

FARO® Quantum Max The Next Generation ScanArm



FARO



Since 1995, FARO has produced the world's most trusted portable CMM – the FaroArm®. When it comes to performing accurate 3D measurement and inspection on small to medium sized parts, no tool can match the utility, speed and accuracy of the FaroArm. Leading aerospace, machining, assembly, and automotive manufacturers rely on this highly versatile device to easily capture precise measurements on the shop floor and in the field, in any environment including extreme temperatures. And when a part or tool is so difficult to reach that contact probes cannot capture all of its measurements, manufacturers utilize the non-contact functionality of the FARO Quantum ScanArm to do the job. At the heart of the Quantum ScanArm is the Laser Line Probe (LLP), capable of capturing tens of millions of data points with ease.

3 Purpose-Built LLPs

Now the tradition continues with the all-new Quantum Max ScanArm and its three hot-swappable FAROBlu® LLPs that meet any measurement need. With options to dramatically increase the scanning speed or resolution, getting the job done as quickly and precisely as possible has never been easier. With maximum flexibility, extended arm reach and a redesigned end effector with dual kinematic LLP mounts, value and productivity is maximized by over 30%.

The Quantum Max features the fastest, most detailed scanning available on the market today, accelerating project completion time while enhancing overall productivity.

Maximum Versatility

The new Quantum Max offers 2 times the versatility from previous models. Dual kinematic seats allow for hard probe and LLP interchangeable mounting positions to easily move the LLP from top to front mount, enabling greater access to small spaces or hard to reach areas without the need to recalibrate. The quick release handle also offers dynamic holding options.



Maximize
value and
productivity
by over
30%

Maximum Performance

Three FaroArm models offer basic, standard, and premium performance options – available in various working volumes from 2.0m to 4.0m. Improved rigidity and stability deliver optimized accuracy and repeatability with superior performance while maintaining shop-hardened ruggedness for use in the harshest factory environments. The new 2.0m working volume arm delivers the best accuracy in its size category.

Maximum Reach

Each FaroArm model comes with up to 25% longer reach, offering more comfortable articulation for better extension over and around larger objects positioned within its specified working volume. Combined with the FARO exclusive 8-Axis Max rotary worktable, the need to relocate or reposition the device is virtually eliminated – and inspections can be completed in a fraction of the time.



FARO
8-AXIS
MAX

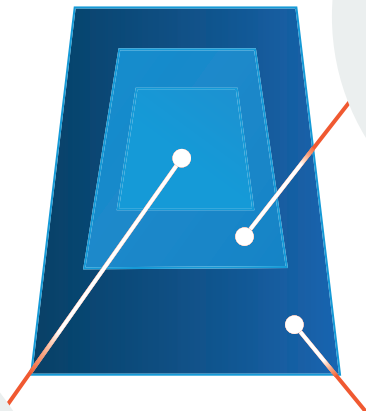
The right LLP is not always a “one size fits all” choice. Sometimes the fastest speed is needed to get the job done quickly. Sometimes the highest accuracy and resolution possible is needed instead. And sometimes, a trade-off of both is preferred. With the Quantum Max, choosing between these options is now seamless. Three unique models help boost productivity collectively or individually. All LLPs come with the exclusive FARO Continuous Light Rectifications (CLR) scanning technology, providing users with the highest quality scan data possible on dark, translucent, and reflective surfaces.



Quantum Max LLPs

With the next-gen Quantum Max, getting the inspection job done as quickly and precisely as possible has never been easier when using multiple LLPs that can be changed in seconds, with no need for recalibration so inspection can continue, virtually uninterrupted.

SCANNING RANGE



FAROBlu xP

MAXIMUM PRODUCTIVITY

This LLP offers the ability to scan anything with a balanced coverage blend of xR accuracy/resolution and xS speed – increasing profitability and throughput with performance suitable for any application.



FAROBlu xR

MAXIMUM RESOLUTION AND ACCURACY

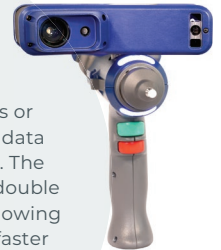
This LLP is ideal for high-precision tasks with tight tolerances to capture data at highest accuracy and best resolution possible. Users can scan small intricate parts and fine details with up to 30% better accuracy and resolution than the xP, improving production quality with better and more reliable data.



FAROBlu xS

MAXIMUM SPEED

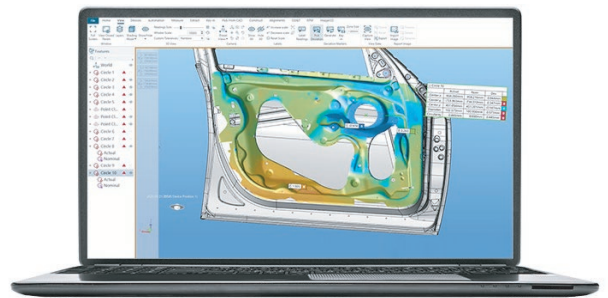
This LLP is best for large parts or expansive surface areas when data collection speed is top priority. The extra-wide laser stripe delivers double the coverage in a single pass, allowing users to collect data over 65% faster than the xP. Fewer passes to collect data means faster results and higher productivity.



SmartFactory Ready

FARO CAM2® Software, a powerful 3D measurement platform designed to efficiently complete quality assurance and inspection tasks, is perfectly suited to manage repeat inspection routines with live-trend and statistical process control (SPC) analysis. When combined with the Quantum Max, CAM2's Repeat Part Management feature allows guided inspection routines to be pre-programmed into the software.

Every operator can now perform the exact same inspection routine, thus minimizing variability and maximizing repeatability. Data records are digitally stored, analyzed, and maintained so trends can be identified and appropriate actions are taken when parts begin to deviate from their nominal tolerances.



FaroArm Accuracy - Contact Measurement ¹ (FaroArm)				
Quantum Max	S Model			
	6-Axis		7-Axis	
2.0m (6.6ft)	0.024 mm	0.0009 in	0.025 mm	0.0010 in
2.5m (8.2ft)	0.026 mm	0.0010 in	0.028 mm	0.0011 in
3.0m (9.8ft)	0.038 mm	0.0015 in	0.05 mm	0.0020 in
3.5m (11.5ft)	0.052 mm	0.0020 in	0.062 mm	0.0024 in
4.0m (13.1ft)	0.063 mm	0.0025 in	0.076 mm	0.0030 in
Quantum Max	M Model			
	6-Axis		7-Axis	
2.0m (6.6ft)	0.027 mm	0.0011 in	0.029 mm	0.0011 in
2.5m (8.2ft)	0.030 mm	0.0012 in	0.032 mm	0.0013 in
3.0m (9.8ft)	0.042 mm	0.0017 in	0.054 mm	0.0021 in
3.5m (11.5ft)	0.056 mm	0.0022 in	0.066 mm	0.0026 in
4.0m (13.1ft)	0.067 mm	0.0026 in	0.082 mm	0.0032 in
Quantum Max	E Model			
	7-Axis			
2.0m (6.6ft)	0.040 mm		0.0016 in	
2.5m (8.2ft)	0.046 mm		0.0018 in	
3.0m (9.8ft)	0.066 mm		0.0026 in	
3.5m (11.5ft)	0.082 mm		0.0032 in	
4.0m (13.1ft)	0.100 mm		0.0039 in	
Quantum Max	Max Reach / Weight			
	6-Axis		7-Axis	
2.0m (6.6ft)	2.58 m 8.5 ft	9.5 kg 21.1 lbs	2.60 m 8.5 ft	9.6 kg 21.3 lbs
2.5m (8.2ft)	3.08 m 10.1 ft	9.6 kg 21.2 lbs	3.10 m 10.2 ft	9.7 kg 21.4 lbs
3.0m (9.8ft)	3.50 m 11.5 ft	9.7 kg 21.4 lbs	3.52 m 11.5 ft	9.8 kg 21.6 lbs
3.5m (11.5ft)	4.08 m 13.4 ft	9.9 kg 21.8 lbs	4.10 m 13.5 ft	10.0 kg 22.0 lbs
4.0m (13.1ft)	4.58 m 15.0 ft	10.1 kg 22.3 lbs	4.60 m 15.1 ft	10.2 kg 22.5 lbs

Hardware Specifications			
FaroArm			
Operating Temperature	10C - 40C (50F - 104F)		
Operating Humidity	95%, Non-Condensing		
Power Supply	100-240 VAC, 47/63 Hz		
8-Axis			
Max Load Capacity	100kg (220 lbs)		
Standard Plate Diameter	250mm (9.8in)		
Weight	4.3kg (9.5 lbs)		
Laser Line Probe	xR	xP	xS
Accuracy	10µm (0.0004in)	15µm (0.0006in)	25µm (0.001in)
Max Scan Width	95mm (3.7in)	150mm (5.9in)	250mm (9.8in)
Mid Scan Width	80mm (3.1in)	110mm (4.3in)	185mm (7.3in)
Min Scan Width	60mm (2.4in)	80mm (3.1in)	120mm (4.7in)
Stand-off	75mm (3.0in)	105mm (4.1in)	155mm (6.1in)
Depth of Field	60mm (2.4in)	110mm (4.3in)	205mm (8.1in)
Min Point Spacing	15µm (0.0006in)	20µm (0.0008in)	30µm (0.0012in)
Weight	399.1g	369.7g	434.3g
Max Points Per Line	4000		
Max Scan Rate	600 Hz		
Point Acquisition Rate	1,200,000 points per second		
Laser Type	450nm/635nm, Class 2		

ScanArm System Accuracy - Non-Contact Measurement ²					
Quantum Max	S Model				
	xR		xP		xS
FAROBlu Max					
2.0m (6.6ft)	0.030 mm	0.0012 in	0.038 mm	0.0015 in	0.046 mm 0.0018 in
2.5m (8.2ft)	0.034 mm	0.0013 in	0.042 mm	0.0017 in	0.050 mm 0.0020 in
3.0m (9.8ft)	0.040 mm	0.0016 in	0.048 mm	0.0019 in	0.055 mm 0.0022 in
3.5m (11.5ft)	0.054 mm	0.0021 in	0.061 mm	0.0024 in	0.068 mm 0.0027 in
4.0m (13.1ft)	0.068 mm	0.0027 in	0.074 mm	0.0029 in	0.080 mm 0.0031 in
Quantum Max	M Model				
	xR		xP		xS
FAROBlu Max					
2.0m (6.6ft)	0.035 mm	0.0014 in	0.041 mm	0.0016 in	0.052 mm 0.0020 in
2.5m (8.2ft)	0.039 mm	0.0015 in	0.046 mm	0.0018 in	0.056 mm 0.0022 in
3.0m (9.8ft)	0.046 mm	0.0018 in	0.053 mm	0.0021 in	0.062 mm 0.0024 in
3.5m (11.5ft)	0.062 mm	0.0024 in	0.067 mm	0.0026 in	0.076 mm 0.0030 in
4.0m (13.1ft)	0.078 mm	0.0031 in	0.081 mm	0.0032 in	0.090 mm 0.0035 in
Quantum Max	E Model				
	xR		xP		xS
FAROBlu Max					
2.0m (6.6ft)	0.042 mm	0.0017 in	0.053 mm	0.0021 in	0.060 mm 0.0024 in
2.5m (8.2ft)	0.048 mm	0.0019 in	0.059 mm	0.0023 in	0.065 mm 0.0026 in
3.0m (9.8ft)	0.056 mm	0.0022 in	0.067 mm	0.0026 in	0.077 mm 0.0030 in
3.5m (11.5ft)	0.076 mm	0.0030 in	0.085 mm	0.0033 in	0.095 mm 0.0037 in
4.0m (13.1ft)	0.095 mm	0.0037 in	0.104 mm	0.0041 in	0.112 mm 0.0044 in

All values represent MPE (Maximum Permissible Error).

¹Contact Measurement (FaroArm) : In Accordance with ISO 10360-12; defined as EUNI (Unilateral Error) - Distance error between two points comparing measured versus nominal. Values are +/-.

²Non-Contact Measurement (ScanArm and ScanArm + 8-Axis): Based on ISO 10360-8 Annex D; defined as LDIA (Sphere Location Diameter Error) - Diameter of the spherical zone containing the centers of a sphere measure from multiple orientations. Values are absolute.

For the complete set of specifications in accordance with ISO 10360-12 please visit www.faro.com

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, and 10 CFR Part 430 – Department of Energy; Energy Conservation for External Power Supplies.

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 RoHS2; 2002/96/ EC WEEE; 2006/66/EC WEEE; 2006/66/EC Batteries and Accumulators; 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; CISPR 11:2015; EN/IEC 61326-1:2020 EMC; ETSI EN 300 328 V2.1.1; ETSI 301 489-1 V1.9.2; ETSI 301 489-17 V2.2.1; ETSI EN 62311:2008; IEEE 802.11 b/g; FCC Part 15.247 (WLAN and Bluetooth); Japanese Radio Law MPT No. 37 Ordinance (MIC classification WW); UN TI-T8; IEC 62133 2nd ed.; IEC 60825-1:2014 ed3.0; FDA (CDRH) 21 CFR 1040.10 / ANSI Z136.1-2007; EN 50581:2012; 21 CFR 1002 (Records & Reports); 21 CFR 1010 (Performance Standards).

Shock and Vibrations Testing per International Electrotechnical Commission (IEC) Standards: IEC 60068-2-6; IEC 60068-2-64; IEC 60068-2-27 Extreme Temperature Cycling (-20°C to 60°C). Based on: IEC 60068-2-1; MIL-STD-810G; ISTA.



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