

Extremely Round and Perfect Uses 'Random Ball Test' to Determine the Error in Transmission Spheres

Qualify your transmission sphere in minutes and be confident of the results

CaliBall™ is a 25.4 mm diameter silicon nitride ball and kinematics mount used to calibrate phase-measuring interferometers by determining the errors in the transmission-sphere reference surface. The **CaliBall™** is located with its center at the focus of the interferometer transmission sphere and aligned to better than one fringe.

The **CaliBall™** is positioned in x, y and z with its center at the focus of the transmission sphere so light is reflected back into the interferometer by the convex ball surface. An interferogram is taken and stored. The **CaliBall™** is lifted out of its kinematics mount, rotated to an arbitrary new position and replaced. Another interferogram is taken and averaged with the first. The process is repeated several times. The average is an estimate of the residual error in the transmission sphere because the errors in the **CaliBall™** average to zero in the limit of a large number of tests.

The calibration can be done in as little as 10 minutes and the result is difficult to dispute. If the **CaliBall™** settles just one disagreement with a customer or vendor, it has more than paid for itself in saved time and frustration.

CaliBall™ comes with a three ball kinematics mount potted in a substantial steel base that is cut away on one side so F/0.7 transmission spheres can be calibrated. **CaliBall™** comes with a certificate showing roundness and finish, complete instructions for use and a clean room compatible storage case.

CaliBall™ dimensions: 42mm x 51mm x 56mm - Weight: 287g.

Use **CaliBall™** with the standard bayonet mount for attachment to virtually any interferometer multiple axis stage
Bayonet mount dimension: Φ 128mm, thickness: 12mm - Total Weight: 519g

Applications

- Works with any Fizeau interferometer, such as:
- **Intellium™ Z30, Z40, Z100, and Intellium™ H2000**, as well as other commercial and custom built Fizeau interferometers.
- Works with any brand/make of transmission sphere.

Main Features & Benefits

- Extremely round and perfect
- Perform Random Ball Test
- Easy to use
- Low cost
- Wide range of transmission sphere F/# to qualify
- From F/0.7 to F/11
- Works with ROC as small as 12.7mm (0.5")

