

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.

All Focus^S and Focus^M scanners are equipped with outstanding 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 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. When used 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 or PC in real time.

Focus^S Series

Accuracy

The Focus^S uses dual-axis compensation to capture environments with increased accuracy and range.



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 -20°C and up to 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

Focus Laser Scanners are the smallest and lightest devices in their performance class. They are provided with a waterproof transport and ergonomic carrying case for maximum portability.

Benefits

- Confidence and documented data-quality by traceable vendor 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, e.g. 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 ensured by interfaces to various standard CAD systems.

Performance Specifications

Focus ^S Series S 350 S 150 S 70				Focus ^M 70				Focus ^S Series S 350 S 150 S 70		Focus ^M 70										
Ranging Unit																				
Unambiguity interval:		614m for 122 to 488kpts/s			614m for 122 to 488kpts/s			802.11n (150Mbit/s), as access point or client in existing networks												
Range1:																				
90% reflectivity (white)		0.6-350m 0.6-150m 0.6-70m			0.6 - 70m			Performs a leveling of each scan with an accuracy of 19 arcsec valid within ±2°												
10% reflectivity (dark-gray)		0.6-150m 0.6-150m 0.6-70m			0.6 - 70m			Via an electronic barometer the height relative to a fixed point can be detected and added to a scan.												
2% reflectivity (black)		0.6- 50m 0.6- 50m 0.6-50m			0.6 - 50m			The electronic compass gives the scan an orientation.												
Ranging noise ²		@10m	@10m noise reduced ³	@25m	@25m noise reduced ³	@10m	@10m noise reduced ³	@25m	@25m noise reduced ³	Integrated GPS & GLONASS										
in mm																				
90% reflectivity (white)		0.30	0.15	0.30	0.15	0.70	0.40	0.70	0.40	Creates a current quality report and provides the option to improve the devices compensation automatically.										
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			-												
Range accuracy 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/ 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																				

**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 Range accuracy 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.