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Information technology — Office equipment — Copying machines and Multi-function devices — Information to be included in specification sheets and related test methods

Technologies de l'information — Machines de bureau — Machines copiantes et dispositifs multifonctionnels — Information à inclure dans les feuilles de spécifications et les méthodes relatives d'essai

Reference number
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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. In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of the joint technical committee is to prepare International Standards. 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.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights.

ISO/IEC 21117 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 28, *Office equipment.*

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Information technology — Office equipment — Copying machines and Multi-function devices — Information to be included in specification sheets and related test methods

1. Scope

This International Standard specifies the information to be listed in specification sheets for electrophotographic digital copying machines and multi-function devices. The intention of this International Standard is to allow purchasers and users to compare the characteristics of different models of copying machines and multi-function devices so that they can more easily select copying machines and multi-function devices that meet their requirements.

2. Normative references

The following referenced documents are indispensable for the application 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 216:1975, *Writing paper and certain classes of printed matter — Trimmed sizes — A and B series*

ISO/IEC 14545:1998, *Information technology -- Office equipment -- Method for measuring copying machine productivity*

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

ISO 7779:1999, *Acoustics — Measurement of airborne noise emitted by information technology and telecommunications equipment*

ISO 3740:2000, *Acoustics — Determination of sound power levels of noise sources — Guidelines for the use of basic standards*

3. Information to be included in specification sheets:

Table 1 defines a name and a short description for each parameter entry. These constitute the information to be included in specification sheets. Furthermore, test and measurement methods are defined for parameters where applicable in the “Definitions and methods of measurement” column. Specification sheets shall use the parameter names listed in **Table 1**. Specification sheets must include all applicable parameters in the given order. Parameters that do not function, however, may be omitted.

Note: When extracting parameters and specification values from specification sheets for use in catalogs, there are no particular provisions on the parameter numbers or on the order in which the parameters are listed.

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4. Specification sheets

4.1 Main Unit: refer to **Annex 1**.

4.2 Option devices

a) document feeder: refer to **Annex 2**.

b) auxiliary paper-supply devices: refer to **Annex 3**.

c) sorters: refer to **Annex 4**.

d) finishers: refer to **Annex 5**.

4.3 Extended functions

a) scanner function: refer to **Annex 6**.

b) printer function: refer to **Annex 7**.

c) facsimile function: refer to **Annex 8**.

d) e-mail / internet facsimile function: refer to **Annex 9**.

5. Test and measurement methods

5.1 Test and measurement conditions

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

Temperature:	23 ° C ± 5 ° C
Relative humidity:	(50 ± 20) %
Supply voltage:	rated input voltage
Supply frequency:	rated frequency
Paper size:	A4
Paper weight:	60 g/m^2 to 90 g/m^2

If different paper size from A4 is used, the used paper sized should be given in the specification sheets. It is assumed that paper used in tests has been conditioned under the environmental conditions given above.

5.2 Test and measurement methods

Test and measurement method for each parameter is specified in Table 1.

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Table 1: Parameters to be included in specification sheets

Parameter	Description of the entry Remarks and examples	Definitions and methods of measurement
1 Main unit	Refer to **Annex 1**.	
1.1 Name	Product name and model number.	
1.2 Type	States if the machine is a portable, desktop, or floor-standing (console) type and if the machine is an all-in-one or multi-component type.	
1.3 Copying method	Analog or digital	
1.4 Colour	States if single-colour or full-colour copying is supported for machines that support colour copying.	
1.5 Type of photoreceptor	Organic material, a-Si or Selenium.	
1.6 Scanning light source	States the type of light source used for scanning and its rated power consumption in watts.	
1.7 Type of platen	Moving or stationary. If no platen is provided and the original is fed into the machine by hand or with a document carrier, indicate the platen as “feed-through”.	
1.8 Scanning method	States the method by which originals are scanned and the type of scanning device. **Example:** indirect: mirror scanning type, reduction optical system direct: contact type line sensor device: CCD	
1.9 Writing method	States the method by which the latent image is written to the photoreceptor.	
1.10 Developing method	Mono or dual components.	
1.11 Copy density adjustment	Manual or automatic. If manual, indicate the adjustment method, such as continuous or discrete.	
1.12 Fixing method	Heat-roller, flash, oven, or pressure fixing.	
1.13 Paper-supply device/paper-supply capacity	States the paper-supply method (automatic or manual) and the number of cassettes, decks, and trays (attached to the main unit). Also, indicate the loading capacity in sheets for each cassette, deck, and tray for a defined paper weight (in g/m^2). If there are multiple pickup trays, indicate the loading capacity for each pickup tray. For machines that use roll sheets, list the width and length of roll sheets.	
1.14 Scanning resolution	States the main and sub scanning resolution, expressed in “dpi” or “dpi (number of dots / 25.4 mm)”. If the machine extends the optical resolution through an interpolation process, state the equivalent resolution. Indicate interpolated resolutions with the expression “equivalent”. **Example:** main:1,200 equivalent dpi × sub:1,200 equivalent dpi	

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Table 1: Parameters to be included in specification sheets (continued)

Parameter	Description of the entry Remarks and examples	Definitions and methods of measurement
1.15 Writing resolution	States the main and sub write resolution, expressed in “dpi” or “dpi (number of dots / 25.4 mm)”. If the machine extends the optical resolution through an interpolation process, state the equivalent resolution. Indicate interpolated resolutions with the expression “equivalent”. **Example:** main:1,200 equivalent dpi × sub: 1,200 equivalent dpi	
1.16 Number of tones / colours for printing	Single colours are colours that cannot be combined. State the number of single colours and their respective colour values. Normally, full colours are represented through a combination of yellow, magenta, cyan, and black. State the number of tones that can be represented for each of these colours, including black. The maximum (theoretical) number of colours that can be represented through combinations of these basic colours may also be indicated.	
1.17 Acceptable originals	Lists sheets, books, computer forms, and other acceptable originals.	
1.18 Copy paper	Indicates any specially processed copy paper that is used. Also, states the paper weight that can be transported in the machine. The recommended unit is g/m^2.	
1.19 Original sizes	States the maximum size in millimeters. The specification sheet should indicate any limitations on the thickness of originals as well as the maximum weight that can be placed on the platen.	
1.20 Copying dimensions	States the maximum and minimum dimensions that can be copied in millimeters. If the copying size varies by the paper-supply method (manual or automatic), this is indicated.	
1.21 Non-image area	Non-image area is the area that cannot be copied on when copying an original without margins on a given paper size. States in millimeters the width of the non-copy area at the top, bottom, and side of the page.	The non-image areas at each edge shall be indicated. The non-image areas shall be measured from the top, bottom, and sides of the copy paper to the image, copied under normal usage conditions.
1.22 Possible enlargement and reduction	Indicates the possible enlargement and reduction expressed as a normalized ratio to the length of the original. The ratio is stated for enlarged copies, reduced copies, and direct (1:1) copies to two decimal places. Express the error deviation of direct (1:1) copying as a percent. The deviation percentage (%) shall be the	

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Table 1: Parameters to be included in specification sheets (continued)

Parameter	Description of the entry Remarks and examples	Definitions and methods of measurement
	maximum deviation, including variations between machines of the same model.	
1.23 Number of continuous copies	Indicates in pages the maximum number of copies that can be set for continuous copying when the machine operates as a copying machine.	
1.24 Continuous copying speed	States the number in pages/minute that can be made under normal usage conditions (A4 paper, 1:1 magnification, and standard feed direction) in continuous copying mode. Specify if copying speeds vary by paper size. For colour copying machines, specify the copying speeds for both colour copying and monochrome (black and white) copying. Specify if copying speeds vary by copying process. Each respective copying speed should be indicated. The number of copies is expressed in Copies Per Minute (CPM) in the following formats. a) Less than 10 CPM: Round off to two decimal places and express as two significant figures: X.X b) 10 CPM to 99 CPM: Express with either of the methods below: 1) Round off to one decimal place and express as two significant figures: XX 2) Round off to two decimal places and express as three significant figures: XX.X c) 100 CPM or more: Round off to one decimal place and express as three significant figures: XXX	The machine shall be set to copy 11 copies under normal usage conditions (A4 paper, 1:1 magnification, and standard feed direction). Measure the time (that is, obtain the value t in seconds) from when the first copy is fully ejected to when the 11th copy is fully ejected. This value shall be converted into the number of copies per minute with the following equation: 60 ÷ (t/10) = the number of copies per minute For continuous passed pages, a number of pages equivalent to the number of copies per minute + 1 may be passed. In this case, “10” in the equation above is replaced with “number of passed pages – 1”.
1.25 First-copy-out time	States in seconds the time from pressing the Print button to completing the delivery of the first copy with the setting that produces the fastest result under normal usage conditions (A4 paper, 1:1 magnification, and standard feed direction). (It is recommended to indicate in the specification sheet if the first-copy-out time varies depending on certain conditions, such as the basic configuration of the copying machine or the mode of or attachments to the document feeder or depending on the use and modes of options, such as automatic copy-density adjustment, original-size detection, and automatic duplex copying. And these different FCOT values are recommended to indicate in the specification sheet.)	The first-copy-out time shall be measured in seconds from the moment the Print button is pressed to the time the first copy is fully ejected with the setting that produces the fastest result under normal usage conditions.

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Table 1: Parameters to be included in specification sheets (continued)

Parameter	Description of the entry Remarks and examples	Definitions and methods of measurement
1.26 Warm-up time	States the time in minutes or seconds from power on to a ready state. If the machine is pre-heated, this is indicated along with the time to pre-heat. The temperature and relative humidity during the warm-up-time measurement shall also be reported with the measured value. If the machine is pre-heated, this shall be indicated along with the time to pre-heat.	Tests shall be performed on a machine that has been turned off until its internal temperature can be assumed the same as the ambient temperature. The time from turning on the power switch to a copy-ready state shall be measured. The warm-up time should be tested at a temperature of 20 ° C.
1.27 Power source	Lists the voltage (in volts), frequency (in hertz), and current (in amperes) for AC-powered machines. If the machine can operate at both 50 Hz and 60 Hz, this is indicated. For DC-powered machines, list the voltage (in volts) and current (in amperes).	
1.28 Maximum power consumption	States the maximum power consumed in kilowatts when the machine is in use.	The maximum power consumption shall be measured in kilowatts while copying under normal usage conditions from the time the power is turned on. Transient power fluctuations, however, are excluded. Options that can be adjusted, such as the copy ratio and copy density, shall be set so the maximum amount of power is consumed.
1.29 Power-savings efficiency	States the power-saving efficiency for machines that are subject to the Law Concerning the Rational Use of Energy. Express the power-savings efficiency as an integer in watt-hours/hour.	
1.30 Extended functions	States any extended functions that can be installed, such as facsimile, printer, scanner, and network functions.	
1.31 Memory capacity	States the standard-equipped memory capacity and the maximum extendable memory capacity, expressed in megabytes (MB) or gigabytes (GB). Examples: 256 MB standard, 512 MB maximum, 120 GB hard-disk drive	
1.32 Optional copying functions	Lists any options not covered above, such as duplex copying functions, automatic colour functions, image processing, magnification functions, margin functions, and editing functions. When listing options, specify the test parameters, test methods, and test results.	The copying machine unit shall be tested with the options in place while being operated in accordance with the operating procedure given in catalogs, specification sheets, or operating manuals. The existence or absence of malfunctions and other required parameters shall be examined.
1.33 Safety regulations	States applicable standards. Indicates the applicable national deviations.	
1.34 Safety data sheets	Available/not available	

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Table 1: Parameters to be included in specification sheets (continued)

Parameter	Description of the entry Remarks and examples	Definitions and methods of measurement
1.35 Electromagnetic compatibility (EMC)	States electromagnetic compatibility in accordance with IEC 60950-1 : Information technology equipment - Safety - Part 1: General requirements and CISPL 22:CISPR (The International Special Committee on Radio Interference)	
1.36 Acoustical noise	States the sound power levels and sound pressure levels of noise during standby and while copying. Express the noise values in accordance with **ISO 9296**.	Sound power levels and sound pressure levels shall be measured in accordance with ISO 7779. Noise shall be measured both during standby and while copying. a) Method of measuring sound power levels 1) Many types of measurement points can be selected when measuring sound power according to **7.** in **ISO 7779**. In this Standard, the measurement points shown in **Figure C.2** in **ISO 3744** (a nine-point measurement on a parallelepiped measurement surface) are recommended. When measuring sound power in a reverberation room according to **6.** in **ISO 7779**, use the measurement points described in **6**. 2) The distance criteria is assumed to be to each plane of the hypothetical surface (the reference box) which is the smallest rectangular parallelepiped that just encloses the copying machine. Protruding sections of the copying machine (such as cassettes and trays) that do not appear to contribute to noise are assumed not to be included in the reference box mentioned above because they are considered not to affect measurement values. 3) Measurements are expressed in bels (B). b) Method of measuring sound pressure levels 1) Measurement points are defined in **ISO 7779**. 2) The distance between the machine under measurement and the measurement points is defined as follows: 2.1) Operator distance: 0.25 m ± 0.03 m 2.2) Bystander distance: 1.00 m ± 0.03 m Measurements are taken at four bystander positions at the

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Table 1: Parameters to be included in specification sheets (continued)

Parameter	Description of the entry Remarks and examples	Definitions and methods of measurement
		front, back, left, and right of the machine. 3) The height of the measurement points from the floor is 1.50 m ± 0.03 m. The height of 1.50 m ± 0.03 m assumes a standing operator. If the operator is seated, choose the most appropriate operator position from (b), (c), or (d) in **Figure 1** of **ISO 7779**. If the operator position cannot be determined, measurements from the operator position may be omitted. 4) Measurements are expressed in decibels (dB).
1.37 Additional units	States any extended features that can be installed on the copying machine. **Example:** ADF(standard), Finisher(option)	
1.38 Operating environment	Specifies the minimum and maximum ambient temperatures, and related range of relative humidity.	
1.39 Dimensions	States the dimensions of the main unit in either centimeters or millimeters in the order: width × depth × height.	
1.40 Weight	States the weight of the main unit in kilograms.	
1.41 Space required	States the maximum dimensions in either centimeters or millimeters of the main unit when the largest cassette, tray, and delivery unit are installed in the order: width × depth. For machines with moving platens, include the dimensions when the platen is at its maximum extension point. The specification sheet should also list the space required when accessories and options are installed, such as automatic document feeders, sorters, or large-capacity paper-supply devices.	
1.42 Other parameters	Lists required parameters not covered between 1.1 and 1.41.	
2 Accessories (options)		
2.1 Document feeders	Refer to **Annex 2**.	
2.1.1 Name	Lists the product name or model number.	
2.1.2 Type	States the feeder class, such as document feeder, automatic document feeder, or automatic duplex document feeder. If the feeder has a sheet-through feeding function, this is indicated.	
2.1.3 Acceptable originals	States the maximum and minimum original sizes in millimeters that the feeder can accept. If special originals can be used, their size is indicated.	

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Table 1: Parameters to be included in specification sheets (continued)

Parameter	Description of the entry Remarks and examples	Definitions and methods of measurement
2.1.4 Types of originals	States the range of paper thickness, expressed by weight in g/m^2, that the feeder can accept. If special originals or special paper types can be used, this is indicated.	
2.1.5 Loading capacity	States the maximum number of originals that can be loaded in the feeder at one time. If the capacity varies by size or weight of originals, this is indicated.	
2.1.6 Original exchange speed	States the original exchange speed in sheets per minute when making one copy of each A4 original from a number of originals at a magnification of 1:1 in succession using the feeder and the copying machine together. If it is necessary to note the original exchange speed of the feeder when not combined with the copying machine, this value may be entered on the specification sheet as the "original scanning speed". If necessary, refer to **ISO 14545** for details on copying productivity. The specification sheet should indicate if the original exchange speed varies when options are used, such as automatic copy-density adjustment, original-size detection, and automatic duplex copying. Each respective copying speed should be indicated. The specification sheet should note if the original scanning speed varies by resolution and indicate the resolution at which the speed was measured.	The original exchange speed shall be measured as the combined copying speed when making one copy of each A4 original from a number of originals at a magnification of 100% (1:1) in succession using the feeder and the copying machine together. Eleven pages shall be copied in succession and the time from when the first copy is fully ejected to when the 11th copy is fully ejected shall be measured (that is, obtain the value *t* in seconds). This value shall be converted into the number of sheets per minute with the following equation: 60 ÷ (*t*/10) = the number of sheets per minute If the feeder can scan originals independent of the copying machine, the original scanning speed shall be measured. Eleven A4 originals shall be loaded in the feeder and the time from when the first original is fully ejected to when the 11th original is fully ejected shall be measured (that is, obtain the value *t* in seconds). This value shall be converted into the number of sheets per minute with the following equation: 60 ÷ (*t*/10) = the number of sheets per minute
2.1.7 Power source	Lists the voltage (in volts), frequency (in hertz), and current (in amperes) if the feeder has an AC power cord. If the feeder does not have an AC power cord and draws its power from the copying machine, this should be indicated.	
2.1.8 Maximum power consumption	States the maximum power consumption if equipped with document feeder which is directly connected to external power line.	The maximum power consumption shall be measured in watts while copying under normal usage conditions after the power is turned on if this option unit uses electricity directly from external power line, otherwise this measurement is optional. Transient power fluctuations, however, are excluded. Any options that can be adjusted shall be set so the maximum amount of power is consumed.

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Table 1: Parameters to be included in specification sheets (continued)

Parameter	Description of the entry Remarks and examples	Definitions and methods of measurement
2.1.9 Dimensions	States the dimensions of the feeder unit in either centimeters or millimeters in the order: width × depth × height.	
2.1.10 Weight	States the weight in kilograms.	
2.1.11 Other parameters	Lists required parameters not covered between 2.1.1 and 2.1.10.	
2.2 Auxiliary paper-supply devices	Refer to **Annex 3**.	
2.2.1 Name	Lists the product name or model number.	
2.2.2 Acceptable paper sizes	States the maximum and minimum paper sizes in millimeters that can be loaded in the device for each tray.	
2.2.3 Number of paper feed trays	States the number of trays and cassettes. If there are multiple paper feed trays, the specification sheet should specify the capacity of each paper feed tray along with the number of paper feed trays and overall capacity.	
2.2.4 Paper supply capacity	States the loading capacity for each paper feed tray. List the maximum capacity, and, if necessary, indicate the paper weight in g/m^2.	
2.2.5 Power source	Lists the voltage (in volts), frequency (in hertz), and current (in amperes) if the paper-supply device has an AC power cord. If the paper-supply device does not have an AC power cord and draws its power from the copying machine, this should be indicated.	
2.2.6 Maximum power consumption	States the maximum power consumption if equipped with auxiliary paper-supply devices which is directly connected to external power line.	The maximum power consumption shall be measured in watts while copying under normal usage conditions after the power is turned on if this option unit uses electricity directly from external power line, otherwise this measurement is optional. Transient power fluctuations, however, are excluded. Any options that can be adjusted shall be set so the maximum amount of power is consumed.
2.2.7 Dimensions	States the dimensions of the paper-supply device in either centimeters or millimeters in the order: width × depth × height.	
2.2.8 Weight	States the weight in kilograms.	
2.2.9 Other parameters	Lists required parameters not covered between 2.2.1 and 2.2.8.	
2.3 Sorters	Refer to **Annex 4**.	
2.3.1 Name	Lists the product name or model number.	
2.3.2 Acceptable paper sizes	States the maximum and minimum paper sizes in millimeters that the sort bins can accept. If the paper sizes that can be accepted by non-sort bins are different, this should be indicated.	

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Table 1: Parameters to be included in specification sheets (continued)

Parameter	Description of the entry Remarks and examples	Definitions and methods of measurement
2.3.3 Bin type	Specifies if bins are fixed or moveable, and specifies if copies are delivered face-up or face-down when ejected.	
2.3.4 Number of bins	States the number of bins available for sorting copies. Indicates if non-sort bins are provided.	
2.3.5 Bin capacity	States the number of copies that each bin can accept. If the capacity varies by paper size, this is indicated. Also, if the capacities of sort bins and non-sort bins are different, list each capacity. If necessary, note the paper weight in g/m^2.	
2.3.6 Stapler	Stapler is the name of the mechanism that automatically binds copies delivered to the bins. States the maximum number of sheets that can be stapled, the maximum and minimum paper sizes that can be stapled, and the stapling configurations (positions) available. If necessary, the paper weight in g/m^2 should also be included.	
2.3.7 Hole puncher	Hole puncher is the name of the mechanism that automatically punches holes in copies. States the maximum and minimum paper sizes that can be punched as well as the number of holes punched per copy.	
2.3.8 Mode	Lists the modes of the sorter, including sort, non-sort, and group (stack) modes.	
2.3.9 Acceptable paper types	States the range of paper thickness that can be sorted into sort bins, expressed by weight in g/m^2. Indicate any special paper types, such as transparencies, that can be sorted.	
2.3.10 Power source	Lists the voltage (in volts), frequency (in hertz), and current (in amperes) if the sorter has an AC power cord. If the sorter does not have an AC power cord and draws its power from the copying machine, this should be indicated.	
2.3.11 Maximum power consumption	States the maximum power consumption if equipped with sorter which is directly connected to external power line.	The maximum power consumption shall be measured in watts while copying under normal usage conditions from the time the power is turned on if this option unit uses electricity directly from external power line, otherwise this measurement is optional. Transient power fluctuations, however, are excluded. Any options that can be adjusted shall be set so the maximum amount of power is consumed.
2.3.12 Dimensions	States the dimensions of the sorter unit in either centimeters or millimeters in the order: width × depth × height.	
2.3.13 Weight	States the weight in kilograms.	

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Table 1: Parameters to be included in specification sheets (continued)

Parameter	Description of the entry Remarks and examples	Definitions and methods of measurement
2.3.14 Other parameters	Lists required parameters not covered between 2.3.1 and 2.3.13.	
2.4 Finishers	Refer to **Annex 5**.	
2.4.1 Name	Lists the product name or model number.	
2.4.2 Acceptable paper sizes	States the maximum and minimum paper sizes in millimeters that the finisher trays can accept. If the acceptable paper sizes vary by finisher tray, this is indicated.	
2.4.3 Tray type	Specifies the tray type so that the tray can be distinguished by function. Also specifies if copies are delivered face-up or face-down when ejected.	
2.4.4 Number of trays	States the number of finisher trays.	
2.4.5 Tray capacity	States the number of copies that each tray can accept. If the capacity varies by paper size or other condition, this is indicated. If necessary, note the paper weight in g/m^2.	
2.4.6 Stapler	Stapler is the name of the mechanism that automatically binds copies delivered to the trays. States the maximum number of staples, the maximum and minimum paper sizes that can be stapled, and the stapling configurations (positions) available.	
2.4.7 Hole puncher	Hole puncher is the name of the mechanism that automatically punches holes in copies. States the maximum and minimum paper sizes that can be punched as well as the number of holes punched per copy.	
2.4.8 Saddle stitcher	The saddle stitcher is a function that binds copies by automatically stapling them in the center and folding them in half. States the maximum number of staples, the maximum and minimum paper sizes that can be stapled, and the paper weight in g/m^2.	
2.4.9 Z-fold	Z-fold is a folding pattern. States the maximum and minimum paper sizes that can be folded and the paper weight in g/m^2.	
2.4.10 Acceptable paper types	States the range of paper thickness that the finisher trays can accept, expressed by weight in g/m^2. Indicate any special paper types, such as transparencies, that the finisher can accept.	
2.4.11 Power source	Lists the voltage (in volts), frequency (in hertz), and current (in amperes) if the finisher has an AC power cord. If the finisher does not have an AC power cord and draws its power from the copying machine, this should be indicated.	

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Table 1: Parameters to be included in specification sheets (continued)

Parameter	Description of the entry Remarks and examples	Definitions and methods of measurement
2.4.12 Maximum power consumption	States the finisher's maximum power consumption if equipped with finisher which is directly connected to external power line.	The maximum power consumption shall be measured in watts while copying under normal usage conditions from the time the power is turned on if this option unit uses electricity directly from external power line, otherwise this measurement is optional. Transient power fluctuations, however, are excluded. Any options that can be adjusted shall be set so the maximum amount of power is consumed.
2.4.13 Dimensions	States the dimensions of the finisher unit in either centimeters or millimeters in the order: width × depth × height.	
2.4.14 Weight	States the weight in kilograms.	
2.4.15 Other parameters	Lists required parameters not covered between 2.4.1 and 2.4.14.	
3. Extended functions		
3.1 Scanner functions	Refer to **Annex 6**.	
3.1.1 Type	Color/monochrome scanner	
3.1.2 Scanning resolution	States the main and sub scanning resolutions as needed, expressed in "dpi" or "dpi (number of dots/25.4 mm)". If the machine extends the optical resolution through an interpolation process, the equivalent resolution may be stated. **Example:** 600 dpi × 600 dpi	
3.1.3 Scanning speed	The scanning speed may be specified if it varies when the machine operates in copying mode. (If this measurement is needed, scanning parameters should also be indicated.) **Examples:** Colour: 20 originals/min(600x600 dpi/A4) Monochrome: 30 originals/min(600x600 dpi/A4)	
3.1.4 Scanning colour depth	The scanning colour depth may be specified if they vary when the machine operates in copying mode. This shows how many colours of scanner data be available for input and output. **Examples:** Colour: input 48bit(each 16bit=2^{16}tone) output 48bit(each 16bit=2^{16}tone) Monochrome: input 16bit (=2^{16}tone) output 16bit (=2^{16}tone)	
3.1.5 Interfaces	Specifies any interface (physical layer) standards for machines with functions to output images to external devices in addition to the copying machine. **Examples:** SCSI, RS232C, 10Base-T, 100Base-T, USB, IEEE 1394	

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Table 1: Parameters to be included in specification sheets (continued)

Parameter	Description of the entry Remarks and examples	Definitions and methods of measurement
3.1.6 Supported protocols	Lists supported transmission protocols for machines with external image output functions. **Examples:** TCP/IP, SMTP, POP3, HTTP	
3.1.7 Output formats	Lists transfer formats of external image outputs. If the images are compressed, the compression format is indicated. **Examples:** Transfer formats: TIFF, EPS, PICT, DCS Compression formats: MH, MR, MMR, JBIG, JPEG, and so on	
3.1.8 Drivers	Lists device driver standards, such as TWAIN support.	
3.1.9 Other parameters	Lists required parameters not covered between 2.5.1 and 2.5.8.	
3.2 Printer functions	Refer to **Annex 7**.	
3.2.1 Type	Specifies built-in or external controller.	
3.2.2 Continuous printing speed	When printing the second and following A4 pages of a set in succession, states the continuous printing speed as the maximum number of printed pages output in a given time or as the maximum speed in pages/minute.	
3.2.3 Resolution	States the main and sub printing resolutions, expressed in “dpi” or “dpi (number of dots/25.4 mm)”. If the machine extends the optical resolution through an interpolation process, the equivalent resolution may be stated. **Examples:** 600 dpi × 600 dpi 2,400 equivalent dpi × 600 dpi	
3.2.4 Page description languages	Page description languages describe the printing details and control the mechanical operations of the printer. Lists the names of supported languages.	
3.2.5 Supported protocols	States the names of transmission protocols used to send and receive data between computers and peripheral devices over networks.	
3.2.6 Supported operating systems	Lists the supported computer operating systems.	
3.2.7 Memory capacity	States the standard-equipped memory capacity in the printer controller and the maximum extendable memory capacity, expressed in megabytes (MB) or gigabytes (GB). **Examples:** 256 MB standard, 512 MB maximum, 120 GB hard-disk drive	
3.2.8 Built-in fonts	States the names and number of typefaces of fonts stored in the printer controller. If fonts can be added (as an option), this is indicated. **Example:** Japanese fonts: Mincho typeface, Gothic typeface European fonts: 136 typefaces	

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Table 1: Parameters to be included in specification sheets (continued)

Parameter	Description of the entry Remarks and examples	Definitions and methods of measurement
3.2.9 Emulation	If the machine applies a function to provide compatibility of software interfaces with other printers, lists the names of printers that can be emulated. Indicate if this is an optional feature.	
3.2.10 Interfaces	Lists the transmission mechanism and its standard name of interfaces, which constitute signal paths and their associated control circuits between the host computer and the printer. Indicate if this is an optional feature. **Examples:** SCSI, RS232C, 10Base-T, 100Base-T, USB, IEEE 1394	
3.2.11 Power supply/maximum power consumption	Stated only if the printer controller is externally attached to the copying machine.	
3.2.12 Dimensions/weight	Stated only if the printer controller is external to the copying machine.	
3.2.13 Other parameters	Lists required parameters not covered between 2.6.1 and 2.6.12.	
3.3 Facsimile functions	Refer to **Annex 8**.	
3.3.1 Applicable lines	Specifies the types of lines that can be connected and the number of lines that can be accommodated. **Examples:** General subscriber lines (two), ISDN, facsimile communication network	
3.3.2 Scanning resolution	States the main and sub scanning resolutions provided for communications. Resolution expressed in “lines/mm”, “dpi”, or “dpi (number of dots/25.4 mm)”. **Examples:** 8 × 3.85 lines/mm, 200 × 200 dpi	
3.3.3 Communication speed	Lists the maximum communication speed for each transmission standard. **Examples:** G3: 14.4 kbps, G4: 64 kbps, Super G3: 33.6 kbps	
3.3.4 Encoding method	Lists all data compression methods that can be used with communications. **Examples:** MMR, JBIG, JPEG (CIELAB), JPEG (sYCC)	
3.3.5 Communication mode	Lists all possible communication protocols. **Examples:** G3, G4, Super G3, ECM, proprietary modes	
3.3.6 Transmission original size	States the maximum standard dimensions. States the maximum length, however, if long strips can be sent. **Examples:** A3 (297 × 420 mm), length 500 mm	
3.3.8 Paper size	States the minimum and maximum standard dimensions. **Examples:** A4, B4, A3	

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Table 1: Parameters to be included in specification sheets (continued)

Parameter	Description of the entry Remarks and examples	Definitions and methods of measurement
3.3.9 Transmission time	States the time to transmit an image at maximum speed. Specifies the type of original and communication mode used. **Example:** Approximately 3 seconds (with an A4 original, 8 × 3.85 lines/mm, and a proprietary mode)	
3.3.10 Memory size assigned for FAX use only	Lists the standard memory size and maximum extended memory size, if such memory is assigned and dedicated for FAX only. **Example:** Standard 4 MB, maximum 8 MB	
3.3.11 Color	Indicates if the machine has a color-facsimile communication function. **Examples:** Available, not available	
3.3.12 Other parameters	Lists required parameters not covered between 2.7.1 and 2.7.11.	
3.4 Internet facsimile functions (including e-mail transmission functions)	Refer to **Annex 9**.	
3.4.1 Communication protocol	Lists protocols used for connections. **Examples:** SMTP, POP3	
3.4.2 Communication mode	Lists the communication modes supported by Internet facsimile functions. **Examples:** Simple mode, full mode	
3.4.3 Resolution	States the main and sub scan resolution provided for communications. Resolution expressed in “dpi” or “dpi (number of dots/25.4 mm)”. **Example:** 200 dpi × 200 dpi	
3.4.4 Transmission file format	States the file format when transmitted. If necessary, also includes data compression methods. **Examples:** TIFF (MH, MR, MMR), JPEG	
3.4.5 Transmission original size	States the maximum standard dimensions. **Examples:** A3 (297 × 420 mm)	
3.4.6 Other parameters	Lists required parameters not covered between 2.8.1 and 2.8.5.	

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Annex 1 (informative) Specification sheets for copying machines and multi-function devices (main units)

This annex defines the layout of specification sheets for copying machines and multi-function devices (main units).

Date of entry ((month, day, year))

Name	
Type	
Copying method	
Color	
Type of photoreceptor	
Scanning light source	
Type of platen	
Scanning method	Type: Device:
Write method	
Developing process	
Copy density adjustment	
Fixing method	
Paper-supply device/paper-supply capacity	
Scanning resolution	Main: dpi; Sub: dpi
Write resolution	Main: dpi; Sub: dpi
Number of tones/colours	
Acceptable originals	
Copy paper	g/m^2
Original sizes	Maximum: Minimum: or standard size (number)
Copying dimensions	Maximum: Minimum: or standard size (number)

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Non-image area	Top: mm Bottom: mm Sides: mm
Possible enlargement and reduction	Enlargement: Reduction: Direct (1:1):
Number of continuous copies	
Continuous copying speed	
First-copy-out time	seconds
Warm-up time	
Power supply	Hz V A
Maximum power consumption	kW
Power-savings efficiency	Wh/h
Extended functions	
Memory capacity	
Optional Copying functions	
Safety regulations	
Safety data sheets	
Electromagnetic compatibility (EMC)	
Acoustical noise	
Additional units	(standard) (option)
Operating environment	
Dimensions	
Weight	kg
Space required	
Other parameters	

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Annex 2 (informative) Specification sheets for document feeders

This annex defines the layout of specification sheets for document feeders.

Date of entry ((month, day, year))

Name	(as Standard) (as Option)
Type	
Acceptable originals	Maximum: Minimum:
Types of originals	From g/m^2 to g/m^2
Loading capacity	sheets at g/m^2 paper
Original exchange speed	
Power source	V A
Maximum power consumption	W
Dimensions	(width) × (depth) × (height) (units:)
Weight	kg
Other parameters	

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Annex 3 (informative) Specification sheets for auxiliary paper-supply devices

This annex defines the layout of specification sheets for auxiliary paper-supply devices.

Date of entry ((month, day, year))

Name	(as Standard) (as Option)
Type	
Acceptable paper sizes	Maximum: Minimum:
Number of paper feed trays	
Paper supply capacity	
Power source	V A
Maximum power consumption	W
Dimensions	(width) × (depth) × (height) (units:)
Weight	kg
Other parameters	

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Annex 4 (informative) Specification sheets for sorters

This annex defines the layout of specification sheets for sorters.

Date of entry ((month, day, year))

Name	(as Standard) (as Option)
Type	
Acceptable paper sizes	Maximum: Minimum:
Bin type	Fixed Moveable ; copies delivered face-up face-down
Number of bins	Non-sort bins: Available/not available
Bin capacity	copies/bin
Stapler	Maximum number of staples: Acceptable paper sizes (maximum: minimum:) Stapling configurations (positions):
Hole puncher	Acceptable paper sizes (maximum: minimum:) Number of holes:
Mode	
Acceptable paper types	From g/m^2 to g/m^2
Power source	V A
Maximum power consumption	W
Dimensions	(width) × (depth) × (height) (units:)
Weight	kg
Other parameters	

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Annex 5 (informative) Specification sheets for finishers

This annex defines the layout of specification sheets for finishers.

Date of entry ((month, day, year))

Name	(as Standard) (as Option)
Type	
Acceptable paper sizes	Maximum: Minimum:
Tray type	
Number of trays	
Tray capacity	
Stapler	Maximum number of staples: Acceptable paper sizes (maximum: minimum:) Stapling configurations (positions):
Hole puncher	Acceptable paper sizes (maximum: minimum:) Number of holes:
Saddle stitcher	Maximum number of staples: Acceptable paper sizes (maximum: minimum:)
Z-fold	Acceptable paper sizes (maximum: minimum: weight: (g/m^2))
Acceptable paper types	From g/m^2 to g/m^2
Power source	V A
Maximum power consumption	W
Dimensions	(width) × (depth) × (height) (units:)
Weight	kg
Other parameters	

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Annex 6 (informative) Specification sheets for scanner functions

This annex defines the layout of specification sheets for scanner functions.

Date of entry ((month, day, year))

Type	
Scanning resolution	Main: dpi; Sub: dpi
Scanning speed	(Not specified If scanning speed is the same as copying speed.) Colour: Monochrome:
Scanning colour depth	Input: Output:
Interfaces	
Supported protocols	
Output formats	
Drivers	
Other parameters	

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Annex 7 (informative) Specification sheets for printer functions

This annex defines the layout of specification sheets for printer functions.

Date of entry ((month, day, year))

Continuous printing speed	
Resolution	Main: dpi; Sub: dpi
Page description languages	
Supported protocols	
Supported operating systems	
Memory capacity	
Built-in fonts	
Emulation	
Interfaces	
Power supply/maximum power consumption	V A W
Dimensions/weight	(width) × (depth) × (height) (units:) / kg
Other parameters	

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Annex 8 (informative) Specification sheets of facsimile functions

This annex defines the layout for specification sheets of facsimile functions.

Date of entry ((year, month, day))

Applicable lines	
Scanning resolution	
Communication speed	
Encoding method	
Communication mode	
Transmission original size	
Maximum readable size	
Paper size	
Transmission time	seconds
Memory size assigned for FAX use only	
Color	
Other parameters	

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Annex 9 (informative) Specification sheets of Internet facsimile functions (including e-mail transmission functions)

This annex defines the layout for specification sheets of Internet facsimile functions (including e-mail transmission functions).

Date of entry ((year, month, day))

Communication protocol	
Communication mode	
Resolution	
Transmission file format	
Transmission original size	
Other parameters	

Related Standards:

ISO/IEC 11159: 1996, Information technology — Office equipment — Minimum information to be included in specification sheets — Copying machines

TTC Standard JT-T4: Terminal Characteristics of G3 Facsimile Device for Document Transmission

TTC Standard JT-T30: Procedures for Document Facsimile Transmission in a General Switched Telephone Network

TTC Standard JT-T37: Procedures for the transfer of facsimile data via store-and-forward on the Internet

TTC Standard JT-T38: Procedures for Real-Time G3 Facsimile Communication over IP Networks

TTC Standard JT-T90: Characteristics and Protocols for Telematic Services in ISDN

TTC Standard JT-T563: Terminal Characteristics for a Group 4 Facsimile Apparatus

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