Specifications $O^{2D}S$ Z-Line Scanner series

HT / High target temperature (1000ºC) versions and VHT (1300ºC) as well as VVHT (1500 up to 2200ºC) are also available.

Models :	**$O^{2D}S$ 250**	**$O^{2D}S$ 325**	**$O^{2D}S$ 500**	**$O^{2D}S$ 750**	**$O^{2D}S$ 505**	**$O^{2D}S$ 1155**	**$O^{2D}S$ 1350**	**$O^{2D}S$ 1950**
Measurement data:								
Radial distance from mirror axis	200-300 mm	200-450 mm	250-750 mm	400-1100 mm	450-550 mm	1000-1300 mm	700-2000 mm	1500-2400 mm
Minimum 10º scan arch	± 5º	± 5º	± 5º	± 5º	± 5º	± 5º	± 5º	± 5º
Depth of Field (X)	98 mm	248 mm	497 mm	695 mm	98 mm	295 mm	1292 mm	890 mm
Field of View close end (Y)	35 mm	35 mm	43 mm	70 mm	79 mm	175 mm	123 mm	262 mm
Field of View far end (Y)	52 mm	78 mm	130 mm	191 mm	95 mm	226 mm	348 mm	418 mm
Maximum 50º scan arch	± 25º	± 25º	± 25º	± 25º	± 25º	± 25º	± 25º	± 25º
Depth of Field (X)	72 mm	207 mm	429 mm	597 mm	48 mm	178 mm	1113 mm	675 mm
Field of View close end (Y)	186 mm	186 mm	232 mm	372 mm	419 mm	932 mm	652 mm	1398 mm
Field of View far end (Y)	253 mm	379 mm	633 mm	928 mm	464 mm	1098 mm	1688 mm	2028 mm
Radial / Polar Resolution	0.03 mm	0.05 mm	0.2 mm	0.3 mm	0.05 mm	0.2 mm	0.8 mm	0.7 mm
Radial / Polar Reproducibility	± 0.03 mm	± 0.05 mm	± 0.2 mm	± 0.3 mm	± 0.05 mm	± 0.2 mm	± 0.8 mm	± 0.7 mm
Radial / Polar Linearity	± 0.10 mm	± 0.20 mm	± 0.4 mm	± 0.5 mm	± 0.10 mm	± 0.5 mm	± 1.6 mm	± 1.4 mm
Size of spot	Ø 0.5 mm	Ø 0.5 mm	Ø 1 mm	Ø 1.5 mm	Ø 1 mm	Ø 1 mm	Ø 1.5 mm	Ø 1.5 mm
Laser protection class: 2 kHz / 6 kHz	IEC 2 / IEC 2	IEC 2 / IEC 3R	IEC 2 / IEC 3R	IEC 2 / IEC 3R	IEC 2 / IEC 3R	IEC 3R / IEC 3B	IEC 3R / IEC 3B	IEC 3R / IEC 3B

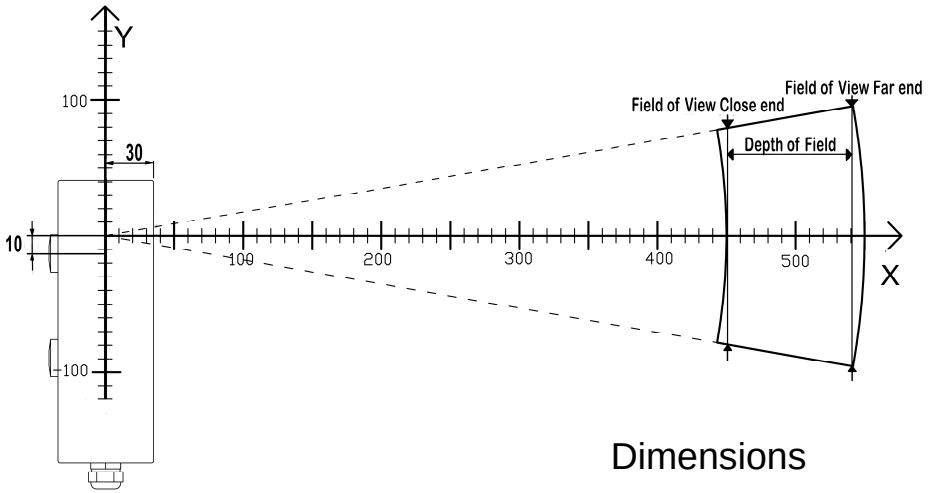
**) Static measurement on white paper without any averaging of the output signals, sampling and output frequency being equal.*

Common Measurement data:	
Updating frequency	2000 Hz or 6000 Hz
Scan rate (from one side to the other for 2 kHz model)	600 or 300 scans/min.
Angular resolution at Minimum 10º scan arch (2 kHz)	< 0.08º or < 0.04º
Angular resolution at Maximum 50º scan arch (2 kHz)	< 0.4º or < 0.2º
Scan rate (from one side to the other for 6 kHz model)	1800, 900 or 450 scans/min.
Angular resolution at Minimum 10º scan arch (6 kHz)	< 0.08º < 0.04º or < 0.02º
Angular resolution at Maximum 50º scan arch (6 kHz)	< 0.4º < 0.2º or < 0.1º
Temperature deviation	± 0.03% FS/C°
Light source red or blue diode (nm)	Laser (650 or 405)
Electrical data:	
Serial output : 2 kHz / 6 kHz	RS232 **or** RS422 **or** Ethernet
Baud rate : 2 kHz / 6 kHz	115200 / 230400
Supply voltage	22 - 28 VDC
Power consumption	max 12 W

Environment data:	
Operating temperature	0 - +45 C°
Storage temperature	-20 - +70 C°
Humidity non condensing	Max 90 % RH
Degree of protection	IEC IP65
Operating temperature	0 - +45 C°
Physical data:	
Dimensions	310 x 190 x 64 mm
Weight excl. Cable	4.5 kg
Cable length	2.5 m
Housing	Aluminum & Glass windows

General Description

The O2DS Z scanner is an optical measuring device for non-contact precision measurement in two dimensions. The measurement is performed by oscillating the triangulation plane over X° up to 5 0°. A fine collimated or focused laser beam is diffusely reflected from the surface of almost any kind of material or fluid, and a CCD- camera records the image through an objective. This makes it possible for a Digital Signal Processor to calculate the (radial) distance from the centre of the mirror axis to the object surface, as well as keeping track of the angular reference position.
The O2DS measuring system is a compact unit where optics, CCD-camera, and digital signal processing electronics all are integrated in the sensor housing. The schematic drawing to the right shows the scanner seen from the side. It is here indicated, with this orientation of the scanner, how the triangulation plane can sweep from minus 25° below the horizontal plane to plus 25° above the horizontal plane. The measured distance data is available with a measuring frequency of 2 or 6 kHz as a digital signal for an application running under Windows and using the O2DS driver DLL.
The scanner is delivered with CD's containing the mentioned DLL and a Windows test/demo program. The PC application program receives output data from the scanner over the RS422/RS232 serial interface and a COM port via the DLL. The software either converts polar coordinates of a measurement point to orthogonal X, Y-coordinates or presents a profile (table of X, Y-values) for each sweep from one side to the other. Within the application program the user can specify the seize of the Y-increment and thus the length of the output table containing the profile data. Standard Models of the O2DS scanner can be delivered in 8 different measuring ranges, and each in two versions with different measuring angles, either 10° or 50° and then in 2 or



3 scan rates giving high or low angular resolution, and can furthermore be customized to other than standard scan angels and measuring ranges.

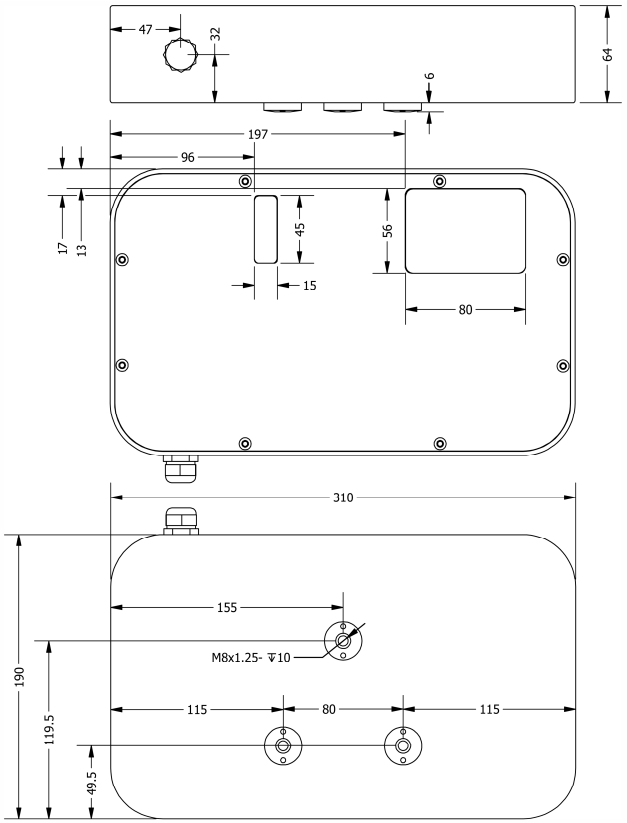
Multi O2DS applications

The O2DS scanners are also available in a synchronized version, where the units are programmed to operate as either a SLAVE unit or as a MASTER unit controlling one or more SLAVE units.

High Target Temperature

The O2DS scanners are also available in high target temperature and high Laser light intensity versions named HT, VHT and VVHT. The HT version is made for surface temperatures up to 1000ºC. The VHT can handle surface temperatures up to 1300ºC. The VVHT, using a **BLUE** laser diode, brings target temperature up to as high as 2.200ºC.

Dimensions



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