

ISO 15253:2021 (E)

Ophthalmic optics and instruments — Optical and electro-optical devices for enhancing low vision

Contents

| | |
|---------|---|
| | Foreword |
| | Introduction |
| 1 | Scope |
| 2 | Normative references |
| 3 | Terms and definitions |
| 4 | Classification |
| 4.1 | Optical devices |
| 4.1.1 | Distance vision |
| 4.1.2 | Near and intermediate vision |
| 4.1.3 | Retinal illumination reduction or contrast enhancement |
| 4.2 | Electro-optical devices |
| 5 | Requirements |
| 5.1 | General |
| 5.1.1 | Risk assessment and management |
| 5.1.2 | Materials |
| 5.1.3 | Dimensions and weight |
| 5.1.4 | Flammability/Ignitability |
| 5.1.5 | Resistance to perspiration |
| 5.1.6 | Robustness |
| 5.1.7 | Resistance to drop |
| 5.2 | Optical devices |
| 5.2.1 | Spatial resolution |
| 5.2.1.1 | Devices designed for near/intermediate use |
| 5.2.1.2 | Devices designed for distance vision |
| 5.2.2 | Equivalent power (applies to optical devices designed for near or intermediate use) |
| 5.2.3 | Magnification |
| 5.2.3.1 | Nominal magnification or trade magnification (applies to all magnifiers) |
| 5.2.3.2 | Transverse magnification (applies to stand magnifiers) |
| 5.2.3.3 | Angular magnification (applies to telescopes designed for distance use) |
| 5.2.3.4 | Uniformity of magnification |
| 5.2.4 | Exit image distance (applies to stand magnifiers) |
| 5.2.5 | Entrance pupil diameter (applies to telescopes) |
| 5.2.6 | Transmittance |
| 5.2.7 | Image relocation |
| 5.3 | Electro-optical devices |
| 5.3.1 | Display size |
| 5.3.2 | Ambient temperatures |
| 5.3.3 | Image characteristics |
| 5.3.3.1 | System resolution |
| 5.3.3.2 | Display magnification |
| 5.3.3.3 | Display size |
| 5.3.3.4 | Electro-optical device field of view |
| 5.3.3.5 | Display luminance |
| 5.3.3.6 | Contrast ratio |
| 5.3.4 | Object (XY) table |
| 5.3.5 | Electro-optical device working distance |
| 5.3.6 | Text to speech system |

- 5.3.7 Electrical requirements
 - 5.3.7.1 General
 - 5.3.7.2 Electromagnetic compatibility
- 6 Test methods
 - 6.1 General
 - 6.2 Optical devices
 - 6.2.1 Spatial resolution test
 - 6.2.1.1 Test principle
 - 6.2.1.2 Test set-up
 - 6.2.1.2.1 General
 - 6.2.1.2.2 Magnifiers and telemicroscopes/near-vision telescopes
 - 6.2.1.2.3 Telescopes
 - 6.2.1.3 Test procedure
 - 6.2.1.3.1 Magnifiers and telemicroscopes/near-vision telescopes
 - 6.2.1.3.2 Telescopes
 - 6.2.1.4 Test evaluation
 - 6.2.2 Equivalent power – Magnifiers
 - 6.2.3 Angular magnification – Telescopes
 - 6.2.4 Transverse magnification – Stand magnifiers
 - 6.2.5 Lateral variation of magnification test
 - 6.2.6 Exit image distance – Stand magnifiers
 - 6.3 Electro-optical devices
 - 6.3.1 Display magnification test
 - 6.3.1.1 Equipment
 - 6.3.1.2 Procedure
 - 6.3.2 Uniformity of magnification
- 7 Information to be provided by the manufacturer
 - 7.1 Marking
 - 7.2 Instructions for use
- Annex A (informative) Determination of lateral variation of magnification
 - A.1 Principle
 - A.2 Apparatus
 - A.2.1 Hand and stand magnifiers.
 - A.2.2 Distance and afocal telescopes.
 - A.3 Procedure
 - A.3.1 Magnifier viewing position
 - A.3.2 Near-vision telescope viewing position
 - A.3.3 Afocal and distance telescope viewing position
 - A.4 Assessment
 - A.4.1 Magnifiers
 - A.4.2 Near-vision telescopes
 - A.4.3 Afocal and distance telescopes

Page count: 26