

FARO® Laser Tracker ION®

Features, Benefits & Technical Specifications



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

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

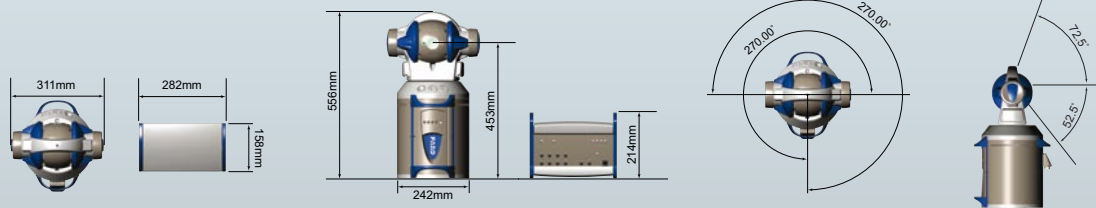
Resolution:	0.158µm
Accuracy (MPE):	4µm + 0.8µm/m
Maxim. radial velocity:	4m/sec
R0 Parameter (MPE):	16µm

Angle Measurement Performance***

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

Laser Emission**

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



Point to Point Accuracy***

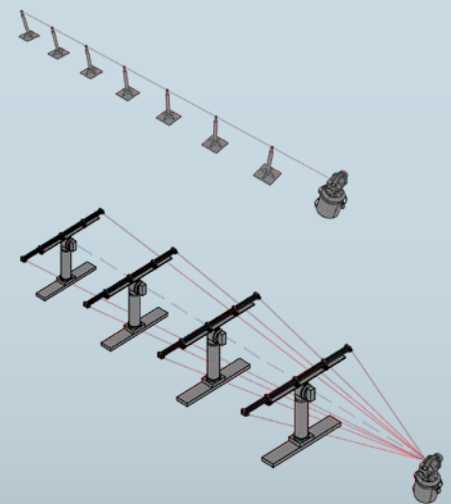


In-Line Distance Measurement

Length (m)	2-5	2-10	2-20	2-30	2-40	2-50*	2-55*	
Distance (m)	3	8	18	28	38	48	53	
ADM	MPE (mm)	0.018	0.022	0.03	0.038	0.046	0.062	0.078
	Typical (mm)	0.009	0.011	0.015	0.019	0.023	0.031	0.039
IFM	MPE (mm)	0.006	0.01	0.018	0.026	0.034	0.042	0.046
	Typical (mm)	0.003	0.005	0.009	0.013	0.017	0.021	0.023

Horizontal Scale Bar Measurement (2.3m)

Range (m)	2	5	10	20	30	40	50*	55*
ADM	MPE (mm)	0.044	0.064	0.099	0.17	0.24	0.311	0.417
	Typical (mm)	0.022	0.032	0.049	0.085	0.12	0.156	0.191
IFM	MPE (mm)	0.042	0.063	0.099	0.17	0.24	0.311	0.417
	Typical (mm)	0.021	0.032	0.049	0.085	0.12	0.156	0.191



*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. ****With integrated weather station. Protected by U.S. patents: 7,327,446 7,352,446 7,466,401 7,701,559 8,040,525 8,120,780. 1mm = 0.0394 inches

