

FARO Laser Scanner LS 840/880



[A] Camera (option)

For realistic colour scans

[B] High Resolution

A scan has typically 28 million 3-D pixels

[C] Fast

Scan speed: 120,000 3-D measurements per second

[D] Accurate

±3 mm systematical distance error at 25 m

[E] Surrounding field of view

360° horizontal and 320° vertical - the largest field of view on the market

[F] Independent

Independent webserver; data recording on internal hard disk - no laptop needed

[G] Universal Quick-Mount

For mounting on a surveyor tripod

Designed for high performance!

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 color images where every pixel has an X, Y, Z coordinate. Measurements can be made immediately after scanning and 3-D objects can be generated to create dimensionally accurate CAD models.

Most Common Applications

Product Design/Compare, Architecture & Civil Engineering:

As-Built Documentation, Dimensional Calculations

Petrochemical, Power Plant, Process Industry:

Reverse Engineering, As-Built Documentation

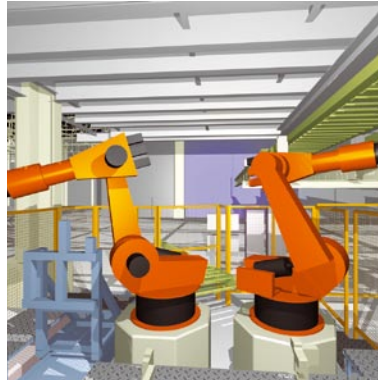
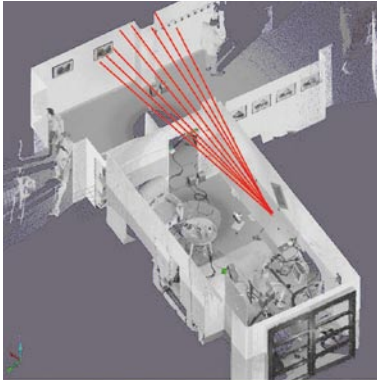
Forensics: Blood Splatter Analysis, Bullet Trajectory

Heritage: Colored Orthophoto, Fly-Through

Features

- ▶ Extreme productivity
- ▶ Scan speed 120,000 points/sec.
- ▶ High accuracy
- ▶ Up to 100 times faster than time-of-flight scanners
- ▶ Automatic high resolution color overlay with color option
- ▶ Modularity

Applications



Specifications

Ranging Unit

Range: 0.6 m - 40 m¹⁾ (LS 840) / 0.6 m - 76 m¹⁾ (LS 880)
Resolution: 0.6 mm - 17 Bit Range
Measurement Speed: 120 000 points/sec.
Syst. Distance Error²⁾: ±3 mm at 25 m
Repeatability (LS 840 / 10 mW)^{2,3)}:
 @10 m: 0.8/3.1 mm rms @ 90 % refl. | 1.7/6.8 mm rms @ 10% refl.
(filtered / raw data):
 @25 m: 1.4/5.4 mm rms @ 90 % refl. | 3.4/13.6 mm rms @ 10% refl.
Repeatability (LS 880 / 20 mW)^{2,3)}:
 @10 m: 0.7/2.6 mm rms @ 90 % refl. | 1.3/5.2 mm rms @ 10% refl.
(filtered / raw data):
 @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°
Scanning Time: at 2 mio. points 20 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
 (for most resolutions)
 remote: via Ethernet on external PC or laptop
Scanner Control: via Ethernet or WLAN by PC or PDA,
 on local network or internet

¹⁾ Depends on ambient light. Full Range is achieved on 90% matte white surfaces at moderate ambient lighting. Bright sunshine will shorten the actual range of the Scanner to lesser distances.

²⁾ Measured on a non moving orthogonal 90% reflectivity reference paper in averaging mode.

³⁾ Noise compression filter.
 More details upon request at info@faro-europe.com
 Subject to change without prior notice.



General

Power Supply Voltage: 24 V DC (Battery Pack or AC converter)
Power Consumption: ~60 W
Ambient Temperature: 5° - 40° C
Humidity: non condensing
Inclination Sensor: optional (accuracy 0.1°; resolution 0.001°; range ± 15°)
Weight: 14.5 kg (35lb)

Size (LxWxH): 400 mm x 160 mm x 280 mm (15.7" x 6.3" x 11")
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

