

# FARO Laser Scanner Focus<sup>s</sup> 150

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

# FARO<sup>®</sup>



## Accuracy

The Focus<sup>s</sup> now captures environments with increased accuracy regarding distance, dual-axis compensator and angular measurement.

## Temperature

Extended temperature range allows scanning in challenging environments - take your Focus<sup>s</sup> to the desert or run a project in Antarctica.

## On-Site Compensation

With the on-site compensation functionality users can verify and adjust the Focus<sup>s</sup> compensation on-site or in the office, ensuring the highest scan data quality. A comprehensive compensation document is automatically generated.

## IP Rating - Class 54

With the sealed design, the Focus<sup>s</sup> is certified with the industry standard Ingress Protection (IP) Rating and classified in class 54 against environmental influences.

## HDR Photo overlay

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

## Accessory Bay

With this future-proof interface users can connect additional accessories to the scanner, which offers an option for user specific customization.

## Laser scanner for medium-range applications

The Focus<sup>s</sup> series is the latest addition to FARO's popular, compact, lightweight and intuitive laser scanner product line. The devices of this series are the most forward-thinking laser scanners on the market, adding several customer-centric features, such as Ingress Protection Rating (IP54), increased scanning accuracy and range, an internal accessory bay and a built-in on-site compensation routine.

The Focus<sup>s</sup> 150 combines all benefits from FARO's well-known Focus<sup>3D</sup> Laser Scanners with today's most innovative features to perform laser scanning in both indoor and outdoor environments - truly mobile, fast and reliable.

The FARO Focus<sup>s</sup> 150 provides the next level of laser scanning for all applications in industries like Construction, BIM/CIM, Public Safety and Forensics.

## Benefits

- ▶ Scanning in rough environments while providing protection from dust, debris and water splashes
- ▶ Confident data quality through the on-site compensation
- ▶ Reality-like scan data by increased distance accuracy and angular accuracy
- ▶ Future-proof investment and expandability due to the integrated accessory bay
- ▶ Easy handling of scanner control through its large and luminous touchscreen

[www.faro.com/LaserScanner/sg](http://www.faro.com/LaserScanner/sg)

## 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 <sup>1</sup>	0.6-150 m	0.6-150 m	0.6-50 m

Ranging noise <sup>2</sup>	@10m	@10m - noise reduction <sup>3</sup>	@25m	@25m - noise reduction <sup>3</sup>
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<sup>4</sup>: ±1mm

Angular accuracy<sup>5</sup>: 19 arcsec for vertical/horizontal angles

3D position accuracy<sup>6</sup>: 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/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)

**CLASS 1 LASER PRODUCT**

<sup>1</sup> For a Lambertian scatterer. <sup>2</sup> Ranging noise is defined as a standard deviation of values about the best-fit plane for measurement speed of 122,000 points/sec. <sup>3</sup> A noise-reduction algorithm may be activated by averaging raw data. <sup>4</sup> Ranging error is defined as a systematic measurement error at around 10m and 25m. <sup>5</sup> On-site compensation required. <sup>6</sup> For distances larger 25m add 0.1mm/m of uncertainty. <sup>7</sup> 2x150°, homogenous point spacing is not guaranteed. <sup>8</sup> Ferromagnetic objects can disturb the earth magnetic field and lead to inaccurate measurements. <sup>9</sup> 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<sup>9</sup>: -20° - 55°C

Storage temperature: -10° - 60°C

Ingress Protection: IP54

Humidity: Non-condensing

### Data handling and control

Data storage:

Scanner control:

SD, SDHC™, SDXC™; 32GB card  
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  
0.015° 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<sup>8</sup>:

The electronic compass gives the  
scan an orientation.

GNSS:

### On-site Compensation

Integrated GPS & GLONASS  
Creates a current quality report  
and provides the option to im-  
prove the devices compensation  
automatically.

### Accessory Bay

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

Weight incl. battery: 4.2kg

Size: 230 x 183 x 103mm

Maintenance / calibration: Annual



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