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Hollow metallic waveguides - Part 2: Relevant specifications for ordinary rectangular waveguides

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Guides d'ondes métalliques creux
Deuxième partie: Spécifications particulières pour les guides d'ondes rectangulaires normaux

Metallische Hohlleiter
Teil 2: Allgemeine Empfehlungen für Rechteck-Hohlleiter

RD: IEC 153-2 (1974) ed 2; IEC/SC 46B (not appended)

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- Title Page Related to Directive: -

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List of national deviations

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BE : NOS

CH : SEV/ASE 3068.1966

DE : DIN 47 302 Teil 1/03.80; DIN 47 302 Teil 10/02.79

DK : NOS

ES : NOS

FI : NOS

FR : NF C 93-576 (1969)

GB : BS 9220 N001 : 1971

GR : NOS

IE : NOS

IT : CEI 46-2 (1970)

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Hollow metallic waveguides

Part 2: Relevant specifications for ordinary rectangular waveguides

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For price, see current catalogue

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

HOLLOW METALLIC WAVEGUIDES

Part 2 : Relevant specifications for ordinary rectangular waveguides

FOREWORD

1) The formal decisions or agreements of the IEC on technical matters, prepared by Technical Committees on which all the National Committees having a special interest therein are represented, express, as nearly as possible, an international consensus of opinion on the subjects dealt with.

2) They have the form of recommendations for international use and they are accepted by the National Committees in that sense.

3) In order to promote international unification, the IEC expresses the wish that all National Committees should adopt the text of the IEC recommendation for their national rules in so far as national conditions will permit. Any divergence between the IEC recommendations and the corresponding national rules should, as far as possible, be clearly indicated in the latter.

4) The IEC has not laid down any procedure concerning marking as an indication of approval and has no responsibility when an item of equipment is declared to comply with one of its recommendations.

PREFACE

This publication was prepared by Sub-Committee 46B, Waveguides and their Accessories, of Technical Committee No. 46, Cables, Wires and Waveguides for Telecommunication Equipment.

It contains Part 2 : Relevant Specifications for Ordinary Rectangular Waveguides, of the complete IEC recommendation for hollow metallic waveguides, and it is intended to be used in conjunction with Part 1 : General Requirements and Measuring Methods, which is issued as IEC Publication 153-1.

Detail specifications for other types of waveguides are issued in companion publications.

The amendments and supplements contained in this second edition of Publication 153-2 have been approved in several Six Months' Rule documents.

The amendments to Table I were discussed at meetings held in Baden-Baden in June 1965 and in The Hague in November 1970. The resulting drafts were submitted to the National Committees for approval under the Six Months' Rule as follows :

document 46B(Central Office)26, circulated in February 1966
document 46B(Central Office)50, circulated in May 1971.

The following countries voted explicitly in favour of publication :

Document 46B(Central Office)26	*Document 46B(Central Office)50*
Australia	Belgium
Belgium	Czechoslovakia
Czechoslovakia	Denmark
Denmark	France
Finland	Germany
France	Iran
Germany	Israel
Israel	Italy
Italy	Japan
Japan	Netherlands
Netherlands	Poland
Norway	Portugal
Poland	Sweden
Spain	Switzerland
Sweden	Turkey
Switzerland	United Kingdom
Turkey	United States of America
United States of America	

The United Kingdom cast a negative vote on document 46B(Central Office)26.

Certain amendments contained in this publication are of an editorial nature and were deemed necessary by the Editing Committee of SC 46B.

DIMENSIONAL DEVIATIONS

The values for the permissible deviations in this recommendation follow the principles given in ISO Recommendation R286, ISO System of Limits and Fits, where :

Deviation is defined as :
Algebraical difference between a size (actual, maximum, etc.) and the corresponding basic size.

Upper deviation is defined as :
Algebraical difference between the maximum limit of size and the corresponding basic size.

And lower deviation is defined as :
Algebraical difference between the minimum limit of size and the corresponding basic size.

It should be noted that the upper and lower deviations may have like signs, unlike signs or either deviation may be zero. This permits the basic sizes of mating shafts and holes to be identical.

The older concept of plus tolerances and minus tolerances has an undesirable limitation, in that the basic sizes of mating shafts and holes cannot be identical for clearance fits.

HOLLOW METALLIC WAVEGUIDES

Part 2 : Relevant specifications for ordinary rectangular waveguides

ORDINARY RECTANGULAR WAVEGUIDES – TYPE R

Clause No.	Item
1.	**General**
1.1	*Standardized types* The series of ordinary rectangular waveguides covered by this publication are shown in Table I.
1.2	*Type designation* For these waveguides, the type designation comprises : *a)* The code : 153 IEC-R *b)* A number characterizing a particular size of waveguide. This number expresses approximately in multiples of 100 MHz the geometric mean frequency of the recommended frequency range. Example : 153 IEC-R 100, denotes a 22.860 mm × 10.160 mm (0.900 in × 0.400 in) ordinary rectangular waveguide for general purposes with a centre frequency of approximately 10 GHz in the dominant mode.
1.3	*Frequency range* The frequency range indicated in Table I is from 1.25 to 1.9 times the cut-off frequency in the dominant mode. For any particular type of application, the working frequency range may be smaller or greater than the frequency range given in the table.
2.	**Mechanical requirements** It should be noted that no recommendations are made for the materials to be used for waveguides. The choice of material must be agreed upon between customer and manufacturer.