ISO 17901-2:2015-07 (E)

Optics and photonics - Holography - Part 2: Methods for measurement of hologram recording characteristics

Contents

Page

Foreword iv

Introduction v

1 Scope 1

2 Normative references 1

3 Termsanddefinitions 1

4 Symbols and abbreviated terms 2

5 Principles 2

6 Measurement methods 3
6.1 General 3
6.2 Definition of the Coordinate System 4
6.3 Hologram recording environment 4
6.4 Measurement device and apparatus 4
6.5 Exposure characteristics curve measurement method for recording of the hologram 6
6.6 Exposure at half-maximum measurement method for recording of the hologram 6
6.7 Method to measure the R-value of the hologram 7
6.8 Method to measure the amplitude of refractive index modulation of the hologram 7
6.8.1 General 7
6.8.2 Measurement using the transmission hologram 8
6.8.3 Measurement using the reflection hologram 8

7 Description of measurement results 9
7.1 General 9
7.2 Description of the information concerning the object to be measured 9
7.3 Description of the measurement results on the exposure characteristics curve and exposure at half-maximum for hologram recording 9
7.4 Description of the R-value measurement result of the hologram 9
7.5 Description of the measurement result of refractive index modulation of the hologram 10

Annex A (informative)Assemblyprocedureandstabilityconfirmationofhologram recording optical system based on double-beam interference 13

Annex B (informative) Hologram recording procedure 15

Annex C (informative) Relationship between the hologram and interference fringes due to double-beam interference 16