

# ISO/TR 14999-3:2005-03 (E)

## Optics and photonics - Interferometric measurement of optical elements and optical systems - Part 3: Calibration and validation of interferometric test equipment and measurements

---

<b>Contents</b>		<b>Page</b>
Foreword .....		iv
Introduction .....		v
1	Scope .....	1
2	Terms and definitions .....	1
3	Systematical investigation of test equipment, test set-up and test environment for sources of errors .....	2
3.1	General .....	2
3.2	Sources of uncertainty .....	2
3.3	Combination of uncertainties .....	3
4	Separation of errors into rotationally symmetric and non-rotationally symmetric terms .....	4
4.1	General .....	4
4.2	Principle .....	4
4.3	Apparatus .....	6
4.4	Procedure .....	6
5	Measurement relying on the quality of a physical reference surface .....	6
5.1	Planes .....	6
5.2	Spheres .....	9
5.3	Aspheres .....	12
5.4	Homogeneity testing .....	24
5.5	Optical systems in transmission .....	25
6	Optical test procedures for achieving absolute calibration .....	28
6.1	General .....	28
6.2	Flats .....	29
6.3	Spherical surfaces .....	35
6.4	Cylindrical surfaces .....	41
6.5	Windows in transmission .....	42
Bibliography .....		44