
**Ergonomics — Accessible design —
Indicator lights on consumer products**

*Ergonomie — Conception accessible — Voyants lumineux sur les
produits de consommation courante*



This document is a preview generated by ERS



COPYRIGHT PROTECTED DOCUMENT

© ISO 2019

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Fax: +41 22 749 09 47
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

Contents

	Page
Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Accessibility considerations related to indicator lights	2
4.1 Modes of lighting condition	2
4.2 Colour.....	3
4.3 Luminance	3
4.4 Size	5
4.5 Temporal luminance difference and blinking light frequency.....	5
4.6 Location.....	6
4.7 Alternative presentation of indicator light information.....	6
4.8 Marking of the indicator light meaning	7
4.9 Other factors	7
5 Conformance	7
Bibliography	8

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).

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 will be in the Introduction and/or on the ISO list of patent declarations received (see 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.

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

This first edition cancels and replaces ISO 24500:2010.

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.

Introduction

Indicator lights of consumer products provide important information to use products properly. Although their importance is recognized widely, many difficulties exist in relation to indicator lights such as insufficient on/off visibility, unclear implications of lighting modes, and discomforting glare are reported by users, particularly by older persons or persons with visual disabilities. These claims result from the lack of a relevant standard related to indicator lights design. This document is intended to provide design requirements and recommendations for adequate brightness, colour, and use of blinking lights of indicator lights considering the needs of older persons and persons with visual disabilities.

This document adopts the concepts of accessibility given in ISO/IEC Guide 71 and in ISO/TR 22411.

Ergonomics — Accessible design — Indicator lights on consumer products

1 Scope

This document specifies design requirements and recommendations for indicator lights, mainly LED sourced, on consumer products for use by older people and people with visual disabilities. It does not consider the needs of persons who are blind.

Indicator lights include those that inform users visually about the conditions, changes in functional status and settings, and malfunction of products. They convey information by light on/off, time-modulated intensity, blinking, colour, luminance level, and layout.

This document addresses household and home appliances. It excludes electronic displays presenting characters and graphics, machinery, and appliances in special use for professional, technical, and industrial applications.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC Guide 71, *Guide for addressing accessibility in standards*

ISO 17049, *Accessible design — Application of braille on signage, equipment and appliances*

CIE S 017, *ILV: International Lighting Vocabulary*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/IEC Guide 71 and CIE S 017 and the following 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

consumer product

product that is intended to be acquired and used by an individual for personal rather than professional use

[SOURCE: ISO/TS 20282-2:2013, 4.3]

3.2

indicator light

light which is associated with the operation of a product and is indicative of the operation of a product

Note 1 to entry: Indicator light informs users about the conditions, changes in functional statuses and settings, or malfunction of products.

Note 2 to entry: Indicator light conveys information by light on/off, time-modulated intensity, blinking, colour, luminance level, and layout.