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

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



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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 in 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 11159 was prepared by Joint Technical Committee ISO/IEC JTC1, *Information technology*, Subcommittee SC28, *Office equipment*.

This second edition cancels and replaces the first edition (ISO/IEC 11159:1992), which has been technically revised.

Annexes A and B of this International Standard are for information only.

Introduction

Copying machines 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 - Copying machines

1 Scope

This International Standard is intended to facilitate the users in selecting a copying machine which meets their requirements.

This International Standard specifies the minimum information that shall be included in the specification sheets of copying machines so that users may compare the characteristics of different machines. This International Standard also defines the tests to be made on copying machines in order to verify the specifications given in the specification sheets, when no other Standards are available.

This International Standard applies to copying machines that could be operated in an office environment. Copying machines requiring specially equipped rooms or specially instructed operators are not considered in this International Standard.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard 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 554:1976, *Standard atmospheres for conditioning and/or testing - Specifications.*

ISO 7779:1988¹⁾, *Acoustics - Measurement of airborne noise emitted by computer and business equipment.*

ISO 9295:1988, *Acoustics - Measurement of high-frequency noise emitted by computer and business equipment.*

ISO 9296:1988, *Acoustics - Declared noise emission values of computer and business equipment.*

IEC 950:1991, *Safety of information technology equipment, including electrical business equipment.*

CISPR Pub.22 *Limits and methods of measurement of radio interference characteristics of information technology equipment.*

3 Conformance

In order to comply with this International Standard, specification sheets shall contain, in the order shown, all items listed in clause 4 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%
- voltage: rated input voltage
- frequency: rated frequency
- paper size: A4
- paper weight: 60 g/m² to 90 g/m²

Whenever a capacity is given in sheets, the reference paper weight shall be specified.

When A4 paper size is specified, the size most commonly used in the country can 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%).

¹⁾ Currently under revision.

5 Information to be included in the specification sheets

Table 1 defines, for each parameter, the number, the name of the parameter, a short description of the entry, and the measurement method. 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 International Standard. The numbers and headings of the parameters in Table 1 shall be used. Parameters not applicable may be ignored, without changing the numbers of other parameters.

Table 1 - Parameters

Parameter	Description of the entry Remarks and examples	Definitions and methods of measurement
1 General data		
1.1 Machine name, model and/or model number	Product name, model number.	
1.2 Type	States if the machine is portable, desk-top, floor- standing (console).	
1.3 Type of platen	Moving or stationary. If moving, states the maximum permissible weight on the platen. If no platen is provided, and the original is to be fed into the machine, indicate "feed- through type".	
2 Copying method		
2.1 Imaging method	Digital, analogue or hybrid. States if imaging method is analogue or digital or possibly a hybrid involving characteristics of both analogue and digital.	
2.2 Copying process	Electrostatic process, electrophotographic process, direct or indirect method, ink- jet, thermal transfer.	
2.3 Developing process	Wet process, dry process, type of developer (mono or dual components).	
2.4 Fusing or fixing system	Heat roller fusing, flash fusing, heat and pressure fusing. Not applicable in the case of wet developing process.	

Table 1 (cont'd)

Parameter	Description of the entry Remarks and examples	Definitions and methods of measurement
2.5 Type of photoreceptor	Selenium, organic material. Applicable only for indirect electrostatic process.	
3 Colour copying		
3.1 Monochrome	Available / not available. Specifies black or alternate single colours.	
3.2 Multi-colour	Available / not available. Also known as functional colour, spot colour, highlight or accent colour. Indicate if colour can be added to a copy, or changed across a copy. State the number of discrete colours that can be reproduced by colorants residing in the machine.	
3.3 Full colour	Available / not available. States if the machine can reproduce full colour originals, continuous tone, half-tone or both.	
4 Copying margins	In millimetres, from the top, bottom, left and right edges of the paper. Indicates the areas in which copying is not possible.	The measurement shall be made using a test page of A4 size, with a pattern, of the users choice, extending inward from the edges of the test page to a line about 20 mm from the edges. The copier shall be set for a 1:1 magnification and the test page deposited on the platen, aligned with the platen reference markings, if any. Three copies shall then be made in continuous mode, and the maximum blank areas around the page, measured at the centre of each side, shall be the value for this parameter.

Table 1 (cont'd)

Parameter	Description of the entry Remarks and examples	Definitions and methods of measurement
5 Performance data		
5.1 Copying speed	Number of copies per minute. Continuous copying, A4 paper size, 1:1 magnification, steady state.	The copier shall be set for a 1:1 magnification, and an original deposited on the platen. Either of the following two methods of measurement can be used. The method used shall be indicated in the specification sheet. 1 Copies shall be made continuously, and the time T (sec.) needed to produce a convenient number N of copies, measured from the time a copy following the first one is fully ejected to the time the Nth copy is fully ejected, is measured. The copying speed shall then be: $S = 60 \times \frac{N - 1}{T}$ The value of S (copies/min) shall be rounded off to at least two significant digits. N is chosen to produce repeatable accuracy of $\pm 5\%$. 2 The number of copies produced during one minute is counted, starting the timer from the moment a copy following the first one is fully ejected. The number of copies is the value of the copying speed. Specify for monochrome and colour if different.

Table 1 (cont'd)

Parameter	Description of the entry Remarks and examples	Definitions and methods of measurement
5.2 First copy-out time (FCOT)	In seconds. Time from the "copy" command to completing delivery of the first copy. Same conditions as in 5.1.	FCOT shall be measured in seconds, and shall not include the warm-up time (5.3), or any automatic adjustment necessary to bring the copier to a ready state. The copier shall be ready for copying and set for a 1 : 1 magnification. An original shall be deposited on the platen. The time in seconds from the moment the copy command is issued to the time the first copy is fully ejected shall be measured and reported to two significant digits.
5.3 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.	Warm-up time shall be measured in two ways, depending on the status of the copier. 1 If the copier is off, it shall measure the time between power on and the indication of a ready status. 2 If the copier is in a "power saver mode", it shall measure the time between the start command and the indication of a ready status or the beginning of copying. If the machine is pre-heated, this should be indicated.
5.4 Recommended monthly copy volume	Number of copies per month. Manufacturers recommended range of use.	For the determination of this parameter, the month is considered consisting of 20 days of 8 hours each.

Table 1 (cont'd)

Parameter	Description of the entry Remarks and examples	Definitions and methods of measurement
5.5 Halftone performance		
5.5.1 Monochrome	Available/not available. States if the machine can produce monochrome halftones from continuous-tone originals.	
5.5.1.1 Screen rulings	Expressed in lines per millimetre or equivalent. States the screen ruling or range of screen rulings available.	
5.5.2 Colour	Available/not available. States if the machine can produce colour halftones from continuous-tone originals.	
5.5.2.1 Screen rulings	Expressed in lines per millimetre or equivalent. States the screen ruling or range of screen rulings available.	
6 Characteristics of the originals		
6.1 Acceptable type	Sheets, books, computer forms.	
6.2 Maximum sizes	Indicate the applicable standard, or dimensions in millimetres. A sizes, B sizes, North American sizes.	Specify originals whose content can be completely reproduced. Indicate if the accepted size is different for sheets and books.