



**BSI Standards Publication**

## **Ergonomics of human-system interaction**

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Part 312: Readability of electrophoretic displays

## National foreword

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## **Ergonomics of human-system interaction —**

### **Part 312: Readability of electrophoretic displays**

*Ergonomie de l'interaction homme-système —*

*Partie 312: Lisibilité des écrans électrophorétiques*



Reference number  
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## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document can be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 159, *Ergonomics*, Subcommittee SC 4, *Ergonomics of human-system interaction*.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at [www.iso.org/members.html](http://www.iso.org/members.html).

A list of all parts in the ISO 9241-300 series can be found on the ISO website.

## **Introduction**

Electrophoretic technology has led to the development of reflective e-paper displays (EPD) that have fundamentally different optical characteristics compared to emissive display devices, such as backlit liquid crystal displays (LCD) or organic light emitting diode displays (OLED). EPD are used in reading devices, also known as e-readers. See [Annex A](#) for more information on the standardization of electronic displays.

The ISO 9241-300 series provides requirements from the viewpoint of human beings' visual properties and are organized by subjects.

Electrophoretic EPD were selected for the experiments reported in this document because of their widespread use as electronic reading devices.



# Ergonomics of human-system interaction —

## Part 312: Readability of electrophoretic displays

### 1 Scope

This document provides an overview of recent research on readability of electrophoretic displays. It also provides information for evaluating readability of electrophoretic displays and defining the context of their use.

### 2 Normative references

There are no normative references in this document.

### 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>

#### 3.1

##### **visual analogue scale**

psychometric response measurement scale

#### 3.2

##### **legibility**

ability for unambiguous identification of single characters or symbols that may be presented in a non-contextual format

[SOURCE: ISO 9241-302: 2008, 3.3.35]

#### 3.3

##### **readability**

characteristics of a text presentation on a display that affect performance when groups of characters are to be easily discriminated, recognized and interpreted

[SOURCE: ISO 9241-302: 2008, 3.3.38]

#### 3.4

##### **electronic paper display**

##### **EPD**

electronic display that shows information by diffuse reflection and holds the image with low power consumption

#### 3.5

##### **electrophoretic display**

*electronic paper display* (3.4) which forms an image by rearranging charged pigment particles using an applied electric field