FARO® Focus^{S} Laser Scanner

The world's most popular terrestrial laser scanner with ultra-high accuracy and ingress protection

Value-Added Laser Scanners for Mid-to-Long Range Applications

Compact, lightweight and intuitive, the FARO® Focus^{S} Laser Scanner is the latest advancement in 3D scanning. The Focus^{S} is available in two versions depending on your scanning range requirement: a long-range version (350m scanning radius) and a mid-range version (150m scanning radius).

The Focus^{S} is the next-generation of laser scanners. It combines the hallmark features of the FARO® Focus^{3D} product line with significant technological innovations such as Ingress Protection Rating (IP54), increased scanning accuracy, an internal accessory bay and a built-in compensation on-site routine.

The Focus^{S} provides users with a truly mobile, intuitive, and reliable laser scanning solution for both indoor and outdoor environments, across a wide range of industries such as Construction BIM-CIM and Public Safety - Forensics.

Accuracy

The Focus^{S} now captures environments with increased accuracy and distance with dual-axis compensator and angular measurement.

Temperature

Extended temperature range allows scanning in challenging environments. The Focus^{S} can operate in temperatures as low as -4°F (-20°C) and up to 131°F (55°C).

On-site Compensation

With the on-site compensation functionality users can verify and adjust the Focus^{S} compensation on-site, ensuring high quality scan data.

IP Rating - Class 54

With the sealed design and certified with the industry standard Ingress Protection (IP) Rating, IP54, the Focus^{S} can be used in high particulate and wet weather conditions.

HDR Photo Overlay

The HDR camera easily captures detailed imagery while providing a natural color overlay to the scan data captured under extreme brightness gradients.

Accessory Bay

The accessory bay allows users to connect additional 3D laser scanning accessories to support a variety of projects.

Benefits

- Scan in challenging environments while providing protection from dust, debris and water splashes
- Be confident in data quality with the on-site compensation functionality
- Close the gap between digital documentation and reality with improved scan data from increased distance and angular accuracy improvements
- Customize the scanner with the internal accessory bay
- Handle the scanner control with ease through its large and luminous touch-screen

Performance Specifications

Ranging Unit

Unambiguity interval: 614m for 122 to 488 kpts/s
307m for 976 kpts/s

Reflectivity	90% (white)	10% (dark-gray)	2% (black)
Range[1] (150 m)	0.6-150 m	0.6-150 m	0.6-50 m
Range[1] (350 m)	0.6-350 m	0.6-150 m	0.6 m-50 m

Ranging Noise[2]	@10m	@10m - noise reduction[3]	@25m	@25m - noise reduction[3]
90% reflectivity	0.3mm	0.15mm	0.3mm	0.15mm
10% reflectivity	0.4mm	0.2mm	0.5mm	0.25mm
2% reflectivity	1.3mm	0.65mm	2mm	1mm

Measurement speed (pts/sec): 122,000 / 244,000 / 488,000 / 976,000
Ranging error[4]: ±1mm
Angular accuracy[5]: 19 arcsec for vertical/horizontal angles
3D position accuracy[6]: 10m: 2mm / 25m: 3.5mm

Color Unit

Resolution: Up to 165 megapixel color
High Dynamic Range (HDR): Exposure Bracketing 2x, 3x, 5x
Parallax: Minimized due to co-axial design

Deflection Unit

Field of view (vertical[7]/horizontal): 300° / 360°
Step size (vertical/horizontal): 0.009° (40,960 3D-Pixel on 360°) / 0.009° (40,960 3D-Pixel on 360°)
Max. vertical scan speed: 97Hz

Laser (Optical Transmitter)

Laser class: Laser class 1
Wavelength: 1550nm
Beam divergence: 0.3mrad (1/e)
Beam diameter at exit:: 2.12mm (1/e)

Data Handling and Control

Data storage: SD™, SDHC™, SDXC™; 32GB card
Scanner control: Via touchscreen display and WLAN connection. Access by mobile devices with HTML5

Interface Connection

WLAN: 802.11n (150Mbit/s), as Access Point or client in existing networks

Integrated Sensors

Dual axis compensator: Performs a leveling of each scan with an accuracy of 19 arcsec valid within ±2°
Height sensor: Via an electronic barometer, the height relative to a fixed point can be detected and added to a scan.
Compass[8]: The electronic compass gives the scan an orientation.
GNSS: Integrated GPS & GLONASS

On-site Compensation

Creates a current quality report and provides the option to improve the device's compensation automatically.

Accessory Bay

The accessory bay is located on top of the laser scanner and is used to connect versatile accessories to the scanner.

[1] For a Lambertian scatterer. [2] Ranging noise is defined as a standard deviation of values about the best-fit plane for measurement speed of 122,000 points/sec. [3] A noise-reduction algorithm may be activated by averaging raw data. [4] Ranging error is defined as a systematic measurement error at around 10m and 25m. [5] On-site compensation required. [6] For distances larger 25m add 0.1mm/m of uncertainty. [7] 2x150°, homogenous point spacing is not guaranteed. [8] Ferromagnetic objects can disturb the earth magnetic field and lead to inaccurate measurements. [9] Low temperature operation: scanner has to be powered on while internal temperature is at or above 15°C, high temperature operation: additional accessory required, further information on request | All accuracy specifications are one sigma, after warm-up and within operating temperature range; unless otherwise noted. Subject to change without prior notice.

General

Power supply voltage: 19V (external supply)
14.4V (internal battery)
Power consumption: 15W idle, 25W scanning, 80W charging
Battery service life: 4.5 hours
Operating temperature: 5° - 40°C
Extended operating temperature[9]: -20° - 55°C
Storage temperature: -10° - 60°C
Ingress Protection: IP54

Humidity: Non-condensing
Weight incl. battery: 4.2kg
Size: 230 x 183 x 103mm
Maintenance / calibration: Annual

For more information,
call 800.736.0234 or visit www.faro.com

CLASS 1 LASER PRODUCT

ISO 9001 BUREAU VERITAS Certification

ANAB ACCREDITED

GSA Contract Holder