

Manchester Metrology LTD

Portable Measurement Solutions

FARO® Laser Tracker ION®

www.Manchester-Metrology.co.uk



SelfComp

Automatically tunes Laser Tracker parameters to ensure high accuracy.

Versatile Mounting Options

Mounts vertically, horizontally or upside down*, providing versatility in tight or congested areas.

* Inverted mounting requires the use of the integrated threaded ring

Dual Distancing Systems

Catch the beam in the air and set the distance instantly with Agile ADM; perform high speed dynamic measurements or high precision in-line measurements with IFM

Smart Warm-Up

Accelerates the stabilization time in order to minimize the initial temperature changes' impact on measurements.

Integrated Weather Station

Monitors and compensates for changes in temperature, air pressure and humidity.

Integrated Precision Level

Establishes level to gravity within the measurement job.

The FARO Laser Tracker ION is a high precision, portable coordinate measuring machine that enables you to build products, optimize processes, and deliver solutions by measuring more quickly, simply and precisely. Replacing conventional hand tools such as tape measures, piano wire, plumb bobs, and even theodolites - the ION is a more accurate and reliable tool that allows you to streamline your processes and gain confidence in your measurement results.

Most Common Applications

Alignment: Real-time measurement confirms tolerances and validates design
Installation: Reduce wear and tear on mechanical parts
Part Inspection: Digital record of actual vs nominal data
Tool Building: Full volumetric accuracy tests
Reverse Engineering: Acquire high accuracy digital scan data
Robotic & Machine Guidance: Automation simplifies complex drilling and probing applications

Benefits

- ▶ Advanced technology yet still easy for everyone to use
- ▶ Long range for easy measurement of large objects
- ▶ High accuracy gives you dependable results to remain competitive
- ▶ High precision IFM based Laser Tracker



System Specifications

Dimensions

Head size: (w x h): 311mm x 556mm
 Head weight: 19.5kg
 Controller size (l x d x h): 282mm x 158mm x 214mm
 Controller weight: 5.2kg

Range

Horizontal envelope: ± 270°
 Vertical envelope: 125° (+72.5° to -52.5°)
 Minimum working range: 0m
 Maximum working range: 55m with select targets
 40m with standard 1.5" & 7/8" SMRs
 30m with standard 1/2" SMR

Environmental

Altitude: -700 to 2,450m
 Humidity: 0 to 95% non-condensing
 Operating temperature: -15°C to 50°C

Laser Emission**

633-635nm Laser, 1 milliwatt max/cw.
 Class II Laser Product

Distance Measurement Performance***

Agile ADM

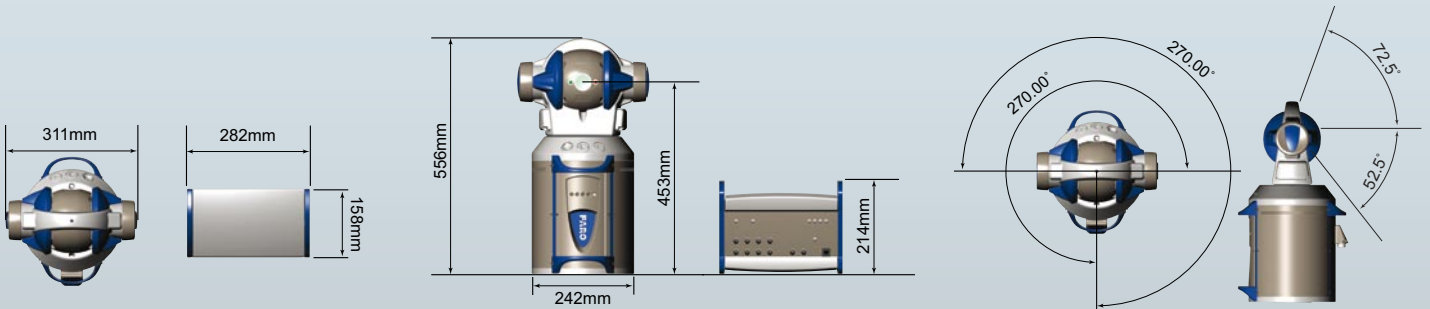
Resolution: 0.5µm
 Sample rate: 10,000 points/sec
 Accuracy (MPE): 16µm + 0.8µm/m
 R0 Parameter (MPE): 16µm

Interferometer

Resolution: 0.158µm
 Accuracy (MPE): 4µm + 0.8µm/m
 Maxim. radial velocity: 4m/sec
 R0 Parameter (MPE): 16µm

Angle Measurement Performance***

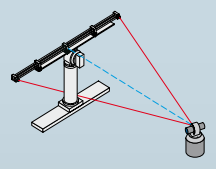
Angular accuracy (MPE): 20µm + 5µm/m
 Maximum angular velocity: 180°/sec
 Precision level accuracy: ±2 arcseconds



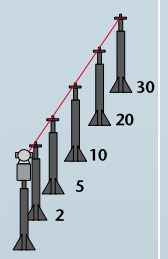
Point-to-Point MPE Accuracy***



Horizontal Scale Bar Measurement		
Range (m)	ADM (mm)	IFM (mm)
2	0.044	0.044
5	0.064	0.064
10	0.098	0.098
20	0.170	0.170
30	0.240	0.240
40	0.312	0.312
50*	0.382	0.382
55*	0.418	0.418



In-Line Distance Measurement			
Length (m)	Distance (m)	ADM (mm)	IFM (mm)
2-5	3	0.018	0.006
2-10	8	0.022	0.010
2-20	18	0.030	0.018
2-30	28	0.038	0.026
2-40	38	0.046	0.034
2-50*	48	0.054	0.042
2-55*	53	0.058	0.046



*With selected targets.
 **Product complies with radiation performance standards under the food, drug, and cosmetics act and international standard IEC 60825-1 2001-08.
 ***MPE 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