



3D vision  
CameraLink , Ranger, Ranger C, Ranger C55

Ranger-C55412



**Model Name** > [Ranger-C55412](#)  
**Part No.** > [1014217](#)



**At a glance**

- 3D shape inspection at up to 30,000 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 software integration
- Easy to integrate via CameraLink interface

**Your benefits**

- With speeds of up to 30,000 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
- Full flexibility in the choice of lens and field of view in combination with the easy in-machine 3D calibration tool gives you true millimeter dimensions wherever you need it
- Unique MultiScan technology enables one camera do the job of many, reducing the cost for integration, maintenance, and accessories
- The high level of flexibility and versatility of Ranger C makes it a the best choice for the most challenging tasks
- Standard CameraLink interface for easy integration



**Features**

Task:	Inspection, Measuring, Positioning
Description:	Ranger C55 - 3D MultiScan, up to 30 k profiles/second. CameraLink 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:	-

## Performance

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Image sensor:	CMOS
Maximum performance:	30,000 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

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Configuration software:	Ranger Studio
Communication interfaces:	CameraLink
Operating system:	Windows XP Pro
Development environment:	C, C++ (VS 2005/2008/2010)
Programming interface:	iCon API
Digital inputs:	5 x TTL
Digital outputs:	1 x TTL
Maximum encoder frequency:	2 MHz
Control of external illumination:	5 V TTL
Encoder interface:	5 V TTL

## Mechanics/electronics

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Connectors:	Lemo 14-pin female connector (power, I/O) Mini D Ribbon, MDR, 26 pin female connector (CameraLink)
Supply voltage:	12 V DC ... 24 V DC
Power consumption:	8 W
Current consumption:	1.25 A
Ripple:	< 5 Vpp
Enclosure rating:	IP 20
Housing material:	Aluminum
Housing color:	Gray, varnished
Weight:	390 g
Dimensions (L x W x H):	109 mm x 50 mm x 50 mm
Optics:	C-Mount, 1"

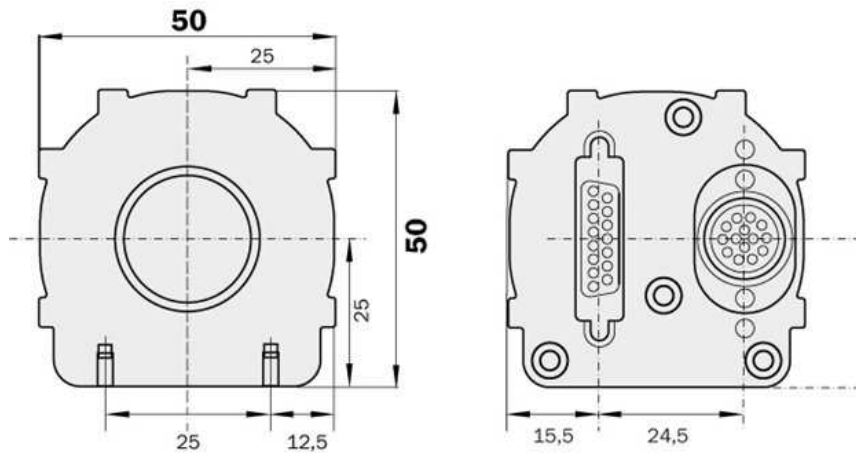
## Ambient data

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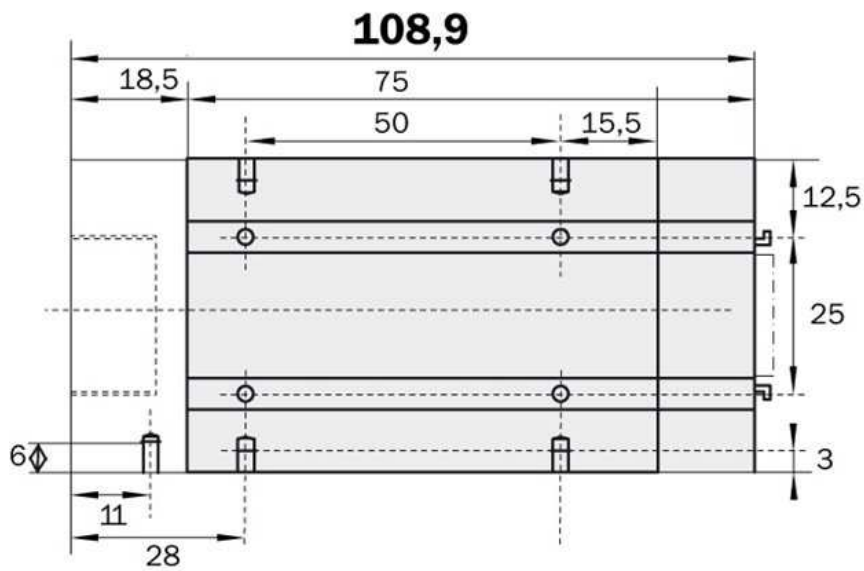
Shock load:	15 g, 3 x 6 directions
Vibration load:	5 g, 58 Hz ... 150 Hz
Ambient operating temperature::	+5 °C ... +50 °C <sup>1) 2)</sup>
Ambient storage temperature:	-20 °C ... +70 °C <sup>3)</sup>

1) 3) Non-condensing 2) Camera housing temperature

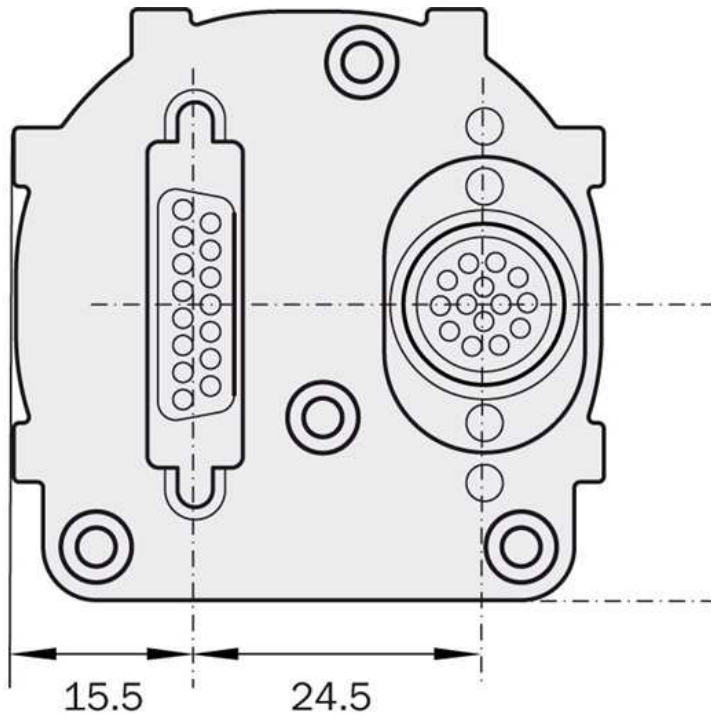
**Dimensional drawing, front / back view**



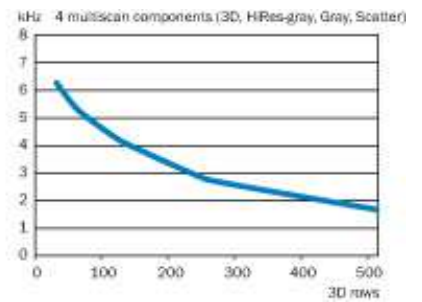
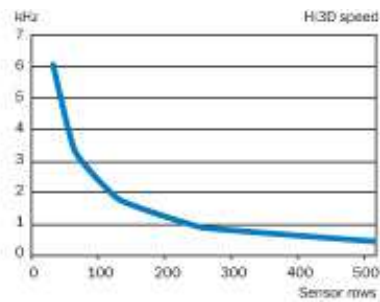
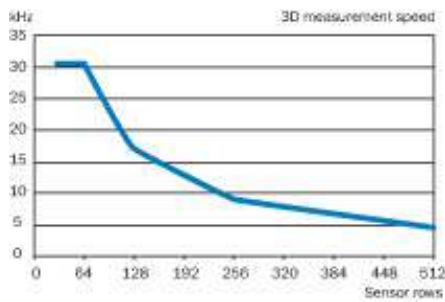
**Dimensional drawing, side view**



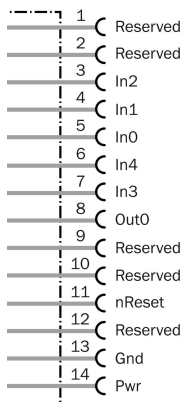
## Connection type



## Characteristic curves



## Connection diagram



**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](http://www.sick.com)