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Test
TS EN ISO/IEC 17025
AB-0123-T

AB-0823-T

201900002TUR-003

01.04.2019

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

Report Number.....: 201900002TUR-003

Date of issue.....: 01.04.2019

Total number of pages: 46

Name of Testing Laboratory
preparing the Report.....: Intertek Test Hizmetleri A.Ş. Electrical Laboratory

Applicant's name: Hera Eğlence ve Mimari Aydınlatma Sis. İç ve Dış Tic. A.Ş.

Address: Güllübağlar Mah. Kahramanlar Cad. No:3/1 Pendik-İstanbul

Test specification:

Standard.....: IEC 60598-2-3:2002, AMD1:2011 used in conjunction with
IEC 60598-1:2014, AMD1:2017

Test procedure: LVD

Non-standard test method: N/A

Test Report Form No.: IEC60598_2_3L

Test Report Form(s) Originator: Intertek Semko AB

Master TRF.....: Dated 2018-03-09

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Test item description	Fixed Outdoor Luminaire
Trade Mark	Hera
Manufacturer	Hera Eğlence ve Mimari Aydınlatma Sis. İç ve Dış Tic. A.Ş.
Model/Type reference	P01070105 Sword RGBW/A
Ratings	48V D.C. / Max 0.6 A/ Max. 28.5 W

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Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):		
<input checked="" type="checkbox"/>	CB Testing Laboratory:	Intertek Test Hizmetleri A.Ş. Electrical Laboratory
Testing location/ address :		Merkez Mah. Sanayi Cad. No:23 Altındağ Plaza Yenibosna 34197 İstanbul-Turkey
Tested by (name, function, signature).....:		Lokman TUNÇ Project Engineer 
Approved by (name, function, signature)....:		Alper PEKGÖZ Team Leader 
Testing procedure: CTF Stage 1:		
Testing location/ address :		
Tested by (name, function, signature).....:		
Approved by (name, function, signature)....:		
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:		
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) :		

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<p>List of Attachments (including a total number of pages in each attachment):</p> <ul style="list-style-type: none"> -EN 60598-2-3:2003, AMD1:2011, EN 60598-1:2015, AMD1:2018 (2 pages) -Measurement equipment list (1 page) -Photo documentation (3 pages) 	
<p>Summary of testing: The EUT passed the requirements of the applied standards within this test report.</p>	
<p>Tests performed:</p> <p>IEC 60598-2-3:2002, AMD1:2011 used in conjunction with IEC 60598-1:2014, AMD1:2017</p> <p>EN 60598-2-3:2003, AMD1:2011 used in conjunction with EN 60598-1:2015, AMD1:2018</p> <p>The EN requirements listed above also added to this TRF, see appendixes at the end of this report for differences.</p> <p>Model P01070105 Sword RGBW/A</p>	<p>Testing location:</p> <p>Intertek Test Hizmetleri A.Ş. Electrical Laboratory Merkez Mah. Sanayi Cad. No:23 Altındağ Plaza Yenibosna 34197 İstanbul-Turkey</p>
<p>Summary of compliance with National Differences:</p> <p>All CCA national differences for Europe.</p>	

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Report History:

-10.01.2019/201900002TUR-001: Initial test report was published.

-26.03.2019/201900002TUR-002:

- Cl.3.6(4.13.1) Impact test results were updated, IK test results and reference report number added.
- Cl.3.6(4.24.2) Classification according to photobiological test report added, reference report number added.

-01.04.2019/201900002TUR-003:

- Cl.3.12(12.5) updated, Annex 2 updated and thermal test (abnormal operation) result were added to the table.
- Table for thermal test of Cl. 3.12(12.4) and Cl.3.12(12.5) updated with °C values (previous results were temperature rises).

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Copy of marking plate:



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Test item particulars: Fixed Outdoor Luminaire	
Classification of installation and use: Class III, Fixed connection for outdoor use	
Supply Connection: Type Z attachment, connection with socket	
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: 03.01.2018	
Test item receipt number: S18.1525, S18.1526	
Test item serial number: Engineering sample	
Date (s) of performance of tests: 31.12.2018-08.01.2019-29.03.2019	
General remarks:	
"(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report.	
The whole and/or the part of this report shall not be reproduced and shall not be shared with third parties, nor to be used for juridical – official and PR activities without the written permission of INTERTEK Test Hizmetleri A.S. The results given herein apply to the submitted sample only. Reports are invalid without signature / seal.	
The results are reported with an expanded uncertainty calculated using a coverage factor of 2 which gives a level of confidence of approximately 95%.	
Throughout this report a <input type="checkbox"/> comma / <input checked="" type="checkbox"/> point is used as the decimal separator.	
Manufacturer's Declaration per sub-clause 4.2.5 of IEC 60598-2-13:	
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 Not for a CB Certificate
When differences exist; they shall be identified in the General product information section.	
Name and address of factory (ies): Hera Eğlence ve Mimari Aydınlatma Sis. İç ve Dış Tic. A.Ş. Güllübağlar Mah. Kahramanlar Cad. No:3/1 Pendik/İstanbul/Turkey	

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General product information:

Product is a fixed outdoor luminaire with RGBW/A module. Provided with sockets for DC supply connection.

Input voltage: 48V DC, Input current: 0.6A (Max.), Input power: 28.5W (Max.)

AC to DC constant voltage driver is not provided with the product.



Note 1: IEC/EN 62031 is not considered in this test report since the LED module is integrated one. LED module is tested as part of the luminaire.

Note 2: IEC/ EN 61347 is not considered in this test report because driver was not part of the tested luminaire.

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

3.2 (0)	GENERAL TEST REQUIREMENTS		
3.2 (0.3)	More sections applicable..... :	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Section/s:	—
3.2 (0.5)	Components	(see Annex 1)	—
3.2 (0.7)	Information for luminaire design in light sources standards		—
3.2 (0.7.2)	Light source safety standard		—
	Luminaire design in the light source safety standard		N/A

3.4 (2)	CLASSIFICATION OF LUMINAIRES		
3.4 (2.2)	Type of protection	Class III	P
3.4 (2.3)	Degree of protection..... :	IP67	—
3.4 (2.4)	Luminaire suitable for direct mounting on normally flammable surfaces	Yes <input checked="" type="checkbox"/> No <input checked="" 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		—
	a) on a pipe	Yes <input type="checkbox"/> No <input type="checkbox"/>	—
	b) on a mast arm	Yes <input type="checkbox"/> No <input type="checkbox"/>	—
	c) on a post top	Yes <input type="checkbox"/> No <input type="checkbox"/>	—
	d) on span or suspension wires	Yes <input type="checkbox"/> No <input type="checkbox"/>	—
	e) on a wall	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	—

3.5 (3)	MARKING		
3.5 (3.2)	Mandatory markings	Hera	P
	Position of the marking	Mounting side	P
	Format of symbols/text		P
3.5 (3.3)	Additional information		P
	Language of instructions	English version is checked	P
3.5 (3.3.1)	Combination luminaires		N/A
3.5 (3.3.2)	Nominal frequency in Hz		N/A
3.5 (3.3.3)	Operating temperature	-40°C - 50°C	P

IEC 60598-2-3			
Clause	Requirement + Test	Result - Remark	Verdict
3.5 (3.3.5)	Wiring diagram		P
3.5 (3.3.6)	Special conditions		N/A
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	0.6A Max.	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	DC is used	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	Type Z	P
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 arm's reach		N/A
3.5 (3.3.21)	Non-replaceable and non-user replaceable light sources information provided		P
3.5 (3.3.22)	Controllable luminaires, classification of insulation provided		N/A
3.5 (3.3.23)	Luminaire without controlgear provided with necessary information for selection of appropriate component		N/A
3.5 (3.3.24)	If not supplied with terminal block, information on the packaging		N/A
3.5 (3.4)	Test with water		P
	Test with hexane		P
	Legible after test		P
	Label attached		P
3.5 (-)	Additional information in instruction leaflet		P

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Clause	Requirement + Test	Result - Remark	Verdict
	a) Design attitude		P
	b) Weight		N/A
	c) Overall dimensions		P
	d) Maximum projected area if applicable		N/A
	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	Provided with installation instruction	P
	i) Maximum mounting height		N/A

3.6 (4)	CONSTRUCTION		
3.6 (4.2)	Components replaceable without difficulty		P
3.6 (4.3)	Wireways smooth and free from sharp edges		P
3.6 (4.4)	Lampholders		N/A
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)		—
	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
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

IEC 60598-2-3			
Clause	Requirement + Test	Result - Remark	Verdict
3.6 (4.4.9)	Caps and bases correctly used		N/A
3.6 (4.4.10)	Light source for lampholder or connection according IEC 60061 not connected another way		N/A
3.6 (4.5)	Starter holders		N/A
	Starter holder in luminaires other than class II		N/A
	Starter holder class II construction		N/A
3.6 (4.6)	Terminal blocks		N/A
	Tails		N/A
	Unsecured blocks		N/A
3.6 (4.7)	Terminals and supply connections		P
3.6 (4.7.1)	Contact to metal parts		N/A
3.6 (4.7.2)	Test 8 mm live conductor		N/A
	Test 8 mm earth conductor		N/A
3.6 (4.7.3)	Terminals for supply conductors		N/A
3.6 (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
3.6 (4.7.4)	Terminals other than supply connection		N/A
3.6 (4.7.5)	Heat-resistant wiring/sleeves		N/A
3.6 (4.7.6)	Multi-pole plug		P
	- test at 30 N		P
3.6 (4.8)	Switches		N/A
	- adequate rating		N/A
	- adequate fixing		N/A
	- polarized supply		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- compliance with IEC 61058-1 for electronic switches		N/A
3.6 (4.9)	Insulating lining and sleeves		N/A
3.6 (4.9.1)	Retainment		N/A
	Method of fixing		N/A
3.6 (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
3.6 (4.10)	Double or reinforced insulation		P
3.6 (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
3.6 (4.10.2)	Assembly gaps:		P
	- not coincidental		P
	- no straight access with test probe		P
3.6 (4.10.3)	Retainment 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
3.6 (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
3.6 (4.11)	Electrical connections and current-carrying parts		P

IEC 60598-2-3			
Clause	Requirement + Test	Result - Remark	Verdict
3.6 (4.11.1)	Contact pressure		P
3.6 (4.11.2)	Screws:		P
	- self-tapping screws	Not used	P
	- thread-cutting screws	Not used	P
3.6 (4.11.3)	Screw locking:		N/A
	- 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		N/A
3.6 (4.12)	Screws and connections (mechanical) and glands		P
3.6 (4.12.1)	Screws not made of soft metal		P
	Screws of insulating material		N/A
	Torque test: torque (Nm); part..... :	2.18mm, 0.4Nm, Side lid screw	P
	Torque test: torque (Nm); part..... :	2.9mm, 0.5Nm, Bracket screw	P
	Torque test: torque (Nm); part..... :	2.82mm, 0.5Nm, Fixing screw	P
3.6 (4.12.2)	Screws with diameter < 3 mm screwed into metal		P
3.6 (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
3.6 (4.12.5)	Screwed glands; force (Nm)..... :		N/A
3.6 (4.13)	Mechanical strength		P
3.6 (4.13.1)	Impact tests:		P
	- fragile parts; energy (Nm)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- other parts; energy (Nm)..... :	0.70Nm IK test also performed on the luminaire Classification: IK09 Impact energy 10J, Vertical hammer, metal parts and plastic enclosure are subjected to test. CGS, Report No: LVD-196-02	P
	1) live parts		P
	2) linings		P
	3) protection		P
	4) covers		P
3.6 (4.13.2)	Metal parts have adequate mechanical strength		N/A
3.6 (4.13.3)	Straight test finger		N/A
3.6 (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
3.6 (4.13.6)	Tumbling barrel		N/A
3.6 (4.14)	Suspensions, fixings and means of adjusting		P
3.6 (4.14.1)	Mechanical load:		P
	A) four times the weight	2+8=10kg	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

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Clause	Requirement + Test	Result - Remark	Verdict
3.6 (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
3.6 (4.14.3)	Adjusting devices:		N/A
	- flexing test; number of cycles.....		N/A
	- strands broken		N/A
	- electric strength test afterwards		N/A
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		N/A
	- glow-wire test 650°C	See Test Table 3.15 (13.3.2)	N/A
	- spacing ≥ 30 mm		N/A
	- screen withstanding test of 13.3.1		N/A
	- screen dimensions		N/A
	- no fiercely burning material		N/A
	- thermal protection		N/A
	- electronic circuits exempted		N/A
3.6 (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
3.6 (4.16)	Luminaires for mounting on normally flammable surfaces		P
	No lamp control gear	(compliance with Section 12)	P
	Provided with adaptor for a track meet the requirements for direct mounting on normally flammable surfaces		N/A
3.6 (4.16.1)	Lamp control gear spacing:		N/A
	- spacing 35 mm		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- spacing 10 mm		N/A
3.6 (4.16.2)	Thermal protection:		N/A
	- 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 clause 12.6)	N/A
3.6 (4.17)	Drain holes		N/A
	Clearance at least 5 mm		N/A
3.6 (4.18)	Resistance to corrosion		N/A
3.6 (4.18.1)	- rust-resistance		P
3.6 (4.18.2)	- season cracking in copper		N/A
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		N/A
3.6 (4.21.1)	Shield fitted if tungsten halogen lamps or metal halide lamps		N/A
	Shield of glass if tungsten halogen lamps		N/A
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..... :	See Test Table 3.15 (13.3.2)	N/A
3.6 (4.22)	Attachments to lamps not cause overheating or damage		N/A
3.6 (4.23)	Semi-luminaires comply Class II		N/A
3.6 (4.24)	Photobiological hazards		N/A
3.6 (4.24.1)	No excessive UV radiation if tungsten halogen lamps and metal halide lamps (Annex P)		N/A
3.6 (4.24.2)	Retinal blue light hazard		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Class of risk group assessed according to IEC/TR 62778	Lamp classification group: Exempt TÜV Austria, Report No: 19-TST-0044-40	—
	Luminaires with E_{thr} :		N/A
	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
3.6 (4.25)	Mechanical hazard		P
	No sharp point or edges		P
3.6 (4.26)	Short-circuit protection		N/A
3.6 (4.26.1)	Adequate means of uninsulated accessible SELV parts		N/A
3.6 (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
3.6 (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
3.6 (4.28)	Fixing of thermal sensing control		N/A
	Not plug-in or easily replaceable type		N/A
	Reliably kept in position		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	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 (°C) :		—
	100 cycles between t min and t max		N/A
	Temperature sensing control still in position		N/A
3.6 (4.29)	Luminaires with non-replaceable light source		P
	Not possible to replace light source		P
	Live part not accessible after parts have been opened by hand or tools		P
3.6 (4.30)	Luminaires with non-user replaceable light source		N/A
	If protective cover provide protection against electric shock and marked with “caution, electric shock risk” symbol:		N/A
	Minimum two fixing means		N/A
3.6 (4.31)	Insulation between circuits		N/A
	Circuits insulated from LV supply fulfil requirements according 4.31.1 – 4.31.3		N/A
	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
3.6 (4.31.1)	SELV circuits		N/A
	Used SELV source		N/A
	Voltage ≤ ELV		N/A
	Insulating of SELV circuits from LV supply		N/A
	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		N/A
	Plugs not able to enter socket-outlets of other voltage systems		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Socket outlets does not admit plugs of other voltage systems		N/A
	Plugs and socket-outlets does not have protective conductor contact		N/A
3.6 (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
	Socket-outlets does not have protective conductor contact		N/A
3.6 (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
3.6 (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

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Clause	Requirement + Test	Result - Remark	Verdict
3.6.1 (-)	At least IP X3 or X5 respectively. IP		N/A
	Column-integrated luminaires:		N/A
	- parts below 2,5 m. IP		N/A
	- parts above 2,5 m. IP		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		N/A
	- drag coefficient.....		N/A
	- loaded area (m ²).....		N/A
	- used load (N).....		N/A
	- measured deformation (cm/m)		N/A
	- no rotation		N/A
3.6.4 (-)	Adjustable lampholders		N/A
3.6.5 (-)	Luminaires installed above 5 m, glass covers shall be:		N/A
	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 (-)	Protection by the use of glass that fractures into small pieces		N/A
	- number of particles is more than 40.....		N/A
3.6.5.2 (-)	Protection by the use of high impact resistant glass		N/A
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 on preconditioned sample		N/A
3.6.5.2.2 (-)	Glass covers not break 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		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- provides adequate space		N/A
	- means for attachment		N/A
	- means for attachment of metal corrosion-resistant		N/A
3.6.7 (-)	Compliance with ISO standard or other		N/A
3.6.8 (-)	Doors of column-integrated luminaires:		N/A
	- corrosion-resistant		N/A
	- opening only possible for an authorized person		N/A
	- impact test 5 Nm		N/A
	- sample show no damage		N/A
3.6.9 (-)	Column-integrated luminaire:		N/A
	- dimension of the cable 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		
3.7 (11.2.1)	Impulse withstand category (Normal category II)	Category II <input type="checkbox"/> Category III <input type="checkbox"/>	—
	Category III according Annex U		N/A
	Protected against pollution, reduced creepage and clearance according Annex P of IEC 61347-1		N/A
3.7 (11.2.2)	Creepage distances for frequency up to 30 kHz	See Test Table 3.7 (11.2) I	N/A
	Creepage distances for frequency over 30 kHz:		N/A
	- Controlgear marked with \hat{U}_{OUT} and f_{OUT} according IEC 61347-1, clause 7.1, item w	See Test Table 3.7 (11.2) II	N/A
	- Requirements according IEC 60664-4 for controlgear not covered by IEC 61347	See Test Table 3.7 (11.2) II	N/A
3.7 (11.2.3)	Clearances for frequency up to 30 kHz	See Test Table 3.7 (11.2) I	N/A
	Clearances distances for frequency over 30 kHz:		N/A
	- Controlgear marked with U_P	See Test Table 3.7 (11.2) II	N/A
	- Requirements according IEC 60664-4 for controlgear not covered by IEC 61347	See Test Table 3.7 (11.2) II	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
3.8 (7)	PROVISION FOR EARTHING		
3.8 (7.2.1 + 7.2.3)	Accessible metal parts		N/A
	Metal parts in contact with supporting surface		N/A
	Resistance < 0,5 Ω :		N/A
	Self-tapping screws 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
	Protective earthing of the luminaire not via built-in control gear		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		N/A
	Compliance with 4.7.3		N/A
	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
3.8 (7.2.6)	Earth terminal adjacent to mains terminals		N/A
3.8 (7.2.7)	Electrolytic corrosion of the earth terminal		N/A
3.8 (7.2.8)	Material of earth terminal		N/A
	Contact surface bare metal		N/A
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		N/A
	Length of earth conductor		N/A
3.8.1 (-)	Attachment prevented from rotation		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
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	(see Annex 4)	N/A
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	Socket connection	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
3.10 (5.2.2)	Type of cable	Class III, PVC, U ≤ 60 V	P
	Nominal cross-sectional area (mm ²)	2x0.75mm ²	P
	Cables equal to IEC 60227 or IEC 60245	IEC 60227	P
3.10 (5.2.3)	Type of attachment, X, Y or Z	Type Z	P
3.10 (5.2.5)	Type Z not connected to screws		P
3.10 (5.2.6)	Cable entries:		P
	- suitable for introduction		P
	- adequate degree of protection	Waterproof connector	P
3.10 (5.2.7)	Cable entries through rigid material have rounded edges	>0.5mm	P
3.10 (5.2.8)	Insulating bushings:		N/A
	- suitably fixed	Class III	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:		P

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Clause	Requirement + Test	Result - Remark	Verdict
	- 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
3.10 (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
3.10 (5.2.10.2)	Adequate cord anchorage for type Y and type Z attachment		P
3.10 (5.2.10.3)	Tests:		P
	- impossible to push cable; unsafe		P
	- pull test: 25 times; pull (N) : 30N		P
	- torque test: torque (Nm) : 0.08Nm		P
	- displacement \leq 2 mm	<2 mm	P
	- no movement of conductors		P
	- no damage of cable or cord		P
	- function independent of electrical connection		P
3.10 (5.2.11)	External wiring passing into luminaire	Complies tests of 5.3	P
3.10 (5.2.12)	Looping-in terminals		P
3.10 (5.2.13)	Wire ends not tinned		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Wire ends tinned: no cold flow		N/A
3.10 (5.2.14)	Mains plug same protection	No plug	N/A
	Class III luminaire plug		N/A
	No unsafe compatibility		N/A
3.10 (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
3.10 (5.2.17)	No standardized interconnecting cables properly assembled		N/A
3.10 (5.2.18)	Used plug in accordance with		N/A
	- IEC 60083		N/A
	- other standard		N/A
3.10 (5.3)	Internal wiring		P
3.10 (5.3.1)	Internal wiring of suitable size and type		P
	Through wiring		P
	- not delivered/ mounting instruction		P
	- 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		N/A
	Cross-sectional area (mm ²).....		N/A
	Insulation thickness (mm)		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		N/A
	Cross-sectional area (mm ²).....		N/A
3.10 (5.3.1.3)	Double or reinforced insulation for class II	Class III	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
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°		N/A
3.10 (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
3.10 (5.3.4)	Joints and junctions effectively insulated		N/A
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		N/A
	Wire ends tinned: no cold flow		N/A
3.10 (5.4)	Test to determine suitability of conductors having a reduced cross-sectional area		N/A
	Under test the temperature of the luminaire wiring insulation not exceed the limits stated in Table 12.2	(see Annex 2)	N/A
	No damage to luminaire wiring after test		N/A
3.10.1 (-)	Cord anchorage if applicable		N/A
	- pull test: 25 times; pull (N)		N/A
	- torque test: torque (Nm)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
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, settable and adjustable luminaires		N/A
	Basic insulated parts not accessible with Ø 50 mm probe from outside, other types of luminaires		P
	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		P
	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	Fixed	N/A
3.11 (8.2.3.a)	Class II luminaire:		N/A
	- basic insulated metal parts not accessible during starter or lamp replacement	Class III	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)	SELV circuits with exposed current carrying parts:		N/A
	Ordinary luminaire:		N/A
	- voltage under load (V)..... :	Other than ordinary luminaire, IP67	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- 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:		P
	- nominal voltage (V) :	48V D.C.	N/A
	Class III luminaire only for connection to SELV		P
	Class III luminaire not provided with means for protective earthing		N/A
3.11 (8.2.4)	Portable luminaire has protection independent of supporting surface		N/A
3.11 (8.2.5)	Compliance with the standard test finger or relevant probe		N/A
3.11 (8.2.6)	Covers reliably secured		N/A
3.11 (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
3.12 (12)	ENDURANCE TEST AND THERMAL TEST		
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 (12.2)	Selection of lamps and ballasts		—
	Lamp used according Annex B	(Lamp used see Annex 2)	—
	Controlgear if separate and not supplied	(Controlgear used see Annex 2)	—
3.12 (12.3)	Endurance test		P
	a) mounting-position :	Positioned as in normal use	—
	b) test temperature ($^{\circ}$ C) :	60 $^{\circ}$ C \pm 2 $^{\circ}$ C, ta:50 $^{\circ}$ C	—
	c) total duration (h) :	240h	—
	d) supply voltage (V) :	48	—
	d) if not equipped with controlgear, constant voltage/current (V) or (A) :	48V D.C. x 1.1 =52.8V D.C.	—

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Clause	Requirement + Test	Result - Remark	Verdict
	e) luminaire ceases to operate		—
3.12 (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
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):		N/A
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		N/A
	- 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
3.12 (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
3.12 (12.7)	Thermal test (failed lamp control gear in plastic luminaires):		N/A
3.12 (12.7.1)	Luminaire without temperature sensing control		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
3.12 (12.7.1.1)	Luminaire with fluorescent lamp $\leq 70W$		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 ($^{\circ}C$): at 1,1 Un		—
	- measured temperature of fixing point/exposed part ($^{\circ}C$): at 1,1 Un		—
	- calculated temperature of fixing point/exposed part ($^{\circ}C$)		—
	Ball-pressure test	See Test Table 3.15 (13.2.1)	N/A
3.12 (12.7.1.2)	Luminaire with discharge lamp, fluorescent lamp $> 70W$, transformer $> 10 VA$		N/A
	- case of abnormal conditions		—
	- measured winding temperature ($^{\circ}C$): at 1,1 Un		—
	- measured temperature of fixing point/exposed part ($^{\circ}C$): at 1,1 Un		—
	- calculated temperature of fixing point/exposed part ($^{\circ}C$)		—
	Ball-pressure test	See Test Table 3.15 (13.2.1)	N/A
3.12 (12.7.1.3)	Luminaire with short circuit proof transformers $\leq 10 VA$		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		N/A
	- thermal link	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	—

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Clause	Requirement + Test	Result - Remark	Verdict
	- manual reset cut-out	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	—
	- auto reset cut-out	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	—
	- case of abnormal conditions		—
	- highest measured temperature of fixing point/ exposed part (°C):		—
	Ball-pressure test:	See Test Table 3.15 (13.2.1)	N/A
3.12.1 (-)	Temperature reduction if for outdoor use only		P
3.12.2 (-)	(See above)		—
3.12.3 (-)	Glass covers used within the thermal limits declared by the glass manufacturer		N/A

3.13 (9)	RESISTANCE TO DUST AND MOISTURE		
3.13.1 (-)	If IP > IP 20 the order of tests as specified in clause 3.12		P
3.13 (9.2)	Tests for ingress of dust, solid objects and moisture: Results are taken from the report nr. LVD-196-04		P
	- classification according to IP	IP67	—
	- mounting position during test	Placed as shown in Fig.6	—
	- fixing screws tightened; torque (Nm)	0.33Nm	—
	- tests according to clauses	9.2.1, 9.2.2, 9.2.8	—
	- 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		N/A
	c.2) For luminaires with drain holes – no hazardous water entry		P
	d) no water in watertight or pressure watertight luminaire		P
	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		N/A
	g) no damage of protective shield or glass envelope		N/A
3.13 (9.3)	Humidity test 48 h	25C, 93%Rh, 48h	P

3.14 (10)	INSULATION RESISTANCE AND ELECTRIC STRENGTH		
3.14 (10.2.1)	Insulation resistance test		P
	Cable or cord covered by metal foil or replaced by a metal rod of mm Ø	Covered by metal foil	—
	Insulation resistance (MΩ)	>1 MΩ	—
	SELV		P
	- between current-carrying parts of different polarity :		N/A
	- between current-carrying parts and mounting surface.....	>1 MΩ, 100V D.C. applied	P
	- between current-carrying parts and metal parts of the luminaire.....	>1 MΩ, 100V D.C. applied	P
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts.....	>1 MΩ, 100V D.C. applied	P
	- Insulation bushings as described in Section 5	>1 MΩ, 100V D.C. applied	P
	Other than SELV		N/A
	- between live parts of different polarity		N/A
	- between live parts and mounting surface		N/A
	- between live parts and metal parts		N/A
	- 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		P

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Clause	Requirement + Test	Result - Remark	Verdict
	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		P
	- between current-carrying parts of different polarity :		N/A
	- between current-carrying parts and mounting surface..... :	No flashover, 500V D.C. applied,	P
	- between current-carrying parts and metal parts of the luminaire..... :	No flashover, 500V D.C. applied	P
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts..... :	No flashover, 500V D.C. applied	P
	- Insulation bushings as described in Section 5	No flashover, 500V D.C. applied	P
	Other than SELV		N/A
	- between live parts of different polarity		N/A
	- between live parts and mounting surface		N/A
	- between live parts and metal parts		N/A
	- 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):.		N/A

3.15 (13)	RESISTANCE TO HEAT, FIRE AND TRACKING		
3.15 (13.2.1)	Ball-pressure test	See Test Table 3.15 (13.2.1)	N/A
3.15 (13.3.1)	Needle-flame test (10 s)..... :	See Test Table 3.15 (13.3.1)	N/A
3.15 (13.3.2)	Glow-wire test (650°C)	See Test Table 3.15 (13.3.2)	N/A
3.15 (13.4)	Proof tracking test (IEC 60112)..... :	See Test Table 3.15 (13.4)	N/A

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Clause	Requirement + Test	Result - Remark	Verdict

3.7 (11.2)	TABLE I: Creepage distances and clearances						N/A
	Minimum distances (mm) for a.c. up to 30 kHz sinusoidal voltages						
	Applicable part of IEC 60598-1 Table 11.1.A*, 11.1.B* 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 or U_P if applicable (kV)							—
Supplementary information:							
Distance 2:							
Working voltage (V)							—
PTI					< 600 <input type="checkbox"/>	≥ 600 <input type="checkbox"/>	—
Pulse voltage or U_P if applicable (kV)							—
Supplementary information:							
Distance 3:							
Working voltage (V)							—
PTI					< 600 <input type="checkbox"/>	≥ 600 <input type="checkbox"/>	—
Pulse voltage or U_P if applicable (kV)							—
Supplementary information: No values are specified for working voltages below 25 V r.m.s. and 60V d.c. as the test voltage of table 10.2 is considered sufficient. Working voltage for the appliance is 48V d.c.							

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

3.7 (11.2)	TABLE II: Creepage distances and clearances						N/A
	Minimum distances (mm) for a.c. higher than 30 kHz sinusoidal voltages						
	Applicable part of IEC 61347-1 Table 7 and 8* or IEC 60664-4 Table 1 and 2						
Distances	Insulation type **	Measured clearance	Required		Measured creepage	Required	
			clearance	*Table		creepage	*Table
Distance 1:							

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Clause	Requirement + Test	Result - Remark	Verdict
	Working voltage (V)		—
	Frequency if applicable (kHz)		—
	PTI	< 600 <input type="checkbox"/> ≥ 600 <input type="checkbox"/>	—
	Peak value of the working voltage \hat{U}_{out} if applicable (kV)		—
Supplementary information:			
Distance 2:			
	Working voltage (V)		—
	Frequency if applicable (kHz)		—
	PTI	< 600 <input type="checkbox"/> ≥ 600 <input type="checkbox"/>	—
	Peak value of the working voltage \hat{U}_{out} if applicable (kV)		—
Supplementary information:			
Distance 3:			
	Working voltage (V)		—
	Frequency if applicable (kHz)		—
	PTI	< 600 <input type="checkbox"/> ≥ 600 <input type="checkbox"/>	—
	Peak value of the working voltage \hat{U}_{out} if applicable (kV)		—
Supplementary information: No values are specified for working voltages below 25 V r.m.s. and 60V d.c. as the test voltage of table 10.2 is considered sufficient. Working voltage for the appliance is 48V d.c.			

** Insulation type: B – Basic; S – Supplementary; R – Reinforced.

3.15 (13.2.1)	TABLE: Ball Pressure Test of Thermoplastics			N/A
Allowed impression diameter (mm)	2			—
Object/ Part No./ Material	Manufacturer/ trademark	Test temperature (°C)	Impression diameter (mm)	
Supplementary information: No such parts therefore tests are not performed.				

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Clause	Requirement + Test	Result - Remark			Verdict
3.15 (13.3.1)	TABLE: Needle-flame test (IEC 60695-11-5)				N/A
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
Supplementary information: No such parts therefore tests are not performed.					

3.15 (13.3.2)	TABLE: Glow-wire test (IEC 60695-2-11)				N/A
Glow wire temperature		650°C		—	
Object/ Part No./ Material	Manufacturer/ trademark	Ignition of specified layer Yes/No	Duration of burning (tb) (s)	Verdict	
Supplementary information: External parts of insulating material does not provide protection against electric shock, the purpose of this part is reducing the lumen output, not relevant with the safety of appliance.					

3.15 (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	
Supplementary information: Protected against dust and moisture, IP67.					

ANNEX 1 TABLE: Critical components information						P
Object / part No.	Code	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity ¹⁾
LED PCB	C	Baskı Devre San. ve Tic. A.Ş.	BK.364.97R1	V-0	UL 796	UL, E201793
LED	C	Nichia	NVSL219B	700mA, Tc:85 °C 2200K	IEC 62471	Nichia, SQETB15051 301L
Socket connector	C	Shenzen Lilutong Electronic Tech.	LLT-M12	60V AC 50/60Hz 300W	UL 1977	UL, E470166

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Clause	Requirement + Test	Result - Remark	Verdict

Supplementary information:

¹⁾ Provided evidence ensures the agreed level of compliance. See OD-CB2039.

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

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Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 2	TABLE: Thermal tests of Section 12			P			
	Type reference	P01070105		—			
	Lamp used.....	LED		—			
	Lamp control gear used.....	No control gear		—			
	Mounting position of luminaire	As in normal use		—			
	Supply wattage (W)	6.86W		—			
	Supply current (A)	0.13A		—			
	Temperatures in test 1 - 4 below are corrected for ta (°C)	-		—			
	- abnormal operating mode	-		—			
1.12 (12.4)	- test 1: rated voltage	-		—			
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current	48V x 1.1=52.8V		—			
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage	-		—			
	Through wiring or looping-in wiring loaded by a current of A during the test	-		—			
1.12 (12.5)	- test 4: 1,1 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current	48V x 1.1=52.8V		—			
Temperature measurements (°C)							
Part	Ambient	Cl. 12.4 – normal				Cl. 12.5 – abnormal	
		test 1	test 2	test 3	limit	test 4	limit
Metal surface of luminaire	22.7	-	26.9	-	60	32.9	65
LED surface	22.7	-	27.8	-	Info	33.4	Info
Plastic enclosure of LED	22.7	-	24.4	-	75	29.2	80
External surface of socket connection	22.7	-	24.6	-	70	25.3	75
Supplementary information:							

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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

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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

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Clause	Requirement + Test	Result - Remark	Verdict
(15.6)	Terminals and connections for external wiring		N/A
(15.6.1)	Conductors		N/A
	Terminal size and rating		N/A
15.6.2	Mechanical tests		
(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	

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Clause	Requirement + Test							Result - Remark		Verdict
voltage drop (mV)										
Supplementary information:										

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Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 60598-2-3 EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES Luminaires Part 2: Particular requirements Section 3: Luminaires for road and street lighting			
Differences according to: EN 60598-2-3:2003, AMD1:2011 used in conjunction with EN 60598-1:2015, AMD1:2018			
Annex Form No: EU_GD_IEC60598_2_3L			
Annex Form Originator: Intertek Semko AB			
Master Annex Form: 2018-12-07			
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CENELEC COMMON MODIFICATIONS (EN)			
3.6 (4)	CONSTRUCTION		
3.6 (4.11.6)	Electro-mechanical contact systems		N/A
3.10 (5)	EXTERNAL AND INTERNAL WIRING		
3.10 (5.2.2)	Cables equal to EN 50525	Class III	N/A
	Replace table 5.1 – Supply cord		N/A
3.12 (12)	ENDURANCE TESTS AND THERMAL TESTS		
3.12 (12.4.2c)	Thermal test (normal operation) see footnote c to table 12.2 relating to unsleeved fixed wiring		N/A
ZB	ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)		
(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)		
(4 & 5)	FR: Shuttered socket-outlets 10/16A		N/A
	FR: Safety requirements for high buildings (Decree of 30 December 2011 on safety regulations for the construction of high-rise buildings and their protection against fire and panic risks; Section VIII; Article GH 48, Lighting)		N/A
	Glow-wire test for outer parts of luminaires:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- 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

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Clause	Requirement + Test	Result - Remark	Verdict

List of test equipment used:

Measurement / testing	Testing / measuring equipment / material used, (Equipment ID)	Range used	Last Calibration date	Calibration due date
Variable Stabilized Power Source	CHROMA 61612	EN 23	initial calibration	initial calibration
Mono-Phase Power Meter	YOKOGAWA WT310	EN 033	12.2018	12.2019
Temperature Recorder	YOKOGAWA MV2040	EN 34	12.2018	12.2019
Hand-held Thermometer	FLUKE 52-II	EN 008	09.2018	09.2019
Hand-held Multimeter	FLUKE 289	EN 05	09.2018	09.2019
Force Gauge	IMADA DS2-110	EN 20	08.2018	08.2019
Electrical Safety Analyzer	CHROMA 19032-P	EN 21	09.2018	09.2019
Glow Wire Test Apparatus	TESTING EUROPE T4-08	EN 43	03.2019	04.2020
Test Nail	TESTING EUROPE T5-76	EN 53	09.2016	09.2019
Chronometer	CASIO HS-80TW	EN 114	01.2019	01.2020
Torque Screwdriver	Imada	EN 18	09.2018	09.2019
Calliper	MITUTOYO 573-635	EN 37	09.2018	09.2019
Angle meter	MITUTOYO 950-317	EN 39	09.2018	09.2019
Probe B	TESTING EUROPE T5-75	EN 50	09.2016	09.2019
Probe 11	TESTING EUROPE T5-41	EN 56	09.2016	09.2019
Probe 13	TESTING EUROPE T5-47	EN 58	09.2016	09.2019
EMF tester	NARDA ELT-400	EN 002	06.2016	06.2019
EMF tester Probe	NARDA 100cm2	EN 02-A	08.2016	08.2019
Climatic chamber	ANGELANTONI DY 1200	EN 001	01.2019	01.2021
Impact hammer	PTL F 22.50	EN 041	05.2018	05.2019
Tracking test apparatus	Testing Europe T4-41A	EN 044	04.2018	04.2019
Probe 18	Testing Europe T5 77	EN 059	09.2016	09.2019
Tape	Ceta Form P05-0316	EN 193	11.2016	11.2019
Oven	Testing Europe SP120E	EN 45	01.2019	01.2020
Ball pressure test mass	Hüray M	EN 120	01.2017	01.2020