

CaliBallTM



Interferometer Transmission Sphere Calibration Ball for the Random Ball Test^{1,2}

CaliBallTM is a 25.4 mm diameter, silicon nitride ball and kinematic mount used to calibrate phase-measuring interferometers by determining the errors in the transmission-sphere reference-surface. The CaliBallTM is located with its center at the focus of the interferometer transmission sphere and aligned to better than one fringe. A measurement of the ball is taken, the ball picked up, arbitrarily rotated and replaced in its mount. The center of the ball will return to the original position due to the kinematic mount. Another measurement of the ball is then taken.

This process is repeated about a dozen times and the interferograms averaged. The average represents the errors in the transmission sphere and interferometer because the ball is extremely round and the small imperfections of the ball average to zero. The calibration can be done in as little as 10 minutes and the result is difficult to dispute. If the CaliBallTM settles just one disagreement with a customer or vendor, it has more than paid for itself in wasted time and frustration. Best used with low F/# transmission spheres.



Optical Perspectives Group, LLC

7011 E. Calle Tolosa

Tucson, AZ 85750

520 529 2950

www.optiper.com

\$700

Major credit cards accepted

¹R. E. Parks, C. J. Evans and L. Shao, "Calibration of Interferometer Transmission Spheres", in *Optical Fabrication and Testing Workshop, OSA Technical Digest Series*, **12**, pp. 80-3, 1998.

²U. Griesman, "A Simple Ball Averager for Reference Sphere Calibrations", *Proc. SPIE*, **5869**, 2005.