

ISO 14999-4:2015-08 (E)

Optics and photonics - Interferometric measurement of optical elements and optical systems - Part 4: Interpretation and evaluation of tolerances specified in ISO 10110

Contents		Page
Foreword		iv
Introduction		v
1	Scope	1
2	Normative references	1
3	Terms and definitions	1
3.1	Mathematical definitions	1
3.2	Definition of optical functions	2
3.3	Definition of values related to the optical functions defined in 3.2	4
3.4	Definition of Zernike polynomials	7
3.5	Definitions of functions and terms for tolerancing the slope deviation	7
3.6	Definitions of values for tolerancing the slope deviation	8
4	Relating interferometric measurements to surface form deviation or transmitted wavefront deformation	11
4.1	Test areas	11
4.2	Quantities	11
4.3	Single-pass transmitted wavefront deformation	11
4.4	Double-pass transmitted wavefront deformation	11
4.5	Surface form deviation	11
4.6	Conversion to other wavelengths	11
5	Representation of the measured wavefront deviation as Zernike coefficients	12
6	Tolerancing of the slope deviation	12
6.1	One-dimensional measurement of the slope deviation	12
6.2	Two-dimensional measurement of the slope deviation	15
	Annex A (normative) Visual interferogram analysis	16
	Annex B (normative) Zernike polynomials	24
	Bibliography	27