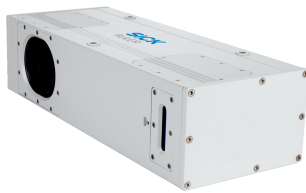


Ruler-E2112

Ruler

3D VISION

SICK
Sensor Intelligence.



Ordering information

Type	Part no.
Ruler-E2112	1029238

Other models and accessories → www.sick.com/Ruler



Detailed technical data

Features

Task	Positioning Inspection Measuring
Technology	3D, LineScan
Product category	Streaming devices
Working distance	415 mm ... 865 mm
Example field of view	250 mm x 600 mm
Field of view width	450 mm ... 820 mm
Light source	Visible red light (laser, 660 nm, ± 15 nm)
Laser class	2 (IEC 60825-1:2014, EN 60825-1:2014)
Data synchronization	Free running, encoder triggered, external triggering
Grayscale measurements	✓
Scatter measurement	✓
Spectral range	Approx. 630 nm ... 690 nm
Maximum height range	450 mm
Heating element	Without heating
Factory calibrated	✓
Description	Ruler E600 S - 2M laser, scattered light measurements, up to 10 k profiles/second. Gigabit Ethernet interface 1,536 px x 512 px.

Mechanics/electronics

Connections	Harting Push Pull (Ethernet) M12, 8-pin male connector, A-coded (voltage supply, I/O) M12, 8-pin socket (encoder)
Connector material	M12: nickel-plated brass, Ethernet: thermoplast/anodized aluminum
Ripple	< 5 V _{pp}
Power consumption	7 W
Current consumption	< 1 A
Enclosure rating	IP65
Housing material	Aluminum
Housing color	Gray, varnished
Window material	Float glass, anti-reflective coated
Weight	7 kg

Dimensions (L x W x H)	420 mm x 107 mm x 163 mm
-------------------------------	--------------------------

Performance

Image sensor	CMOS
Sensor resolution	1,536 px x 512 px
Scan/frame rate	10,000 3D profiles/s
Typical height resolution	0.2 mm ¹⁾
3D profile resolution	1,536 px
Scatter resolution	1,536 px
Gray-scale resolution	1,536 px

¹⁾ The given height resolution is relevant for relative measurements and depends on the object distance from the camera and on the 3D algorithm used.

Interfaces

Ethernet	✓, UDP/IP
Data transmission rate	1,000 Mbit/s
Serial	✓, RS-422
Function	Encoder
Data transmission rate	Maximum encoder frequency: 2 MHz
Configuration software	Ranger Studio
Operating system	Windows 7, Windows XP Pro, Windows 10
Development environment	C++ (VS 2005/2008/2010) / C
Programming interface	iCon API
Digital input	3 x HIGH = 10 V ... 28.8 V
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 ¹⁾
Ambient storage temperature	-30 °C ... +70 °C ¹⁾

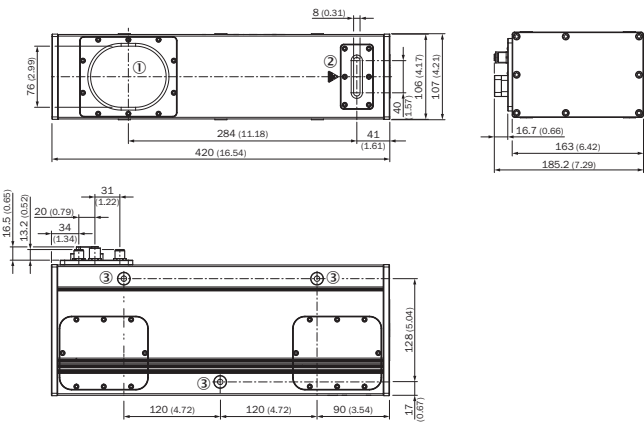
¹⁾ Non-condensing.

Classifications

ECl@ss 5.0	27310205
ECl@ss 5.1.4	27310205
ECl@ss 6.0	27310205
ECl@ss 6.2	27310205
ECl@ss 7.0	27310205
ECl@ss 8.0	27310205
ECl@ss 8.1	27310205
ECl@ss 9.0	27310205
ETIM 5.0	EC001820
ETIM 6.0	EC001820

UNSPSC 16.0901	43211731
----------------	----------

Dimensional drawing (Dimensions in mm (inch))

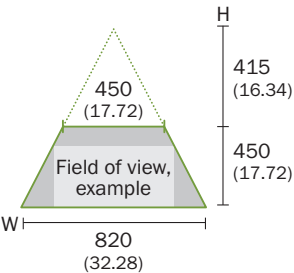


- ① Image sensor
- ② Laser unit
- ③ Fastening threads (M8 x 15 mm)

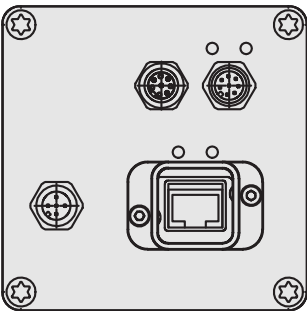
Field of view

Ruler E600

Typ. field of view in mm (inch)

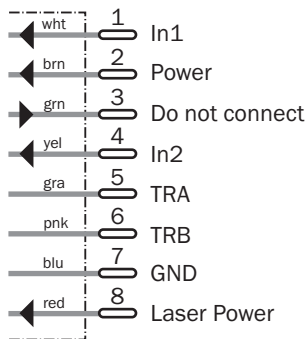


Connection type

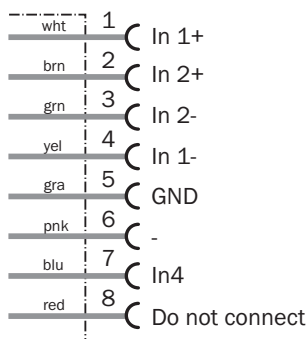


Connection diagram

Connection diagram, voltage I/O









Connection diagram, encoder connection



Recommended accessories

Other models and accessories → www.sick.com/Ruler

	Brief description	Type	Part no.
Power supply units and power supply cables			
	24 V DC power supply with 8-pin M 12 connector, 90 ... 264 V AC, 1.14 A / 24 W, including two line cords (European and US)	Power supply (Ruler E/S)	1014242
Adapters and distributors			
	T-junction	SBO-02F12-SF	6026503
Modules and gateways			
	Single port PCI board for connection to Gigabit Ethernet high-end camera	Gigabit Ethernet Board Single	6032329
Plug connectors and cables			
	Head A: male connector, M12, 8-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, shielded, 2 m	YM2A28-020VA6XLEAX	2096232

	Brief description	Type	Part no.
	Head A: male connector, PushPull Head B: male connector, RJ45 Cable: Gigabit Ethernet, unshielded, 10 m	SSL-0J08-G10ME	6032322
	Head A: female connector, M12, 8-pin, straight, A-coded Head B: male connector, M12, 8-pin, straight, A-coded Cable: Sensor/actuator cable, PUR, halogen-free, shielded, 2 m	YF2A28-020UA6M2A28	2096105
Illuminations			
	The ICT-R terminal box with key-operated pushbutton is used to switch the power to the internal laser on and off. The ICT-R is intended for devices with class IIb/3B lasers to achieve compliance with laser safety regulations. The ICT-R has a removable key, switch-on delay (< 5 s), M12 plug connectors, and LEDs to indicate the operational status.	ICT-R	1029242

Recommended services

Additional services → www.sick.com/Ruler

	Type	Part no.
Warranty extensions		
<ul style="list-style-type: none"> • Product area: Identification solutions, Vision, Distance sensors, Detection and ranging solutions • Range of services: 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. • Duration: Five-year warranty from date of purchase. 	Five-year extended warranty	1680671

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