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# Information technology — Office equipment — Information to be included in specification sheets for data projectors

*Technologies de l'information — Équipements de bureau — Information à inclure dans les feuilles de spécifications pour projecteurs de données*

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# Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work.

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 document 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).

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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 Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 28, *Office equipment*.

This third edition cancels and replaces the second edition (ISO/IEC 21118:2012), which has been technically revised.

The main changes compared to the previous edition are as follows:

— progress of light source technologies (from lamp to laser, LED, etc.);

— diversification of input/output signals (HDMI, display port, HDBase-T, etc.);

— move toward higher resolution (4K, 8K, pixel shift technology, etc.);

— description of colour quality (colour gamut ratio).

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.


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# Information technology — Office equipment — Information to be included in specification sheets for data projectors

## 1 Scope

This document specifies the information to be included in the specification sheets for front projection type data projectors and the form of specification sheets.

This document is not applicable to units for a rear screen projection.

## 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 7779:2018, *Acoustics — Measurement of airborne noise emitted by information technology and telecommunications equipment*

ISO 11201, *Acoustics — Noise emitted by machinery and equipment — Determination of emission sound pressure levels at a work station and at other specified positions in an essentially free field over a reflecting plane with negligible environmental corrections*

IEC 60107-2:1997, *Methods of measurement on receivers for television broadcast transmissions — Part 2: Audio channels — General methods and methods for monophonic channels*

IEC 61947-1, *Electronic projection — Measurement and documentation of key performance criteria — Part 1: Fixed resolution projectors*

## 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**
**data projector**
display equipment that converts electrical signals containing image information from automatic data processing machines into optical signals and projects onto a projection screen

**3.2**
**light valve**
light-modulation device (such as a transmissive or reflective liquid crystal display, or a micro mirror device) used to create an optical image from an external light source that corresponds to an electrical signal

**3.3**
**wide-angle end**
minimum focal length position of the zoom lens

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**3.4**
**lens shift**
projecting function which is vertical or horizontal repositioning of the projection lens relative to the *light valve* (3.2) to compensate for projector to screen alignment differences

**3.5**
**image position**
presentation of shifts of projected image on horizontal and vertical directions

Note 1 to entry: It is calculated as per Formulae (1) and (2):

$$X_{shift} = (X_{cpi} - X_{axis}) / W_{pi} \times 100\ \% \quad (1)$$

$$Y_{shift} = (Y_{cpi} - Y_{axis}) / H_{pi} \times 100\ \% \quad (2)$$

where

| | |
|---|---|
| $X_{shift}$ , $Y_{shift}$ | are the horizontal and vertical image shift ratios; |
| $X_{cpi}$ , $Y_{cpi}$ | are *x* and *y* coordinates of $P_{cpi}$ ($X_{cpi}$, $Y_{cpi}$) (as shown in Figure 1), the centre of the projected image; |
| $X_{axis}$ , $Y_{axis}$ | are *x* and *y* coordinates of $P_{axis}$ ($X_{axis}$, $Y_{axis}$) (as shown in Figure 1), the point at which the axis of the projection lens intersects the screen; |
| $W_{pi}$, $H_{pi}$ | are the overall width and height of the projected image. |

Note 2 to entry: The horizontal image shift ratio is positive when $P_{cpi}$ is at the right of $P_{axis}$, and negative when $P_{cpi}$ is at the left of $P_{axis}$.

Note 3 to entry: The vertical image shift ratio is positive when $P_{cpi}$ is above $P_{axis}$, and negative when $P_{cpi}$ is below $P_{axis}$.


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