INTERNATIONAL STANDARD

ISO/IEC 24711

Second edition
2007-12-15

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

Méthode pour la détermination du rendement de cartouche d'encre pour les imprimantes couleur à jet d'encre et pour les dispositifs multifonctionnels qui peuvent contenir des composants d'imprimantes

Reference number
ISO/IEC 24711:2007(E)

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

Contents

Page

Foreword ... iv

Introduction ... v

1 Scope ... 1

2 Normative references ... 1

3 Terms and definitions ... 1

4 Test parameters and conditions ... 3
4.1 Set-up ... 3
4.2 Sample size ... 4
4.3 Print mode ... 4
4.4 Print environment ... 5
4.5 Paper ... 5
4.6 Maintenance ... 5
4.7 Test files ... 6

5 Test methodology ... 6
5.1 Testing procedure ... 6
5.2 Procedure for handling streaks ... 7
5.3 Procedure for handling a defective cartridge, printhead or printer ... 8

6 Determination of the declared yield value and declaration ... 9
6.1 Yield of primary cartridges ... 9
6.2 Yield of supplemental cartridges ... 10
6.3 Test data reporting ... 11
6.4 Declaration of the yield ... 12

Annex A (informative) **Examples of fade** ... 18

Annex B (informative) **Examples of streaks** ... 19

Annex C (normative) **Testing reporting form** ... 20

Annex D (informative) **Process flowchart** ... 24

Annex E (informative) **Method for comparison of inkjet performance to ISO/IEC 19752** ... 26

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 24711 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 28, *Office equipment*.

This second edition cancels and replaces the first edition (ISO/IEC 24711:2006), of which it constitutes a minor revision.

Introduction

The purpose of this International Standard is to provide a process for determining the ink cartridge yield for a given colour inkjet printer model (i.e. integrated ink cartridges and ink cartridges without integrated printheads) using a standard consumer type test suite. Ink cartridge yields determined on one printer model and cartridge configuration are not applicable to another printer model or cartridge configuration even if the ink jet cartridges used in testing are the same. This test page suite is not focused on printing of photographs, but is intended to be a sampling of typical business consumer pages.

This International Standard prescribes the following:

- the test method that manufacturers, test labs, etc. use to determine ink cartridge yield;
- the method for determination of declared yield values from the test results; and
- 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 International Standard will be for the calculation of cost per page (CPP). While this International Standard measures a portion of this cost, it is not used as the sole component of CPP calculation. Additional factors are considered for CPP calculations.

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

1 Scope

The scope of this International Standard is limited to evaluation of ink cartridge page yield for ink-containing cartridges (i.e. integrated ink cartridges and ink cartridges without integrated print heads) for colour inkjet printers. This International Standard 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 International Standard.

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

This International Standard 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.

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

ISO/IEC 19752, *Information technology — Method for the determination of toner cartridge yield for monochromatic electrophotographic printers and multi-function devices that contain printer components*