

STN	Meranie vodivosti tenkých kovových vrstiev pri mikrovlnových a milimetrovlnových frekvenciách Metóda symetrického kruhového diskového rezonátora	STN EN IEC 63616 35 3817
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Measurement of the conductivity for metal thin films at microwave and millimeter-wave frequencies - Balanced-type circular disk resonator method

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. 03/26

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EUROPEAN STANDARD
NORME EUROPÉENNE
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EN IEC 63616

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English Version

**Measurement of the conductivity for metal thin films at
microwave and millimeter-wave frequencies - Balanced-type
circular disk resonator method
(IEC 63616:2025)**

Mesurage de la conductivité des films minces métalliques
aux hyperfréquences et aux fréquences à ondes
millimétriques - Méthode du résonateur à disque circulaire
de type symétrique
(IEC 63616:2025)

Messung der Leitfähigkeit von Metaldünnschichten bei
Mikrowellen- und Millimeterwellenfrequenzen nach dem
symmetrischen Kreisscheibenresonatorverfahren
(IEC 63616:2025)

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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 63616:2026 (E)**European foreword**

The text of document 46F/722/FDIS, future edition 1 of IEC 63616, 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 63616:2026.

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IEC 61788-7:2020 NOTE Approved as EN IEC 61788-7:2020 (not modified)



IEC 63616

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INTERNATIONAL STANDARD

Measurement of the conductivity for metal thin films at microwave and millimeter-wave frequencies - Balanced-type circular disk resonator method

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IEC Secretariat
3, rue de Varembe
CH-1211 Geneva 20
Switzerland

Tel.: +41 22 919 02 11
info@iec.ch
www.iec.ch

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**Measurement of the conductivity for metal thin films
at microwave and millimeter-wave frequencies -
Balanced-type circular disk resonator method**

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IEC 63616 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.

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

Draft	Report on voting
46F/722/FDIS	46F/734/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.

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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/publications.

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- reconfirmed,
- withdrawn, or
- revised.

1 Scope

This document relates to a conductivity measurement method of thin metal films at microwave and millimeter-wave frequencies. This method has been developed to evaluate the conductivity of a metal foil used for adhering to a substrate or the interfacial conductivity of a metal layer formed on a dielectric substrate. It uses higher-order modes of a balanced-type circular disk resonator and provides broadband conductivity measurements by using a single resonator.

In comparison with the conventional method described in IEC 61788-7 [1]¹, this method has the following characteristics:

- the value of the conductivity σ of a metal foil can be measured accurately and non-destructively;
- the value of the interfacial conductivity σ of a metal layer on a dielectric substrate can be measured accurately and non-destructively;
- this method presents broadband measurements by using higher-order modes by one resonator;
- this method is applicable for the measurements under the following conditions:
 - frequency: $10 \text{ GHz} \leq f \leq 170 \text{ GHz}$;
 - conductivity: $10^5 \text{ S/m} \leq \sigma \leq 10^8 \text{ S/m}$.

2 Normative references

There are no normative references in this document.

koniec náhľadu – text ďalej pokračuje v platenej verzii STN

¹ Numbers in square brackets refer to the Bibliography.