INTERNATIONAL STANDARD

ISO/IEC 11160-2

First edition
1996-08-01

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
ISO/IEC 11160-2:1996(E)

Copyright International Organization for Standardization
Provided by IHS under license with ISO
No reproduction or networking permitted without license from IHS

Not for Resale

Contents

1 Scope 1

2 Normative references 1

3 Conformance 1

4 Test and measurement conditions 1

5 Information to be included in the specification sheets 2

Annex A - Classification of printers - Class 3 and Class 4 14

Annex B - Target Document 16

Annex C - Classification of Printers 17

Annex D - Bibliography 18

Annex E - Example of a layout for a specification sheet 19

© ISO/IEC 1996
All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from the publisher.
ISO/IEC Copyright Office * Case Postale 56 * CH-1211 Genève 20 * Switzerland
Printed in Switzerland

Copyright International Organization for Standardization
Provided by IHS under license with ISO
No reproduction or networking permitted without license from IHS
Not for Resale

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.

Copyright International Organization for Standardization
Provided by IHS under license with ISO
No reproduction or networking permitted without license from IHS
Not for Resale

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.

--`,,```,,,,````-`-`,,`,,`,`,,`---
Copyright International Organization for Standardization
Provided by IHS under license with ISO
No reproduction or networking permitted without license from IHS
Not for Resale

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/IC 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/IC 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)],	*Writing paper and certain classes of printed matter - Trimmed sizes - A and B series.*
ISO 554: 1976,	*Standard atmospheres for conditioning and/or testing - Specifications*
ISO 7779:1988[1)],	*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.*
ISO/IEC 10561[1)],	*Information technology - Printing devices - Method for measuring printer throughput.*
IEC 950:1991,	*Safety of information technology equipment, including electrical business equipment.*

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

Copyright International Organization for Standardization
Provided by IHS under license with ISO
No reproduction or networking permitted without license from IHS Not for Resale

- 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.

Copyright International Organization for Standardization
Provided by IHS under license with ISO
No reproduction or networking permitted without license from IHS Not for Resale

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.

--`,,```,,,,````-`-`,,`,,`,`,,`---
Copyright International Organization for Standardization
Provided by IHS under license with ISO
No reproduction or networking permitted without license from IHS
Not for Resale

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.	

Copyright International Organization for Standardization
Provided by IHS under license with ISO
No reproduction or networking permitted without license from IHS
Not for Resale

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.

Copyright International Organization for Standardization
Provided by IHS under license with ISO
No reproduction or networking permitted without license from IHS
Not for Resale

Table 1 (cont'd)

Parameter	Description of the entry	Remarks and examples
4.3 Other printing features	Manufacturer may highlight features or capabilities.	Print Image Rotation: Printer panel control capability to rotate the image which is described by incoming data. Image shift Fit Image to paper
5 Fonts and character sets		The capabilities of the basic machine and the capabilities that can be added by additional print elements (external cartridges, external print elements, downloadable fonts) shall be clearly identified.
5.1 Resident Fonts	List fonts or number of fonts available in the printer.	Times Regular Type 1, Roman Italic True Type, 35 Type 1 fonts, 45 True Type
5.2 Standard Character Set	List the character set (Glyph Index Mapping) available.	Roman-8, ISO 8859-1 If the external cartridge or card with character sets is packed with printer, state here.
5.3 Optional Capabilities	List fonts and character set optionally available. List the methods for optional font handling capability.	Number of PCMCIA slots for the font cards. Download from a host computer. Additional hard disk for fonts.
6 Output material		
6.1 Paper type		Plain, coated, thermal paper. The manufacturer shall specify for which characteristics of the paper, other than normal paper, normal warranted performance can be assured.
6.2 Special material		The manufacturer shall specify the printing materials that can be processed, possibly with degraded performances, e.g. Transparent sheets, labels, envelopes and recycled paper.

Copyright International Organization for Standardization
Provided by IHS under license with ISO
No reproduction or networking permitted without license from IHS Not for Resale

Table 1 (cont'd)

Parameter	Description of the entry	Remarks and examples
6.3 Paper size	State the minimum and maximum width and the minimum and maximum length of the paper. This indication can be given either in millimetres or by quoting standard paper sizes.	
6.3.1 Cut sheets	Available/not available. Standard name and/or sizes of paper in millimetres.	A sizes (ISO 216), B sizes (ISO 216), North American sizes.
6.3.2 Paper in continuous forms (roll or fanfold)	Available/not available. Width, maximum and minimum in millimetres; length in meters; diameter of the roll, in millimetres.	Indicate if length is manually pre-selectable (maximum and minimum); and if the paper is cut automatically.
6.3.3 Envelopes	State minimum and maximum sizes of envelopes that can be printed.	Sizes according to ISO 269.
6.4 Paper weight	Minimum and maximum in g/m^2.	Specify if for sheet or roll.
7 Paper handling		
7.1 Paper supply device	Manual, cassette, tray, drawer.	Indicate which are standard and which are optional. Indicate the number of supply devices that can be attached simultaneously.
7.2 Paper supply capacity	For roll paper supply: diameter and length of the roll. For cut sheets paper supply: number of sheets for each paper supply device, with the paper weight.	
7.3 Paper feed orientation	Long edge feed or short edge feed.	Indicate the paper size.
7.4 Paper path options	Indicate whether the paper is passed through the printer in a straight or curled path. State all possible choices.	Generally used to indicate whether paper can be passed through a printer with minimal curl. Especially important for envelopes, heavy stock paper and transparency.

Copyright International Organization for Standardization
Provided by IHS under license with ISO
No reproduction or networking permitted without license from IHS
Not for Resale

Table 1 (cont'd)

Parameter	Description of the entry	Remarks and examples
8 Paper Output Handling		Refers to "in-line" capability integrated with the printer.
8.1 Output trays	The manufacture shall indicate for each tray the values of all parameters 8.1.1 through 8.1.3 listed below. Indicate which output trays are optional.	
8.1.1 Output tray paper sizes	Maximum and minimum standard sizes. Indicates the applicable standard or dimensions in millimetres. A sizes, B sizes, North American sizes.	The manufacturer shall state the minimum and maximum width and the minimum and maximum length of the paper. The indication can be given either in millimetres or quoting standard paper sizes.
8.1.2 Output tray capacities	Maximum number of sheets	The manufacturer shall indicate the nominal capacity with respect to the reference paper weight. Testing shall be done by counting the number of sheets in a filled receptacle.
8.1.3 Delivery mode to output tray	Face up/ Face down	Indicate whether the paper is delivered to the output tray with the printed side up or down. State all possible choices.
8.1.4 Offsetting capability (shifting)	Standard/optional/Not available If available, specify minimum offset distance between sets in millimetres. Allows physical separation of printed sets.	
8.2 Bypass capability	Indicate whether the printer has the capability to bypass the output tray to enable attached finishing equipment.	
8.3 Finishing Features	Describe the finishing features.	Offsetting, Sorting, Collating, Binding, Stapling, Folding, Addressable bins, Mail Box. Indicate the number of the trays or accessories that can be attached simultaneously.
9 Physical characteristics		
9.1 Dimensions	Width x depth x height (all expressed in centimetres or millimetres).	Indicate if it is the envelope around or if trays, knobs or other are not included.

Copyright International Organization for Standardization
Provided by IHS under license with ISO
No reproduction or networking permitted without license from IHS
Not for Resale

Table 1 (cont'd)

Parameter	Description of the entry	Remarks and examples
9.2 Space required - operation	Width x depth x height (expressed in centimetres or millimetres).	Varies with options. This parameter includes space for operator functions such as paper handling and jam removal. Indicate if it is with or without accessories.
9.3 Space required - maintenance	Width x depth x height (expressed in centimetres or millimetres).	Varies with options. This parameter includes space for access to all service areas and the use of required tools. Indicate if it is with or without accessories.
9.4 Weight	Installed weight in kilograms.	Indicate if it is with or without accessories and supplies.
10 Operating environment	Minimum and maximum ambient temperature, and range of relative humidity.	This indication is intended to give the user a guide to the expected machine operating environment.
11 Power source	Power rating plate in accordance with IEC 950.	
11.1 Rated voltage or voltage range	Expressed in volts.	Indicate if AC or DC. For AC power: indicate the number of phases. For DC power: indicate if built-in battery. Indicate tolerances.
11.2 Rated frequency or frequency range	Expressed in hertz.	For AC power only. Indicate tolerance.

Copyright International Organization for Standardization
Provided by IHS under license with ISO
No reproduction or networking permitted without license from IHS
Not for Resale

Table 1 (cont'd)

Parameter	Description of the entry	Remarks and examples
11.3 Current	Maximum current in amperes.	The maximum current shall be measured and indicated in amperes. This measurement shall be made with all the settings that can have an influence on the current value set to produce the maximum value. The inrush current at the starting of the machine shall not be considered for this indication, but shall be taken into consideration for the specification of the fuses. Indicate if special mains fuses are required. Specify for both basic and maximum configuration. The maximum configuration means the configuration that requires the highest current.
11.4 Power	Maximum power in kilowatts or watts.	The maximum power shall be measured and indicated in kilowatts. This measurement shall be made with all the settings that can influence on the current value set to the case producing the maximum value. Indicate the value at the rated input voltage.

Copyright International Organization for Standardization
Provided by IHS under license with ISO
No reproduction or networking permitted without license from IHS
Not for Resale

Table 1 (cont'd)

Parameter	Description of the entry	Remarks and examples
11.5 Average power consumption	Average power consumption per hour in kilowatts - operating - standby - power saver mode. For operating mode, indicates the average power consumption for continuous printing on A4 paper, with 4 % to 7 % image coverage. Useful for estimating air conditioning requirements. Specify for both basic and maximum configuration.	The average power consumption per hour shall be stated in kilowatts. The measurement shall be made with the machine in a steady state, during a test period of not less than 10 minutes. An integrating measuring instrument shall be used. The power consumption shall be measured under the following conditions: • standby status (machine ready to work) • "power saver mode" condition • continuous printing in A4 size paper with 4% to 7% image coverage. The estimated daily power consumption (kWh) can be obtained by $P_1t_1 + P_2t_2 + P_3t_3$ where P's are average power consumptions given above and t's are estimated times in those modes.
12 Safety		
12.1 Equipment Safety regulations	Applicable standards.	Indicate the national standards applicable in the relevant market area.
12.2 Material Safety Data Sheets (MSDS)	Available/not available.	Indicate the hazardous material and the way to dispose of it, if required. This indication depends on market areas.
13 Electromagnetic compatibility (EMC)	State the specifications, standards or regulation that the equipment complies with.	Standards or other requirements to be listed. Emission and susceptibility data to be considered.

Copyright International Organization for Standardization
Provided by IHS under license with ISO
No reproduction or networking permitted without license from IHS
Not for Resale

Table 1 (cont'd)

Parameter	Description of the entry	Remarks and examples
14 Emissions		
14.1 Acoustical noise	Sound power levels and sound pressure levels - operating - standby - power saver mode.	Measured in accordance with ISO 7779 and ISO 9295. The reference box specified in ISO 7779 includes, unless otherwise specified, cassette, trays and raised parts of the printer. Declared in accordance with ISO 9296. The determination shall be made according to clause 4.4.1 and 4.4.3 of ISO 9296 (for batches of machines). Specify the configuration used.
14.2 Heat emission	For estimating purposes it may be considered that the power consumed by a printer is nearly completely transformed in heat.	The heat emission per hour shall be indicated in kJ, for the three conditions specified under 11.5. Heat emission in [kJ/h] = $\frac{\text{Power Consumption [kW]}}{3600}$ *Note: 1 kJ/h = 1 kWs/3600s*
15 Consumable supplies	List the consumable items and the packaging.	Customer replaceable items.
16 Optional equipment		Peripheral equipment that changes the functionality of the machine (e.g. extra memory, elements for duplex printing, addressable bins, special handling of output paper).
17 Accessory equipment		Peripheral equipment that does not change the functionality of the machine (e.g. acoustic cover).

Copyright International Organization for Standardization
Provided by IHS under license with ISO
No reproduction or networking permitted without license from IHS
Not for Resale

Table 1 (concluded)

Parameter	Description of the entry	Remarks and examples
18 Others	An entry category for the supplier to highlight features or functionality that does not fit in any of the previous listed parameters.	Diagnostic capability, user interfaces, connectivity.

Copyright International Organization for Standardization
Provided by IHS under license with ISO
No reproduction or networking permitted without license from IHS
Not for Resale

Annex A
(normative)

Classification of printers - Class 3 and Class 4

A.1 Specific terminology

A.1.1 printer

The physical device which contains the image transducer, the marking process and paper transport mechanism device. This may also contain other functional unit such as Raster Image Processor (RIP).

A.1.2 page

A collection of text and graphic objects intended to print on one side of a sheet of paper.

A.1.3 Raster Image Processor (RIP)

A device which converts coded character data and/or vector data into raster data.

A.1.4 Unit of printing

A source file can be partitioned into blocks of data that correspond to a mechanical unit. The size of such a partition is the unit of printing.

A.1.5 Mechanical operation unit

Electronic printing is the process of converting signals to mechanical operations that (for example) move the print head, move the paper, and operate the print head. Within the printer, there is a certain mechanical operation unit - that is, a sequence of mechanical operation that, once begun, must be carried out in order from beginning to end without interruption.

In a daisy wheel printer, this mechanical unit may be to move the print head, strike a single character, and restore the print head to a resting position. In an electrophotographic printer, this mechanical unit is the entire sequence of operations that move a sheet of paper through the machine while printing an entire page image on it.

A.2 Elements for classification of printers

A.2.1 Characteristics of the input data to the printer

- Character data or coded character data
- Raster data
- Vector data

A.2.2 Smallest unit of printing

- One page

A.3 Class 3 printer

A.3.1 Definition

- Input data to the printer is only "raster data" or "character, coded character data, or raster data".
- The smallest unit of printing is one page.

Copyright International Organization for Standardization
Provided by IHS under license with ISO
No reproduction or networking permitted without license from IHS Not for Resale

A.3.2 Comments

- The source file from the user may have vector data if the system has a RIP, but the file sent to the printer does not contain any vector data.
- Input data may be compressed.
- Emulation of class 1 and/or class 2 printers may be supported.

A.3.3 Example

- Laser printer receives bit stream of Kanji character that are generated in the host computer.

A.4 Class 4 printer

A.4.1 Definition

- Input data to the printer are character data, coded character data, raster data, or vector.
- The smallest unit of printing is one page.

A.4.2 Comments

- Emulation of class 1 and/or class 2 printers may be supported.
- Page Description Language (PDL) is supported.

A.4.3 Example

Laser printer that accepts PDL input.

Copyright International Organization for Standardization
Provided by IHS under license with ISO
No reproduction or networking permitted without license from IHS
Not for Resale

Annex B
(normative)

Target Document

E X P R E S S M A I L

October 17,1990

Northern Lights Color Works, Inc.
Dr. Harold M. Smith
8934A North Main Street W105 97H
North Rutherford, New Jersey 78916-9596

Re: X3/SD-10, October,1989
Accredited Standards Committee; X3 - Information Processing Systems

Dear Dr. Smith:

Following our recent discussion, I want to provide you this additional information on X3 Standing Documents.

There is a series of documents. They were developed by X3 and the X3 Secretariat. The series provides an information data base on Accredited Standards Committee X3 - Information Processing Systems. The documents are updated periodically, each on an individual basis.

This series is designed to serve several needs:
first, they describe X3, and explain its program;
second,they teach members of X3 committees the operational procedures of X3; and
third, they insure systematic administration according to procedural requirements of the American National Standards Institute and the X3 Secretariat.

We have found that this set of documents serves well as guidance to the Secretariat staff, as well as to the several working subgroups, members and officers.

You had asked for a partial listing of the Standing Documents. I am pleased to provide them as follows:

X3/SD-0	Informational Brochure - January 1989
X3/SD-1	Master Plan - January 1988
X3/SD-1B	Master Plan (Operational) - April 1989
X3/SD-2	Organization and Procedures - July 1987
X3/SD-3	Project Proposal Guide - May 1987
X3/SD-4	Projects Manual - August 1988
X3/SD-5	Standards Criteria - September 1984

Perhaps a few more words of explanation about the last document would be helpful to you.

X3 subgroups produce a required annual report to X3 using the format described in this report. They do so according to the schedule defined in X3/SD-6, Membership and Officers.

I hope that this additional information is helpful to you. Should you wish to obtain copies of the listed documents, I will be pleased to provide them to you.

With warm personal regards,

Jonathan

ABC Institute NEDET
Washington, D. C. 34921-2654

Copyright International Organization for Standardization
Provided by IHS under license with ISO
No reproduction or networking permitted without license from IHS
Not for Resale

Annex C
(informative)

Classification of Printers

No.			Class 1	Class 2	Class 3	Class 4
1	**Unit of Printing**	Less than one page	X	X		
		One Page			X	X
2	**Input Data**	Character Data or Coded Character Data	X	X	X	X
		Raster Data		X	X	X
		Vector Data				X
3	**Comments**			The source file from the user may have vector data if the system has a host RIP, but the file sent to the printer does not contain any vector data. Dumb printers are also included in this class.	The source file from the user may have vector data if the system has a host RIP, but the file sent to the printer does not contain any vector data. Emulation of Class 1 and/or Class 2 printers may be supported. Input data may be compressed. Dumb printers are also included in this class.	Supports PDL. Emulation of class 1 and/or class 2 printers may be supported.
4	**Printer examples**		Character printers only Daisy wheel Wire dot Ink-jet Thermal	PC and hard copy printer Wire dot Ink-jet Thermal	Laser LED LCD Ink-jet	Laser LED LCD Ink-jet Thermal

Class is defined by the maximum capability of the printer.

This annex is intended for the printer manufacturers to classify their printers so that the appropriate specifications can be generated based on ISO/IEC 11160-1 for class 1 and class 2 or ISO/IEC 11160-2 for class 3 and class 4.

Copyright International Organization for Standardization
Provided by IHS under license with ISO
No reproduction or networking permitted without license from IHS
Not for Resale

Annex D
(informative)

Bibliography

ISO 269:1985, *Correspondence envelopes - Designation and sizes.*

ISO 646:1991, *Information technology - ISO 7-bit coded character set for information interchange.*

ISO 1073-1:1976, *Alphanumeric character sets for optical recognition - Part 1: Character set OCR-A - Shapes and dimensions of the printed image.*

ISO 1073-2:1976, *Alphanumeric character sets for optical recognition - Part 2: Character set OCR-B - Shapes and dimensions of the printed image.*

ISO/IEC 6937:1994, *Information technology - Coded character set for text communication - Latin alphabet.*

ISO/IEC 9541-1:1991, *Information technology - Font information interchange - Part 1: Architecture.*

ISO/IEC 9541-2:1991, *Information technology - Font information interchange - Part 2: Interchange Format.*

ISO/IEC 6429:1992, *Information technology - Control functions for coded character sets.*

ISO 8859-1:1987, *Information processing - 8-bit single-byte coded graphic character sets -Part 1: Latin alphabet No. 1.*

ISO 8859-2:1987, *Information processing - 8-bit single-byte coded graphic character sets - Part 2: Latin alphabet No. 2.*

ISO 8859-3:1988, *Information processing - 8-bit single-byte coded graphic character sets - Part 3: Latin alphabet No. 3.*

ISO 8859-4:1988, *Information processing - 8-bit single-byte coded graphic character sets - Part 4: Latin alphabet No. 4.*

ISO/IEC 8859-5:1988, *Information processing - 8-bit single-byte coded graphic character sets - Part 5: Latin/Cyrillic alphabet.*

ISO 8859-6:1987, *Information processing - 8-bit single-byte coded graphic character sets - Part 6: Latin/Arabic alphabet.*

ISO 8859-7:1987, *Information processing - 8-bit single-byte coded graphic character sets - Part 7: Latin/Greek alphabet.*

ISO 8859-8:1988, *Information processing - 8-bit single-byte coded graphic character sets - Part 8: Latin/Hebrew alphabet.*

ISO/IEC 8859-9:1989, *Information processing - 8-bit single-byte coded graphic character sets - Part 9: Latin alphabet No. 5.*

ISO/IEC 8859-10:1992, *Information technology - 8-bit single- byte coded graphic character sets - Part 9: Latin alphabet No. 6.*

ISO/IEC 10036:1993, *Information technology - Font information interchange - Procedure for the registration of glyph and glyph collection identifiers.*

ISO/IEC 10180:1995, *Information technology - Processing Languages - Standard Page Description Language (SPDL).*

ISO/IEC 10367:1991, *Information technology - Standardized coded graphic character sets for use in 8-bit codes.*

ISO/IEC 10646-1:1993, *Information technology - Universal Multiple-Octet Coded Character Set (UCS) - Part 1: Architecture and Basic Multilingual Plane.*

Copyright International Organization for Standardization
Provided by IHS under license with ISO
No reproduction or networking permitted without license from IHS
Not for Resale

Annex E
(informative)

Example of a layout for a specification sheet

1. General data			
1.1 Printer class	Class 4		
1.2 Name and Model number	.....		
1.3 Type	Desk-top		
1.4 Printing method	Electrophotographic, laser		
1.5 Dot density	Horizontal;	300dpi, 360dpi, 400dpi, 600dpi	
	Vertical;	300dpi, 360dpi, 400dpi, 600dpi	
1.6 Line smoothing	Available,	Type/Trade Mark: REt	
1.7 Dot depth	..... bits per dot		
1.8 Colour printing			
1.8.1 Monochrome	Black, Red		
1.8.2 Multi-colour	Available (2 colours / Black and Red)		
1.8.3 Full colour	Available		
1.8.4 Colour transparencies	Available (The colour can be projected.)		
2. Performance data			
2.1 Rated engine speed	Monochrome prints	Colour prints	
First page	..... sec.	..... sec.	
Continuous print	..... PPM	..... PPM	(PPM = Pages Per Minutes)
2.2 Warm-up time			
From power up	..... sec.		
From power saver mode	..... sec.		
2.3 Recommended monthly	Monochrome prints	Colour prints	
print volume	..... to..... pages/month	..... to..... pages/month	
2.4 First page out time	..... sec.		
2.5 Sustained throughput	..... PPM		
3. Control			
3.1 Interface for hardware connection	IEEE1284, RS232C (Optional ;10 Base T, Localtalk)		
3.2 Interface for connection control	Optional ; Netware, Apple Talk, TCP IP		
3.3 Interface for printer control	PCL 5 (Optional ; PostScript)		
3.4 Memory			
3.4.1 Standard memory	..... MB		
3.4.2 Optional memory	..... MB (SIMM)		
3.5 Control panel	Alphanumeric 20 character display with 4 buttons and 4 status LED.		
4. Printing features			
4.1 Printing margins	Top =.....mm, Bottom =.....m, Left =.....mm, Right =.....mm		
4.2 Duplex printing	Available		
4.3 Other printing features	.....		
5. Fonts and character sets			
5.1 Resident fonts	50 fonts (e.g. .....)		
5.2 Standard character set	.....		
5.3 Optional capabilities	Downloadable to PCMCIA (2 slots);		
	Pre-installed Japanese true type font to hard disk		

Copyright International Organization for Standardization
Provided by IHS under license with ISO
No reproduction or networking permitted without license from IHS
Not for Resale

6. Output material	
6.1 Paper type	Plain paper
6.2 Special material	Recycled paper, Transparencies, Labels, Envelops
6.3 Paper size (Min. to Max.)	Min.: 148,5 mm x 210,0 mm to Max.: 279,4 mm x 431,8 mm
6.3.1 Cut sheets	A3, B4, A4, B5, A5, Ledger, Legal, Letter, Executive
6.3.2 Paper in continuous form (roll and fanfold)	Rolled paper is available. Width : ..... mm, Length : ..... mm, Diameter : ..... mm
6.3.3 Envelop	Width : ..... to ..... mm ; Length: ..... to ..... mm
6.4 Paper weight	Cut sheet : ..... to ..... g/m^2 Rolled paper: ..... to ..... g/m^2

7. Paper handling			
7.1 Paper supply device	Tray	Cassette	Drawer(Option)
7.2 Paper supply capacity	100	250	1000 sheets (80 g/m^2)
7.3 Paper feed orientation	Short edge feed; A3, B4, A5, Ledger, Legal Other sizes can be handled both short edge and long edge feed.		
7.4 Paper path options	Either straight path or curled path can be selected.		

8. Paper output handling			
8.1 Output trays	Tray 1	Tray 2	Tray 3(option)
8.1.1 Output tray paper size	A5 to A4	A3 to A5	A4, Letter
8.1.2 Output tray capacities	50	250	500 sheets (80 g/m^2)
8.1.3 Delivery mode to output tray	Face up	Face down	Face down
8.1.4 Offsetting capacity(shifting)	Non	Non	Available(30 mm)
8.2 Bypass capability	Available		
8.3 Finishing features	.....		

9. Physical characteristics	All the dimensions given below include accessory.
9.1 Dimensions	(W)..... mm , (D)..... mm , (H)..... mm
9.2 Space required - operation	(W)..... mm , (D)..... mm , (H)..... mm
9.3 Space required - maintenance	(W)..... mm , (D)..... mm , (H)..... mm
9.4 Weight	..... kg (with all the accessory and consumables)
10. Operating environment	..... to ..... °C , ... to ..... %RH

11. Power source		
11.1 Rated voltage or voltage range	100 - 127 V and 220 - 240 V	
11.2 Rated frequency or frequency range	50 and 60 Hz	
11.3 Current (See Notes below)	Basic configuration Max. ..... A	Maximum configuration Max. ..... A
11.4 Power at the rated input voltage	Max .....kW	Max .....kW
11.5 Average power consumption	Basic configuration	Maximum configuration
Operating	..... kW	..... kW
Standby	..... W	..... W
Power saver mode	..... W	..... W

Note: The maximum configuration means the configuration that requires the highest current.

Copyright International Organization for Standardization
Provided by IHS under license with ISO
No reproduction or networking permitted without license from IHS Not for Resale

12. Safety

12.1 Equipment safety regulations .....

12.2 Material Safety Data Sheet (MSDS) Available

.....

13. Electromagnetic compatibility (EMC) .....

14. Emissions

14.1 Acoustical noise

Declared noise emission in accordance with ISO 9296:

	Operating	Standby	Power Saver Mode	
L_{WAd} (1 B = 10 dB)	.....B	.....B	.....B	(Sound power level, A-weighted)
L_{pAm} (bystander position)	.....dB	.....dB	.....dB	(Sound pressure level, A-weighted)

14.2 Heat emission

	Basic configuration	Maximum configuration
Operating	..... kJ	..... kJ
Standby	..... kJ	..... kJ
Power saver mode	..... kJ	..... kJ

15. Consumable supplies .....

16. Optional equipment .....

17. Accessory .....

18. Others .....

Copyright International Organization for Standardization
Provided by IHS under license with ISO
No reproduction or networking permitted without license from IHS Not for Resale

© ISO/IEC

ICS 35.180

Descriptors: data processing, data processing equipment, office equipment, data processing printers, specifications, technical data sheets, layout.

Price based on 21 pages

Copyright International Organization for Standardization
Provided by IHS under license with ISO
No reproduction or networking permitted without license from IHS

Not for Resale