

Technical Data

The imaging 3D laser measurement systems are applicable in the fields of digital planning of factories, industrial plants, architecture, protection of historic monuments, landscape and virtual reality. They are based upon the Z+F spot Laser Measurement System LARA.



Lasersystem			
Laser safety class	3R (ISO EN 60825-1)		
Beam divergence	0.22 mrad		
Beam diameter	3 mm circular (1 m distance)		
Ambiguity interval	79 m		
Min. range	0.4 m		
Resolution range	0.1 mm		
Data aquisition rate	≤ 1,016,027 pixel/sec		
Linearity error up to 50 m [1]	≤ 1 mm		
Range noise	black 10 %	grey 20 %	white 100 %
Range noise, 10 m [1 2]	1.2 mm rms	0.7 mm rms	0.4 mm rms
Range noise, 25 m [1 2]	2.6 mm rms	1.5 mm rms	0.7 mm rms
Range noise, 50 m [1 2]	6.8 mm rms	3.5 mm rms	1.8 mm rms
Temperature drift (-10°C to -45°C)	negligible due to internal reference		



Deflection Unit	
System vertical	rotating mirror
System horizontal	rotating device
Field of view vertical	310°
Field of view horizontal	360°
Resolution vertical	0.0018°
Resolution horizontal	0.0018°
Accuracy vertical [1]	0.007° rms
Accuracy horizontal [1]	0.007° rms
Scanning speed	≤ 50 r/s (3,000 r/min) max.

Resolution		Scanning time		
Resolutions	Pixel/360° horizontal & vertical	low quality 50 rps	normal quality 25 rps	high quality [5] 12,5 rps
„preview“ [3]	1,250	13 sec.	25 sec.	50 sec.
„middle“	5,000	50 sec.	1:40 min.	3:20 min.
„high“	10,000	1:41 min.	3:22 min.	6:44 min.
„super high“	20,000	3:22 min.	6:44 min.	13:28 min.
„ultra high“ [4]	40.000	-	13:38 min.	26:36 min.

Z+F IMAGER® 5006h

General	
Tilt measurement	Resolution: 1/1,000° Accuracy (zero point): 1/500°
Communication	Ethernet/W-LAN
Data storage	internal HDD (60 GB)
Integrated operation panel	> Keypad: 6 Buttons ; > Display: 4 Lines
Data interface	Ethernet/USB 2.0

Power supply	
Input voltage	24V DC (scanner)/90-260V AC (power unit)
Power consumption	65 W max.
Battery life time	2.5 h typ. (changeable battery pack) 4 h (external battery (TRAPP-15-24)

Ambient conditions	
Calibrated temperature	-10 °C to +45 °C
Storage temperature	-20 °C to 50 °C
Illumination	all conditions from darkness to daylight
Humidity; Dust/air humidity	non-condensing
Target reflectivity	no retro-reflectors

Dimensions and weights	
Scanner: (w x d x h) Weight	286 x 190 x 412 mm 14 kg
Bottom of scanner to horizontal axis	242 mm
Tripod: Height Diameter Weight	 approx. 800 - 1,400 mm approx. 1,200 mm 9 kg





1. detailed explanation on request – please contact info@zf-laser.com
2. data-rate of 127 000 pxl / sec., 1 sigma range noise, unfiltered raw data, in high power mode
3. not recommended for exact measurements, should only be used as an overview
4. only recommended for selection scans, as the data will be too large for further post processing. Resolution of 100,000 pxl/360° for selections
5. Doubling ("less qualitiy") and halving ("high qualitiy") of the data rate (pixels / sec), increases the range noise on each pixel theoretically by 40% ("less quality") or decreased it by 40% ("high quality") in comparison the "normal qualitiy". Related to the roughness of the measured surface, the difference in reality can be less, especially when scanning objects with bright surfaces in short distances, e.g. indoor.

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