ICS 33.120.30 SLOVENSKÁ TECHNICKÁ NORMA Január 2016

STN	**Metóda valcovej dutiny na meranie komplexnej permitivity nízkostratových dielektrických tyčí.**	**STN EN 62810** 35 3809

Cylindrical cavity method to measure the complex permittivity of low-loss dielectric rods

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 12/15

Obsahuje: EN 62810:2015, IEC 62810:2015

122193

Úrad pre normalizáciu, metrológiu a skúšobníctvo SR, 2016
Podľa zákona č. 264/1999 Z. z. v znení neskorších predpisov sa môžu slovenské technické normy rozmnožovať a rozširovať iba so súhlasom Úradu pre normalizáciu, metrológiu a skúšobníctvo SR.

EUROPEAN STANDARD **EN 62810**

NORME EUROPÉENNE

EUROPÄISCHE NORM May 2015

ICS 33.120.30

English Version

Cylindrical cavity method to measure the complex permittivity of low-loss dielectric rods (IEC 62810:2015)

Mesure de la permitivité complexe des barreaux diélectriques à faibles pertes par la méthode de la cavité cylindrique (IEC 62810:2015)

Zylindrisches Hohlraumverfahren zur Messung der komplexen Permittivität von verlustarmen dielektrischen Stäben (IEC 62810:2015)

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

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Ref. No. EN 62810:2015 E

Foreword

The text of document 46F/242/CDV, future edition 1 of IEC 62810, prepared by SC 46F, "R.F. and microwave passive components", of IEC TC 46, "Cables, wires, waveguides, R.F. connectors, R.F. and microwave passive components and accessories" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 62810:2015.

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)	2015-12-24
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2018-03-24

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In the official version, for Bibliography, the following note has to be added for the standard indicated:

IEC 60556	NOTE	Harmonised as EN 60556.

IEC 62810

Edition 1.0 2015-02

INTERNATIONAL STANDARD

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Cylindrical cavity method to measure the complex permittivity of low-loss dielectric rods

IEC 62810:2015-02(en)

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IEC 62810

Edition 1.0 2015-02

INTERNATIONAL STANDARD

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Cylindrical cavity method to measure the complex permittivity of low-loss dielectric rods

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FOREWORD

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International Standard IEC 62810 has been prepared by subcommittee 46F: R.F. and microwave passive components, of IEC technical committee 46: Cables, wires, waveguides, R.F. connectors, R.F. and microwave passive components and accessories.

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

CDV	Report on voting
46F/242/CDV	46F/260/RVC

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.

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

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CYLINDRICAL CAVITY METHOD TO MEASURE THE COMPLEX PERMITTIVITY OF LOW-LOSS DIELECTRIC RODS

1 Scope

This International Standard relates to a measurement method for complex permittivity of a dielectric rod at microwave frequency. This method has been developed to evaluate the dielectric properties of low-loss materials in coaxial cables and electronic devices used in microwave systems. It uses the TM_{010} mode in a circular cylindrical cavity and presents accurate measurement results of a dielectric rod sample, where the effect of sample insertion holes is taken into account accurately on the basis of the rigorous electromagnetic analysis.

In comparison with the conventional method described in IEC 60556 [2][1], this method has the following characteristics:

- the values of the relative permittivity ε' and loss tangent $\tan\delta$ of a dielectric rod sample can be measured accurately and non-destructively;
- the measurement accuracy is within 1,0 % for ε' and within 20 % for $\tan\delta$;
- the effect of sample insertion holes is corrected using correction charts presented;
- this method is applicable for the measurements on the following condition:
  - frequency: 1 GHz $\leqq f \leqq$ 10 GHz;
  - relative permittivity: $1 \leqq \varepsilon' \leqq 100$;
  - loss tangent: $10^{-4} \leqq \tan\delta \leqq 10^{-1}$.

2 Normative references

Void.

koniec náhľadu – text ďalej pokračuje v platenej verzii STN

[1] Figures in square brackets refer to the Bibliography.