



## PLOC2D

**SICK**  
Sensor Intelligence.



### Ordering information

Type	part no.
PLOC2D-611-12NIR	1139165

Other models and accessories → [www.sick.com/PLOC2D](http://www.sick.com/PLOC2D)



### Detailed technical data

#### Features

<b>Product name</b>		PLOC2D-FIX0016
<b>System features</b>		Stand-alone sensor with easy teach, for localization of parts using 2D measurements
<b>Example field of view</b>		For details see field of view diagram
<b>Working distance</b>		50 mm ... 300 mm
<b>Light source</b>		
	Internal lighting	Infrared LED, invisible, 850 nm, ± 15 nm
	Feedback spot	LED, visible green light, 525 nm, ± 15 nm
	Adjustment aid	Laser, visible red light, 630 nm, ± 15 nm
<b>Laser class</b>		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
<b>Optical focus</b>		Adjustable focus (manually)
<b>LED class</b>		Risk group 0
<b>Localization principle</b>		Shape comparison
<b>Sensor resolution</b>		1,280 px x 960 px (1.2 MP)
<b>Lens</b>		
	Mounting method	Integrated
	Focal length	12 mm
<b>Technology</b>		2D snapshot, image analysis
<b>Description</b>		Medium resolution 2D localization of parts in medium/large fields of view at medium/long reading distances

#### Mechanics/electronics

<b>Connection type</b>		1 x M12, 17-pin male connector (serial, I/Os, voltage supply) 1 x M12, 4-pin female connector (Ethernet)
<b>Supply voltage</b>		12 V ... 24 V, ± 15 %
<b>Power consumption</b>		3.5 W
<b>Housing material</b>		Die-cast zinc
<b>Housing color</b>		Light blue (RAL 5012)
<b>Window material</b>		PMMA

<b>Dimensions (L x W x H)</b>	50 mm x 40.3 mm x 29.6 mm
<b>Weight</b>	165 g
<b>Enclosure rating</b>	IP54

## Performance

<b>Part localization time</b>	< 0.5 seconds for the first part in the image and then < 100 ms for additional parts in the image
<b>Localization accuracy</b>	$\pm 0.5$ px, $\pm 0.1^\circ$
<b>Output data</b>	X, Y (mm), rotation around Z (degrees)

## Interfaces

<b>Ethernet</b>	✓
Data transmission rate	100 Mbit/s
Protocol	TCP/IP XML and CSV (robot), TCP/IP (operator) PROFINET EtherNet/IP™ FTP
Electrical connection	M12 female connector, 4-pin
<b>Supply voltage</b>	
Electrical connection	Male connector M12, 17-pin
<b>User interface</b>	Web server
<b>Data storage and retrieval</b>	Image and data logging via microSD memory card and external FTP

## Ambient data

<b>Ambient temperature, operation</b>	0 °C ... +40 °C, permissible relative humidity: 0% ... 90% (non-condensing)
<b>Ambient temperature, storage</b>	-20 °C ... +70 °C <sup>1)</sup>
<b>Shock load</b>	EN 60068-2-27:2009-05
<b>Vibration load</b>	EN 60068-2-6:2008-02

<sup>1)</sup> Permissible relative humidity: 0% ... 90% (non-condensing).

## General notes

<b>Items supplied</b>	Camera, complete with integrated optics and illumination PLOC2D software
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## Classifications

<b>ECLASS 5.0</b>	27381501
<b>ECLASS 5.1.4</b>	27381501
<b>ECLASS 6.0</b>	27381590
<b>ECLASS 6.2</b>	27381590
<b>ECLASS 7.0</b>	27381590
<b>ECLASS 8.0</b>	27381590
<b>ECLASS 8.1</b>	27381590
<b>ECLASS 9.0</b>	27381590
<b>ECLASS 10.0</b>	27381590
<b>ECLASS 11.0</b>	27381591
<b>ECLASS 12.0</b>	27381591

EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
China RoHS	✓
Information according to Art. 3 of Data Act (Regulation EU 2023/2854)	✓

Technical drawings of the M2000 camera showing front, top, and side views with dimensions in inches and millimeters.

**Front View:** Shows the camera body with two circular lenses at the bottom. Dimensions include a total width of 40.28 (1.59) and a distance of 20.81 (0.82) between the lenses. Callouts 1 and 2 point to the lenses.

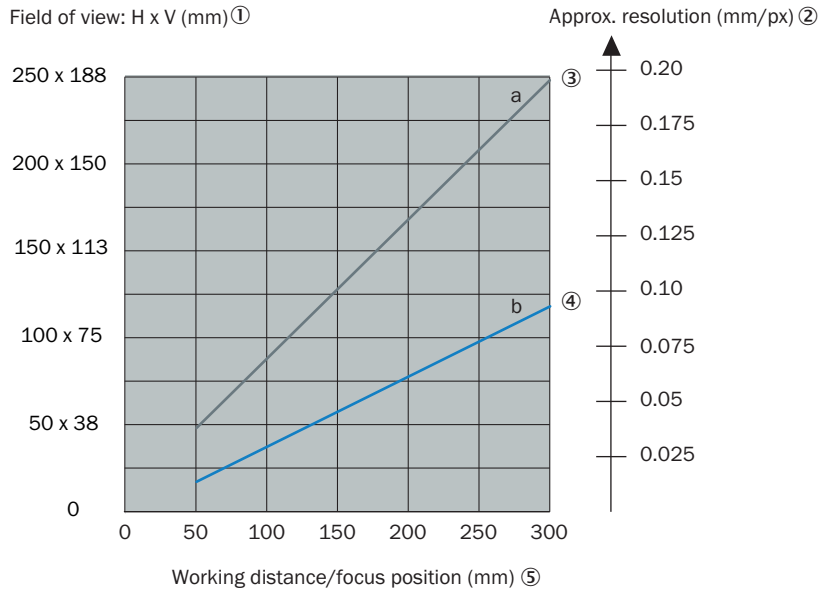
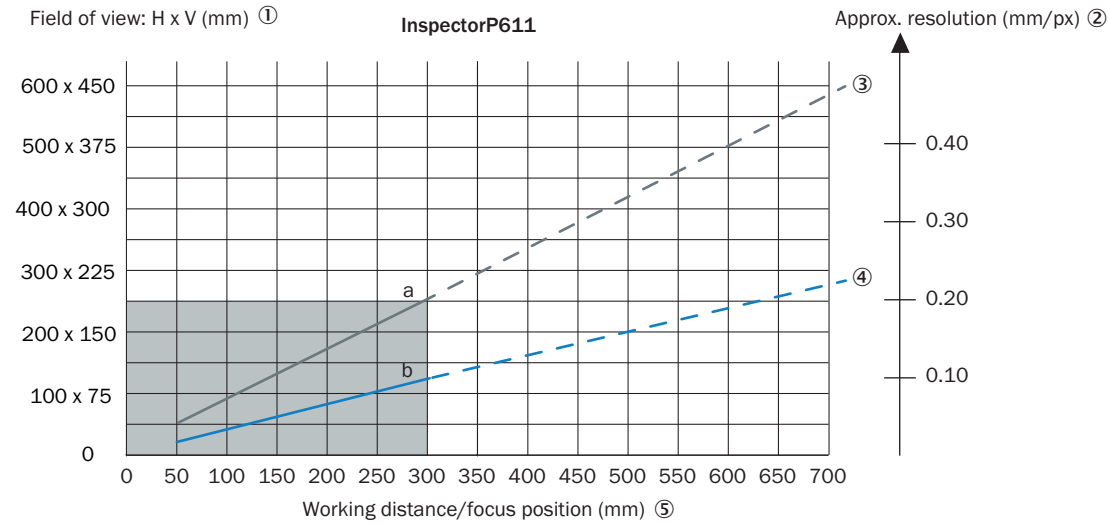
**Top View:** Shows the camera from above. Dimensions include a total width of 29.6 (1.17) and a distance of 13.9 (0.55) between the lenses. Callouts 1 and 2 point to the lenses. A central circular feature is labeled 5.

**Side View (Left):** Shows the camera's profile. Dimensions include a total height of 50 (1.97) and a distance of 25 (0.98) from the bottom to the center of the lens. Callouts 3 and 4 point to the top and bottom edges.

**Side View (Right):** Shows the camera's profile with the control panel. Dimensions include a total height of 43.8 (1.72) and a distance of 25 (0.98) from the bottom to the center of the lens. Callouts 3, 4, 5, 6, and 7 point to the top edge, bottom edge, lens, control panel, and bottom edge of the control panel, respectively.

- ① Connecting cable with “Ethernet” connection (female connector, M12, 4-pin, D-coded), length of cable: 0.25 m
- ② Connecting cable with “Power/Serial Data/CAN/I/O” connection (male connector, M12, 17-pin, A-coded), length of cable: 0.35 m
- ③ 4 x M4 blind tapped holes, 6.4 mm deep for mounting the device
- ④ Viewing window with 8 integrated illumination LEDs, 2 LED alignment aids, 1 feedback LED, 1 time-of-flight sensor
- ⑤ Optics, manual focus adjustment with the help of a focus adjustment tool
- ⑥ 6 status LEDs to display the focus position and working distance, device status and device function (3 display levels)
- ⑦ Function key

## Characteristic curve



— a: f = 6 mm      - - - with external illumination ⑥  
 — b: f = 12 mm

Take into account the following aspects when designing the application: the field of view geometry of the device, and the position of the field of view in the space in front of the device. Possible angles at which the objects can arise in relation to the device. For the planned working distance: resultant field of view length and width as well as the approximate resolution.

① Field of view: Horizontal x vertical in mm

② approximate resolution in mm/px

③ f = 6 mm. Solid line with internal lighting, and dashed line with appropriate external illumination accessories.


④ f = 12 mm. Solid line with internal lighting, and dashed line with appropriate external illumination accessories.

⑤ Working distance/Focus position in mm

⑥ With external illumination

Recommended accessories

Other models and accessories → [www.sick.com/PLOC2D](http://www.sick.com/PLOC2D)

	Brief description	Type	part no.
Commissioning aids and test equipment			
	<ul style="list-style-type: none"><li>• <b>Product:</b> Test equipment</li><li>• <b>Description:</b> Target for alignment and calibration, A3-size</li></ul>	PLOC2D alignment and calibration target A3	4092645

## 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)