

TRACEABLE

KinAiry's 2.3m reference length becomes traceable by virtue of its special calibration procedure.

SI
Units

National
Standards Lab

Laser Tracker
Manufacturer

ISOLATE

Tracker Ranging
Component

CALIBRATE

KinAiry Artifact



Images are not to scale

KINAIRY INCLUDES:

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

Required but not included:

Computer with Windows 7 or later
High Quality Retroreflector
Metrology Stand

Kinairy may also be purchased:

With a Metrology Stand
Without Software (Hardware only)



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ISOLATE

Isolate the laser tracker's distance measuring component

CALIBRATE

Calibrate the 2.3m artifact length using the tracker's traceable distance measurement capability

MEASURE

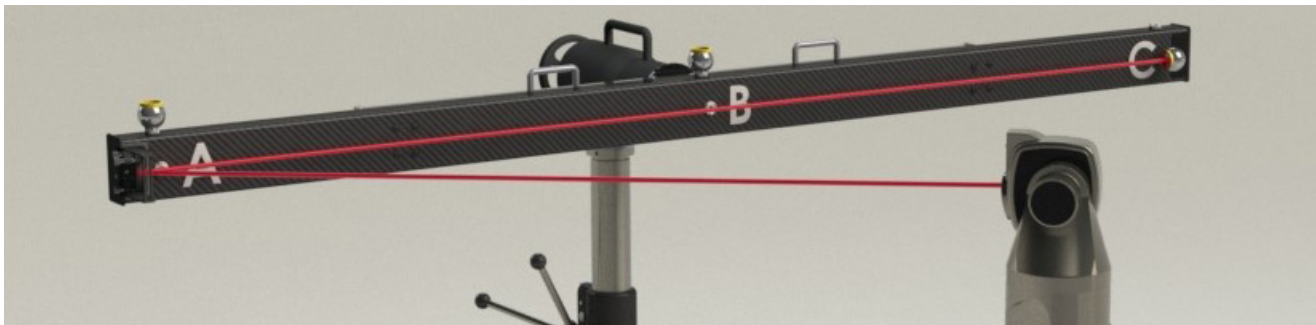
Perform the volumetric check outlined in NIST's new Interim Field Test Procedure

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

**The KinAiry length reference bar is not certified to a given length at the factory.
So how in the world are KinAiry measurements said to be traceable?**

Well, consider this... KinAiry's first step is to use a pan-and-tilt mirror along with a simple buck-in process to put the tracker's beam on a line directly through the bar's three targets. There is no need to move the tracker around when doing this. When this alignment is accomplished within 0.1° (much easier than it sounds), it virtually eliminates the effect of any tracker head rotation* on length measurement. This **isolates** the tracker's ranging element for the sole purpose of measuring the distances between the bar's three targets. In this manner, the tracker's IFM or ADM, which is calibrated and traceable, **calibrates** the bar, establishing traceable lengths between the targets. This results in a calibrated, traceable artifact with which to then perform the **volumetric** test. And who wouldn't want to use a length artifact that was calibrated immediately before each and every test? Pretty clever, huh? We can thank the NIST folks for coming up with this one.

*When aligned within 0.1° , the inter-target distance measuring error due to tracker head rotation is reduced to much less than 1 micron.



Position 1: Vertical with tracker at 0°

Position 2: Vertical with tracker at 90°

Position 3: Horizontal with tracker at 90°

Position 4: Horizontal with tracker at 0°

Position 5: Horizontal with 0.5 meter offset and tracker at 0°

