

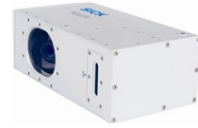


High-end cameras
Ruler, Ruler E150, Ruler E150, Gigabit Ethernet

Ruler-E4111



Model Name > [Ruler-E4111](#)
Part No. > [1044434](#)



At a glance

- Factory calibrated 3D in millimeters at full production speed
- High accuracy 3D for measurement widths from 100 mm up to 1.5 m
- Capture 3D, grayscale, and scatter at the same time
- Easy to integrate without need for external lights
- Rugged housing for tough environments and operation down to -30 °C
- Remote operation over long cable distances with Gigabit Ethernet

Your benefits

- High-speed measurement allows you to increase production throughput and still ensure product quality
- Accurate size and position measurement in 3D, regardless of an object's height or color, creating reliable solutions
- Simultaneously capturing 3D, scatter, and grayscale, allows for more reliable quality control and inspection
- Factory calibrated 3D with built-in lighting instantly provides results in millimeters, which makes integration easy
- Designed for tough industrial environments to ensure a long and problem-free life time



Features

Task:	Inspection, Measuring, Positioning
Description:	Ruler E150 - 2M Laser, up to 10k profiles/second. Gigabit Ethernet interface, 1,536 px x 512 px.
Technology:	3D LineScan
Example field of view (H x W):	50 mm x 150 mm
Field of view width:	140 mm ... 185 mm
Working distance:	160 mm ... 248 mm
Maximum height range:	88 mm
Data synchronization:	Encoder triggered External enable Free running
Grayscale measurements:	✓
Scatter measurement:	-
Spectral range:	Ca. 630 nm ... 690 nm
Heating element:	-
Light source:	Visible red light, laser, 660 nm, ± 15 nm

Laser class: 2M (IEC 60825-1 : 2008-01)
Factory calibrated: ✓

Performance

Image sensor: CMOS
Maximum performance: 10,000 3D profiles/s
Sensor resolution: 1,536 px x 512 px
3D profile resolution: 1,536 px
Typical height resolution: 0.05 mm
Gray line resolution: 1,536 px

Interfaces

Configuration software: Ranger Studio
Communication interfaces: Gigabit Ethernet
Operating system: Windows 7, Windows XP Pro
Development environment: C++ (VS 2005/2008/2010) or C
Programming interface: iCon API
Digital inputs: 3 x HIGH = 10 V ... 28.8 V
Digital outputs: 2 x B-type, < 100 mA in total
Encoder interface: RS-422
Maximum encoder frequency: 2 MHz

Mechanics/electronics

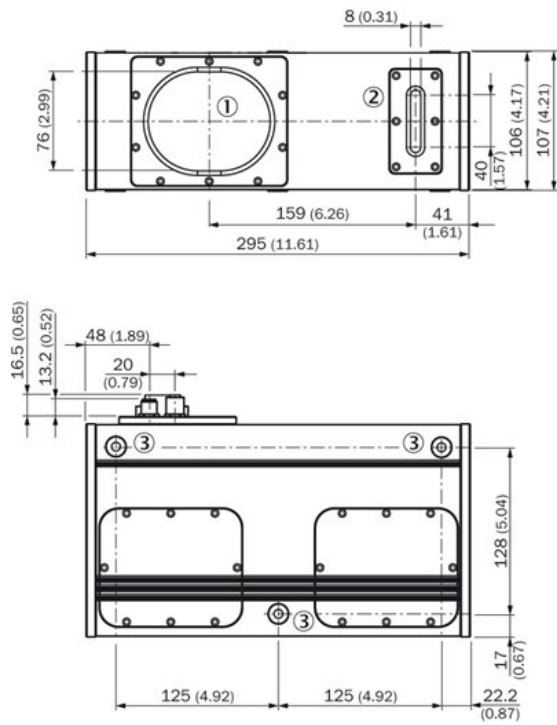
Connectors: Harting Push Pull (Ethernet)
M12, 8-pin socket (encoder)
M12, 8-pin male connector (power I/O)
Connector material: Ethernet: thermoplast/anodized aluminum, M12: nickel-plated brass
Power consumption: 7 W
Power consumption: < 1 A
Ripple: < 5 Vpp
Enclosure rating: IP 65
Housing material: Aluminum
Housing color: Gray, varnished
Window material: Float glass, AR-coated
Weight: 5.1 kg
Dimensions (L x W x H): 295 mm x 107 mm x 163 mm

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 ²⁾

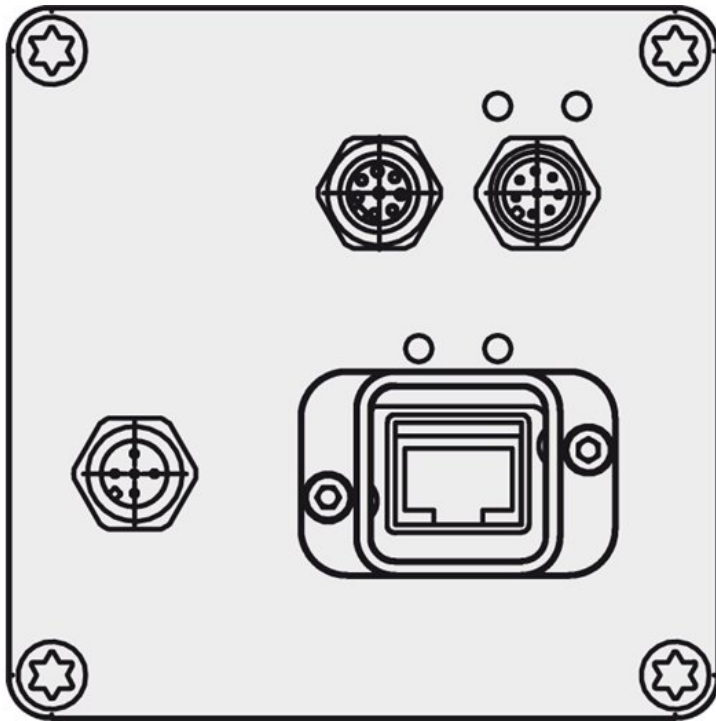
^{1) 2)} Non-condensing

Dimensional drawing

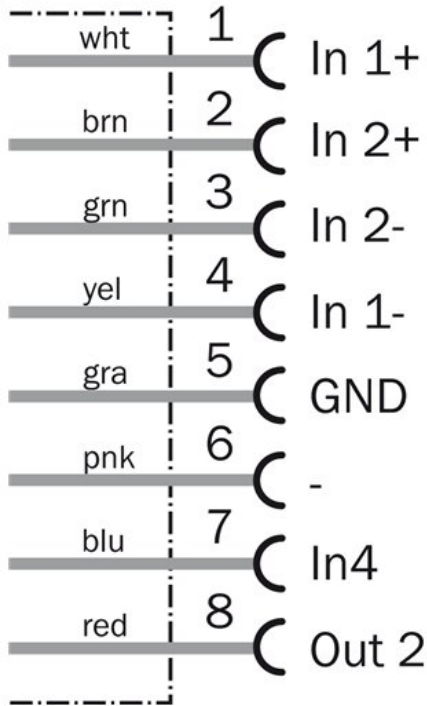


- |1| Image sensor
- |2| Laser unit
- |3| Threaded mounting hole

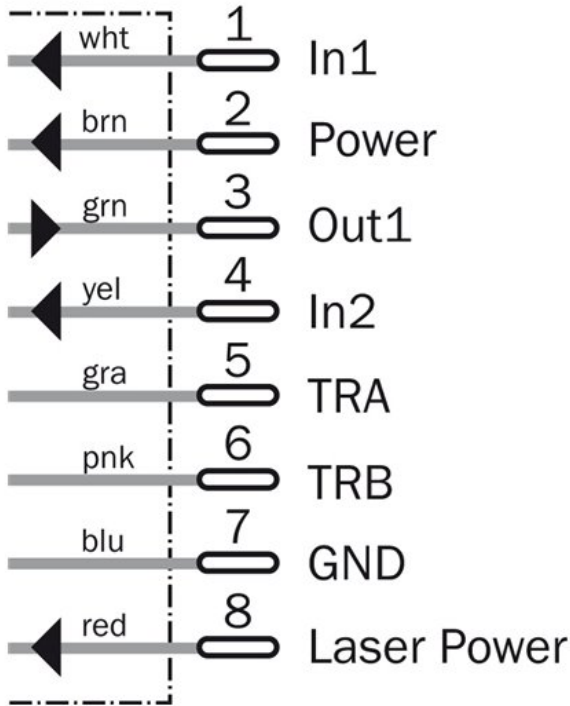
Connection type



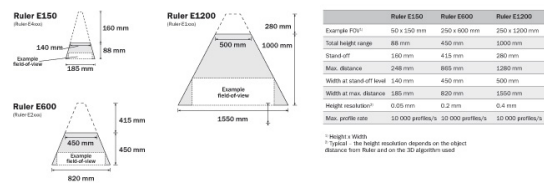
Connection diagram, Encoder connection



Connection diagram Power I/O



Measuring details



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