

FARO® Super 6DoF TrackArm

The Most Versatile Portable 3D Measurement System

Multifaceted 6-Degrees-of-Freedom Capabilities Without Compromise

The FARO Super 6DoF TrackArm is the most versatile portable 3D measurement system that brings together the latest advancements in FARO's 3D measurement technology to deliver a solution that allows flexibility, ease of use and uncompromised accuracy for your most demanding 3D measurement needs. The system combines the long range and high accuracy capabilities of FARO's Laser Tracker with the flexibility and consistency of the FaroArm® and/or ScanArm®.

When the Tracker and the Arm are synchronized into the same coordinate system with a simple motion with the FaroArm, the measurement process can start: points can be visualized in real-time in the measurement software and compared to the nominal data.

The FaroArm enables flexible measurement of any object where even hidden points around corners and inside features can be reached. This gives the FARO Super 6DoF TrackArm the unique capability of reaching hidden points even if they are out of the Laser Tracker's line-of-sight, while still maintaining the measurement integrity of the entire system. This seamless combination also allows the FaroArm to be quickly repositioned anywhere within the Laser Tracker's measurement range while remaining in the same coordinate system. Additionally, the system allows for multiple FaroArms to be simultaneously used in conjunction with one Laser Tracker as long as they are within the same coordinate system. This flexibility offers multiple measurement possibilities on large objects.

FARO's Super 6DoF TrackArm delivers fast, precise 3D measurement without compromise. Best of all, the FaroArm and Laser Tracker are stand-alone portable CMMs that can also be used independently or in combination to create this multi-purpose FARO Super 6DoF TrackArm system.

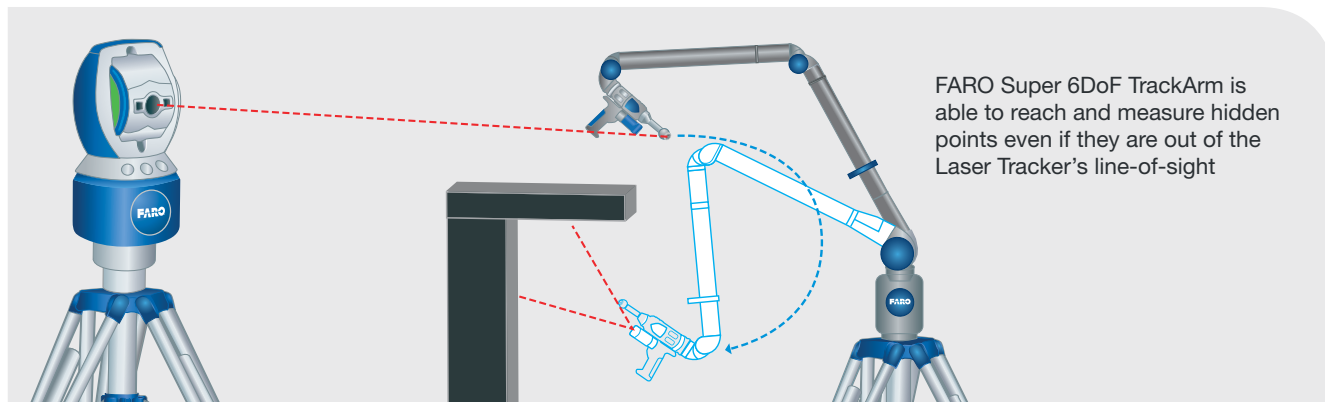


Benefits

- Expanded measurement range, flexible and superior accuracy
- No line-of-sight limitations — the only tracker solution that is able to measure without line-of-sight
- Large volume measurement at a fraction of the cost of comparable systems
- Easy to use and quick synchronization of multiple devices saves set-up and measurement time
- Each device can also be used independently when needed, improving resource efficiency

Features

- Seamless combination of two (or more) portable CMMs into one complete large volume solution
- 6DoF (6-Degrees-of-Freedom) capabilities with no hidden point restrictions
- Ultimate portability with cable-free operation



FARO Super 6DoF TrackArm is able to reach and measure hidden points even if they are out of the Laser Tracker's line-of-sight

Technical Specifications

FARO® Quantum^S & Quantum^M FaroArm: Performance Specifications

Contact Measurement (Arm)*										
Measurement Range	SPAT ¹		E _{UNI} ²		P _{SIZE} ³		P _{FORM} ⁴		L _{DIA} ⁵	
Quantum ^S	6 axis	7 axis	6 axis	7 axis	6 axis	7 axis	6 axis	7 axis	6 axis	7 axis
1.5m (4.9ft)	0.012mm (0.0005in)		0.023mm (0.0009in)		0.008mm (0.0003in)		0.015mm (0.0006in)		0.027mm (0.0011in)	
2.5m (8.2ft)	0.018mm (0.0007in)	0.020mm (0.0008in)	0.028mm (0.0011in)	0.030mm (0.0012in)	0.010mm (0.0004in)	0.012mm (0.0005in)	0.020mm (0.0008in)	0.025mm (0.0010in)	0.035mm (0.0014in)	0.048mm (0.0019in)
3.5m (11.5ft)	0.036mm (0.0014in)	0.045mm (0.0018in)	0.056mm (0.0022in)	0.070mm (0.0028in)	0.020mm (0.0008in)	0.024mm (0.0009in)	0.040mm (0.0016in)	0.045mm (0.0018in)	0.070mm (0.0028in)	0.100mm (0.0039in)
4.0m (13.1ft)	0.045mm (0.0018in)	0.055mm (0.0022in)	0.068mm (0.0027in)	0.085mm (0.0033in)	0.024mm (0.0009in)	0.030mm (0.0012in)	0.045mm (0.0018in)	0.050mm (0.0020in)	0.086mm (0.0034in)	0.120mm (0.0047in)
Quantum ^M	6 axis	7 axis	6 axis	7 axis	6 axis	7 axis	6 axis	7 axis	6 axis	7 axis
1.5m (4.9ft)	0.018mm (0.0007in)		0.028mm (0.0011in)		0.012mm (0.0005in)		0.020mm (0.0008in)		0.034mm (0.0013in)	
2.5m (8.2ft)	0.023mm (0.0009in)	0.027mm (0.0011in)	0.034mm (0.0013in)	0.038mm (0.0015in)	0.015mm (0.0006in)	0.018mm (0.0007in)	0.030mm (0.0012in)	0.035mm (0.0014in)	0.045mm (0.0018in)	0.053mm (0.0021in)
3.5m (11.5ft)	0.044mm (0.0017in)	0.055mm (0.0022in)	0.066mm (0.0026in)	0.085mm (0.0033in)	0.025mm (0.0010in)	0.029mm (0.0011in)	0.050mm (0.0020in)	0.060mm (0.0024in)	0.080mm (0.0031in)	0.110mm (0.0043in)
4.0m (13.1ft)	0.053mm (0.0021in)	0.065mm (0.0026in)	0.078mm (0.0031in)	0.100mm (0.0039in)	0.034mm (0.0013in)	0.036mm (0.0014in)	0.060mm (0.0024in)	0.080mm (0.0031in)	0.096mm (0.0038in)	0.132mm (0.0052in)

Non-Contact Measurement (ScanArm)**	
Measurement Range	L _{DIA} ⁵
Quantum ^S 2.5m (8.2ft)	0.048mm (0.0019in)
Quantum ^S 3.5m (11.5ft)	0.080mm (0.0031in)
Quantum ^S 4.0m (13.1ft)	0.092mm (0.0036in)
Quantum ^M 2.5m (8.2ft)	0.063mm (0.0025in)
Quantum ^M 3.5m (11.5ft)	0.100mm (0.0039in)
Quantum ^M 4.0m (13.1ft)	0.115mm (0.0045in)

All values represent MPE (Maximum Permissible Error)

* Contact Measurement (Arm): In accordance with ISO 10360-12

** Non-Contact Measurement (ScanArm): Full System performance in accordance with ISO 10360-8 Annex D

¹ SPAT – Single Point Articulation Test

² E_{UNI} – Distance Error between two points comparing measured vs nominal values

³ P_{SIZE} – Sphere Probing Size Error comparing measured vs nominal values

⁴ P_{FORM} – Sphere Probing Form Error

⁵ L_{DIA} – Sphere Location Diameter Error (Diameter of the spherical zone containing the centers of a sphere measured from multiple orientations)

FARO® Laser Tracker Vantage^S & Vantage^E: Performance Specifications - Point to Point Accuracy^b

In-Line Distance Measurement ^a					
Length		2-5m (6.6-16.4ft)	2-10m (6.6-32.8ft)	2-35m (6.6-114.8ft)	2-80m ^b (6.6-262.5ft)
Distance		3m (9.8ft)	8m (26.2ft)	33m (108ft)	78m (255.9ft)
ADM	MPE ^c	0.018mm (0.0007in)	0.022mm (0.0009in)	0.042mm (0.0017in)	0.078mm (0.0031in)
	Typical	0.009mm (0.0004in)	0.011mm (0.0004in)	0.021mm (0.0008in)	0.039mm (0.0015in)

Horizontal Scale Bar Measurement 2.3m (7.55ft) ^a						
Range		2m (6.6ft)	5m (16.4ft)	10m (32.8ft)	35m (144.8ft)	80m ^b (262.5ft)
ADM	MPE ^c	0.044mm (0.0017in)	0.064mm (0.0025in)	0.099mm (0.0039in)	0.276mm (0.0109in)	0.594mm (0.0234in)
	Typical	0.022mm (0.0009in)	0.032mm (0.0013in)	0.049mm (0.0019in)	0.138mm (0.0054in)	0.297mm (0.0117in)

^a With integrated weather station.

^b With selected targets. Lengths and distances of over 35m are not applicable to Vantage^E.

^c MPE (Maximum Permissible Error) and all accuracy specifications are calculated per ASME B89.4.19 - 2006. Variation in air temperature is not included. Specifications, descriptions, and technical data may be subject to change.

Protected by U.S. patents: 7,327,446; 7,352,446; 7,466,401; 7,701,559; 8,040,525; 8,120,780

(Please refer to individual product's techsheet for more detailed technical information)

FARO® Super 6DoF TrackArm System

Typical Measurement Performance

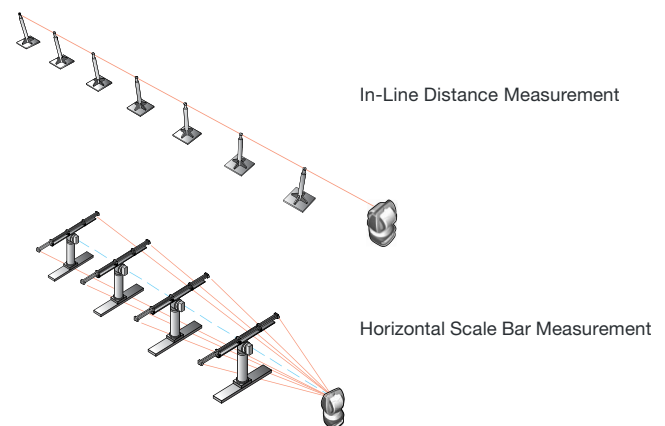
(complete TrackArm system): 80µm + 5 µm/m

FaroArm repeatability:

up to 0.016mm

Tracker distance accuracy:

up to 0.018mm @ 2m



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