

CONSOLIDATED VERSION

VERSION CONSOLIDÉE



Radio frequency cables –

Part 0-1: Guidelines to the design of detail specifications – Coaxial cables

Câbles pour fréquences radioélectriques –

**Partie 0-1: Lignes directrices pour la conception des spécifications particulières –
Câbles coaxiaux**



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**Partie 0-1: Lignes directrices pour la conception des spécifications particulières –
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RADIO FREQUENCY CABLES –

Part 0-1: Guidelines to the design of detail specifications –
Coaxial cables

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This Consolidated version of IEC 60096-0-1 bears the edition number 3.1. It consists of the third edition (2012-10) [documents 46A/1043/FDIS and 46A/1064/RVD] and its amendment 1 (2017-01) [documents 46A/1317/FDIS and 46A/1321/RVD]. The technical content is identical to the base edition and its amendment.

In this Redline version, a vertical line in the margin shows where the technical content is modified by amendment 1. Additions are in green text, deletions are in strikethrough red text. A separate Final version with all changes accepted is available in this publication.

International standard IEC 60096-0-1 has been prepared by subcommittee 46A: Coaxial cables, of IEC technical committee 46: Cables, wires, waveguides, R.F. connectors, R.F. and microwave passive components and accessories.

This third edition constitutes a technical revision.

The significant changes with respect to the previous edition are as follows:

- tables of material constants and factors and have been updated, different equations have been updated and corrected;
- a subclause dealing with the calculation of “Current carrying capacity of coaxial cables” has been added as Subclause 7.7.

A list of all the parts in the IEC 60096 series, published under the general title *Radio frequency cables*, can be found on the IEC website.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

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RADIO FREQUENCY CABLES –**Part 0-1: Guidelines to the design of detail specifications –
Coaxial cables****1 Scope**

This part of IEC 60096 provides guidance for the design of radio frequency coaxial cables with braid, metallic tapes or tubular outer conductors.

2 Normative references

Void.

3 Symbols and numbering**3.1 Register of symbols used**

Symbol	Designation	Unit
α	Total attenuation per unit length, 20 °C	dB/100 m
α_T	Total attenuation per unit length, $T \neq 20$ °C	dB/100 m
α_x	Attenuation due to element x, 20 °C	dB/100 m
β_x	Braid angle of element x	° (degree)
γ_x	Density of the material of element x	g/cm ³
δ_x	Loss angle of the material of element x	rad
ε_x	Relative dielectric permittivity of the material of element x	–
χ_x	Conductivity of the material of element x, 20 °C	m/Ωmm ²
σ_x	Thermal resistivity of the material of element x	K·m/W
B_x	Braid coverage concerning element x	–
c_0	Velocity of propagation in free space	m/s
C	Dielectric diameter	mm
C_x	Capacitance of element x, per unit length	pF/m
d_x	Diameter of individual wires of element x	mm
D_x	Outer diameter of element x	mm
D_{xe}	Electrical effective diameter of element x	mm
D_{xm}	Mean diameter of element x	mm
D	Sheath diameter	mm
D_s	Outer conductor diameter	mm
d	Center conductor diameter	mm
E_2	Maximum permissible voltage gradient of dielectric (peak value)	kV/mm
ε	Surface emissivity (sheathed=0,95, bare=0,35)	
f	Frequency	MHz
h_x	Coating thickness concerning element x	mm
I	Current carrying capacity (Amperes)	
k_x, k_{xy}	Calculation factors according to Tables 1 and 2	–
L_x	Braid lay length concerning element x	mm