

Ranger C: Fastest 3D Available!



Benefits with Ranger C:

- The fastest 3D available!
- Easy to integrate into existing CameraLink systems
- Flexible product for a wide range of applications
- Best market price/performance
- Flexible field of view due to free choice of lens and geometry

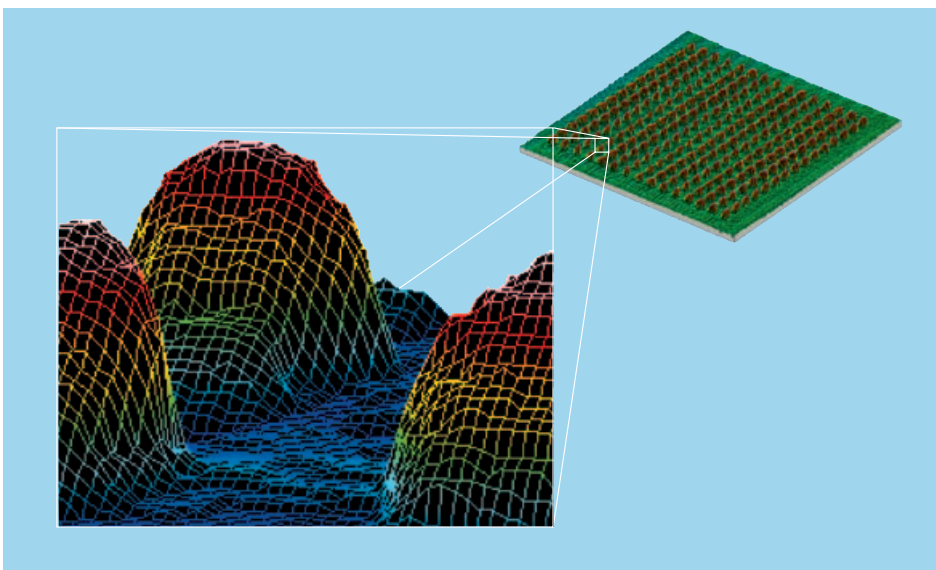
Examples:

- Volume measurement of solder paste
- Quality of substrates and components
- True shape of logs in sawmill
- Food portioning
- Glue string measurement
- Robot guidance
- Tire inspection
- Rail inspection

The Ranger C is the ultimate 3D camera for the most advanced needs. With its extreme speed, flexible choice of illumination and optics and with 3rd party imaging software it can be used to solve almost any problem.

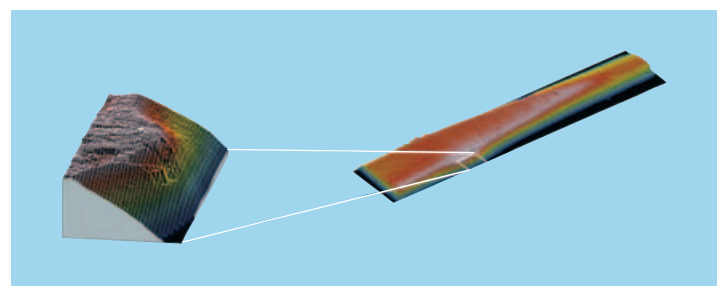
The Ranger C can acquire up to 30,000 profiles per second, each containing up to 1536 high-quality 3D coordinates. The complete 3D calculation is done inside the camera and the ready-to-use 3D coordinates are sent directly to a standard PC via CameraLink.

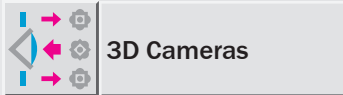
► The 3D data is transferred to the PC via CameraLink for easy access. This enables you to base your application as your own, or commercially available imaging libraries.



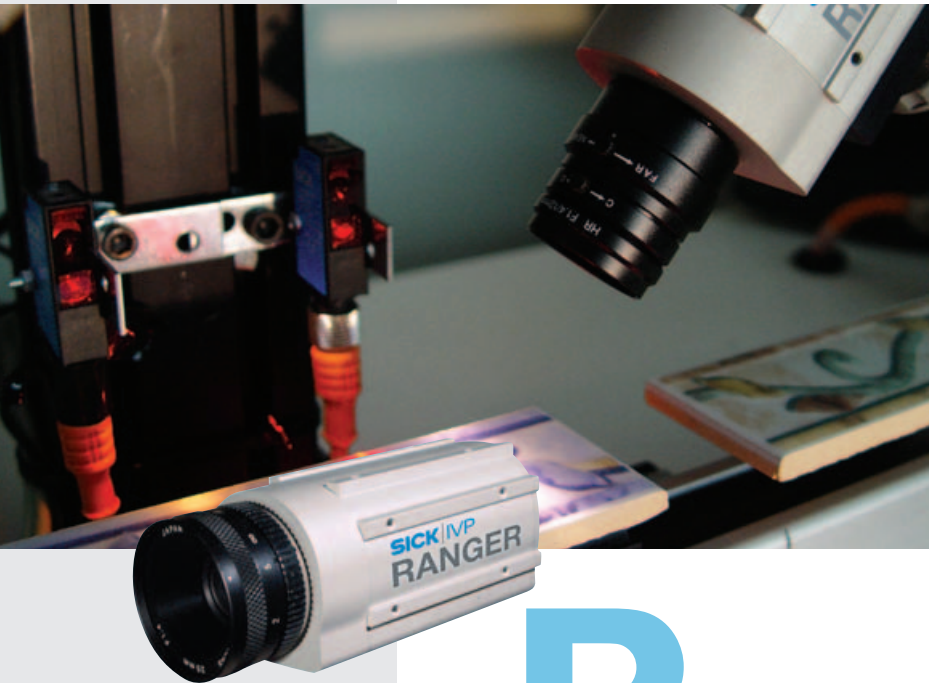
Component Inspection

Board Inspection





MultiScan on Ranger C: Measure it All at Once!



Benefits with MultiScan on Ranger C :

- One camera instead of many
- Up to 1536 pixel 3D width
- Up to 3072 pixel greyscale line width
- Best market price/performance

Examples:

- Wood quality grading
- Ceramic tile quality grading
- Size and quality grading of fruits
- Rubber and plastic extrusion

Ranger C supports MultiScan measurement – this means that the camera can acquire a number of properties (such as 3D, greyscale and scatter) of the measured object in the same scan.

One of the benefits of the MultiScan feature is a more robust result by combining 3D and greyscale information for decision making. A second advantage is the need of only one camera, where in other cases there is need for one area camera and one or several line scan cameras to produce the same result.

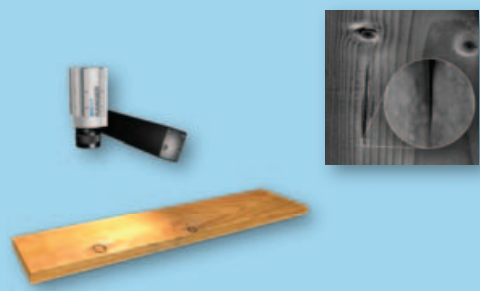
◀ The speed and performance is extremely high thanks to SICK IVP's unique and patented sensor technology. MultiScan is the solution for any in-line inspection task where 2D or 3D alone does not solve the problem.



High Speed 3D



High resolution greyscale



Gloss measurement



Laser Scatter



3D Cameras: Ranger C

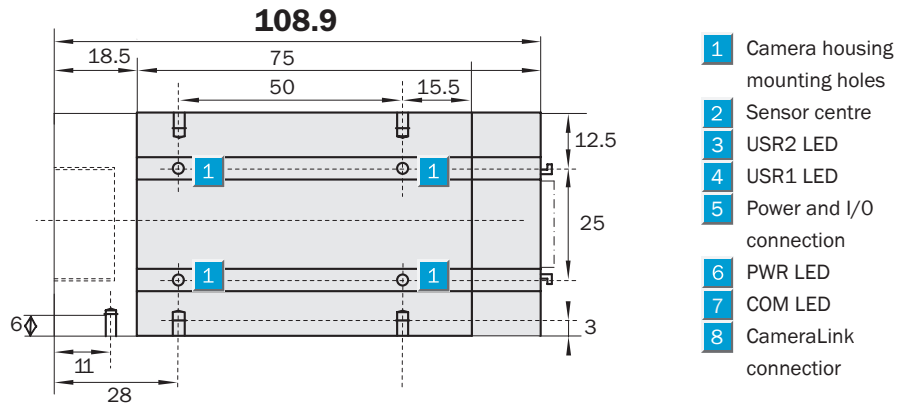
	Sensor Resolution
	1536x512
	512x512
3D Cameras	

- The fastest 3D available!
- Multiscan technology
- Easy to integrate into existing CameraLink systems
- Flexible product for a wide range of applications
- Best market price/performance
- Flexible field of view due to free choice of lens and geometry



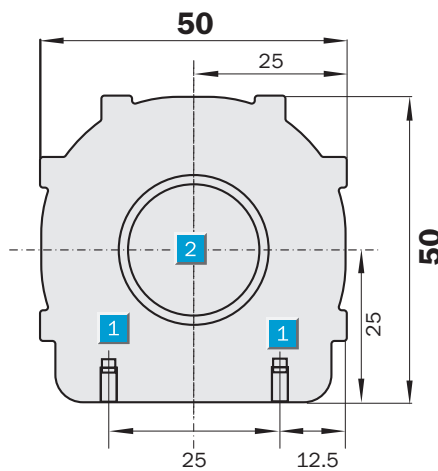
Dimensional drawing

Ranger C Camera dimension, mid (mm)

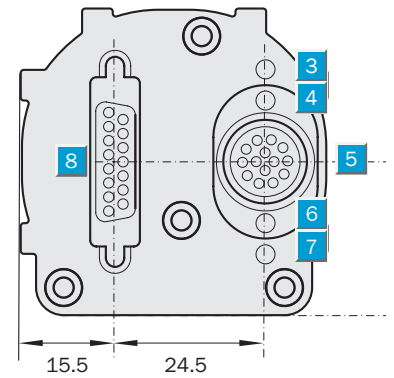


- 1 Camera housing mounting holes
- 2 Sensor centre
- 3 USR2 LED
- 4 USR1 LED
- 5 Power and I/O connection
- 6 PWR LED
- 7 COM LED
- 8 CameraLink connector

Ranger C Camera dimension, rear (mm)



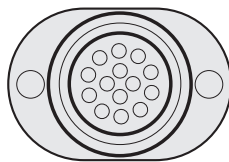
Ranger C Camera dimension, front (mm)



Connection type

Power and I/O

CameraLink Connector



1	Reserved
2	Reserved
3	In2
4	In1
5	In0
6	In4
7	In3
8	Out0
9	Reserved
10	Reserved
11	nReset
12	Reserved
13	Gnd
14	Pwr

The CameraLink Connector is specified in the CameraLink standard and is a 26-position high-density Mini D Ribbon (MDR) female plug.

Power and I/O cable, 3 m

Order no. 1014266

CameraLink cable, 3 m

Order no. 1014310

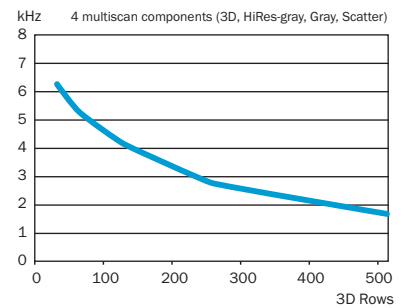
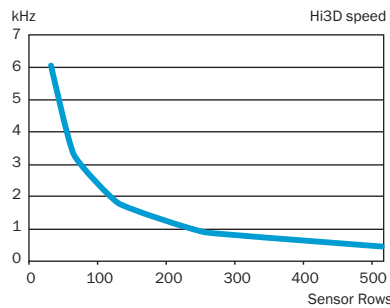
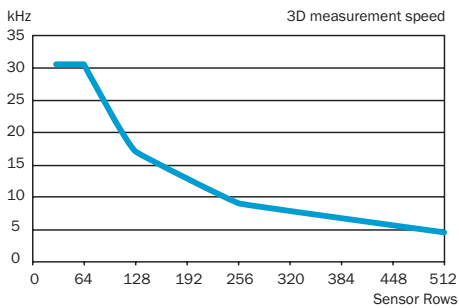
Technical data		Ranger C	55	50	40	50-IR	55-IR					
Performance	Up to 30,000 3D profiles per second											
	Up to 10,000 Multi Scan blocks per second, each containing 3 features											
Host platform ¹⁾	PC, Windows XP											
Communication interface ²⁾	CameraLink											
Development environment	C++ (VS .NET 2003) or C (VS .NET 2003, VS6)											
Synchronisation of data	Free running, light switch enable, rotary encoder trig											
Dimensions (L x H x D)	50 x 50 x 110 mm											
IR filter	Band pass filter for separation of multiple light sources											
HiRes grey line resolution	3072											
Grey line resolution	1536											
	512											
3Dprofile resolution	1536											
	512											
Scatter resolution	1536											
	512											
Maximum 3D height resolution	13 bits $\frac{1}{16}$ pixel											
C-mount optics	1 inch											
	$\frac{1}{2}$ inch											
Camera I/O	5 in, 1 out, TTL level											
Power	12 ... 24 V CD											
Camera house temperature	5 ... 50 °C											

¹⁾ PC requirements: Min Pentium III, 1,5 GHz, 256 MB RAM, half-length PCI slot.

²⁾ Frame Grabber requirements: 33/66 MHz, PCI 32bit@33MHz. Support for Com port mapping, 2x8 bit two-taps interleave data mode. Line-scan, true line-scan. Pixels/line: 512-64kB depending on application

Diagrams

Max. speed $\frac{1}{2}$ pixel resolution	Best resolution $\frac{1}{16}$ pixel resolution	MultiScan measurement speed
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Order information

3D Cameras		Accessories	
Type	Order no.	Type	Order no.
Ranger C40	1014218	X64 CL Single Board	6030530
Ranger C50	1014216	Ranger C Development SW	1014314
Ranger C50-IR	1014203	Ranger C Camera Accessories	1014313
Ranger C55	1014217	Laser Accessories	1014257
Ranger C55-IR	1014205		