



Test Report issued under the responsibility of:

intertek

TEST REPORT
IEC 60598-2-5
Luminaires
Part 2: Particular requirements
Section 5: Floodlights

Report Number. : 202100225TUR-001

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Total number of pages : 54

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

Applicant's name : BSI Aydınlatma Elektrik Elektronik San. ve Tic. A.Ş.

Address : Konutkent Mah. 3029 Cad. No:3/91 Azel Urhan Tower 06810
Çankaya/Ankara/TURKEY

Test specification:

Standard..... : IEC 60598-2-5:2015 used in conjunction with
IEC 60598-1:2014, AMD1:2017

Test procedure : CB Scheme

Non-standard test method : N/A

Test Report Form No. : IEC60598_2_5F

Test Report Form(s) Originator : Intertek Semko AB

Master TRF..... : Dated 2018-04-06

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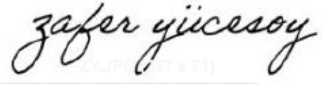
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General disclaimer:

The test results presented in this report relate only to the object tested.

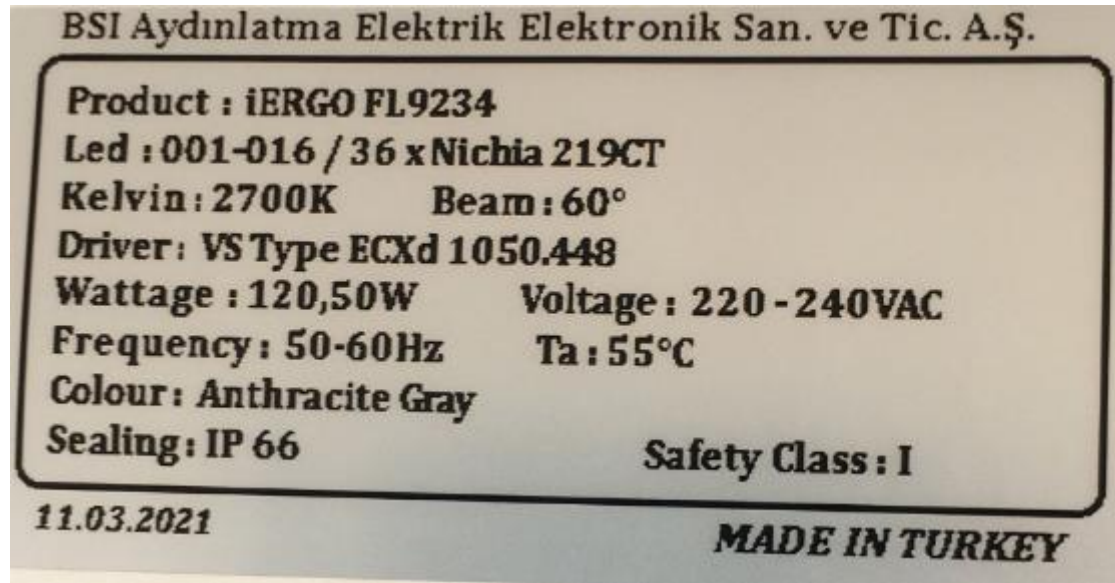
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Test item description..... :	Floodlight
Trade Mark..... :	
Manufacturer :	BSI Aydınlatma Elektrik Elektronik San. ve Tic. A.Ş.
Model/Type reference :	FL9222, FL9224, FL9226, FL9228, FL9230, FL9232, FL9234
Ratings :	220-240VAC 50-60Hz IP66 Ta:55°C Rated power varies between 12W and 120.5W

Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):		
☒	CB Testing Laboratory:	Intertek Test Hizmetleri A.Ş. Electrical Laboratory
Testing location/ address.....:		Merkez Mah. Sanayi Cad. No:23 Altındağ Plaza 34197 Yenibosna/İstanbul/TURKEY
Tested by (name, function, signature).....:		Lokman TUNÇ Senior Project Engineer
Approved by (name, function, signature)....:		Zafer YÜCESOY Laboratory Manager 
☐	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) :		

List of Attachments: - EN 60598-2-5:2015 used in conjunction with EN 60598-1:2015 + A1:2018 (2 pages) - List of test equipment (1 page) - Photos (10 pages)	
Summary of testing: The EUT is in compliance with the requirements of the applied standards within this test report.	
Tests performed: IEC 60598-2-5:2015 IEC 60598-1:2014, AMD1:2017 EN 60598-2-5:2015 EN 60598-1:2015 + A1:2018 The EN requirements listed above were also added to this TRF, see appendixes for differences. Model of FL9234 was tested completely.	Testing location: Intertek Test Hizmetleri A.Ş. Electrical Laboratory Merkez Mah. Sanayi Cad. No:23 Altındağ Plaza 34197 Yenibosna/İstanbul/TURKEY
Summary of compliance with National Differences: National differences for Europe except Denmark	

Copy of marking plate:



Test item particulars.....: Floodlight	
Classification of installation and use.....: Class I luminaire for outdoor use	
Supply Connection Supply cord for permanent connection	
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 17.03.2021	
Test item serial number Engineering samples	
Test item receipt number.....: S21.305, S21.206, S21.307	
Date (s) of performance of tests 19.03.2021-08.04.2021	
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 Intertek Turkey Electrical Laboratory applies the shared risk decision rule. The results are reported with an expanded uncertainty calculated using a coverage factor k of 2 which gives a level of confidence of approximately 95%. The product or test method requires a declaration of conformity in the laboratory report. However, if there is no information about the effects of confidence level and measurement uncertainty in evaluating the conformity with the relevant standards or legislation, the laboratory can evaluate whether the obtained test result is within the specified limits or not as appropriate or not, without considering the level of confidence and measurement uncertainty. Throughout this report a ☐ comma / ☒ point is used as the decimal separator. Clause numbers between brackets refer to clauses in IEC 60598-1	
Manufacturer's Declaration per sub-clause 4.2.5 of IEC 60598-1:	
The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided :	☐ Yes ☒ Not applicable Only one factory
When differences exist; they shall be identified in the General product information section.	
Name and address of factory (ies) : BSI Aydınlatma Elektrik Elektronik San. ve Tic. A.Ş. Konutkent Mah. 3029 Cad. No:3/91 Azel Urhan Tower 06810 Çankaya/Ankara/TURKEY	

General product information:

Tested luminaire is a floodlight for outdoor use and luminaire is Class I with ingress protection IP66 against dust and water.

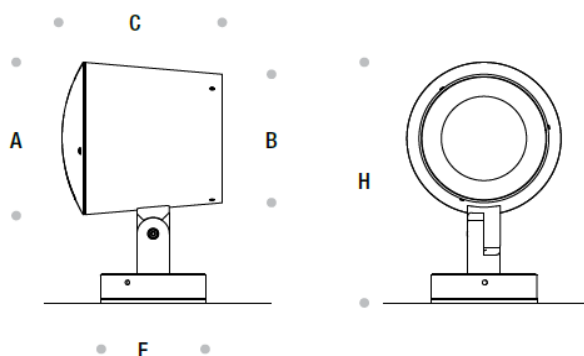
Tested model is FL9234 with electrical ratings 220-240VAC 50-60Hz and 120.5W. Luminaire is also marked with Ta:55°C.

Tested luminaire incorporates LED driver, LED module, supply cord and connecting device for supply cord.

This test report also covers models listed below:

Model	Rated Power (W)	Lumen Output (lm) 3000K/4000K	Colour Temperature	A(mm)	B(mm)	C(mm)	H(mm)	F(mm)
FL9222	12	1320/1440	3000K/4000K	127	108	130	210	80
FL9224	24	2460/2880	3000K/4000K	127	108	130	210	80
FL9226	36	3940/4320	3000K/4000K	190	160	197	300	120
FL9228	48	5280/5760	3000K/4000K	190	160	197	300	120
FL9230	72	7290/8640	3000K/4000K	238	200	240	365	150
FL9232	108	11880/12960	3000K/4000K	238	200	240	365	150
FL9234	120.5	15840/17280	3000K/4000K	238	200	240	365	150

Differences between models are rated power, dimensions and LED modules.



FL9234

IEC 60598-2-5			
Clause	Requirement + Test	Result - Remark	Verdict
5.4 (0+2)	CLASSIFICATION OF LUMINAIRES		P
5.4 (0)	General requirements and tests		—
5.4 (0.3)	More sections applicable..... :	Yes ☐ No ☒ Section/s:	—
5.4 (0.5)	Components	(see Annex 1)	—
5.4 (0.7)	Information for luminaire design in light sources standards		—
5.4 (0.7.2)	Light source safety standard	IEC 62031	—
	Luminaire design in the light source safety standard		—
5.4 (2)	Classification of luminaires		—
5.4 (2.2)	Type of protection	Class I	P
5.4 (2.3)	Degree of protection..... :	IP66	—
5.4 (2.4)	Luminaire suitable for direct mounting on normally flammable surfaces	Yes ☒ No ☐	—
5.4 (2.5)	Luminaire for normal use	Yes ☒ No ☐	—
	Luminaire for rough service	Yes ☐ No ☒	—
5.5 (3)	MARKING		P
5.5 (3.2)	Mandatory markings		P
	Position of the marking	On the base plate	P
	Format of symbols/text		P
5.5 (3.3)	Additional information		P
	Language of instructions	English	P
5.5 (3.3.1)	Combination luminaires	No combination of luminaire	N/A
5.5 (3.3.2)	Nominal frequency in Hz	50-60	P
5.5 (3.3.3)	Operating temperature	55°C	P
5.5 (3.3.5)	Wiring diagram	Provided in installation guide	P
5.5 (3.3.6)	Special conditions	No special condition	N/A
5.5 (3.3.7)	Metal halide lamp luminaire – warning	No metal halide lamp	N/A
5.5 (3.3.8)	Limitation for semi-luminaires	No semi-luminaire	N/A
5.5 (3.3.9)	Power factor and supply current	>0.95	P
5.5 (3.3.10)	Suitability for use indoors	Outdoor use	N/A
5.5 (3.3.11)	Luminaires with remote control	No remote control	N/A
5.5 (3.3.12)	Clip-mounted luminaire – warning	No clip-mounted luminaire	N/A
5.5 (3.3.13)	Specifications of protective shields	No protective shield	N/A
5.5 (3.3.14)	Symbol for nature of supply	220-240VAC 50-60Hz	N/A

IEC 60598-2-5			
Clause	Requirement + Test	Result - Remark	Verdict
5.5 (3.3.15)	Rated current of socket outlet	No socket outlet incorporated in the luminaire	N/A
5.5 (3.3.16)	Rough service luminaire	No rough service luminaire	N/A
5.5 (3.3.17)	Mounting instruction for type Y, type Z and some type X attachments		P
5.5 (3.3.18)	Non-ordinary luminaires with PVC cable		P
5.5 (3.3.19)	Protective conductor current in instruction if applicable		N/A
5.5 (3.3.20)	Provided with information if not intended to be mounted within arm's reach		N/A
5.5 (3.3.21)	Non-replaceable and non-user replaceable light sources information provided		P
5.5 (3.3.22)	Controllable luminaires, classification of insulation provided	No controllable luminaire	N/A
5.5 (3.3.23)	Luminaire without controlgear provided with necessary information for selection of appropriate component	Controlgear provided	N/A
5.5 (3.3.24)	If not supplied with terminal block, information on the packaging		N/A
5.5 (3.4)	Test with water		P
	Test with hexane		P
	Legible after test	Legible after the tests	P
	Label attached		P
5.5 (-)	Additional information if applicable		P
	a) Operation position		P
	b) Weight and dimensions		P
	c) Maximum protected area		P
	d) Limitation of use indoors and/or outdoor	Outdoor use	P
	e) Maximum mounting height if ≤ 5 m	Tempered glass on front surface	P
5.6 (4)	CONSTRUCTION		P
5.6 (4.2)	Components replaceable without difficulty		P
5.6 (4.3)	Wireways smooth and free from sharp edges	Free from sharp edges	P
5.6 (4.4)	Lampholders		N/A
5.6 (4.4.1)	Integral lampholder		N/A
5.6 (4.4.2)	Wiring connection		N/A
5.6 (4.4.3)	Lampholder for end-to-end mounting		N/A
5.6 (4.4.4)	Positioning		N/A

IEC 60598-2-5			
Clause	Requirement + Test	Result - Remark	Verdict
	- pressure test (N)	No lamp holder	—
	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)	No lamp holder	—
	After test the lampholder have not moved from its position and show no permanent deformation		N/A
5.6 (4.4.5)	Peak pulse voltage		N/A
5.6 (4.4.6)	Centre contact		N/A
5.6 (4.4.7)	Parts in rough service luminaires resistant to tracking		N/A
5.6 (4.4.8)	Lamp connectors		N/A
5.6 (4.4.9)	Caps and bases correctly used		N/A
5.6 (4.4.10)	Light source for lampholder or connection according IEC 60061 not connected another way		N/A
5.6 (4.5)	Starter holders		N/A
	Starter holder in luminaires other than class II	No starter holder	N/A
	Starter holder class II construction		N/A
5.6 (4.6)	Terminal blocks		N/A
	Tails	No supply lead	N/A
	Unsecured blocks		N/A
5.6 (4.7)	Terminals and supply connections		P
5.6 (4.7.1)	Contact to metal parts	No frequently adjusted luminaire	N/A
5.6 (4.7.2)	Test 8 mm live conductor	Live conductor is enclosed by connecting device. Not possible to touch earth conductor or accessible metals	P
	Test 8 mm earth conductor		P
5.6 (4.7.3)	Terminals for supply conductors	Certified connecting device is in use	P
5.6 (4.7.3.1)	Welded method and material		N/A
	- stranded or solid conductor	No such construction	N/A
	- spot welding		N/A
	- welding between wires		N/A
	- Type Z attachment		N/A

IEC 60598-2-5			
Clause	Requirement + Test	Result - Remark	Verdict
	- 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
5.6 (4.7.4)	Terminals other than supply connection		N/A
5.6 (4.7.5)	Heat-resistant wiring/sleeves	Suitable	N/A
5.6 (4.7.6)	Multi-pole plug	No plug	N/A
	- test at 30 N		N/A
5.6 (4.8)	Switches		N/A
	- adequate rating	No switch	N/A
	- adequate fixing		N/A
	- polarized supply		N/A
	- compliance with IEC 61058-1 for electronic switches		N/A
5.6 (4.9)	Insulating lining and sleeves		N/A
5.6 (4.9.1)	Retainment		N/A
	Method of fixing :	No sleeve or lining	N/A
5.6 (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
5.6 (4.10)	Double or reinforced insulation		P
5.6 (4.10.1)	No contact, mounting surface – accessible metal parts – wiring of basic insulation	Class I luminaire	N/A
	Safe installation fixed luminaires		N/A
	Capacitors and switches		N/A
	Interference suppression capacitors according to IEC 60384-14		N/A
5.6 (4.10.2)	Assembly gaps:		P
	- not coincidental		P
	- no straight access with test probe	No straight access to live part	P
5.6 (4.10.3)	Retainment of insulation:		N/A
	- fixed	Class I luminaire	N/A
	- unable to be replaced; luminaire inoperative		N/A
	- sleeves retained in position		N/A

IEC 60598-2-5			
Clause	Requirement + Test	Result - Remark	Verdict
	- lining in lampholder		N/A
5.6 (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	No protective impedance	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
5.6 (4.11)	Electrical connections and current-carrying parts		P
5.6 (4.11.1)	Contact pressure		P
5.6 (4.11.2)	Screws:		P
	- self-tapping screws	Not in use	P
	- thread-cutting screws	Not in use	P
5.6 (4.11.3)	Screw locking:		N/A
	- spring washer	No spring washer	N/A
	- rivets	No rivet	N/A
5.6 (4.11.4)	Material of current-carrying parts	Copper	P
5.6 (4.11.5)	No contact to wood or mounting surface		P
5.6 (4.11.6)	Electro-mechanical contact systems	No such construction	N/A
5.6 (4.12)	Screws and connections (mechanical) and glands		P
5.6 (4.12.1)	Screws not made of soft metal		P
	Screws of insulating material	No screw of insulating material	P
	Torque test: torque (Nm); part..... :	1.2Nm for LED driver fixing screw	P
5.6 (4.12.2)	Screws with diameter < 3 mm screwed into metal		P
5.6 (4.12.4)	Locked connections:		P
	- fixed arms; torque (Nm) :	2.5Nm on the set screw located at front side of luminaire. 10Nm on the set screw located at base plate of the luminaire. 10Nm on the set screw located at rear side of the luminaire. 10Nm on the lock nut located on adjustment device between baseplate and luminaire enclosure	P
	- lampholder; torque (Nm) :	No lamp holder	N/A
	- push-button switches; torque 0,8 Nm :	No switch	N/A

IEC 60598-2-5			
Clause	Requirement + Test	Result - Remark	Verdict
5.6 (4.12.5)	Screwed glands; force (Nm)..... :	Plastic gland, 7.5Nm	P
5.6 (4.13)	Mechanical strength		P
5.6 (4.13.1)	Impact tests:		P
	- fragile parts; energy (Nm) :	0.5	P
	- other parts; energy (Nm) :	0.7	P
	1) live parts	Not accessible after the test	P
	2) linings	No lining	N/A
	3) protection	No damage observed that could impair IP66	P
	4) covers	No damage on the enclosure or glass cover on the front side	P
5.6 (4.13.2)	Metal parts have adequate mechanical strength	Pressed with 30N against the metal surface	P
5.6 (4.13.3)	Straight test finger	In compliance	P
5.6 (4.13.4)	Rough service luminaires		N/A
	- IP54 or higher	No rough service luminaire	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
5.6 (4.13.6)	Tumbling barrel		N/A
5.6 (4.14)	Suspensions, fixings and means of adjusting		P
5.6 (4.14.1)	Mechanical load:		P
	A) four times the weight	7.7kg+ (4x7.7kg)=38.5kg for 1 hour	P
	B) torque 2,5 Nm	No rigid suspension luminaire	N/A
	C) bracket arm; bending moment (Nm)..... :		N/A
	D) load track-mounted luminaires	No track mounted luminaire	N/A
	E) clip-mounted luminaires, glass-shelve. Thickness (mm) :	No clip-mounted luminaire	N/A
	Metal rod. diameter (mm) :	Same as above	N/A
	Fixed luminaire or independent control gear without fixing devices		N/A
5.6 (4.14.2)	Load to flexible cables		N/A
	Mass (kg) :	Not suspended by flexible cable or cord	—

IEC 60598-2-5			
Clause	Requirement + Test	Result - Remark	Verdict
	Stress in conductors (N/mm ²)		N/A
	Mass (kg) of semi-luminaire		N/A
	Bending moment (Nm) of semi-luminaire		N/A
5.6 (4.14.3)	Adjusting devices:		P
	- flexing test; number of cycles.....	150, considered as occasionally adjusted luminaire	P
	- strands broken	No broken strand on the supply cord	P
	- electric strength test afterwards	No breakdown	P
5.6 (4.14.4)	Telescopic tubes: cords not fixed to tube; no strain on conductors	No telescopic tube	N/A
5.6 (4.14.5)	Guide pulleys	No pulley	N/A
5.6 (4.14.6)	Strain on socket-outlets	No socket-outlet	N/A
5.6 (4.15)	Flammable materials		P
	- glow-wire test 650°C	See Test Table 5.15 (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	LED driver	P
	- electronic circuits exempted		N/A
5.6 (4.15.2)	Luminaires made of thermoplastic material with lamp control gear		N/A
	a) construction	No luminaire made of thermoplastic material	N/A
	b) temperature sensing control		N/A
	c) surface temperature		N/A
5.6 (4.16)	Luminaires for mounting on normally flammable surfaces		P
	No lamp control gear	Control gear provided, compliance with Cl.4.16.2	N/A
	Provided with adaptor for a track meet the requirements for direct mounting on normally flammable surfaces		N/A
5.6 (4.16.1)	Lamp control gear spacing:		N/A
	- spacing 35 mm		N/A
	- spacing 10 mm		N/A
5.6 (4.16.2)	Thermal protection:		P

IEC 60598-2-5			
Clause	Requirement + Test	Result - Remark	Verdict
	- in lamp control gear		P
	- external		N/A
	- fixed position		N/A
	- temperature marked lamp control gear	Marked on the control gear	P
5.6 (4.16.3)	Design to satisfy the test of 12.6	Compliance provided with Cl.4.16.2	N/A
5.6 (4.17)	Drain holes		N/A
	Clearance at least 5 mm	No drain hole	N/A
5.6 (4.18)	Resistance to corrosion		P
5.6 (4.18.1)	- rust-resistance	No sign of rust	P
5.6 (4.18.2)	- season cracking in copper		N/A
5.6 (4.18.3)	- corrosion of aluminium		P
5.6 (4.19)	Ignitors compatible with ballast	No ballast	N/A
5.6 (4.20)	Rough service vibration	No rough service luminaire	N/A
5.6 (4.21)	Protective shield		N/A
5.6 (4.21.1)	Shield fitted if tungsten halogen lamps or metal halide lamps		N/A
	Shield of glass if tungsten halogen lamps		N/A
5.6 (4.21.2)	Particles from a shattering lamp not impair safety		N/A
5.6 (4.21.3)	No direct path		N/A
5.6 (4.21.4)	Impact test on shield		N/A
	Glow-wire test on lamp compartment..... :	No protective shield	N/A
5.6 (4.22)	Attachments to lamps not cause overheating or damage		N/A
5.6 (4.23)	Semi-luminaires comply Class II		N/A
5.6 (4.24)	Photobiological hazards		P
5.6 (4.24.1)	No excessive UV radiation if tungsten halogen lamps and metal halide lamps (Annex P)		N/A
5.6 (4.24.2)	Retinal blue light hazard		P
	Class of risk group assessed according to IEC/TR 62778 :	RG1 Reference report number 210520008GZU-001	—
	Luminaires with E_{thr} :		N/A
	a) Fixed luminaires		N/A
	- distance x m, borderline between RG1 and RG2 .. :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- 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
5.6 (4.25)	Mechanical hazard		P
	No sharp point or edges		P
5.6 (4.26)	Short-circuit protection		N/A
5.6 (4.26.1)	Adequate means of uninsulated accessible SELV parts	No accessible SELV part	N/A
5.6 (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
5.6 (4.27)	Terminal blocks with integrated screwless earthing contacts		N/A
	Test according Annex V	No terminal block with integrated screwless earthing contact	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
5.6 (4.28)	Fixing of thermal sensing control		N/A
	Not plug-in or easily replaceable type	No temperature sensing control external to lamp control gear	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
5.6 (4.29)	Luminaires with non-replaceable light source		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Not possible to replace light source	Non-user replaceable light source	N/A
	Live part not accessible after parts have been opened by hand or tools		N/A
5.6 (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	No protective cover is marked with the symbol detailed 3.2.24. LED module is supplied with 106V (maximum) d.c. SELV through safety isolating transformer (control gear) 	N/A
5.6 (4.31)	Insulation between circuits		P
	Circuits insulated from LV supply fulfil requirements according 4.31.1 – 4.31.3	Control gear: Vossloh-Schwabe Type ECXd 1050.448	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	No controllable luminaire	N/A
5.6 (4.31.1)	SELV circuits		P
	Used SELV source	Control gear: Vossloh-Schwabe Type ECXd 1050.448	P
	Voltage ≤ ELV		P
	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		P
	Plugs not able to enter socket-outlets of other voltage systems	No plug	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Socket outlets does not admit plugs of other voltage systems	No socket outlet	N/A
	Plugs and socket-outlets does not have protective conductor contact		N/A
5.6 (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
5.6 (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	No equipotential bonding	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
5.6 (4.32)	Overvoltage protective devices		N/A
	Comply with IEC 61643-11	No overvoltage protective device	N/A
	External to controlgear and connected to earth:		N/A
	- only in fixed luminaires		N/A
	- only connected to protective earth		N/A
5.6.1 (-)	At least IPX3 if for outdoor use	IP66	P
5.6.2 (-)	Lampholder brackets and lamp supports	No such construction	N/A
5.6.3 (-)	Adjusting means		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.6.4 (-)	Controlling components	Considered for lens on the LED module	P
5.6.5 (-)	Fixing device		P
	Wind force test	Tested with 300N for 10 minutes	P
5.6.6 (-)	Locking of angular adjustment		P
5.6.7 (-)	Vibration resistance		P
5.6.8 (-)	Requirement on glass cover if mounting height > 5 m		P
	Method of protection	Tempered glass is in use. Tested in accordance with Cl.5.6.8.1 Counted particles in 50mmx50mm square is >80	—
5.7 (11)	CREEPAGE DISTANCES AND CLEARANCES		P
5.7 (11.2.1)	Impulse withstand category (Normal category II)	Category II ☒ Category III ☐	—
	Category III according Annex U		N/A
	Protected against pollution, reduced creepage and clearance according Annex P of IEC 61347-1		N/A
5.7 (11.2.2)	Creepage distances for frequency up to 30 kHz	See Test Table 5.7 (11.2) I	P
	Creepage distances for frequency over 30 kHz:		N/A
	- Controlgear marked with $\hat{U}_{OUT}$ and f_{UOUT} according IEC 61347-1, clause 7.1, item w		N/A
	- Requirements according IEC 60664-4 for controlgear not covered by IEC 61347		N/A
5.7 (11.2.3)	Clearances for frequency up to 30 kHz	See Test Table 5.7 (11.2) I	P
	Clearances distances for frequency over 30 kHz:		N/A
	- Controlgear marked with U_P		N/A
	- Requirements according IEC 60664-4 for controlgear not covered by IEC 61347		N/A
5.8 (7)	PROVISION FOR EARTHING		P
5.8 (7.2.1 + 7.2.3)	Accessible metal parts		P
	Metal parts in contact with supporting surface		P
	Resistance < 0,5 Ω :	0.077 Ω maximum measured	P
	Self-tapping screws used	Not in use	N/A
	Thread-forming screws	Not in use	N/A
	Thread-forming screw used in a grove		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Earth makes contact first	No such construction	N/A
	Terminal blocks with integrated screwless earthing contacts tested according Annex V	No such component is in use	N/A
	Protective earthing of the luminaire not via built-in control gear	Control gear enclosure is earthed, protective earthing is not provided through control-gear	P
5.8 (7.2.2 + 7.2.3)	Earth continuity in joints, etc.		P
5.8 (7.2.4)	Locking of clamping means		P
	Compliance with 4.7.3	Base plate of control gear is fixed by two screws to the cooling fins of the LED module, metal frame for LED module is also fixed to the metal enclosure by four set screws	P
	Terminal blocks with integrated screwless earthing contacts tested according Annex V		N/A
5.8 (7.2.5)	Earth terminal integral part of connector socket	Earth terminal is integral part of the connecting device	P
5.8 (7.2.6)	Earth terminal adjacent to mains terminals		P
5.8 (7.2.7)	Electrolytic corrosion of the earth terminal		P
5.8 (7.2.8)	Material of earth terminal		P
	Contact surface bare metal		P
5.8 (7.2.10)	Class II luminaire for looping-in	Class I luminaire	N/A
	Double or reinforced insulation to functional earth		N/A
5.8 (7.2.11)	Earthing core coloured green-yellow	Green-yellow coloured	P
	Length of earth conductor		P
5.9 (14)	SCREW TERMINALS		P
	Separately approved; component list	Certified connecting device (see Annex 1)	P
	Part of the luminaire		N/A
5.9 (15)	SCREWLESS TERMINALS AND ELECTRICAL CONNECTIONS		N/A
	Separately approved; component list..... :	No screwless terminal	N/A
	Part of the luminaire :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.10 (5)	EXTERNAL AND INTERNAL WIRING		P
5.10 (5.2)	Supply connection and external wiring		P
5.10 (5.2.1)	Means of connection	Supply cord for permanent 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	No PVC insulated external wiring	P
5.10 (5.2.2)	Type of cable	H05VV-F	P
	Nominal cross-sectional area (mm ²)	3x0.75mm ²	P
	Cables equal to IEC 60227 or IEC 60245	60227 IEC 53	P
5.10 (5.2.3)	Type of attachment, X, Y or Z	Type Y	P
5.10 (5.2.5)	Type Z not connected to screws	No Type Z attachment	N/A
5.10 (5.2.6)	Cable entries:		P
	- suitable for introduction		P
	- adequate degree of protection	IP68 connecting device IP67 control gear	P
5.10 (5.2.7)	Cable entries through rigid material have rounded edges	Rounded edges	P
5.10 (5.2.8)	Insulating bushings:		N/A
	- suitably fixed	Class I luminaire	N/A
	- material in bushings		N/A
	- material not likely to deteriorate		N/A
	- tubes or guards made of insulating material		N/A
5.10 (5.2.9)	Locking of screwed bushings	No screwed bushing	N/A
5.10 (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	Anchorage provided within the connecting device, connecting device is made of thermoplastic material, PA66 for housing	P
5.10 (5.2.10.1)	Cord anchorage for type X attachment:		N/A
	a) at least one part fixed	No Type X attachment	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	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
5.10 (5.2.10.2)	Adequate cord anchorage for type Y and type Z attachment	Type Y, adequate anchorage for supply cord	P
5.10 (5.2.10.3)	Tests:		P
	- impossible to push cable; unsafe		P
	- pull test: 25 times; pull (N) :	60	P
	- torque test: torque (Nm) :	0.25	P
	- displacement ≤ 2 mm	1.73	P
	- no movement of conductors		P
	- no damage of cable or cord		P
	- function independent of electrical connection		N/A
5.10 (5.2.11)	External wiring passing into luminaire	No external wiring	N/A
5.10 (5.2.12)	Looping-in terminals	No looping-in	N/A
5.10 (5.2.13)	Wire ends not tinned		N/A
	Wire ends tinned: no cold flow	Considered for supply cord, no cold flow	P
5.10 (5.2.14)	Mains plug same protection	No plug	N/A
	Class III luminaire plug		N/A
	No unsafe compatibility		N/A
5.10 (5.2.16)	Appliance inlets (IEC 60320)	No appliance coupler	N/A
	Installation couplers (IEC 61535)		N/A
	Other appliance inlet or connector according relevant IEC standard		N/A
5.10 (5.2.17)	No standardized interconnecting cables properly assembled	No interconnecting cable	N/A

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Clause	Requirement + Test		Verdict
5.10 (5.2.18)	Used plug in accordance with		N/A
	- IEC 60083	Not intended to be connected to the supply mains via socket outlet	N/A
	- other standard		N/A
5.10 (5.3)	Internal wiring		P
5.10 (5.3.1)	Internal wiring of suitable size and type		P
	Through wiring		N/A
	- not delivered/ mounting instruction	No through wiring is in use	N/A
	- factory assembled		N/A
	- socket outlet loaded (A)		N/A
	- temperatures	(see Annex 2)	P
	Green-yellow for earth only		P
5.10 (5.3.1.1)	Internal wiring connected directly to fixed wiring		N/A
	Cross-sectional area (mm ²).....	No internal wiring connected directly to the fixed wiring	N/A
	Insulation thickness (mm)		N/A
	Extra insulation added where necessary		N/A
5.10 (5.3.1.2)	Internal wiring connected to fixed wiring via internal current-limiting device		P
	Cross-sectional area (mm ²).....	Considered for supply cord conductors, 0.75 mm ² , control gear is considered as current limiting device	P
5.10 (5.3.1.3)	Double or reinforced insulation for class II	Class I luminaire	N/A
5.10 (5.3.1.4)	Conductors without insulation	No conductor without insulation	N/A
5.10 (5.3.1.5)	SELV current-carrying parts	Insulated and tested according to section 10	N/A
5.10 (5.3.1.6)	Insulation thickness other than PVC or rubber	H05RN-F insulated cables, integral part of control gear	P
5.10 (5.3.2)	Sharp edges etc.		P
	No moving parts of switches etc.	No moving part locates inside the enclosure	N/A
	Joints, raising/lowering devices		P
	Telescopic tubes etc.	No telescopic tube	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	No twisting over 360°		P
5.10 (5.3.3)	Insulating bushings:		N/A
	- suitable fixed	Class I luminaire	N/A
	- material in bushings		N/A
	- material not likely to deteriorate		N/A
	- cables with protective sheath		N/A
5.10 (5.3.4)	Joints and junctions effectively insulated	Insulated adequately	P
5.10 (5.3.5)	Strain on internal wiring	No strain on wiring	P
5.10 (5.3.6)	Wire carriers	No wire carries	N/A
5.10 (5.3.7)	Wire ends not tinned		N/A
	Wire ends tinned: no cold flow	No cold flow	P
5.10 (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		N/A
	No damage to luminaire wiring after test		N/A
5.11 (8)	PROTECTION AGAINST ELECTRIC SHOCK		P
5.11 (8.2.1)	Live parts not accessible		P
	Basic insulated parts not used on the outer surface without appropriate protection	No basic insulated part on outer surface	P
	Basic insulated parts not accessible with standard test finger on portable, settable and adjustable luminaires	Basic insulation is not accessible Adjustable luminaire	P
	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	No lampholder/starterholder	N/A
	Basic insulation only accessible under lamp or starter replacement		N/A
	Protection in any position		P
	Double-ended tungsten filament lamp	No filament lamp	N/A
	Insulation lacquer not reliable	No insulation lacquer	N/A
	Double-ended high-pressure discharge lamp	No discharge lamp	N/A
	Relevant warning according to 3.2.18 fitted to the luminaire	No ignitor	N/A
5.11 (8.2.2)	Portable luminaire adjusted in most unfavourable position	No portable luminaire	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.11 (8.2.3.a)	Class II luminaire:		N/A
	- basic insulated metal parts not accessible during starter or lamp replacement	Class I luminaire	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
5.11 (8.2.3.b)	BC lampholder of metal in class I luminaires shall be earthed	No lampholder	N/A
5.11 (8.2.3.c)	SELV circuits with exposed current carrying parts:		N/A
	Ordinary luminaire:		N/A
	- voltage under load (V)..... :	No SELV circuit with exposed current carrying part	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
5.11 (8.2.4)	Portable luminaire has protection independent of supporting surface	No portable luminaire	N/A
5.11 (8.2.5)	Compliance with the standard test finger or relevant probe	No access to live parts	P
5.11 (8.2.6)	Covers reliably secured	Adequate mechanical strength and reliably secured	P
5.11 (8.2.7)	Luminaire other than below with capacitor > 0,5 μ F not exceed 50 V 1 min after disconnection	0.6mV, 1 minute after disconnection	P
	Portable luminaire with capacitor > 0,1 μ F (0.25) not exceed 34 V 1 s after disconnection	No portable luminaire	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	No plug or track adaptor	N/A
5.12 (12)	ENDURANCE TEST AND THERMAL TEST		P
5.12.2 (-)	If IP > IP 20 relevant test of (12.4), (12.5) and (12.6) after (9.2) before (9.3) specified in 5.13		—
5.12 (12.2)	Selection of lamps and ballasts		—

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Clause	Requirement + Test	Result - Remark	Verdict
	Lamp used according Annex B	(Lamp used see Annex 2)	—
	Controlgear if separate and not supplied	(Controlgear used see Annex 2)	—
5.12 (12.3)	Endurance test		P
	a) mounting-position	Mounted on supporting surface as in normal use	—
	b) test temperature (°C)	65	—
	c) total duration (h)	240	—
	d) supply voltage (V)	264	—
	d) if not equipped with controlgear, constant voltage/current (V) or (A)	Equipped with controlgear	—
	e) luminaire ceases to operate	Functional and operates after the test	—
5.12 (12.3.2)	After endurance test:		P
	- no part unserviceable	All parts are still functional	P
	- luminaire not unsafe	No unsafe condition is observed	P
	- no damage to track system	No track system	N/A
	- marking legible	Legible	P
	- no cracks, deformation etc.	No deformation on luminaire	P
5.12 (12.4)	Thermal test (normal operation)	(see Annex 2)	P
5.12 (12.5)	Thermal test (abnormal operation)		N/A
5.12 (12.6)	Thermal test (failed lamp control gear condition):		N/A
5.12 (12.6.1)	Through wiring or looping-in wiring loaded by a current of (A)	Compliance provided with Cl.4.16.2	—
	- 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
5.12 (12.6.2)	Temperature sensing control		N/A
	- case of abnormal conditions		—
	- thermal link		N/A
	- manual reset cut-out		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- auto reset cut-out		N/A
	- measured mounting surface temperature (°C) :		N/A
	- track-mounted luminaires		N/A
5.12 (12.7)	Thermal test (failed lamp control gear in plastic luminaires):		N/A
5.12 (12.7.1)	Luminaire without temperature sensing control		N/A
5.12 (12.7.1.1)	Luminaire with fluorescent lamp ≤ 70W		N/A
	Test method 12.7.1.1 or Annex W :	No plastic luminaire	—
	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 :		N/A
5.12 (12.7.1.2)	Luminaire with discharge lamp, fluorescent lamp > 70W, transformer > 10 VA		N/A
	- case of abnormal conditions :	No discharge lamp	—
	- 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 :		N/A
5.12 (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

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Clause	Requirement + Test	Result - Remark	Verdict
5.12 (12.7.2)	Luminaire with temperature sensing control		N/A
	- thermal link..... :	Yes ☐ No ☐	—
	- manual reset cut-out :	Yes ☐ No ☐	—
	- auto reset cut-out :	Yes ☐ No ☐	—
	- case of abnormal conditions :		—
	- highest measured temperature of fixing point/ exposed part (°C): :		—
	Ball-pressure test: :		N/A
5.12.1 (-)	Reduction 10 °C of measured temperatures if for outdoor use	10°C deducted from the temperatures measured on luminaire	—
5.12.2 (-)	Glass covers used within the thermal limits		P
5.13 (9)	RESISTANCE TO DUST AND MOISTURE		P
5.13.1 (-)	If IP > IP 20 the order of tests as specified in clause 5.12		P
5.13 (9.2)	Tests for ingress of dust, solid objects and moisture:		P
	- classification according to IP..... :	IP66	—
	- mounting position during test :	Mounted on horizontal support as in normal use	—
	- fixing screws tightened; torque (Nm) :	1.6Nm and 6.6Nm	—
	- tests according to clauses..... :	9.2, 9.2.2, 9.2.7	—
	- electric strength test afterwards	No breakdown	P
	a) no deposit in dust-proof luminaire		N/A
	b) no talcum in dust-tight luminaire	No deposit of talcum powder inside the enclosure	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	No drain hole	N/A
	d) no water in watertight or pressure watertight luminaire	Powerful water jet-proof luminaire	N/A
	e) no contact with live parts (IP 2X)	IP66, no contact with live part	N/A
	e) no entry into enclosure (IP 3X and IP 4X)	IP66	N/A
	e) no contact with live parts through drain holes and ventilation slots (IP3X and IP4X)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	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
5.13 (9.3)	Humidity test 48 h	25°C and 93% RH	P
5.14 (10)	INSULATION RESISTANCE AND ELECTRIC STRENGTH		P
5.14 (10.2.1)	Insulation resistance test	100V 1 minute for SELV 500V 1 minute for other parts	P
	Cable or cord covered by metal foil or replaced by a metal rod of mm Ø :	Covered with metal foil	—
	Insulation resistance (MΩ) :	>4 MΩ	—
	SELV		P
	- between current-carrying parts of different polarity :	>4 MΩ	P
	- between current-carrying parts and mounting surface..... :	>4 MΩ	P
	- between current-carrying parts and metal parts of the luminaire :	>4 MΩ	P
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts..... :	>4 MΩ	P
	- Insulation bushings as described in Section 5 :	No bushing	N/A
	Other than SELV		P
	- between live parts of different polarity :	>4 MΩ	P
	- between live parts and mounting surface :	>4 MΩ	P
	- between live parts and metal parts :	>4 MΩ	P
	- between live parts of different polarity through action of a switch..... :	No 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..... :	>4 MΩ	P
	- Insulation bushings as described in Section 5 :	No bushing	N/A
5.14 (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) :	500V for SELV part 1480V for other parts	P
	SELV		P

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Clause	Requirement + Test	Result - Remark	Verdict
	- between current-carrying parts of different polarity :	500V	P
	- 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..... :	500V	P
	- Insulation bushings as described in Section 5 :	No bushing	N/A
	Other than SELV		P
	- between live parts of different polarity :	1480V	P
	- 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..... :	No 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..... :	1480V	P
	- Insulation bushings as described in Section 5 :	No bushing	N/A
5.14 (10.3)	Touch current or protective conductor current (mA):	0.3mA, limit:0.7mA	P
5.15 (13)	RESISTANCE TO HEAT, FIRE AND TRACKING		P
5.15 (13.2.1)	Ball-pressure test :	See Test Table 5.15 (13.2.1)	P
5.15 (13.3.1)	Needle-flame test (10 s)..... :	See Test Table 5.15 (13.3.1)	P
5.15 (13.3.2)	Glow-wire test (650°C) :	See Test Table 5.15 (13.3.2)	P
5.15 (13.4)	Proof tracking test (IEC 60112)..... :	See Test Table 5.15 (13.4)	P

IEC 60598-2-5							
Clause	Requirement + Test				Result - Remark		Verdict
5.7 (11.2)	TABLE I: Creepage distances and clearances						P
	Minimum distances (mm) for a.c. up to 30 kHz sinusoidal voltages						P
	Applicable part of IEC 60598-1 Table 11.1.A*, 11.1.B* and 11.2*						P
	Insulation type **	Measured clearance	Required		Measured creepage	Required	
			clearance	*Table		creepage	*Table
Distance 1:	B	>3	1.5mm	11.1.B	>5mm	2.5mm	11.1.A
Working voltage (V)					240		—
PTI					< 600 ☒ ≥ 600 ☐		—
Pulse voltage or U_P if applicable (kV)					Not applicable		—
Supplementary information:							
Distance 2:	S	>3	1.5mm	11.1.B	>5mm	2.5mm	11.1.A
Working voltage (V)					240		—
PTI					< 600 ☒ ≥ 600 ☐		—
Pulse voltage or U_P if applicable (kV)					Not applicable		—
Supplementary information:							
Distance 3:	R	>6	3mm	11.1.B	>10mm	5mm	11.1.A
Working voltage (V)					240		—
PTI					< 600 ☒ ≥ 600 ☐		—
Pulse voltage or U_P if applicable (kV)					Not applicable		—
Supplementary information:							

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

IEC 60598-2-5							
Clause	Requirement + Test				Result - Remark		Verdict
5.7 (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:							
Working voltage (V)							—
Frequency if applicable (kHz)							—
PTI					< 600 ☐ ≥ 600 ☐		—
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 ☐ ≥ 600 ☐		—
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 ☐ ≥ 600 ☐		—
Peak value of the working voltage $\hat{U}_{out}$ if applicable (kV)							—
Supplementary information:							

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

IEC 60598-2-5				
Clause	Requirement + Test		Result - Remark	Verdict
5.15 (13.2.1)	TABLE: Ball Pressure Test of Thermoplastics			P
Allowed impression diameter (mm) :		2		—
Object/ Part No./ Material	Manufacturer/ trademark	Test temperature (°C)	Impression diameter (mm)	
Connecting device	Techno SRL	125	0.73	
Supplementary information:				

5.15 (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
Connecting device	Techno SRL	10	No	0	Pass
PCB for LED module	Msm Aydınlatma	10	No	0	Pass
Supplementary information:					

5.15 (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
Connecting device	Techno SRL		No	0	Pass
Supplementary information:					

5.15 (13.4)	TABLE: Proof tracking test (IEC 60112)				P
Test voltage PTI		175 V			—
Object/ Part No./ Material	Manufacturer/ trademark	Withstand 50 drops without failure on three places or on three specimens			Verdict
Connecting device	Techno SRL	50	50	50	Pass
Supplementary information:					

IEC 60598-2-5			
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	B	Nichia	NVSW219CT	Vf:3.1-3.2V If:700mA RG1 3.5*3.5*2mm	IEC 62471	Intertek Report nr. 210520008GZU-001	
LED module	B	Msm Aydınlatma	001-016	160mm radius 36 LED on the module 108V d.c. 670mA or 1000mA or 1350mA 72W or 108W or 144W	IEC/EN 62031	Intertek Report nr: 202100297TUR-001	
Alternative	B	Msm Aydınlatma	001-015	70mm radius 6 LED on the module 18V d.c. 700mA 12W	IEC/EN 62031	Intertek Report nr: 202100297TUR-001	
Alternative	B	Msm Aydınlatma	001-021	70mm radius 9 LED on the module 27V d.c. 450mA or 900mA 12W or 24W	IEC/EN 62031	Intertek Report nr: 202100297TUR-001	
Alternative	B	Msm Aydınlatma	001-014	70mm radius 12 LED on the module 36V d.c. 350mA or 700mA 12W or 24W	IEC/EN 62031	Intertek Report nr: 202100297TUR-001	
Alternative	B	Msm Aydınlatma	001-018	113mm radius 12 LED on the module 36V d.c. 1000mA or 1350mA 36W or 48W	IEC/EN 62031	Intertek Report nr: 202100297TUR-001	

IEC 60598-2-5						
Clause	Requirement + Test			Result - Remark		Verdict
Alternative	B	Msm Aydınlatma	001-028	103mm radius 15 LED on the module 45V d.c. 1000mA or 1350mA 36W or 48W	IEC/EN 62031	Intertek Report nr: 202100297TUR-001
LED driver	B	Vossloh-Schwabe	Type ECXd 1050.448	Primary: 100-240V~ 2000mA 50/60Hz Secondary: 100...1050mA 107...214V Umax 240V Pmax 150W IP67 Tc:90°C	EN 61347-1 EN 61347-2-13	TÜV R 69290155
Connecting device	B	Techno SRL	TH391	450VAC 24A IP68 T85 Connector housing PA66 Cable gland PA66	EN 60998-1 EN 60998-2-1 EN 60998-2-3	ENEC IMQ SN.N000N8
Supply cord	B	Pamukkale	H05VV-F	3x0.75mm ²	EN 50525-2-11	TSE 001025-TSE-08/01
Internal wiring (integral part of LED driver)	B	Yang Tai Wire	2733	600VAC 105°C PVC FT2	UL 758 IEC/EN 60598-1 IEC/EN 60598-2-5	UL E214859 Tested with appliance
Internal wiring (integral part of LED driver)	B	Guangdong Rifeng	SJOW	300V 105°C H05RN-F FT2	UL 62 IEC/EN 60598-1 IEC/EN 60598-2-5	UL E251603 Tested with appliance
Glass cover	B	BSI Aydınlatma	--	Tempered 5mm	IEC/EN 60598-1 IEC/EN 60598-2-5	Tested with appliance

IEC 60598-2-5						
Clause	Requirement + Test			Result - Remark		Verdict
Metal gland on LED module	B	Turkuaz Elektrotechnik	TPR-18-001	IP66 T100 Nickel plated brass Cable holder PA6 O-ring rubber	IEC/EN 60598-1 IEC/EN 60598-2-5	Tested with appliance
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						

IEC 60598-2-5			
Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 2	TABLE: Thermal tests of Section 12		P				
	Type reference :	FL9234	—				
	Lamp used..... :	Nichia NVSW219CT	—				
	Lamp control gear used..... :	Vossloh-Schwabe Type ECXd 1050.448	—				
	Mounting position of luminaire :	Mounted on horizontal support as in normal use	—				
	Supply wattage (W) :	128.5	—				
	Supply current (A) :	0.53	—				
	Temperatures in test 1 - 4 below are corrected for ta (°C) :	55	—				
	- abnormal operating mode :	No abnormal test performed for the electronic board. Certified LED driver for the standards EN 61347-1 and EN 61347-2-13. It is considered that Led driver meets the requirements for fault conditions and abnormal operating conditions due to thermal protection.	—				
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 :	1.06x240V=254.4V	—				
	- 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 :	--	—				
Temperature measurements (°C)							
Part	Ambient	Cl. 12.4 – normal				Cl. 12.5 – abnormal	
		test 1	test 2	test 3	limit	test 4	limit
PCB for LED module	55	--	97.5	--	120	--	--
Connecting device	55	--	64.9	--	85	--	--
Insulation of supply cord (H05VV-F)	55	--	45.8	--	90	--	--

IEC 60598-2-5							
Clause	Requirement + Test			Result - Remark			Verdict
Internal wiring (SJOW H05RN-F)	55	--	61.9	--	105	--	--
Internal wiring (Yang Tai 2733)	55	--	90.8	--	105	--	--
LED driver Tc	55	--	80.3	--	90	--	--
Mounting surface	55	--	46.6	--	90	--	--
External metal surface (rear side)	55	--	49	--	60	--	--
External metal surface (front side)	55	--	53.3	--	60	--	--
Glass cover surface	55	--	46.1	--	75	--	--
Supplementary information: 10°C deducted from the temperatures measured according to Cl.5.12.1 of IEC 60598-2-5:2015							

IEC 60598-2-5			
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..... :	Certified component is in use	—
	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 60598-2-5			
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..... :	No screwless 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

IEC 60598-2-5											
Clause	Requirement + Test					Result - Remark					Verdict
	Terminal size and rating										N/A
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)										N/A	
	Voltage drop of two inseparable joints										N/A
	Voltage drop after 10th alt. 25th cycle										N/A
	Max. allowed voltage drop (mV) :										—
terminal	1	2	3	4	5	6	7	8	9	10	
voltage drop (mV)										N/A	
	Voltage drop after 50th alt. 100th cycle										N/A
	Max. allowed voltage drop (mV) :										—
terminal	1	2	3	4	5	6	7	8	9	10	
voltage drop (mV)										N/A	
	Continued ageing: voltage drop after 10th alt. 25th cycle										N/A
	Max. allowed voltage drop (mV) :										—
terminal	1	2	3	4	5	6	7	8	9	10	
voltage drop (mV)										N/A	
	Continued ageing: voltage drop after 50th alt. 100th cycle										N/A
	Max. allowed voltage drop (mV) :										—
terminal	1	2	3	4	5	6	7	8	9	10	
voltage drop (mV)										N/A	
										N/A	
Supplementary information:											

IEC 60598-2-5			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 60598-2-5 EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES Luminaires Part 2: Particular requirements Section 5: Floodlights			
Differences according to: EN 60598-2-5:2015 used in conjunction with EN 60598-1:2015 + A1:2018			
Annex Form No.: EU_GD_IEC60598_2_5F Annex Form Originator: OVE Master Annex Form: 2019-01-24			
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	CENELEC COMMON MODIFICATIONS (EN)	
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5.5 (3)	MARKING		N/A
5.5 (3.3.101)	For luminaires not supplied with terminal block: Adequate warning on the package		N/A

5.6 (4)	CONSTRUCTION		N/A
5.6 (4.11.6)	Electro-mechanical contact systems	No such construction	N/A

5.10 (5)	EXTERNAL AND INTERNAL WIRING		P
5.10 (5.2.1)	Connecting leads	No connecting lead	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
5.10 (5.2.2)	Cables equal to EN 50525	H05VV-F	P
	Replace table 5.1 – Supply cord		P

5.12 (12)	ENDURANCE TESTS AND THERMAL TESTS		N/A
5.12 (12.4.2c)	Thermal test (normal operation) see footnote c to table 12.2 relating to unsleeved fixed wiring		N/A

IEC 60598-2-5			
Clause	Requirement + Test	Result - Remark	Verdict
ZB	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	No socket outlet	N/A
(5.2.1)	CY, DK, FI, GB: type of plug	No 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	Metal enclosure	N/A
	- 650°C for indoor luminaires	Outdoor luminaire	N/A
	GB: Requirements according to United Kingdom Building Regulation		N/A

List of test equipment used:

Measurement / testing	Testing / measuring equipment / material used,	Equipment ID	Last Calibration date	Calibration due date
Variable Stabilized Power	CHROMA 61612	EN 23	initial calibration	initial
Mono-Phase Power Meter	YOKOGAWA WT310	EN 033	12.2020	12.2021
Temperature Recorder	YOKOGAWA MV2040	EN 34	12.2020	12.2021
Hand-held Thermometer	FLUKE 52-II	EN008	09.2020	09.2021
Hand-held Multimeter	FLUKE 289	EN 05	09.2020	09.2021
Force Gauge	IMADA DS2-110	EN 20	08.2020	08.2021
Electrical Safety Analyzer	CHROMA 19032-P	EN 21	09.2020	09.2021
Glow Wire Test Apparatus	TESTING EUROPE T4-08	EN 45	02.2021	02.2022
Test Nail	TESTING EUROPE T5-76	EN 53	09.2020	09.2021
Chronometer	CASIO HS-80TW	EN 114	01.2021	01.2022
Torque Screwdriver	Imada	EN 18	09.2020	09.2021
Calliper	MITUTOYO 573-635	EN 37	09.2020	09.2021
Angle meter	MITUTOYO 950-317	EN 36	09.2020	09.2021
Probe B	TESTING EUROPE T5-75	EN 50	09.2020	09.2021
Probe 11	TESTING EUROPE T5-41	EN 56	09.2020	09.2021
Probe 13	TESTING EUROPE T5-47	EN 58	09.2020	09.2021
Climatic chamber	ANGELANTONI DY 1200	EN 001	01.2021	01.2022
Impact hammer	PTL F 22.50	EN 041	05.2020	05.2021
Tracking test apparatus	Testing Europe T4-41A	EN 043	04.2020	04.2021
Probe 18	Testing Europe T5 77	EN 059	09.2020	09.2021
Tape	Ceta Form P05-0316	EN 193	11.2020	11.2021
Oven	Testing Europe SP120E	EN 45	02.2021	02.2022
Weight	Hüroy 2kg	EN 104	12.2020	12.2021
Becher	Lab 312 Boro 3.3	EN 90	02.2021	02.2024
Ball pressure test mass	Hüroy M	EN 120	01.2021	01.2022
Apparatus for wind force test	Güney Elektrik	EN 249	--	--
Needle flame test apparatus	Testing Europe	EN 046	01.2021	01.2022
Jet test set for IPX6	Testing Europe	EN 049	10.2019	10.2022
Dust chamber	Öz Makina	EN 242	01.2020	01.2023

Photos:



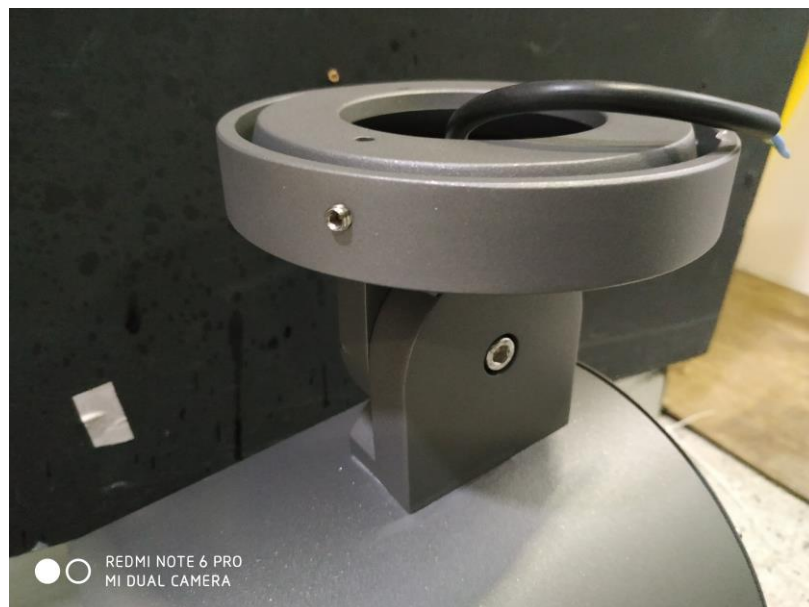
1) Front view, FL9234



2) Rear view, FL9234



3) Side view, FL9234



4) Adjustable part for different angles, FL9234



5) Bottom view, FL9234



6) Internal view for adjustable part, FL9234



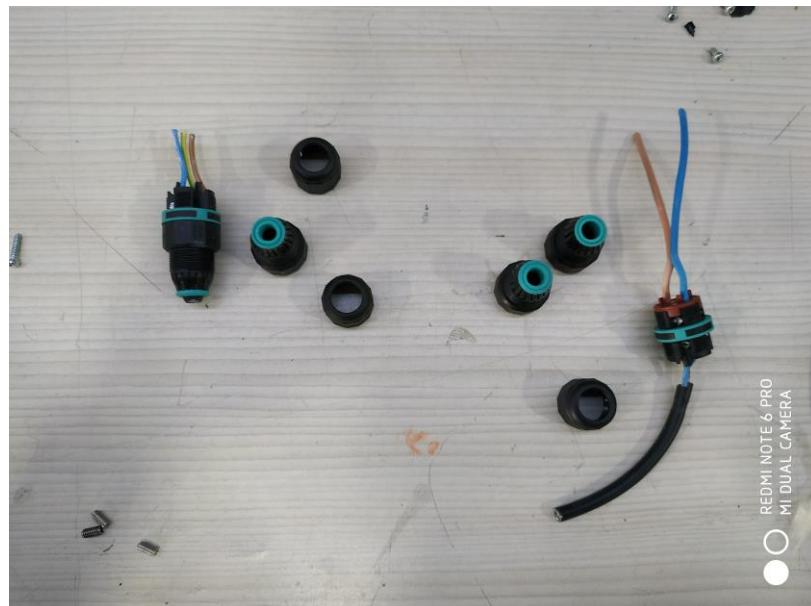
7) Internal view after the rear cover removed, FL9234



8) Connecting device



9) Connecting device (screwed glands are removed)



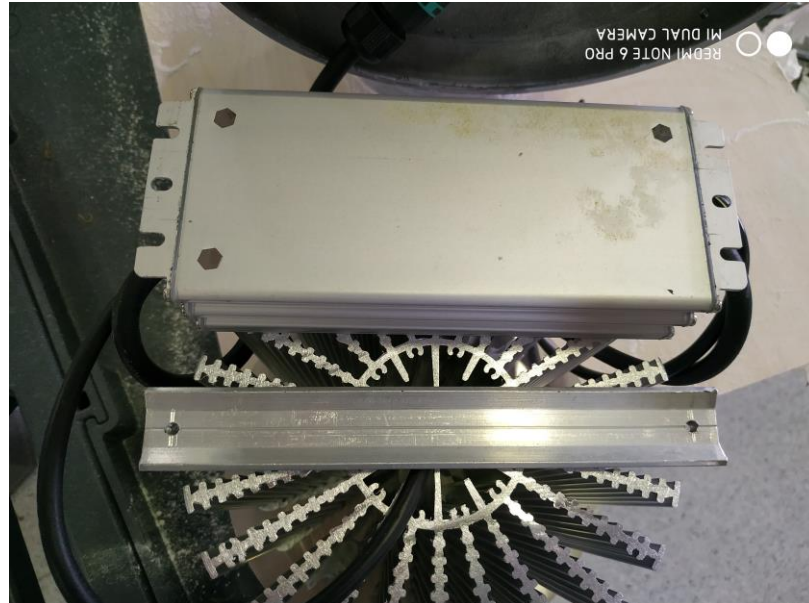
10) Connecting device dismantled (cables are removed)



11) LED driver, Type ECXd 1050.448



12) Cable entries on LED driver



13) Fixing base for LED driver on the cooling fins for LED module



14) Showing of sheathed internal wiring H05RN-F (integral part of LED driver)



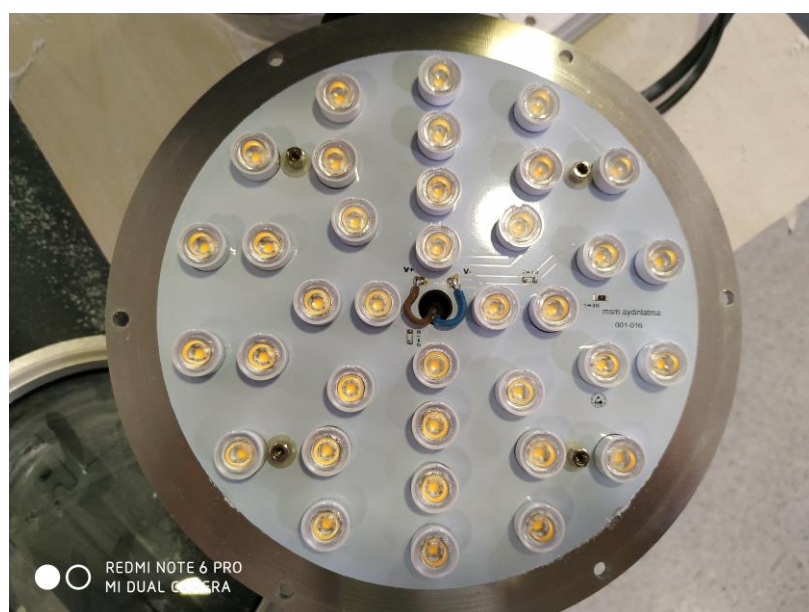
15) Showing of PVC sheathed internal wiring (2733, integral part of LED driver)



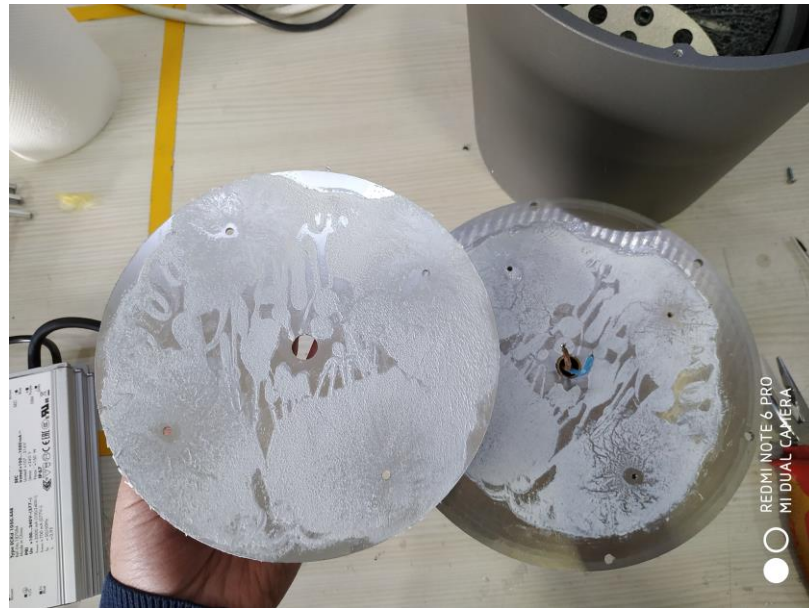
16) Cooling fin for LED module



17) Top view for LED module



18) LED module 001-016



19) Thermal paste between LED module and cooling fin