FARO®

Focus Premium

Capture With Confidence and Connect Your World Faster

Premium Preview:
The Ultimate in 3D Data Capture

Building on our history of accuracy and reliability, the new FARO® Focus Premium Laser Scanner is the fastest, most accurate and most data-sharing-enabled scanner on the market to date, featuring entirely new components with a proven design.

Up to 50% Faster Scan Times

About 1 minute to complete a typical scan, in combination with the optional FARO PanoCam upgrade, even in color.

Super-High Color Resolution

The latest color camera technology enables the Focus Premium to capture scans with up to 266 megapixel color information.

Two-Year Warranty

Competitive service means maximizing the life of this product while reducing the total cost of ownership throughout the device's lifespan. Two years allows for maximum flexibility and the piece of mind knowing that any repairs or defective parts will be replaced.

On Closer Inspection

Focus Premium provides exceptional capturing efficiency, data quality and accuracy for professional applications across the construction, public safety, operations & maintenance and manufacturing markets, while offering data quality at faster scan speeds (up to 1 minute per scan) reducing onsite scanning time by up to 50%. Meanwhile, faster loading and system response yields greater data management efficiency when paired with the new FARO Stream mobile app and uploaded to the new FARO Sphere cloud-based collaboration platform.

Focus Premium Features:

- Up to 350m scanning range, leading to superior area coverage per scan position
- Smartphone-enabled remote control capabilities, limited only by the range of a Wi-Fi network
- Improved wireless workflow with more stable and faster Wi-Fi operation
- On-site registration, the process of combining multiple scans using common overlap, means faster project completion and real-time awareness of scan errors or missing data
- Seamless connectivity with Stream and Sphere
- Scanner control can be executed on either the app or on the actual Focus
- Users have easy access to create projects, change scanner settings, manage image resolution, opt for color or black and white scans, group scans through clustering, and add annotations
- Rugged construction and housing can withstand the tough day-to-day work
- Integrated high-speed SSD data storage for maximum scan capacity and lighting fast scan processing

Performance Specifications

Range Option	Focus Premium 350	Focus Premium 150	Focus Premium 70
Unambiguity Interval	614 m for up to 0.5 MPts/sec 307 m at 1 MPts/sec 153 m at 2 MPts/sec	614 m for up to 0.5 MPts/sec 307 m at 1 MPts/sec 153 m at 2 MPts/sec	614 m for up to 0.5 MPts/sec 307 m at 1 MPts/sec 153 m at 2 MPts/sec
Range			
White, 90% Reflectivity	0.5 – 350 m	0.5 – 150 m	0.5 – 70 m
Dark-grey, 10% Reflectivity	0.5 – 150 m	0.5 – 150 m	0.5 – 70 m
Black, 2% Reflectivity	0.5 – 50 m	0.5 – 50 m	0.5 – 50 m
Range Noise[1,2]			
White, 90% Reflectivity	0.1 mm @ 10 m, 0.2 mm @ 25 m		
Dark-grey, 10% Reflectivity	0.3 mm @ 10 m, 0.4 mm @ 25 m		
Black, 2% Reflectivity	0.7 mm @ 10 m, 1.2 mm @ 25 m		
Max Speed	Up to 2 MPts/sec		
3D Accuracy[3]	2 mm @ 10 m, 3.5 mm @ 25 m		
Ranging Error[4]	±1 mm		
Angular Accuracy[5]	19 arcsec		
LaserHDR	Yes		
Temperature Range[6]	Operating: +5 ° to +40 °C, Extended Operating: -20 ° to +55 °C, Storage: -10 ° to +60 °C		

Additional Performance Specifications

Color Unit	
Color Resolution	Up to 266 MPx color
Raw Color Resolution	867 MPx
HDR Camera	13 MPx - 2x, 3x, 5x brackets
Parallax	Minimized due to co-axial design
Deflection Unit	
Field of View	300° vertical[8] / 360° horizontal
Step Size	0.009° (40,960 Pts on 360°) vertical / 0.009° (40,960 Pts on 360°) horizontal
Max. Scan Speed	97 Hz (vertical)
Laser (Optical Transmitter)	
Laser Class	Laser Class 1
Wavelength	1553.5 nm
Beam Divergence	0.3 mrad (1/e)
Beam Diameter at Exit	2.12 mm (1/e)
Data Handling and Control	
Data Storage	SATA 3.0 SSD 128 GB and SDXC™ V30 64 GB SD Card; SD3.0, UHS-I / SDXC™ / SDHC™, max. 512 GB
Scanner Control	Via touch screen display and WLAN connection, Control by FARO Stream App (iOS & Android) or mobile devices with HTML5
Interface Connection	
WLAN	IEEE 802.11 ac/a/b/g/n 2x2 MIMO, as access point or client in existing networks (2.4 and 5 GHz)
USB	USB 3 port

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[9]	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	Stream App real-time scan streaming, registration, overview map and Sphere cloud upload
Electronic Automation Interface	Available as option, only at point of sale
Digital Hash Function	Scans are cryptographically hashed and signed by the scanner
Rescanning of Distant Targets	Defined areas recaptured in higher resolution at a greater distance
Retake Photos	Select individual photographs with unwanted objects and retake them

General Specifications

Power Supply	19 V (external supply), 14.4 V (internal battery)
Typical Power Consumption	19 W idle, 32 W scanning, 72 W charging
Typical Battery Operation Time	About 4 hours
Typical Scan Time[7]	About 1 min
Ingress Protection (IP) Rating Class	54
Humidity	Non-condensing
Weight	4.4 kg (including battery)
Size/Dimensions	230 x 183 x 103 mm
Calibration	Recommended annually
Manufacturer Warranty	2 years

CLASS 1 LASER PRODUCT

1. Ranging noise is defined as the variation of distance samples from repeated measurements of a single point at 122k Pts/sec | **2.** Some surfaces can lead to additional noise | **3.** For distances larger 25 m add 0.1 mm/m of uncertainty | **4.** Ranging error is defined as a systematic measurement error at around 10 m and 25 m |**6.** It is recommended to perform on-site compensation in the event the unit is exposed to exceptional temperature or mechanical stress|**6.** Low temperature operation: scanner has to be powered on while internal temperature is at or above 15° C. High temperature operation: additional accessory Thermal Cover required | **7.** Accelerated Profile with PanoCam | **8.** 2x150°, homogeneous point spacing is not guaranteed | **9.** Ferromagnetic objects can disturb the earth magnetic field and lead to inaccurate measurements

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

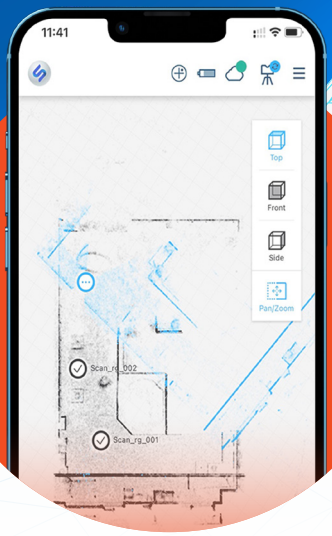
Designed for Complete Integration

FARO's complementary products — **FARO Sphere** and **FARO Stream** (which serves as the data bridge between Focus Premium and Sphere) — create a powerful union of three distinct technologies, enabling users to capture with confidence and connect their world anytime, anywhere. This reduces time to decision while streamlining workflow tasks, meeting the demands of today's increasingly remote, digital workforce.

Stream

Stream is the first mobile app that connects FARO hardware with FARO Sphere cloud-based applications and services. By uniting hardware with cloud software, Stream makes on-site capture workflows more efficient and brings captured data directly into the FARO ecosystem. It does so by providing live feedback of the captured scans while performing its pre-registration function.

Stream provides the best on-site efficiency for data capture with the Focus Premium scanner for scan operations in architecture, engineering, construction and facility management. Now, users can be confident in the successful and complete scan data they collect in real-time, confident that no additional site visits will be required because of missing data and confident in radically expedited project finalization times as Stream and Sphere are already doing some of the work automatically while a Focus Premium operator is returning from the field. Premium also allows the ability to include complementary data like field annotations and photographic images to the project after a scan is complete.



Stream integrates the captured data seamlessly into Sphere, and provides full FARO solution and application compatibility.

FARO Sphere

What sets Focus Premium apart is its ability to share the on-site data it collects via Stream and send that information to Sphere. Once data is on Sphere users experience a centralized, efficient, and collaborative environment across FARO point cloud applications and customer support tools for faster 3D data capture, processing, and delivery through a secure, single point sign-on process.

With Stream and Sphere, registration starts in the field and processing is performed in the cloud while the scan operator is driving back to the office. This allows off-site colleagues to already work on the data or share it with end-customers via FARO WebShare Software, the world's leading collaborative point cloud project management solution.

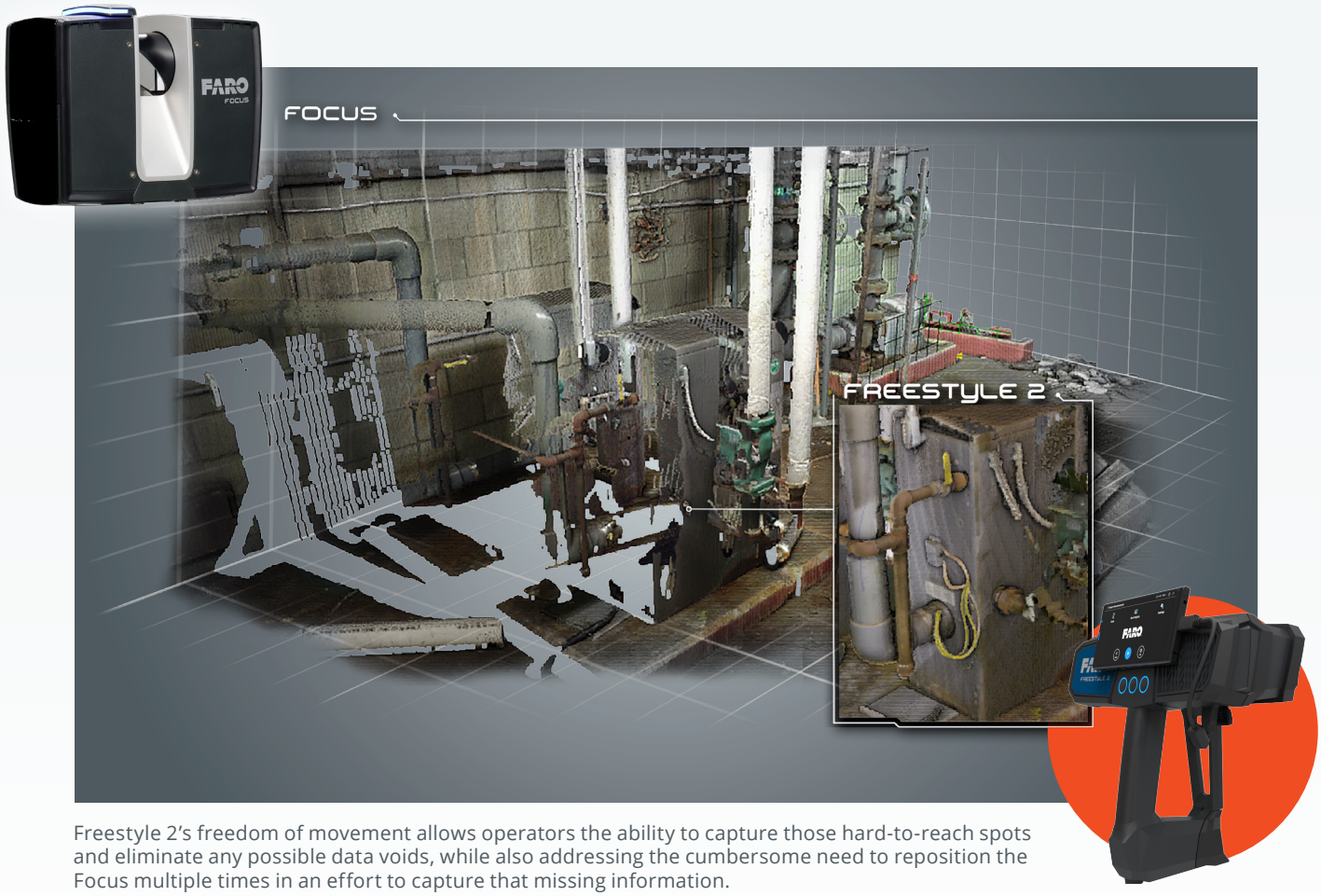
Additionally, Sphere leverages WebShare to integrate three customer service platforms: Knowledge Base, which provides technical product information, FARO Support, which provides 24-7 personalized service, and FARO Academy, which provides on-demand and live training and education programs.

Snap-In Success

The new Focus is also designed to work seamlessly with the FARO Freestyle 2 Handheld Scanner, thanks to its “Snap-In” feature.

Save the time that is required for multiple scanner positions when it comes to scanning complex environments/structures, equipment or tight spaces. Snap-in enables the user to seamlessly add data starting from a Focus point cloud by using it as a reference for missing data from such hard-to-scan locations, including areas in shadow and objects with irregular geometries.

The two point clouds are then pre-registered in the same project. Together Focus and Freestyle 2 achieve what neither tool can do alone—provide both the speed and granularity of data capture to ensure that no on-site detail is missed.

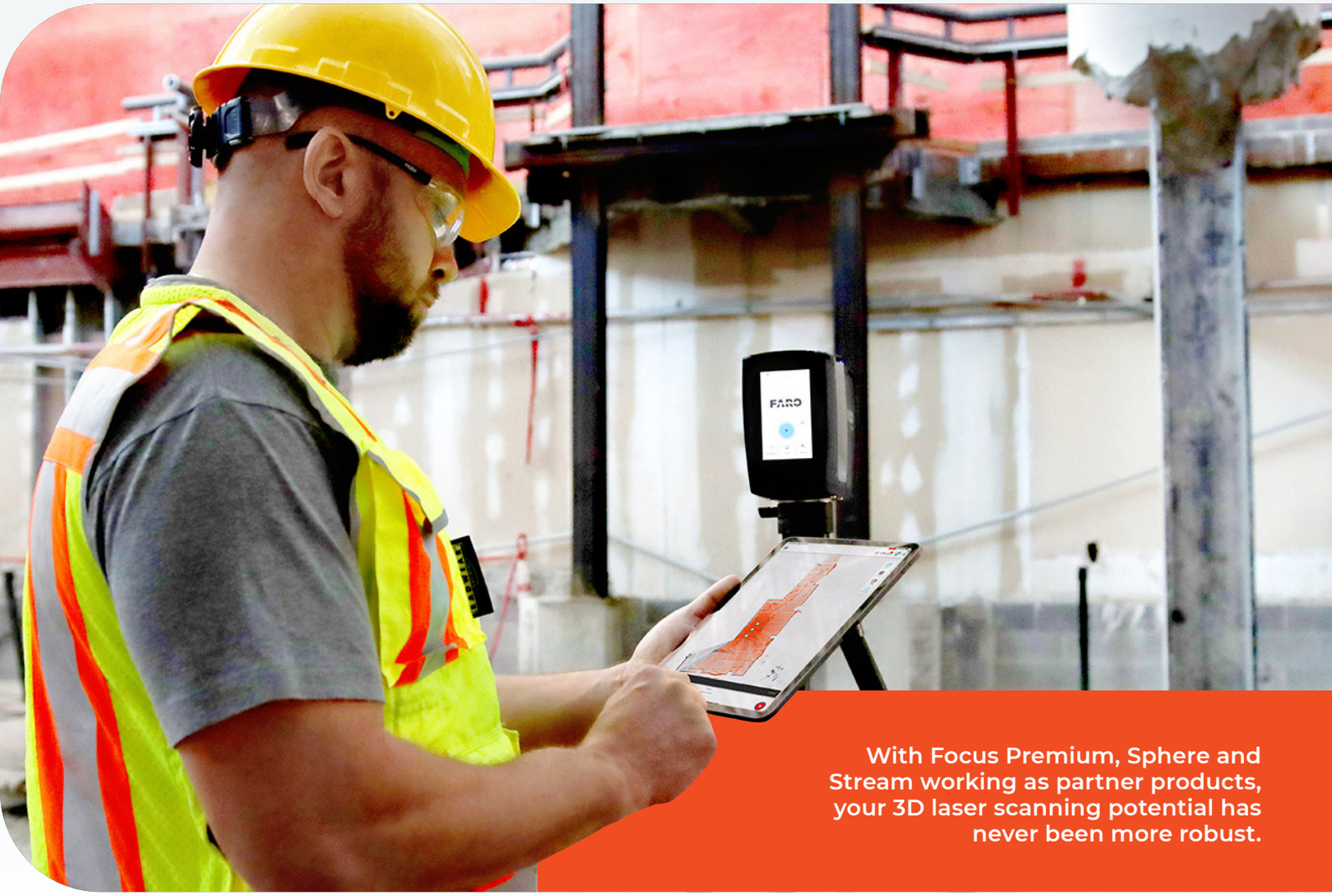


Freestyle 2’s freedom of movement allows operators the ability to capture those hard-to-reach spots and eliminate any possible data voids, while also addressing the cumbersome need to reposition the Focus multiple times in an effort to capture that missing information.

A Workflow Wiz

Whether it's for Building Information Modeling (BIM), industrial facility management and infrastructure projects, or improved construction quality control, historic preservation and the sending of scan data for digital twinning for asset and facility management, the new Focus, paired with Sphere, via Stream, enables enhanced workflow efficiencies that will drive business success.

Sharing data seamlessly — and securely — through the cloud, wherever a Focus Premium operator is located is what sets this suite of complementary products apart. Contact your local sales representative or visit FARO.com to learn more.



With Focus Premium, Sphere and Stream working as partner products, your 3D laser scanning potential has never been more robust.

Local Offices in over 25 countries around the world. Go to **www.faro.com** to learn more.

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