IEC 60297-3-108

Edition 1.0 2014-09

INTERNATIONAL STANDARD

NORME INTERNATIONALE

colour inside

Mechanical structures for electronic equipment – Dimensions of mechanical structures of the 482,6 mm (19 in) series –
Part 3-108: Dimensions of R-type subracks and plug-in units

Structures mécaniques pour équipements électroniques – Dimensions des structures mécaniques de la série 482,6 mm (19 pouces) –
Partie 3-108: Dimensions des bacs de type R et des blocs enfichables

IEC 60297-3-108:2014-09(en-fr)

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

Part 3-108: Dimensions of R-type subracks and plug-in units

FOREWORD

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International Standard IEC 60297-3-108 has been prepared by subcommittee 48D: Mechanical structures for electronic equipment, of IEC technical committee 48: Electrical connectors and mechanical structures for electrical and electronic equipment.

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

FDIS	Report on voting
48D/565/FDIS	48D/570/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

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
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INTRODUCTION

The purpose of this standard is to establish alternative dimensions and features for subracks and associated plug-in units, compared with IEC 60297-3-101. These alternatives allow more sturdy designs for the load bearing members of the subrack. In addition, the plug-in units are with alignment pins and fastened with M3 screws. Chassis integrated subracks are also part of this standard.

The main differing dimensions/features compared with IEC 60297-3-101 are:

a) The subrack height aperture is decreased in order to increase the dimension for the top and bottom members (most critical load bearing parts).

b) Incorporated alignment between the subrack and the plug-in units. Injecting and extracting provisions for plug-in units.

c) The mounting flanges of the subracks are recessable. This feature meets the mounting requirements of heavy subracks and allows the positioning to the centre of gravity.

d) Chassis integrated subracks for optimized thermal management features.

e) Comparison of dimensions and features with IEC 60297-3-101 is shown in appendix D, Table D.1. For an application image of the subrack based on this standard see Figure 1.

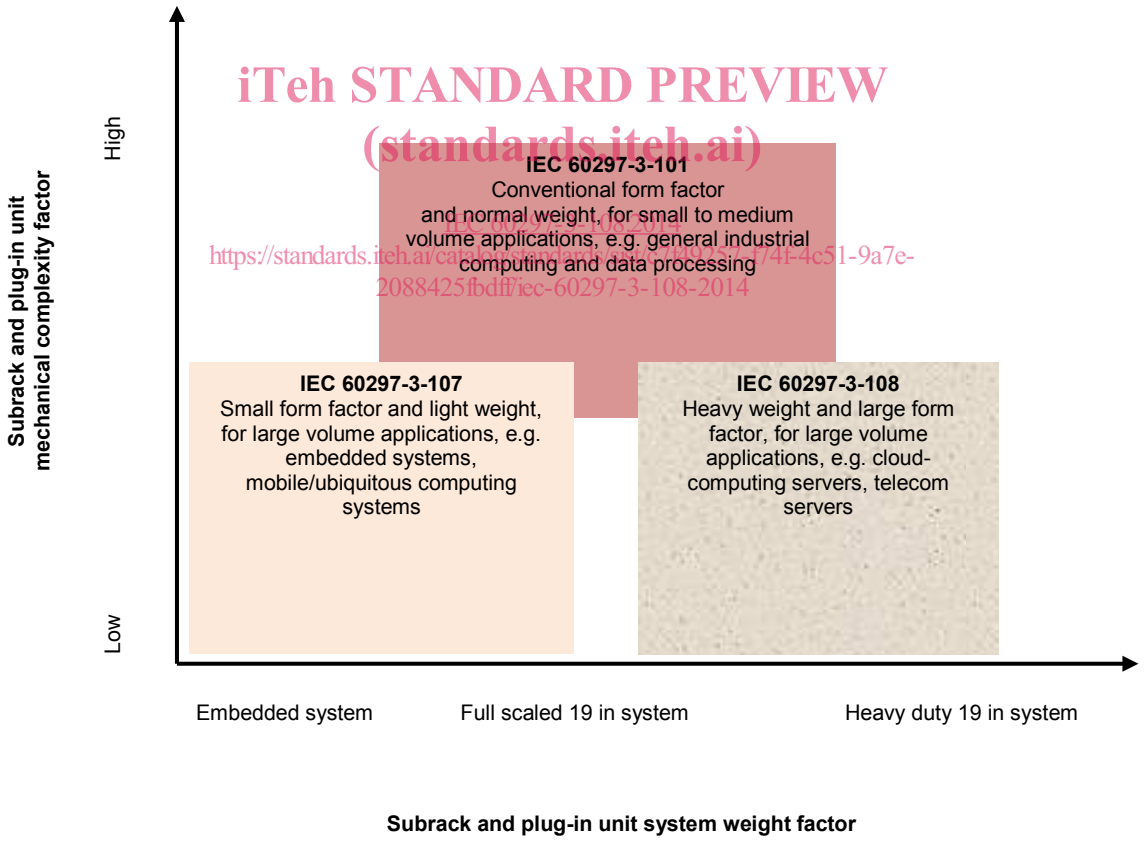


Figure 1 – Subrack application

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

Part 3-108: Dimensions of R-type subracks and plug-in units

1 Scope

This part of IEC 60297 provides dimensions and features for R-type subracks and plug-in units, i.e. ruggedized variants of the mechanical structures of the 482,6 mm (19 in) series, with enhanced vibration and shock resistance and/or improved EMC performance, for use in more harsh environment. This leads to a subrack standard which is externally compatible with IEC 60297-3-100 but internally largely incompatible with IEC 60297-3-101. R-type subracks, chassis integrated subracks and plug-in units incorporate dimensions and features which provide for a higher level of ruggedness, compared with IEC 60297-3-101 (test set-up and load definitions are selected from IEC 61587-1 and IEC 61587-5).

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60297-3-100, *Mechanical structures for electronic equipment – Dimensions of mechanical structures of the 482,6 mm (19 in) series – Part 3-100: Basic dimensions of front panels, subracks, chassis, racks and cabinets*

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 60297-3-105, *Mechanical structures for electronic equipment – Dimensions of mechanical structures of the 482,6 mm (19 in) series – Part 3-105: Dimensions and design aspects for 1U high chassis*

IEC 61587-1, *Mechanical structures for electronic equipment – Tests for IEC 60917 and IEC 60297 series – Part 1: Environmental requirements, test set-up and safety aspects for cabinets, racks, subracks and chassis under indoor conditions*

IEC 61587-3, *Mechanical structures for electronic equipment – Tests for IEC 60917 and IEC60297 – Part 3: Electromagnetic shielding performance tests for cabinets and subracks*

IEC 61587-5, *Mechanical structures for electronic equipment – Tests for IEC 60917 and IEC 60297 – Part 5: Seismic tests for chassis, subracks, and plug-in units*

IEC TS 62610-2, *Mechanical structures for electronic equipment – Thermal management for cabinets in accordance with IEC 60297 and IEC 60917 series – Part 2: Design guide: Method for determination of forced air-cooling structure*

3 Terms and definitions

For the purposes of this document the following terms and definitions apply.

3.1
R–type subrack and plug–in unit
ruggedized subrack and plug-in unit, with enhanced shock and vibration resistance, with or without EMC provisions compared with subrack/plug-in units according to IEC 60297-3-101

3.2
chassis integrated subrack
subrack integrated within the envelope of a chassis

4 Arrangement overview

Figure 2 illustrates the typical arrangement of a R-type subrack with the associated plug-in units.

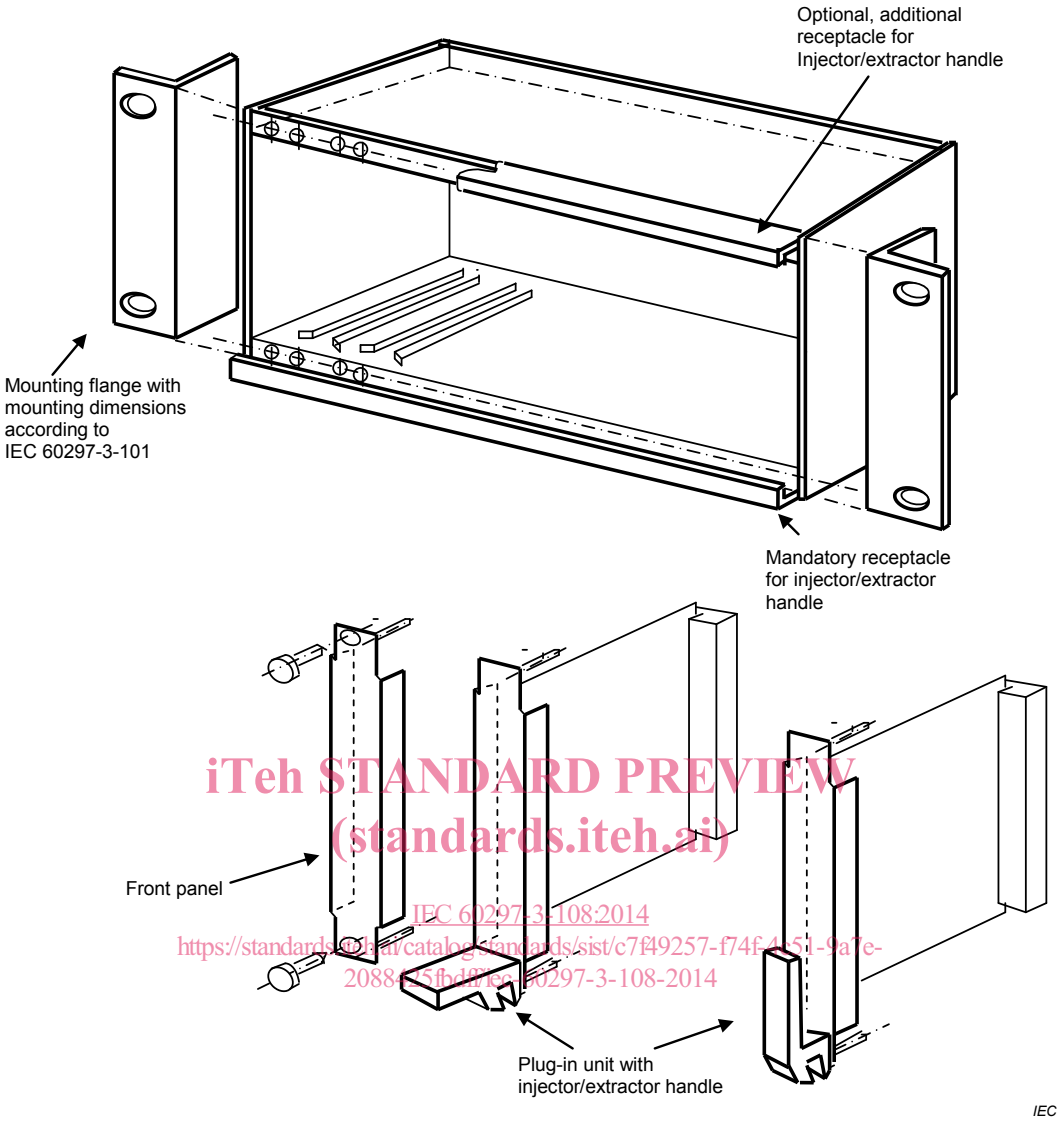
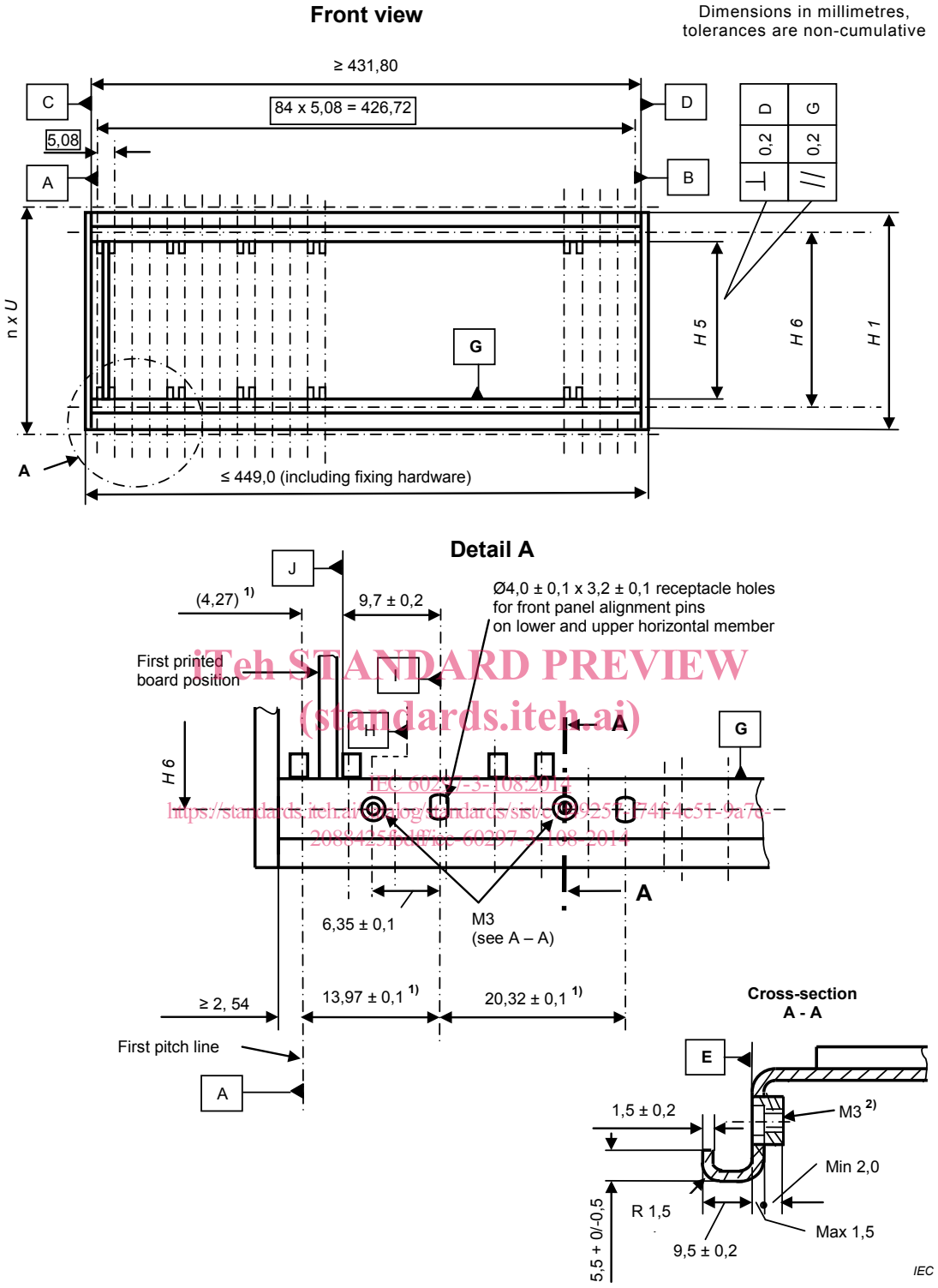


Figure 2 – Arrangement of a R-type subrack and plug-in units

5 RA – type subrack

5.1 General

Figure 3 illustrates the RA-type subrack, defined by the dimension of the first printed board position in relation to the first pitch line (see detail A). The deflection of the load bearing members of max. 0,2 mm is permitted.



Key

1 If this dimension needs to be increased increments of 5,08mm shall be used, based on the dimension 4,07 mm as in IEC 60297-3-101.

2 May be applied by press-in nuts.

Figure 3 – RA–type subrack front mounting dimensions

5.2 RA–type subrack rear mounting dimensions

Figure 4 illustrates the rear mounting dimensions with the possible mounting holes for backplanes.

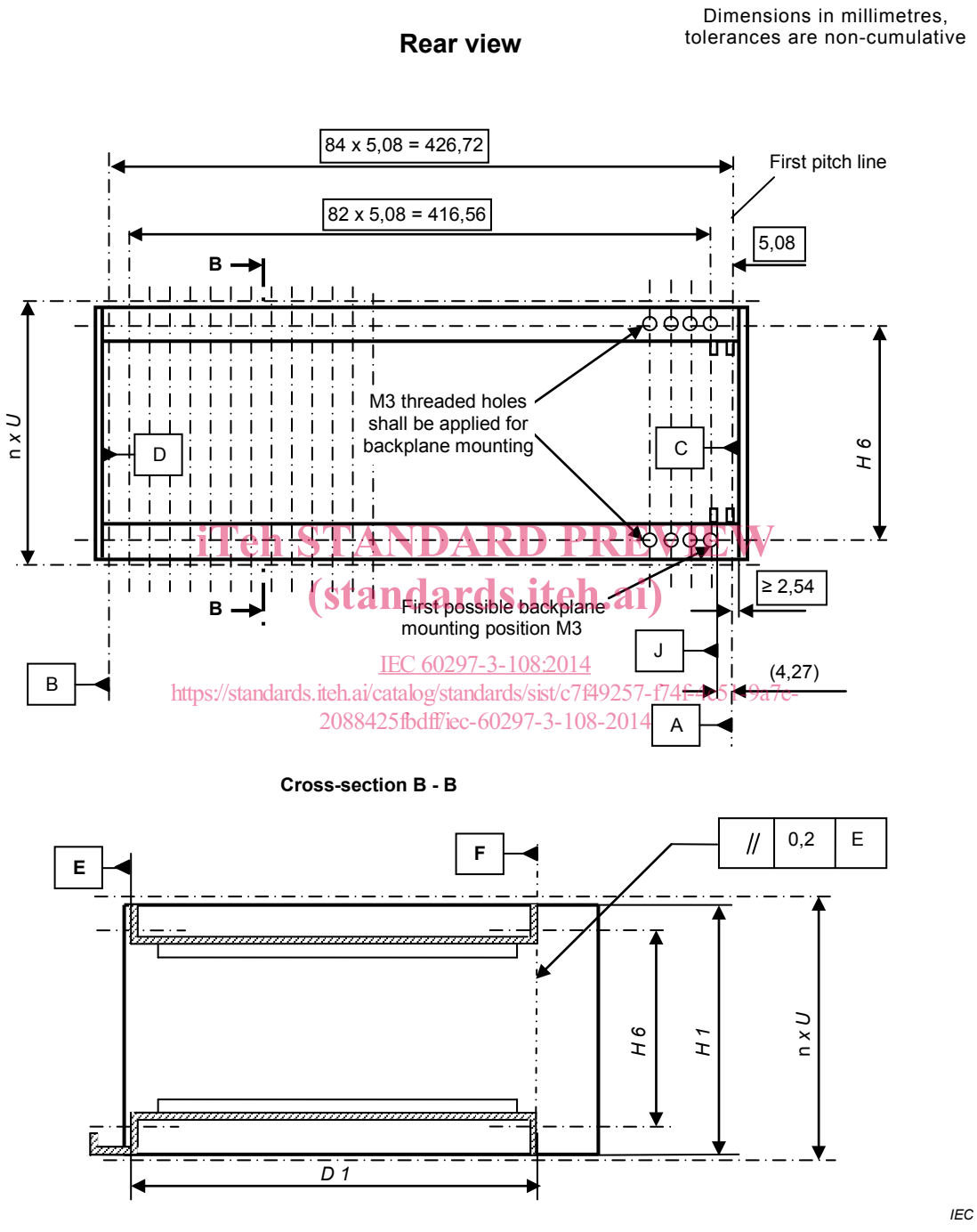
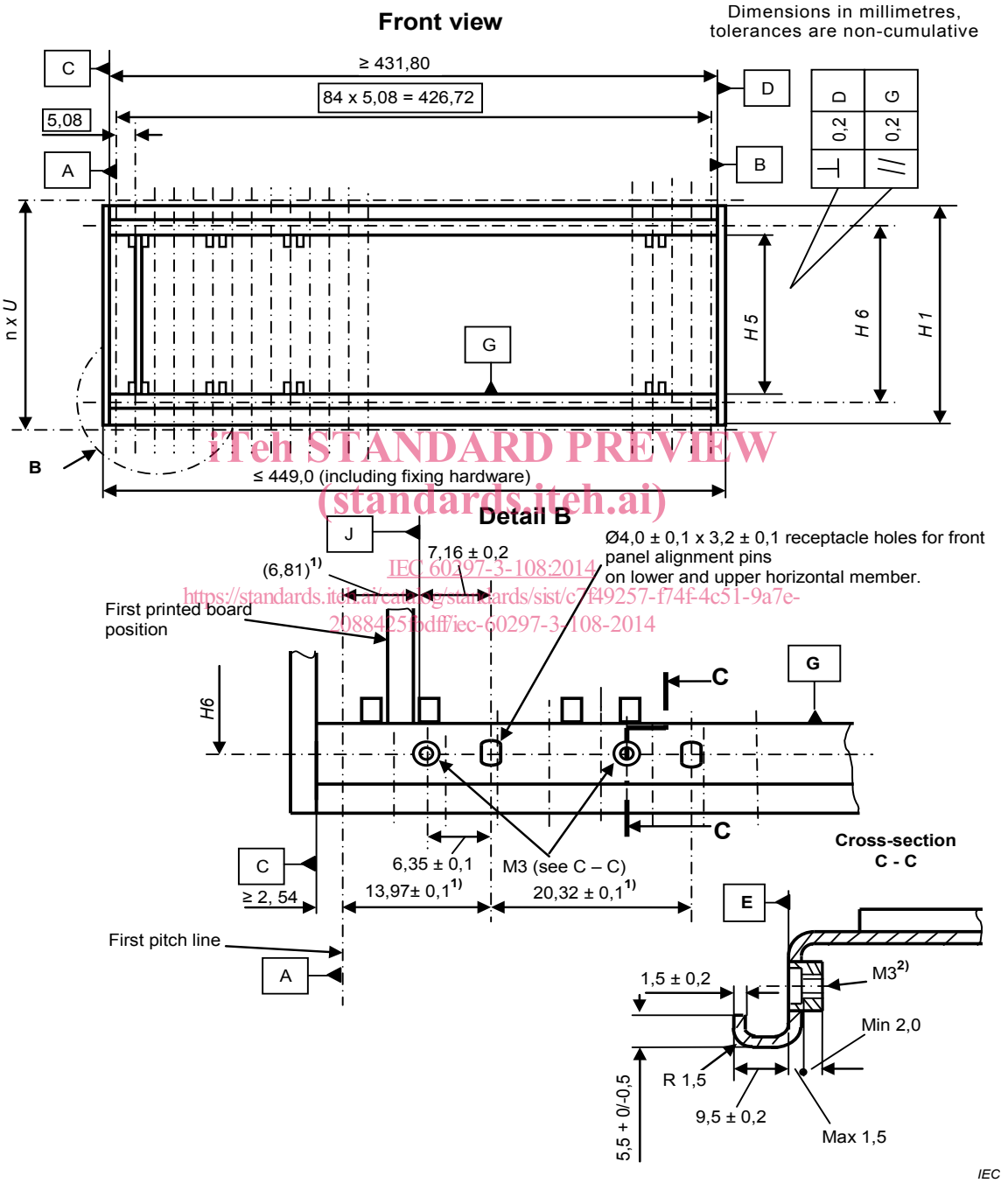


Figure 4 – RA–type subrack rear mounting dimensions

6 RB–type subrack

6.1 General

Figure 5 illustrates the subrack RB-type, defined by the dimension of the first printed board position in relation to the first pitch line (see Detail B). The deflection of the load bearing members of max. 0,2 mm is permitted.



Key

1 If this dimension needs to be increased increments of 5,08 mm shall be used, based on the dimension 4,07 mm as in IEC 60297-3-101.

2 Press-in nuts may be applied.

Figure 5 – RB–type subrack front mounting dimensions

6.2 RB–type subrack rear mounting dimensions

Figure 6 illustrates the rear mounting dimensions with the possible mounting holes for backplanes.

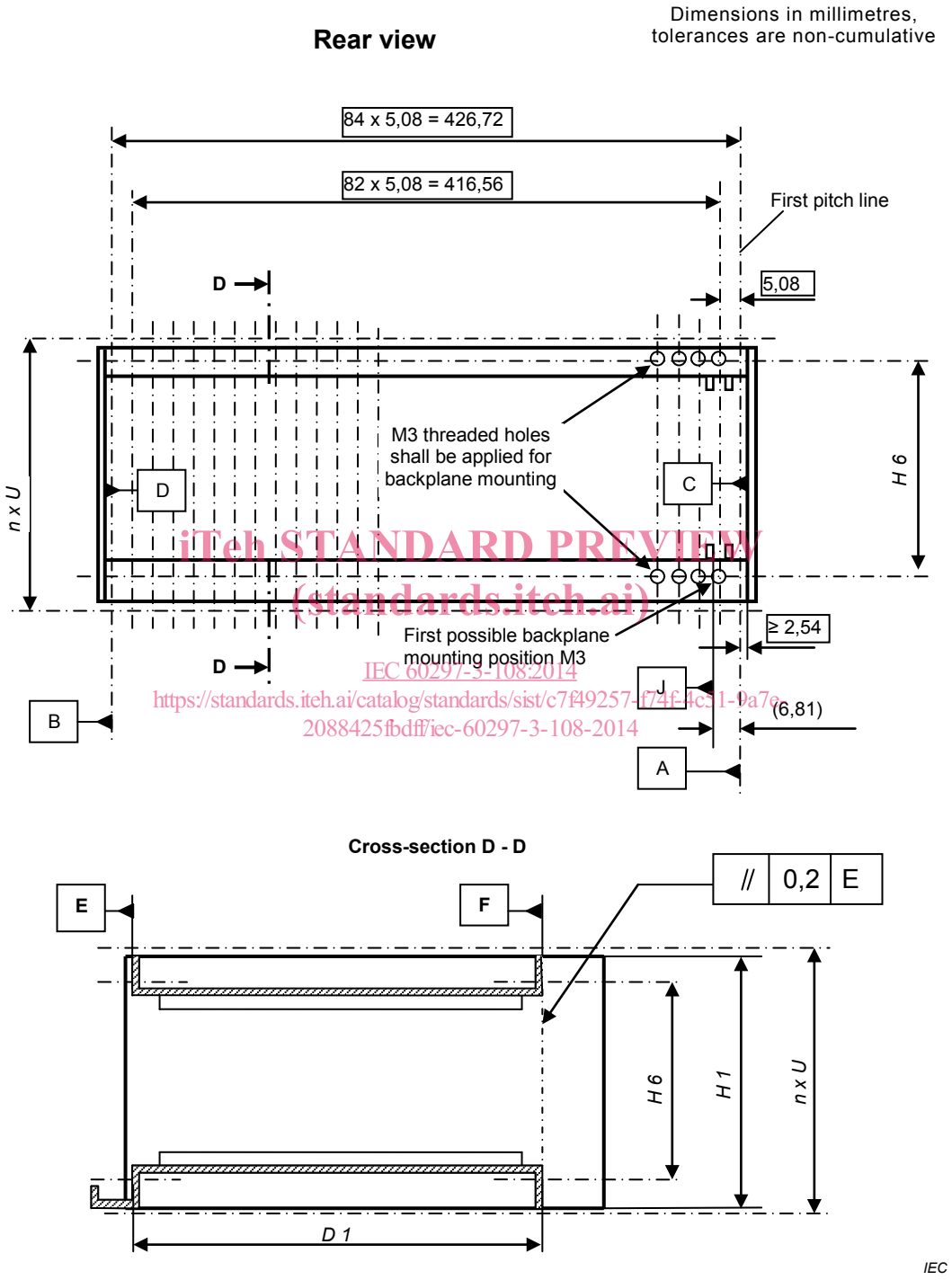


Figure 6 – RB–type subrack rear mounting dimensions

7 R–type subrack guide rails

The position of guide rails (Figure 7) is always in relation to the receptacle holes for the alignment pin of the plug-in unit (as shown in Figures 3 and 5, Details A and B).