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Automatic identification and data capture techniques — Bar code print quality test specification — Linear symbols

Techniques automatiques d'identification et de capture des données — Spécifications pour essai de qualité d'impression des codes à barres — Symboles linéaires

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Foreword

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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 or www.iec.ch/members_experts/refdocs).

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This document was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 31, *Automatic identification and data capture techniques*.

This third edition cancels and replaces the second edition (ISO/IEC 15416:2016), which has been technically revised.

The main changes are as follows:

— the calculation of threshold to find edges within a scan reflectance profile has been modified;

— the calculation of R_{max} and R_{min} has been modified;

— the calculation of continuous grades has been clarified.

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Introduction

The technology of bar coding is based on the recognition of patterns encoded in bars and spaces of defined dimensions according to rules defining the translation of characters into such patterns, known as the symbology specification.

The bar code symbol is produced in such a way as to be reliably decoded at the point of use, if it is to fulfil its basic objective as a machine-readable data carrier.

Manufacturers of bar code equipment and the producers and users of bar code symbols therefore require publicly available standard test specifications for the objective assessment of the quality of bar code symbols, to which they can refer to when developing equipment and application standards or determining the quality of the symbols. Such test specifications form the basis for the development of measuring equipment for process control and quality assurance purposes during symbol production, as well as afterwards.

This edition of this document introduces several new methods of grading bar code symbols that will improve the stability of results and modernize the grading method to be more in alignment with modern methods of bar code scanning. Further details about the changes made in this edition of this document are discussed in Annex K.

The performance of measuring equipment is covered in ISO/IEC 15426-1.

This document is intended to be read in conjunction with the symbology specification applicable to the bar code symbol being tested. The symbology-specification provides symbology specific details. Additionally, an application specification is required to apply this document.

This methodology provides symbol producers and their trading partners a universally standardized means for communicating about the quality of bar code symbols after they have been printed.

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Automatic identification and data capture techniques — Bar code print quality test specification — Linear symbols

1 Scope

This document

— specifies the methodology for the measurement of specific attributes of bar code symbols,

— defines a method for evaluating these measurements and deriving an overall assessment of symbol quality, and

— gives information on possible causes of deviation from optimum grades to assist users in taking appropriate corrective action.

This document applies to those symbologies for which a reference decode algorithm has been defined, and which are intended to be read using linear scanning methods, but its methodology can be applied partially or wholly to other symbologies.

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 19762, *Information technology — Automatic identification and data capture (AIDC) techniques — Vocabulary*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/IEC 19762 and the following apply.

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

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

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

3.1
bar reflectance
lowest reflectance value in the scan reflectance profile of a bar element

3.2
defect
irregularity found within elements and quiet zones

3.3
edge contrast
difference between *bar reflectance* (3.1) and *space reflectance* (3.13) of two adjacent elements

3.4
element reflectance non-uniformity
reflectance difference between the highest *peak* (3.9) and the lowest *valley* (3.15) in the scan reflectance profile of an individual element or quiet zone

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