

# FARO® 8-Axis Design ScanArm 2.5C

Breakthrough Color Scanning and Unmatched Efficiency for 3D Design

## High-Performance 3D Scan-to-CAD Solution for Product Development and Computer Graphics

The FARO 8-Axis Design ScanArm 2.5C is the only integrated remote axis portable 3D visualization and rendering solution, capable of measuring in full color for 3D modeling, reverse engineering and CAD-based design applications across the product lifecycle management (PLM) process. FARO's advanced 3D scanning technology with the 8-Axis Design ScanArm now features the new FARO PRIZM Laser Line Probe offering a turnkey solution to deliver high-resolution color point-cloud data. Users now have more insight into the object's design and creation, geometry, surface composition and visual differentiation between materials. Captured scan data can be used for high-quality 3D visualizations of real-world objects in gaming and movies. The eighth-axis offers an unprecedented ergonomic experience with real-time rotation of the object being scanned – eliminating wasted time, reducing risk to delicate objects, and supporting more complete scan output. The 8-Axis Design ScanArm 2.5C is the ideal solution for any organization that may have the need to develop or manufacture parts and after-market products characterized by different coatings, materials, co-molded parts or surfaced finishes without existing CAD models. Users can also reverse engineer legacy parts to design changes or replacement, create digital libraries to decrease inventory and warehouse costs, design aesthetically pleasing free form surfaces or leverage the power of rapid prototyping.



8-Axis Design ScanArm 2.5C with FARO PRIZM Laser Line Probe

## Features & Benefits

### Full Color Capture

The FARO PRIZM Laser Line Probe provides full color values to the point cloud.

### Rapid Scanning Speed

The FARO PRIZM Laser Line Probe HD provides expanded coverage and high speed scanning up to 600,000 points per second; while the eighth-axis allows for capture with only small user movements, reducing repositioning needs and reducing time it takes to scan.

### High Precision Scanning

Features volumetric accuracy up to 75 microns for confidence that real world designs match the dimensions and detail of the source objects.

### Optimized Measurement Volumes

Available in lengths of 2.5 m, 3.5 m and 4.0 m, to deliver the highest precision and easiest handling for the specific application needs.

### Ultimate Portability

Optional dual hot swappable batteries enabling continuous operation anywhere without the need for external power.

### Lightweight, Maneuverable and Ergonomic

Enhanced ergonomics and an overall weight optimization increases maneuverability and productivity over extended periods of operation. With the ability to rotate, in real-time, the component being measured, the optional 8-axis dramatically improves ergonomic functionality and ease-of-use.

## Ideal Applications

### Historical Preservation and Digital Archiving

Create digital libraries with greater detail for preservation and virtual display or decrease mold inventory and warehouse costs that can be reproduced as needed in the future.

### Industrial Design / Clay Modeling

Easily digitize complex, organic, challenging shapes for quick iterations to design aesthetically pleasing and functional freeform surfaces.

### Product Visualization

Create a color 3D model for visual display such as web catalogs, competitive analysis and product marketing.

### Special Effects, Movies and Games

Capture and digitize objects and props in full realistic detail to be used in digital visualization for entertainment projects such as movies and gaming.

### 3D Printing / Rapid Prototyping

3D scan data can easily produce a watertight, 3D printable mesh or scale model to feed directly into a 3D printer.

### Aftermarket Products

Quickly and accurately scan OEM parts enabling the efficient design of aftermarket products in CAD based directly on the geometry of the mating part.

### Maintenance, Repair, and Overhaul (MRO)

Conduct wear and tear analysis and create as-built documentation on parts and tooling prior to maintenance efforts and create custom fit replacements for critical repairs.

### Reverse Engineering and CAD Reconstruction

Quickly digitize legacy parts to support design changes, replacements, incorporation into new designs, or to perform competitive analysis.

## Software

The FARO Design ScanArm 2.5C can be bundled with 3D System's® Geomagic® as well as other 3rd party software packages.

Software Package Key	Capabilities
Geomagic Software	Geomagic Wrap provides a effective scan-to-mesh solution when working with organic shapes and it is possible to continue to NURBS when a surface model is required. Design X is 3D System's most comprehensive reverse engineering software creating a history based, geometric model that can be transferred to most popular CAD systems while maintaining the parametric connections. Developed as a plugin, Geomagic for SOLIDWORKS enables the direct scanning into SOLIDWORKS where automated wizards quickly and easily create accurate feature-based solid parts (not capable of texture capture).

## Laser Line Probe Specifications

<b>Scan Modes:</b>	3D Points HDR ON/OFF Texture ON/OFF Texture in Color or Grayscale
<b>Scan Rate:</b>	Up to 2,000 points per line/frame x up to 300 frames per second (fps) = 600,000 points per second (pps)

Model Types		HDR Scan Mode	Texture Scan Mode	Frame Rate	Scanning Speed
2.5	2.5C				
X	X	OFF	OFF	Up to 300 fps	600,000 pps
X	X	ON	OFF	Up to 150 fps	300,000 pps
	X	OFF	ON	Up to 120 fps	240,000 pps
	X	ON	ON	Up to 60 fps	120,000 pps

<b>Stand Off:</b>	115 mm
<b>Depth of Field:</b>	115 mm
<b>Effective Scan Width:</b>	Near field 80 mm Far field 150 mm
<b>Minimum Point Spacing:</b>	40µm
<b>Laser:</b>	Class 2

## Hardware Specifications

### Design ScanArm 2.5C

<b>Operating Temp Range:</b>	10°C - 40°C (50°F - 104°F)
<b>Temperature Rate:</b>	3°C/5 min (5.4°F/5 min)
<b>Operating Humidity Range:</b>	95%, non-condensing
<b>Power Supply:</b>	universal worldwide voltage; 100-240VAC; 47/63Hz
<b>ScanArm Weight:</b>	2.5m: 9.5kg/20.9lb, 3.5m: 9.6kg/21.2lb, 4.0m: 9.8kg/21.5lb

### 8-Axis

<b>8-Axis Weight:</b>	8-Axis with plate 9.35lb/4.24kg 8-Axis without plate 6.6lb/2.99kg
<b>8-Axis Height:</b>	230mm (9.0 in)
<b>Plate Diameter Width:</b>	250mm (9.8 in)
<b>Max Load (Centered):</b>	220lb/100kg

Certifications: Meets OSHA requirements, NRTL TÜV SÜD C-US Listed, Complies with Electronic Code of Federal Regulations 47 CFR PART 15, 17 CFR Parts 240 and 249b – Conflict Material, 21 CFR 1040 Performance standards For Light-Emitting Products.

Complies with the following EC Directives: 93/68/EEC CE Marking; 2014/30/EU Electrical Equipment; 2014/53/EU Radio Equipment Directive; 2011/65/EU RoHS2012/19/EU WEE; 2014/35/EU Low Voltage Directive; 2009/125/EC Ecodesign requirement.

Conforms to the following standards: EN 61010-1:2010 / CSA-C22.2 No. 61010-1; EN 61326-1:2013 EMC; IEC 60825-1:2014 ed3.0; FDA (CDRH) 21 CFR 1040.10 / ANSI Z136.1-2007; 21 CFR 1002 (Records & Reports); 21 CFR 1010 (Performance Standards).

Extreme Temperature Cycling (-20°C to 60°C). Based on: IEC 60068-2-1

Note: The FARO Design ScanArm 2.5C is not metrology-certified and the laser line probe is permanently attached

## Performance Specifications

ScanArm Accuracy	
Measurement Range	System Accuracy <sup>1</sup>
Design ScanArm 2.5C 2.5 m (8.2 ft)	0.075 mm (0.0030 in)
Design ScanArm 2.5C 3.5 m (11.5 ft)	0.110 mm (0.0043 in)
Design ScanArm 2.5C 4.0 m (13.1 ft)	0.130 mm (0.0051 in)

All values represent MPE (Maximum Permissible Error)

<sup>1</sup> System accuracy: determined by scanning / probing a single sphere from multiple orientations and represented the maximum deviation of sphere position or by comparing measured versus nominal values between two points within the arm volume.



Freecall 00 800 3276 7253 | [info.emea@faro.com](mailto:info.emea@faro.com) | [www.faro.com](http://www.faro.com)

FARO Europe GmbH & Co. KG | Lingwiesenstrasse 11/2 | 70825 Korntal-Münchingen



Contract Holder