



KinAiry is the comprehensive, independent solution for laser tracker evaluation, utilizing **NIST's new Interim Field Test Procedure IR-8016<sup>1</sup>**. The KinAiry system provides a set of traceable measurements designed to verify volumetric performance in your environment. The result is a colored graphical analysis that quickly shows the overall health of your tracker...regardless of make or model.

## COMPREHENSIVE TESTING

Traditional laser tracker field checks often consist of 2-face (front sight/back sight) tests or short reference bar measurements. While these have value, they don't exercise the tracker sufficiently to evaluate performance over a larger working volume. That's why NIST designed a volumetric test to assess the total health of a tracker in the field. A number of measurements are taken on a 2.3 meter bar in various orientations, strategically located to fully exercise both the ranging and angular measurement components of a tracker. The test is quick and easy to run, occupies a small footprint, and provides the ultimate confidence in laser tracker performance... right on the job.



*When installed on a Brunson portable stand, KinAiry can be set up in nearly any location.*

## IN YOUR ENVIRONMENT

While there is no substitute for the periodic testing a laser tracker receives at the manufacturer's facility, it is equally important

to be confident that the tracker survived the ride home and is operating within spec on the production floor. The role of interim field testing is to evaluate instrument performance and identify errors in conditions of actual use. It answers the question, "How is my tracker performing right now?" Results from interim field testing can be used as a required check in the quality audit trail, to confirm instrument performance prior to critical measurements, and to track instrument performance over time.

## OBJECTIVE, TRACEABLE RESULTS

Many companies own laser trackers from different manufacturers, all of which have built-in, firmware-specific field checks requiring operators to be fluent in various test methodologies. KinAiry consolidates these device-specific processes into one system check for any laser tracker. The operator follows a simple script to capture test points using the metrology software of choice along with KinAiry's calibrated 2.3 meter artifact in multiple positions. The data is transferred to KinAiry, where it is analyzed and presented in a colored graphical plot comparing the tracker's actual performance against the manufacturer's Maximum Permissible Error (MPE). Now there's one field test which objectively qualifies the performance of any tracker using a NIST traceable process. Industry has waited a long time for this!



*Folding mirror expedites beam buck-in process.*

## INNOVATIVE DESIGN AND PROCESS

KinAiry's innovative features revolutionize the use of long reference bars in the field. The length artifact, a rotating 2.3 meter reference bar, is calibrated and certified on-site by isolating the ranging element of the laser tracker through an innovative buck-in process. The carbon fiber reference bar floats stress-free on KINematic mounts located at the bar's AIRY points, chosen because they minimize sag. A folding mirror quickly orients the beam to the bar, and an articulating head effortlessly positions the bar as required by the test. KinAiry's software guides the operator through point measurement, which takes about 20 minutes, then analyzes the data and renders a colored plot that instantly diagnoses the health of a tracker. When installed on a Brunson portable stand, KinAiry can be set up in nearly any location or environment.

1. NIST IR 8016: "A Proposed Interim Check for Field Testing a Laser Tracker's 3-D Length Measurement Capability Using a Calibrated Scale Bar as a Reference Artifact"  
Download free from [www.brunson.us/nist-field-test](http://www.brunson.us/nist-field-test)

# SOLUTION PACKAGE

## Small Case

- 1. Positioner
  - 2. Mirror and Gimbal Mount
  - 3. Software Flashdrive
  - 4. Spanner Wrench
  - 5. EasyConnect Base
  - 6. Retroreflector Counterweights (2)
  - 7. Positioner and Accessories Case
  - 8. Length Artifact Case
- KinAiry Artifact Bar (shown below)



Images are not to scale



### Required but not Included

- Computer with Windows 7 or later
- High Quality Retroreflector
- Model 230 shop stand or
- Model MAS2000TA portable stand

## SPECIFICATIONS

**Artifact Length**  
8' 0.025" / 2.43 m

**Artifact Rotation**  
360° with 45° stops

**Solution Weight**  
Positioner: 24.6 lbs/11.2 kg  
Length Artifact: 28.3 lbs/12.8 kg  
Small Case (packed): 46.7 lbs/21.2 kg  
Long Case (packed): 94.1 lbs/42.7 kg

When the KinAiry bar is mounted to this Brunson stand...	The tracker must have an "eye height" of...
Shop Stand (230-0)	49-53 in. (124-134.5 cm)
Portable Stand (MAS2000TA)	49-60 in. (124-152.5 cm)

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[www.brunson.us/KinAiry](http://www.brunson.us/KinAiry)  
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