

# FARO® Vantage Laser Trackers

## Portable, Large-Scale, High-Accuracy 3D Measurement

The FARO Vantage Laser Trackers enable you to build and inspect products by measuring quickly, simply and precisely. With superior accuracy, exceptional portability and outstanding ruggedness, Vantage Laser Trackers make large-scale 3D measurement easy. They streamline your processes and give you confidence in your measurement results. The latest-generation of Vantage<sup>S</sup> and the Vantage<sup>E</sup> Laser Trackers take productivity and simplicity to the next level. These Laser Trackers feature FARO's patent-pending ActiveSeek™ capability to quickly sync up the user and the tracker to measure faster than any other laser tracker in the market today. The Vantage series also includes FARO's unique RemoteControls™ workflow, which allows a single user to control functions such as live video feed and tracker movements with a mobile phone or tablet, thus increasing mobility and ease of use.

The Vantage<sup>S</sup> is intended for short-to-long range measurement applications of up to 80 meters, while the Vantage<sup>E</sup> supports short-to-medium range applications of up to 35 meters.



## Benefits

### Maximize productivity and reduce inspection cycle times by 50% to 75%:

- Faster, easier measurement with ActiveSeek and RemoteControls
- Faster WiFi, warmup, and field compensation

### Robust performance delivers consistent, dependable, and repeatable measurement results across a wide array of applications:

- High accuracy with virtually no drift
- Operates in darkness or bright sunlight

### Exceptional portability:

- Easy transport and setup – no Master Control Unit required
- Dual, hot-swappable battery

### Rugged design and construction:

- Rigorous shock, vibration, temperature & humidity testing
- IP52 water and dust resistant

### Realize a quick return on investment:

- Reduce rework, scrap, and downtime
- Increase efficiencies in measurement and production times

## Features

### ActiveSeek™

- FARO's patent-pending feature to quickly and efficiently locate and lock onto a target – allowing the Vantage to follow a moving target, even behind obstacles, and lock onto the target again when it is stable. Stereo cameras with a 50° field of view, the best in the industry, make ActiveSeek effective across a wide footprint.

### RemoteControls Workflow

- FARO's patented feature enhances workflow by allowing a user to control functions such as live video feed and tracker movements with a mobile phone or tablet.

### Exceptional Portability & Ruggedness

- With an ultracompact size and integrated WiFi, Vantage Trackers can easily move between locations in a single, easily transportable case. They are rated IP52 and have been rigorously tested for resistance to shock, vibration, temperature cycle, and humidity.

### Integrated Absolute Distance Measurement System (iADM)

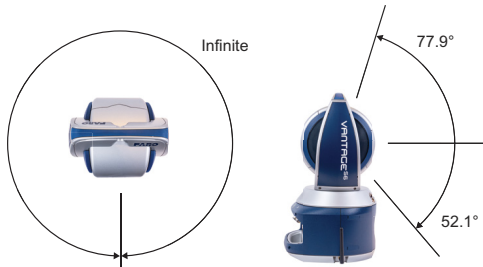
- Vantage is the only tracker that uses one laser to measure angle and distance with iADM to ensure exceptional accuracy. Reliability is improved because errors and drift associated with two-beam tracker technology are eliminated.

# Vantage<sup>S</sup> and Vantage<sup>E</sup> Specifications

Working Range	Vantage <sup>S</sup>	Vantage <sup>E</sup>
Maximum with FARO 1.5in green-ring or 1.5in blue-ring SMRs	80m (262.5ft)	35m (114.8ft)
Maximum with 1.5in & 7/8in SMRs	60m (196.9ft)	35m (114.8ft)
Maximum with 1/2in SMRs	30m (98.4ft)	30m (98.4ft)
Minimum	0m (0ft)	0m (0ft)

## Rotational Envelope

- Horizontal: 360° – Infinite rotation
- Vertical: 130° (+77.9° to -52.1°) – Infinite rotation



## Data Output Rate

- 1,000 measurement points per second

## Distance Measurement Performance<sup>a</sup>

- Resolution: 0.5µm (0.00002in)
- Accuracy (MPE): 16µm + 0.8µm/m (0.00063in + 0.0000096in/ft)
- Max Radial Acceleration: 30m/sec<sup>2</sup> (82.0ft/sec<sup>2</sup>)
- Max Radial Velocity: > 25m/sec (98.4ft/sec)

## Angle Measurement Performance<sup>a</sup>

- Angular Accuracy (MPE): 20µm + 5µm/m (0.00079in + 0.00006in/ft)
- Precision Level Accuracy: ± 2 arcseconds

## Tracking Performance

- Max Angular Acceleration: 860°/sec<sup>2</sup> (15 rads/sec<sup>2</sup>)
- Max Angular Velocity: 180°/sec (π rads/sec)

## Stereo Color Cameras

- Field of View: 50°
- Resolution: 1920 x 1080p @ 15 fps

## Point to Point Accuracy<sup>a</sup>

In-Line Distance Measurement <sup>c</sup>					
Length		2-5m (6.6-16.4ft)	2-10m (6.6-32.8ft)	2-35m (6.6-114.8ft)	2-80m <sup>d</sup> (6.6-262.5ft)
Distance		3m (9.8ft)	8m (26.2ft)	33m (108ft)	78m (255.9ft)
ADM	MPE <sup>a</sup>	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) <sup>c</sup>						
Range		2m (6.6ft)	5m (16.4ft)	10m (32.8ft)	35m (144.8ft)	80m <sup>d</sup> (262.5ft)
ADM	MPE <sup>a</sup>	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)

## Laser Emission<sup>b</sup>

- Class 1 Laser Product: 630-640 nm laser, 0.39 milliwatt max/cw

## Dimensions

- Size: 240(W) x 416(H) mm [9.4(W) x 16.4(H) in]
- Weight: 13.4kg (29.5lb)

## Hardware Specifications & Environmental

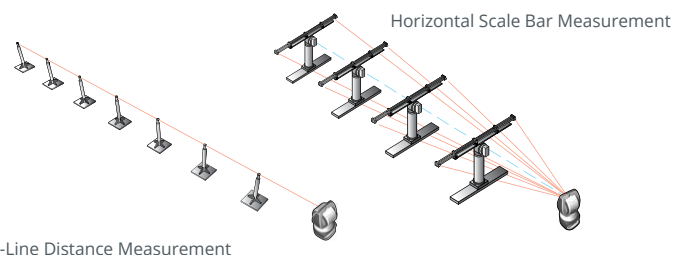
- Power Supply Voltage: 24V
- Power Consumption: 75W
- Battery Life: 8 hours continuous operation (2 batteries), hot swappable
- Altitude: -700 to 9,000m (-2,297 to 29,527ft)<sup>e</sup>
- Humidity: 0 to 95% non-condensing
- Operating Temperature: -15°C to 50°C (5°F to 122°F)
- IP52 – Dust and water resistant (IEC 60529)
- Certifications:
  - NRTL listed, MET-C listed
  - EU – RoHS2
- Complies With:
  - Ingress Protection IP52 per IEC 60529
  - 47 CFR, Ch. 1, Part 15, Subpart B
  - ICES-003, Issue 6, 2016
  - UL 61010-1, CSA C22.2 No. 61010-1, EN 61010-1, IEC 61010-1
  - Laser and LED Safety IEC 60825 and IEC 62471
  - IEC 60068-2-6, IEC 60068-2-64, and IEC-60068-2-27 (shock and vibration)
  - EU/EMC Directive 2014/30/EU, EN 61326:2013, IEC 61326:2012

## Connectivity

- Ethernet: RJ45 port supporting GigE
- WiFi: 802.11n (and earlier)

## Software Compatibility

- FARO CAM2<sup>®</sup>
- BuildIT
- FARO RemoteControls Workflow App
- Third-Party Software Plug-ins
- Software Development Kit (SDK)



<sup>a</sup> MPE (Maximum Permissible Error) and all accuracy specs based on ISO 10360-10:2016 verified to 75m.

<sup>b</sup> Product complies with radiation performance standards under the Food, Drug, and Cosmetics Act and international standard IEC 60825-1 2001-08.

<sup>c</sup> With integrated weather station.

<sup>d</sup> Lengths and distances of over 35m are not applicable to Vantage<sup>E</sup>.

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



Local operations around the world. Go to [FARO.com](https://www.faro.com) to learn more.