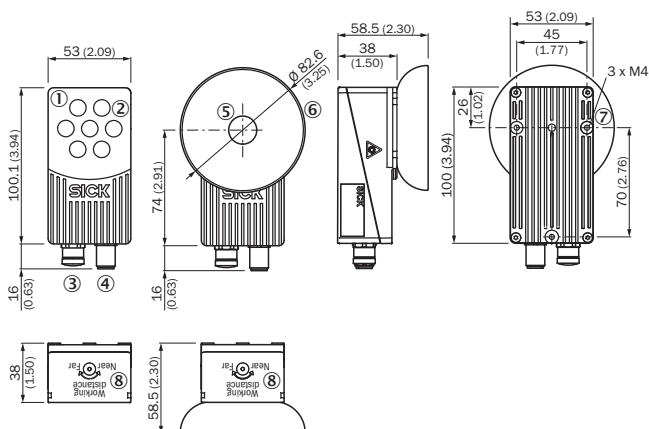
<sup>1)</sup> Relative humidity: 35% ... 85%, 95% in storage.

### Classifications

<b>ECl@ss 5.0</b>	27310205
<b>ECl@ss 5.1.4</b>	27310205
<b>ECl@ss 6.0</b>	27310205
<b>ECl@ss 6.2</b>	27310205
<b>ECl@ss 7.0</b>	27310205
<b>ECl@ss 8.0</b>	27310205
<b>ECl@ss 8.1</b>	27310205
<b>ECl@ss 9.0</b>	27310205
<b>ECl@ss 10.0</b>	27310205
<b>ECl@ss 11.0</b>	27310205
<b>ETIM 5.0</b>	EC001820
<b>ETIM 6.0</b>	EC001820
<b>ETIM 7.0</b>	EC001820
<b>UNSPSC 16.0901</b>	43211731

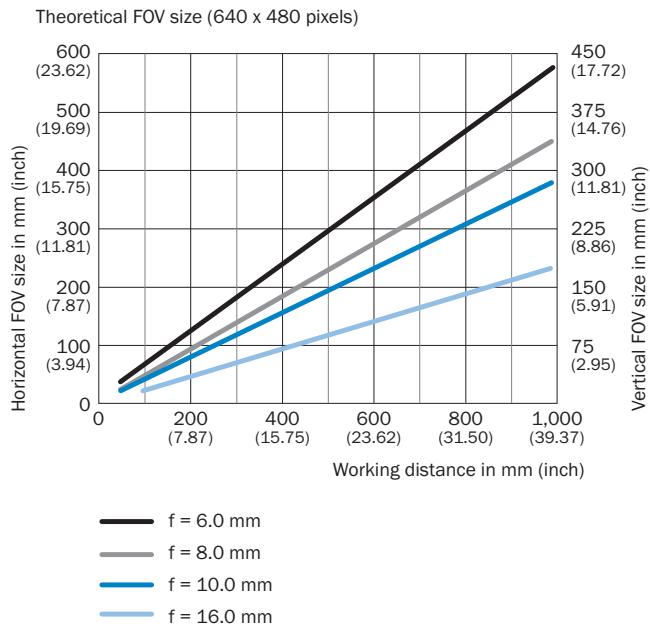
### Dimensional drawing (Dimensions in mm (inch))

#### Standard

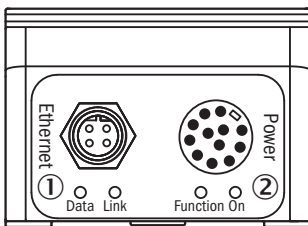


- ① Front screen: standard, flex
- ② Ring lighting
- ③ Ethernet connection M12, 4-pin, female
- ④ Power connection M12, 12-pin, male
- ⑤ Front screen: dome
- ⑥ Dome light
- ⑦ Mounting hole M4
- ⑧ Focus

## Field of view



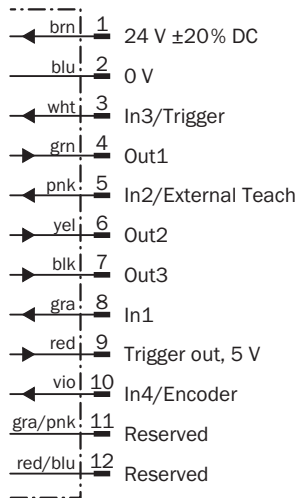
## Connection type



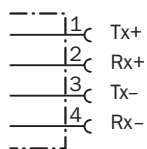
- ① Ethernet connection M12, 4-pin, female
- ② Power connection M12, 12-pin, male

### 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.
<b>Lenses and accessories</b>			
	Replaces the front screen and generates even and uniform illumination, for glossy surfaces, PMMA	Inspector Flex Dome	2050678
	Exchangeable lens, focal length 6 mm, Round connector M12 x 0.5	OBJ-B06025BA	2049668
	Exchangeable lens, focal length 16 mm, including spacer ring, Round connector M12 x 0.5	OBJ-B16018BA	2049418
<b>Optical filters</b>			
	Color filter blue (468 nm ± 62 nm) for variants with exchangeable lens and front window, PMMA	Inspector Flex blue color filter	2050676
	Color filter green (544 nm ± 53 nm) for variants with exchangeable lens and front window, PMMA	Inspector Flex green color filter	2050677

	Brief description	Type	Part no.
	Color filter red for variants with exchangeable lens and front window, PMMA	Inspector Flex red color filter	2050675
Plug connectors and cables			
	Head A: female connector, M12, 12-pin, straight Head B: Flying leads Cable: Sensor/actuator cable, PUR, halogen-free, shielded, 5 m	DOL-1212-G05MAS01	6036556
	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, machine 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)</li> <li>• <b>Duration:</b> Five-year warranty from delivery date.</li> </ul>	Extended warranty for a total of five years from delivery date	1680671
Commissioning		
<ul style="list-style-type: none"> <li>• <b>Product area:</b> 2D machine vision</li> <li>• <b>Range of services:</b> Inspection of connection, fine adjustment, optimization of parameters of SICK product as well as tests, set-up of previously defined functions of image settings, object locator, detailed inspections, output settings and results</li> <li>• <b>Travel expenses:</b> The prices do not include travel costs such as hotel, flight, travel time and expenses.</li> <li>• <b>Duration:</b> Additional work will be invoiced separately</li> </ul>	Inspector commissioning	1612238
Maintenance		
<ul style="list-style-type: none"> <li>• <b>Product area:</b> 2D machine 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>Travel expenses:</b> The prices do not include travel costs such as hotel, flight, travel time and expenses.</li> <li>• <b>Duration:</b> Additional work will be invoiced separately</li> </ul>	Inspector maintenance	1612242
Feasibility study		
<ul style="list-style-type: none"> <li>• <b>Product area:</b> 2D machine vision, 3D machine 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</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)