IEC 60286-5

Edition 2.0 2009-02

INTERNATIONAL STANDARD

NORME INTERNATIONALE

colour inside

AMENDMENT 1
AMENDEMENT 1

Packaging of components for automatic handling – Part 5: Matrix trays

Emballage des composants pour opérations automatisées – Partie 5: Supports matriciels

IEC 60286-5:2003-10/AMD1:2009-02(EN-FR)

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FOREWORD

This amendment has been prepared by IEC technical committee 40: Capacitors and resistors for electronic equipment.

This bilingual version (2014-01) corresponds to the monolingual English version, published in 2009-02.

The text of this amendment is based on the following documents:

FDIS	Report on voting
40/1942/FDIS	40/1971/RVD

Full information on the voting for the approval of this amendment can be found in the report on voting indicated in the above table.

The French version of this amendment has not been voted upon.

The committee has decided that the contents of this amendment and the base publication will remain unchanged until the maintenance result date indicated on the IEC web site under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

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- withdrawn,
- replaced by a revised edition, or
- amended.

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2.1 Electrostatic dissipative requirements

Replace the existing text by the following text:

Trays shall be moulded from material that meets the ESD dissipative requirements with surface resistance equal to or greater than $1{,}0 \times 10^5$ ohms/square but less than $1{,}0 \times 10^{11}$ ohms/square.

4.1.3.1 Formulas

Replace the existing text by the following text:

DT is D_{max} + strengthening pocket rib width W
ET is E_{max}" + strengthening pocket rib width W
M is (135,9 mm – $M3(N1 – 1)$)/2
$M1$ is (315,0 mm – $M2(N2 – 1)$)/2
$M2$ is [(315,0 mm – 2P mm) – $W(N2 – 1)$]/$N2$ + W
$M3$ is [(135,9 mm – 2P mm) – $W(N1 – 1)$]/$N1$ + W
$N1$ is (135,9 mm –2P mm)/ET (rounded down to a whole number)
$N2$ is (315,0 mm – 2P mm)/DT (rounded down to a whole number)

Add, after the NOTE, the following new text and Table 1:

The dimensions P and W are given in Table 1.

Table 1 – P and W dimension

Dimension	Thin tray		Thick tray
	Normal stacking tray	Low stacking tray	
	mm	mm	mm
P	3,2	5,0	5,0
W	2,0	2,5	2,0

4.1.3.2 Constituents of the design rules, formulas and drawings

Add, on page 8, the following line to the list:

P is the edge of the tray to the edge of the pocket

4.1.3.2 Constituents of the design rules, formulas and drawings

Replace the last paragraph by the following new text:

W should not exceed the target value of Table 1 in order to achieve the maximum tray density unless required by application.

4.2 Overall tray dimensions

Replace, in the first paragraph, "Table 1" by "Table 2".

Replace Table 1 by new Table 2:

Table 2 – Height dimensions

Dimension	Thin tray		Thick tray
	Normal stacking tray mm	Low stacking tray mm	mm
A	7,62	7,62	12,19
*A*1	6,35	5,62	10,16
*A*2	1,27 typically	2,00 typically	2,03 typically

Add, below Table 2, the following new paragraph:

Measurement methodology of the tray outline dimensions, height, stacking feature dimensions and warpage are described in Annex B.

4.5 Detail features

Replace the existing paragraph by the following new text:

All cavity detail features must begin at a minimum distance of P = 3,2 mm [Thin tray(normal tray)] or P = 5,0 mm [Thin tray(Low stack tray) and Thick tray)].

Add the following new subclause:

4.8 Dimensional information

Figures 3 and 4 state dimensions for the tray main view and for the tray stacking details.

Replace Figures 3 and 4 by new Figures 3 and 4:

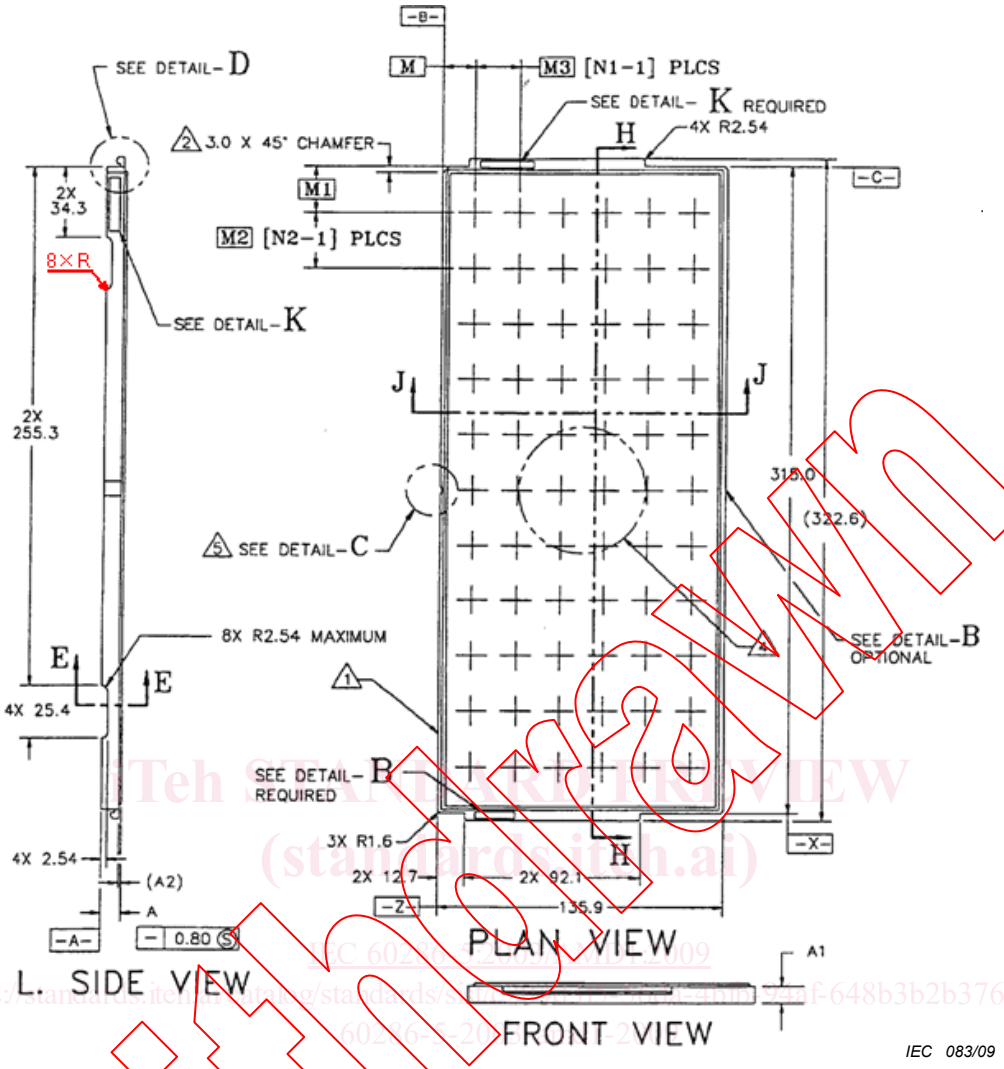

Figure 3 – Tray main view

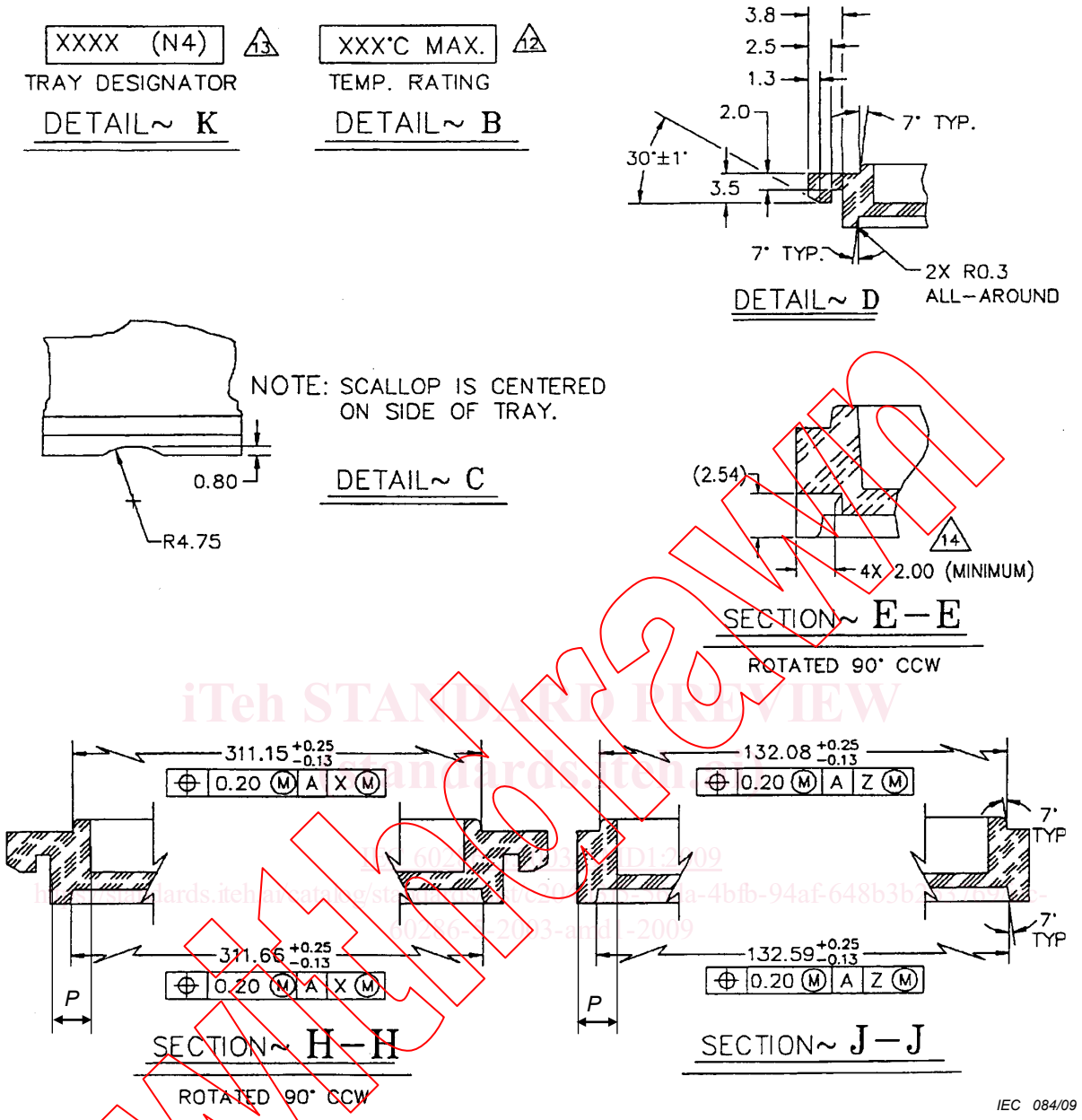

Figure 4 – Tray stacking details

Notes related to Figures 3 and 4

Add, at the end of Note 15, the following new sentence:

All tray measurements except height measurement should be done with the tray unrestrained.

A.1.1 Dimensional information

Replace the first sentence by the following sentence:

See Table 1, column “Thin tray”, and Figure A.1

Add the following new Annex B.

Annex B
(normative)

Measurement methodology of the tray dimensions

B.1 General

This annex describes the definitions of terms and the measurement methodology of the specified tray dimensions.

B.2 Definition of the dimensions

B.2.1 Outline dimensions

The outline dimensions are the maximum dimensions of length (315,0 mm) and width (135,9 mm) which are measured in the cross sections of the indicated locations in Figure B.1.

NOTE See Figure 3.

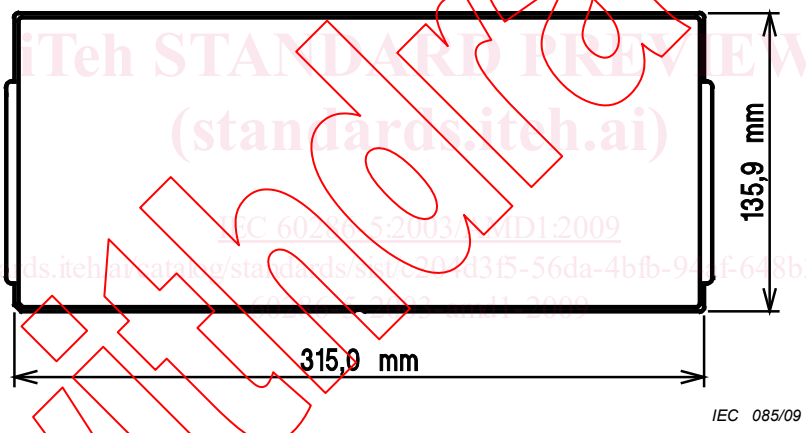

Figure B.1a – Dimensions 315,0 mm and 135,9 mm

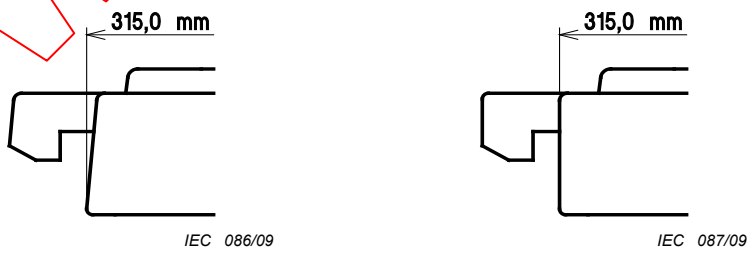

Figure B.1b – Dimension 315,0 mm

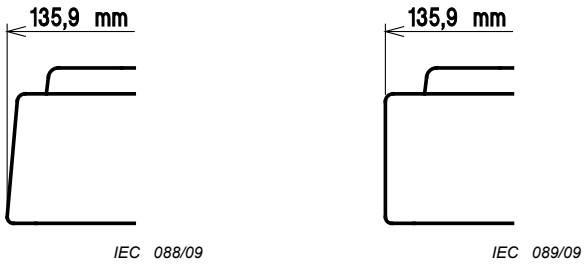

Figure B.1c – Dimension 135,9 mm

Figure B.1 – Cross- sections of the outline dimensions

B.2.2 Tray thickness (*A*)

The tray thickness is the maximum dimension, but not include any tray deformations such as peripheral warpage. (Refer to Figure B.2.)

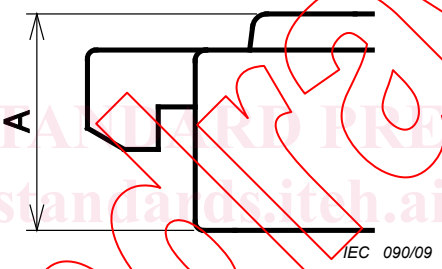

Figure B.2 – Tray thickness

B.2.3 Dimensions of the stacking feature

Dimensions of the stacking feature are length (311,15 mm. 311,66 mm) and width (132,08 mm. 132,59 mm) of the particular features that fit in each other when the same type of tray is stacked.

NOTE See Figure 4, Section H-H, Section J-J

B.2.4 Warpage

The warpage is the maximum lift from the reference plane. (Refer to Figure B.4.)

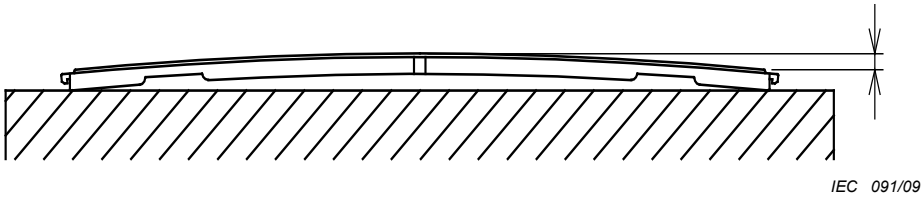

Figure B.4a – Convex warpage