Hollow metallic waveguides - Part 4: Relevant specifications for circular waveguides

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN IEC 60153-4:2022 sisaldab Euroopa standardi EN IEC 60153-4:2022 ingliskeelset teksti.	This Estonian standard EVS-EN IEC 60153-4:2022 consists of the English text of the European standard EN IEC 60153-4:2022.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation.
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English Version

Hollow metallic waveguides - Part 4: Relevant specifications for circular waveguides (IEC 60153-4:2022)

Guides d'ondes métalliques creux - Partie 4: Spécifications applicables aux guides d'ondes circulaires (IEC 60153-4:2022)

Metallische Hohlleiter - Teil 4: Einzelbestimmungen für Rundhohlleiter (IEC 60153-4:2022)

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

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European foreword

The text of document 46F/616/FDIS, future edition 4 of IEC 60153-4, prepared by SC 46F "RF and microwave passive components" of IEC/TC 46 "Cables, wires, waveguides, RF connectors, RF and microwave passive components and accessories" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 60153-4:2022.

The following dates are fixed:

•	latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement	(dop) 2023-04-14
•	latest date by which the national standards conflicting with the document have to be withdrawn	(dow) 2025-07-14

This document supersedes EN 60153-4:2017 and all of its amendments and corrigenda (if any).

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Endorsement notice

The text of the International Standard IEC 60153-4:2022 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 60153-2:2016 NOTE Harmonized as EN 60153-2:2016 (not modified)

ISO/IEC 17025:2017 NOTE Harmonized as EN ISO/IEC 17025:2017 (not modified)

IEC 60153-4

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INTERNATIONAL STANDARD

NORME INTERNATIONALE

Hollow metallic waveguides –
Part 4: Relevant specifications for circular waveguides

Guides d'ondes métalliques creux –
Partie 4: Spécifications applicables aux guides d'ondes circulaires

IEC 60153-4:2022-06(en-fr)

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INTERNATIONAL STANDARD

NORME INTERNATIONALE

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CONTENTS

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HOLLOW METALLIC WAVEGUIDES –

Part 4: Relevant specifications for circular waveguides

FOREWORD

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IEC 60153-4 has been prepared by subcommittee 46F: RF and microwave passive components, of IEC technical committee 46: Cables, wires, waveguides, RF connectors, RF and microwave passive components and accessories. It is an International Standard.

This fourth edition cancels and replaces the third edition published in 2017. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

a) change of the designation scheme for small circular waveguides (e.g. C 25.5k instead of C 25500);
b) revision of Table 1:
   - correction of two waveguide designations (now C 1.2k, C 12k);
   - correction of three waveguide diameters (C 140, C 1.4k, C 14k);
   - tightening of inner diameter tolerances for waveguides smaller than C 890;
   - deletion of waveguide attenuation values for aluminium, gold, and brass;

c) deletion of Table 2 (duplication) and replacement with the table of intermediate waveguide sizes originally envisaged here;

d) addition of an equation for calculating the attenuation of waveguides made of any material.

The text of this International Standard is based on the following documents:

Draft	Report on voting
46F/616/FDIS	46F/621/RVD

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

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/standardsdev/publications.

A list of all parts in the IEC 60153 series, published under the general title *Hollow metallic waveguides*, can be found on the IEC website.

This International Standard is to be read in conjunction with IEC 60153-1.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

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

HOLLOW METALLIC WAVEGUIDES –

Part 4: Relevant specifications for circular waveguides

1 Scope

This part of IEC 60153 specifies straight hollow metallic tubing of circular cross section for use as waveguides in electronic equipment.

The aim of this document is to specify the hollow metallic waveguides:

a) the details necessary to ensure compatibility and, as far as essential, interchangeability;

b) test methods;

c) uniform requirements for the electrical and mechanical properties.

No recommendations are made for the materials to be used for waveguides. The choice of materials is to be agreed on between the customer and the manufacturer.

This document is intended to be read in conjunction with IEC 60153-1, which gives general requirements and test methods.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 60028:1925, *International standard of resistance for copper*

IEC 60050 (all parts), *International Electrotechnical Vocabulary* (available at http://www.electropedia.org/)

IEC 60153-1, *Hollow metallic waveguides – Part 1: General requirements and measuring methods*

IEC 60261, *Sealing test for pressurized waveguide tubing and assemblies*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 60050 apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at http://www.electropedia.org/
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