



V3DR3-40NE31111

Ranger3

3D MACHINE VISION

SICK
Sensor Intelligence.



Ordering information

Type	Part no.
V3DR3-40NE31111	1105757

Other models and accessories → www.sick.com/Ranger3



Detailed technical data

Features

Task	Quality inspection, high-speed Measuring, 3D
Technology	3D line scanning
Product category	Streaming, flexible
Shutter technology	Global-Shutter
Example field of view	Free of choice by lens selection
Exposure mode	Linear / HDR
Light source	
Internal lighting	To be ordered separately as accessories
Data synchronization	Free running, encoder triggered, external triggering
3D measurement	✓
Scatter measurement	✓
Reflectance measurement	✓
Spectral range	400 nm ... 950 nm
Lens	Exchangeable (C-mount), to be ordered separately as an accessory
Optical format	1"

Mechanics/electronics

Connections	Power – I/O: M12, 17-pin, male connector Gigabit Ethernet: M12, female connector
Connector material	M12: Nickel-coated brass
Supply voltage	24 V DC ... 24 V DC, ± 20 %
Power consumption	12 W
Current consumption	≤ 1.5 A
Enclosure rating	IP20 IP65 / IP67 by ProFlex protection hood
Housing material	Aluminum

Housing color	Blue, powder-coated
Weight	330 g
Dimensions (L x W x H)	77 mm x 55 mm x 55 mm

Performance

Image sensor	CMOS sensor from SICK with ROCC technology
Sensor resolution	2,560 px x 832 px
Scan/frame rate	20,000 3D profiles/s, in AOI 2,500 3D profiles/s, full format
Pixel size	6 µm x 6 µm
Maximum 3D height resolution	16 bits, 1/16 subpixel

Interfaces

Ethernet	✓, UDP/IP
Data transmission rate	1,000 Mbit/s
Configuration software	Ranger3 Studio
Operating system	Windows 7, Windows 10
Programming interface	GenAPI
Digital input	4 x HIGH = 10 V ... 28.8 V
Digital output	2 x TTL
Encoder interface	RS-422

Ambient data

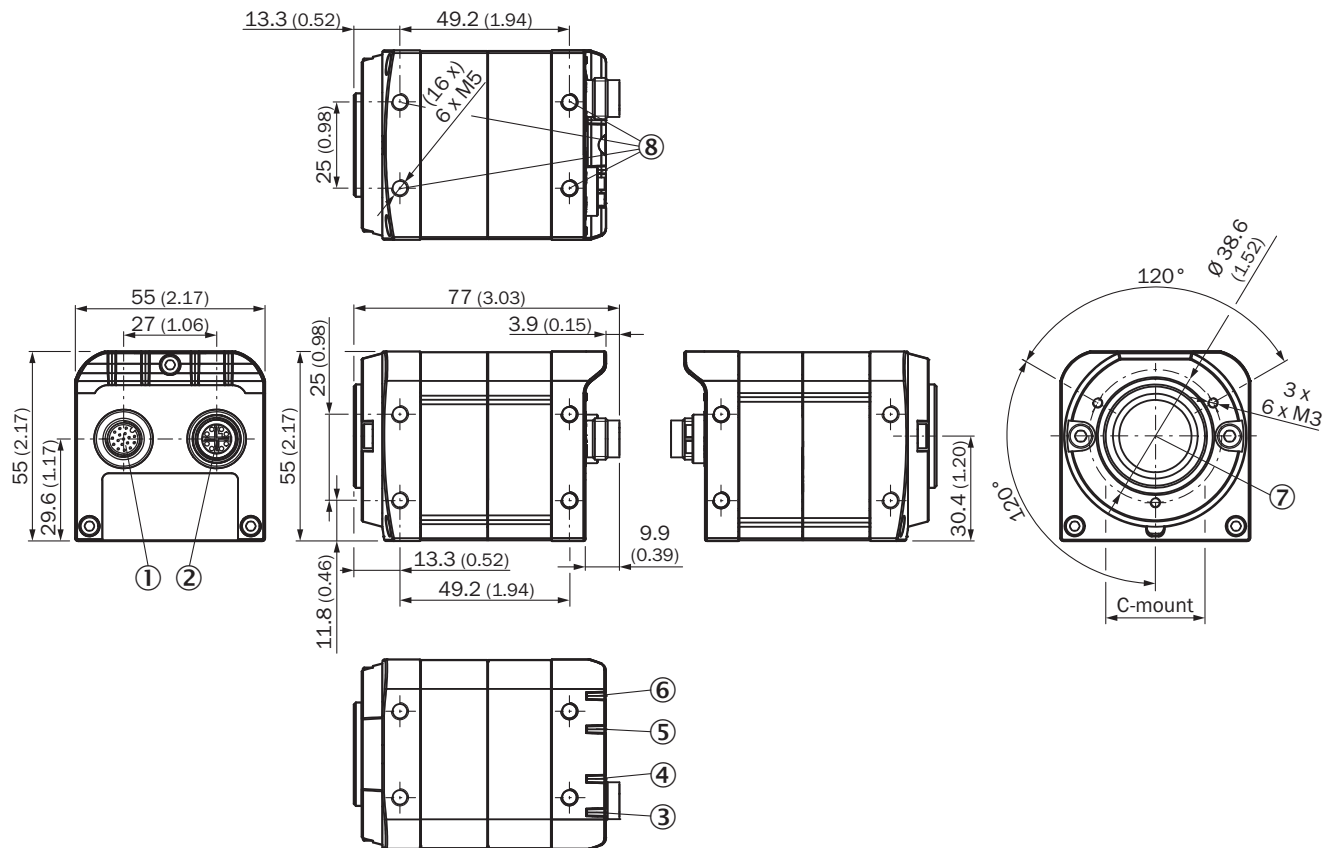
Shock load	15 g, 3 x 6 directions
Vibration load	5 g, 58 Hz ... 150 Hz
Ambient operating temperature	0 °C ... +50 °C ¹⁾
Storage temperature	-20 °C ... +70 °C ¹⁾

¹⁾ Non-condensing.

Classifications

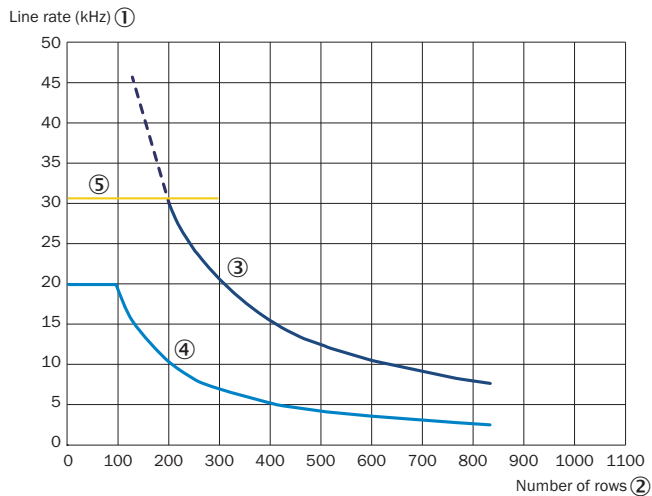
ECl@ss 5.0	27310205
ECl@ss 5.1.4	27310205
ECl@ss 6.0	27310205
ECl@ss 6.2	27310205
ECl@ss 7.0	27310205
ECl@ss 8.0	27310205
ECl@ss 8.1	27310205
ECl@ss 9.0	27310205
ECl@ss 10.0	27310205
ECl@ss 11.0	27310205
ETIM 5.0	EC001820
ETIM 6.0	EC001820
ETIM 7.0	EC001820
UNSPSC 16.0901	43211731

Dimensional drawing (Dimensions in mm (inch))



- ① Power I/O connector
- ② Connector Gigabit Ethernet (Gig E)
- ③ LED; On
- ④ LED; State
- ⑤ LED; Link/Data
- ⑥ LED; Laser
- ⑦ Optical axis, receiver
- ⑧ Mounting holes, 4 x M5

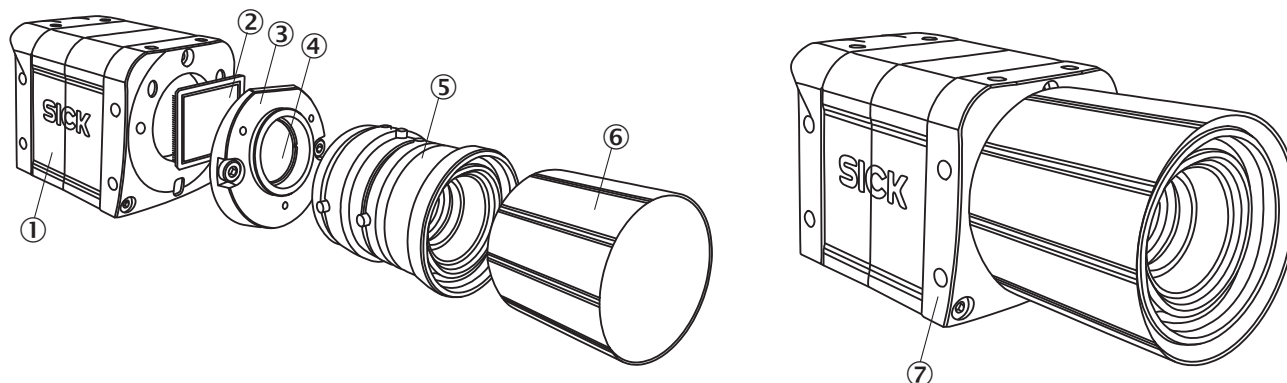
Characteristic curve



The maximum line rate is based on the number of sensor lines used

- ① Line rate (kHz)
- ② Number of lines
- ③ Ranger3-60, 2,560 columns
- ④ Ranger3-40, 2,560 columns
- ⑤ Bandwidth limitation for 2,560 columns





Exploded view



- ① Ranger3 (housing)
- ② CMOS sensor M30
- ③ Scheimpflug adapter, replaceable
- ④ Optical filter, replaceable
- ⑤ C-mount lens, replaceable
- ⑥ Protective hood, replaceable
- ⑦ Installed device with all listed parts

Recommended accessories

Other models and accessories → www.sick.com/Ranger3

	Brief description	Type	Part no.
Mounting brackets and plates			
	Mounting bracket with camera adapter plate, including screws	Mounting bracket	2091431
Plug connectors and cables			
	Head A: female connector, M12, 17-pin, straight, A-coded Head B: Flying leads Cable: Power, serial, CANopen, digital I/Os, twisted pair, PUR, shielded, 3 m	YF2A2D-030UV1XLEAX	6042772
	Head A: male connector, M12, 8-pin, straight, X-coded Head B: male connector, RJ45, 8-pin, straight Cable: Gigabit Ethernet, twisted pair, PUR, halogen-free, shielded, 2 m	YM2X18-020EG2MRJA8	6049728
Lenses and accessories			
	C-Mount lens 1", focal length 25 mm, lens aperture 1.4 – 16	C-mount lens	5327524

Recommended services

Additional services → www.sick.com/Ranger3

	Type	Part no.
Warranty extensions		
<ul style="list-style-type: none">• Product area: Identification solutions, machine 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)• Duration: Five-year warranty from delivery date.	Extended warranty for a total of five years from delivery date	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