



Ref. Certif. No.

DE 2-020464

IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST
CERTIFICATES FOR ELECTRICAL EQUIPMENT
(IECEE) CB SCHEMESYSTEME CEI D'ACCEPTATION MUTUELLE DE
CERTIFICATS D'ESSAIS DES EQUIPEMENTS
ELECTRIQUES (IECEE) METHODE OCCB TEST CERTIFICATE
CERTIFICAT D'ESSAI OCProduct
Produit

LED High Bay Light

Name and address of the applicant
Nom et adresse du demandeurAOK LED Light Company Limited
Building 1 St George's Science
and Technology Industrial Park, Outer Ring Road Bao'an, Shenzhen,
Guangdong, ChinaName and address of the manufacturer
Nom et adresse du fabricantAOK LED Light Company Limited
Building 1 St George's Science
and Technology Industrial Park, Outer Ring Road Bao'an, Shenzhen,
Guangdong, ChinaName and address of the factory
Nom et adresse de l'usineAOK LED Light Company Limited
Building 1 St George's Science
and Technology Industrial Park, Outer Ring Road Bao'an, Shenzhen,
Guangdong, ChinaNote: When more than one factory, please report on page 2
Note: Lorsque il y plus d'une usine, veuillez utiliser la 2^{ème} pageRatings and principal characteristics
Valeurs nominales et caractéristiques principalesAC 100-240V; 50/60Hz; IP65; Class I; Ta: 25°C;
1) 100W; 2) 120W; 3) 150W; 4) 200WTrade mark (if any)
Marque de fabrique (si elle existe)

AOK

Model/type Ref.
Ref. de type

1) AOK-100WiU; 2)AOK-120WiU; 3)AOK-150WiU; 4)AOK-200WiU

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. 50042197 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 laIEC 60598-1:2014
IEC 60598-2-1:1979+A1
for national deviations see test reportAs 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

50042197 001

This CB Test Certificate is issued by the National Certification Body
Ce Certificat d'essai OC est établi par l'Organisme National de CertificationTÜV Rheinland LGA Products GmbH
Tillystraße 2 · 90431 Nürnberg, Germany
Phone + 49 221 806-1371
Fax + 49 221 806-3935
Mail: cert-validity@de.tuv.com
Web: www.tuv.com

Date: 22.06.2016

Signature:

Dipl.-Ing. (FH) C. Nasca

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

Date : 2016-06-22
Our ref. : awa ZD
Your ref.: 0164061406

Ref : CB Certificate Germany

Type of Equipment: LED High Bay Light
Model Designation: See Certificate
Certificate No. : DE 2-020464 01
Report No. : 50042197 001

Dear Ladies and Gentlemen,

Thank you very much for your interest in our services.

Please find enclosed your certification documents.

We appreciate your support and would like to offer our assistance in the approval of your future products through our extensive range of technical services. Please feel free to contact us whatever your requirements may be.

With kind regards,

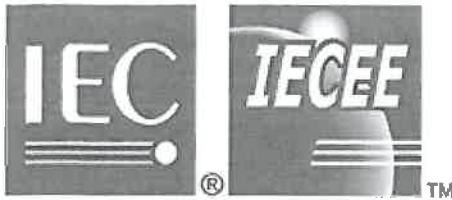
Certification Body



Dipl.-Ing. (FH) C. Nasca

Enclosure

证书的详细资料请登陆www.certipedia.com查阅,或拨打我司客服热线800 999 3668 / 400 883 1300咨询



Test Report issued under the responsibility of:



TEST REPORT
IEC 60598-2-1
Luminaires
Part 2: Particular requirements
Section 1: Fixed general purpose luminaires

Report Number: 50042197 001

Date of issue: 2016-05-30

Total number of pages 48 pages

Name of Testing Laboratory preparing the Report.....: TÜV Rheinland (Shenzhen) Co., Ltd.

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 60598-2-1 (ed.1), am1 used in conjunction with IEC 60598-1 (ed.8)

Test procedure: CB Scheme

Non-standard test method: N/A

Test Report Form No.: IEC60598_2_1E

Test Report Form(s) Originator: Intertek Semko AB

Master TRF: 2016-04

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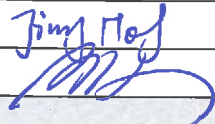
If this Test Report Form is used by non-IECEE members, the IECEE/IEC logo and the reference to the CB Scheme procedure shall be removed.

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.

General disclaimer:

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 CB Testing Laboratory. The authenticity of this Test Report and its contents can be verified by contacting the NCB, responsible for this Test Report.

Test item description	LED High Bay Light	
Trade Mark	AOK	
Manufacturer	The same as applicant	
Model/Type reference	See below model list	
Ratings	See General product information	
Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):		
<input checked="" type="checkbox"/> CB Testing Laboratory:	TÜV Rheinland (Shenzhen) Co., Ltd.	
Testing location/ address	East of F/1, F/2~F/4, Building 1, Cybio Technology Building No. 6 Langshan No.2 Road, North Hi-tech Industry Park 518057 Shenzhen Nanshan District CHINA	
<input type="checkbox"/> Associated CB Testing Laboratory:		
Testing location/ address		
Tested by (name, function, signature)	Jimmy Hong	
Approved by (name, function, signature) ..	Allan Huang	
Testing procedure: CTF Stage 1:		
<input type="checkbox"/> Testing procedure: CTF Stage 1:		
Testing location/ address		
Tested by (name, function, signature)		
Approved by (name, function, signature) ..		
Testing procedure: CTF Stage 2:		
<input type="checkbox"/> Testing procedure: CTF Stage 2:		
Testing location/ address		
Tested by (name + signature)		
Witnessed by (name, function, signature) ..		
Approved by (name, function, signature) ..		
Testing procedure: CTF Stage 3:		
<input type="checkbox"/> Testing procedure: CTF Stage 3:		
Testing procedure: CTF Stage 4:		
<input type="checkbox"/> Testing procedure: CTF Stage 4:		
Testing location/ address		
Tested by (name, function, signature)		
Witnessed by (name, function, signature) ..		
Approved by (name, function, signature) ..		
Supervised by (name, function, signature) :		

List of Attachments (including a total number of pages in each attachment): N/A	
Summary of testing:	
Tests performed (name of test and test clause): <p>This report includes the following parts:</p> <ul style="list-style-type: none"> - All clauses of IEC 60598-1:2014 and IEC 60598-2-1:1979 +A1. - Annex 5: European Group Differences and National Differences. - Annex 6: Creepage distances and clearances - Annex 7: LED modules for general lighting — Safety specifications IEC 62031:2008+A1:2012 +A2:2014 and EN 62031:2008+A1:2013+A2:2015 - Annex 8: Photobiological safety of lamps and lamp systems were evaluated according to standard IEC 62471:2006, EN 62471:2008 and IEC TR 62778:2014. <p>Full test were done on model AOK-200WiU, AOK-150WiU and AOK-100WiU as representative, partial tests were done on other models.</p>	Testing location: TÜV Rheinland (Shenzhen) Co., Ltd. East of F/1, F/2~F/4, Building 1, Cybio Technology Building No. 6 Langshan No.2 Road, North Hi-tech Industry Park 518057 Shenzhen Nanshan District CHINA
Summary of compliance with National Differences:	
List of countries addressed	
DE=Germany	
<input checked="" type="checkbox"/> The product fulfils the requirements of EN 60598-1:2015, EN 60598-2-1:1989	

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.



Note: other models are same as above, except model and ratings.

Test item particulars:	
Classification of installation and use: Fixed LED Luminaires	
Supply Connection: Power 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: 2016-04-21	
Date (s) of performance of tests: 2016-04-21 to 2016-05-20	
General remarks:	
"(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 02:	
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) : The same as applicant	

General product information:

Product: LED high bay light

Rating: AC100-240V, 50/60Hz, ta=25°C,IP65

Class I, suitable for direct mounting on normally flammable surfaces.

1. All models have the similar appearance and construction, but different power and LED quantities.
2. Approved independent SELV LED driver used for driving LED module which have the same type of LED chip in this product.

Model list

Model	Power	Model of LED driver	LED type/ quantity
AOK-100WiU	100W	HBG-100-48A	126
AOK-120WiU	120W	HBG-160-48A	126
AOK-150WiU	150W	HBG-160-48A	210
AOK-200WiU	200W	HBG-240-48A	210

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.2 (0)	GENERAL TEST REQUIREMENTS		P
1.2 (0.1)	Information for luminaire design considered	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Lamp standard: IEC 62031	—
1.2 (0.3)	More sections applicable.....	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Section/s:	—

1.4 (2)	CLASSIFICATION OF LUMINAIRES		
1.4 (2.2)	Type of protection	Class I	P
1.4 (2.3)	Degree of protection.....	IP 65	P
1.4 (2.4)	Luminaire suitable for direct mounting on normally flammable surfaces	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	—
1.4 (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"/>	—

1.5 (3)	MARKING		P
1.5 (3.2)	Mandatory markings		P
	Position of the marking		P
	Format of symbols/text		P
1.5 (3.3)	Additional information		P
	Language of instructions		P
1.5 (3.3.1)	Combination luminaires		N/A
1.5 (3.3.2)	Nominal frequency in Hz	50/60Hz	P
1.5 (3.3.3)	Operating temperature		N/A
1.5 (3.3.4)	Symbol or warning notice		N/A
1.5 (3.3.5)	Wiring diagram		P
1.5 (3.3.6)	Special conditions		N/A
1.5 (3.3.7)	Metal halide lamp luminaire – warning		N/A
1.5 (3.3.8)	Limitation for semi-luminaires		N/A
1.5 (3.3.9)	Power factor and supply current		N/A
1.5 (3.3.10)	Suitability for use indoors		N/A
1.5 (3.3.11)	Luminaires with remote control		N/A
1.5 (3.3.12)	Clip-mounted luminaire – warning		N/A
1.5 (3.3.13)	Specifications of protective shields		N/A
1.5 (3.3.14)	Symbol for nature of supply		N/A
1.5 (3.3.15)	Rated current of socket outlet		N/A

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.5 (3.3.16)	Rough service luminaire		N/A
1.5 (3.3.17)	Mounting instruction for type Y, type Z and some type X attachments	Type Z	P
1.5 (3.3.18)	Non-ordinary luminaires with PVC cable	Indoor used only	P
1.5 (3.3.19)	Protective conductor current in instruction if applicable		N/A
1.5 (3.3.20)	Provided with information if not intended to be mounted within arm's reach		N/A
1.5 (3.3.21)	Non replaceable and non-user replaceable light sources information provided		P
	Cautionary symbol		N/A
1.5 (3.3.22)	Controllable luminaires, classification of insulation provided		N/A
1.5 (3.4)	Test with water		P
	Test with hexane		P
	Legible after test		P
	Label attached		P

1.6 (4)	CONSTRUCTION		P
1.6 (4.2)	Components replaceable without difficulty		P
1.6 (4.3)	Wireways smooth and free from sharp edges		P
1.6 (4.4)	Lampholders		N/A
1.6 (4.4.1)	Integral lampholder		N/A
1.6 (4.4.2)	Wiring connection		N/A
1.6 (4.4.3)	Lampholder for end-to-end mounting		N/A
1.6 (4.4.4)	Positioning		N/A
	- pressure test (N)		—
	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)		—
	After test the lampholder have not moved from its position and show no permanent deformation		N/A
1.6 (4.4.5)	Peak pulse voltage		N/A
1.6 (4.4.6)	Centre contact		N/A
1.6 (4.4.7)	Parts in rough service luminaires resistant to tracking		N/A

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.6 (4.4.8)	Lamp connectors		N/A
1.6 (4.4.9)	Caps and bases correctly used		N/A
1.6 (4.4.10)	Light source for lampholder or connection according IEC 60061 not connected another way		N/A
1.6 (4.5)	Starter holders		N/A
	Starter holder in luminaires other than class II		N/A
	Starter holder class II construction		N/A
1.6 (4.6)	Terminal blocks		N/A
	Tails		N/A
	Unsecured blocks		N/A
1.6 (4.7)	Terminals and supply connections		P
1.6 (4.7.1)	Contact to metal parts		N/A
1.6 (4.7.2)	Test 8 mm live conductor		N/A
	Test 8 mm earth conductor		N/A
1.6 (4.7.3)	Terminals for supply conductors		N/A
1.6 (4.7.3.1)	Welded method and material		N/A
	- stranded or solid conductor		N/A
	- spot welding		N/A
	- welding between wires		N/A
	- Type Z attachment		N/A
	- mechanical test according to 15.6.2		N/A
	- electrical test according to 15.6.3		N/A
	- heat test according to 15.6.3.2.3 and 15.6.3.2.4		N/A
1.6 (4.7.4)	Terminals other than supply connection		P
1.6 (4.7.5)	Heat-resistant wiring/sleeves		N/A
1.6 (4.7.6)	Multi-pole plug		N/A
	- test at 30 N		N/A
1.6 (4.8)	Switches		N/A
	- adequate rating		N/A
	- adequate fixing		N/A
	- polarized supply		N/A
	- compliance with IEC 61058-1 for electronic switches		N/A
1.6 (4.9)	Insulating lining and sleeves		N/A
1.6 (4.9.1)	Retainment		N/A

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Method of fixing		N/A
1.6 (4.9.2)	Insulated linings and sleeves:		N/A
	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
1.6 (4.10)	Double or reinforced insulation		P
1.6 (4.10.1)	No contact, mounting surface – accessible metal parts – wiring of basic insulation		N/A
	Safe installation fixed luminaires		N/A
	Capacitors and switches		N/A
	Interference suppression capacitors according to IEC 60384-14		N/A
1.6 (4.10.2)	Assembly gaps:		P
	- not coincidental		N/A
	- no straight access with test probe		P
1.6 (4.10.3)	Retention of insulation:		N/A
	- fixed		N/A
	- unable to be replaced; luminaire inoperative		N/A
	- sleeves retained in position		N/A
	- lining in lampholder		N/A
1.6 (4.10.4)	Protective impedance device		N/A
	Double or reinforced insulation bridged by appropriate and at least two resistors or two Y2 capacitors or one Y1 capacitor		N/A
	Y1 or Y2 capacitors comply with IEC 60384-14		N/A
	Resistors comply with test (a) in 14.1 of IEC 60065		N/A
1.6 (4.11)	Electrical connections and current-carrying parts		P
1.6 (4.11.1)	Contact pressure		P
1.6 (4.11.2)	Screws:		P
	- self-tapping screws		P
	- thread-cutting screws		N/A
1.6 (4.11.3)	Screw locking:		P
	- spring washer		P
	- rivets		N/A
1.6 (4.11.4)	Material of current-carrying parts		P

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.6 (4.11.5)	No contact to wood or mounting surface		P
1.6 (4.11.6)	Electro-mechanical contact systems		P
1.6 (4.12)	Screws and connections (mechanical) and glands		P
1.6 (4.12.1)	Screws not made of soft metal		P
	Screws of insulating material		N/A
	Torque test: torque (Nm); part..... :	Screw for fixing LED driver: 5,9mm,2,9Nm	P
	Torque test: torque (Nm); part..... :	Screw for fixing LED cover: 2,9mm,0,5Nm	P
	Torque test: torque (Nm); part..... :	Screw for fixing LED board: 2,9mm,0,5Nm	P
1.6 (4.12.2)	Screws with diameter < 3 mm screwed into metal		N/A
1.6 (4.12.4)	Locked connections:		N/A
	- fixed arms; torque (Nm)		N/A
	- lampholder; torque (Nm)		N/A
	- push-button switches; torque 0,8 Nm		N/A
1.6 (4.12.5)	Screwed glands; force (Nm)..... :	Plastic gland: 5Nm	P
1.6 (4.13)	Mechanical strength		P
1.6 (4.13.1)	Impact tests:		P
	- fragile parts; energy (Nm)		N/A
	- other parts; energy (Nm)	All enclosure:0,35Nm	P
	1) live parts		P
	2) linings		N/A
	3) protection		P
	4) covers		P
1.6 (4.13.3)	Straight test finger		P
1.6 (4.13.4)	Rough service luminaires		N/A
	- 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
1.6 (4.13.6)	Tumbling barrel		N/A
1.6 (4.14)	Suspensions, fixings and means of adjusting		P

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.6 (4.14.1)	Mechanical load:		P
	A) four times the weight	Max.7,98Kg×4=31,92Kg	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
	Metal rod. diameter (mm)		N/A
	Fixed luminaire or independent control gear without fixing devices		N/A
1.6 (4.14.2)	Load to flexible cables		N/A
	Mass (kg)		—
	Stress in conductors (N/mm ²)		N/A
	Mass (kg) of semi-luminaire		N/A
	Bending moment (Nm) of semi-luminaire		N/A
1.6 (4.14.3)	Adjusting devices:		N/A
	- flexing test; number of cycles..... :		N/A
	- strands broken		N/A
	- electric strength test afterwards		N/A
1.6 (4.14.4)	Telescopic tubes: cords not fixed to tube; no strain on conductors		N/A
1.6 (4.14.5)	Guide pulleys		N/A
1.6 (4.14.6)	Strain on socket-outlets		N/A
1.6 (4.15)	Flammable materials		P
	- glow-wire test 650°C	See Test Table 1.15 (13.3.2)	P
	- spacing ≥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
1.6 (4.15.2)	Luminaires made of thermoplastic material with lamp control gear		N/A
	a) construction		N/A
	b) temperature sensing control		N/A
	c) surface temperature		N/A
1.6 (4.16)	Luminaires for mounting on normally flammable surfaces		P

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
	No lamp control gear	(compliance with Section 12)	N/A
1.6 (4.16.1)	Lamp control gear spacing:		N/A
	- spacing 35 mm		N/A
	- spacing 10 mm		N/A
1.6 (4.16.2)	Thermal protection:		P
	- in lamp control gear		P
	- external		N/A
	- fixed position		N/A
	- temperature marked lamp control gear		P
1.6 (4.16.3)	Design to satisfy the test of 12.6	(see clause 12.6)	N/A
1.6 (4.17)	Drain holes		N/A
	Clearance at least 5 mm		N/A
1.6 (4.18)	Resistance to corrosion		P
1.6 (4.18.1)	- rust-resistance		P
1.6 (4.18.2)	- season cracking in copper		N/A
1.6 (4.18.3)	- corrosion of aluminium		N/A
1.6 (4.19)	Igniters compatible with ballast		N/A
1.6 (4.20)	Rough service vibration		N/A
1.6 (4.21)	Protective shield		N/A
1.6 (4.21.1)	Shield fitted if tungsten halogen lamps or metal halide lamps		N/A
	Shield of glass if tungsten halogen lamps		N/A
1.6 (4.21.2)	Particles from a shattering lamp not impair safety		N/A
1.6 (4.21.3)	No direct path		N/A
1.6 (4.21.4)	Impact test on shield		N/A
	Glow-wire test on lamp compartment.....	See Test Table 1.15 (13.3.2)	N/A
1.6 (4.22)	Attachments to lamps not cause overheating or damage		N/A
1.6 (4.23)	Semi-luminaires comply Class II		N/A
1.6 (4.24)	Photobiological hazards		P
1.6 (4.24.1)	No excessive UV radiation if tungsten halogen lamps and metal halide lamps (Annex P)		N/A
1.6 (4.24.2)	Retinal blue light hazard		P
	Class of risk group assessed according to IEC/TR 62778	RG0	—
	Luminaires with E_{thr} :		N/A

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
	a) Fixed luminaires		N/A
	- distance x m, borderline between RG1 and RG2 ... :		N/A
	- marking and instruction according 3.2.23		N/A
	b) Portable and handheld luminaires		N/A
	- marking according 3.2.23 if RG1 exceeded at 200 mm according to IEC/TR 62778		N/A
	Portable luminaires for children IEC 60598-2-10 and Mains socket outlet nightlights IEC 60598-2-12 not exceed RG1 at 200 mm according to IEC/62778		N/A
1.6 (4.25)	Mechanical hazard		P
	No sharp point or edges		P
1.6 (4.26)	Short-circuit protection		N/A
1.6 (4.26.1)	Adequate means of uninsulated accessible SELV parts		N/A
1.6 (4.26.2)	Short-circuit test with test chain according 4.26.3		N/A
	Test chain not melt through		N/A
	Test sample not exceed values of Table 12.1 and 12.2		N/A
1.6 (4.27)	Terminal blocks with integrated screwless earthing contacts		N/A
	Test according Annex V		N/A
	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
1.6 (4.28)	Fixing of thermal sensing control		N/A
	Not plug-in or easily replaceable type		N/A
	Reliably kept in position		N/A
	No adhesive fixing if UV radiations from a lamp can degrade the fixing		N/A
	Not outside the luminaire enclosure		N/A
	Test of adhesive fixing:		N/A
	Max. temperature on adhesive material ($^{\circ}\text{C}$) :		—
	100 cycles between t min and t max		N/A
	Temperature sensing control still in position		N/A
1.6 (4.29)	Luminaires with non-replaceable light source		N/A
	Not possible to replace light source		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Live part not accessible after parts have been opened by hand or tools		N/A
1.6 (4.30)	Luminaires with non-user replaceable light source		P
	If protective cover provide protection against electric shock and marked with "caution, electric shock risk" symbol:		P
	Minimum two fixing means		P
1.6 (4.31)	Insulation between circuits		P
	Circuits insulated from LV supply fulfil requirements according 4.31.1 – 4.31.3		P
	Controllable luminaires requiring same level of insulation for all components, the insulation between control terminals and LV supply fulfil requirements according 4.31.1 – 4.31.3		N/A
1.6 (4.31.1)	SELV circuits		P
	Used SELV source		P
	Voltage \leq ELV		P
	Insulating of SELV circuits from LV supply		P
	Insulating of SELV circuits from other non SELV circuits		N/A
	Insulating of SELV circuits from FELV		N/A
	Insulating of SELV circuits from other SELV circuits		N/A
	SELV circuits insulated from accessible parts according Table X.1		P
	Plugs not able to enter socket-outlets of other voltage systems		N/A
	Socket outlets does not admit plugs of other voltage systems		N/A
	Plugs and socket-outlets does not have protective conductor contact		N/A
1.6 (4.31.2)	FELV circuits		N/A
	Used FELV source		N/A
	Voltage \leq ELV		N/A
	Insulating of FELV circuits from LV supply		N/A
	FELV circuits insulated from accessible parts according Table X.1		N/A
	Plugs not able to enter socket-outlets of other voltage systems		N/A
	Socket outlets does not admit plugs of other voltage systems		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Socket-outlets does not have protective conductor contact		N/A
1.6 (4.31.3)	Other circuits		N/A
	Other circuits insulated from accessible parts according Table X.1		N/A
	Class II construction with equipotential bonding for protection against indirect contacts with live parts:		N/A
	- conductive parts are connected together		N/A
	- test according 7.2.3		N/A
	- conductive part not cause an electric shock in case of an insulation fault		N/A
	- equipotential bonding in master/slave applications		N/A
	- master luminaire provided with terminal for accessible conductive parts of slave luminaires		N/A
	- slave luminaire constructed as class I		N/A
1.6 (4.32)	Overvoltage protective devices		N/A
	Comply with IEC 61643-11		N/A
	External to controlgear and connected to earth:		N/A
	- only in fixed luminaires		N/A
	- only connected to protective earth		N/A

1.7 (11)	CREEPAGE DISTANCES AND CLEARANCES		P
1.7 (11.2)	Creepage distances and clearances..... :	See Table 1.7 (11.2)	P
	Impulse withstand category (Normal category II) (Category III Annex U, Table U.1)	Category II <input checked="" type="checkbox"/> Category III <input type="checkbox"/>	—

1.8 (7)	PROVISION FOR EARTHING		P
1.8 (7.2.1 + 7.2.3)	Accessible metal parts		P
	Metal parts in contact with supporting surface		P
	Resistance < 0,5 Ω..... :	0,02Ω < 0,5 Ω	P
	Self-tapping screws used		P
	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

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Clause	Requirement + Test	Result - Remark	Verdict
	Protective earthing of the luminaire not via built-in control gear		N/A
1.8 (7.2.2 + 7.2.3)	Earth continuity in joints, etc.		N/A
1.8 (7.2.4)	Locking of clamping means		P
	Compliance with 4.7.3		P
	Terminal blocks with integrated screwless earthing contacts tested according Annex V		N/A
1.8 (7.2.5)	Earth terminal integral part of connector socket		N/A
1.8 (7.2.6)	Earth terminal adjacent to mains terminals		N/A
1.8 (7.2.7)	Electrolytic corrosion of the earth terminal		P
1.8 (7.2.8)	Material of earth terminal		P
	Contact surface bare metal		P
1.8 (7.2.10)	Class II luminaire for looping-in		N/A
	Double or reinforced insulation to functional earth		N/A
1.8 (7.2.11)	Earthing core coloured green-yellow		P
	Length of earth conductor		N/A
1.9 (14)	SCREW TERMINALS		N/A
	Separately approved; component list	(see Annex 1)	N/A
	Part of the luminaire	(see Annex 3)	N/A
1.9 (15)	SCREWLESS TERMINALS AND ELECTRICAL CONNECTIONS		P
	Separately approved; component list..... :	(see Annex 1)	N/A
	Part of the luminaire	Soldered connection and output connector	P
1.10 (5)	EXTERNAL AND INTERNAL WIRING		P
1.10 (5.2)	Supply connection and external wiring		P
1.10 (5.2.1)	Means of connection	Power cord	P
	Outdoor luminaire has not PVC insulated external wiring if not class III or SELV ≤ 25 V a.c./60 V d.c. or protected from outdoor environment		N/A
1.10 (5.2.2)	Type of cable	Rubber	P
	Nominal cross-sectional area (mm ²)	1mm ²	P
	Cables equal to IEC 60227 or IEC 60245		P
1.10 (5.2.3)	Type of attachment, X, Y or Z	Type Z	P

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Clause	Requirement + Test	Result - Remark	Verdict
1.10 (5.2.5)	Type Z not connected to screws		P
1.10 (5.2.6)	Cable entries:		P
	- suitable for introduction		P
	- adequate degree of protection		P
1.10 (5.2.7)	Cable entries through rigid material have rounded edges		P
1.10 (5.2.8)	Insulating bushings:		N/A
	- 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
1.10 (5.2.9)	Locking of screwed bushings		P
1.10 (5.2.10)	Cord anchorage:		P
	- 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		P
1.10 (5.2.10.1)	Cord anchorage for type X attachment:		N/A
	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
1.10 (5.2.10.2)	Adequate cord anchorage for type Y and type Z attachment	Type Z	P
1.10 (5.2.10.3)	Tests:		P
	- impossible to push cable; unsafe		P
	- pull test: 25 times; pull (N) : 60N		P

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Clause	Requirement + Test	Result - Remark	Verdict
	- torque test: torque (Nm)	0,25Nm	P
	- displacement \leq 2 mm	0,9mm	P
	- no movement of conductors		P
	- no damage of cable or cord		P
	- function independent of electrical connection		P
1.10 (5.2.11)	External wiring passing into luminaire		P
1.10 (5.2.12)	Looping-in terminals		N/A
1.10 (5.2.13)	Wire ends not tinned		N/A
	Wire ends tinned: no cold flow		P
1.10 (5.2.14)	Mains plug same protection		N/A
	Class III luminaire plug		N/A
	No unsafe compatibility		N/A
1.10 (5.2.16)	Appliance inlets (IEC 60320)		N/A
	Installation couplers (IEC 61535)		N/A
	Other appliance inlet or connector according relevant IEC standard		N/A
1.10 (5.2.17)	No standardized interconnecting cables properly assembled		N/A
1.10 (5.2.18)	Used plug in accordance with		N/A
	- IEC 60083		N/A
	- other standard		N/A
1.10 (5.3)	Internal wiring		P
1.10 (5.3.1)	Internal wiring of suitable size and type		P
	Through wiring		N/A
	- not delivered/ mounting instruction		N/A
	- factory assembled		N/A
	- socket outlet loaded (A)		N/A
	- temperatures	(see Annex 2)	P
	Green-yellow for earth only		P
1.10 (5.3.1.1)	Internal wiring connected directly to fixed wiring		P
	Cross-sectional area (mm ²).....		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Insulation thickness		P
	Extra insulation added where necessary		N/A
1.10 (5.3.1.2)	Internal wiring connected to fixed wiring via internal current-limiting device		P
	Adequate cross-sectional area and insulation thickness		P
1.10 (5.3.1.3)	Double or reinforced insulation for class II		N/A
1.10 (5.3.1.4)	Conductors without insulation		N/A
1.10 (5.3.1.5)	SELV current-carrying parts		P
1.10 (5.3.1.6)	Insulation thickness other than PVC or rubber		N/A
1.10 (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
1.10 (5.3.3)	Insulating bushings:		N/A
	- suitable fixed		N/A
	- material in bushings		N/A
	- material not likely to deteriorate		N/A
	- cables with protective sheath		N/A
1.10 (5.3.4)	Joints and junctions effectively insulated		N/A
1.10 (5.3.5)	Strain on internal wiring		P
1.10 (5.3.6)	Wire carriers		N/A
1.10 (5.3.7)	Wire ends not tinned		N/A
	Wire ends tinned: no cold flow		P

1.11 (8)	PROTECTION AGAINST ELECTRIC SHOCK		P
1.11 (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, settable and adjustable luminaires		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Basic insulated parts not accessible with Ø 50 mm probe from outside, other types of luminaires		N/A
	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
1.11 (8.2.2)	Portable luminaire adjusted in most unfavourable position		N/A
1.11 (8.2.3.a)	Class II luminaire:		N/A
	- 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
1.11 (8.2.3.b)	BC lampholder of metal in class I luminaires shall be earthed		N/A
1.11 (8.2.3.c)	SELV circuits with exposed current carrying parts:		N/A
	Ordinary luminaire:		N/A
	- voltage under load (V)..... :		N/A
	- no-load voltage (V)..... :		N/A
	- touch current if applicable (mA) :		N/A
	One conductive part insulated if required		N/A
	Other than ordinary luminaire:		N/A
	- nominal voltage (V) :		N/A
	Class III luminaire only for connection to SELV		N/A
	Class III luminaire not provided with means for protective earthing		N/A
1.11 (8.2.4)	Portable luminaire have protection independent of supporting surface		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
1.11 (8.2.5)	Compliance with the standard test finger or relevant probe		P
1.11 (8.2.6)	Covers reliably secured		P
1.11 (8.2.7)	Luminaire other than below with capacitor > 0,5 μ F not exceed 50 V 1 min after disconnection		N/A
	Portable luminaire with capacitor > 0,1 μ F (0.25) not exceed 34 V 1 s after disconnection		N/A
	Other luminaires with capacitor > 0,1 μ F (0.25) with plug and track adaptors not exceed 60 V 5 s after disconnection		N/A

1.12 (12)	ENDURANCE TEST AND THERMAL TEST		P
1.12 (-)	If IP > IP 20 relevant test of (12.4), (12.5) and (12.6) after (9.2) before (9.3) specified in 1.13		—
1.12 (12.3)	Endurance test:		P
	- mounting-position..... :	According to manual	—
	- test temperature (°C)	35°C	—
	- total duration (h)	240h	—
	- supply voltage: Un factor; calculated voltage (V).... :	264V	—
	- lamp used..... :	Integral LED module	—
1.12 (12.3.2)	After endurance test:		P
	- no part unserviceable		P
	- luminaire not unsafe		P
	- no damage to track system		N/A
	- marking legible		P
	- no cracks, deformation etc.		P
1.12 (12.4)	Thermal test (normal operation)	(see Annex 2)	P
1.12 (12.5)	Thermal test (abnormal operation)	(see Annex 2)	P
1.12 (12.6)	Thermal test (failed lamp control gear condition):		N/A
1.12 (12.6.1)	Through wiring or looping-in wiring loaded by a current of (A)		—
	- case of abnormal conditions		—
	- electronic lamp control gear		N/A
	- measured winding temperature (°C): at 1,1 Un		—
	- measured mounting surface temperature (°C) at 1,1 Un		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- calculated mounting surface temperature (°C) :		N/A
	- track-mounted luminaires		N/A
1.12 (12.6.2)	Temperature sensing control		N/A
	- 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
1.12 (12.7)	Thermal test (failed lamp control gear in plastic luminaires):		N/A
1.12 (12.7.1)	Luminaire without temperature sensing control		N/A
1.12 (12.7.1.1)	Luminaire with fluorescent lamp ≤ 70W		N/A
	Test method 12.7.1.1 or Annex W :		—
	Test according to 12.7.1.1:		N/A
	- 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:		N/A
	- 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 :	See Table 1.15 (13.2.1)	N/A
1.12 (12.7.1.2)	Luminaire with discharge lamp, fluorescent lamp > 70W, transformer > 10 VA		N/A
	- 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) :		—

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Clause	Requirement + Test	Result - Remark	Verdict
	Ball-pressure test	See Table 1.15 (13.2.1)	N/A
1.12 (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
1.12 (12.7.2)	Luminaire with temperature sensing control		N/A
	- 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:	See Table 1.15 (13.2.1)	N/A

1.13 (9)	RESISTANCE TO DUST AND MOISTURE		P
1.13 (-)	If IP > IP 20 the order of tests as specified in clause 1.12		P
1.13 (9.2)	Tests for ingress of dust, solid objects and moisture:		P
	- classification according to IP.....	IP65	—
	- mounting position during test	According to manual	—
	- fixing screws tightened; torque (Nm)	1,67Nm	—
	- tests according to clauses.....	Cl.9.2.2 and Cl.9.2.6	—
	- 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 on insulation where it could become a hazard		P
	c.1) For luminaires without drain holes – no water entry		P
	c.2) For luminaires with drain holes – no hazardous water entry		N/A
	d) no water in watertight or pressure watertight luminaire		N/A
	e) no contact with live parts (IP 2X)		N/A
	e) no entry into enclosure (IP 3X and IP 4X)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	e) no contact with live parts through drain holes and ventilation slots (IP3X and IP4X)		N/A
	f) no trace of water on part of lamp requiring protection from splashing water		P
	g) no damage of protective shield or glass envelope		P
1.13 (9.3)	Humidity test 48 h	25°C, R.H. 93%	P
1.14 (10)	INSULATION RESISTANCE AND ELECTRIC STRENGTH		P
1.14 (10.2.1)	Insulation resistance test		P
	Cable or cord covered by metal foil or replaced by a metal rod of mm Ø		—
	Insulation resistance (MΩ)		—
	SELV		P
	- between current-carrying parts of different polarity :		N/A
	- between current-carrying parts and mounting surface..... :	Min. 760 MΩ>1 MΩ	P
	- between current-carrying parts and metal parts of the luminaire..... :	Min. 760 MΩ>1 MΩ	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		P
	- between live parts of different polarity		N/A
	- between live parts and mounting surface	10000 MΩ>1 MΩ	P
	- between live parts and metal parts	10000 MΩ>1 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
1.14 (10.2.2)	Electric strength test		P
	Dummy lamp		N/A
	Luminaires with ignitors after 24 h test		N/A
	Luminaires with manual ignitors		N/A
	Test voltage (V)		P
	SELV		P

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Clause	Requirement + Test	Result - Remark	Verdict
	- between current-carrying parts of different polarity :		N/A
	- between current-carrying parts and mounting surface..... :	500V	P
	- between current-carrying parts and metal parts of the luminaire..... :	500V	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		P
	- between live parts of different polarity :		N/A
	- between live parts and mounting surface :	1480V	P
	- between live parts and metal parts :	1480V	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
1.14 (10.3)	Touch current or protective conductor current (mA):	Protective conductive current Max.0,32mA<3,5mA	P

1.15 (13)	RESISTANCE TO HEAT, FIRE AND TRACKING		P
1.15 (13.2.1)	Ball-pressure test	See Test Table 1.15 (13.2.1)	P
1.15 (13.3.1)	Needle-flame test (10 s).....	See Test Table 1.15 (13.3.1)	P
1.15 (13.3.2)	Glow-wire test (650°C)	See Test Table 1.15 (13.3.2)	P
1.15 (13.4)	Proof tracking test (IEC 60112).....	See Test Table 1.15 (13.4)	N/A

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Clause	Requirement + Test	Result - Remark	Verdict

1.7 (11.2)	TABLE: Creepage distances and clearances see annex 6						P
	Minimum distances (mm) for a.c. (50/60 Hz) sinusoidal voltages						
	Applicable part of IEC 60598-1 Table 11.1* and 11.2*						
	Insulation type **	Measured clearance	Required		Measured creepage	Required	
			clearance	*Table		creepage	*Table
Distance 1:							
Working voltage (V)							—
PTI					< 600 <input type="checkbox"/>	≥ 600 <input type="checkbox"/>	—
Pulse voltage if applicable (kV)							—
Supplementary information:							
Distance 2:							
Working voltage (V)							—
PTI					< 600 <input type="checkbox"/>	≥ 600 <input type="checkbox"/>	—
Pulse voltage if applicable (kV)							—
Supplementary information:							
Distance 3:							
Working voltage (V)							—
PTI					< 600 <input type="checkbox"/>	≥ 600 <input type="checkbox"/>	—
Pulse voltage if applicable (kV)							—
Supplementary information:							

** Insulation type: B – Basic; S – Supplementary; R – Reinforced. See also IEC 60598-1 Annex M.

1.15 (13.2.1)	TABLE: Ball Pressure Test of Thermoplastics			P
Allowed impression diameter (mm)		2mm		—
Object/ Part No./ Material	Manufacturer/ trademark	Test temperature (°C)	Impression diameter (mm)	
LED cover	--	98	1,0	
Output connector	--	125	1,2	
Supplementary information:				

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Clause	Requirement + Test	Result - Remark			Verdict
1.15 (13.3.1)	TABLE: Needle-flame test (IEC 60695-11-5)				P
Object/ Part No./ Material	Manufacturer/ trademark	Duration of application of test flame (ta); (s)	Ignition of specified layer Yes/No	Duration of burning (tb) (s)	Verdict
Output connector	--	10	No	3	P
Supplementary information:					

1.15 (13.3.2)	TABLE: Glow-wire test (IEC 60695-2-11)				P
Glow wire temperature		650°C			—
Object/ Part No./ Material	Manufacturer/ trademark	Ignition of specified layer Yes/No	Duration of burning (tb) (s)	Verdict	
LED cover	--	No	0	P	
Any flame or glowing of the sample extinguished within 30 s of withdrawing the glow-wire, and any burning or molten drop did not ignite the underlying parts (Yes/No)				N/A	
Supplementary information:					

1.15 (13.4)	TABLE: Proof tracking test (IEC 60112)				N/A
Test voltage PTI		175 V			—
Object/ Part No./ Material	Manufacturer/ trademark	Withstand 50 drops without failure on three places or on three specimens			Verdict
N/A	N/A	N/A	N/A	N/A	N/A
Supplementary information:					

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Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 1	TABLE: Critical components information						P
Object / part No.	Code	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity ¹⁾	
LED driver (for model AOK-100WiU)	B	MEAN WELL ENTERPRISES CO.,LTD	HBG-100-48A	Input: 100-240Vac, 50/60Hz; Output: DC 48V, 0-2,0A, Ta:60°C, Tc:85°C, Class I, Impendent SELV	EN 61347-1 EN 61347-2-13	ENEC Nemko NO 3756	
LED driver (for model AOK-120WiU and AOK-150WiU)	B	MEAN WELL ENTERPRISES CO.,LTD	HBG-160-48A	Input: 100-240Vac, 50/60Hz; Output: DC 48V, 0-3,3A, Ta:50°C, Tc:85°C, Class I, Impendent SELV	EN 61347-1 EN 61347-2-13	TUV R 50256469	
LED driver (for model AOK-200WiU)	B	MEAN WELL ENTERPRISES CO.,LTD	HBG-240-48A	Input: 100-240Vac, 50/60Hz; Output: DC 48V, 0-5,0A, Ta:50°C, Tc:75°C, IP 65, Class I, Impendent SELV	EN 61347-1 EN 61347-2-13	ENEC Nemko NO 3757	
Output connector	C	Dongguan Yangjie precision electronics co., LTD	FRX-M18	2*1,0mm ² , 300/500V	--	Test with appliance	
LED board	B,C	DONGGUANG DINGLIANG ELECTRONICS CO., LTD	SP1	V-0,120°C	--	UL E348315	

IEC 60598-2-1						
Clause	Requirement + Test			Result - Remark		Verdict
LED cover	B,C	mitsubishi ENGINEERING- PLASTICS CORP	S-3000+(f1)	HB,115°C	--	UL E41179
LED	C	Philips Lumileds	LUXEON 3030 2D	5,8Vdc-6,6Vdc, 240mA, 2700K-6500K, White light	--	Test with appliance
<p>Supplementary information:</p> <p>¹⁾ Provided evidence ensures the agreed level of compliance. See OD-CB2039.</p> <p>The codes above have the following meaning:</p> <p>A - The component is replaceable with another one, also certified, with equivalent characteristics</p> <p>B - The component is replaceable if authorised by the test house</p> <p>C - Integrated component tested together with the appliance</p> <p>D - Alternative component</p>						

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 2	TABLE: Temperature measurements, thermal tests of Section 12			P			
	Type reference	AOK-100WiU		—			
	Lamp used.....	With integrated LED module		—			
	Lamp control gear used.....	Approved LED driver		—			
	Mounting position of luminaire	According to manual		—			
	Supply wattage (W)	99,1W		—			
	Supply current (A)	0,4A		—			
	Calculated power factor.....	--		—			
	Table: measured temperatures corrected for ta = 25°C:			P			
	- abnormal operating mode	Short circuit LED driver output		—			
	- test 1: rated voltage.....	--		—			
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage	254,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 ,shutdown ,temperature lower than normal temperature		—			
	Through wiring or looping-in wiring loaded by a current of A during the test	--		—			
Temperature measurements, (°C)							
Part	Ambient	Clause 12.4 – normal				Clause 12.5 – abnormal	
		test 1	test 2	test 3	limit	test 4	limit
Input wire of LED driver	25°C	--	36,7°C	--	90°C	--	--
Surface of LED driver	25°C	--	51,4°C	--	85°C	--	--
output wire of LED driver	25°C	--	53,3°C	--	90°C	--	--
Output connector	25°C	--	54,5°C	--	Ref.	--	--
Wire to LED (near LED)	25°C	--	64,3°C	--	90°C	--	--
LED board	25°C	--	66,4°C	--	130°C	--	--
LED Cover (inside)	25°C	--	65,1°C	--	Ref.	--	--
Light object (10cm)	25°C	--	33,4°C	--	90°C	--	--
Mounting surface	25°C	--	51,0°C	--	90°C	--	--
Supplementary information:							

IEC 60598-2-1							
Clause	Requirement + Test			Result - Remark		Verdict	
	Type reference	AOK-150WiU					—
	Lamp used.....	With integrated LED module					—
	Lamp control gear used.....	Approved LED driver					—
	Mounting position of luminaire	According to manual					—
	Supply wattage (W)	149W					—
	Supply current (A)	0,61A					—
	Calculated power factor.....						—
	Table: measured temperatures corrected for ta = 25°C:						P
	- abnormal operating mode	Short circuit LED driver output					—
	- test 1: rated voltage.....	--					—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage	254,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 ,shutdown ,temperature lower than normal temperature					—
	Through wiring or looping-in wiring loaded by a current of A during the test	--					—
Temperature measurements, (°C)							
Part	Ambient	Clause 12.4 – normal				Clause 12.5 – abnormal	
		test 1	test 2	test 3	limit	test 4	limit
Input wire of LED driver	25°C	--	37,7°C	--	90°C	--	--
Surface of LED driver	25°C	--	52,7°C	--	85°C	--	--
output wire of LED driver	25°C	--	53,9°C	--	90°C	--	--
Output connector	25°C	--	53,1°C	--	Ref.	--	--
Wire to LED (near LED)	25°C	--	65,0°C	--	90°C	--	--
LED board	25°C	--	67,6°C	--	130°C	--	--
LED Cover (inside)	25°C	--	67,2°C	--	Ref.	--	--
Light object (10cm)	25°C	--	33,7°C	--	90°C	--	--
Mounting surface	25°C	--	51,0°C	--	90°C	--	--
Supplementary information:							

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict

	Type reference	AOK-200WiU	—
	Lamp used.....	With integrated LED module	—
	Lamp control gear used.....	Approved LED driver	—
	Mounting position of luminaire	According to manual	—
	Supply wattage (W)	194W	—
	Supply current (A)	0,81A	—
	Calculated power factor.....		—
	Table: measured temperatures corrected for ta = 25°C:		P
	- abnormal operating mode	Short circuit LED driver output	—
	- test 1: rated voltage.....	--	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage	254,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 ,shutdown ,temperature lower than normal temperature	—
	Through wiring or looping-in wiring loaded by a current of A during the test	--	—

Temperature measurements, (°C)

Part	Ambient	Clause 12.4 – normal				Clause 12.5 – abnormal	
		test 1	test 2	test 3	limit	test 4	limit
Input wire of LED driver	25°C	--	37,5°C	--	90°C	--	--
Surface of LED driver	25°C	--	55,7°C	--	77,5°C	--	--
output wire of LED driver	25°C	--	57,9°C	--	90°C	--	--
Output connector	25°C	--	62,4°C	--	Ref.	--	--
Wire to LED (near LED)	25°C	--	73,7°C	--	90°C	--	--
LED board	25°C	--	72,7°C	--	130°C	--	--
LED Cover (inside)	25°C	--	70,7°C	--	Ref.	--	--
Light object (10cm)	25°C	--	35,4°C	--	90°C	--	--
Mounting surface	25°C	--	51,1°C	--	90°C	--	--

Supplementary information:

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 3	Screw terminals (part of the luminaire)		N/A
(14)	SCREW TERMINALS		N/A
(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)..... :		—
(14.3.3)	Conductor space (mm)..... :		N/A
(14.4)	Mechanical tests		N/A
(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 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 4	Screwless terminals (part of the luminaire)		N/A
(15)	SCREWLESS TERMINALS		N/A
(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)	Terminals and connections for internal wiring		N/A
(15.5.1)	Mechanical tests		N/A
(15.5.1.1.1)	Pull test spring-type terminals (4 N, 4 samples)		N/A
(15.5.1.1.2)	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
(15.5.2)	Electrical tests		N/A
	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
	After ageing, voltage drop (mV) after 50th alt. 100th cycle (4 samples)		N/A
(15.6)	Terminals and connections for external wiring		N/A
(15.6.1)	Conductors		N/A
	Terminal size and rating		N/A

IEC 60598-2-1											
Clause	Requirement + Test									Result - Remark	Verdict
15.6.2	Mechanical tests										N/A
(15.6.2.1)	Pull test spring-type terminals or welded connections (4 samples); pull (N)										N/A
(15.6.2.2)	Pull test pin or tab terminals (4 samples); pull (N)										N/A
(15.6.3)	Electrical tests										N/A
	Tests according 15.6.3.1 + 15.6.3.2 in IEC 60598-1										N/A
(15.6.3.1) (15.6.3.2)	TABLE: Contact resistance test / Heating tests										N/A
	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)											
Supplementary information:											

ANNEX 5	EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES
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ATTACHMENT TO TEST REPORT IEC 60598-2-1 EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES LUMINAIRES PART 2: PARTICULAR REQUIREMENTS SECTION 1: FIXED GENERAL PURPOSE LUMINAIRES	
Differences according to:	EN 60598-2-1:1989 used in conjunction with EN 60598-1:2015
Annex Form No:	EU_GD_IEC60598_2_1E
Annex Form Originator	OVE
Master Annex Form	2015-04
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	CENELEC COMMON MODIFICATIONS (EN)	P
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1.5 (3)	MARKING	N/A
1.5 (3.3.101)	For luminaires not supplied with terminal block: Adequate warning on the package	N/A

1.6 (4)	CONSTRUCTION	P
1.6 (4.11.6)	Electro-mechanical contact systems	P

1.10 (5)	EXTERNAL AND INTERNAL WIRING	P
1.10 (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
1.10 (5.2.2)	Cables equal to EN 50525	P
	Replace table 5.1 – Supply cord	P

1.12 (12)	ENDURANCE TESTS AND THERMAL TESTS	N/A
1.12 (12.4.2c)	Thermal test (normal operation) see footnote c to table 12.2 relating to unsleeved fixed wiring	N/A

ANNEX 5	EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES
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B	ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)	N/A
(3.3)	DK: power supply cords of class I luminaires with label	N/A
(4.5.1)	DK: socket-outlets	N/A
(5.2.1)	CY, DK, FI, GB: type of plug	N/A
ZC	ANNEX ZC, NATIONAL DEVIATIONS (EN)	N/A

(4 & 5)	FR: Shuttered socket-outlets 10/16A	N/A
	FR: Safety requirements for high buildings (Arrêté du 30 décembre 2011 portant règlement de sécurité pour la construction des immeubles de grande hauteur et leur protection contre les risques d'incendie et de panique; Section VIII; Article GH 48, Eclairage) Glow-wire test for outer parts of luminaires:	N/A
	- 850°C for luminaires in stairways and horizontal travel paths	N/A
	- 650°C for indoor luminaires	N/A
	GB: Requirements according to United Kingdom Building Regulation	N/A

Annex 6	Creepage distances and clearances (Follow Table 11.1 of IEC 60598-1)
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Model: AOK-100WiU, Class I						
clearance cl and creepage distance cr at/of:	Up (V)	U r.m.s. (V)	required cl (mm)	Cl (mm)	required cr (mm)	Cr (mm)
(1) Live parts of different polarity	340	240	1,5	Approved LED driver	2,5	Approved LED driver
(2a) Live parts and accessible metal parts	340	240	1,5	Approved LED driver	2,5	Approved LED driver
(2b) Live parts and the outer accessible surface of insulating parts	--	--	--	--	--	--
Current-carrying part of LED module to LED cover	--	DC 48V	500V Electric strength			
(3) Parts which may become live due to the breakdown of basic insulation in luminaires of class II and accessible metal parts	--	--	--	--	--	--
(4) The outer surface of a flexible cord or cable and an accessible metal part to which it is secured by means of a cord grip, cable carrier or clip of insulating material	this requirement is fulfilled by the cable itself					
(6) Live parts and other metal parts, between them and the supporting surface (ceiling, wall, table, etc.) or between live parts and the supporting surface where there is no intervening metal	340	240	1,5	Approved LED driver	2,5	Approved LED driver
Model: AOK-150WiU, Class I						
clearance cl and creepage distance cr at/of:	Up (V)	U r.m.s. (V)	required cl (mm)	Cl (mm)	required cr (mm)	Cr (mm)
(1) Live parts of different polarity	340	240	1,5	Approved LED driver	2,5	Approved LED driver
(2a) Live parts and accessible metal parts	340	240	1,5	Approved LED driver	2,5	Approved LED driver
(2b) Live parts and the outer accessible surface of insulating parts	--	--	--	--	--	--
Current-carrying part of LED module to Plastic LED cover	--	DC 48V	500V Electric strength			
(3) Parts which may become live due to the breakdown of basic insulation in luminaires of class II and accessible metal parts	--	--	--	--	--	--

Annex 6	Creepage distances and clearances (Follow Table 11.1 of IEC 60598-1)
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(4)The outer surface of a flexible cord or cable and an accessible metal part to which it is secured by means of a cord grip, cable carrier or clip of insulating material	this requirement is fulfilled by the cable itself					
(6) Live parts and other metal parts, between them and the supporting surface (ceiling, wall, table, etc.) or between live parts and the supporting surface where there is no intervening metal	340	240	1,5	Approved LED driver	2,5	Approved LED driver
Model: AOK-200WiU, Class I						
clearance cl and creepage distance cr at/of:	Up (V)	U r.m.s. (V)	required cl (mm)	Cl (mm)	required cr (mm)	Cr (mm)
(1) Live parts of different polarity	340	240	1,5	Approved LED driver	2,5	Approved LED driver
(2a) Live parts and accessible metal parts	340	240	1,5	Approved LED driver	2,5	Approved LED driver
(2b) Live parts and the outer accessible surface of insulating parts	--	--	--	--	--	--
Current-carrying part of LED module to Plastic LED cover	--	DC 48V	500V Electric strength			
(3) Parts which may become live due to the breakdown of basic insulation in luminaires of class II and accessible metal parts	--	--	--	--	--	--
(4)The outer surface of a flexible cord or cable and an accessible metal part to which it is secured by means of a cord grip, cable carrier or clip of insulating material	this requirement is fulfilled by the cable itself					
(6) Live parts and other metal parts, between them and the supporting surface (ceiling, wall, table, etc.) or between live parts and the supporting surface where there is no intervening metal	340	240	1,5	Approved LED driver	2,5	Approved LED driver

ANNEX 7	Tests according to IEC 62031:2008+A1:2012+A2:2014,EN 62031:2008+A1:2013+A2:2015		
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
22	PHOTOBIOLOGICAL SAFETY		P
22.1	UV radiation		N/A
	Luminous radiation not exceed 2mW/klm		N/A
22.2	Blue light hazard		P
	Assessed according to IEC TR 62778	See annex 8	P
22.3	Infrared radiation		N/A
	Requirements for infrared radiation when required		N/A

Annex 8	Photobiological safety of lamps and lamp systems were evaluated according to standard IEC 62471:2006, EN 62471:2008, EU Directive 2006/25/EC and IEC TR 62778:2014
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Table 6.1 Emission limits for risk groups of continuous wave lamps									P
Risk	Action spectrum	Symbol	Units	Emission Measurement					
				Exempt		Low risk		Mod risk	
				Limit	Result	Limit	Result	Limit	Result
Actinic UV	$S_{UV}(\lambda)$	E_s	$W \cdot m^{-2}$	0,001	1,7e-05	0,003	1,7e-05	0,03	--
Near UV		E_{UVA}	$W \cdot m^{-2}$	10	2,7e-03	33	2,7e-03	100	--
Blue light	$B(\lambda)$	L_B	$W \cdot m^{-2} \cdot sr^{-1}$	100	1,8e+02	10000	1,8e+03	4000000	--
Blue light, small source	$B(\lambda)$	E_B	$W \cdot m^{-2}$	1,0*	--	1,0	--	400	--
Retinal thermal	$R(\lambda)$	L_R	$W \cdot m^{-2} \cdot sr^{-1}$	28000/ α	2,2e+04	28000/ α	2,2e+04	71000/ α	--
Retinal thermal, weak visual stimulus**	$R(\lambda)$	L_{IR}	$W \cdot m^{-2} \cdot sr^{-1}$	6000/ α	6,9e+00	6000/ α	6,9e+00	6000/ α	--
IR radiation, eye		E_{IR}	$W \cdot m^{-2}$	100	0,0e+00	570	0,0e+00	3200	--

* Small source defined as one with $\alpha < 0,011$ radian. Averaging field of view at 10000 s is 0,1 radian.
** Involves evaluation of non-GLS source

Emission limits for risk groups of continuous wave lamps
AOK-200WiU, Measure distance 5069mm, $\alpha = 0,0280$ rad (Risk Group 1)

Annex 8	Photobiological safety of lamps and lamp systems were evaluated according to standard IEC 62471:2006, EN 62471:2008, EU Directive 2006/25/EC and IEC TR 62778:2014
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Table 6.1		Emission limits for risk groups of continuous wave lamps (based on EU Directive 2006/25/EC)								P
Risk	Action spectrum	Symbol	Units	Emission Measurement						
				Exempt		Low risk		Mod risk		
				Limit	Result	Limit	Result	Limit	Result	
Actinic UV	$S_{UV}(\lambda)$	E_s	$W \cdot m^{-2}$	0,001	1,7e-05	--	--	--	--	
Near UV		E_{UVA}	$W \cdot m^{-2}$	0,33	2,7e-03	--	--	--	--	
Blue light	$B(\lambda)$	L_B	$W \cdot m^{-2} \cdot sr^{-1}$	100	1,8e+02	10000	1,8e+03	4000000	--	
Blue light, small source	$B(\lambda)$	E_B	$W \cdot m^{-2}$	0,01*	--	1,0	--	400	--	
Retinal thermal	$R(\lambda)$	L_R	$W \cdot m^{-2} \cdot sr^{-1}$	$28000/\alpha$	2,2e+04	$28000/\alpha$	2,2e+04	$71000/\alpha$	--	
Retinal thermal, weak visual stimulus**	$R(\lambda)$	L_{IR}	$W \cdot m^{-2} \cdot sr^{-1}$	545000 $0,0017 \leq \alpha \leq 0,011$	--					
				6000/ α $0,011 \leq \alpha \leq 0,1$	6,9e+00					
IR radiation, eye		E_{IR}	$W \cdot m^{-2}$	100	0,0e+00	570	--	3200	--	

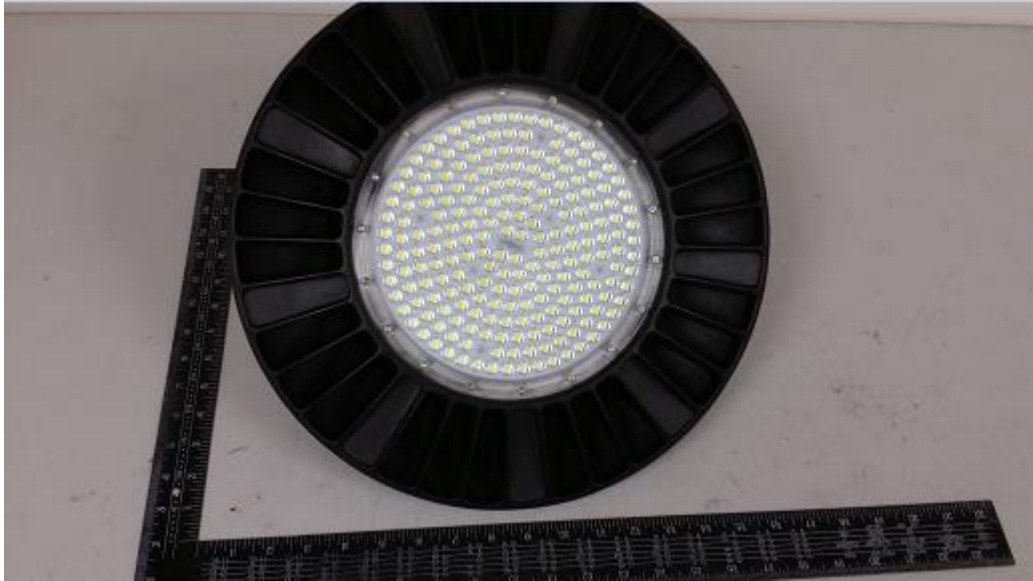
Annex 8	Photobiological safety of lamps and lamp systems were evaluated according to standard IEC 62471:2006, EN 62471:2008, EU Directive 2006/25/EC and IEC TR 62778:2014
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Table 6.1	Emission limits for risk groups of continuous wave lamps (based on EU Directive 2006/25/EC)	P
<p>* Small source defined as one with $\alpha < 0,011$ radian. Averaging field of view at 10000 s is 0,1 radian.</p> <p>** Involves evaluation of non-GLS source</p> <p>NOTE The action functions: see Table 4.1 and Table 4.2 The applicable aperture diameters: see 4.2.1 The limitations for the angular subtenses: see 4.2.2 The related measurement condition 5.2.3 and the range of acceptance angles: see Table 5.5.</p> <p>AOK-200WiU, Measure distance 5069mm, $\alpha = 0,0280$rad (Risk Group 1)</p>		

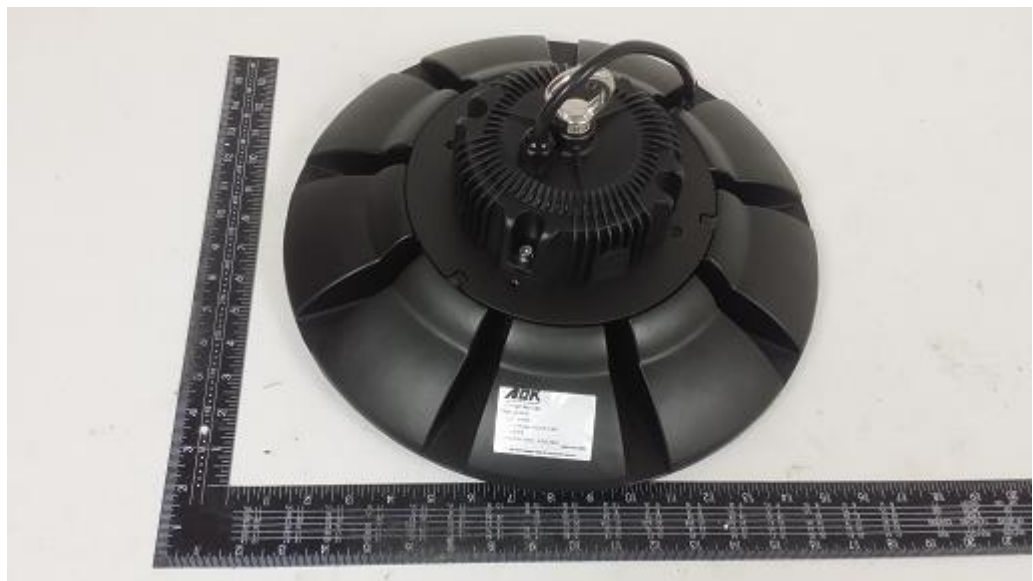
ANNEX 8 Photobiological safety of lamps and lamp systems were evaluated according to standard IEC 62471:2006, EN 62471:2008, EU Directive 2006/25/EC and IEC TR 62778:2014

TABLE: Spectroradiometric measurement		P		
Measurement performed on:	<input type="checkbox"/> LED package <input type="checkbox"/> LED module <input type="checkbox"/> Lamp <input checked="" type="checkbox"/> Luminaire			
Model number.....	AOK-200WiU			
Test voltage (V)	240V	—		
Test current (mA)	--	—		
Test frequency (Hz).....	--	—		
Ambient, t (°C)	25	—		
Measurement distance	<input checked="" type="checkbox"/> 20 cm <input type="checkbox"/> ... cm	—		
Source size	<input checked="" type="checkbox"/> Non-small <input type="checkbox"/> Small : mm	—		
Field of view	<input type="checkbox"/> 100 mrad <input checked="" type="checkbox"/> 11 mrad <input type="checkbox"/> 1,7 mrad (for small sources)	—		
Item	Symb ol	Units	Result	Remark
Correlated colour temperature	CCT	K	--	
x/y colour coordinates			--	
Blue light hazard radiance	L _B	W/(m ² •sr ¹)	784	RG1
Blue light hazard irradiance	E _B	W/m ²	--	
Luminance	L	cd/m ²	--	
Illuminance	E	lx	--	
Supplementary information:				

Photo document



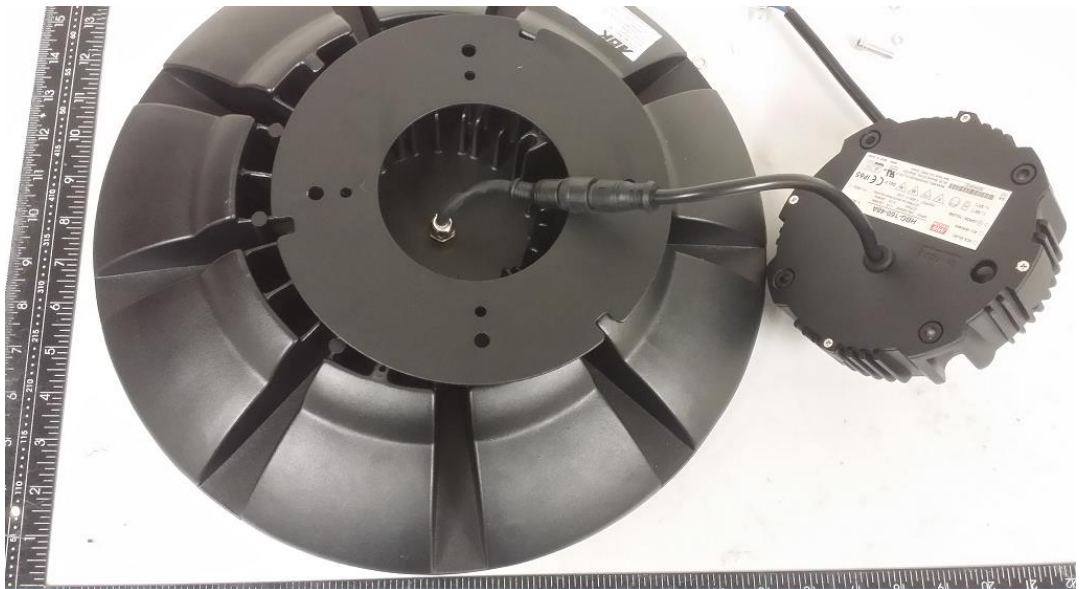
Picture 1. the bottom view of AOK-150WiU
(Mechanical construction and electrical construction of all other models are same as above
Except size, LED driver models, and quantity of LED)



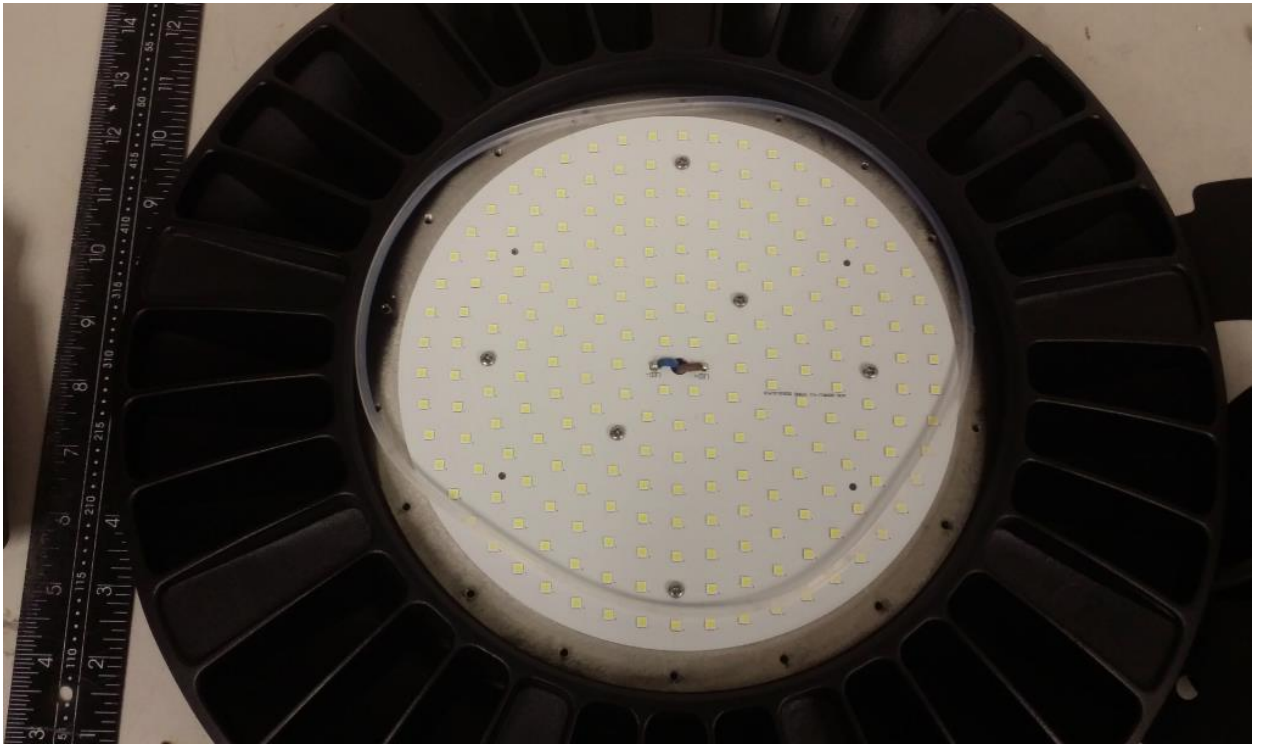
Picture 2. the back view of AOK-150WiU



Picture 3. cable gland



Picture 4. inside of luminaire view (under LED driver)



Picture 5. LED module (used sealing ring)