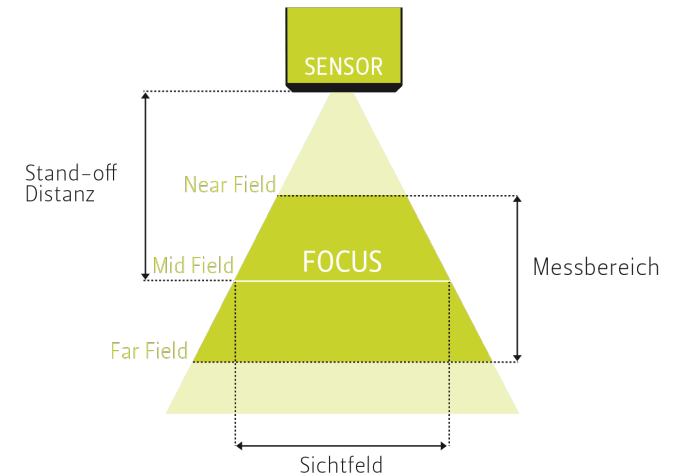


ECCO 95.010+

[ECCO 95.020+](#) / [ECCO 95.040+](#) / [ECCO 95.100+](#) / [ECCO 95.200+](#) / [ALLE SENSOREN](#)

Typical field of view (near mid far) ¹	10.5 11 11.5 mm
Measurement range ¹	5 mm
Stand-off distance	25 mm
Typical vertical resolution (Z) ¹	0.37 – 0.45 µm
Typical lateral resolution (Y) ¹	5.8 – 6.8 µm
Z-Linearity ^{2,5}	0.015%
Z-Repeatability ^{4,5}	0.1 µm
Weight	Approx. 550 g
Part number	3.001.202 (2) 3.004.202 (3R)
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	The following triggers are supported: 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, $\pm 15\%$ 7.5 W
Laser wavelength	450 nm
Laser class (standard optional)	2 3R
Maximum ambient light	10,000 lx
EMC test	as per EN 61 000-6-2, EN 61 000-6-4, EN 61326-1:2013-07
Electrical safety	as per EN 61 010-1-3
Protection class	III, as per EN 61 040-3
Laser safety Inputs	24 VDC 0V
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: 6.320.0XX Ethernet cable: 6.303.0XX

(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 μ sec, min-max MR and full FOV. The typical scan rate can be further boosted by windowing the FOV

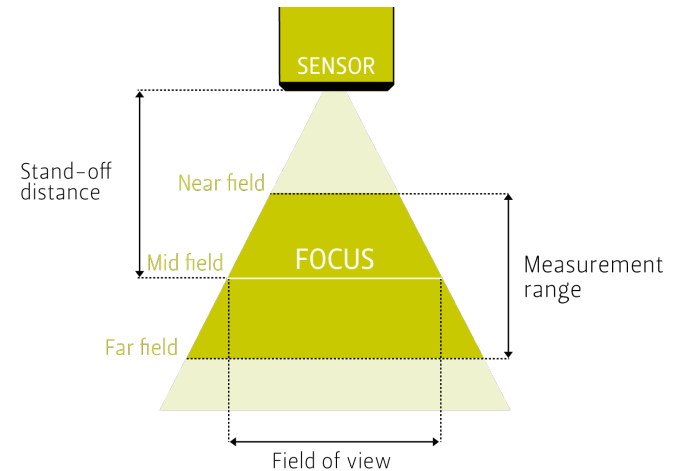
(4) Experimentally assessed by scanning a fixed measurement target 4100 times successively within short time interval. No post-processing filters applied

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

ECCO 95.020+

[ECCO 95.010+](#) / [ECCO 95.040+](#) / [ECCO 95.100+](#) / [ECCO 95.200+](#) / [TO ALL SENSORS](#)

Typical field of view (near mid far) ¹	22 25 28 mm
Measurement range ¹	16 mm
Stand-off distance	63 mm
Typical vertical resolution (Z) ¹	1.1 – 1.6 µm
Typical lateral resolution (Y) ¹	11.5 – 14.5 µm
Z-Linearity ^{2,5}	0.005%
Z-Repeatability ^{4,5}	0.2 µm
Weight	Approx. 550 g
Part number	3.001.201 (2) 3.004.201 (3R)
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	The following triggers are supported: 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, $\pm 15\%$ 7.5 W
Laser wavelength	450 nm
Laser class (standard optional)	2 3R
Maximum ambient light	10,000 lx
EMC test	as per EN 61 000-6-2, EN 61 000-6-4, EN 61326-1:2013-07
Electrical safety	as per EN 61 010-1-3
Protection class	III, as per EN 61 040-3
Laser safety Inputs	24 VDC 0V
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: 6.320.0XX Ethernet cable: 6.303.0XX

(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 μ sec, min-max MR and full FOV. The typical scan rate can be further boosted by windowing the FOV

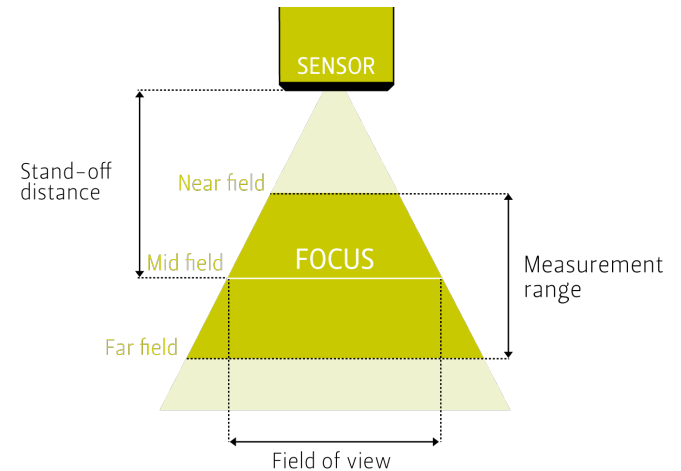
(4) Experimentally assessed by scanning a fixed measurement target 4100 times successively within short time interval. No post-processing filters applied

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

ECCO 95.040+

[ECCO 95.010+](#) / [ECCO 95.020+](#) / [ECCO 95.100+](#) / [ECCO 95.200+](#) / [TO ALL SENSORS](#)

Typical field of view (near mid far) ¹	34 36 38 mm
Measurement range ¹	16 mm
Stand-off distance	55 mm
Typical vertical resolution (Z) ¹	1.4 – 1.8 µm
Typical lateral resolution (Y) ¹	18 – 20 µm
Z-Linearity ^{2,5}	0.006 %
Z-Repeatability ^{4,5}	0.4 µm
Weight	Approx. 550 g
Part number	3.001.203 (2) 3.004.203 (3R)
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	The following triggers are supported: 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, $\pm 15\%$ 7.5 W
Laser wavelength	450 nm
Laser class (standard optional)	2 3R
Maximum ambient light	10,000 lx
EMC test	as per EN 61 000-6-2, EN 61 000-6-4, EN 61326-1:2013-07
Electrical safety	as per EN 61 010-1-3
Protection class	III, as per EN 61 040-3
Laser safety Inputs	24 VDC 0V
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: 6.320.0XX Ethernet cable: 6.303.0XX

(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 μ sec, min-max MR and full FOV. The typical scan rate can be further boosted by windowing the FOV

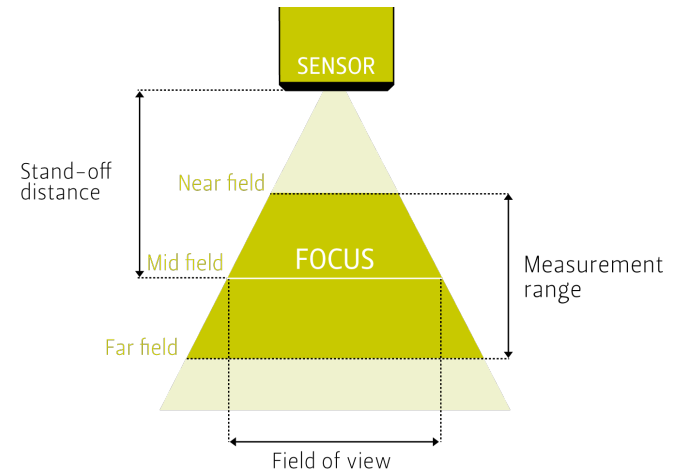
(4) Experimentally assessed by scanning a fixed measurement target 4100 times successively within short time interval. No post-processing filters applied

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

ECCO 95.100+

[ECCO 95.010+](#) / [ECCO 95.020+](#) / [ECCO 95.040+](#) / [ECCO 95.200+](#) / [TO ALL SENSORS](#)

Typical field of view (near mid far) ¹	72 98 124 mm
Measurement range ¹	100 mm
Stand-off distance	145 mm
Typical vertical resolution (Z) ¹	5 – 12 µm
Typical lateral resolution (Y) ¹	42 – 70 µm
Z-Linearity ^{2,5}	0.002%
Z-Repeatability ^{4,5}	2 µm
Weight	Approx. 550 g
Part number	3.001.200 (2) 3.004.200 (3R)
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	The following triggers are supported: 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, $\pm 15\%$ 7.5 W
Laser wavelength	450 nm
Laser class (standard optional)	2 3R
Maximum ambient light	10,000 lx
EMC test	as per EN 61 000-6-2, EN 61 000-6-4, EN 61326-1:2013-07
Electrical safety	as per EN 61 010-1-3
Protection class	III, as per EN 61 040-3
Laser safety Inputs	24 VDC 0V
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: 6.320.0XX Ethernet cable: 6.303.0XX

(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 μ sec, 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

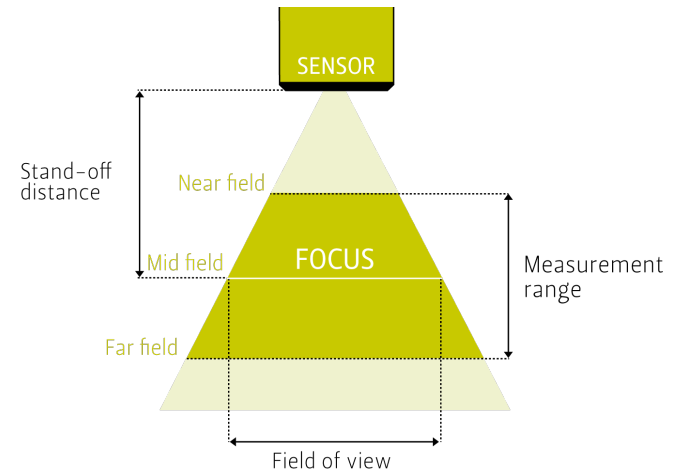
(5) Measurements performed on a SmartRay standard artifact which is an aluminium flat matt surface painted matte white

ECCO 95.200+

[ECCO 95.010+](#) / [ECCO 95.020+](#) / [ECCO 95.040+](#) / [ECCO 95.100+](#) / [TO ALL SENSORS](#)

Typical field of view (near mid far) ¹	125 190 280mm
Measurement range ¹	300 mm (-125 mm, +175 mm)
Stand-off distance	320 mm
Typical vertical resolution (Z) ¹	12 – 50µm
Typical lateral resolution (Y) ¹	66 – 138µm
Z-Linearity ^{2,5}	0.015%
Z-Repeatability ^{4,5}	3.3 µm
Weight	Approx. 550 g
Part number	3.005.204 (2) 3.008.204 (3R)

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)
	The following triggers are supported:
	START Trigger support on Input 1 – 2
Trigger	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, $\pm 15\%$ 7.5 W
Laser wavelength	660nm red laser
Laser class (standard optional)	2 3R
Maximum ambient light	10,000 lx
EMC test	as per EN 61 000-6-2, EN 61 000-6-4, EN 61326-1:2013-07
Electrical safety	as per EN 61 010-1-3
Protection class	III, as per EN 61 040-3
Laser safety Inputs	24 VDC 0V
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: 6.320.0XX Ethernet cable: 6.303.0XX

(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 μ sec, 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