

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 decisions to improve and maintain the overall project and product quality.

The Laser Scanner Focus^s series offers advanced functionality. In addition to increased distance, angular accuracy, and range, the Focus^s scanners' on-site compensation function ensures high-quality measurements, while external accessory bays and HDR functionality make the scanner extremely flexible.



Features

Accuracy

Highest accuracy and range by using a combination of the most advanced sensor technologies.

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 and traceable documentation.

On-Site Registration

During on-site data capture, the laser scanner immediately transmits scan data wirelessly to FARO SCENE for real-time scan processing and registration, providing efficiency and time savings.

Rescanning of Distant Targets

The Scan Group feature identifies multiple areas to be rescanned with higher resolution to either perform accurate target detection or to capture smaller areas of interest with greater detail.

IP Rating 54 and Extended Temperature Range

With the sealed design and certified with the industry standard Ingress Protection (IP) Rating, IP54, the Focus can be used in wet weather conditions at temperatures from -20°C to 55°C.

Compact and Portable

Focus Laser Scanners are the smallest and lightest devices in their performance class.

Focus^s 150
Focus^s 350

Benefits

- Confidence in documented data-quality by traceable calibration and market-leading on-site compensation.
- Scan in challenging environments while providing protection from dust, debris and water splashes. Mount the Focus^s scanner in an inverted position, such as under a ceiling of a hall.
- The Focus Laser Scanner portfolio offers the most economic 3D scanning solution for all requirements and budgets.
- Minimum training effort is ensured by the intuitive and easy to operate touch-screen interface as well as hands-on and online tutorials.
- Efficient integration into existing software infrastructures and workflows are provided by interfaces to various standard CAD systems.

Performance Specifications

	Focus ^S Series S 350 S 150 S 70				Focus ^M 70 Series			
Ranging Unit								
Unambiguity interval	614m for 122 to 488 kpts/s 307m for 976 kpts/s				614m for 122 to 488 kpts/s			
Range¹								
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 reduction ³	@25m	@25m noise reduction ³	@10m	@10m noise reduction ³	@25m	@25m noise reduction 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:	300° vertical ⁷ / 360° horizontal							
Step size:	0.009° (40,960 3D-pixel on 360°) vertical / 0.009° (40,960 3D-pixel on 360°) horizontal							
Max scan speed	97Hz (vertical)							
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							

	Focus ^S Series S 350 S 150 S 70		Focus ^M 70 Series
Interface Connection			
WLAN	802.11n (150Mbit/s), as access point or client in existing networks		
Additional Features			
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 current quality report and improves compensation automatically	—	
Accessory bay	The accessory bay connects versatile accessories to the scanner	—	
Inverse mounting	Yes	—	
Real-time, on-site registration in SCENE	Connects to SCENE, real-time scan processing and registration, overview map	—	
Electronic Automation Interface	Available as option, only at point of sale	—	
Digital Hash Function	Scans are cryptographically hashed and signed by the scanner	—	
General specifications			
Power supply	19V (external supply), 14.4V (internal battery)		
Power consumption:	15W idle, 25W scanning, 80W charging		
Battery service life	4.5 hours		
Temperature	Operating: 5 – 40°C, extended operating ⁹ : -20 – 55°C, storage: -10 – 60°C		
Ingress protection (IP) rating class	IP54		
Humidity Resistance	Non-condensing		
Weight	4.2kg (incl. battery)		
Size/Dimensions	230 x 183 x 103mm		
Maintenance / calibration	Annual		



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. | All accuracy specifications are one sigma, after warm-up and within operating temperature range; unless otherwise noted. Subject to change without prior notice.

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