



Technical data IMAGER



IMAGER 5003



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 spot Z+F Laser Measurement System LARA and can be fitted alternatively for two distance ranges:

<i>Laser measurement system</i>	<i>LARA 25200</i>	<i>LARA 53500</i>
Ambiguity interval:	25.2 m	53.5 m
Min. range:	1.0 m	1.0 m
Resolution Range:	16 Bit 1.0 mm/lb	16 Bit 1.0 mm/lb
Data acquisition rate:	625,000 px/sec.	500,000 px/sec.
Typical data acquisition rate:	125,000 px/sec.	125,000 px/sec.
Linearity error: ¹⁾	≤ 3 mm	≤ 5 mm
Range noise at 10 m: ^{1) 2)}		
> Reflectivity 20% (dark grey):	1.6 mm rms	3.0 mm rms
> Reflectivity 100% (white):	0.9 mm rms	1.3 mm rms
Range noise at 25 m: ^{1) 2)}		
> Reflectivity 20% (dark grey):	4.5 mm rms	9.0 mm rms
> Reflectivity 100% (white):	1.6 mm rms	3.0 mm rms
Range drift over temp. (0–40 °C):	negligible due to internal reference	
<i>Optical transceiver</i>		
Laser output power (CW):	23 mW (red)	
Beam divergence:	0.22 mrad	
Beam diameter at 1 m distance:	3 mm circular	
Laser safety class:	3R (DIN EN 60825-1)	
<i>Deflection unit</i>		
Field of view vertical:	310°	
Field of view horizontal:	360°	
Resolution vertical:	0.018°	
Resolution horizontal:	0.01°	
Accuracy vertical: ¹⁾	0.02° rms	
Accuracy horizontal: ¹⁾	0.02° rms	
Max. scanning speed vertical:	2,000 rpm	
Typ. scanning speed vertical: ²⁾	1,500 rpm	
Max. no. of pixels vertical:	20,000 360°	
Max. no. of pixels horizontal:	20,000 360°	
Scanning time: (image field of view total at middle resolution): ²⁾	100 sec.	
<i>Miscellaneous</i>		
Data interface:		
> Max. output data rate:	5 MB/sec.	
> Host interface:	IEEE1394 ("Firewire"/"I-Link")	
Power supply:		
> Input voltage:	24V DC (scanner) 90–260V AC (power unit)	
> Power consumption (total):	50–70 W	
Ambient conditions:		
> Calibrated temperature range:	0–40 °C	
> Humidity:	non-condensing	
> Target reflectivity:	no retro-reflectors	
> Illumination:	all conditions from darkness to daylight	
<i>Dimensions and weights</i>		
Scanner (w x d x h):	30 x 18 x 50 cm	16 kg
Tripod:		
> Height:	approx. 80–140 cm	
> Diameter:	approx. 120 cm	

¹⁾ detailed explanation on demand – please contact info@zf-laser.com

²⁾ data acquisition rate: 125,000 px/sec.



Range of Z+F services



Z+F Measurement Systems

Localized Systems LARA (1D):	<ul style="list-style-type: none"> > Z+F 2D and 3D measurement systems are based upon the LARA 1D laser system > Application: Operational area: long-term measurement
Profile Systems PROFILER (2D):	<ul style="list-style-type: none"> > LARA with 1D deflection of the laser beam > Applications: landscape and infrastructure (examples of use: surveying of railways, tunnels, streets etc.) > The scanner will be installed on a carrier (train, vehicle etc.) and scans in 2D whilst moving in the 3rd dimension
Imaging Systems IMAGER (3D):	<ul style="list-style-type: none"> > LARA with 2D deflection of the laser beam > Applications: digital factory planning (e.g. automotive), plant revamp (e.g. process industry), architecture, cultural heritage, virtual reality
Product advantages:	<ul style="list-style-type: none"> > High resolution (different resolution levels possible) > Large scanning distance of up to 53.5 m (radius) > All around scanning with a max. field of view of 360° horizontal by 310° vertical (focus on smaller field of view also possible) > High scanning speed (approx. 2 min. for complete scan) > Easy data processing and handling with the included software > High voltage (120 V / 230 V) or battery operation (24 V) > Interface IEEE 1394 ("Firewire"/"I-Link") enables data interchange with a conventional industrial laptop > High mobility due to low weight and compact construction
Full service:	<ul style="list-style-type: none"> > Sale of complete systems > Sale of hardware and software separately > Hardware and software development contracts for clients > Joint development software programmes > Full support for product sales > Provision of laser scanning and modelling services

Z+F Group

Headquarters:	<p>Zoller+Fröhlich GmbH Simoniusstr. 22 · D-88239 Wangen i.A. Phone: +49-7522-9308-0 · Fax: +49-7522-9308-52 info@zf-laser.com · www.zf-laser.com</p>
GB:	<p>Z+F UK Ltd. Derwent House · Unit 9, Clarence Ave. · Trafford Park · GB-Manchester M17 1QS Phone: +44-161-869-0450 · Fax: +44-161-869-0451 info@zf-uk.com · www.zf-uk.com</p>
USA:	<p>Z+F USA, Inc. 1 Library Place, Suite 203 · USA-Duquesne, PA 15110 Phone: +1-412-469-9210 · Fax: +1-412-469-9211 info@zf-usa.com · www.zf-usa.com</p>