

FARO Laser Scanner Focus^{3D} X 330

Features, Benefits & Technical Specifications

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The Perfect Instrument for 3D Documentation and Land Surveying

Building on the success of the Focus^{3D}, the new Focus^{3D} X 330 surpasses previous models in functionality and performance. With a range almost three times greater than previous models, the Focus^{3D} X 330 can scan objects up to 330 meters away and in direct sunlight. With its integrated GPS receiver, the laser scanner is able to correlate individual scans in post-processing making it ideal for surveying based applications.

In addition, the Focus^{3D} X 330 scan quality has been increased and noise has been reduced, providing precise three dimensional models in a photo-realistic style. These advances in performance did not come at the expense of safety as the Focus^{3D} X 330 includes a Class 1 "eye safe" laser.

With its increased range and scan quality, the Focus^{3D} X 330 considerably reduces the effort involved in measuring and post-processing. The 3D scan data can easily be imported into all commonly used software solutions for accident reconstruction, architecture, civil engineering, construction, forensics, industrial manufacturing and land surveying. Distance dimensions, area and volume calculations, analysis and inspection tasks and documentation can thus be carried out quickly, precisely and reliably.



How the Focus^{3D} X 330 Works

The technology behind the Focus^{3D} X 330 is simple. First, the laser scanner emits a laser beam from a rotating mirror out towards the area being scanned. Then the unit distributes the laser beam at a vertical range of 300° and a horizontal range of 360°. The laser beam is then reflected back to the scanner by objects in its path. The distance to the objects defining an area is calculated as well as their relative vertical and horizontal angles. The data is captured and transmitted via WLAN for calculating precise 3D renderings.



Features of the Focus^{3D} X 330



Extended Scanning - 330m Range

The Focus^{3D} X 330 can scan objects up to 330 meters away. Large buildings, land-site excavations and vast terrains can be surveyed with fewer scans, thus resulting in quicker project scanning completion.



Easy Positioning - Integrated GPS Receiver

With its integrated GPS receiver, the laser scanner is able to correlate individual scans in post-processing making it ideal for surveying based applications.



Outdoor Scanning Capability

The Focus^{3D} X 330 now is able to perform fast and highly precise scanning in direct sunlight.



Low Noise Performance

The Focus^{3D} X 330 delivers extraordinary scan data quality with very low noise.



Compass

An electronic compass is included within the unit to associate directional data to your scans and facilitate the auto-registration process.



Height Sensor (Altimeter)

Each scan includes height information which can be used to scan different floor levels in a building. The data can then be used to differentiate the floors.



Dual Axis Compensator

To minimize the number of targets needed, the dual axis compensator enables every scan to have integrated level information.



WLAN (WiFi)

WLAN remote control allows starting, stopping, viewing or downloading of scans at a distance.

Benefits to the End User

- 330m scanning range reduces the number of scans per project
- Portability allows user to scan complex objects and environments
- GPS receiver helps correlate individual scans during post-processing
- Touch-screen interface makes the scanner easy for anyone to use

Benefits to the Company

- Provides long term investment for future projects
- Dedicated users can act as general scanning providers within organization
- Real world environments are preserved in a virtual 3D world
- Unsurpassed cost-value proposition make every scanning project economical

FARO Focus^{3D} X 330

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Performance Specifications



GSA Contract Holder

Ranging Unit

Unambiguity Interval: By 122 till 488 Kpts/sec at 614m; by 976 Kpts/sec at 307m

Range Focus3D X 330: 0.6m - 330m indoor or outdoor with upright incidence to a 90% reflective surface

Measurement Speed (pts/sec): 122,000 / 244,000 / 488,000 / 976,000

Ranging Error¹: ±2mm

Ranging noise ²	@10m	@10m - noise compressed ³	@25m	@25m - noise compressed ³
@ 90% refl.	0.3mm	0.15mm	0.3mm	0.15mm
@ 10% refl.	0.4mm	0.20mm	0.5mm	0.25mm

Color Unit

Resolution: Up to 70 megapixel color

Dynamic Color Feature: Automatic adaption of brightness

Parallax: Co-axial design

Deflection Unit

Vertical 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: 5,820rpm or 97Hz

Laser (Optical Transmitter)

Laser Class: Laser class 1

Wavelength: 1550nm

Beam Divergence: Typical 0.19mrad (0.011°) (1/e, halfangle)

Beam Diameter at Exit: Typical 2.25mm (1/e)

Data Handling and Control

Data Storage: SD, SDHC™, SDXC™; 32GB card included

Scanner Control: Via touch-screen display and WLAN

New WLAN Access: Remote control, scan visualization are possible on mobile devices with Flash®

Multi-Sensor

Dual Axis Compensator: Levels each scan with an accuracy of 0.015° and a range of ±5°

Height Sensor: Via an electronic barometer the height relative to a fixed point can be detected and added to a scan

Compass: Electronic compass gives the scan an orientation. A calibration feature is included.

GPS: Integrated GPS receiver



**CLASS 1
LASER PRODUCT**

¹ Ranging error is defined as a systematic measurement error at around 10m and 25m, one sigma. 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-compression algorithm may be activated thereby compressing raw data noise by a factor of 2 or 4. Subject to change without prior notice. ⁴ Ferromagnetic objects can disturb the earth magnetic field and lead to inaccurate measurements.

Hardware Specifications

Power Supply Voltage: 19V (external supply), 14.4V (internal battery)

Power Consumption: 40W and 80W (while battery charges)

Battery Life: 4.5 hours

Ambient Temperature: 5° - 40°C

Humidity: Non-condensing

Cable Connector: Located in scanner mount

Weight: 5.2kg

Size: 240 x 200 x 100mm

Maintenance Calibration: Annual

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