
Železniške naprave - Zunanje vidne in zvočne opozorilne naprave - 3. del: Vidne opozorilne naprave za mestno železnico

Railway applications - External visible and audible warning devices - Part 3: Visible warning devices for urban rail

Bahnanwendungen - Äußere optische und akustische Warneinrichtungen - Teil 3: Optische Warneinrichtungen für städtische Schienenbahnen

Applications ferroviaires - Dispositifs externes d'avertissement optiques et acoustiques - Partie 3 : Dispositifs d'avertissement optiques pour le rail urbain

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ICS:

45.060.10	Vlečna vozila	Tractive stock
45.140	Oprema za podzemne vlake, tramvaje in lahka tirna vozila	Metro, tram and light rail equipment

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Railway applications - External visible and audible warning devices - Part 3: Visible warning devices for urban rail

Applications ferroviaires - Dispositifs externes
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Dispositifs d'avertissement optiques pour le rail urbain

Bahnwendungen - Äußere optische und akustische
Warneinrichtungen - Teil 3: Optische
Warneinrichtungen für städtische Schienenbahnen

This European Standard was approved by CEN on 6 October 2019.

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European foreword

This document (EN 15153-3:2020) has been prepared by Technical Committee CEN/TC 256 “Railway applications”, the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by July 2020, and conflicting national standards shall be withdrawn at the latest by July 2020.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This series of documents *Railway applications — External visible and audible warning devices* consists of the following parts:

- Part 1: *Head, marker and tail lamps for heavy rail;*
- Part 2: *Warning horns for heavy rail;*
- Part 3: *Visible warning devices for urban rail (this document);*
- Part 4: *Audible warning devices for urban rail.*

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EN 15153-3:2020 (E)

Introduction

This document sets out the requirements for external visible warning devices for urban rail vehicles, as defined in the CEN-CENELEC Guide 26.

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1 Scope

This document defines the functional and technical requirements for exterior visible warning devices for urban rail vehicles as defined in the CEN-CENELEC Guide 26, i.e. metro systems, trams, light rail, and local rail systems.

This document also defines the requirements for testing and conformity assessment.

NOTE The requirements for exterior visible warning devices for heavy rail vehicles are found in EN 15153-1.

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 15153-1:2020, *Railway applications — External visible and audible warning devices – Part 1: Head, marker and tail lamps for heavy rail*

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:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <https://www.iso.org/obp>

3.1

urban guided transport (UGT) systems

system covering metro, tram and light rail, and defined as public transport systems permanently guided at least by one rail, intended for the operation of local, urban and suburban passenger services with self-propelled vehicles and operated either segregated or not from general road and pedestrian traffic

Note 1 to entry: Adapted from CEN-CENELEC Guide 26.

3.2

metro system

UGT system operated on its own right of way and segregated from general road and pedestrian traffic; consequently designed for operations in tunnels, viaducts or on surface level but with physical separation in such a way that inadvertent access is not possible

Note 1 to entry: In different parts of the world, Metro systems are also known as the underground, the subway or the tube. Rail systems with specific construction issues operating on a segregated guideway (e.g. monorail, rack railways) are also treated as Metros as long as they are designated as part of the urban public transport network.

Note 2 to entry: Adapted from CEN-CENELEC Guide 26.

3.3

tram

UGT system not segregated from general road and pedestrian traffic, which shares its right of way with general road and/or pedestrian traffic and is therefore embedded in its relevant national road traffic legislation (highway codes and specific adaptations)

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Note 1 to entry: Adapted from CEN-CENELEC Guide 26.

3.4 light rail

UGT system operated on parts of the system not segregated from general road and pedestrian traffic, and on parts of the system with segregated right-of-way. The segregation may include some sections of line where inadvertent access is not possible

Note 1 to entry: Adapted from CEN-CENELEC Guide 26.

3.5 local rail system

system connecting city centres with their suburban hinterland or regional local centres, operated on rights of way, which are basically segregated from general road and/or pedestrian traffic and/or which can be declared by law as independent from the public environment, even if they are not segregated by location, form of construction or appropriate measures

Note 1 to entry: Local rail systems, by national decision complying with Article 1.3 (a) or (b) of Directive 2008/57/EC, may be excluded from the European Community Rail System.

Note 2 to entry: For historical reasons local rail systems may be strongly influenced by conventional railway parameters and their operations procedures.

Note 3 to entry: Adapted from CEN-CENELEC Guide 26.

3.6 tram/train

vehicle designed for combined use on both a light-rail infrastructure and a heavy-rail infrastructure

[SOURCE: DIRECTIVE (EU) 2016/797, Article 2, §18, modified – "tram-train means a", at the start of the definition, deleted.]

3.7 vehicle

the complete assembly of one or more cars

3.8 tramcar

one car of a tram

3.9 head lamp

device fitted to the front of the vehicle that emits white light, intended to provide visual warning of an approaching vehicle, and/or to illuminate the area immediately in front of the vehicle

[SOURCE: EN 15153-1:2020, 3.2, modified – "train" replaced by "vehicle", "line and lineside", at the end of the definition, replaced by "area immediately in front of the vehicle".]

3.10 daytime running lamp

lamp facing in a forward direction used to make the vehicle more easily visible when driving during daytime

[SOURCE: UN ECE Regulation 87]

3.11**direction indicator**

lamp used to indicate to other road users that the driver intends to change direction to the right or to the left

3.12**stop lamp**

signal to indicate to other road users to the rear of the vehicle that its driver is applying the brake

Note 1 to entry: Stop lamps are not required to be lit when the vehicle is not in service, for example when parked.

3.13**hazard warning signal**

simultaneous operation of all of a vehicle's direction indicator lamps to show that the vehicle temporarily constitutes a special danger to other road users

3.14**retro-reflector**

device used to indicate the presence of a vehicle by the reflection of light emanating from a light source not connected to the vehicle, the observer being situated near the source

3.15**front fog lamp**

lamp used to improve the illumination of the area ahead of the vehicle in case of fog or any similar condition of reduced visibility

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3.16**rear fog lamp**

lamp used to make the vehicle more easily visible from the rear in dense fog

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3.17**side marker lamp**

lamp used to indicate the presence of the vehicle when viewed from the side

3.18**outline marker lamp**

lamp fitted near to the extreme outer edge and as close as possible to the top of the vehicle and intended to indicate clearly the vehicle's overall width

Note 1 to entry: This lamp is intended, for certain vehicles, to draw particular attention to the bulk of the vehicle.

3.19**marker lamp**

device fitted to the front of the vehicle that emits white light, intended to indicate the presence of a vehicle, to provide visual warning of an approaching vehicle and/or to illuminate retro-reflective lineside signs

[SOURCE: EN 15153-1:2020, 3.3, modified – "train" replaced by "vehicle" (three times), Note 1 to entry deleted.]

EN 15153-3:2020 (E)**3.20****tail lamp**

device fitted to the rear of the vehicle that emits red light, intended to indicate the presence of the rail vehicle

[SOURCE: EN 15153-1:2020, 3.4, modified – "train" replaced by "vehicle", "train" replaced by "rail vehicle", "and to indicate the end of the complete train formation" deleted, Note 1 to entry deleted.]

3.21**reversing lamp**

lamp fitted to the rear of the vehicle, intended to provide visual warning of a reversing vehicle, and/or to illuminate the area immediately to the rear of the vehicle

[SOURCE: UN ECE Regulation 23]

3.22**light source**

system for generating light in a lamp

[SOURCE: EN 15153-1:2020, 3.6]

3.23**optical axis of lamp**

axis defined by the manufacturer against which the luminous intensity requirements are assessed

[SOURCE: EN 15153-1:2020, 3.8]

3.24**lit area**

active optical area of a lamp projected into a plane perpendicular to the optical axis

[SOURCE: EN 15153-1:2020, 3.10, modified – "onto" replaced by "into".]

3.25**geometric centre**

location defined as the 'centre of gravity' for the lit area of the lamp

Note 1 to entry: For irregular shaped lamps, this may be outside the lit area.

3.26**contractor**

organization responsible for

- the design, manufacture or supply of the visible warning devices; and
- the purchase, installation or use of the visible warning devices

4 Symbols and abbreviations

For the purposes of this document, the following symbols and abbreviations apply.

cd·m⁻² Candela per square metre, the SI unit of luminance

LED Light Emitting Diode

5 Requirements

5.1 General

The technical requirements for visible warning devices on metro vehicles, trams, light rail, and local rail vehicles are set out in 5.2, 5.3, 5.4 and 5.5 (respectively). The testing requirements are set out in Clause 6.

The application requirements are set out in Table 1.

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