

Digital addressable lighting interface - Part 304:  
Particular requirements - Input devices - Light sensor

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

See Eesti standard EVS-EN 62386-304:2017 sisaldab Euroopa standardi EN 62386-304:2017 ingliskeelset teksti.	This Estonian standard EVS-EN 62386-304:2017 consists of the English text of the European standard EN 62386-304:2017.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 15.09.2017.	Date of Availability of the European standard is 15.09.2017.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile [standardiosakond@evs.ee](mailto:standardiosakond@evs.ee).

ICS 29.140.50, 29.140.99

Standardite reprodutseerimise ja levitamise õigus kuulub Eesti Standardikeskusele

Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonsesse süsteemi või edastamine ükskõik millises vormis või millisel teel ilma Eesti Standardikeskuse kirjaliku loata on keelatud.

Kui Teil on küsimusi standardite autorikaitse kohta, võtke palun ühendust Eesti Standardikeskusega:  
Koduleht [www.evs.ee](http://www.evs.ee); telefon 605 5050; e-post [info@evs.ee](mailto:info@evs.ee)

The right to reproduce and distribute standards belongs to the Estonian Centre for Standardisation

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, without a written permission from the Estonian Centre for Standardisation.

If you have any questions about copyright, please contact Estonian Centre for Standardisation:

Homepage [www.evs.ee](http://www.evs.ee); phone +372 605 5050; e-mail [info@evs.ee](mailto:info@evs.ee)

ICS 29.140.50; 29.140.99

English Version

Digital addressable lighting interface -  
Part 304: Particular requirements - Input devices -  
Light sensor  
(IEC 62386-304:2017)

Interface d'éclairage adressable numérique -  
Partie 304: Exigences particulières - Dispositifs d'entrée -  
Capteur de luminosité  
(IEC 62386-304:2017)

Digital adressierbare Schnittstelle für die Beleuchtung -  
Teil 304: Besondere Anforderungen - Eingabegeräte -  
Lichtsensor  
(IEC 62386-304:2017)

This European Standard was approved by CENELEC on 2017-06-23. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.



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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

## European foreword

The text of document 34C/1314/FDIS, future edition 1 of IEC 62386-304, prepared by SC 34C "Auxiliaries for lamps", of IEC/TC 34 "Lamps and related equipment" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 62386-304:2017.

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) 2018-03-23
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2020-06-23

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

## Endorsement notice

The text of the International Standard IEC 62386-304:2017 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 61347	NOTE	Harmonized in EN 61347 series.
IEC 61347-1	NOTE	Harmonized as EN 61347-1.

## Annex ZA

(normative)

### Normative references to international publications with their corresponding European publications

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.

NOTE 1 When an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: [www.cenelec.eu](http://www.cenelec.eu).

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 62386-101	2014	Digital addressable lighting interface -	EN 62386-101	2014
+ A1	— <sup>1)</sup>	Part 101: General requirements - System components	-	-
IEC 62386-103	2014	Digital addressable lighting interface -	EN 62386-103	2014
+ A1	— <sup>2)</sup>	Part 103: General requirements - Control devices	-	-
IEC 62386-333	— <sup>3)</sup>	Digital addressable lighting interface - Part 333: Particular requirements for control devices - Manual configuration (feature type 33)	EN 62386-333	— <sup>4)</sup>

---

1) Under preparation. Stage at the time of publication: IEC ACDV 62386-101/AMD1:2017.

2) Under preparation. Stage at the time of publication: IEC ACDV 62386-103/AMD1:2017.

3) Under preparation. Stage at the time of publication: IEC CCDV 62386-333:2017.

4) Under preparation. Stage at the time of publication: prEN 62386-333:2016.

## CONTENTS

FOREWORD.....	4
INTRODUCTION.....	6
1 Scope.....	8
2 Normative references .....	8
3 Terms and definitions .....	8
4 General.....	9
4.1 General.....	9
4.2 Version number .....	9
4.3 Insulation.....	9
5 Electrical specification.....	9
6 Interface power supply .....	9
7 Transmission protocol structure.....	9
8 Timing .....	9
9 Method of operation.....	10
9.1 General.....	10
9.2 Instance type .....	10
9.3 Input signal and value.....	10
9.4 Events .....	10
9.4.1 Priority use .....	10
9.4.2 Bus usage .....	10
9.4.3 Encoding .....	10
9.4.4 Event configuration.....	11
9.4.5 Event generation .....	11
9.5 Configuring the input device.....	13
9.5.1 Using the report timer .....	13
9.5.2 Using the deadtime timer.....	13
9.5.3 Setting the timers .....	13
9.5.4 Setting the hysteresis .....	13
9.5.5 Manual configuration .....	14
9.6 Exception handling.....	15
9.6.1 Physical sensor failure.....	15
9.6.2 Manufacturer specific errors .....	15
9.6.3 Error value.....	15
10 Declaration of variables .....	15
11 Definition of commands .....	16
11.1 General.....	16
11.2 Overview sheets .....	17
11.2.1 General .....	17
11.2.2 Standard commands.....	17
11.3 Event messages .....	17
11.3.1 INPUT NOTIFICATION ( <i>device/instance, event</i> ).....	17
11.3.2 POWER NOTIFICATION ( <i>device</i> ) .....	17
11.4 Device control instructions .....	17
11.5 Device configuration instructions.....	17
11.6 Device queries .....	17
11.7 Instance control instructions .....	17

11.8	Instance configuration instructions .....	18
11.8.1	General .....	18
11.8.2	SET EVENT FILTER ( <i>DTR0</i> ) .....	18
11.8.3	SET REPORT TIMER ( <i>DTR0</i> ).....	18
11.8.4	SET HYSTERESIS ( <i>DTR0</i> ).....	18
11.8.5	SET DEADTIME TIMER ( <i>DTR0</i> ) .....	18
11.8.6	SET HYSTERESIS MIN ( <i>DTR0</i> ).....	18
11.9	Instance queries .....	18
11.9.1	General .....	18
11.9.2	QUERY DEADTIME TIMER .....	18
11.9.3	QUERY INSTANCE ERROR .....	18
11.9.4	QUERY REPORT TIMER.....	19
11.9.5	QUERY HYSTERESIS .....	19
11.9.6	QUERY HYSTERESIS MIN.....	19
11.10	Special commands.....	19
	Bibliography.....	20
	Figure 1 – IEC 62386 graphical overview .....	6
	Figure 2 – Example of <i>inputValue</i> changes and resultant hysteresis bands .....	12
	Table 1 – Illuminance level events .....	10
	Table 2 – Event filter.....	11
	Table 3 – Event timer setting .....	13
	Table 4 – Default and reset values for “ <i>hysteresisMin</i> ” .....	14
	Table 5 – “ <i>manualCapabilityInstance3xx</i> ” values .....	15
	Table 6 – “ <i>instanceErrorByte</i> ” values .....	15
	Table 7 – Declaration of device variables.....	16
	Table 8 – Restrictions to instance variables defined in IEC 62386-103:2014 and IEC 62386-103:2014/AMD1:— .....	16
	Table 9 – Declaration of instance variables.....	16
	Table 10 – Standard commands.....	17

## INTRODUCTION

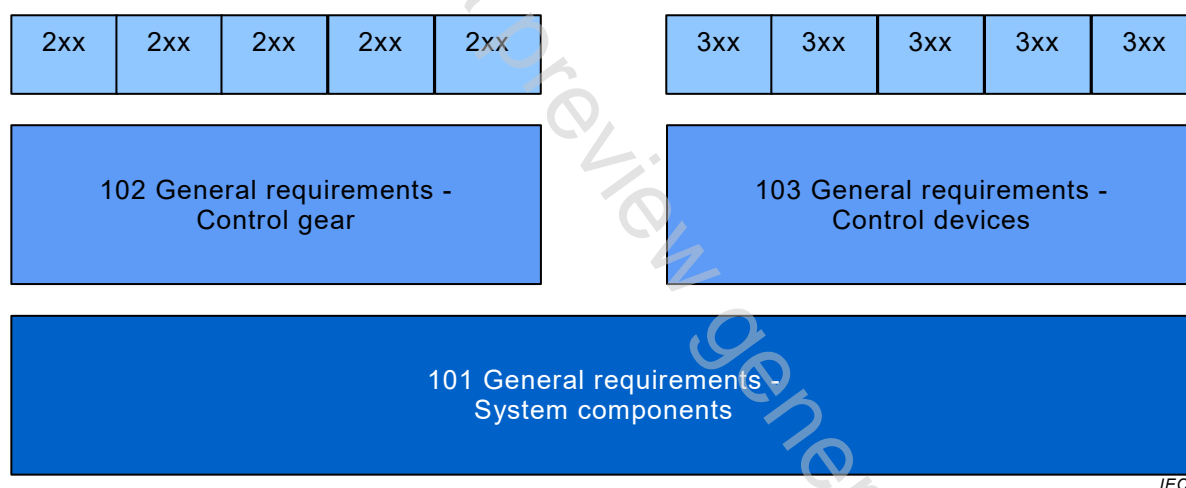
IEC 62386 contains several parts, referred to as series. The 1xx series includes the basic specifications. Part 101 contains general requirements for system components, Part 102 extends this information with general requirements for control gear and Part 103 extends it further with general requirements for control devices.

The 2xx parts extend the general requirements for control gear with lamp specific extensions (mainly for backward compatibility with Edition 1 of IEC 62386) and with control gear specific features.

The 3xx parts extend the general requirements for control devices with input device specific extensions describing the instance types as well as some common features that can be combined with multiple instance types.

This first edition of IEC 62386-304 is intended to be used in conjunction with IEC 62386-101:2014, IEC 62386-101:2014/AMD1:—, IEC 62386-103:2014 and IEC 62386-103:2014/AMD1:—. The division of IEC 62386 into separately published parts provides for ease of future amendments and revisions. Additional requirements will be added as and when a need for them is recognized.

The setup of the standards is graphically represented in Figure 1 below.



**Figure 1 – IEC 62386 graphical overview**

This document, and the other parts that make up the IEC 62386-300 series, in referring to any of the clauses of IEC 62386-1XX, specifies the extent to which such a clause is applicable and the order in which the tests are to be performed; the parts also include additional requirements, as necessary.

Where the requirements of any of the clauses of IEC 62386-1XX are referred to in this document by the sentence “The requirements of IEC 62386-1XX, Clause “n” apply”, this sentence is to be interpreted as meaning that all requirements of the clause in question of Part 1XX apply, except any which are clearly inapplicable.

The standardization of the control interface for control devices is intended to achieve compatible co-existence and multi-master operation between electronic control gear and lighting control devices, below the level of building management systems. This document describes a method of implementing light sensors.



All numbers used in this document are decimal numbers unless otherwise noted. Hexadecimal numbers are given in the format 0xVV, where VV is the value. Binary numbers are given in the format XXXXXXXXb or in the format XXXX XXXX, where X is 0 or 1; “x” in binary numbers means “don't care”.

The following typographic expressions are used:

Variables: “*variableName*” or “*variableName[3:0]*”, giving only bits 3 to 0 of “*variableName*”.

Time value is expressed in minutes and seconds: mm:ss

Range of values: [lowest, highest]

Command: “COMMAND NAME”

This document is a preview generated by EVS