ONLINE DATA SHEET
www.mysick.com

3D vision
RS-422 , Ranger, Ranger E, Ranger E55

Ranger-E55414

SICK
Sensor Intelligence.

SICK
Sensor Intelligence.

3D vision
RS-422 , Ranger, Ranger E, Ranger E55

Model Name > Ranger-E55414
Part No. > 1040380

At a glance

- 3D shape inspection at up to 35,000 profiles/s
- In-machine 3D calibration tool
- MultiScan technology to measure 3D, contrast, and scatter at the same time
- Sensor resolutions of up to 1,536 pixels in 3D and 3,072 pixels in gray scale
- Full flexibility in configuration, working distance, and field of view
- C and C++ APIs for integration
- Remote operation and easy integration with Gigabit Ethernet

Your benefits

- With speeds of up to 35,000 profiles/s and gray scale resolution up to 3,072 pixels, you can increase production throughput and still see the finest details, ensuring product quality
- Contrast-independent 3D provides more reliable size and position measurements, regardless of an object's color or height
- Contrast-independent 3D provides more reliable size and position measurements, regardless of an object's color or height
- Unique MultiScan technology lets one camera do the job of many, reducing costs for integration, maintenance, and accessories, creating cost-efficient solutions
- Ranger E's high level of flexibility makes it the best choice for the most challenging tasks
- Gigabit Ethernet for remote operation over long cable distances, allowing you to put your PCs in a safe and convenient place

Features

Task:	Inspection, Measuring, Positioning
Description:	Ranger E55 - 3D and MultiScan, up to 35 k profiles/second. Gigabit Ethernet interface, 1,536 x 512 pixels, high resolution line of 3,072 pixels.
Technology:	3D LineScan MultiScan
Example field of view (H x W):	Free of choice by lens selection
Data synchronization:	Encoder triggered External trigger Free running
Grayscale measurements:	✓
Scatter measurement:	✓
Spectral range:	400 nm ... 950 nm
Factory calibrated:	-

© SICK AG. Subject to change without notice.

Performance

Image sensor:	CMOS
Maximum performance:	35,000 3D profiles/s
Sensor resolution:	1,536 px x 512 px
3D profile resolution:	1,536 px
Gray line resolution:	1,536 px
Pixel size:	9.5 µm x 9.5 µm
Pixel matrix fill factor:	60 %
Maximum 3D height resolution:	13 bits 1/16 pixel
Optical center (row, column):	(227, 768)
IR filter:	No IR pass filter
Scatter resolution:	1,536 px
Hi-Res Gray resolution:	3,072 px
Sensor rows available for 3D:	0 ... 511
Bit depth:	8 bit
Hi-Res pixel size (H x V):	4.75 µm x 9.5 µm
Hi-Res pixel fill factor:	80 %

Interfaces

Configuration software:	Ranger Studio
Communication interfaces:	RS-422
Operating system:	Windows 7, Windows XP Pro
Development environment:	C, C++ (VS 2005/2008/2010)
Programming interface:	iCon API
Digital inputs:	4 x HIGH = 10 V ... 28.8 V
Digital outputs:	1 x TTL level, 2 x B-type, < 100 mA in total
Maximum encoder frequency:	2 MHz
Control of external illumination:	5 V TTL
Encoder interface:	RS-422

Mechanics/electronics

Connectors:	M12, 8-pin female connector (encoder) RJ45 (Ethernet) Power I/O: M12, 8-pin male
Connector material:	M12: nickel-plated brass
Supply voltage:	12 V DC ... 24 V DC
Power consumption:	7 W
Power consumption:	0.8 A
Ripple:	< 5 Vpp
Enclosure rating:	IP 20
Housing material:	Aluminum
Housing color:	Gray, varnished
Weight:	360 g
Dimensions (L x W x H):	125 mm x 52 mm x 52 mm
Optics:	C-Mount, 1"
Standards (ROHS):	✓

Ambient data

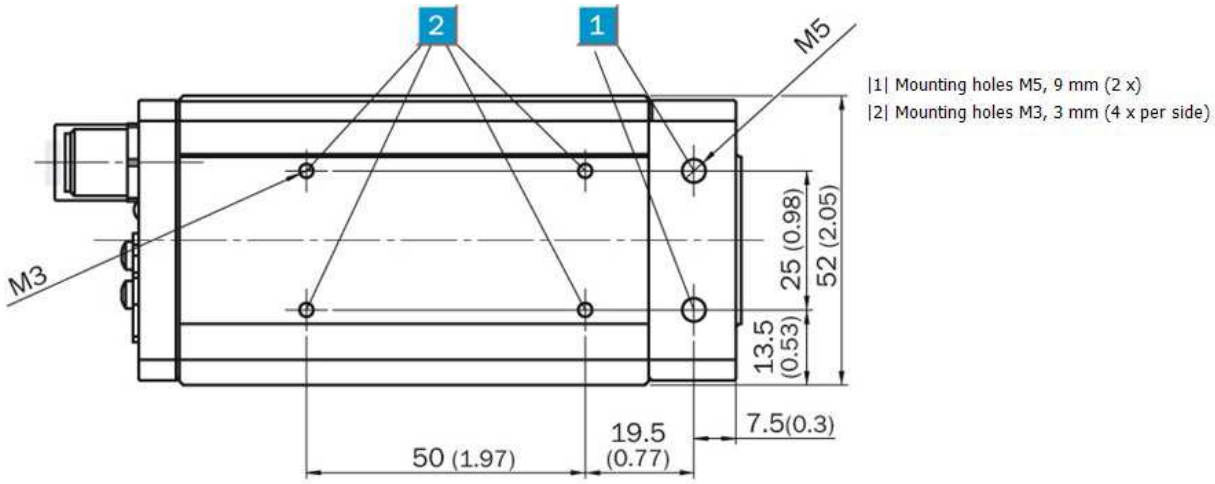
Shock load:	15 g, 3 x 6 directions
Vibration load:	5 g, 58 Hz ... 150 Hz
Ambient operating temperature:	0 °C ... +45 °C [1)]

© SICK AG. Subject to change without notice.

Ambient storage temperature:	-20 °C ... +70 °C [2]

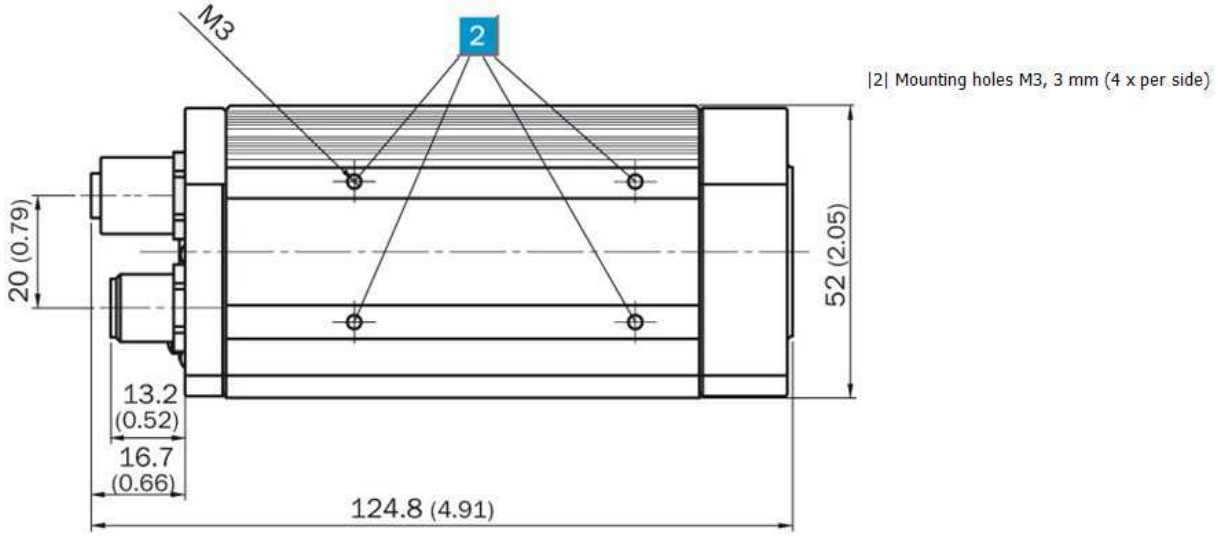
[1] [2] Non-condensing

Dimensional drawing, bottom view

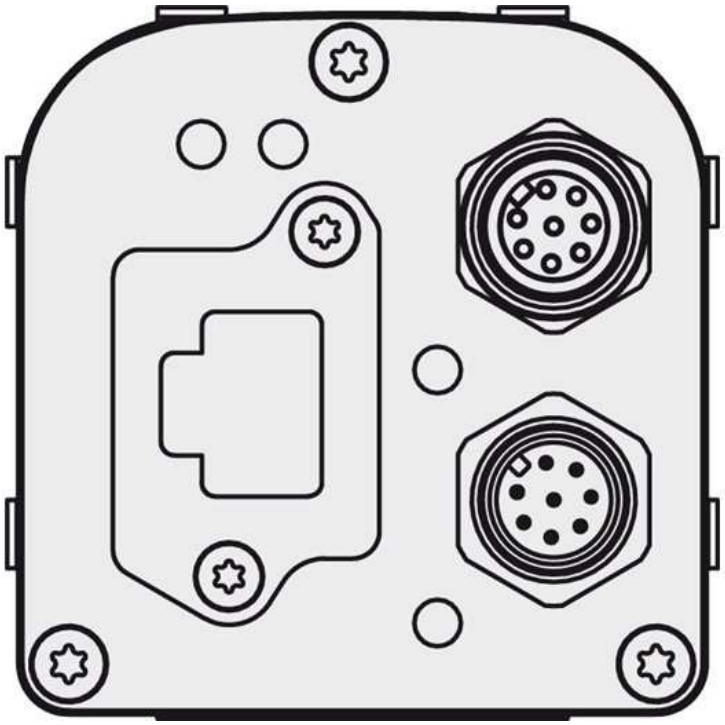


© SICK AG. Subject to change without notice.

Dimensional drawing, side view

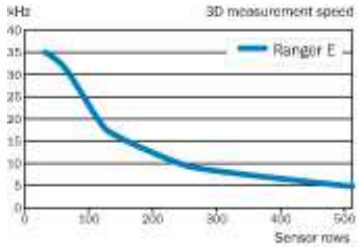


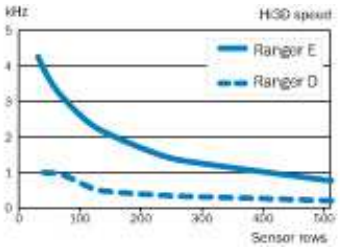
Connection type

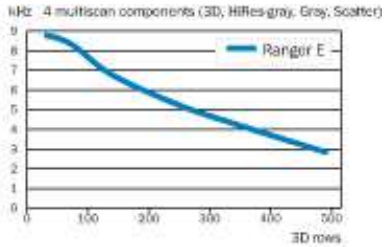


© SICK AG. Subject to change without notice.

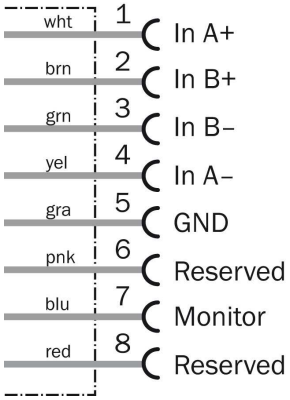
Characteristic curves



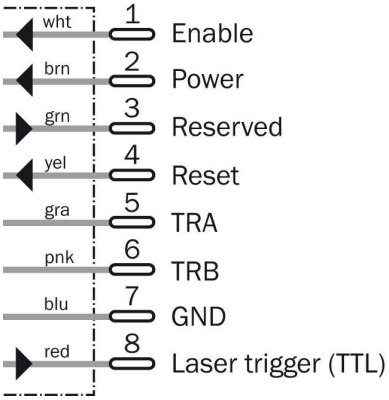




Connection diagram, Encoder connection



Connection diagram Power I/O



© SICK AG. Subject to change without notice.

A4 4c int43

Australia
Phone +61 3 9457 0600
1800 33 48 02 – tollfree
E-Mail sales@sick.com.au

Belgium/Luxembourg
Phone +32 (0)2 466 55 66
E-Mail info@sick.be

Brasil
Phone +55 11 3215-4900
E-Mail marketing@sick.com.br

Canada
Phone +1 905 771 14 44
E-Mail information@sick.com

Česká republika
Phone +420 2 57 91 18 50
E-Mail sick@sick.cz

China
Phone +86 4000 121 000
E-Mail info.china@sick.net.cn
Phone +852-2153 6300
E-Mail ghk@sick.com.hk

Danmark
Phone +45 45 82 64 00
E-Mail sick@sick.dk

Deutschland
Phone +49 211 5301-301
E-Mail info@sick.de

España
Phone +34 93 480 31 00
E-Mail info@sick.es

France
Phone +33 1 64 62 35 00
E-Mail info@sick.fr

Great Britain
Phone +44 (0)1727 831121
E-Mail info@sick.co.uk

India
Phone +91–22–4033 8333
E-Mail info@sick-india.com

Israel
Phone +972-4-6881000
E-Mail info@sick-sensors.com

Italia
Phone +39 02 27 43 41
E-Mail info@sick.it

Japan
Phone +81 (0)3 5309 2112
E-Mail support@sick.jp

Magyarország
Phone +36 1 371 2680
E-Mail office@sick.hu

Nederland
Phone +31 (0)30 229 25 44
E-Mail info@sick.nl

Norge
Phone +47 67 81 50 00
E-Mail sick@sick.no

Österreich
Phone +43 (0)22 36 62 28 8-0
E-Mail office@sick.at

Polska
Phone +48 22 837 40 50
E-Mail info@sick.pl

România
Phone +40 356 171 120
E-Mail office@sick.ro

Russia
Phone +7-495-775-05-30
E-Mail info@sick.ru

Schweiz
Phone +41 41 619 29 39
E-Mail contact@sick.ch

Singapore
Phone +65 6744 3732
E-Mail sales.gsg@sick.com

Slovenija
Phone +386 (0)1-47 69 990
E-Mail office@sick.si

South Africa
Phone +27 11 472 3733
E-Mail info@sickautomation.co.za

South Korea
Phone +82 2 786 6321/4
E-Mail info@sickkorea.net

Suomi
Phone +358-9-25 15 800
E-Mail sick@sick.fi

Sverige
Phone +46 10 110 10 00
E-Mail info@sick.se

Taiwan
Phone +886 2 2375-6288
E-Mail sales@sick.com.tw

Türkiye
Phone +90 (216) 528 50 00
E-Mail info@sick.com.tr

United Arab Emirates
Phone +971 (0) 4 88 65 878
E-Mail info@sick.ae

USA/México
Phone +1(952) 941-6780
1 (800) 325-7425 – tollfree
E-Mail info@sickusa.com

More representatives and agencies
at **www.sick.com**

SICK
Sensor Intelligence.