



SLOVENSKI STANDARD

SIST EN 62707-1:2016

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LED - Razvrščanje po parametrih - 1. del: Splošne zahteve in bela mreža (IEC 62707-1:2013)

LED - Binning - Part 1: General requirements and white grid (IEC 62707-1:2013)

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Ta slovenski standard je istoveten z: EN 62707-1:2014

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29.140.01 Žarnice na splošno Lamps in general

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 62707-1

March 2014

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English version

**LED-binning -
Part 1: General requirements and white colour grid
(IEC 62707-1:2013)**

Tri des LED -
Partie 1: Exigences générales et matrice
de couleur blanche
(CEI 62707-1:2013)

LED-Binning -
Allgemeine Anforderungen und
Weißfelder
(IEC 62707-1:2013)

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

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Foreword

The text of document 34A/1702/FDIS, future edition 1 of IEC 62707-1, prepared by SC 34A, "Lamps", of IEC/TC 34, "Lamps and related equipment" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 62707-1:2014.

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) 2014-10-16
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2017-01-16

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- <https://standards.iteh.ai/catalog/standards/sist/68b39495-f730-45d9-8b09-715b29205e81/iec-62707-1-2016>
- | | |
|-------------|------------------------------------|
| ISO 11664-1 | NOTE Harmonized as EN ISO 11664-1. |
| ISO 11664-5 | NOTE Harmonized as EN ISO 11664-5. |

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC/TS 62504	-	General lighting - LEDs and LED modules - Terms and definitions	- -	-

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NORME INTERNATIONALE



LED-binning – **iTeh STANDARD PREVIEW**
Part 1: General requirements and white colour grid
(standards.iteh.ai)

Tri des LED – **SIST EN 62707-1:2016**
Partie 1: Exigences générales et matrice de couleur blanche
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INTERNATIONAL ELECTROTECHNICAL COMMISSION

LED-BINNING –

Part 1: General requirements and white colour grid

FOREWORD

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International Standard IEC 62707-1 has been prepared by subcommittee 34A: Lamps, of IEC technical committee 34: Lamps and related equipment.

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

FDIS	Report on voting
34A/1702/FDIS	34A/1736/RVD

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 first edition cancels and replaces IEC/PAS 62707-1, published in 2011.

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

A list of all parts in the IEC 62707 series, published under the general title *LED-binning*, can be found on the IEC website.

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

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

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LED-BINNING –

Part 1: General requirements and white colour grid

1 Scope

This part of IEC 62707 specifies general requirements, a grid and a corresponding code for the colour binning of white LED packages emitting incoherent, visible radiation. It applies for LED packages.

Other parts of the IEC 62707 series covering chromaticity of coloured LED packages, luminous flux/luminous intensity, colour rendering and forward voltage are in preparation or under consideration.

NOTE 1 This International Standard does not apply for LED modules, LED lamps and LED luminaires.

NOTE 2 Even though the words "white light" are used, the purpose of this International Standard is not to define "white light", but to specify a grid and a corresponding colour code for the colour binning of white LED packages emitting incoherent, visible radiation. The area covered by the grid may differ from the definition of white light given in other standards or regulations.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC/TS 62504, *General lighting – LEDs and LED modules – Terms and definitions*

3 Terms and Definitions

For the purposes of this document, the terms and definitions given in IEC/TS 62504, as well as the following apply.

3.1 bin

restricted range of LED package performance characteristics used to delimit a subset of LED packages near a nominal LED package performance as identified by chromaticity, photometric performance and forward voltage

3.2 grid

entity representing colour coordinates and specified by a set of grid points

3.3 grid point

colour coordinate in u' , v' colour space (or its equivalent in the x , y colour space) identified by two discrete indices, the first index p counting steps along the Planckian locus, and its extension beyond the high temperature boundary towards blue colours and second index j along Judd isothermal lines

Note 1 to entry: The u' , v' colour space is specified in ISO 11664-5 CIE S 014-5/E. The x , y colour space is specified in ISO 11664-1 CIE S 014-1/E.

3.4**white color bin**

area inside a quadrilateral defined by four grid points

4 Chromaticity bins for white LED packages**4.1 Grid for white LED packages**

The grid shall be aligned in equidistant steps along the Planckian locus, and its extension beyond the high temperature boundary towards blue colours, in the first direction (Planck-axis) and in equidistant steps along the Judd isothermal lines in the second direction (Judd-axis).

The origin of the grid shall be on the Planckian locus at T_{∞} (u'/v') = (0,180 06/0,395 28).

The distance between adjacent grid points along the Planckian locus and its extension beyond the high temperature boundary towards blue colours and along Judd isothermal lines in the u' , v' colour space shall be $s = 0,001 74$. Steps along the Planckian locus are counted with a positive index p , steps toward blue with a negative index p . Steps towards the saturated colour line (gamut) along the Judd-axis are counted with a positive index j and with negative index j in the opposite direction.

NOTE 1 $s = 0,0017 4$ has been chosen as providing for the best alignment with existing chromaticity requirements.

The Planckian locus shall be extended beyond T_{∞} (towards blue) as follows (see Figure 1):

- Quadratic Bézier locus defined by three points:
 - P_1 : T_{∞} (u'/v') = (0,180 06/0,395 28)
 - P_2 : (u'/v') = (0,141 22/0,155 93)
 - P_3 : (u'/v') = (0,256 80/0,016 59)
- The Bézier locus is $B(t) = P_1 \times (1-t)^2 + 2P_2 \times t \times (1-t) + P_3 \times t^2$; $t \in (0;1)$.

NOTE 2 P_2 is the intersection of spectral locus of the u' , v' colour space and tangent of Planckian locus at T_{∞} in direction of blue wavelength.

NOTE 3 P_3 corresponds to a wavelength of 380 nm on the spectral locus of the u' , v' colour space.