



**SLOVENSKI STANDARD**  
**SIST EN IEC 60153-4:2022**

**01-oktober-2022**

**Nadomešča:**  
**SIST EN 60153-4:2018**

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**Votli kovinski valovodi - 4. del: Ustrezne specifikacije za krožne valovode (IEC 60153-4:2022)**

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

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

Guides d'ondes métalliques creux - Partie 4: Spécifications particulières pour les guides d'ondes circulaires (IEC 60153-4:2022)

**Ta slovenski standard je istoveten z: EN IEC 60153-4:2022**

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**ICS:**

33.120.10 Koaksialni kabli. Valovodi Coaxial cables. Waveguides

**SIST EN IEC 60153-4:2022 en**



EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN IEC 60153-4**

July 2022

ICS 33.120.10

Supersedes EN 60153-4:2017

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)

This European Standard was approved by CENELEC on 2022-07-14. 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.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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

**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**

**EN IEC 60153-4:2022 (E)****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).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC shall not be held responsible for identifying any or all such patent rights.

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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)

## Annex ZA (normative)

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

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.

NOTE 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: [www.cenelec.eu](http://www.cenelec.eu).

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60028	1925	International standard of resistance for copper	-	-
IEC 60050	series	International Electrotechnical Vocabulary	-	-
IEC 60153-1	-	Hollow metallic waveguides - Part 1: General requirements and measuring methods	EN 60153-1	-
IEC 60261	-	Sealing test for pressurized waveguide tubing and assemblies	HD 138 S2	-

<https://standards.iteh.ai/catalog/standards/sist/f93b5f14-e93f-4a4b-8aeb-8978eda8cdd9/sist-en-iec-60153-4-2022>





IEC 60153-4

Edition 4.0 2022-06

# 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**

<https://standards.iteh.ai/catalog/standards/sist/f93b5f14-e93f-4a4b-8aeb-8978eda8cdd9/sist-en-iec-60153-4-2022>

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Table 1 – Circular waveguides (preferred sizes) 2022



## INTERNATIONAL ELECTROTECHNICAL COMMISSION

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**HOLLOW METALLIC WAVEGUIDES –****Part 4: Relevant specifications for circular waveguides****FOREWORD**

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as “IEC Publication(s)”). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

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](http://www.iec.ch/members_experts/refdocs). The main document types developed by IEC are described in greater detail at [www.iec.ch/standardsdev/publications](http://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](http://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/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>