

ISO/TR 9241-312:2020-02 (E)

Ergonomics of human-system interaction - Part 312: Readability of electrophoretic displays

Contents	Page
Foreword	v
Introduction	vi
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Literature review on readability and legibility for electronic paper displays	2
4.1 General	2
4.2 Readability for electronic paper displays	2
4.3 Legibility	3
5 Overview	3
6 Readability evaluation for EPD under 14 levels of illumination conditions	4
6.1 General	4
6.2 Evaluation condition	4
6.2.1 Equipment	4
6.2.2 Participants	4
6.2.3 Illumination condition	4
6.2.4 Task (Evaluation methods)	6
6.3 Experimental results	6
6.4 Discussion	7
7 Proposing a baseline setup for readability using VAS evaluation	9
7.1 General	9
7.2 Experimental condition	9
7.2.1 Equipment	9
7.2.2 Participants	9
7.2.3 Illumination condition	10
7.2.4 Task (Evaluation methods)	10
7.3 Experimental results	10
7.4 Discussion	10
8 Verification of the minimum illuminance for readability of an EPD	11
8.1 General	11
8.2 Experimental condition	11
8.2.1 Equipment	11
8.2.2 Participants	11
8.2.3 Illumination condition	11
8.2.4 Task (Evaluation methods)	11
8.3 Experimental results	11
8.4 Discussion	13
9 Contribution of character sizes to the readability of mobile devices	13
9.1 General	13
9.2 Experimental condition	13
9.2.1 Equipment (specimen)	13

9.2.2	Participants	13
9.2.3	Illumination condition	14
9.2.4	Task (Evaluation methods)	14
9.3	Experimental results	14
9.4	Discussion	15
10	Difference in readability of the contrast ratio of mobile devices	15
10.1	General	15
10.2	Experimental condition	16
10.2.1	Equipment	16
10.2.2	Participants	16
10.2.3	Illumination condition	16
10.2.4	Task (evaluation methods)	16
10.3	Experimental results	16
10.4	Discussion	19
11	Effects of long-term reading on visual functions and subjective symptoms	20
11.1	General	20
11.2	Experimental condition	20
11.2.1	Equipment	20
11.2.2	Participants	20
11.2.3	Illumination condition	20
11.2.4	Task (Evaluation methods)	20
11.3	Experimental results	21
11.4	Discussion	22
12	Evaluation of readability for tablet devices by the severity of cataract cloudiness	22
12.1	General	22
12.2	Experimental condition	23
12.2.1	Equipment	23
12.2.2	Participants	23
12.2.3	Illumination condition	23
12.2.4	Evaluation methods	23
12.3	Experimental results	23
12.4	Discussion	25
13	Summary	25
14	Context of use for electrophoretic displays	26
Annex A (informative)	Standardization of electronic displays	31
Bibliography		34