BRITISH STANDARD

BS EN
1556:1998

Bar coding — Terminology

The European Standard EN 1556:1998 has the status of a British Standard

ICS 01.090.35; 35.040

National foreword

This British Standard is the English language version of EN 1556:1998.

The UK participation in its preparation was entrusted to Technical Committee IST/34, Bar coding, which has the responsibility to:

— aid enquirers to understand the text;

— present to the responsible European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;

— monitor related international and European developments and promulgate them in the UK.

A list of organizations represented on this committee can be obtained on request to its secretary.

Cross-references

The British Standards which implement international or European publications referred to in this document may be found in the BSI Standards Catalogue under the section entitled "International Standards Correspondence Index", or by using the "Find" facility of the BSI Standards Electronic Catalogue.

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Summary of pages

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EUROPEAN STANDARD

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Bar coding — Terminology

Codes à barres — Terminologie

Strichcodierung — Terminologie

This European Standard was approved by CEN on 28 February 1998.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart 36, B-1050 Brussels

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Foreword

This European Standard has been prepared by Technical Committee CEN/TC 225, Bar coding, the Secretariat of which is held by NNI.

Organizations contributing to the development of the standard include:

— AIM Europe

— International Article Numbering Association EAN

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by September 1998, and conflicting national standards shall be withdrawn at the latest by September 1998.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

Contents

Introduction

CEN Technical Committee 225 is responsible for a series of European Standards and Pre-standards covering both technical and applications aspects of bar code technology. Many of these standards use specialist technical and other terms and this standard defines a number of terms which may be encountered in more than one standard or in bar coding standards produced by other organizations, with the aim of encouraging consistency of usage and reducing the risk of ambiguity or misunderstanding.

1 Scope

This European Standard defines a number of technical and other terms applicable to bar code technology, which are used in the standards produced by CEN TC225 and may be encountered elsewhere in bar coding standards produced by other organizations. Definitions given are in the context of bar coding and the terms so defined may customarily have a wider meaning than that shown in this standard. Translations of the terms defined into the two other official languages of CEN are also shown to facilitate cross-reference.

2 Normative references

This European Standard incorporates by dated or undated references provisions from other publications. These normative references are cited at appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

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

ISO 8859, *Information processing — 8-bit single-byte coded graphic character sets.*

3 Definitions of terms

3.1

algorithm

a set of steps to be taken to effect a desired calculation.

French = algorithme

German = Algorithmus

3.2

alphanumeric

alphabetic and numeric including punctuation marks.

French = alphanumérique

German = alphanumerisch

3.3

aperture

the opening in an optical device, such as a scanner, photometer, or camera, which determines its field of view. Most apertures are circular, but they may be rectangular or elliptical.

French = ouverture

German = Blende

3.4

application standard

specification defining the method by which and conditions under which bar code technology may be applied to a particular purpose, prescribing, for example, data formats, optical requirements and symbology-related parameters as subsets of the range defined by relevant technical standards.

French = norme d'application

German = Anwendungsstandard

3.5

ASCII

American Standard Code for Information Interchange: a computer code, as described in ISO 646, consisting of 128 alphanumeric and control characters, each encoded with 7 bits (8 including parity check), used for the exchange of information between computerized systems.

French = ASCII

German = ASCII

3.6

autodiscrimination

the ability of a bar code reader to distinguish automatically between two or more symbologies.

French = autodiscrimination

German = Autodiskrimination

3.7

auxiliary character

a non-data character – e.g. start character, stop character, centre pattern, delineator pattern, latch character, mode indicator, shift character, code subset change characters, and function characters. See overhead.

French = caractère auxiliaire

German = Hilfszeichen

3.8

background

the light area between and surrounding the dark elements of a printed symbol. The background can be the substrate on which the symbol is printed or an over-printing of a suitable light colour.

French = arrière-plan

German = Hintergrund

3.9

bar

any of the dark lines in a printed bar code symbol.

French = barre

German = Strich

3.10

bar code

an array of parallel rectangular bars and spaces arranged according to the encodation rules of a particular symbol specification in order to represent data in machine readable form.

French = code à barres

German = Strichcode

3.11

bar code character

see symbol character.

French = caractère de code à barres

German = Strichcodezeichen

3.12

bar code density (symbol density)

the number of characters that can be represented in a bar code symbol per unit of measure, usually expressed as characters per inch (cpi) or per centimetre for linear bar codes and per square inch or per square centimetre for multi-row symbologies. The width of the narrowest bar or space, the wide to narrow ratio, the number of bars and spaces per character and the width of the intercharacter gap, if any, are the controlling factors.

French = densité du code à barres

German = Strichcodedichte

3.13

bar code master

the original film or other image of a bar code symbol, produced to close tolerances and intended for reproduction by conventional printing processes (e.g. for incorporation in a printed packaging design).

French = code à barres de base

German = Strichcode-Master

3.14

bar code reader

a device used to capture the data encoded in a bar code symbol. It consists of two parts: a) the scanner, an input device which sends signals proportional to the reflectivity of each successive element of the symbol to the decoder, and b) the decoder, which examines the signals from the scanner and translates them into recognizable or computer-compatible data. The decoder itself is sometimes erroneously called a reader.

French = lecteur de code à barres

German = Strichcode-Lesegerät

3.15

bar code symbol

the combination of symbol characters and features required by a particular symbology, including quiet zones, start and stop characters, data characters, check characters and other auxiliary patterns, which together form a complete scannable entity.

French = symbole de code à barres

German = Strichcodesymbol

3.16

bar height

the dimension of the individual bars in a linear bar code symbol or in a row of a multi-row bar code symbol, measured perpendicular to the scanning direction. See also Y dimension.

French = hauteur de barre

German = Strichhöhe

3.17

bar width

the transverse dimension of an individual bar in a bar code symbol, measured parallel to the scanning direction. The number of possible width variations within a particular printed symbol depends on the symbology used.

French = largeur de barre

German = Strichbreite

3.18

bar width gain/loss

see print gain/loss.

French = gain/perte de la largeur de barre

German = Strichbreitenzuwachs/-verlust

3.19

bar width reduction/increase

the extent by which the width of the bars on the bar code master is reduced/increased in order to correct for expected print gain/loss.

French = réduction/augmentation de la largeur de barre

German = Strichbreitenverringerung/-vergrößerung

3.20

bearer bar

a bar abutting the tops and bottoms of the bars in a bar code symbol, or a frame surrounding the entire symbol, intended to equalize the pressure exerted by the printing plate over the entire surface of the symbol, and/or to prevent a short scan by the bar code reader.

French = barre porteuse

German = Trägerbalken/Trägerstrich

3.21

bi-directional

in two directions – viz. backwards and forwards. Denoting that a bar code symbol can be read successfully either backwards or forwards. Denoting a scanner that can operate successfully either backward or forwards.

French = bi-directionnel

German = bi-direktional

3.22

binary

denoting a numbering system to base 2 in which numbers are expressed as combinations of the digits 0 and 1, with positional weighting based on powers of 2. In computing these can be represented electrically by "off" and "on" respectively, or in bar codes by narrow and wide elements or by the absence or presence of a bar module.

French = binaire

German = binär

3.23

binary coded decimal (BCD)

a method of representing decimal numbers in binary code as groups of four bits, with weighting values 8, 4, 2, 1 reading from left to right, each group representing one decimal digit, for example 0010 0011 for 23.

French = décimal codé binaire (BCD)

German = binär verschlüsselte Dezimalziffern (BCD)

3.24

binary symbology

see two-width symbology.

French = système de symbolisation binaire

German = binäre Symbologie

3.25

BIT

abbreviation for binary digit.

1) A single element (0 or 1) in a binary number.

2) A unit of information capacity in a binary storage device.

French = BIT

German = BIT, Binärzeichen

3.26

CCD (charge-coupled device)

an electronic light-sensitive component used in a linear or two-dimensional array as the light-collecting element in certain types of bar code reader.

French = CCD – dispositif à couplage de charge

German = CCD – Charge-Coupled Device

3.27

character

see character set, data character, symbol character, human readable character.

French = caractère

German = Zeichen

3.28

character set

the total range of letters, numbers, and symbols that can be encoded in a particular symbology. See code page, code set.

French = jeu de caractères

German = Zeichensatz

3.29

check digit/character

a digit or character calculated from other characters in a code by means of a defined algorithm and used to check that the code is correctly composed. See symbol check character, data check character/digit.

French = caractère de contrôle/clé de contrôle

German = Prüfziffer/Prüfzeichen

3.30

clear area

see quiet zone.

French = zone de repos

German = Hellzone

3.31

closed application environment (system)

an application which is intended for use by a closed group of users, typically within a single organization or subject to a specific agreement. Compare open application environment.

French = système fermé

German = geschlossene Anwendungsumgebung

3.32

closed system

see closed application environment.

French = système fermé

German = geschlossenes System

3.33

code page

a table showing the character allocated to each byte value in a coded character set.

French = page de code

German = Codiertabelle

3.34
code set
a subset of the character set of a particular symbology. See character set.
French = jeu de code
German = spezifischer Zeichensatz

3.35
coded character set
a set of unambiguous rules establishing a character set and the relationship between the characters of the set and their byte values.
French = jeu de caractères codés
German =Zeichensatzreferenz

3.36
codeword
a symbol character value. An intermediate level of coding between source data and the graphical encodation in a symbol.
French = mot de code
German = Codewort

3.37
column
the horizontal symbol character position in a row of a multi-row symbology.
French = colonne
German = Spalte

3.38
concatenation
the linking or chaining together (1) of separate items of data in a bar code symbol, or (2) of the data contained in two or more separate bar code symbols (also referred to as “message append” and “structured append”).
French = concaténation
German = Verkettung

3.39
continuous code
a symbology in which there is no intercharacter gap, i.e. the final element of one symbol character abuts the first element of the next symbol character and all the elements carry data continuously. Compare discrete code.
French = code à barres continu
German = kontinuierlicher Code

3.40
conventional printing process
one of the printing processes typically using a printing plate (or cylinder) and wet ink to produce multiple impressions of an image on a substrate. Includes lithography, letterpress, flexography, photogravure, screen process, hot foil stamping. Compare on-demand printing.
French = procédé d’impression conventionnel
German = übliches Druckverfahren

3.41
corner marks
marks which indicate the four corners of a bar code symbol including the light margins on a bar code master. Corner marks are not normally printed.
French = marques de coins
German = Eckpunkte

3.42
CPI (Characters per inch)
used as a measure of bar code density.
French = CPI (Caractères par pouce)
German = CPI (Zeichen pro Zoll)

3.43
data character
a single numeric digit, alphabetic character or punctuation mark, or control character, which represents information. Compare symbol character.
French = caractère de données
German = Datenzeichen

3.44
data check character/digit
a digit or character calculated from data and appended as part of the data string to ensure that the data is correctly composed and transmitted. Compare symbol check character.
French = caractère de contrôle de données
German = Datenprüfzeichen/-ziffer

3.45
data codeword
A codeword which encodes data according to one of the compaction schemes of a symbology.
French = mot code de données
German = verdichtetes Codewort

3.46
data compaction (or data compaction scheme)
a mechanism or algorithm to process the original data so that it is represented efficiently in as few codewords as possible in a symbology.
French = compression des données (ou schema de compression des données)
German = Datenverdichtung

3.47
data region
that part of a symbol used to encode data codewords as opposed to other symbol overhead.
French = zone de données
German = Datenfeld

3.48

data separator character

an auxiliary character used to determine the end of one and the beginning of the next of two items of data which have been concatenated.

French = caractère séparateur de données

German = Datentrennzeichen

3.49

decode algorithm

the set of rules used, in a bar code or matrix symbology, to convert the element pattern of a symbol to data characters.

French = algorithme de décodage

German = Decodieralgorithmus

3.50

decoder

an electronic assembly which translates the proportional electrical signals from a scanner into recognizable or computer-compatible data.

French = décodeur

German = Decoder

3.51

densitometer

an instrument that measures the degree to which light is transmitted through or reflected from a material. A calibrated photometer compares the transmitted or reflective light with the incident light, and the result may be displayed as percentage reflectance or density.

French = densitomètre

German = Densitometer

3.52

density (optical)

Measure of the relationship between transmitted or reflected light and the incident light, expressed as the logarithms of their ratio:

Optical density = $\log_{10} (I/T)$,

where I = Incident light

T = Transmitted or reflected light.

French = densité (optique)

German = optische Dichte

3.53

depth of field

the range of distances over which a scanner can reliably read a symbol of given characteristics. Equal to the range of the scanner minus its optical throw. See optical throw, range, reading distance.

French = profondeur de champ

German = Tiefenschärfe

3.54

diffuse reflection

reflection of light in all directions. Non-glossy surfaces reflect light in this way, whereas glossy surfaces produce specular reflection.

French = réflexion diffuse

German = diffuse Reflexion (Streulicht)

3.55

digital

represented in a binary form rather than a continuously varying analogue form. In the context of integrated artwork, produced by a number of discrete dots rather than a continuous image.

French = digital

German = digital

3.56

discrete code

a symbology in which the spaces between symbol characters (intercharacter gaps) do not contain information as each character begins and ends with a bar. Compare continuous code.

French = code à barres discontinue

German = diskreter Code

3.57

dot code

a subset of matrix symbologies in which individual modules are surrounded by clear space which has no information content.

French = code à points

German = Dot Code

3.58

EAN

Abbreviation for EAN International. Also used to refer to the bar code symbology used for marking of consumer products in accordance with this body's specifications.

French = EAN

German = EAN

3.59

effective aperture

the apparent field of view of a scanner or similar device determined by the smaller of the spot size and the physical aperture of the scanner for reception of reflected light.

French = ouverture effective

German = Blendenöffnung

3.60

element

a single bar or space in a bar code symbol. The width of individual elements may be expressed in modules, or in multiples of the X dimension.

French = élément

German = Element

3.61

encode

Put into the form of a code.

French = encoder

German = codieren

3.62

erasure

a type of error represented by a physically missing character, or a symbol character which has failed to be decoded, as opposed to a substitution error or misdecode.

French = effacement

German = Auslöschung

3.63

error correction

a mathematical procedure which allows the detection and rectification of errors to take place.

French = correction d'erreur

German = Fehlerkorrektur

3.64

error correction level

the degree of error correction capability in a symbology, where this is not fixed but subject to some user choice.

French = niveau de correction d'erreur

German = Fehlerkorrekturgrad

3.65

extended ASCII

an extended code set encoded in 8 bits giving values from 0 to 255 in accordance with ISO 8859.

French = ASCII étendu

German = erweiterter ASCII

3.66

eye-readable character

see human-readable character.

French = caractère signifiant

German = Klarschriftzeichen

3.67

field of view

the length of bar code that can be read in one scan. For wand scanners and others where the scanner beam has to be manually moved across the symbol, field of view is a function of the operator's ability to scan smoothly.

French = champ de vision

German = Lesehöhe/Lesebreite

3.68

filler character

a character inserted to extend an item of data to achieve a desired length. (Also pad character.)

French = caractère de remplissage

German = Füllzeichen

3.69

film master

a bar code master on film.

French = film maitre

German = Filmmaster

3.70

finder pattern

a unique pattern in a symbology used to locate symbols conforming with the symbology rules within a field of view.

French = configuration de repérage

German = Suchmuster

3.71

fixed beam scanner

a scanning device in which the beam of light is emitted in a fixed direction, relying on movement of the bar code symbol relative to the beam to achieve the scanning action.

French = analyseur à rayon fixe

German = Abstandsleser

3.72

fixed parity

a bar code symbol or a defined section of a symbol has fixed parity if every symbol character has the same parity (either even or odd).

French = parité fixe

German = feste Parität

3.73

flat-bed scanner

an omnidirectional scanner in which the scanning beam(s) are directed upwards through a window or slot(s) and over which the bar code symbol is passed.

French = analyseur à plat

German = Flachbettscanner

3.74

font

a set of characters of a specific style and size of graphic type. Also used analogously to refer to the set of bar code symbol characters for a symbology in on-demand printing equipment.

French = police

German = Schriftart

3.75

helium neon laser (He Ne laser)

a type of laser commonly used in bar code scanners. It emits visible coherent red light at a wavelength of 632,8 nm.

French = laser hélium-néon

German = Helium-Neon-Laser

3.76

human readable character

the representation of a bar coded data character or data check character in a standard eye-readable alphabet or numerals, as distinct from its machine-readable representation.

French = caractère signifiant

German = Klarschriftzeichen

3.77

integrated artwork

artwork in which the bar code symbol and the other graphics are generated together by electronic means.

French = dessin intégré

German = integriertes Design

3.78

intercharacter gap

the space between the last bar of one symbol character and the first bar of the next in a discrete bar code symbology. See discrete code, continuous code.

French = espacement entre les caractères

German = Trennlücke

3.79

label printing machine

in the context of these standards a device for producing bar coded labels directly from data.

French = imprimante d'étiquette

German = Etikettendrucker

3.80

ladder orientation

position of a bar code symbol in which the axis of the bars is horizontal in order to enable a vertical scanning beam to traverse the complete symbol. Compare picket fence orientation.

French = orientation en échelle

German = Leiteranordnung

3.81

laser (light amplification by the stimulated emission of radiation)

a device for producing an intense beam of monochromatic coherent light.

French = laser

German = Laser

3.82

laser diode

a laser device using a solid-state component as the light source.

French = diode laser

German = Laser-Diode

3.83

laser engraver

a device which uses concentrated heat from a laser beam to engrave graphic images directly on to an item to be marked.

French = graveur à laser

German = Laser-Gravurgerät

3.84

laser scanner

a device for scanning bar codes which uses a laser beam as its light source.

French = analyseur à laser

German = Laserscanner

3.85

latch character

a symbology character which is used to switch from one code set to another. The code set stays in effect until another latch or shift character is explicitly brought into use or until the end of the symbol is reached.

French = caractère de basculement permanent

German = Wechselzeichen

3.86

leading zeros

zeros at the left of a number.

French = zéros de tête

German = führende Nullen

3.87

LED (light emitting diode)

a semiconductor that produces light at a wavelength determined by its chemical composition as a result of electrical stimulation. A range of devices is available, each having an output with a peak wavelength in the spectrum between 600 nm (visible red) and 900 nm (infrared). It is commonly used as a light source in wand, CCD and slot-type bar code readers.

French = LED (diode électroluminescente)

German = LED (lichtemittierende Diode)

3.88

license plate

a unique number, irrespective of its use, specified by the issuer of a label (or similar item) and applied to an entity to provide for traceability, regardless of product, its destination and valid for its lifetime.

French = numéro matricule

German = Identifikationsschlüssel für Transporteinheiten

3.89

light margin

see quiet zone.

French = marge claire

German = Hellzone

3.90

light pen (light wand)

a hand-held bar code reading device which must be passed across the symbol in order to decode it.

French = crayon-lecteur, crayon-optique

German = Lesestift, Lichtstift

3.91

linear symbology

a bar code symbology in which the symbol is formed of a single row of symbol characters. Compare multi-row symbology.

French = système de symbolisation linéaire

German = lineare Symbologie

3.92

magnification factor

The constant multiplier applied to the nominal dimensions of a bar code symbol to obtain the actual dimensions at which it must be produced.

French = facteur de grossissement

German = Vergrößerungsfaktor

3.93

matrix symbology

a collection of polygonal or circular elements in a regular pattern to represent data for retrieval by a vision scanning system.

French = systeme de symbolisation matricielle

German = Matrix-Symbologie

3.94

message append

see structured append

French = structure d'association

German = Nachrichtenverkettung

3.95

misread (bad read, mis-scan)

a disparity between the data encoded in a bar code symbol and the data output from a bar code reader. The error will not be detected by test routines in the decode algorithm. The output data may erroneously correspond with valid data. Compare non-read.

French = lecture erronée

German = Falschlesung

3.96

modular symbology

a bar code symbology in which symbol characters are composed of elements the nominal widths of which are integer multiples of the X dimension or module width. see module, (n,k) symbology.

French = système de symbolisation modulaire

German = modulare Symbologie

3.97

module

1) In a linear or multi-row bar code symbology the nominal unit of measure in a symbol character. In certain symbologies, element widths may be specified as multiples of one module. Equivalent to X dimension.

2) In a matrix symbology, a single cell or element used to encode one bit of the codeword.

French = module

German = Modul

3.98

modulo

usually used in the form modulo-10, modulo-103 etc. The type of algorithm used to calculate the check character for certain bar code symbols.

French = modulo

German = Modulo

3.99

moving beam scanner

a scanning device in which the scanning beam is swept by mechanical or electronic means.

French = analyseur à balayage

German = Scanner mit bewegtem Strahl

3.100

multi-row symbology (also stacked symbology)

a bar code symbology in which the symbol consists of two or more vertically adjacent rows of symbol characters. Compare linear symbology.

French = système de symbolisation multi-ligne

German = mehrzeilige Strichcodesymbologie

3.101

nanometre

a unit of measure used to define the wavelength (and hence colour) of light. One nanometre is one thousand millionth of a metre (10^{-9} metres), or 10 ångströms. Abbreviation: nm.

French = nanomètre

German = Nanometer

3.102

(n,k) symbology

a class of bar code symbologies in which each symbol character is n modules in width and is composed of k bar and space pairs. A subset of these is the n,k,m class of symbologies, where m represents the maximum width of an element in modules. See module, modular symbology.

French = système de symbolisation (n,k)

German = (n,k) Symbologie

3.103

nominal

denoting the "standard" or "ideal" values of specified parameters of the elements which make up the characters of symbols.

French = nominal

German = Nominalgröße

3.104

non-read (no-read, non-scan)

lack of data output when a bar code symbol is scanned due to a defective code, incorrect orientation or speed of scan, scanner failure, or operator error. Compare misread.

French = non-lecture

German = Nichtlesung

3.105

numeric

denoting a character set that includes only numbers. Compare alphanumeric.

French = numérique

German = numerisch

3.106

omnidirectional

in all directions. Used to refer to symbols which can be scanned in any orientation with an appropriate scanner, or to such a scanner.

French = omnidirectionnel

German = omnidirektional

3.107

omnidirectional scanner

a scanner, such as a flat bed scanner, capable of reading symbols whatever their orientation in a plane parallel or near parallel to the exit window of the scanner.

French = analyseur omnidirectionnel

German = omnidirektionaler Scanner

3.108

on-demand printing

printing of bar code symbols and other matter immediately prior to the material being required for application or use, normally using a computer-controlled printer.

French = impression à la demande

German = Vor-Ort-Druck

3.109

opacity

the property of a substance of preventing light from passing through it. Substrate opacity affects show-through from the reverse side of the substrate or any substance underneath it. Ink opacity determines the show through from the substrate.

French = opacité

German = Opazität

3.110

open application environment (system)

an application in which independent parties may freely participate and in which bilateral arrangements are not necessary. Compare closed application environment.

French = environnement d'application ouvert

German = offene Anwendungsumgebung

3.111

open system

see open application environment.

French = système ouvert

German = offenes System

3.112

optical throw

the distance from the face of a scanning device to the beginning of the depth of field, for a symbol of given characteristics. Compare depth of field, range, reading distance.

French = distance optique

German = optische Unschärfebereich

3.113

orientation

positioning with respect to a specific direction or plane. See ladder orientation, picket fence orientation.

French = orientation

German = Ausrichtung

3.114

orientation pattern

a unique spatial arrangement of dark and light modules in a symbology used to detect the spatial orientation of the symbol.

French = orientation spatiale

German = Lagemuster

3.115

oscillating mirror scanner

a single beam scanner with an additional mirror oscillating in a plane at right angles to the scanner beam and causing (for example) a horizontal field of view to be swept up and down vertically.

French = analyseur à miroir oscillant

German = Schwingspiegelscanner

3.116

output device

in the context of integrated artwork, the final piece of computer-driven equipment used to produce the artwork, typically an image setter or cylinder engraver.

French = appareil de sortie

German = Ausgabegerät

3.117

overhead

the part of a bar code symbol required in addition to the symbol characters encoding data to give the symbol a valid structure. It consists of the auxiliary characters and symbol check characters.

French = caractères complementaires

German = Überhang

3.118

overprinting

printing on to pre-printed material.

French = surimpression

German = Überdruck/Eindruck

3.119

pad character

see filler character.

French = caractère de remplissage

German = Pad-Zeichen

3.120

pad codeword

a codeword inserted to extend a codeword sequence to achieve a desired symbol structure, or to fill the capacity of a symbol.

French = mot code de remplissage

German = Pad-Codewort

3.121

parity

a system for encoding characters as "odd" (having an odd number of binary ones in their structure) or "even" (having an even number of binary ones in their structure), used as self-checking mechanism in bar codes. A parity bit (parity bar or module) can be incorporated into an encoded character to make the sum of all the bits always odd or always even, which acts as a fundamental check.

French = parité

German = Parität

3.122

photometer

an instrument used to measure the intensity of light at specified wavelengths. See also densitometer.

French = photomètre

German = Photometer

3.123

picket fence orientation

position of a bar code symbol in which the axis of the bars is vertical in order to enable a horizontal scanning beam to traverse the complete symbol. Compare ladder orientation.

French = orientation en piquets de clôture

German = Zaunanordnung

3.124

pitch

rotation of a bar code symbol about an axis parallel to the height of the bars. Compare skew, tilt.

French = assiette

German = Drehwinkel

3.125

pixel

the smallest image element that when combined with others makes a complete graphic image. (From "picture element")

French = pixel

German = Pixel

3.126

print contrast signal (PCS)

a measure of the relative difference between the reflectances of light and dark elements (in the following formula, R_L and R_D respectively):

$$PCS = (R_L - R_D) / R_L.$$

Compare reflectance difference.

French = contraste de lecture (PCS)

German = Druckkontrast-Signal (PCS)

3.127

print direction

the orientation of the print image as it moves through the print press.

French = sens d'impression

German = Druckrichtung

3.128

print gain/loss

The increase/decrease in bar width due to effects of the reproduction and printing processes.

French = gain/perte à l'impression

German = Druckzuwachs/-verlust

3.129

print quality

the degree to which a printed optical symbol complies with the requirements which are specified for it, such as dimensions, reflectance, edge roughness, spots, voids, etc., which will affect the performance of the scanner. See verification.

French = qualité d'impression

German = Druckqualität

3.130

printability gauge

a series of specially calibrated marks printed on to a substrate to assess or monitor the quality of printing.

French = indicateurs d'impression

German = Druckqualitätstestmarke

3.131

printability test

a test of print quality.

French = test d'impression

German = Druckqualitätstest

3.132

quiet zone

the area free from interfering markings which must surround a bar code symbol and, in particular, precede the start character and follow the stop character. Also referred to as light margin or clear area.

French = marge

German = Hellzone

3.133

range

the maximum distance at which a scanning device can read a symbol of given characteristics. Equal to the sum of optical throw and depth of field. See depth of field, optical throw, reading distance.

French = portée

German = Entfernung

3.134

raster scanner

a moving beam scanner which emits several parallel scanning beams.

French = analyseur à trame

German = Rasterscanner

3.135

reading distance

the distance (or range of distances) from the exit window of a scanner at which the scanner can reliably read a symbol. The minimum reading distance is equal to the optical throw and the maximum reading distance is equal to the range of the scanner. See depth of field, optical throw, range.

French = distance de lecture

German = Leseabstand

3.136

redundancy

characteristic whereby information is repeated to increase the probability of its being read or communicated successfully. In a bar code symbol the height of the bars provides vertical redundancy by enabling multiple scan paths to exist through the symbol, only one of which is necessary in theory for a complete decode.

French = redondance

German = Redundanz

3.137

Reed-Solomon error correction code

a linear, error correcting, block code, suited to the correction of character errors which could be, in bar or matrix codes, the obliteration or removal of part of the symbol.

French = code de correction d'erreur Reed Solomon

German = Reed-Solomon Error Correction Code

3.138

reference decode algorithm

the decode algorithm quoted in a symbology specification as the basis for the derivation of tolerances, decodability values etc.

French = algorithme de décodage de référence

German = Referenzdecodieralgorithmus

3.139

reference reflected flux

the radiant power reflected by a magnesium oxide or barium sulfate photometric standard.

French = flux réfléchi de référence

German = Referenzreflexionsfluß

3.140

reference threshold

in a decode algorithm, a reference point at which a decision is made to select between two possible values.

French = seuil de référence

German = Referenzschwelle

3.141

reflectance

1) The amount of light of a specified wavelength or range of wavelengths that is reflected from a surface.

2) Reflectance (sometimes called reflectance factor) is measured on a scale of 0 to 1, at a wavelength or bandwidth of light (spectral response) specified in the particular application specification. Reflectance = R/I

where R = reflected light

I = incident light

Barium sulfate or magnesium oxide are used as "near perfect" reference white standards (a perfect standard of pure white would have a reflectance of 1.00 at any wavelength of light). The absence of any light in a vacuum is used as reference black standard. Samples (such as substrates, inks, etc.) are tested against the standards under similar illumination.

French = réflexion

German = Reflexion

3.142

reflectance difference

the difference between the reflectances of light and dark elements of a bar code symbol.

French = différence de réflexion

German = Reflexionsdifferenz

3.143

reflectance factor

the ratio of reflected flux to the reference reflected flux.

French = facteur de réflexion

German = Reflexionsfaktor

3.144

reflected flux

the radiant power reflected by the sample.

French = flux réfléchi

German = Reflexionsfluß

3.145

resolution

measure of the fineness of detail of an image which a piece of equipment can produce or distinguish. The narrowest bar dimension that can be produced by a particular device or method or scanned successfully by a particular scanner.

French = résolution

German = Auflösung

3.146

row

a lateral set of components in a multi-row symbology, comprising a start pattern, a number of symbol characters, and a stop pattern.

French = rangée

German = Zeile

3.147

scan reflectance profile

the plot of the variations in reflectance with distance along a scan path through a symbol, representing the analogue waveform produced by a device scanning the symbol.

French = profil de réflexion du balayage

German = Scan-Reflexionsprofil

3.148

scanner

an electronic device that converts optical information (e.g. a printed bar code) into electrical signals for subsequent decoding and transmission to a computer. See also bar code reader, decoder.

French = analyseur

German = Scanner

3.149

scanning window

the whole area in front of the exit window of a non-contact scanner in which symbols can be read. Also known as effective reading zone.

French = fenêtre (zone) de balayage

German = Lesefenster

3.150

self-checking (character self-checking)

a property of a symbology whereby a checking algorithm is applied to each character in the code; substitution errors can then only occur if two or more separate printing defects occur within one character. Codes which are not self-checking usually have a check character added to the encoded data.

French = auto-controlé

German = selbstüberprüfend

3.151

shift character

a symbology character which is used to switch from one code set to another for a single character, or in the case of “double shift” or “triple shift” characters, for two or three characters respectively, following which data encodation reverts automatically to the code set from which the shift was invoked.

French = caractère de basculement transitoire

German = Umschaltzeichen

3.152

short read

The reading of an apparently valid shorter symbol within a longer one, of the same or different symbologies.

French = lecture incomplète

German = Teillesung

3.153

show through

the effect of a dark surface or pattern underlying a substrate on the reflectance value(s) of the symbol or substrate. Compare opacity.

French = transparence

German = Durchscheinen

3.154

single line (beam) scanner

a scanner in which the light beam traverses a single path, giving a one-dimensional field of view.

French = analyseur à ligne (faisceau) unique

German = Einstrahlscanner

3.155

skew

rotation of a bar code symbol about an axis parallel to the symbol width. Compare pitch, tilt.

French = obliquité

German = Neigungswinkel

3.156

slot reader

a bar code reading device which requires that the bar-coded material is drawn through a slot into which a near-contact bar code reader is built. The device requires that the bar code symbol be in a fixed location relative to the edge of a thin substrate. Compare slot scanner.

French = lecteur à fente

German = Schlitzleser

3.157

slot scanner

description applied to a specific type of omnidirectional scanner used for electronic point of sale applications, in which the scanning beams are directed through a window resembling a slot or pattern of slots.

French = analyseur à fente

German = Schlitzscanner

3.158

space

an area of relatively high reflectance between the bars in a bar code symbol.

French = espace

German = Lücke, Zwischenraum

3.159

speck

see spot.

French = tache

German = Farbfleck

3.160

spectral response

the sensitivity of a scanner or other device to light of different wavelengths.

French = réponse spectrale

German = Spektralempfindlichkeit

3.161

specular reflection

reflection from a surface in which the angle of reflection to normal equals the angle of incidence to normal. Compare diffuse reflection.

French = réflexion spéculaire

German = Spiegelung

3.162

spot

an ink or dirt mark or other area of low reflectance in an area of a symbol which is intended to be of high reflectance. Compare void.

French = tache

German = Fleck

3.163

stacked symbology

see multi-row symbology.

French = système de symbolisation empilée

German = gestapelte Symbologie

3.164

start character/pattern

an auxiliary character which indicates the beginning (left hand side) of a bar code symbol.

French = borne de début de lecture

German = Startzeichen

3.165

stop character/pattern

an auxiliary character which indicates the end (right hand side) of a bar code symbol.

French = borne de fin de lecture

German = Stoppzeichen

3.166

structured append

the linking together in a predetermined sequence of the data contained in two or more symbols, enabling the data to be handled as a single message. See concatenation, message append.

French = structure d'association

German = strukturierte Verkettung

3.167

substitution error

a character that is wrongly decoded when a bar code symbol is read. Compare misread, non-read.

French = erreur de lecture

German = Substitutionsfehler

3.168

substrate

the material or medium upon which printed matter (such as a bar code symbol or OCR characters) or a coating is imposed.

French = support

German = Trägermaterial

3.169

symbol

see bar code symbol.

French = symbole

German = Symbol

3.170

symbol architecture

the structure of a bar code symbol. See symbology.

French = architecture d'un symbole

German = Symbolstruktur

3.171

symbol aspect ratio

The ratio of the symbol height to the symbol width.

French = proportion du symbole

German = Symbol-Seitenverhältnis

3.172

symbol character

the physical representation of the codeword as a pattern of dark and light elements. There may be no direct one-to-one mapping between symbol character and data character or auxiliary character. Decoding through the compaction rules is necessary to identify the data.

French = caractère symbolisé

German = Symbolzeichen

3.173

symbol check character

a symbol character calculated from the other symbol characters in a bar code symbol in accordance with an algorithm defined in the symbology specification and used to check that the bar code has been correctly composed and read. The symbol check character does not form part of the data encoded in the symbol.

French = caractère (ou clé) de contrôle symbolisé

German = Symbolprüfzeichen

3.174

symbol contrast

the reflectance difference between the points of highest and lowest reflectance respectively in a scan reflectance profile.

French = contraste du symbole

German = Symbolkontrast

3.175

symbol density

see bar code density.

French = densité du symbole

German = Symboldichte

3.176

symbol width

the total width of a bar code symbol including the quiet zones. Also referred to as symbol length.

French = largeur du symbole

German = Symbollänge

3.177

symbology

a standard means of representing data in bar code form. Each symbology specification sets out its particular rules of composition or symbol architecture.

French = système de symbolisation

German = Symbologie

3.178

symbology identifier

a sequence of characters, generated by the decoder and prefixed to the decoded data transmitted by the decoder, that identifies the symbology from which the data has been decoded.

French = identifiant du système de symbolisation

German = Symbologie-Identifikator

3.179

tilt

rotation of a bar code symbol about an axis perpendicular to the substrate. Compare pitch, skew.

French = pente, gîte

German = Kippwinkel

3.180

tolerance

the largest permitted variation of a specified dimension or other value from its nominal value.

French = tolérance

German = Toleranz

3.181

truncation

providing a symbol with normal width but reduced height.

French = troncature

German = Höhenverkürzung

3.182

two-width symbology

a bar code symbology in which symbol characters consist only of narrow and wide elements the widths of which are in a constant ratio to each other. Compare modular symbology.

French = système de symbolisation à deux épaisseurs

German = Zweibreiten-Symbologie

3.183

verification

the technical process by which a bar code symbol is measured to determine its conformance with the specification for that symbol.

French = vérification

German = Vermessung

3.184

verifier/verification instrument

a device used to measure and analyse quality attributes of a bar code symbol such as bar width and quiet zone dimensions, reflectances, and other aspects against a standard to which the bar code symbol should conform.

French = vérificateur/instrument de vérification

German = Strichcodemeßgerät

3.185

VLD (visible laser diode)

a laser diode operating in the visible light spectrum.

French = diode laser visible

German = VLD (sichtbare Laser-Diode)

3.186

void

an area of high reflectance in an area of a bar code symbol which is intended to be of low reflectance. Compare speck, spot.

French = vide

German = Fehlstelle

3.187

wand

light pen.

French = crayon-lecteur

German = Lesestift

3.188

wide:narrow ratio

the ratio of the widths of wider elements in a symbol to those of narrow elements.

French = rapport large:etroit

German = Verhältnis von Schmal zu Breit

3.189

X dimension

1) The specified width of the narrow elements in a bar code symbol. See Z dimension.

2) The specified width of a single element in a matrix symbol.

French = dimension en X

German = X-Modul

3.190

Y dimension

the specified height of the elements in a linear bar code symbol or a row in a multi-row symbology. See also bar height.

French = dimension en Y

German = Y-Modul

3.191

Z dimension

the average achieved width of the narrow elements in a bar code symbol. It is equal to half the sum of the average narrow bar width and the average narrow space width, in two-width symbologies, or to the quotient of the average overall character width divided by the number of modules per character in modular symbologies.

French = dimension en Z

German = Z-Modul

Annex A (informative)

Maintenance

In a technology which is still evolving, the terminology in use will likewise develop; new terms will come into use and the precise significance of existing terms may be modified. Pending the formal revision of this European standard in accordance with the CEN rules, responsibility for maintaining the definitions of both new and modified terms has been assigned by CEN/TC225 to AIM Europe, from whom a regularly updated addendum to this European standard may be obtained on request.

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Annex B (informative)

Tri-lingual cross-reference

The alphabetical sequence of the terms defined in this European standard is not identical in each of the three official languages of CEN. For ease of reference, the terms are listed in alphabetical order in each language version. The numeric reference of each term will therefore also differ in each version.

English ref.	English term	French ref.	French term	German ref.	German term
3.1	algorithm	3.1	algorithme	3.2	Algorithmus
3.2	alphanumeric	3.4	alphanumérique	3.3	alphanumerisch
3.3	aperture	3.135	ouverture	3.16	Blende
3.4	application standard	3.125	norme d'application	3.4	Anwendungsstandard
3.5	ASCII	3.18	ASCII	3.5	ASCII
3.6	autodiscrimination	3.22	autodiscrimination	3.10	Autodiskrimination
3.7	auxiliary character	3.31	caractère auxiliaire	3.66	Hilfszeichen
3.8	background	3.17	arrière-plan	3.67	Hintergrund
3.9	bar	3.23	barre	3.137	Strich
3.10	bar code	3.46	code à barres	3.141	Strichcode
3.11	bar code character	3.34	caractère de code à barres	3.147	Strichcodezeichen
3.12	bar code density (symbol density)	3.65	densité du code à barres (densité du symbole)	3.144	Strichcodedichte
3.13	bar code master	3.48	code à barres de base	3.143	Strichcode-Master
3.14	bar code reader	3.108	lecteur de code à barres	3.142	Strichcode-Lesegerät
3.15	bar code symbol	3.166	symbole de code à barres	3.146	Strichcodesymbol
3.16	bar height	3.95	hauteur de barre	3.148	Strichhöhe
3.17	bar width	3.103	largeur de barre	3.138	Strichbreite

	English ref./term		French ref./term		German ref./term
3.18	bar width gain/loss	3.93	gain/perte de la largeur de barre	3.140	Strichbreitenzuwachs/ -verlust
3.19	bar width reduction/increase	3.154	réduction/augmentation de la largeur de barre	3.139	Strichbreitenverringerung/ -vergrößerung
3.20	bearer bar	3.24	barre porteuse	3.165	Trägerbalken/Trägerstrich
3.21	bi-directional	3.25	bi-directionnel	3.11	bi-direktional
3.22	binary	3.26	binaire	3.12	binär
3.23	binary coded decimal (BCD)	3.62	décimal codé binaire (BCD)	3.13	binär verschlüsselte Dezimalziffern (BCD)
3.24	binary symbology	3.169	système de symbolisation binaire	3.14	binäre Symbologie
3.25	BIT	3.27	BIT	3.15	BIT, Binärzeichen
3.26	CCD – charge-coupled device	3.44	CCD – dispositif à couplage de charge	3.18	CCD – Charge-Coupled Device
3.27	character	3.30	caractère	3.184	Zeichen
3.28	character set	3.100	jeu de caractères	3.185	Zeichensatz
3.29	check digit/character	3.35	caractère de contrôle/clé de contrôle	3.112	Prüfziffer/Prüfzeichen
3.30	clear area	3.188	zone de repos	3.65	Hellzone
3.31	closed application environment (system)	3.176	système fermé	3.61	geschlossene Anwendungsumgebung
3.32	closed system	3.176	système fermé	3.62	geschlossenes System
3.33	code page	3.137	page de code	3.19	Codiertabelle
3.34	code set	3.102	jeu de code	3.133	spezifischer Zeichensatz
3.35	coded character set	3.101	jeu de caractères codés	3.186	Zeichensatzreferenz
3.36	codeword	3.120	mot de code	3.20	Codewort
3.37	column	3.52	colonne	3.131	Spalte
3.38	concatenation	3.54	concaténation	3.175	Verkettung
3.39	continuous code	3.47	code à barres continu	3.73	kontinuierlicher Code
3.40	conventional printing process	3.146	procédé d'impression conventionnel	3.170	übliches Druckverfahren
3.41	corner marks	3.115	marques de coins	3.44	Eckpunkte
3.42	CPI (characters per inch)	3.39	CPI (caracteres par pouce)	3.22	CPI (Zeichen pro Zoll)
3.43	data character	3.38	caractère de données	3.27	Datenzeichen
3.44	data check character/digit	3.36	caractère de contrôle de données	3.24	Datenprüfzeichen/-ziffer
3.45	data codeword	3.118	mot code de données	3.172	verdichtetes Codewort
3.46	data compaction/data compaction scheme	3.53	compression des données/ schema de compression des données	3.26	Datenverdichtung
3.47	data region	3.187	zone de données	3.23	Datenfeld
3.48	data separator character	3.40	caractère séparateur de données	3.25	Datentrennzeichen
3.49	decode algorithm	3.2	algorithme de décodage	3.29	Decodieralgorithmus
3.50	decoder	3.63	décodeur	3.28	Decoder
3.51	densitometer	3.67	densitomètre	3.30	Densitometer
3.52	density (optical)	3.64	densité (optique)	3.105	optische Dichte

	English ref./term		French ref./term		German ref./term
3.53	depth of field	3.148	profondeur de champ	3.163	Tiefenschärfe
3.54	diffuse reflection	3.156	réflexion diffuse	3.31	diffuse Reflexion (Streulicht)
3.55	digital	3.70	digital	3.32	digital
3.56	discrete code	3.49	code à barres discontinue	3.33	diskreter Code
3.57	dot code	3.50	code à points	3.34	Dot Code
3.58	EAN	3.78	EAN	3.43	EAN
3.59	effective aperture	3.136	ouverture effective	3.17	Blendenöffnung
3.60	element	3.80	élément	3.46	Element
3.61	encode	3.81	encoder	3.21	codieren
3.62	erasure	3.79	effacement	3.8	Auslöschung
3.63	error correction	3.58	correction d'erreur	3.52	Fehlerkorrektur
3.64	error correction level	3.122	niveau de correction d'erreur	3.53	Fehlerkorrekturgrad
3.65	extended ASCII	3.19	ASCII étendu	3.48	erweiterter ASCII
3.66	eye-readable character	3.41	caractère significant	3.72	Klarschriftzeichen
3.67	field of view	3.45	champ de vision	3.83	Lesehöhe/Lesebreite
3.68	filler character	3.39	caractère de remplissage	3.60	Füllzeichen
3.69	film master	3.89	film maitre	3.56	Filmmaster
3.70	finder pattern	3.55	configuration de repérage	3.151	Suchmuster
3.71	fixed beam scanner	3.12	analyseur à rayon fixe	3.1	Abstandsleser
3.72	fixed parity	3.139	parité fixe	3.55	feste Parität
3.73	flat-bed scanner	3.11	analyseur à plat	3.57	Flachbettscanner
3.74	font	3.144	police	3.128	Schriftart
3.75	helium neon laser	3.106	laser hélium-néon	3.64	Helium-Neon-Laser
3.76	human readable character	3.41	caractère signifiant	3.72	Klarschriftzeichen
3.77	integrated artwork	3.68	dessin intégré	3.70	integriertes Design
3.78	intercharacter gap	3.85	espacement entre les caractères	3.167	Trennlücke
3.79	label printing machine	3.98	imprimante d'étiquette	3.49	Etikettendrucker
3.80	ladder orientation	3.132	orientation en échelle	3.80	Leiteranordnung
3.81	laser (light amplification by the stimulated emission of radiation)	3.105	laser	3.75	Laser
3.82	laser diode	3.74	diode laser	3.76	Laser-Diode
3.83	laser engraver	3.94	graveur à laser	3.77	Laser-Gravurgerät
3.84	laser scanner	3.8	analyseur à laser	3.78	Laserscanner
3.85	latch character	3.32	caractère de basculement permanent	3.179	Wechselzeichen
3.86	leading zeros	3.186	zéros de tête	3.59	führende Nullen
3.87	LED (light emitting diode)	3.112	LED (diode électroluminescente)	3.79	LED (lichtemittierende Diode)
3.88	license plate	3.127	numéro matricule	3.69	Identifikationsschlüssel für Transporteinheiten
3.89	light margin	3.114	marge claire	3.65	Hellzone

	English ref./term		French ref./term		German ref./term
3.90	light pen (light wand)	3.61	crayon-lecteur, crayon-optique	3.84	Lesestift, Lichtstift
3.91	linear symbology	3.171	système de symbolisation linéaire	3.86	lineare Symbologie
3.92	magnification factor	3.86	facteur de grossissement	3.173	Vergrößerungsfaktor
3.93	matrix symbology	3.172	système de symbolisation matricielle	3.88	Matrix-Symbologie
3.94	message append	3.162	structure d'association	3.93	Nachrichtenverkettung
3.95	misread/bad read/ mis-scan	3.110	lecture erronée	3.50	Falschlesung
3.96	modular symbology	3.173	système de symbolisation modulaire	3.91	modulare Symbologie
3.97	module	3.116	module	3.90	Modul
3.98	modulo	3.117	modulo	3.92	Modulo
3.99	moving beam scanner	3.6	analyseur à balayage	3.125	Scanner mit bewegtem Strahl
3.100	multi-row symbology/ stacked symbology	3.174	système de symbolisation multi-linge	3.89	mehrzeilige Strichcodesymbologie
3.101	nanometre	3.121	nanomètre	3.94	Nanometer
3.102	(n,k) symbology	3.175	système de symbolisation (n,k)	3.97	(n,k) Symbologie
3.103	nominal	3.123	nominal	3.98	Nominalgröße
3.104	non-read (no-read, non-scan)	3.124	non-lecture	3.96	Nichtlesung
3.105	numeric	3.126	numérique	3.99	numerisch
3.106	omnidirectional	3.129	omnidirectionnel	3.102	omnidirektional
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	English ref./term		French ref./term		German ref./term
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3.127	print direction	3.160	sens d'impression	3.40	Druckrichtung
3.128	print gain/loss	3.92	gain/perte à l'impression	3.41	Druckzuwachs/-verlust
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3.131	printability test	3.179	test d'impression	3.38	Druckqualitätstest
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	English ref./term		French ref./term		German ref./term
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