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Information technology — Office equipment — Method for the determination of ink cartridge yield for colour inkjet printers and multi-function devices that contain printer components

Technologies de l'information — Équipements de bureau — Méthode pour la détermination du rendement de cartouches d'encre pour les imprimantes couleur à jet d'encre et pour les dispositifs multifonctionnels qui contiennent des composants d'imprimantes

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ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

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

This fourth edition cancels and replaces the third edition (ISO/IEC 24711:2015), which has been technically revised.

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

— printer setting was corrected from duplex to simplex mode in Clause 4.1;

— the status of Annex E was changed from informative to normative to have consistency with ISO/IEC 19798;

— ISO/IEC 29142-1 has been added to the Bibliography;

— editorial changes were applied.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

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Introduction

The purpose of this document is to provide a process for determining the ink cartridge yield for a given colour inkjet print system (i.e. integrated ink cartridges and ink cartridges without integrated printheads) using a standard consumer type test page suite. In the case where a cartridge set can be used in multiple printer models, only one yield test needs to be performed as long as the difference between printer models does not impact yield.

NOTE A cartridge supplier can choose to use more than one market identifier for a single physical cartridge. In this case, only one yield test is required as long as there are no differences in the cartridges other than market identifiers.

This document prescribes the following:

— the test method that manufacturers, test laboratories, etc. use to determine ink cartridge yield;

— the method for determination of declared yield values from the test results;

— the appropriate method of describing the yield of cartridges in documentation supplied to the consumer by the manufacturer.

The cartridge yield is determined by an end-of-life judgement, or signalled with either of two phenomena: *fade,* caused by depletion of ink in the cartridge, or *automatic printing stop*, caused by an ink out detection function. It is envisioned that one of the uses of this document is for the calculation of cost per page (CPP). While this document measures a portion of this cost, it is not used as the sole component of CPP calculation. Additional factors are considered for CPP calculations. It is beyond the scope of this document to provide a methodology for calculation of CPP.

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Information technology — Office equipment — Method for the determination of ink cartridge yield for colour inkjet printers and multi-function devices that contain printer components

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1 Scope

The scope of this document is limited to the evaluation of ink cartridge page yield for ink-containing cartridges (i.e. integrated ink cartridges and ink cartridges without integrated printheads) for colour inkjet print systems. This document can also be applied to the printer component of any multifunctional device that has a digital input printing path, including multi-function devices that contain inkjet printer components. Both liquid and solid ink products can be tested using this document.

This document is only intended for the measurement of ink cartridge page yield when printing on plain paper. No other claims can be made from this testing regarding quality, reliability, etc.

This document can be used to measure the yield of any cartridge that is used in a significant amount during the printing of the test page suite defined in ISO/IEC 24712.

This document is not for use with printers whose minimum printable size is equal to or greater than A3 or for printers designed or configured to print photos (for example, maximum printable size less than A4 or a printer configuration intended for photo-only printing). In addition, it only applies to drop-on-demand printing systems.

NOTE Integrated ink cartridges is a cartridge that includes at least: an ink containment part, an ink deposition mechanism and an ink transport part (see ISO/IEC 29142-1).

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 24712, *Colour test pages for measurement of office equipment consumable yield*

ISO/IEC 29102, *Information technology — Office equipment — Method for the determination of ink cartridge photo yield for colour printing with inkjet printers and multi-function devices that contain inkjet printer components*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

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