



LASER SCANNER LS 840/LS 880

The high performance of the FARO Laser Scanner LS can be used with minimal training to capture 3-D point cloud data. Whether documenting a 50,000 square foot building or accurately capturing the scene of a crime, the possible applications are almost unlimited. The FARO Laser Scanner LS produces three dimensional black and white images where every pixel has an X, Y, Z coordinate. For enhanced realism, color can be added to the pixels. Measurements can be made directly in the point cloud and 3-D objects can be generated. These can be used to create dimensionally accurate CAD models.

- Ideal for large-volume scanning
- Scans up to 120,000 points/sec.
- ±3mm linear accuracy
- Up to 100 times faster than time-of-flight scanners

Most Common Applications

Product Design/Compare, Architecture & Civil Engineering:

As-Built Documentation, Dimensional Calculations

Petrochemical, Power Plant, Process Industry:

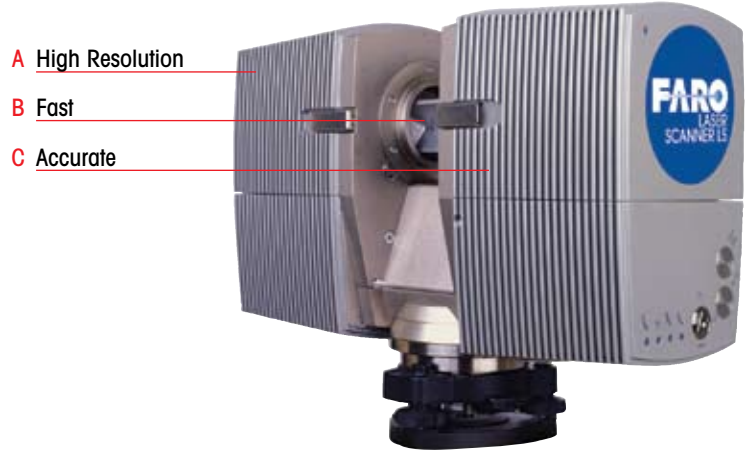
Reverse Engineering, As-Built Documentation

Forensics:

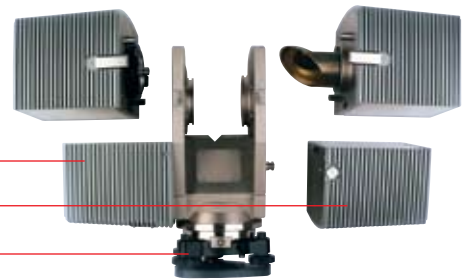
Blood Spatter Analysis, Bullet Trajectory

Heritage:

Colored Orthophoto, Fly-Through



- A **High Resolution**
- B **Fast**
- C **Accurate**



- D **Surrounding Field-of-View**
- E **Independent**
- F **Universal Quick-Mount**

- A A scan has typically 28 million 3-D pixels
- B Up to 120,000 3-D measurements per second
- C ±3 mm linear accuracy at 25 m
- D 360° horizontal and 320° vertical
- E Data recording on internal hard disk
- F For mounting on a surveyor tripod

Ranging Unit

Range	0.6m-40m ¹⁾ (LS840) / 0.6m-76m ¹⁾ (LS880)
Resolution	0.6mm - 17 Bit Range / 9 Bit Intensity
Measurement Speed	120,000 Hz
Syst. Distance Error¹⁾	±3 mm at 25 m
Repeatability (LS 840/10 mW)^{1,2)} <i>(filtered/raw data)</i>	@10m: 0.8/3.1mm rms @ 90% refl./1.7/6.8mm rms @ 10% refl. @25 m: 1.4/5.4 mm rms @ 90 % refl. 3.4/13.6 mm rms @ 10% refl.
Repeatability (LS 880/20 mW)^{1,2)} <i>(filtered/raw data)</i>	@10 m: 0.7/2.6 mm rms @ 90 % refl. 1.3/5.2 mm rms @ 10% refl. @25 m: 1.1/4.2 mm rms @ 90 % refl. 2.5/10 mm rms @ 10% refl.

Deflection Unit

Vertical Field of View	320°
Horizontal Field of View	360°
Vertical Resolution	0.009° (40,000 3D-Pixel on 360°)
Horizontal Resolution	0.00076° (470,000 3D-Pixel on 360°)
Angular Resolution (hor./vert.)	±0.009°
Max. vertical scanning speed	1,800 rpm
Scanning Time	at 7 mio. points 67 sec.

Laser (Optical Transmitter)

Laserpower (CW average)	(LS 840) 10 mW, (LS 880) 20 mW (Laser Class 3R)
Wavelength	785 nm
Beam Divergence	0.25 mrad (0.014°)
Beam Diameter (at exit)	3 mm, circular

Handling of Data

Internal PC	Pentium III with 700 MHz, 256 MB RAM 40GB HD; Windows® 2000, Windows®XP
Data Storage	local: on internal hard disc drive <i>(for most resolutions)</i> remote: via Ethernet on external PC or laptop
Scanned Control	via Ethernet or WLAN by PC or PDA, on local network or internet

¹⁾ Measured on a non moving orthogonal 90% reflectivity reference paper in averaging mode. More details upon request.

²⁾ Noise compression filter. More details upon request.

ISO/IEC 17025 accredited

General

Power Supply Voltage	24V DC (Battery Pack or AC converter)
Power Consumption	~60 W
Ambient Temperature	5° - 40° C
Humidity	non-condensing
Inclination Sensor	optional (accuracy 0.01°; resolution 0.001°; range ± 15°)
Weight	35lb (14.5 kg)
Size (L*W*H*)	15.7" * 6.3" * 11" (400 mm * 160 mm * 280 mm)
Maintenance Calibration	once a year
Exchange Modules	distance sensor / mirror axis / PC
Georeferencing	yes
Cable Connector	located in the non-rotating foot of the scanner
Control Panel	yes; operation without external PC/Laptop



"With the FARO Laser Scanner LS, we doubled our revenue in one year."
— Matthias Grote, Planungsbuero Berlin



GSA Contract Holder

www.FARO.com
800.736.0234



ACCREDITED
Certificate # L1147