

# FARO

# Quantum X

FaroArm® Series

The Next Level  
of Probing and  
Scanning  
Accuracy



# The Quantum Continuum

When it comes to quality assurance, quality control and general inspection tasks, no tool is more versatile than a FaroArm

Designed to probe or scan, articulated measurement arms are significantly more adaptable than bulkier fixed CMMs. They can access hard-to-reach locations, require less technical expertise to operate, and help accelerate assembly workflows.

The Quantum X FaroArm Series is the next transformation in the technologies' ongoing advancement. The series features easy-to-operate, simple-to-learn articulated measuring arms designed as an all-in-one solution for those who are first becoming familiar with the benefits that portable CMMs provide, and other users who are looking for market-leading accuracy. In both cases, FARO delivers.



**15%** Accuracy  
Increase

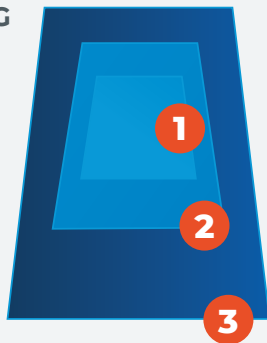
All arms in the series boast up to a 15% accuracy increase against previous models.

# Quantum X LLPs

The right Laser Line Probes (LLP) is not always a “one size fits all” choice. With the Quantum X Series, choosing the right LLP for you is seamless. Unique LLPs 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 on dark, translucent, and reflective surfaces.

With the Quantum X, getting the inspection job done quickly and precisely is made easy. **Hot-swap between multiple LLPs in seconds, with no need for compensation**, so inspection can continue, virtually uninterrupted.

## SCANNING RANGE



**FAROBlu xR**

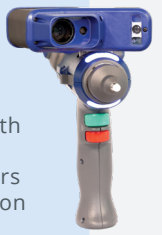
**FAROBlu xP**

**FAROBlu xS**

## 1 FAROBlu xR

### MAXIMIZE SCANNING RESOLUTION & ACCURACY

This LLP is ideal for high-precision tasks with tight tolerances to capture data at highest accuracy and best resolution possible. Users 1.5 times the accuracy, improving production quality with better and more reliable data.



## 2 FAROBlu xP

### SCAN MORE PRODUCTIVELY

This LLP offers the ability to scan anything with a balanced blend of accuracy, speed and coverage—increasing profitability and throughput with performance suitable for any application.



## 3 FAROBlu xS

### SIGNIFICANTLY INCREASE SCAN 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 up to 2.6x faster than the xR and 1.6x faster than the xP. Fewer passes to collect data means faster results and higher productivity.



# FARO 8-Axis Max

The integrated 8-axis rotary worktable is a unique manufacturing solution that **decreases scanning and probing time by up to 40%**, while maintaining accuracy. The rotary worktable is available with all Quantum X FaroArm Series models.



**8-Axis Rotary Worktable**

**Faster Measurement with any Quantum X FaroArm**



## CAM2 Software

### Versatile Hardware, Intuitive Software

Quantum X is also fully compatible with FARO CAM2® Software. FARO CAM2 is a powerful, intuitive and application-focused 3D measurement software platform designed to enable users to efficiently fulfill their quality assurance and inspection tasks.

CAM2 has been developed to streamline industrial metrology applications such as dimensional controls, incoming part, and first article inspections, part-to-CAD comparisons, assemblies and repeat part measurements. CAM2 not only allows to improve and increase the efficiency of measurement routines; it also provides an effective and smooth correlation between metrology (quality assurance) and production operations, offering a powerful tool to fully control and optimize manufacturing processes.

Built around customer application needs and designed to streamline daily measurement operations, CAM2 sets a standard for actionable metrology via ease of use, interactivity, flexibility, and generation of targeted, actionable intelligence.

With Quantum X as the latest, most versatile,

high-accuracy portable measurement arm, CAM2 and related third party software options, will only enhance the solutions' assembly line utility and reach.

### Exceptional Products, Unparalleled Reach

Capable of measuring from small parts to large, articulated arms are increasingly the go-to tool manufacturing professionals rely on. These 3D measurement solutions ensure parts, sub-assemblies, and the machines making the parts, are measured/calibrated within established tolerances. By reducing rework, waste and scrap, throughput increases and money is saved. Add in the time and expenses recouped in reduced equipment downtime, and an articulated scanning or probing arm delivers a rapid (and hard-to-overstate) return on investment.

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**See what the Quantum X  
FaroArm and its increased  
accuracy can do for you!**

# X Factors

With Quantum X flexibility and versatility are key. The series is certified to ISO 10360, the highest industry standard and offers five length options, three accuracy performance levels, and several laser line probes (LLPs).

The addition of the FARO® 8-Axis Max, an 8-axis rotary worktable **reduces measurement time by up to 40%** while maintaining exceptional accuracy.

## Quantum X.S Premium Accuracy and Performance

This flagship arm has set the industry performance bar high and brings measurement consistency to every working environment. Manufacturers rely on the Quantum X.S FaroArm to stay ahead of their competitors through better quality assurance and customer confidence.

## Quantum X.M Optimized Price/Performance Balance

This portable CMM is the standard for robust, reliable factory inspection. With an excellent price/performance ratio, the Quantum X.M FaroArm extends manufacturing performance through high-end quality inspection technology.

## Quantum X.E Great Performance with Greater Affordability

Reliable and cost-effective, this portable CMM gives manufacturers full confidence in their quality assurance processes and ensures high-quality production.



## Accuracy - Contact Measurement<sup>1</sup>

Quantum X.S				
Lengths	7-Axis			
2.0 m (6.6 ft)	0.023 mm		0.0009 in	
2.5 m (8.2 ft)	0.025 mm		0.0010 in	
3.0 m (9.8 ft)	0.043 mm		0.0017 in	
3.5 m (11.5ft)	0.053 mm		0.0021 in	
4.0 m (13.1 ft)	0.068 mm		0.0027 in	

Quantum X.M				
Lengths	6-Axis		7-Axis	
2.0 m (6.6 ft)	0.024 mm	0.0010 in	0.027 mm	0.0011 in
2.5 m (8.2 ft)	0.026 mm	0.0011 in	0.030 mm	0.0012 in
3.0 m (9.8 ft)	0.038 mm	0.0015 in	0.051 mm	0.0020 in
3.5 m (11.5ft)	0.052 mm	0.0021 in	0.062 mm	0.0025 in
4.0 m (13.1 ft)	0.063 mm	0.0025 in	0.078 mm	0.0031 in

Quantum X.E				
Lengths	6-Axis		7-Axis	
2.0 m (6.6 ft)	0.027 mm	0.0011 in	0.036 mm	0.0015 in
2.5 m (8.2 ft)	0.030 mm	0.0012 in	0.045 mm	0.0018 in
3.0 m (9.8 ft)	0.042 mm	0.0017 in	0.061 mm	0.0024 in
3.5 m (11.5 ft)	0.056 mm	0.0022 in	0.075 mm	0.0030 in
4.0 m (13.1 ft)	0.067 mm	0.0027 in	0.095 mm	0.0038 in

Quantum X FaroArm Series Maximum Reach / Weight				
Lengths	6-Axis		7-Axis	
2.0 m (6.6 ft)	2.58 m <i>8.5 ft</i>	9.5 kg <i>21.1 lbs</i>	2.60 m <i>8.5 ft</i>	9.6 kg <i>21.3 lbs</i>
2.5 m (8.2 ft)	3.08 m <i>10.1 ft</i>	9.6 kg <i>21.2 lbs</i>	3.10 m <i>10.2 ft</i>	9.7 kg <i>21.4 lbs</i>
3.0 m (9.8ft)	3.50 m <i>11.5 ft</i>	9.7 kg <i>21.4 lbs</i>	3.52 m <i>11.5 ft</i>	9.8 kg <i>21.6 lbs</i>
3.5 m (11.5 ft)	4.08 m <i>13.4 ft</i>	9.9 kg <i>21.8 lbs</i>	4.10 m <i>13.5 ft</i>	10.0 kg <i>22.0 lbs</i>
4.0 m (13.1 ft)	4.58 m <i>15.0 ft</i>	10.1 kg <i>22.3 lbs</i>	4.60 m <i>15.1 ft</i>	10.2 kg <i>22.5 lbs</i>

## Hardware Specifications

Quantum X FaroArm Series				
Operating Temperature	10 °C - 40 °C (50 °F - 104 °F)			
Operating Humidity	95%, Non-Condensing			
Power Supply	100-240 VAC, 47/63 Hz			

8-Axis				
Max Load Capacity	100 kg (220 lbs)			
Standard Plate Diameter	250 mm (9.8 in)			
Weight	4.3 kg (9.5 lbs)			

FAROBlu Laser Line Line Probe (LLP)	xR	xP	xS
Accuracy	10 µm (0.0004 in)	15 µm (0.0006 in)	25 µm (0.001 in)
Max Scan Width	95 mm (3.7 in)	150 mm (5.9 in)	250 mm (9.8 in)
Mid Scan Width	80 mm (3.1 in)	110 mm (4.3 in)	185 mm (7.3 in)
Min Scan Width	60 mm (2.4 in)	80mm (3.1 in)	120 mm (4.7 in)
Stand-off	75 mm (3.0 in)	105 mm (4.1 in)	155 mm (6.1 in)
Depth of Field	60 mm (2.4 in)	110 mm (4.3 in)	205 mm (8.1 in)
Min Point Spacing	15 µm (0.0006 in)	20 µm (0.0008 in)	30 µm (0.0012 in)
Weight	399.1 g	369.7 g	434.3g
Max Points Per Line	4000		
Max Scan Rate	600 Hz		
Point Acquisition Rate	1,200,000 points per second		
Laser Type	450 nm/635 nm, Class 2		

## Accuracy - Non-Contact Measurement<sup>2</sup>

Quantum X.S						
FAROBlu Max	xR		xP		xS	
2.0 m (6.6 ft)	0.030 mm	0.0012 in	0.038 mm	0.0015 in	0.046 mm	0.0018 in
2.5 m (8.2 ft)	0.034 mm	0.0013 in	0.042 mm	0.0017 in	0.050 mm	0.0020 in
3.0 m (9.8 ft)	0.040 mm	0.0016 in	0.048 mm	0.0019 in	0.055 mm	0.0022 in
3.5 m (11.5 ft)	0.054 mm	0.0021 in	0.061 mm	0.0024 in	0.068 mm	0.0027 in
4.0 m (13.1 ft)	0.068 mm	0.0027 in	0.074 mm	0.0029 in	0.080 mm	0.0031 in

Quantum X.M						
FAROBlu Max	xR		xP		xS	
2.0 m (6.6 ft)	0.033 mm	0.0013 in	0.040 mm	0.0016 in	0.050 mm	0.0020 in
2.5 m (8.2 ft)	0.037 mm	0.0015 in	0.045 mm	0.0018 in	0.054 mm	0.0022 in
3.0 m (9.8 ft)	0.044 mm	0.0018 in	0.052 mm	0.0021 in	0.060 mm	0.0024 in
3.5 m (11.5 ft)	0.060 mm	0.0024 in	0.066 mm	0.0026 in	0.074 mm	0.0030 in
4.0 m (13.1 ft)	0.076 mm	0.0030 in	0.080 mm	0.0032 in	0.088 mm	0.0035 in

Quantum X.E						
FAROBlu Max	xR		xP		xS	
2.0 m (6.6 ft)	0.040 mm	0.0016 in	0.051 mm	0.0020 in	0.058 mm	0.0023 in
2.5 m (8.2 ft)	0.046 mm	0.0019 in	0.057 mm	0.0023 in	0.063 mm	0.0025 in
3.0 m (9.8 ft)	0.054 mm	0.0022 in	0.065 mm	0.0026 in	0.075 mm	0.0030 in
3.5 m (11.5 ft)	0.074 mm	0.0030 in	0.083 mm	0.0033 in	0.093 mm	0.0037 in
4.0 m (13.1 ft)	0.093 mm	0.0037 in	0.102 mm	0.0040 in	0.110 mm	0.0044 in

All values represent MPE (Maximum Permissible Error)

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

<sup>2</sup>Non-Contact Measurement (FaroArm + Laser Line Probe and FaroArm + Laser Line Probe + 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 please visit [FARO.com](http://FARO.com)

Meets OSHA requirements, NRTL TÜV SÜD C-USA 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 T1-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)

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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