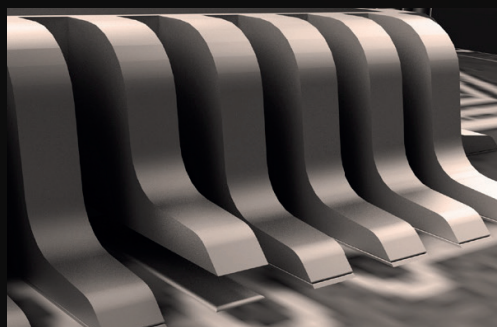




ECCO 95



ECONOMIC & COMPACT
3D GOES HIGH DEFINITION IN HIGH SPEED

HIGH SPEED 3D SCANNING
FOR FASTER PRODUCTION LINES & THROUGHPUT

ULTRA-HIGH RESOLUTION
RESOLVE EXTREMELY FINE FEATURES

SUPERIOR 3D IMAGE QUALITY
BEST REPEATABILITY UNDER CHALLENGING CONDITIONS

MODEL

ECCO 95.010

ECCO 95.020

ECCO 95.040

ECCO 95.100

ECCO 95.200

Typical field of view ¹ near mid far	10.5 11 11.5 mm	22 25 28 mm	34 36 38 mm	72 98 124 mm	125 190 250 mm
Measurement range ¹	5 mm	20 mm	16 mm	100 mm	250 mm
Stand-off distance	23.5 mm	60 mm	60 mm	150 mm	325 mm
Typical vertical resolution (Z) ¹	0.37 – 0.45 µm	1.1 – 1.6 µm	1.4 – 1.8 µm	5 – 12 µm	12 – 50 µm
Typical lateral resolution (Y) ¹	5.8 – 6.8 µm	11.5 – 14.5 µm	18 – 20 µm	42 – 70 µm	66 – 138 µm
Z-Linearity ^{2, 5}	0.015%	0.005%	0.006%	0.002%	0.015%
Z-Repeatability ^{4, 5}	0.1 µm	0.2 µm	0.4 µm	2 µm	3.3 µm
Laser wavelength	450 nm for ECCO 95.010/020/040/100 660 nm for ECCO 95.200				
Weight	Approx. 650 g	Approx. 650 g	Approx. 490 g	Approx. 490 g	Approx. 490 g
Part number	3.002.152 (laser class 2M) 3.004.152 (laser class 3R) 3.003.152 (laser class 3B)	3.002.151 (laser class 2M) 3.004.151 (laser class 3R) 3.003.151 (laser class 3B)	3.002.153 (laser class 2M) 3.004.153 (laser class 3R) 3.003.153 (laser class 3B)	3.002.150 (laser class 2M) 3.004.150 (laser class 3R) 3.003.150 (laser class 3B)	3.006.154 (laser class 2M) 3.008.154 (laser class 3R) 3.007.154 (laser class 3B)

Maximum points / 3D profile	1920
Typical scan rate ³	Approx. from 1 kHz up to 10 kHz (with full FOV)
Typical 3D point rate ³	Approx. from 0.7 up to 15 million points/sec
Interface	Gigabit Ethernet (1 Gbit/sec)
Inputs	2 x Inputs, 5 - 24 VDC Quadrature Encoder (AB-Channel, RS-422 standard)
Outputs	2 x Outputs, 24 VDC (max. 20 mA)
Trigger	START Trigger support on Input 1-2 DATA Trigger support on Quadrature Encoder Input (Max. DATA trigger rate: 1 MHz) DATA Trigger support on Input 2 (Max. DATA trigger rate: 10 kHz)
Input voltage Power	24 VDC, ± 15% ripple 8.5 W
Laser class standard optional	2M 3R/3B
Maximum ambient light	10,000 lx
EMC test	as per EN 61 000-6-2, EN 61 000-6-4
EMC test	as per EN 60 068-2-6, -27, -29, -64
Electrical safety	as per EN 61 010-1-3
Protection class	III, as per EN 61 040-3
Enclosure rating	IP65
Air humidity	Maximum 90%, non-condensing
Temperature operation storage	0 - 40 °C -20 - 70 °C
Compatible accessories	Power-I/O-Encoder cable: 6.320.OXX Ethernet cable: 6.303.OXX

¹ Typical values can vary up to 5% due to optical tolerances

² Z-Linearity calculated as a variation of "bias" (reference value vs. measured value) over the measurement range

³ Scan rate & point rate are dependent on the configured field of view, measurement range and exposure time. A 'scan' by definition considers maximum points/3D profile i.e. full FOV

The typical scan/point rate range has been estimated considering an exposure time of 1 µsec, min-max MR and full FOV. The typical scan rate can be further boosted by windowing the FOV

⁴ Experimentally assessed by scanning a fixed measurement target 4100 times successively within short time interval. No post-processing filters applied

⁵ Measurements performed on a SmartRay standard artifact which is an aluminium flat matt surface painted matte white

