The Patterson

FARO Laser Tracker ION™

Patterson offers

- The World's Most Accurate Large Volume Laser Tracker

The FARO Laser Tracker ION is an extremely accurate, portable coordinate measuring machine that enables you to build products, optimize processes, and deliver solutions by measuring more quickly, simply and precisely than previously possible.

Replacing conventional tools such as tape measures, piano wire, plumb bobs, and even theodolites – the ION is a more accurate and reliable portable 3D measurement tool that allows you to streamline your processes and gain confidence in your measurement results.

Using our extensive knowledge of real-world measurement applications, we were able to develop the most accurate laser tracker available while still making it simple and easy to use and maintain.

The Future of Laser Tracker Technology

Agile Absolute Distance Meter (aADM)

FARO's Agile Absolute Distance Meter (aADM) is the latest advancement in Absolute Distance Meter (ADM) technology from FARO. This patented technology is included in the Laser Tracker ION and provides the ability to acquire a handheld target even if the target is moving.

Interferometer (IFM)-based measurement can trace its origins to the late 1800s – it was not until the invention of ADM that the laser tracker made its move from a laboratory instrument to a real-world measurement system. ADM-based systems represent the latest in laser tracker technology, and the ION's Agile ADM measuring system is the only ADM system on the market that is fast enough to allow for high density scanning without relying on an interferometer. IFM-based laser trackers also require the use of a laser tube that has a finite life, so FARO's aADM-based Laser Tracker ION does not have the additional costs associated with laser tube replacement.

Agile ADM modulates its laser beam at three slightly different frequencies. By comparing the phase of the three modulated frequencies received by the Laser Tracker, aADM eliminates any ambiguity and calculates the position of the target.

With Agile ADM comes great simplification of the system – there is no need to switch between ADM and interferometer-based systems – aADM does it all. The ION's exclusive ADM technology results in increased accuracy, ease of use, and rock-solid reliability.

The FARO Laser Tracker ION is the most advanced, state-of-the-art FARO Laser Tracker ever introduced. It provides increased accuracy, longer measurement range, lighter weight, and has the fastest, most sophisticated distance measuring system available. Additionally, the unit was designed with the end user in mind – despite all these advancements in technology, it is still easy enough for anyone to use. Whether you are already familiar with the FARO Laser Tracker, or the ION is your first introduction, it is sure to exceed your expectations.

Improved Volumetric Accuracy

The accuracy of the FARO Laser Tracker ION gives you results you can depend on – helping your company drive the innovation necessary to remain competitive. With a volumetric accuracy of .002" (.049mm) at 33 feet (10m), even the strictest tolerance measurements can be achieved. This exceeds the previous generations of FARO Laser Trackers by 27%. Why is higher accuracy important? It provides you with superior measurement certainty for your entire project. This can mean eliminating rework, which in some cases can cost more than the entire measurement system. The more the error in the measurement instrument is reduced, the more confidence you will have in the results.

Realize the ION Difference

SelfComp
Compensation is normally a very time-consuming and user-intensive process, and the accuracy of any measurement system is affected by errors due to environmental changes. However, the patented SelfComp feature allows the ION to automatically maintain the highest level of system accuracy over a broad range of environmental conditions. SelfComp allows the unit to compensate for the errors while still producing the highest accuracy results.

Versatile Mounting Options
The ION can be mounted vertically, horizontally or upside down*, providing versatility in tight or congested areas.

Instant-On Laser
Begin taking measurements faster since no warm-up of the laser tube is required. This can result in a time-savings of 20 to 30 minutes!

Smart Warm-Up
This feature accelerates the stabilization time of the unit itself in order to minimize the initial temperature changes' impact on measurements.

Integrated Weather Station
Temperature, air pressure, and humidity can affect the speed that light travels through air. The integrated weather station monitors these and compensates to ensure the accuracy of the measurement results.

Integrated Precision Level
This built-in device establishes level to gravity within the measurement job. This is especially beneficial in complex alignments and equipment set-up.

Real-World Applications

Alignment
- More accurate and less time-consuming than traditional methods
- Frequent measurements and proper trending of distortions
- Real-time measurement confirms tolerances and validates design

Installation
- Lay out / level machine foundation
- Prevent damage during the machine's initial run
- Reduce wear and tear on mechanical parts

Part Inspection
- Compare complex geometry, surfaces and feature positions to nominal data
- No need to move the part to a fixed inspection tool
- Reduce production waste and non-conformance costs

Tool Building
- Full volumetric accuracy tests (ensures parts are being assembled to the highest standard)
- Verify dimensional integrity and repeatability of the tool (identify or preempt tool defects)

Reverse Engineering
- Acquire high accuracy digital scan data
- Eliminate the need for hard masters