



Ref. Certif. No.

DE 2-018509

IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST
CERTIFICATES FOR ELECTRICAL EQUIPMENT
(IECEE) CB SCHEME

SYSTEME CEI D'ACCEPTATION MUTUELLE DE
CERTIFICATS D'ESSAIS DES EQUIPEMENTS
ELECTRIQUES (IECEE) METHODE OC

CB TEST CERTIFICATE
CERTIFICAT D'ESSAI OC

Product
Produit

LED Street Light

Name and address of the applicant
Nom et adresse du demandeur

AOK LED Light Company Limited
Building 1 St George's Science
and Technology Industrial Park, Outer Ring Road Bao'an, Shenzhen,
Guangdong, China

Name and address of the manufacturer
Nom et adresse du fabricant

AOK LED Light Company Limited
Building 1 St George's Science
and Technology Industrial Park, Outer Ring Road Bao'an, Shenzhen,
Guangdong, China

Name and address of the factory
Nom et adresse de l'usine

AOK LED Light Company Limited
Building 1 St George's Science
and Technology Industrial Park, Outer Ring Road Bao'an, Shenzhen,
Guangdong, China

Note: When more than one factory, please report on page 2
Note: Lorsque il y plus d'une usine, veuillez utiliser la 2^{ème} page

Ratings and principal characteristics
Valeurs nominales et caractéristiques principales

AC 100-240V; 50/60Hz; Class I; IP66
1) 40W; 2) 80W; 3) 120W; 4) 160W; 5) 200W; 6) 240W

Trade mark (if any)
Marque de fabrique (si elle existe)

AOK

Model/type Ref.
Ref. de type

1) AOK-30WiL; AOK-40WiL; 2) AOK-60WiL; AOK-80WiL;
3) AOK-90WiL; AOK-120WiL; 4) AOK-160WiL;
5) AOK-150WiL; AOK-200WiL; 6) AOK-180WiL; AOK-240WiL

Additional information (if necessary may also be
reported on page 2)
Les Information complémentaire (si nécessaire,
peuvent être indiqués sur la 2^{ème} page)

-see also test report ref. no. 17044008 001.

PUBLICATION**EDITION**

A sample of the product was tested and found
to be in conformity with
Un échantillon de ce produit a été essayé et a été
considéré conforme à la

IEC 60598-1:2008
IEC 60598-2-3:2002 + A1
for national deviations see test report

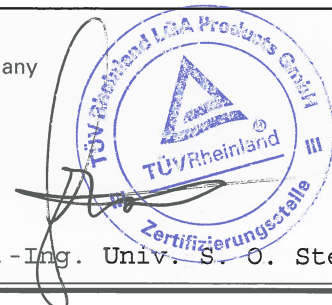
As shown in the Test Report Ref. No. which forms part
of this Certificate
Comme indiqué dans le Rapport d'essais numéro de
référence qui constitue une partie de ce Certificat

17044008 001

This CB Test Certificate is issued by the National Certification Body
Ce Certificat d'essai OC est établi par l'Organisme National de Certification



TÜV Rheinland LGA Products GmbH
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Date: 19.01.2015

Signature:

Dipl.-Ing. Univ. S. O. Steinke



Test Report issued under the responsibility of:



TEST REPORT
IEC 60598-2-3
Luminaires
Part 2: Particular requirements:
Section Three – Luminaires for road and street lighting

Report Number: 17044008 001
Date of issue: 2015-01-13
Total number of pages: 41 pages

Applicant's name.....: AOK LED Light Company Limited
Address: Building 1 St George's Science and Technology Industrial Park,
Outer Ring Road Bao'an, Shenzhen, Guangdong, China

Test specification:

Standard: IEC 60598-2-3(Third Edition):2002 + A1:2011 used in conjunction
with IEC 60598-1(Seventh Edition):2008
Test procedure: CB Scheme
Non-standard test method.....: N/A


Test Report Form No.....: IEC60598_2_3I
Test Report Form(s) Originator.....: Intertek Semko AB
Master TRF.....: 2013-03



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If this Test Report Form is used by non-IECEE members, the IECEE/IEC logo and the reference to the CB Scheme procedure shall be removed.

This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

Test item description: LED Street Light
Trade Mark: 
Manufacturer.....: Same as applicant
Model/Type reference: See model list
Ratings: Input:100-240VAC, 50/60Hz
(for detail see general product information)

Testing procedure and testing location:	
<input checked="" type="checkbox"/> CB Testing Laboratory:	TUV Rheinland (Shenzhen) Co., Ltd.
Testing location/ address	3-4/F., Building 1, Cybio Technology Building, Langshaner Road, 5th Industrial Area, High-Tech Industrial Park(North Section), Nanshan District, Shenzhen, Guangdong, China
<input type="checkbox"/> Associated CB Laboratory:	
Testing location/ address	
Tested by (name + signature)	Archer Sun 
Approved by (+ signature)	Winston Chen 
<hr/>	
<input type="checkbox"/> Testing procedure: TMP	
Testing location/ address	
Tested by (name + signature)	
Approved by (+ signature)	
<hr/>	
<input type="checkbox"/> Testing procedure: WMT	
Testing location/ address	
Tested by (name + signature)	
Witnessed by (+ signature)	
Approved by (+ signature)	
<hr/>	
<input type="checkbox"/> Testing procedure: SMT	
Testing location/ address	
Tested by (name + signature)	
Approved by (+ signature)	
Supervised by (+ signature)	

List of Attachments (including a total number of pages in each attachment):

Attachment 1: CB report No. 16065601 001 of IEC62471: 2006 with EN62471: 2008 deviation.

Attachment 2: 3 pages of photos.

Summary of testing:

Tests performed (name of test and test clause):

1. Tests according to IEC 60598-2-3:2002 + A1:2011, IEC 60598-1:2008.
2. European group differences and national differences, see annex 5.
3. LED modules for general lighting- safety specification IEC/EN 62031, see annex 6.
4. Photobiological safety of lamps and lamp systems were according to standard IEC 62471:2006, EN 62471: 2008 and EU Directive 2006/25/EC, see annex 7.

Testing location:

For IEC 60598-2-3:

TUV Rheinland (Shenzhen) Co., Ltd.

3-4/F., Building 1, Cybio Technology Building,
Langshaner Road, 5th Industrial Area, High-Tech
Industrial Park(North Section), Nanshan District,
Shenzhen, Guangdong, China

For IEC 62471:

TÜV Rheinland (Guangdong) Ltd.

No.199 Kezhu Road, Guangzhou Science City
510663 Guangzhou, China

Summary of compliance with National Differences:

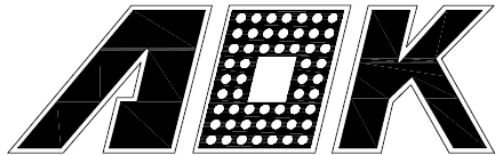
List of countries addressed: DE

DE=Germany

The product fulfils the requirements of EN 60598-2-3:2003+A1:2011 used in conjunction with EN 60598-1:2008+A11:2009.

Copy of marking plate

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.



LED Street light

MODEL : AOK-240WiL

- 1 . Power : Max 240W
- 2 . Input Voltage : AC100-240V 50/60Hz
- 3 . Input Current : 2.68A max
- 4 . CCT : 5700K
- 5 . IP66

Quality You Can Trust

Do not disassemble if non-professional

MADE IN CHINA

Note: other model labels are the same design, except model name and rating correspondingly.

Test item particulars	
Classification of installation and use	LED street light
Supply Connection	Supply cord
.....	
.....	
Possible test case verdicts:	
- test case does not apply to the test object	N/A
- test object does meet the requirement.....	P (Pass)
- test object does not meet the requirement.....	F (Fail)
Testing	
Date of receipt of test item	2014-11-04
Date (s) of performance of tests.....	2014-11-04 to 2014-12-31
General remarks:	
The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory. "(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report. Throughout this report a <input checked="" type="checkbox"/> comma / <input type="checkbox"/> point is used as the decimal separator. Clause numbers between brackets refer to clauses in IEC 60598-1	
Manufacturer's Declaration per sub-clause 4.2.5 of IEC 60598-1:	
The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided.....	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> Not applicable
When differences exist; they shall be identified in the General product information section.	
Name and address of factory (ies)	AOK LED Light Company Limited Building 1 St George's Science and Technology Industrial Park, Outer Ring Road Bao'an, Shenzhen, Guangdong, China

General product information:

Product: LED street light, 100-240VAC, 50/60Hz, Class I, IP66, suitable for mounting on normal flammable surface.

1. All models listed below are LED street light with approved LED drivers with SELV output. For detail, see components list.
2. All the models have the similar appearance, and the same mechanical construction and electrical construction, only quantities of LED module and LED driver are different;
3. LED modules enclosed by the same way for all modules have the same LED chip.
4. CCT. 2700-6500K for all models.
5. For models have the same power are only different in model name.

Model list:

Model	Power	Driver	LED quantity	Module quantity	Dimension (mm)
AOK-30WiL	40W	HLG-60H-48A	14	1 Module	495x300x107
AOK-40WiL					
AOK-60WiL	80W	HLG-100H-48A	28	2 Module	576x300x107
AOK-80WiL					
AOK-90WiL	120W	HLG-150H-48A	42	3 Module	657x300x107
AOK-120WiL					
AOK-160WiL	160W	HLG-185H-48A	56	4 Module	738x300x107
AOK-150WiL	200W	HLG-240H-48A	70	5 Module	819x300x107
AOK-200WiL					
AOK-180WiL	240W	HLG-240H-48A	84	6 Module	900x300x107
AOK-240WiL					

IEC 60598-2-3			
Clause	Requirement + Test	Result - Remark	Verdict
3.2 (0)	GENERAL TEST REQUIREMENTS		—
3.2 (0.1)	Information for luminaire design considered	Standard Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	—
3.2 (0.3)	More sections applicable	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	—
3.4 (2)	CLASSIFICATION		—
3.4 (2.2)	Type of protection	Class I	—
3.4 (2.3)	Degree of protection	IP66	—
3.4 (2.4)	Luminaire suitable for direct mounting on normally flammable surfaces	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	—
3.4 (2.5)	Luminaire for normal use	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	—
	Luminaire for rough service	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	—
3.4 (-)	Modes of installation of road or street lighting		—
	- on a pipe	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	—
	- on a mast arm	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	—
	- on a post top	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	—
	- on span or suspension wires	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	—
	- on a wall	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	—
3.5 (3)	MARKING		—
3.5 (3.2)	Mandatory markings		P
	Position of the marking	On the enclosure	P
	Format of symbols/text		P
3.5 (3.3)	Additional information		P
	Language of instructions	English	P
3.5 (3.3.1)	Combination luminaires		N/A
3.5 (3.3.2)	Nominal frequency in Hz	50/60Hz	P
3.5 (3.3.3)	Operating temperature		N/A
3.5 (3.3.4)	Symbol or warning notice		N/A
3.5 (3.3.5)	Wiring diagram		N/A
3.5 (3.3.6)	Special conditions		N/A

IEC 60598-2-3			
Clause	Requirement + Test	Result - Remark	Verdict
3.5 (3.3.7)	Metal halide lamp luminaire – warning		N/A
3.5 (3.3.8)	Limitation for semi-luminaires		N/A
3.5 (3.3.9)	Power factor and supply current		P
3.5 (3.3.10)	Suitability for use indoors		N/A
3.5 (3.3.11)	Luminaires with remote control		N/A
3.5 (3.3.12)	Clip-mounted luminaire – warning		N/A
3.5 (3.3.13)	Specifications of protective shields		N/A
3.5 (3.3.14)	Symbol for nature of supply		N/A
3.5 (3.3.15)	Rated current of socket outlet		N/A
3.5 (3.3.16)	Rough service luminaire		N/A
3.5 (3.3.17)	Mounting instruction for type Y, type Z and some type X attachments		N/A
3.5 (3.3.18)	Non-ordinary luminaires with PVC cable		N/A
3.5 (3.3.19)	Protective conductor current in instruction if applicable		N/A
3.5 (3.3.20)	Provided with information if not intended to be mounted within arms reach		N/A
3.5 (3.4)	Test with water	15 s	P
	Test with hexane	15 s	P
	Legible after test		P
	Label attached		P
3.5 (-)	Additional information in instruction leaflet		—
	a) Design attitude		P
	b) Weight		P
	c) Overall dimensions		P
	d) Maximum projected area if applicable		P
	e) Cross-sectional area of wires if applicable		N/A
	f) Suitability for indoors use		N/A
	g) Dimensions of the compartment		N/A
	h) Torque setting to be applied to bolts or screws	17 Nm	P
	i) Maximum mounting height	15 m	P

IEC 60598-2-3			
Clause	Requirement + Test	Result - Remark	Verdict
3.6 (4)	CONSTRUCTION		—
3.6 (4.2)	Components replaceable without difficulty		N/A
3.6 (4.3)	Wireways smooth and free from sharp edges		P
3.6 (4.4)	Lampholders		—
3.6 (4.4.1)	Integral lampholder		N/A
3.6 (4.4.2)	Wiring connection		N/A
3.6 (4.4.3)	Lampholder for end-to-end mounting		N/A
3.6 (4.4.4)	Positioning		N/A
	- pressure test (N)		N/A
	After test the lampholder comply with relevant standard sheets and show no damage		N/A
	After test on single-capped lampholder the lampholder have not moved from its position and show no permanent deformation		N/A
	- bending test (N)		N/A
	After test the lampholder have not moved from its position and show no permanent deformation		N/A
3.6 (4.4.5)	Peak pulse voltage		N/A
3.6 (4.4.6)	Centre contact		N/A
3.6 (4.4.7)	Parts in rough service luminaires resistant to tracking		N/A
3.6 (4.4.8)	Lamp connectors		N/A
3.6 (4.4.9)	Caps and bases correctly used		N/A
3.6 (4.5)	Starter holders		—
	Starter holder in luminaires other than class II		N/A
	Starter holder class II construction		N/A
3.6 (4.6)	Terminal blocks		—
	Tails		N/A
	Unsecured blocks		N/A
3.6 (4.7)	Terminals and supply connections		—
3.6 (4.7.1)	Contact to metal parts		N/A
3.6 (4.7.2)	Test 8 mm live conductor		N/A

IEC 60598-2-3			
Clause	Requirement + Test	Result - Remark	Verdict
	Test 8 mm earth conductor		N/A
3.6 (4.7.3)	Terminals for supply conductors	Soldered connection	P
3.6 (4.7.3.1)	Welded connections:		—
	- stranded or solid conductor		N/A
	- spot welding		N/A
	- welding between wires		N/A
	- Type Z attachment		N/A
	- mechanical test according to 15.8.2		N/A
	- electrical test according to 15.9		N/A
	- heat test according to 15.9.2.3 and 15.9.2.4		N/A
3.6 (4.7.4)	Terminals other than supply connection	Screwless terminal and soldered connection	P
3.6 (4.7.5)	Heat-resistant wiring/sleeves		N/A
3.6 (4.7.6)	Multi-pole plug		N/A
	- test at 30 N		N/A
3.6 (4.8)	Switches:		—
	- adequate rating		N/A
	- adequate fixing		N/A
	- polarized supply		N/A
	- compliance with 61058-1 for electronic switches		N/A
3.6 (4.9)	Insulating lining and sleeves		—
3.6 (4.9.1)	Retainment		P
	Method of fixing :	Form a part of luminaire	P
3.6 (4.9.2)	Insulated linings and sleeves		—
	Resistant to a temperature > 20 °C to the wire temperature or		N/A
	a) & c) Insulation resistance and electric strength		N/A
	b) Ageing test. Temperature (°C) :		N/A
3.6 (4.10)	Insulation of Class II luminaires		—
3.6 (4.10.1)	No contact, mounting surface – accessible metal parts – wiring of basic insulation		N/A

IEC 60598-2-3			
Clause	Requirement + Test	Result - Remark	Verdict
	Safe installation fixed luminaires		N/A
	Capacitors and switches		N/A
	Interference suppression capacitors according to IEC 60384-14		N/A
3.6 (4.10.2)	Assembly gaps:		—
	- not coincidental		N/A
	- no straight access with test probe		N/A
3.6 (4.10.3)	Retention of insulation:		—
	- fixed		N/A
	- unable to be replaced; luminaire inoperative		N/A
	- sleeves retained in position		N/A
	- lining in lampholder		N/A
3.6 (4.11)	Electrical connections		—
3.6 (4.11.1)	Contact pressure		P
3.6 (4.11.2)	Screws:		—
	- self-tapping screws		N/A
	- thread-cutting screws		N/A
3.6 (4.11.3)	Screw locking:		—
	- spring washer		N/A
	- rivets		N/A
3.6 (4.11.4)	Material of current-carrying parts		P
3.6 (4.11.5)	No contact to wood or mounting surface		P
3.6 (4.11.6)	Electro-mechanical contact systems	For LED driver output connector	P
3.6 (4.12)	Mechanical connections and glands		—
3.6 (4.12.1)	Screws not made of soft metal		N/A
	Screws of insulating material		N/A
	Torque test: torque (Nm); part :		N/A
	Torque test: torque (Nm); part :		N/A
	Torque test: torque (Nm); part :		N/A
3.6 (4.12.2)	Screws with diameter < 3 mm screwed into metal		N/A

IEC 60598-2-3			
Clause	Requirement + Test	Result - Remark	Verdict
3.6 (4.12.4)	Locked connections:		—
	- fixed arms; torque (Nm)..... :		N/A
	- lampholder; torque (Nm)..... :		N/A
	- push-button switches; torque 0,8 Nm..... :		N/A
3.6 (4.12.5)	Screwed glands; force (Nm) :		N/A
3.6 (4.13)	Mechanical strength		—
3.6 (4.13.1)	Impact tests:		
	- fragile parts; energy (Nm)..... :		N/A
	- other parts; energy (Nm) :	0,7Nm for metal parts, plastic parts of enclosure and LED cover	P
	1) live parts		P
	2) linings		N/A
	3) protection		P
	4) covers		P
3.6 (4.13.3)	Straight test finger	30N	P
3.6 (4.13.4)	Rough service luminaires		—
	- IP54 or higher		N/A
	a) fixed		N/A
	b) hand-held		N/A
	c) delivered with a stand		N/A
	d) for temporary installations and suitable for mounting on a stand		N/A
3.6 (4.13.6)	Tumbling barrel		N/A
3.6 (4.14)	Suspensions and adjusting devices		—
3.6 (4.14.1)	Mechanical load:		—
	A) four times the weight	Max.11,6x4=46,4 kg, 1 h	P
	B) torque 2,5 Nm		N/A
	C) bracket arm; bending moment (Nm)..... :		N/A
	D) load track-mounted luminaires		N/A
	E) clip-mounted luminaires, glass-shelve. Thickness (mm) :		N/A

IEC 60598-2-3			
Clause	Requirement + Test	Result - Remark	Verdict
	Metal rod. diameter (mm)		N/A
	Fixed luminaire or independent control gear without fixing devices		N/A
3.6 (4.14.2)	Load to flexible cables		—
	Mass (kg)		N/A
	Stress in conductors (N/mm ²)		N/A
	Mass (kg) of semi-luminaire		N/A
	Bending moment (Nm) of semi-luminaire		N/A
3.6 (4.14.3)	Adjusting devices:		—
	- flexing test; number of cycles	45	P
	- strands broken		P
	- electric strength test afterwards		P
3.6 (4.14.4)	Telescopic tubes: cords not fixed to tube; no strain on conductors		N/A
3.6 (4.14.5)	Guide pulleys		N/A
3.6 (4.14.6)	Strain on socket-outlets		N/A
3.6 (4.15)	Flammable materials:		—
	- glow-wire test 650 °C		N/A
	- spacing \geq 30 mm		N/A
	- screen withstanding test of 13.3.1		N/A
	- screen dimensions		N/A
	- no fiercely burning material		P
	- thermal protection		N/A
	- electronic circuits exempted		N/A
3.6 (4.15.2)	Luminaires made of thermoplastic material with lamp control gear		—
	a) construction		N/A
	b) temperature sensing control		N/A
	c) surface temperature		N/A
3.6 (4.16)	Luminaires for mounting on normally flammable surfaces		—
	No lamp control gear	(compliance with Section 12)	N/A
3.6 (4.16.1)	Lamp control gear spacing:		—

IEC 60598-2-3			
Clause	Requirement + Test	Result - Remark	Verdict
	- spacing 35 mm		N/A
	- spacing 10 mm		N/A
3.6 (4.16.2)	Thermal protection:		—
	- in lamp control gear		N/A
	- external		N/A
	- fixed position		N/A
	- temperature marked lamp control gear		N/A
3.6 (4.16.3)	Design to satisfy the test of 12.6	(see 12.6)	N/A
3.6 (4.17)	Drain holes		P
	Clearance at least 5 mm		N/A
3.6 (4.18)	Resistance to corrosion:		—
3.6 (4.18.1)	- rust-resistance		P
3.6 (4.18.2)	- season cracking in copper		P
3.6 (4.18.3)	- corrosion of aluminium		P
3.6 (4.19)	Igniters compatible with ballast		N/A
3.6 (4.20)	Rough service vibration		N/A
3.6 (4.21)	Protective shield:		—
3.6 (4.21.1)	Shield fitted		N/A
	Shield of glass if tungsten halogen lamps		N/A
3.6 (4.21.2)	Particles from a shattering lamp not impair safety		N/A
3.6 (4.21.3)	No direct path		N/A
3.6 (4.21.4)	Impact test on shield		N/A
	Glow-wire test on lamp compartment		N/A
3.6 (4.22)	Attachments to lamps		N/A
3.6 (4.23)	Semi-luminaires comply Class II		N/A
3.6 (4.24)	UV radiation for tungsten halogen lamps and metal halide lamps (Annex P)		N/A
3.6 (4.25)	No sharp point or edges		P
3.6 (4.26)	Short-circuit protection:		—
3.6 (4.26.1)	Uninsulated accessible SELV parts		N/A
3.6 (4.26.2)	Short-circuit test		N/A

IEC 60598-2-3			
Clause	Requirement + Test	Result - Remark	Verdict
3.6 (4.26.3)	Test chain according to Figure 29		N/A
3.6 (4.27)	Terminal blocks with integrated screwless earthing contacts tested according Annex V		—
	Pull test of terminal fixing (20 N)		N/A
	After test, resistance < 0,05 Ω		N/A
	Pull test of mechanical connection (50 N)		N/A
	After test, resistance < 0,05 Ω		N/A
	Voltage drop test, resistance < 0,05 Ω		N/A
3.6.1 (-)	At least IP X3 or X5 respectively	IP66	P
	Column-integrated luminaires:		—
	- parts below 2,5 m		N/A
	- parts above 2,5 m		N/A
3.6.2 (-)	Suspension on span wires		N/A
3.6.3 (-)	Means for attaching the luminaire or external parts to its support appropriate to the weight		N/A
3.6.3.1 (-)	Static load test		—
	- drag coefficient	1,2	P
	- loaded area (m ²)	Max. 0,255m ²	P
	- used load (N)	506,8N	P
	- measured deformation (cm/m)	no movement	P
	- no rotation		P
3.6.4 (-)	Adjustable lampholders		N/A
3.6.5 (-)	Luminaires installed above 5 m, glass covers shall be:		—
	a) glass that fractures into small pieces (test according to 3.6.5.1), or		N/A
	b) glass having a high impact shock resistance (test according to 3.6.5.2), or		N/A
	c) protected by any means to retain glass fragments		N/A
	For tunnel luminaires 3.6.5.1 apply		N/A
	Method of protection declared by the manufacturer		N/A
3.6.5.1 (-)	Glass covers fractures into small pieces		—

IEC 60598-2-3			
Clause	Requirement + Test	Result - Remark	Verdict
	- number of particles is more than 40		N/A
3.6.5.2 (-)	Glass covers protected by the use of high impact resistant glass		—
3.6.5.2.1 (-)	Glass covers have high mechanical strength		N/A
	Test according IEC 62262 with test apparatus according IEC 60068-2-75 with impact energy of 5J		N/A
3.6.5.2.2 (-)	Glass covers not brake into large pieces		N/A
	- test according 3.6.5.1, number of particles is more than 20.....		N/A
3.6.6 (-)	Connection compartment of column-integrated luminaire		—
	- provides adequate space		N/A
	- means for attachment		N/A
3.6.7 (-)	Compliance with		N/A
3.6.8 (-)	Doors of column-integrated luminaires:		—
	- corrosion resistance		N/A
	- opening only possible for an authorized person		N/A
	- impact test		N/A
3.6.9 (-)	Column-integrated luminaire:		—
	- dimension of the entry slot (mm)		N/A
	- cable path from the slot to the connection compartment (mm)		N/A
	- cable path free from obstruction that might cause abrasion of the cable		N/A

3.7 (11)	CREEPAGE DISTANCES AND CLEARANCES		—
	Working voltage (V)	100-240VAC	—
	Voltage form	Sinusoidal <input checked="" type="checkbox"/> Non-sinusoidal <input type="checkbox"/>	—
	PTI	< 600 <input checked="" type="checkbox"/> ≥ 600 <input type="checkbox"/>	—
	Impulse withstand category (Normal category II) (Category III Annex U)	Category II <input checked="" type="checkbox"/> Category III <input type="checkbox"/>	—
	Rated pulse voltage (kV)		—

IEC 60598-2-3			
Clause	Requirement + Test	Result - Remark	Verdict
	(1) Current-carrying parts of different polarity: cr (mm); cl (mm)	Approved LED driver used	P
	(2) Current-carrying parts and accessible parts: cr (mm); cl (mm)	Approved LED driver used LED module live parts to accessible parts: cr.=4,0mm>1,2mm; cl.=4,0mm>0,2mm	P
	(3) Parts becoming live due to breakdown of basic insulation and metal parts: cr (mm); cl (mm)		N/A
	(4) Outer surface of cable where it is clamped and metal parts: cr (mm); cl (mm).....		N/A
	(6) Current-carrying parts and supporting surface: cr (mm); cl (mm)	Approved LED driver used LED module live parts to accessible parts: cr.=4,0mm>1,2mm; cl.=4,0mm>0,2mm	P

3.8 (7)	PROVISION FOR EARTHING		—
3.8 (7.2.1 + 7.2.3)	Accessible metal parts		P
	Metal parts in contact with supporting surface		P
	Resistance < 0,5 Ω	Between earth and metal enclosure of LED driver for 1 min.: 0,136Ω	P
	Self-tapping screws used	Approved LED driver used	N/A
	Thread-forming screws		N/A
	Thread-forming screw used in a groove		N/A
	Earth makes contact first		N/A
	Terminal blocks with integrated screwless earthing contacts tested according Annex V		N/A
3.8 (7.2.2 + 7.2.3)	Earth continuity in joints etc.		N/A
3.8 (7.2.4)	Locking of clamping means	Approved LED driver used	P
	Compliance with 4.7.3	Approved LED driver used	P
	Terminal blocks with integrated screwless earthing contacts tested according Annex V		N/A
3.8 (7.2.5)	Earth terminal integral part of connector socket		N/A

IEC 60598-2-3			
Clause	Requirement + Test	Result - Remark	Verdict
3.8 (7.2.6)	Earth terminal adjacent to mains terminals		P
3.8 (7.2.7)	Electrolytic corrosion of the earth terminal		P
3.8 (7.2.8)	Material of earth terminal		P
	Contact surface bare metal		P
3.8 (7.2.10)	Class II luminaire for looping-in		N/A
	Double or reinforced insulation to functional earth		N/A
3.8 (7.2.11)	Earthing core coloured green-yellow		P
	Length of earth conductor		P
3.8.1 (-)	Attachment prevented from rotation		P
3.9 (14)	SCREW TERMINALS		—
	Separately approved; component list	(see Annex 1)	N/A
	Part of the luminaire	(see Annex 3)	N/A
3.9 (15)	SCREWLESS TERMINALS AND ELECTRICAL CONNECTIONS		—
	Separately approved; component list	(see Annex 1)	N/A
	Part of the luminaire	Screwless terminals and soldered connection	P
3.10 (5)	EXTERNAL AND INTERNAL WIRING		—
3.10 (5.2)	Supply connection and external wiring		P
3.10 (5.2.1)	Means of connection..... :	Supply cords	P
3.10 (5.2.2)	Type of cable :	H05RN-F	P
	Nominal cross-sectional area (mm ²)..... :	3 x 1,0mm ²	P
	Cables equal to IEC 60227 or IEC 60245		P
3.10 (5.2.3)	Type of attachment, X, Y or Z		N/A
3.10 (5.2.5)	Type Z not connected to screws		N/A
3.10 (5.2.6)	Cable entries:		—
	- suitable for introduction		N/A
	- adequate degree of protection		N/A

IEC 60598-2-3			
Clause	Requirement + Test	Result - Remark	Verdict
3.10 (5.2.7)	Cable entries through rigid material have rounded edges		N/A
3.10 (5.2.8)	Insulating bushings:		—
	- suitably fixed		N/A
	- material in bushings		N/A
	- material not likely to deteriorate		N/A
	- tubes or guards made of insulating material		N/A
3.10 (5.2.9)	Locking of screwed bushings		N/A
3.10 (5.2.10)	Cord anchorage:		—
	- covering protected from abrasion		P
	- clear how to be effective		P
	- no mechanical or thermal stress		P
	- no tying of cables into knots etc.		P
	- insulating material or lining		N/A
3.10 (5.2.10.1)	Cord anchorage for type X attachment:		—
	a) at least one part fixed		N/A
	b) types of cable		N/A
	c) no damaging of the cable		N/A
	d) whole cable can be mounted		N/A
	e) no touching of clamping screws		N/A
	f) metal screw not directly on cable		N/A
	g) replacement without special tool		N/A
	Glands not used as anchorage		N/A
	Labyrinth type anchorages		N/A
3.10 (5.2.10.2)	Adequate cord anchorage for type Y and type Z attachment		N/A
3.10 (5.2.10.3)	Tests:		—
	- impossible to push cable; unsafe		P
	- pull test: 25 times; pull (N) : 60N		P
	- torque test: torque (Nm) : 0,25Nm		P

IEC 60598-2-3			
Clause	Requirement + Test	Result - Remark	Verdict
	- displacement ≤ 2 mm	no movement	P
	- no movement of conductors		P
	- no damage of cable or cord		P
3.10 (5.2.11)	External wiring passing into luminaire		N/A
3.10 (5.2.12)	Looping-in terminals		N/A
3.10 (5.2.13)	Wire ends not tinned		P
	Wire ends tinned: no cold flow		N/A
3.10 (5.2.14)	Mains plug same protection		N/A
	Class III luminaire plug		N/A
3.10 (5.2.16)	Appliance inlets (IEC 60320)		N/A
	Appliance couplers of class II type		N/A
3.10 (5.2.17)	No standardized interconnecting cables properly assembled		N/A
3.10 (5.2.18)	Used plug in accordance with		—
	- IEC 60083		N/A
	- other standard		N/A
3.10 (5.3)	Internal wiring		—
3.10 (5.3.1)	Internal wiring of suitable size and type		P
	Through wiring		—
	- not delivered/ mounting instruction		N/A
	- factory assembled		N/A
	- socket outlet loaded (A)..... :		N/A
	- temperatures : (see Annex 2)		N/A
	Green-yellow for earth only		N/A
3.10 (5.3.1.1)	Internal wiring connected directly to fixed wiring		—
	Cross-sectional area (mm ²) :		N/A
	Insulation thickness		N/A
	Extra insulation added where necessary		N/A
3.10 (5.3.1.2)	Internal wiring connected to fixed wiring via internal current-limiting device		—
	Adequate cross-sectional area and insulation thickness	H05RR-F, 2x1,0mm ² H07RN-F, 2x1,5mm ²	P

IEC 60598-2-3			
Clause	Requirement + Test	Result - Remark	Verdict
3.10 (5.3.1.3)	Double or reinforced insulation for class II		N/A
3.10 (5.3.1.4)	Conductors without insulation		N/A
3.10 (5.3.1.5)	SELV current-carrying parts		P
3.10 (5.3.1.6)	Insulation thickness other than PVC or rubber		N/A
3.10 (5.3.2)	Sharp edges etc.		P
	No moving parts of switches etc.		N/A
	Joints, raising/lowering devices		N/A
	Telescopic tubes etc.		N/A
	No twisting over 360°		P
3.10 (5.3.3)	Insulating bushings:		—
	- suitable fixed		N/A
	- material in bushings		N/A
	- material not likely to deteriorate		N/A
	- cables with protective sheath		P
3.10 (5.3.4)	Joints and junctions effectively insulated		P
3.10 (5.3.5)	Strain on internal wiring		N/A
3.10 (5.3.6)	Wire carriers		N/A
3.10 (5.3.7)	Wire ends not tinned		P
	Wire ends tinned: no cold flow		N/A
3.10.1 (-)	Cord anchorage if applicable		P
	- pull test: 25 times; pull (N) :	See clause 3.10 (5.2.10.3)	P
	- torque test: torque (Nm) :	See clause 3.10 (5.2.10.3)	P

3.11 (8)	PROTECTION AGAINST ELECTRIC SHOCK		—
3.11 (8.2.1)	Live parts not accessible		P
	Basic insulated parts not used on the outer surface without appropriate protection		P
	Basic insulated parts not accessible with standard test finger on portable and adjustable luminaires		N/A
	Basic insulated parts not accessible with Ø 50 mm probe from outside, within arms reach, on wall-mounted luminaires		N/A

IEC 60598-2-3			
Clause	Requirement + Test	Result - Remark	Verdict
	Lamp and starterholders in portable and adjustable luminaires comply with double or reinforced insulation requirements		N/A
	Basic insulation only accessible under lamp or starter replacement		N/A
	Protection in any position		P
	Double-ended tungsten filament lamp		N/A
	Insulation lacquer not reliable		N/A
	Double-ended high pressure discharge lamp		N/A
	Relevant warning according to 3.2.18 fitted to the luminaire		N/A
3.11 (8.2.2)	Portable luminaire adjusted in most unfavourable position		N/A
3.11 (8.2.3.a)	Class II luminaire:		—
	- basic insulated metal parts not accessible during starter or lamp replacement		N/A
	- basic insulation not accessible other than during starter or lamp replacement		N/A
	- glass protective shields not used as supplementary insulation		N/A
3.11 (8.2.3.b)	BC lampholder of metal in class I luminaires shall be earthed		N/A
3.11 (8.2.3.c)	Class III luminaires with exposed SELV parts:		—
	Ordinary luminaire:		—
	- touch current		N/A
	- no-load voltage		N/A
	Other than ordinary luminaire:		—
	- nominal voltage		N/A
3.11 (8.2.4)	Portable luminaire have protection independent of supporting surface		N/A
3.11 (8.2.5)	Compliance with the standard test finger or relevant probe		P
3.11 (8.2.6)	Covers reliably secured		P
3.11 (8.2.7)	Discharging of capacitors $\geq 0,5 \mu\text{F}$	Approved LED driver used	P

IEC 60598-2-3			
Clause	Requirement + Test	Result - Remark	Verdict
	Portable plug connected luminaire with capacitor		N/A
	Other plug connected luminaire with capacitor		N/A
	Discharge device on or within capacitor		N/A
	Discharge device mounted separately		P

3.12 (12)	ENDURANCE TEST AND THERMAL TEST		—
3.12 (12.3)	Endurance test:		—
	- mounting-position	Mounting according to the suggestion of manufacturer	—
	- test temperature (°C)	35	—
	- total duration (h)	240	—
	- supply voltage: Un factor; calculated voltage (V):	264	—
	- lamp used	Integral LED module	—
3.12 (12.3.2)	After endurance test:		—
	- no part unserviceable		P
	- luminaire not unsafe		P
	- no damage to track system		N/A
	- marking legible		P
	- no cracks, deformation etc.		N/A
3.12 (12.4)	Thermal test (normal operation)	(see Annex 2)	P
3.12 (12.5)	Thermal test (abnormal operation)	(see Annex 2)	P
3.12 (12.6)	Thermal test (failed lamp control gear condition):		—
3.12 (12.6.1)	Through wiring or looping-in wiring loaded by a current of (A)		—
	- case of abnormal conditions.....		—
	- electronic lamp control gear		
	- measured winding temperature (°C): at 1,1 Un . . :		—
	- measured mounting surface temperature (°C) at 1,1 Un		N/A
	- calculated mounting surface temperature (°C) .. :		N/A
	- track-mounted luminaires		N/A

IEC 60598-2-3			
Clause	Requirement + Test	Result - Remark	Verdict
3.12 (12.6.2)	Temperature sensing control		—
	- case of abnormal conditions..... :		—
	- thermal link		N/A
	- manual reset cut-out		N/A
	- auto reset cut-out		N/A
	- measured mounting surface temperature (°C)... :		N/A
	- track-mounted luminaires		N/A
3.12 (12.7)	Thermal test (failed lamp control gear in plastic luminaires):		—
3.12 (12.7.1)	Luminaire without temperature sensing control		—
3.12 (12.7.1.1)	Luminaire with fluorescent lamp ≤ 70W		—
	Test method 12.7.1.1 or Annex W :		—
	Test according to 12.7.1.1:		—
	- case of abnormal conditions		—
	- Ballast failure at supply voltage (V) :		—
	- Components retained in place after the test		N/A
	- Test with standard test finger after the test		N/A
	Test according to Annex W:		—
	- case of abnormal conditions		—
	- measured winding temperature (°C): at 1,1 Un.. :		—
	- measured temperature of fixing point/exposed part (°C): at 1,1 Un..... :		—
	- calculated temperature of fixing point/exposed part (°C) :		—
	Ball-pressure test:		—
	- part tested; temperature (°C)..... :		N/A
	- part tested; temperature (°C)..... :		N/A
3.12 (12.7.1.2)	Luminaire with discharge lamp, fluorescent lamp > 70W, transformer > 10 VA		—
	- case of abnormal conditions		—
	- measured winding temperature (°C): at 1,1 Un.. :		—

IEC 60598-2-3			
Clause	Requirement + Test	Result - Remark	Verdict
	- measured temperature of fixing point/exposed part (°C): at 1,1 Un.....:		—
	- calculated temperature of fixing point/exposed part (°C)		—
	Ball-pressure test:		—
	- part tested; temperature (°C).....:		N/A
	- part tested; temperature (°C).....:		N/A
3.12 (12.7.1.3)	Luminaire with short circuit proof transformers ≤ 10 VA		N/A
	- case of abnormal conditions		—
	- Components retained in place after the test		N/A
	- Test with standard test finger after the test		N/A
3.12 (12.7.2)	Luminaire with temperature sensing control		—
	- thermal link	Yes <input type="checkbox"/> No <input type="checkbox"/>	—
	- manual reset cut-out	Yes <input type="checkbox"/> No <input type="checkbox"/>	—
	- auto reset cut-out	Yes <input type="checkbox"/> No <input type="checkbox"/>	—
	- case of abnormal conditions		—
	- highest measured temperature of fixing point/exposed part (°C):.....:		—
	Ball-pressure test:		—
	- part tested; temperature (°C).....:		N/A
	- part tested; temperature (°C).....:		N/A
3.12.1 (-)	Temperature reduction if for outdoor use only		N/A
3.12.2 (-)	If IP > IP 20 relevant test of (12.4), (12.5) and (12.6) after (9.2) before (9.3) specified in 3.13		—
3.12.3 (-)	Glass covers used within the thermal limits declared by the glass manufacturer		N/A

3.13 (9)	RESISTANCE TO DUST, SOLID OBJECTS AND MOISTURE		—
3.13 (9.2)	Tests for ingress of dust, solid objects and moisture:		—
	- classification according to IP	IP66	—
	- mounting position during test	Mounting as normal use	—

IEC 60598-2-3			
Clause	Requirement + Test	Result - Remark	Verdict
	- fixing screws tightened; torque (Nm)..... :	1,33 Nm	—
	- tests according to clauses :	Clause 9.2.2 and clause 9.2.7	—
	- electric strength test afterwards		P
	a) no deposit in dust-proof luminaire		N/A
	b) no talcum in dust-tight luminaire		P
	c) no trace of water on current-carrying parts or SELV parts or where it could become a hazard		P
	d) i) For luminaires without drain holes – no water entry		P
	d) ii) For luminaires with drain holes – no hazardous water entry		N/A
	e) no water in watertight luminaire		N/A
	f) no contact with live parts (IP 2X)		N/A
	f) no entry into enclosure (IP 3X and IP 4X)		N/A
	f) no contact with live parts (IP3X and IP4X)		N/A
	g) no trace of water on part of lamp requiring protection from splashing water		N/A
	h) no damage of protective shield or glass envelope		P
3.13 (9.3)	Humidity test 48 h	48h, 25°C, R.H.: 93%	P
3.13.1 (-)	If IP > IP 20 the order of the test specified in clause 3.12		—

3.14 (10)	INSULATION RESISTANCE AND ELECTRIC STRENGTH		—
3.14 (10.2.1)	Insulation resistance test		—
	Cable or cord covered by metal foil or replaced by a metal rod of mm Ø		—
	Insulation resistance (MΩ)		—
	SELV:		—
	- between current-carrying parts of different polarity		N/A
	- between current-carrying parts and mounting surface	Min.100 MΩ>1 MΩ	P
	- between current-carrying parts and metal parts of the luminaire	Min.100 MΩ>1 MΩ	P

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Clause	Requirement + Test	Result - Remark	Verdict
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts		N/A
	- Insulation bushings as described in Section 5 ..		N/A
	Other than SELV:		—
	- between live parts of different polarity.....	Approved LED driver	P
	- between live parts and mounting surface.....	Min.100 MΩ>2 MΩ	P
	- between live parts and metal parts.....	Min.100 MΩ>2 MΩ	P
	- between live parts of different polarity through action of a switch		N/A
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts		N/A
	- Insulation bushings as described in Section 5 ..		N/A
3.14 (10.2.2)	Electric strength test		—
	Dummy lamp		N/A
	Luminaires with ignitors after 24 h test		N/A
	Luminaires with manual ignitors		N/A
	Test voltage (V):		N/A
	SELV:		—
	- between current-carrying parts of different polarity		N/A
	- between current-carrying parts and mounting surface	500 V	P
	- between current-carrying parts and metal parts of the luminaire	500 V	P
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts		N/A
	- Insulation bushings as described in Section 5 ..		N/A
	Other than SELV:		—
	- between live parts of different polarity.....	Approved LED driver	P
	- between live parts and mounting surface.....	1480 V	P
	- between live parts and metal parts.....	1480 V	P

IEC 60598-2-3			
Clause	Requirement + Test	Result - Remark	Verdict
	- between live parts of different polarity through action of a switch		N/A
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts		N/A
	- Insulation bushings as described in Section 5 ..		N/A
3.14 (10.3)	Touch current or protective conductor current (mA)	0,7µA<0,7mA peak for touch current, 0,26 mA for protective conductor current	P

3.15 (13)	RESISTANCE TO HEAT, FIRE AND TRACKING		—
3.15 (13.2.1)	Ball-pressure test:		—
	- part tested; temperature (°C).....	LED driver output connector:125°C, 0,8mm	P
	- part tested; temperature (°C).....	LED cover:81°C, 0,8mm	P
3.15 (13.3.1)	Needle flame test (10 s):		—
	- part tested.....		N/A
	- part tested.....		N/A
3.15 (13.3.2)	Glow-wire test (650°C):		—
	- part tested.....	LED driver output connector, No flame, no drop	P
	- part tested.....	LED cover: No flame, no drop	P
	- part tested.....		N/A
3.15 (13.4.1)	Tracking test:		—
	- part tested.....		N/A
	- part tested.....		N/A

IEC 60598-2-3			
Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 1: components

object/part No.	code	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity
LED driver For AOK-40WiL	B	MEAN WELL	HLG-60H-48A	INPUT: AC100- 240V, 50/60Hz OUTPUT:48V 0,64A Ta:60°C, Tc:80°C, Independent LED SELV	IEC/EN6134 7-1 IEC/EN6134 7-2-13	TUV R 50213993
LED driver For AOK-80WiL	B	MEAN WELL	HLG-100H-48A	INPUT: AC100- 240V, 50/60Hz OUTPUT:48V 3,20A Ta:60°C, Tc:90°C, Independent LED SELV	IEC/EN6134 7-1 IEC/EN6134 7-2-13	TUV R 50185176
LED driver For AOK-120WiL	B	MEAN WELL	HLG-150H-48A	INPUT: AC100- 240V, 50/60Hz OUTPUT:48V 3,90A Ta:60°C, Tc:90°C, Independent LED SELV	IEC/EN6134 7-1 IEC/EN6134 7-2-13	TUV R 50185176
LED driver For AOK-160WiL	B	MEAN WELL	HLG-185H-48A	INPUT: AC100- 240V, 50/60Hz OUTPUT:48V 3,90A Ta:60°C, Tc:90°C, Independent LED SELV	IEC/EN6134 7-1 IEC/EN6134 7-2-13	TUV R 50185176

IEC 60598-2-3			
Clause	Requirement + Test	Result - Remark	Verdict

object/part No.	code	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity
LED driver For AOK-200WiL, AOK-240WiL	B	MEAN WELL	HLG-240H-48A	INPUT: AC100- 240V, 50/60Hz OUTPUT:48V 5,00A Ta:50°C, Tc:95°C, Independent LED SELV	IEC/EN6134 7-1 IEC/EN6134 7-2-13	TUV R 50171751
LED chip	C	PHILIPS	LUXEON-T	2,5-3,25VDC 2700-6500K White light.	--	Test with appliance
Supply cords	B	Lucky United Electric Wire	H05RN-F	3x1,0mm ²	--	VDE 40016378
Output wire of LED driver	C	Lucky United Electric Wire	H05RR-F	2x1,0mm ²	--	VDE 40016378
LED module input cord	C	Ningbo Dabu Electric Appliance Co., Ltd.	H07RN-F	2x1,5mm ²	--	VDE 40030691
LED cover	C	MITSUBISHI ENGINEERING- PLASTICS CORP	S-3000+	V-2, 125°C	--	UL E41179
PCB of LED module	C	SHENZHEN YU XINDA SCIENCE AND TECHNOLOGY CO., LTD.	YXD1	V-0, 130°C	--	UL E352507
Terminal block	B	Heavy Power Co., Ltd.	PA10	450V, 24A, 140°C	--	VDE 40019247
Connector for output of driver	C	WAGO KONTAKTECHNIK GMBH & CO KG	222-412	32A, 250V/4KV	--	UL E69654

The codes above have the following meaning:

- A - The component is replaceable with another one, also certified, with equivalent characteristics
- B - The component is replaceable if authorised by the test house
- C - Integrated component tested together with the appliance
- D - Alternative component

IEC 60598-2-3			
Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 2: temperature measurements, thermal tests of Section 12		
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Type reference	AOK-40WiL	---				
Lamp used.....	Integral LED module	---				
Lamp control gear used	HLG-60H-48A	---				
Mounting position of luminaire	Mounting according to the suggestion of manufacturer	---				
Supply wattage (W).....	41,26	---				
Supply current (A)	0,175	---				
Calculated power factor	-	---				
Table: measured temperatures corrected for $t_a = 25^{\circ}\text{C}$:						
- abnormal operating mode	Short-circuit one output of LED driver	---				
- test 1: rated voltage	-	---				
- test 2: 1,06 times rated voltage or 1,05 times rated wattage.....	254,4 V	---				
- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage	-	---				
- test 4: 1,1 times rated voltage or 1,05 times rated wattage.....	264V for short-circuit one output of LED driver, shut down immediately.	---				
Through wiring or looping-in wiring loaded by a current of A during the test	-	---				
temperature ($^{\circ}\text{C}$) of part	Clause 12.4 – normal				Clause 12.5 – abnormal	
	test 1	test 2	test 3	limit	test 4	limit
Power cord	--	20,5	--	90	--	--
Input terminal block	--	39,0	--	140	--	--
Tc point of driver	--	51,3	--	80	--	--
Output wire of LED driver	--	41,4	--	Ref.	--	--
LED driver output connector	--	42,6	--	Ref.	--	--
LED module wire	--	53,9	--	90	--	--

IEC 60598-2-3						
Clause	Requirement + Test				Result - Remark	Verdict
PCB of LED module	--	58,2	--	Ref.	--	--
LED cover	--	44,2	--	Ref.	--	--
Light object (10cm)	--	45,8	--	90	--	--
Mounting surface	--	28,9	--	90	21,6	130

Type reference	AOK-160WiL				---	
Lamp used.....	Integral LED module				---	
Lamp control gear used	HLG-185H-48A				---	
Mounting position of luminaire	Mounting according to the suggestion of manufacturer				---	
Supply wattage (W)	160,38				---	
Supply current (A)	0,663				---	
Calculated power factor	-				---	
Table: measured temperatures corrected for ta = 25°C:						
- abnormal operating mode	Short-circuit one output of LED driver				---	
- test 1: rated voltage	-				---	
- test 2: 1,06 times rated voltage or 1,05 times rated wattage.....	254,4 V				---	
- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage	-				---	
- test 4: 1,1 times rated voltage or 1,05 times rated wattage.....	264V for short-circuit one output of LED driver, shut down immediately.				---	
Through wiring or looping-in wiring loaded by a current of A during the test	-				---	
temperature (°C) of part	Clause 12.4 – normal				Clause 12.5 – abnormal	
	test 1	test 2	test 3	limit	test 4	limit
Power cord	--	21,2	--	90	--	--
Input terminal block	--	37,2	--	140	--	--
Tc point of driver	--	23,9	--	90	--	--
Output wire of LED driver	--	41,0	--	Ref.	--	--

IEC 60598-2-3						
Clause	Requirement + Test			Result - Remark		Verdict
LED driver output connector	--	38,6	--	Ref.	--	--
LED module wire	--	56,3	--	90	--	--
PCB of LED module	--	58,9	--	Ref.	--	--
LED cover	--	56,8	--	Ref.	--	--
Light object (10cm)	--	49,8	--	90	--	--
Mounting surface	--	31,6	--	90	25,3	130

Type reference	AOK-240WiL			---		
Lamp used.....	Integral LED module			---		
Lamp control gear used	HLG-240H-48A			---		
Mounting position of luminaire	Mounting according to the suggestion of manufacturer			---		
Supply wattage (W)	239,6			---		
Supply current (A)	0,97			---		
Calculated power factor	-			---		
Table: measured temperatures corrected for $t_a = 25^\circ\text{C}$:						
- abnormal operating mode	Short-circuit one output of LED driver			---		
- test 1: rated voltage	-			---		
- test 2: 1,06 times rated voltage or 1,05 times rated wattage.....	254,4 V			---		
- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage	-			---		
- test 4: 1,1 times rated voltage or 1,05 times rated wattage.....	264V for short-circuit one output of LED driver, shut down immediately.			---		
Through wiring or looping-in wiring loaded by a current of A during the test	-			---		
temperature ($^\circ\text{C}$) of part	Clause 12.4 – normal				Clause 12.5 – abnormal	
	test 1	test 2	test 3	limit	test 4	limit
Power cord	--	21,2	--	90	--	--
Input terminal block	--	28,9	--	140	--	--

IEC 60598-2-3						
Clause	Requirement + Test				Result - Remark	Verdict
Tc point of driver	--	35,3	--	95	--	--
Output wire of LED driver	--	32,0	--	Ref.	--	--
LED driver output connector	--	31,3	--	Ref.	--	--
LED module wire	--	48,5	--	90	--	--
PCB of LED module	--	51,6	--	Ref.	--	--
LED cover	--	47,3	--	Ref.	--	--
Light object (10cm)	--	38,6	--	90	--	--
Mounting surface	--	25,7	--	90	21,6	130

IEC 60598-2-3			
Clause	Requirement + Test	Result - Remark	Verdict

	ANNEX 3: screw terminals (part of the luminaire)		—
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(14)	SCREW TERMINALS		—
(14.2)	Type of terminal.....:		—
	Rated current (A).....:		—
(14.3.2.1)	One or more conductors		N/A
(14.3.2.2)	Special preparation		N/A
(14.3.2.3)	Terminal size		N/A
	Cross-sectional area (mm ²).....:		N/A
(14.3.3)	Conductor space (mm).....:		N/A
(14.4)	Mechanical tests		—
(14.4.1)	Minimum distance		N/A
(14.4.2)	Cannot slip out		N/A
(14.4.3)	Special preparation		N/A
(14.4.4)	Nominal diameter of thread (metric ISO thread) ...	M	N/A
	External wiring		N/A
	No soft metal		N/A
(14.4.5)	Corrosion		N/A
(14.4.6)	Nominal diameter of thread (mm)		N/A
	Torque (Nm)		N/A
(14.4.7)	Between metal surfaces		N/A
	Lug terminal		N/A
	Mantle terminal		N/A
	Pull test; pull (N).....:		N/A
(14.4.8)	Without undue damage		N/A

IEC 60598-2-3			
Clause	Requirement + Test	Result - Remark	Verdict
ANNEX 4: screwless terminals (part of the luminaire)			—
(15)	SCREWLESS TERMINALS		—
(15.2)	Type of terminal.....:		—
	Rated current (A).....:		—
(15.3.1)	Material		N/A
(15.3.2)	Clamping		N/A
(15.3.3)	Stop		N/A
(15.3.4)	Unprepared conductors		N/A
(15.3.5)	Pressure on insulating material		N/A
(15.3.6)	Clear connection method		N/A
(15.3.7)	Clamping independently		N/A
(15.3.8)	Fixed in position		N/A
(15.3.10)	Conductor size		N/A
	Type of conductor		N/A
(15.5.1)	Terminals internal wiring		N/A
(15.5.1.1)	Pull test spring-type terminals (4 N, 4 samples).....:		N/A
(15.5.1.2)	Pull test pin or tab terminals (4 N, 4 samples).....:		N/A
	Insertion force not exceeding 50 N		N/A
(15.5.1.2)	Permanent connections: pull-off test (20 N)		N/A
(15.6)	Electrical tests		—
	Voltage drop (mV) after 1 h (4 samples).....:		N/A
	Voltage drop of two inseparable joints		N/A
	Number of cycles.....:		—
	Voltage drop (mV) after 10th alt. 25th cycle (4 samples).....:		N/A
	Voltage drop (mV) after 50th alt. 100th cycle (4 samples).....:		N/A
	After ageing, voltage drop (mV) after 10th alt. 25th cycle (4 samples)		N/A

IEC 60598-2-3												
Clause	Requirement + Test										Result - Remark	Verdict
	After ageing, voltage drop (mV) after 50th alt. 100th cycle (4 samples)											N/A
(15.7)	Terminals external wiring											N/A
	Terminal size and rating											N/A
(15.8.1)	Pull test spring-type terminals or welded connections (4 samples); pull (N)											N/A
	Pull test pin or tab terminals (4 samples); pull (N)											N/A
(15.9)	Contact resistance test											—
	Voltage drop (mV) after 1 h											—
terminal	1	2	3	4	5	6	7	8	9	10		
voltage drop (mV)												
	Voltage drop of two inseparable joints											—
	Voltage drop after 10th alt. 25th cycle											—
	Max. allowed voltage drop (mV)											—
terminal	1	2	3	4	5	6	7	8	9	10		
voltage drop (mV)												
	Voltage drop after 50th alt. 100th cycle											—
	Max. allowed voltage drop (mV)											—
terminal	1	2	3	4	5	6	7	8	9	10		
voltage drop (mV)												
	Continued ageing: voltage drop after 10th alt. 25th cycle											—
	Max. allowed voltage drop (mV)											—
terminal	1	2	3	4	5	6	7	8	9	10		
voltage drop (mV)												
	Continued ageing: voltage drop after 50th alt. 100th cycle											—
	Max. allowed voltage drop (mV)											—
terminal	1	2	3	4	5	6	7	8	9	10		
voltage drop (mV)												

	ANNEX 5: European group differences and national differences	—
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ATTACHMENT TO TEST REPORT IEC 60598-2-3 EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES Luminaires Part 2: Particular requirements: Section Three – Luminaires for road and street lighting		
Differences according	EN 60598-2-3:2003 + A1:2011 used in conjunction with EN 60598-1:2008 + A11:2009	
Annex Form No.	EU_GD_IEC_60598_2_3I	
Annex Form Originator	IMQ S.p.A.	
Master Annex Form	2013-03	
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	CENELEC COMMON MODIFICATIONS (EN)	—
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3.5 (3)	MARKING	—
3.5 (3.3.101)	Adequate warning on the package	N/A

3.6 (4)	CONSTRUCTION	—
3.6 (4.11.6)	Electro-mechanical contact systems	P

3.10 (5)	EXTERNAL AND INTERNAL WIRING	—
3.10 (5.2.1)	Connecting leads	N/A
	- without a means for connection to the supply	N/A
	- terminal block specified	N/A
	- relevant information provided	N/A
	- compliance with 4.6, 4.7.1, 4.7.2, 4.10.1, 11.2, 12 and 13.2 of Part 1	N/A
3.10 (5.2.2)	Cables equal to HD21 S2 or HD22 S2	N/A

3.12 (12)	ENDURANCE TEST AND THERMAL TEST	—
3.12 (12.4.2c)	Thermal test (normal operation)	P

ZB	ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)	—
(3.3)	DK: power supply cord with label	N/A
	IT: warning label on Class 0 luminaire	N/A

(4.5.1)	DK: socket-outlets		N/A
(5.2.1)	CY, DK, FI, SE, GB: type of plug		N/A

ZC	ANNEX ZC, NATIONAL DEVIATIONS (EN)		—
(4 & 5)	FR: Shuttered socket-outlets 10/16A		N/A
(13.3)	FR: Glow-wire test 850°C alt. 750°C for luminaires in premises open to public or 960°C for luminaires in emergency exits		N/A
(13.3)	GB: Requirements according to United Kingdom Building Regulation		N/A

Annex 6	LED modules for general lighting —Safety specifications IEC 62031: 2008+ A1:2012, EN 62031: 2008+ A1:2013		P
Clause	Requirement – Test	Result - Remark	Verdict
13.2	Module withstands overpower condition >15 min.		P
	Module with automatic protective device or power limiter, test performed 15 min. at limit.		P
	During the tests, tissue paper, spread below module, does not ignite		P
14	Conformity testing during manufacture Tested as a part of luminaire		P
17	Screws, current-carrying parts and connections		P
	The requirements of IEC 61347-1, Clause 17, apply.		P

Annex 7	Photobiological safety of lamps and lamp systems were according to standard EN 62471:2008 and EU Directive 2006/25/EC Exempt group applies for all models	—
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Exempt Group for model AOK-240WiL with colour temperature 6500K, and this classification apply to all models.

Optical hazard	Test result	Used hazard exposure limit		Ref.
1. Es	1,429E-07 W/m ²	0,001 W/m ²	200-400 nm	P
2. EUVA	3,442E-03 W/m ²	0,33 W/m ²	315-400 nm	P
3. LB	5,352E+01 W/m ²	100 W/m ²	300-700 nm	P
4. EB (small source)	--	--	300-700 nm	N/A
5. LR	2,111E+03 W/m ² sr ⁻¹	3,803E+05 W/m ² sr ⁻¹	380-1400 nm	P
6. LIR	0,000E+00 W/m ² sr ⁻¹	8,150E+04 W/m ² sr ⁻¹	780-1400 nm	P
7. EIR	0,000E+00 W/m ²	100 W/m ²	780-3000 nm	P
8. EH	1,684E+00 W/m ²	3556,56 W/m ²	380-3000 nm	P