

# ISO 9241-333:2017-04 (E)

## Ergonomics of human-system interaction - Part 333: Stereoscopic displays using glasses

---

<b>Contents</b>		<b>Page</b>
Foreword .....		v
Introduction .....		vi
<b>1</b>	<b>Scope .....</b>	<b>1</b>
<b>2</b>	<b>Normative references .....</b>	<b>1</b>
<b>3</b>	<b>Terms and definitions .....</b>	<b>1</b>
3.1	General terms .....	1
3.2	Human factors .....	3
3.3	Performance characteristics .....	4
<b>4</b>	<b>Display technologies and their guiding principles .....</b>	<b>4</b>
<b>5</b>	<b>Ergonomic requirements .....</b>	<b>5</b>
5.1	Viewing conditions .....	5
5.1.1	General .....	5
5.1.2	Design viewing distance .....	5
5.1.3	Design viewing direction .....	6
5.2	Luminance .....	6
5.2.1	General .....	6
5.2.2	Illuminance .....	6
5.2.3	Display luminance .....	6
5.3	Visual artefacts and fidelity .....	6
5.3.1	General .....	6
5.3.2	Luminance non-uniformity .....	7
5.3.3	Interocular luminance difference .....	7
5.3.4	Interocular crosstalk .....	7
<b>6</b>	<b>Optical laboratory test methods .....</b>	<b>8</b>
6.1	General .....	8
6.1.1	Basic measurements and derived procedures .....	8
6.1.2	Structure .....	8
6.2	Measurement conditions .....	9
6.2.1	Preparations and procedures .....	9
6.2.2	Test accessories .....	10
6.2.3	Test patterns .....	10
6.2.4	Alignment: measurement location and meter position .....	10
6.2.5	Light measuring device (LMD) .....	11
6.2.6	Measurement field .....	12
6.2.7	Angular aperture .....	12
6.2.8	Meter time response .....	12
6.2.9	Test illumination .....	12
6.2.10	Other ambient test conditions .....	12
6.3	Measurement methods .....	13
6.3.1	Basic light measurements .....	13
6.3.2	P 333.1: Luminance angular distribution .....	15
6.3.3	P 334.1: Luminance angular uniformity .....	15
6.3.4	Luminance analysis .....	16
6.3.5	P 337.1: Interocular luminance difference .....	18

6.3.6	P 338.1: Interocular crosstalk .....	18
7	Analysis and compliance test methods .....	20
7.1	Compliance routes .....	20
7.1.1	Intended context of use .....	20
7.1.2	Design viewing direction range (angle of inclination and azimuth) .....	21
7.1.3	Information about the technology .....	22
7.1.4	Compliance assessment .....	22
7.2	Conformance .....	27
	Annex B (informative) Matrix of measurement procedures .....	29
	Annex C (informative) Technical explanation of display technologies .....	30
	Bibliography .....	32