

INTERNATIONAL STANDARD

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Mechanical structures for electronic equipment – Dimensions of mechanical structures of the 482,6 mm (19 in) series – Part 3-106: Adaptation dimensions for subracks and chassis applicable to metric cabinets or racks in accordance with IEC 60917-2-1

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Structures mécaniques pour équipements électroniques – Dimensions des structures mécaniques de la série 482,6 mm (19 pouces) – Partie 3-106: Dimensions d'adaptation des bacs et des châssis, applicables aux baies ou aux bâtis dimensionnés selon le système métrique, conformément à la CEI 60917-2-1



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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**MECHANICAL STRUCTURES FOR ELECTRONIC EQUIPMENT –
DIMENSIONS OF MECHANICAL STRUCTURES
OF THE 482, 6 mm (19 in) SERIES –**

**Part 3-106: Adaptation dimensions for subracks and chassis applicable
to metric cabinets or racks in accordance with IEC 60917-2-1**

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

FDIS	Report on voting
48D/419/FDIS	48D/423/RVD

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

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts of IEC 60297 series, under the general title *Mechanical structures for electronic equipment – Dimensions of mechanical structures of the 482, 6 mm (19 in) series*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the stability 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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INTRODUCTION

The IEC 60297 series of standards provides definitions on mechanical structure and dimensions for 19 in cabinets and racks and their compatible subracks and chassis. The combination of 19 in based cabinets or racks and subracks and chassis are broadly applied for all industrial electronic fields in the world.

The IEC 60917 series of standards are based on metric modular ordered dimensions, and also define structures and interface dimensions for metric cabinets, racks, subracks and chassis. The IEC 60917 series, developed later compared to IEC 60297, provides for more logical subrack and chassis design practices based on metric dimensioning.

Requests for combined applications of both mechanical structures, the IEC 60297 series (19 in standard) and the IEC 60917 series (metric standard), resulted in requirements to mount 19 in subracks or chassis into metric standard cabinets or racks and, vice versa, metric subracks or chassis into 19 in cabinets or racks.

To cope with the requirements and needs, it is required to develop definitions for appropriate interface dimensions of flange mounting positions for cabinets or racks mounting of 19 in or metric subracks or chassis. And the definitions bring economical solutions for installations of electronic equipment into existing cabinets or racks. Further, they provide guidance to electro-mechanical designers to develop systems suitable to be mounted into both IEC standard series flexibly.

To meet such market needs, this standard defines dimensions for 19 in subracks or chassis applicable for metric cabinets or racks. (Dimensions for the applications, where metric subracks or chassis to be mounted into 19 in cabinets or racks, are defined in a separate standard , i.e. IEC 60917-2-4.)

[IEC 60297-3-106:2010](https://standards.iteh.ai/catalog/standards/sist/c5da2f8c-ba95-40fb-9ace-483bfa67ebf1/iec-60297-3-106-2010)

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MECHANICAL STRUCTURES FOR ELECTRONIC EQUIPMENT – DIMENSIONS OF MECHANICAL STRUCTURES OF THE 482, 6 mm (19 in) SERIES –

Part 3-106: Adaptation dimensions for subracks and chassis applicable to metric cabinets or racks in accordance with IEC 60917-2-1

1 Scope and object

This part of IEC 60297 specifies dimensions for mounting flanges of 19 in subracks or chassis that are to be mounted into metric cabinets or racks.

Additional dimensions for subracks or chassis are according to the IEC 60297 series, and for metric cabinets or racks to the IEC 60917 series.

EMC, seismic, climatic and environmental requirements and tests, are defined in the IEC 61587 series.

The drawings used in this standard are not intended to indicate product design, only the specific dimensions that should be used.

The terminology used complies with IEC 60917-1.

2 Normative references

[IEC 60297-3-106:2010](https://standards.iteh.ai/catalog/standards/sist/c5da2f8c-ba95-40fb-9ace-483bfa67ebf1/iec-60297-3-106-2010)

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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.

IEC 60297 (all parts): *Mechanical structures for electronic equipment – Dimensions of mechanical structures of the 482,6 mm (19in) series*

IEC 60297-3-101, *Mechanical structures for electronic equipment – Dimensions of mechanical structures of the 482,6 mm (19 in) series – Part 3-101: Subracks and associated plug-in units*

IEC 60917 (all parts): *Modular order for the development of mechanical structures for electronic equipment practice*

IEC 60917-2-1, *Modular order for the development of mechanical structures for electronic equipment practices – Part 2: Sectional specification – Interface co-ordination dimensions for the 25 mm equipment practice – Section 1: Detail specification – Dimensions for cabinets and racks*

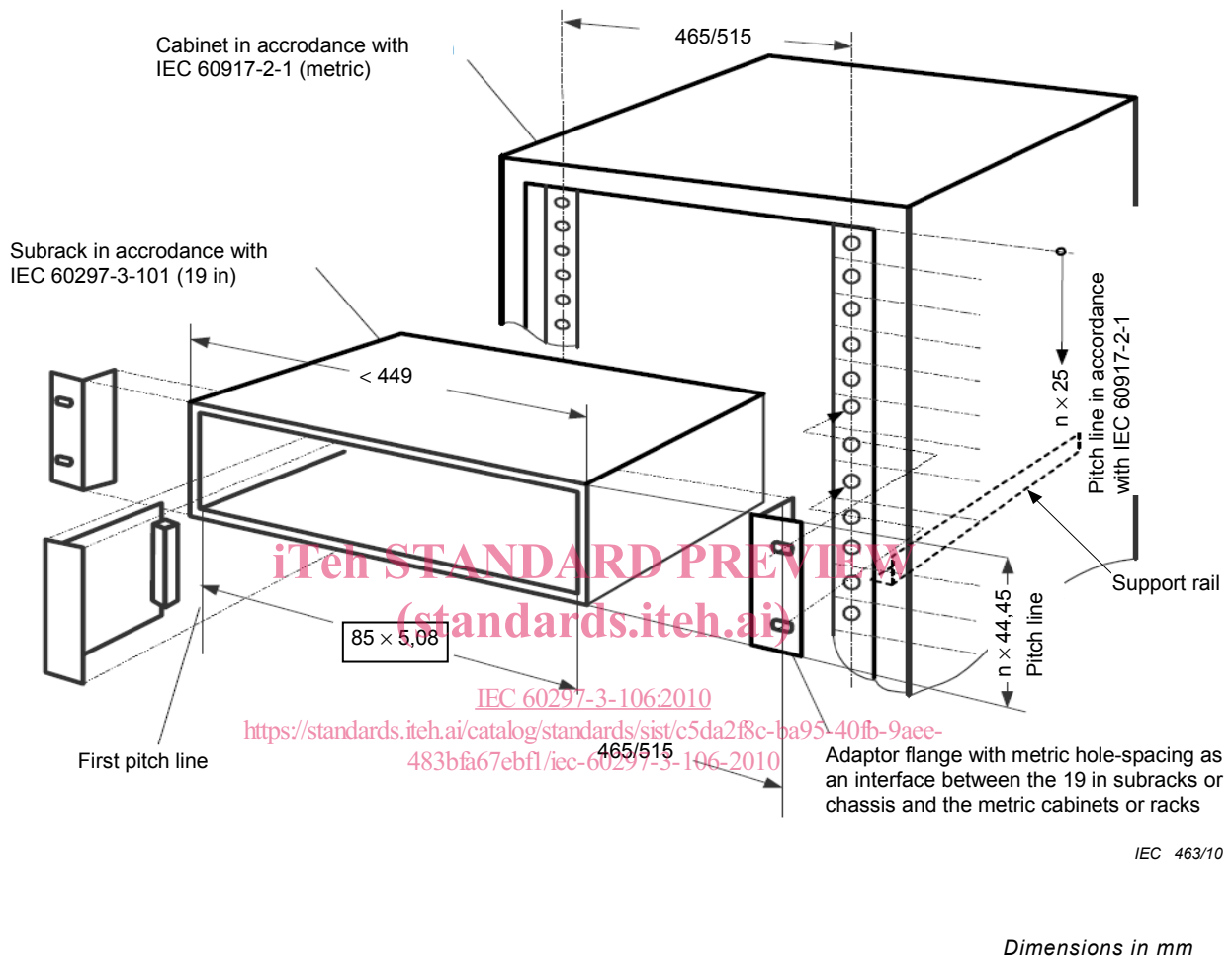
IEC 60917-2-4, *Modular order for the development of mechanical structures for electronic equipment practices – Part 2-4: Sectional specification – Interface co-ordination dimensions for the 25 mm equipment practice – Adaptation dimensions for subracks or chassis applicable in cabinets or racks in accordance with IEC 60297-3-100 (19 in)*

3 Arrangement overview (Figure 1) and definitions

This standard defines dimensions for flanges of 19 in subracks or chassis that are applicable for mounting on metric cabinets or racks. Dimensions for applications where metric subracks

or chassis are to be mounted into 19 in cabinets or racks are defined in a separate standard (IEC 60917-2-4).

All other dimensions are in compliance with IEC 60297 series (19 in standard) and IEC 60917 series (metric standard).



**Figure 1 – Arrangement overview –
Adaptation of subracks of the IEC 60297-3-101 series
into cabinets of the IEC 60917-2-1 series**

4 Dimensions for flanges of 19 in subracks or chassis applicable for mounting on metric cabinets or racks

4.1 General

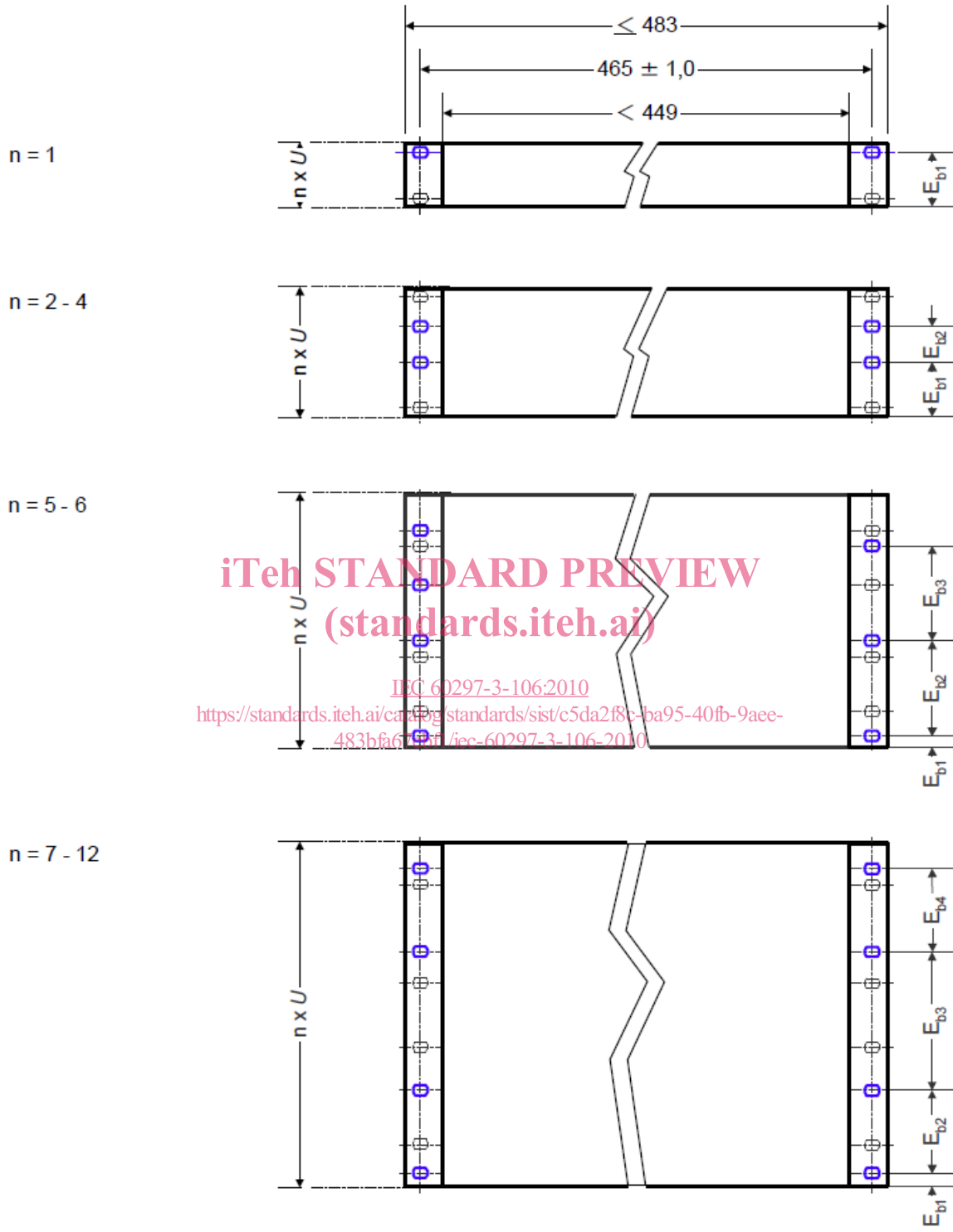
Dimensions for mounting holes arrangements on the flanges are arranged by the two mounting layouts in the cabinets:

- mounting layout referred to the pitch lines of the 19 in subracks or chassis, and
- mounting layout referred to the centre lines of the 19 in subracks or chassis.

4.2 Dimensions for mounting holes arrangements on the flanges, mounting-layout referred to the pitch lines of the 19 in subracks, or chassis

Figure 2 shows the mounting holes arrangements on the flanges.

Flange height: $n \times 44,45$



IEC 465/10

Dimensions in mm

Figure 3 – Dimensions of mounting hole positions of the flanges, mounting layout referred to the bottom pitch lines of the 19 in sub racks or chassis

Table 1 – Dimensions of mounting holes positions of the flange, mounting layout referred to the bottom pitch lines of the 19 in subracks or chassis

Dimensions in mm

Height units $n \times U$	E_{b1} $\pm 0,4$	E_{b2} $\pm 0,4$	E_{b3} $\pm 0,4$	E_{b4} $\pm 0,4$
1U ^a (44,45)	37,7	–	–	–
1U ^b (44,45)	5,95	–	–	–
2U (88,90)	37	25	–	–
3U (133,35)	12	100	–	–
4U (177,80)	12	150	–	–
5U (222,25)	12	100	100	–
6U (266,70)	12	100	100	–
7U (311,15)	12	75	125	75
8U (355,60)	12	100	125	100
9U (400,05)	12	150	125	150
10U (444,50)	12	150	125	150
11U (488,95)	12	175	100	175
12U (533,40)	12	175	150	175
a	Use of the existing mounting hole of the 19 in 1U subrack or chassis.			
b	Optional mounting layout by using of the existing bottom-side hole to make mounting of 1U subracks or chassis stable, but not to be aligned on the bottom pitch line.			

4.3 Dimensions for mounting holes arrangements on the flanges, mounting layout referred to the unit centre lines of the 19 in subracks or chassis

Figure 4 shows the mounting holes arrangements on the flanges.

Figure 5 and Table 2 show detailed dimensions of mounting holes positions of the flanges.