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Electromagnetic characteristics of linear cable management systems (CMS)

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National foreword

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The UK participation in its preparation was entrusted to Technical Committee PEL/213, Cable management.

A list of organizations represented on this committee can be obtained on request to its committee manager.

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Electromagnetic characteristics of linear cable management systems (CMS)

Caractéristiques électromagnétiques des systèmes linéaires de câblage

Elektromagnetische Eigenschaften von linearen Kabelführungssystemen

This Technical Specification was approved by CENELEC on 2022-11-21.

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European foreword

This document (CLC/TS 50659:2022) has been prepared by CLC/TC 213, “Cable management systems”.

This document supersedes CLC/TR 50659:2017.

This is a European Technical Specification for cable management products used for electro-technical purposes. It relates to the Council Directives on the approximation of laws, regulations and administrative provisions of the Member States relating to Low Voltage Directive 2014/35/EU through consideration of the essential requirements of this Directive.

This document is supported by separate standards to which references are made.

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Any feedback and questions on this document should be directed to the users’ national committee. A complete listing of these bodies can be found on the CENELEC website.

1 Scope

This document provides test methods for the measurement of the following electromagnetic characteristics of lengthwise cable management systems like conduit systems according to the EN 61386 series, cable trunking systems and cable ducting systems (CTS/CDS) according to the EN 50085 series and cable tray and cable ladder systems according to EN 61537:

— shielding effectiveness of magnetic field,

— transfer impedance.

This document also provides guidance on how these characteristics can be declared and may be used.

Powertrack systems covered by the EN 61534 series are not covered by this edition of the document and can be considered in a new edition.

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.

EN 61000-4-5, *Electromagnetic compatibility (EMC) - Part 4-5: Testing and measurement techniques - Surge immunity test (IEC 61000-4-5)*

EN 61000-5-7, *Electromagnetic compatibility (EMC) - Part 5-7: Installation and mitigation guidelines - Degrees of protection by enclosures against electromagnetic disturbances (EM code)*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/.

3.1
shielding effectiveness
SE
ability of a cable management system to attenuate an electromagnetic signal as it enters or exits the CMS, quantified as the ratio of a signal received (from a transmitter) without the shield, to the signal received with the shield in place

3.2
magnetic field
constituent of an electromagnetic field which is characterized by the magnetic field strength H together with the magnetic flux density B

Note 1 to entry: In French, the term “champ magnétique” is also used for the quantity magnetic field strength.

[SOURCE: IEV 121-11-69]