FARO

FARO® Focus Laser Scanner

The Most Compact Lightweight and Intuitive Laser Scanner Product Line

Laser Scanners for Short, Medium and Long Range Applications

FARO Focus Laser Scanners are specifically designed for both indoor and outdoor measurements in industries such as Architecture, Engineering, Construction, Public Safety and Forensics or Product Design. All devices capture real world information used in the digital world to analyze, collaborate and execute better decisions to improve and maintain the overall project and product quality.

Easily navigate the scanner controls using the large and luminous touch-screen. All Focus^S and Focus^M scanners are equipped with recognizable features, such as Ingress Protection (IP) Rating, extended temperature range, HDR functionality all in an ultra portable size.

The Laser Scanner Focus^S Series offers more advanced functionality in addition. Besides an increased distance and angular accuracy all Focus^S scanners are equipped with an internal accessory bay and an on-site compensation function quality verification. When utilized with SCENE Software, the Focus^S supports real time, on-site registration which enables 3D scan data to be wirelessly transmitted, processed, aligned and registered directly to an on-site mobile device/PC in real time.

Features

Focus^S Series

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

On-Site Compensation
With the on-site compensation functionality users can verify and adjust the Focus^S compensation immediately before scanning, ensuring high-quality scan data.

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

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

IP Rating - Class 54
With the sealed design and certified with the industry standard Ingress Protection (IP) Rating, IP54, the Focus can be used in high particulate and wet weather conditions.

Compact and Portable
The Focus Laser Scanners measure at 230 x 183 x 103mm and weigh at 4.2kg making them the smallest and most light weight scanners in the market. The devices are equipped with a waterproof transport and ergonomic carrying case for maximum portability.

Benefits

▶ Scan in challenging environments while providing protection from dust, debris and water splashes

▶ The Focus^M 70 delivers full scanning capability with the quickest return on invest in the market

▶ Easily navigate the scanner controls using the large and luminous touch-screen

▶ Maintain familiar workflows through freedom of choice in processing scan data in various software packages

▶ Confidently scan and extract accurate deliverables by using award winning FARO quality

Performance Specifications

Ranging Unit	Focus^S Series S 350 | S 150 | S 70				Focus^M Series			
Ambiguity interval	614m for 122 to 488kpts/s 307m for 976 kpts/s				not specified			
Range[1]								
90% reflectivity (white)	0.6-350m | 0.6-150m | 0.6-70m				0.6 - 70m			
10% reflectivity (dark-gray)	0.6-150m | 0.6-150m | 0.6-70m				0.6 - 70m			
2% reflectivity (black)	0.6- 50m | 0.6- 50m | 0.6-50m				0.6 - 50m			
Ranging noise[2]	@10m	@10m noise reduc-tion[3]	@25m	@25m noise reduc-tion[3]	@10m	@10m noise reduc-tion[3]	@25m	@25m noise reduc-tion[3]
	in mm							
90% reflectivity (white)	0.30	0.15	0.30	0.15	0.70	0.40	0.70	0.40
10% reflectivity (dark-gray)	0.40	0.20	0.50	0.25	0.80	0.40	0.80	0.40
2% reflectivity (black)	1.30	0.65	2.00	1.00	1.50	0.80	2.10	1.10
Measurement speed (pts/sec):	122,000 / 244,000 / 488,000 / 976,000				122,000 / 244,000 / 488,000			
Ranging error[4]	±1mm				±3mm			
Angular accuracy[5]	19 arcsec for vertical/ horizontal angles				not specified			
3D position accuracy[6]	10m: 2mm / 25m: 3.5mm				not specified			

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°)
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	Focus^S Series S 350 | S 150 | S 70	Focus^M Series
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 devices compensation automatically	—
Accessory bay:	The accessory bay connects versatile accessories to the scanner	—
Real-time, on-site registration in SCENE:	Connects to SCENE via WLAN. Processing of scan data, registration and creation of overview map in SCENE in real-time	—

General Specifications		
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 (IP) rating class:	IP54	
Humidity Resistance:	Non-condensing	
Weight incl. Battery:	4.2kg	
Size/Dimensions:	230 x 183 x 103mm	
Maintenance / calibration:	Annual	

CLASS 1 LASER PRODUCT

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.

For more information, call 800.736.0234 or visit www.faro.com
FARO Technologies, Inc. | 250 Technology Park | Lake Mary, FL 32746

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