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Irish Standard  
I.S. EN 60297-3-105:2009

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 60297-3-105:2008 (EQV))

## I.S. EN 60297-3-105:2009

*Incorporating amendments/corrigenda issued since publication:*

<i>This document replaces:</i>	<i>This document is based on:</i> EN 60297-3-105:2009	<i>Published:</i> 8 January, 2009	
This document was published under the authority of the NSAI and comes into effect on: 3 April, 2009		ICS number: 31.240	
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**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 60297-3-105:2008)**

Structures mécaniques  
pour équipements électroniques -  
Dimensions des structures mécaniques  
de la série 482,6 mm (19 pouces) -  
Partie 3-105: Dimensions et aspects  
de conception pour les châssis  
d'une hauteur de 1U  
(CEI 60297-3-105:2008)

Bauweisen für  
elektronische Einrichtungen -  
Maße der 482,6-mm-(19-Zoll-)Bauweise -  
Teil 3-105: Maße und Ausführungen  
von 1U-Einschüben  
(IEC 60297-3-105:2008)

This European Standard was approved by CENELEC on 2008-12-01. CENELEC 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.

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Comité Européen de Normalisation Electrotechnique  
Europäisches Komitee für Elektrotechnische Normung

**Central Secretariat: avenue Marnix 17, B - 1000 Brussels**

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**Foreword**

The text of document 48D/381/FDIS, future edition 1 of IEC 60297-3-105, prepared by SC 48D, Mechanical structures for electronic equipment, of IEC TC 48, Electromechanical components and mechanical structures for electronic equipment, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60297-3-105 on 2008-12-01.

The following dates were fixed:

- latest date by which the EN has to be implemented  
at national level by publication of an identical  
national standard or by endorsement (dop) 2009-09-01
- latest date by which the national standards conflicting  
with the EN have to be withdrawn (dow) 2011-12-01

Annex ZA has been added by CENELEC.

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**Endorsement notice**

The text of the International Standard IEC 60297-3-105:2008 was approved by CENELEC as a European Standard without any modification.

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## Annex ZA (normative)

### Normative references to international publications with their corresponding European publications

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.

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60050-581	- <sup>1)</sup>	International Electrotechnical Vocabulary (IEV) - Part 581: Electromechanical components for electronic equipment	-	-
IEC 60297-3-100	- <sup>1)</sup>	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	EN 60297-3-100	2009 <sup>2)</sup>
IEC 60917-1	- <sup>1)</sup>	Modular order for the development of mechanical structures for electronic equipment practices - Part 1: Generic standard	EN 60917-1	1998 <sup>2)</sup>
IEC 61587-1	- <sup>1)</sup>	Mechanical structures for electronic equipment - Tests for IEC 60917 and IEC 60297 - Part 1: Climatic, mechanical tests and safety aspects for cabinets, racks, subracks and chassis	EN 61587-1	2007 <sup>2)</sup>
IEC 61587-2	- <sup>1)</sup>	Mechanical structures for electronic equipment - Tests for IEC 60917 and IEC 60297 - Part 2: Seismic tests for cabinets and racks	EN 61587-2	2001 <sup>2)</sup>
IEC 61587-3	- <sup>1)</sup>	Mechanical structures for electronic equipment - Tests for IEC 60917 and IEC 60297 - Part 3: Electromagnetic shielding performance tests for cabinets, racks and subracks	EN 61587-3	2006 <sup>2)</sup>

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<sup>1)</sup> Undated reference.

<sup>2)</sup> Valid edition at date of issue.



# INTERNATIONAL STANDARD

# NORME INTERNATIONALE

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**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**

**Structures mécaniques pour équipements électroniques – Dimensions des structures mécaniques de la série 482,6 mm (19 pouces) –  
Partie 3-105: Dimensions et aspects de conception pour les châssis d'une hauteur de 1U**





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# INTERNATIONAL STANDARD

# NORME INTERNATIONALE

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**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**

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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 3-105: Dimensions and design aspects for 1U high chassis**

## FOREWORD

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International Standard IEC 60297-3-105 has been prepared by subcommittee 48D: Mechanical structures for electronic equipment, of IEC technical committee 48: Electromechanical components and mechanical structures for electronic equipment.

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

FDIS	Report on voting
48D/381/FDIS	48D/387/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, published 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 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

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

## INTRODUCTION

Electronic systems based on 1U chassis design have become one of the most important platforms used for servers, industrial electronics, information technology (IT) and telecommunication equipment. 1U chassis are sometimes referred to as “Pizza Boxes”.

Applications for 1U chassis designs are wide spread and solutions are found in every segment of the electronics industry.

IEC 60297-3-100 defines the dimensional rack/cabinet details such as the available aperture and the front panel mounting dimensions. However, IEC 60297-3-100 falls short of providing guidance or dimensional requirements for assembling 1U chassis designs into these IEC 60297 conforming racks/cabinets either in singles or in multiples (stacked in  $n \times 1U$ ).

This part of IEC 60297 will give guidance and provide for dimensional requirements for 1U chassis based on weight loading, physical size and service accessibility.

In this standard, various chassis types are identified according to application needs.

The defined interface dimensions of the various chassis types permit the development of common mounting accessories. Due to this clarification and the application specific chassis type choice, the serviceability and airflow aspects of the chosen 1U chassis can be addressed by the designer.

Similar attributes for multiple unit high equipment may be derived from this standard. The economical value of this standard lies in the predefined interface dimensions of chassis for which suitable accessories may be developed. In addition, as a consequence of the chosen mounting support, the cooling possibilities are indicated.

**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**

## **1 Scope**

This part of IEC 60297 specifies the dimensions for 1U chassis mounted into IEC 60297-3-100 compliant racks/cabinets where dimensions, loaded weight and accessibility require differing assembly methods.

Guidance for cooling and reference for EMC, seismic and for the climatic and mechanical requirements and tests are provided, as defined in the IEC 61587 series.

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

The terminology used complies with IEC 60917-1.

## **2 Normative references**

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 60050-581, *International electrotechnical vocabulary – Part 581: Electromechanical components for electronic equipment*

IEC 60917-1, *Modular order for the development of mechanical structures for electronic equipment practices – Part 1: Generic standard*

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 61587-1, *Mechanical structures for electronic equipment – Tests for IEC 60917 and IEC 60297 – Part 1: Climatic, mechanical tests and safety aspects for cabinets, racks, subracks and chassis*

IEC 61587-2, *Mechanical structures for electronic equipment – Tests for IEC 60917 and IEC 60297 – Part 2: Seismic tests for cabinets and racks*

IEC 61587-3, *Mechanical structures for electronic equipment – Tests for IEC 60917 and IEC 60297 – Part 3: Electromagnetic shielding performance tests for cabinets, racks and subracks*

## **3 Terms and definitions**

For the purposes of this document, the terms and definitions of IEC 60917-1 and IEC 60050-581 apply, as well as the following.

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