



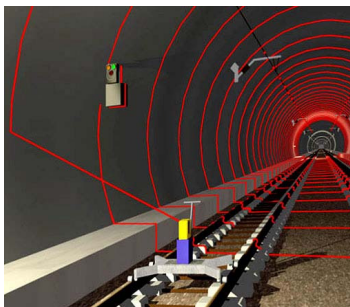
# Technical data PROFILER



PROFILER 5002



PROFILER 6000-300



The profiling Z+F 2D laser measurement systems are applicable in the fields of infrastructure and landscape (surveying of railways, tunnels, streets etc.). 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 16 Bit Range:		1.0 mm/lb	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: <sup>1)</sup>		≤ 3 mm	≤ 5 mm
Range noise at 10 m: <sup>1) 2)</sup>			
> Reflectivity 20% (dark grey):		≤ 1.6 mm rms	≤ 2.4 mm rms
> Reflectivity 100% (white):		≤ 1.0 mm rms	≤ 1.5 mm rms
Range noise at 25 m: <sup>1) 2)</sup>			
> Reflectivity 20% (dark grey):		≤ 4.4 mm rms	≤ 6.5 mm rms
> Reflectivity 100% (white):		≤ 1.8 mm rms	≤ 2.7 mm rms
Range drift over temp. (0–40 °C): <sup>1) 3)</sup>		≤ 1 mm	≤ 2 mm
<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>		<i>PROFILER 5002</i>	<i>PROFILER 6000-300</i>
Field of view vertical:		310°	360°
Resolution vertical:		0.018°	0.18°
Accuracy vertical: <sup>1)</sup>		+/- 0.02° rms	+/- 0.18° rms
Max. scanning speed vertical:		1,980 rpm	18,000 rpm
Scanning time:		0.033 sec./profile	0.0033 sec./profile
<i>Miscellaneous</i>			
Data interface:		5 MB/sec.	
> Max. output data rate:		IEEE1394 ("Firewire"/"I-Link")	
> Host interface:			
Power supply:		24V DC (scanner)   90–260V AC (power unit)	
> Input voltage:			
> Power consumption (total):		50–70 W	up to 2 kW
Ambient conditions:		0–40 °C	
> Calibrated temperature range:		non-condensing	
> Humidity:		no retro-reflectors	
> Target reflectivity:		all conditions from darkness to daylight	
> Illumination:			
<i>System overview</i>			
Application:		<ul style="list-style-type: none"> <li>&gt; Detailed surveying of road, track and equipment etc.</li> <li>&gt; Surveying of complete networks, especially railway networks</li> </ul>	
System description:		Portable Instrument, approx. 30 x 18 x 35 cm (w x d x h), 13 kg	3 single scanners and a computer network, integrated in carrier vehicle, approx. 3 x 35 kg
No. (n) of profiles (rotations) per sec.:		n ≤ 30	n ≤ 3 x 300
No. (p) of pixels per 360° profile:		p = 625,000 / n	
		p ≤ 20,000	p ≤ 10,000
Lateral distance of profiles (Helix):		s = v / n (v = speed of carrier vehicle in m/s)	
Scanning window		310° vertical	360° vertical
Storing files and data		Laptop, file size depending of number of points per profile	Industrial network of PCs, data volume approx. 45 GB per hour

<sup>1)</sup> detailed explanation on demand – please contact [info@zf-laser.com](mailto:info@zf-laser.com)

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

<sup>3)</sup> negligible for PROFILER 5002 due to internal reference



## Range of Z+F services



### Z+F Measurement Systems

Localized Systems LARA (1D):	<ul style="list-style-type: none"> <li>&gt; Z+F 2D and 3D measurement systems are based upon the LARA 1D laser system</li> <li>&gt; Application: Operational area: long-term measurement</li> </ul>
Profile Systems PROFILER (2D):	<ul style="list-style-type: none"> <li>&gt; LARA with 1D deflection of the laser beam</li> <li>&gt; Applications: landscape and infrastructure (examples of use: surveying of railways, tunnels, streets etc.)</li> <li>&gt; The scanner will be installed on a carrier (train, vehicle etc.) and scans in 2D whilst moving in the 3<sup>rd</sup> dimension</li> </ul>
Imaging Systems IMAGER (3D):	<ul style="list-style-type: none"> <li>&gt; LARA with 2D deflection of the laser beam</li> <li>&gt; Applications: digital factory planning (e.g. automotive), plant revamp (e.g. process industry), architecture, cultural heritage, virtual reality</li> </ul>
Product advantages:	<ul style="list-style-type: none"> <li>&gt; High resolution (different resolution levels possible)</li> <li>&gt; Large scanning distance of up to 53.5 m (radius)</li> <li>&gt; All around scanning with a max. field of view of 360° horizontal by 310° vertical (focus on smaller field of view also possible)</li> <li>&gt; High scanning speed (approx. 2 min. for complete scan)</li> <li>&gt; Easy data processing and handling with the included software</li> <li>&gt; High voltage (120 V / 230 V) or battery operation (24 V)</li> <li>&gt; Interface IEEE 1394 ("Firewire"/"I-Link") enables data interchange with a conventional industrial laptop</li> <li>&gt; High mobility due to low weight and compact construction</li> </ul>
Full service:	<ul style="list-style-type: none"> <li>&gt; Sale of complete systems</li> <li>&gt; Sale of hardware and software separately</li> <li>&gt; Hardware and software development contracts for clients</li> <li>&gt; Joint development software programmes</li> <li>&gt; Full support for product sales</li> <li>&gt; Provision of laser scanning and modelling services</li> </ul>
<b>Z+F Group</b>	
Headquarters:	<p>Zoller+Fröhlich GmbH          Simoniusstr. 22 · D-88239 Wangen i.A.          Phone: +49-7522-9308-0 · Fax: +49-7522-9308-52  <a href="mailto:info@zf-laser.com">info@zf-laser.com</a> · <a href="http://www.zf-laser.com">www.zf-laser.com</a></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  <a href="mailto:info@zf-uk.com">info@zf-uk.com</a> · <a href="http://www.zf-uk.com">www.zf-uk.com</a></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  <a href="mailto:info@zf-usa.com">info@zf-usa.com</a> · <a href="http://www.zf-usa.com">www.zf-usa.com</a></p>