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Information technology — Office equipment — Minimum information to be included in specification sheets — Printers —

Part 2:

Class 3 and Class 4 printers

*Technologies de l'information — Équipements de bureau — Information
minimale devant figurer dans les notices techniques — Imprimantes —*

Partie 2: Imprimantes classe 3 et classe 4



Reference number
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Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrical Commission) form the specialised system for worldwide standardisation. National Bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organisation to deal with particular fields of mutual interest. Other international organisations, governmental and non-governmental, in liaison with ISO and IEC, also take part to the work.

In the field of information technology, ISO and IEC have established a joint technical committee ISO/IEC JTC1. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75% of the national bodies casting a vote.

International Standard ISO/IEC 11160-2, was prepared by Joint Technical Committee ISO/IEC JTC1, *Information technology*, Subcommittee SC28, *Office equipment*.

ISO/IEC 11160 consists of the following parts, under the general title *Information technology - Office equipment - Minimum information to be included in specification sheet - Printers*:

- *Part 1: Class 1 and Class 2 printers*
- *Part 2: Class 3 and Class 4 printers*

Annexes A and B form an integral part of this part of ISO/IEC 11160. Annexes C, D and E are for information only.

Introduction

Printers of many different types and capacities are now available and their specifications vary so widely that it is difficult for potential users to assess which machine might best meet their requirements.

Information technology - Office equipment - Minimum information to be included in specification sheets - Printers -**Part 2: Class 3 and Class 4 printers****1 Scope**

ISO/IEC 11160 is intended to facilitate the users in selecting a printer which meets their requirements.

ISO/IEC 11160 specifies the minimum information that shall be included in the specification sheets of printers so that users may compare the characteristics of different machines.

ISO/IEC 11160 applies to printers that could be operated in an office environment. Printers requiring specially equipped rooms or specially instructed operators are not considered in ISO/IEC 11160.

ISO/IEC 11160 will accommodate different classes of printers. This part of ISO/IEC 11160 accommodates Class 3 and Class 4 printers, as defined in annex B.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO/IEC 11160. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO/IEC 11160 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 216:1975 ¹⁾ ,	<i>Writing paper and certain classes of printed matter - Trimmed sizes - A and B series.</i>
ISO 554: 1976,	<i>Standard atmospheres for conditioning and/or testing - Specifications</i>
ISO 7779:1988 ¹⁾ ,	<i>Acoustics - Measurement of airborne noise emitted by computer and business equipment.</i>
ISO 9295:1988,	<i>Acoustics - Measurement of high-frequency noise emitted by computer and business equipment.</i>
ISO 9296:1988,	<i>Acoustics - Declared noise emission values of computer and business equipment.</i>
ISO/IEC 10561 ¹⁾ ,	<i>Information technology - Printing devices - Method for measuring printer throughput.</i>
IEC 950:1991,	<i>Safety of information technology equipment, including electrical business equipment.</i>

3 Conformance

In order to comply with this part of ISO/IEC 11160, specification sheets shall contain, in the order shown, all items listed in clause 5 which are relevant to the machine being described.

4 Test and measurement conditions

Unless otherwise specified, all tests and measurements shall be conducted at the following conditions:

- | | |
|----------------------|---------------------|
| • Temperature: | 18 °C to 25 °C |
| • Relative humidity: | 30 % to 70 % |
| • Line Voltage: | rated input voltage |
| • Line Frequency: | rated frequency |
| • Paper size: | A4 |

¹⁾ Currently under revision

- Paper weight: 60 g/m² to 90 g/m²
- Paper transport direction: standard direction
- Test pattern: as specified

The test conditions shall be indicated in the specification sheet.

Instead of A4 paper size, the size most commonly used in the country may be used, both for the test page and the copies. This shall be indicated in the specification sheet.

When weight of paper (g/m²) is given, it is assumed that the paper has been conditioned in the standard atmosphere defined in ISO 554 (temperature 20 °C ± 2 °C; relative humidity 65 % ± 5 %).

5 Information to be included in the specification sheets

Table 1 defines, for each parameter, the number and name of the parameter and a short description of the entry. These constitute the information to be included in the specification sheet.

The heading of the specification sheet shall indicate that it has been prepared in accordance with this part of ISO/IEC 11160. The numbers and headings of Table 1 shall be used. Not applicable parameters may be ignored, without changing the number of other parameters.

The "Remarks and examples" column is provided for the persons who prepare the information sheet, and it is not intended to appear in the specification sheet. The "Remarks and Examples" column is intended to be informative. Test methods to be applied, when not defined in other International Standards, are defined in this column.

Whenever a capacity is given in sheets, the reference paper weight (g/m²) shall be specified.

Table 1 - Information to be included

Parameter	Description of the entry	Remarks and examples
1 General data		
1.1 Printer class	Class 3 or Class 4 printer.	See Annex B for description of classes.
1.2 Machine name, model and/or model number	Product name, model number.	
1.3 Type		State if the machine is portable, desk-top, or floor-standing.
1.4 Printing method	The printing process used.	ink-jet, thermal transfer, electrophotographic, ion deposit.
1.5 Dot density	Horizontal and vertical dots per 25,4 mm (dpi) . The design capability of the machine to place the dots.	Note that the theoretical writing resolution and the actual printing resolution may be different. If the dot density can be stepped up and down, all grades should be indicated.

Table 1 (cont'd)

Parameter	Description of the entry	Remarks and examples
1.6 Line smoothing	Available/not available	Indicate smoothing technology by type or trademarks
1.7 Dot depth	Indicate the number of bits per dot available	
1.8 Colour printing		
1.8.1 Monochrome	Specify which colour.	
1.8.2 Multi-colour	Available/not available.	Also known as functional colour, spot colour, highlight or accent colour. State the number of discrete colours that can be printed by colorants residing in the machine.
1.8.3 Full colour	Available/not available.	The full colour is often described as YELLOW, MAGENTA, CYAN or YELLOW, MAGENTA, CYAN, BLACK. State if the machine can print full colour, continuous tone, half-tone or both.
1.8.4 Colour transparencies	Available/not available.	Indicate if the colour can be projected.
2 Performance data		
2.1 Rated engine speed	First Page: Time in seconds Continuous Print: Pages Per Minutes (PPM)	Specify if monochrome, colour or both rates are listed. This parameter is a declaration of manufacturer dealing with the mechanical aspect of the printer only.

Table 1 (cont'd)

Parameter	Description of the entry	Remarks and examples
2.2 Warm-up time	1) Time in minutes and/or seconds from power up to ready state. 2) Time in minutes and/or seconds from power saver mode to ready state.	If the machine is pre-heated, this shall be indicated. If the printer is off, it shall measure the time between power on and the indication of a ready status. If the printer is in the power saver mode, it shall measure the time between the start command and the indication of a ready status or the beginning of printing. The value is rounded to the nearest whole number of seconds.
2.3 Recommended monthly print volume	Manufacturers recommended range of use: number of pages per month.	For the determination of this parameter, the month is considered consisting of 20 days of 8 hours each. Specify if monochrome, colour or both rates are listed.
2.4 First Page Out Time	Time in seconds from the moment the mechanical engine motion starts until the moment the first sheet of paper is completely ejected into the output tray. To measure this parameter, a document as described in Annex D shall be created and sent to the printer.	Report two significant digits (e. g. 4.5 seconds, 11 seconds).
2.5 Sustained Throughput	Performance in Pages Per Minute (PPM) that the printer is capable of sustaining. To measure this parameter, a document as described in Annex D shall be created and sent to the printer. Measure the time (t, in seconds) between the first and the second page being ejected into the output tray. The sustained throughput (S) is calculated using the equation: $S = \frac{60}{t}$ The value S (PPM) shall be rounded off to at least two significant digits.	

Table 1 (cont'd)

Parameter	Description of the entry	Remarks and examples
3 Control		
3.1 Interface for hardware connection	State the hardware connections available.	Centronics, RS232, RS422, Token Ring, Ethernet. If automatic switching feature is available, state the feature here.
3.2 Interface for connection control	Identify communication protocols.	XON/XOFF, TCP/IP, AppleTalk. If multiple protocols are supported, state the feature here.
3.3 Interface for printer control	Identify printer control languages, including version.	PCL5, PostScript, Escape P, ISO/IEC 10180.
3.4 Memory		
3.4.1 Standard memory	Size in KB or MB.	
3.4.2 Optional memory	Size in KB or MB. Specify the method.	Optional memory that can be added to support additional fonts or font processing. PCMCIA, SIMM.
3.5 Control panel	Describe the kind and size of the operator panel and display.	Alphanumeric 20 character display with 4 buttons and 4 status LED.
4 Printing features		
4.1 Printing margins	In millimetres, from the top, bottom, left and right edges of the paper.	Area in which printing is not possible. (This area is given on the condition that the print paper is fed through its ideal position). If the printing margins vary with paper sizes, this situation should be described.
4.2 Duplex printing	Available/not available.	State if special paper or accessories are available. Options shall be listed under parameter 16.