

Test Report issued under the responsibility of:



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

Report Number : LO-18.041/18.005/VI/E
Date of issue..... : 2018-09-28
Total number of pages 46

Name of Testing Laboratory preparing the Report : Stowarzyszenie Elektryków Polskich, Biuro Badawcze ds. Jakości
Association of Polish Electricians, Quality Testing Office
ul. M.Pożaryskiego 28, 04-703 Warszawa, POLAND

Applicant's name : NITEKO S.R.L.
Address..... : ZONA P.I.P. – Viale delle Imprese, 3 – 74020 Montemesola (TA)
ITALY

Test specification:

Standard..... : IEC 60598-2-3:2002/AMD1:2011 used in conjunction with
IEC 60598-1:2014
Test procedure : CB Scheme
Non-standard test method : N/A

Test Report Form No. : IEC60598_2_3K
Test Report Form(s) Originator : Intertek Semko AB
Master TRF..... : 2016-09

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Test item description	Luminaires for road and street lighting with non-user replaceable LED module
Trade Mark.....	 ILLUMINAZIONE
Manufacturer	NITEKO S.R.L.
Model/Type reference.....	Series GUIDA S
Ratings.....	220-240V, 50/60Hz; IP66; safety class II; 25-100W; ta=40°C; CCT 2700K, 3000K, 4000K, 5000K, 5700K; on/off, DALI, DIM, PRG1, PRG5, PLV, LPL mode

Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):

<input checked="" type="checkbox"/>	CB Testing Laboratory:	Stowarzyszenie Elektryków Polskich, Biuro Badawcze ds. Jakości Association of Polish Electricians, Quality Testing Office
Testing location/ address		ul. M.Pożaryskiego 28, 04-703 Warszawa, POLAND
<input type="checkbox"/>	Associated CB Testing Laboratory:	
Testing location/ address		
Tested by (name, function, signature)		Kamil Dobrowolski (senior specialist) 
Approved by (name, function, signature) ..		Mieczysław Sudnik (senior specialist) 

<input type="checkbox"/>	Testing procedure: CTF Stage 1:	
Testing location/ address		
Tested by (name, function, signature)		
Approved by (name, function, signature) ..		

<input type="checkbox"/>	Testing procedure: CTF Stage 2:	
Testing location/ address		
Tested by (name + signature).....		
Witnessed by (name, function, signature) ..		
Approved by (name, function, signature) ..		

<input type="checkbox"/>	Testing procedure: CTF Stage 3:	
<input type="checkbox"/>	Testing procedure: CTF Stage 4:	
Testing location/ address		
Tested by (name, function, signature)		
Witnessed by (name, function, signature) ..		
Approved by (name, function, signature) ..		
Supervised by (name, function, signature) :		

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

ATTACHMENT TO TEST REPORT IEC 60598-2-3 EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES – 2 pages

Annex A: Tests of overpower condition according to EN 62031:2008+A1:2013+A2:2015 – 1 page

Annex B: Photographs of the products – 8 pages

Test Report acc. to IEC/TR 62778:2014 No. LO-18.041/18.005/IV/E - 10 pages

Summary of testing:

Tests performed (name of test and test clause):

All applicable tests were performed with positive results.

Note. Construction with SPD was evaluated in test report LO.18.041/18.005/VII/E for luminaires from GUIDA M families.

Testing location:

Stowarzyszenie Elektryków Polskich, Biuro Badawcze ds. Jakości
 Association of Polish Electricians, Quality Testing Office
 ul. M. Pożaryskiego 28,
 04-703 Warszawa,
 POLAND

Summary of compliance with National Differences:

List of countries addressed

ATTACHMENT TO TEST REPORT IEC 60598-2-3 EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES

The product fulfils the requirements of _____ (insert standard number and edition and delete the text in parenthesis, leave it blank or delete the whole sentence, if not applicable)

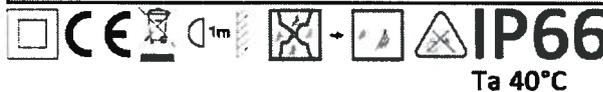
Copy of marking plate:

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



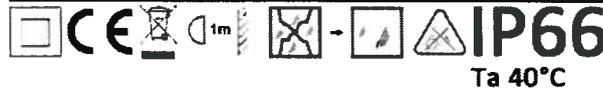
NITEKO S.r.l.
 ZONA P.I.P. - Viale delle Imprese, 3
 74020 - Montemesola (TA) - Italy

MODEL	G5H-WWA1-AN
INPUT VOLTAGE	220÷240 V ~ / 50-60 Hz
NOMINAL POWER	42 W
PRODUCTION YEAR	2018
s/n: G5H-WWA1-AN - 00001	



NITEKO S.r.l.
 ZONA P.I.P. - Viale delle Imprese, 3
 74020 - Montemesola (TA) - Italy

MODEL	GS12H-WA1-AN
INPUT VOLTAGE	220÷240 V ~ / 50-60 Hz
NOMINAL POWER	100 W
PRODUCTION YEAR	2018
s/n: GS12H-WA1-AN - 00001	





Test item particulars				
Classification of installation and use: for normal use				
Supply Connection: screw terminal block				
.....:				
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 : 2018-07-06; 2018-09-26, 2018-09-27				
Date (s) of performance of tests : 2018-07-20 + 2018-09-28				
.....				
General remarks:				
"(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report.				
Throughout this report a <input checked="" type="checkbox"/> comma / <input type="checkbox"/> point is used as the decimal separator.				
Clause numbers between brackets refer to clauses in IEC 60598-1				
Manufacturer's Declaration per sub-clause 4.2.5 of IEC 60598-1:				
The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided.....:				<input type="checkbox"/> Yes <input checked="" type="checkbox"/> Not applicable
When differences exist; they shall be identified in the General product information section.				
Name and address of factory (ies): NITEKO S.R.L. ZONA P.I.P. – Via degli Ulivi, 7/A 74020 Montemesola (TA) / ITALY				
General product information:				
Luminaires for road and street lighting with non-user replaceable LED module in class II, IP66, ta=40°C				
Variants of type GUIDA S covered by this test report:				
Item	Power [W]	Luminous flux [lm]		
		CCT: N / C / UW	CCT: W	CCT: WW
G3H-K**-cc	25	3600	3000	2400
G4H-K**-cc	34	4800	4000	3200
G5H-K**-cc	42	6000	5000	4000
G6X-K**-cc	50	7200	6000	4800
G7H-K**-cc	59	8400	7000	5600
G8H-K**-cc	67	9600	8000	6400
G9H-K**-cc	75	10800	9000	7200
GS10H-K**-cc	84	12000	10000	8000
GS11H-K**-cc	92	13200	11000	8800
GS12H-K**-cc	100	14400	12000	9600

**Where:**

K – CCT: WW=2700K, W=3000K, N=4000K, C=5000K, UW=5700K

**** – optic type:**

A1, A2, A3, A4, A6, A7, A8, A9 – asymmetric

R1 – rotosymmetric

E3 – elliptic

cc – color of the body: e.g. AN – anthracite

Tested model:

- a) GS12H-WA1-AN
- b) G5H-WWA1-AN



IEC 60598-2-3

Clause	Requirement + Test	Result - Remark	Verdict
3.2 (0)	GENERAL TEST REQUIREMENTS		
3.2 (0.1)	Information for luminaire design considered..... :	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Lamp standard: EN 62031	---
3.2 (0.3)	More sections applicable :	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Section/s:	---

3.4 (2)	CLASSIFICATION OF LUMINAIRES		
3.4 (2.2)	Type of protection	Class II	P
3.4 (2.3)	Degree of protection	IP 66	P
3.4 (2.4)	Luminaire suitable for direct mounting on normally flammable surfaces	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	---
3.4 (2.5)	Luminaire for normal use	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	---
	Luminaire for rough service	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	---
3.4 (-)	Modes of installation of road or street lighting		---
	a) on a pipe	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	---
	b) on a mast arm	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	---
	c) on a post top	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	---
	d) on span or suspension wires	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	---
	e) on a wall	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	---

3.5 (3)	MARKING		
3.5 (3.2)	Mandatory markings		P
	Position of the marking		P
	Format of symbols/text		P
3.5 (3.3)	Additional information		P
	Language of instructions		P
3.5 (3.3.1)	Combination luminaires		N/A
3.5 (3.3.2)	Nominal frequency in Hz		P
3.5 (3.3.3)	Operating temperature		P
3.5 (3.3.4)	Symbol or warning notice		N/A
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		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



IEC 60598-2-3			
Clause	Requirement + Test	Result - Remark	Verdict
3.5 (3.3.13)	Specifications of protective shields		N/A
3.5 (3.3.14)	Symbol for nature of supply		P
3.5 (3.3.15)	Rated current of socket outlet		N/A
3.5 (3.3.16)	Rough service luminaire		N/A
3.5 (3.3.17)	Mounting instruction for type Y, type Z and some type X attachments		N/A
3.5 (3.3.18)	Non-ordinary luminaires with PVC cable		N/A
3.5 (3.3.19)	Protective conductor current in instruction if applicable		N/A
3.5 (3.3.20)	Provided with information if not intended to be mounted within arm's reach		N/A
3.5 (3.3.21)	Non replaceable and non-user replaceable light sources information provided	Non-user replaceable LED module	P
	Cautionary symbol		P
3.5 (3.3.22)	Controllable luminaires, classification of insulation provided	DALI	P
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		—
	a) Design attitude		P
	b) Weight		P
	c) Overall dimensions		P
	d) Maximum projected area if applicable	0,045m ²	P
	e) Cross-sectional area of wires if applicable		N/A
	f) Suitability for indoors use		N/A
	g) Dimensions of the compartment		N/A
	h) Torque setting to be applied to bolts or screws	15Nm	P
	i) Maximum mounting height	12m	P

3.6 (4)	CONSTRUCTION		
3.6 (4.2)	Components replaceable without difficulty	Non-user replaceable LED module	P
3.6 (4.3)	Wireways smooth and free from sharp edges		P
3.6 (4.4)	Lampholders		—
3.6 (4.4.1)	Integral lampholder		N/A
3.6 (4.4.2)	Wiring connection		N/A
3.6 (4.4.3)	Lampholder for end-to-end mounting		N/A
3.6 (4.4.4)	Positioning		N/A



IEC 60598-2-3

Clause	Requirement + Test	Result - Remark	Verdict
	- 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
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		---
	Starter holder in luminaires other than class II		N/A
	Starter holder class II construction		N/A
3.6 (4.6)	Terminal blocks		---
	Tails		N/A
	Unsecured blocks		N/A
3.6 (4.7)	Terminals and supply connections		---
3.6 (4.7.1)	Contact to metal parts		N/A
3.6 (4.7.2)	Test 8 mm live conductor		P
	Test 8 mm earth conductor		N/A
3.6 (4.7.3)	Terminals for supply conductors	Screw terminal block - connector	P
3.6 (4.7.3.1)	Welded method and material		---
	- 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



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Clause	Requirement + Test	Result - Remark	Verdict
3.6 (4.8)	Switches		---
	- adequate rating		N/A
	- adequate fixing		N/A
	- polarized supply		N/A
	- compliance with IEC 61058-1 for electronic switches		N/A
3.6 (4.9)	Insulating lining and sleeves		---
3.6 (4.9.1)	Retainment	Insulating lining (thermal adhesive tape) / sleeves	P
	Method of fixing	Adhesive / heat shrink	P
3.6 (4.9.2)	Insulated linings and sleeves:		---
	Resistant to a temperature > 20 °C to the wire temperature or		N/A
	a) & c) Insulation resistance and electric strength	Insulating lining (thermal adhesive tape) / sleeves	P
	b) Ageing test. Temperature (°C)		N/A
3.6 (4.10)	Double or reinforced insulation		---
3.6 (4.10.1)	No contact, mounting surface – accessible metal parts – wiring of basic insulation		P
	Safe installation fixed luminaires		P
	Capacitors and switches		N/A
	Interference suppression capacitors according to IEC 60384-14		N/A
3.6 (4.10.2)	Assembly gaps:		---
	- not coincidental		N/A
	- no straight access with test probe		N/A
3.6 (4.10.3)	Retainment of insulation:		---
	- fixed		N/A
	- unable to be replaced; luminaire inoperative		N/A
	- sleeves retained in position		N/A
	- lining in lampholder		N/A
1.6 (4.10.4)	Protective impedance device		---
	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		---
3.6 (4.11.1)	Contact pressure		P
3.6 (4.11.2)	Screws:		---

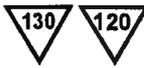


IEC 60598-2-3

Clause	Requirement + Test	Result - Remark	Verdict
	- self-tapping screws		N/A
	- thread-cutting screws		N/A
3.6 (4.11.3)	Screw locking:		---
	- spring washer		N/A
	- rivets		N/A
3.6 (4.11.4)	Material of current-carrying parts		P
3.6 (4.11.5)	No contact to wood or mounting surface		P
3.6 (4.11.6)	Electro-mechanical contact systems	Connector ("knife switch")	P
3.6 (4.12)	Screws and connections (mechanical) and glands		---
3.6 (4.12.1)	Screws not made of soft metal		P
	Screws of insulating material		N/A
	Torque test: torque (Nm); part	Screw of pipe holder ; 8Nm (Ø=7,6mm)	P
	Torque test: torque (Nm); part	Mounting screw for pipe; 15Nm (Ø=9,7mm)	P
	Torque test: torque (Nm); part	Screw of LED module cover; 1,2Nm (Ø=3,8mm)	P
	Torque test: torque (Nm); part	Screw of luminaire cover (by hand); 2,5Nm (Ø=5,6mm)	P
	Torque test: torque (Nm); part	Screw of LED module chamber; 2Nm (Ø=4,85mm)	P
3.6 (4.12.2)	Screws with diameter < 3 mm screwed into metal		P
3.6 (4.12.4)	Locked connections:		---
	- fixed arms; torque (Nm).....		N/A
	- lampholder; torque (Nm).....		N/A
	- push-button switches; torque 0,8 Nm.....		N/A
3.6 (4.12.5)	Screwed glands; force (Nm)	Plastic gland; 3,25Nm	P
3.6 (4.13)	Mechanical strength		---
3.6 (4.13.1)	Impact tests:		---
	- fragile parts; energy (Nm).....		N/A
	- other parts; energy (Nm)	Body, glass – 0,7Nm	P
	a) live parts		P
	b) linings		P
	c) protection		P
	d) covers		P
3.6 (4.13.3)	Straight test finger		P
3.6 (4.13.4)	Rough service luminaires		---
	- IP54 or higher		N/A
	a) fixed		N/A



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Clause	Requirement + Test	Result - Remark	Verdict
	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		---
3.6 (4.14.1)	Mechanical load:		---
	A) four times the weight		N/A
	B) torque 2,5 Nm		N/A
	C) bracket arm; bending moment (Nm)	24,7Nm	P
	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
3.6 (4.14.2)	Load to flexible cables		---
	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:		---
	- flexing test; number of cycles.....	45	P
	- strands broken	No	P
	- 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		---
	- glow-wire test 650°C.....	See Test Table 3.15 (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		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		---
	a) construction		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	b) temperature sensing control		N/A
	c) surface temperature		N/A
3.6 (4.16)	Luminaires for mounting on normally flammable surfaces		---
	No lamp control gear	(compliance with Section 12)	N/A
3.6 (4.16.1)	Lamp control gear spacing:		---
	- spacing 35 mm		P
	- spacing 10 mm		N/A
3.6 (4.16.2)	Thermal protection:		---
	- in lamp control gear		P
	- external		N/A
	- fixed position		N/A
	- temperature marked lamp control gear		P
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		---
	Clearance at least 5 mm		N/A
3.6 (4.18)	Resistance to corrosion		---
3.6 (4.18.1)	- rust-resistance		P
3.6 (4.18.2)	- season cracking in copper		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		---
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		---
3.6 (4.24.1)	No excessive UV radiation if tungsten halogen lamps and metal halide lamps (Annex P)	LED module	N/A
3.6 (4.24.2)	Retinal blue light hazard		---
	Class of risk group assessed according to IEC/TR 62778	RG 2 – for LED module	---

IEC 60598-2-3			
Clause	Requirement + Test	Result - Remark	Verdict
	Luminaires with E_{thr} :		---
	a) Fixed luminaires		P
	- distance x m, borderline between RG1 and RG2....:	$d_{thr}=0,55m$	P
	- marking and instruction according 3.2.23		P
	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		---
	No sharp point or edges		P
3.6 (4.26)	Short-circuit protection		---
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		---
	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		---
	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		---
	Not plug-in or easily replaceable type		N/A
	Reliably kept in position		N/A
	No adhesive fixing if UV radiations from a lamp can degrade the fixing		N/A
	Not outside the luminaire enclosure		N/A
	Test of adhesive fixing:		---
	Max. temperature on adhesive material ($^{\circ}C$)		---
	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		---
	Not possible to replace light source		N/A
	Live part not accessible after parts have been opened by hand or tools		N/A



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Clause	Requirement + Test	Result - Remark	Verdict
3.6 (4.30)	Luminaires with non-user replaceable light source		---
	If protective cover provide protection against electric shock and marked with "caution, electric shock risk" symbol:		---
	Minimum two fixing means		P
3.6 (4.31)	Insulation between circuits		---
	Circuits insulated from LV supply fulfil requirements according 4.31.1 – 4.31.3		P
	Controllable luminaires requiring same level of insulation for all components, the insulation between control terminals and LV supply fulfil requirements according 4.31.1 – 4.31.3		P
3.6 (4.31.1)	SELV circuits		---
	Used SELV source		P
	Voltage ≤ ELV		P
	Insulating of SELV circuits from LV supply		P
	Insulating of SELV circuits from other non SELV circuits		N/A
	Insulating of SELV circuits from FELV		P
	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
	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		---
	Used FELV source		P
	Voltage ≤ ELV		P
	Insulating of FELV circuits from LV supply		P
	FELV circuits insulated from accessible parts according Table X.1	DALI circuit	P
	Plugs not able to enter socket-outlets of other voltage systems		N/A
	Socket outlets does not admit plugs of other voltage systems		N/A
	Socket-outlets does not have protective conductor contact		N/A
3.6 (4.31.3)	Other circuits		---
	Other circuits insulated from accessible parts according Table X.1		P



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Clause	Requirement + Test	Result - Remark	Verdict
	Class II construction with equipotential bonding for protection against indirect contacts with live parts:		---
	- 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		---
	Comply with IEC 61643-11		N/A
	External to controlgear and connected to earth:		---
	- only in fixed luminaires		N/A
	- only connected to protective earth		N/A
3.6.1 (-)	At least IP X3 or X5 respectively. IP :	IPX6	P
	Column-integrated luminaires:		---
	- 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		P
3.6.3.1 (-)	Static load test		---
	- drag coefficient..... :	1,2	P
	- loaded area (m ²)..... :	0,045	P
	- used load (N)..... :	89,4	P
	- measured deformation (cm/m) :	<1,4	P
	- no rotation		P
3.6.4 (-)	Adjustable lampholders		N/A
3.6.5 (-)	Luminaires installed above 5 m, glass covers shall be:		---
	a) glass that fractures into small pieces (test according to 3.6.5.1), or		N/A
	b) glass having a high impact shock resistance (test according to 3.6.5.2), or	IK08	P
	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	Acc. to 3.6.5 (-) b)	P
3.6.5.1 (-)	Protection by the use of glass that fractures into small pieces		---
	- number of particles is more than 40 :		N/A
3.6.5.2 (-)	Protection by the use of high impact resistant glass		---



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Clause	Requirement + Test	Result - Remark	Verdict
3.6.5.2.1 (-)	Glass covers have high mechanical strength		P
	Test according IEC 62262 with test apparatus according IEC 60068-2-75 with impact energy of 5J on preconditioned sample		P
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		---
	- 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:		---
	- 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:		---
	- 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)	Creepage distances and clearances..... :	See Table 3.7 (11.2)	P
	Impulse withstand category (Normal category II) (Category III Annex U, Table U.1)	Category II <input checked="" type="checkbox"/> Category III <input type="checkbox"/>	---

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..... :	< 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



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Clause	Requirement + Test	Result - Remark	Verdict
	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

3.9 (14)	SCREW TERMINALS		
	Separately approved; component list	(see Annex 1)	P
	Part of the luminaire	(see Annex 3)	N/A

3.9 (15)	SCREWLESS TERMINALS AND ELECTRICAL CONNECTIONS		
	Separately approved; component list	(see Annex 1)	P
	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		
3.10 (5.2.1)	Means of connection.....	Screw terminal block - connector	---
	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.....		N/A
	Nominal cross-sectional area (mm ²).....		N/A
	Cables equal to IEC 60227 or IEC 60245		N/A
3.10 (5.2.3)	Type of attachment, X, Y or Z		N/A
3.10 (5.2.5)	Type Z not connected to screws		N/A
3.10 (5.2.6)	Cable entries:		---



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Clause	Requirement + Test	Result - Remark	Verdict
	- suitable for introduction		P
	- adequate degree of protection	IP66	P
3.10 (5.2.7)	Cable entries through rigid material have rounded edges		P
3.10 (5.2.8)	Insulating bushings:		---
	- suitably fixed		N/A
	- material in bushings		N/A
	- material not likely to deteriorate		N/A
	- tubes or guards made of insulating material		N/A
3.10 (5.2.9)	Locking of screwed bushings		N/A
3.10 (5.2.10)	Cord anchorage:		---
	- covering protected from abrasion		P
	- clear how to be effective		P
	- no mechanical or thermal stress		P
	- no tying of cables into knots etc.		P
	- insulating material or lining		P
3.10 (5.2.10.1)	Cord anchorage for type X attachment:		---
	a) at least one part fixed		N/A
	b) types of cable		N/A
	c) no damaging of the cable		N/A
	d) whole cable can be mounted		N/A
	e) no touching of clamping screws		N/A
	f) metal screw not directly on cable		N/A
	g) replacement without special tool		N/A
	Glands not used as anchorage		N/A
	Labyrinth type anchorages		N/A
3.10 (5.2.10.2)	Adequate cord anchorage for type Y and type Z attachment		N/A
3.10 (5.2.10.3)	Tests:		---
	- impossible to push cable; unsafe		P
	- pull test: 25 times; pull (N).....: 60N		P
	- torque test: torque (Nm): 0,25Nm		P
	- displacement \leq 2 mm	<1,4mm	P
	- no movement of conductors		P
	- no damage of cable or cord		P
	- function independent of electrical connection		P



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Clause	Requirement + Test	Result - Remark	Verdict
3.10 (5.2.11)	External wiring passing into luminaire		P
3.10 (5.2.12)	Looping-in terminals		N/A
3.10 (5.2.13)	Wire ends not tinned		N/A
	Wire ends tinned: no cold flow		N/A
3.10 (5.2.14)	Mains plug same protection		N/A
	Class III luminaire plug		N/A
	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	Connector ("knife switch") EN 61984; EN 60998-2-1; EN 60998-1	P
3.10 (5.2.17)	No standardized interconnecting cables properly assembled		N/A
3.10 (5.2.18)	Used plug in accordance with		---
	- IEC 60083		N/A
	- other standard		N/A
3.10 (5.3)	Internal wiring		---
3.10 (5.3.1)	Internal wiring of suitable size and type	UG4G4 1x0,75mm ²	P
	Through wiring		---
	- not delivered/ mounting instruction		N/A
	- factory assembled		N/A
	- socket outlet loaded (A).....:		N/A
	- temperatures.....:	(see Annex 2)	N/A
	Green-yellow for earth only		N/A
3.10 (5.3.1.1)	Internal wiring connected directly to fixed wiring		---
	Cross-sectional area (mm ²)	0,75	P
	Insulation thickness	Double insulated; >0,9mm	P
	Extra insulation added where necessary		P
3.10 (5.3.1.2)	Internal wiring connected to fixed wiring via internal current-limiting device		---
	Adequate cross-sectional area and insulation thickness	FR5FR5F T 180°C 1x0,75mm ²	P
3.10 (5.3.1.3)	Double or reinforced insulation for class II	wire with double insulation	P



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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		N/A
3.10 (5.3.1.6)	Insulation thickness other than PVC or rubber	silicon	P
3.10 (5.3.2)	Sharp edges etc.		P
	No moving parts of switches etc.		N/A
	Joints, raising/lowering devices	gland	P
	Telescopic tubes etc.		N/A
	No twisting over 360°		N/A
3.10 (5.3.3)	Insulating bushings:		---
	- suitable fixed		N/A
	- material in bushings		N/A
	- material not likely to deteriorate		N/A
	- cables with protective sheath		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		P
	Wire ends tinned: no cold flow		N/A
3.10.1 (-)	Cord anchorage if applicable		P
	- pull test: 25 times; pull (N) :	60N	P
	- torque test: torque (Nm) :	0,25Nm	P

3.11 (8)	PROTECTION AGAINST ELECTRIC SHOCK		
3.11 (8.2.1)	Live parts not accessible		P
	Basic insulated parts not used on the outer surface without appropriate protection		P
	Basic insulated parts not accessible with standard test finger on portable, 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		P
	Protection in any position		P
	Double-ended tungsten filament lamp		N/A



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Clause	Requirement + Test	Result - Remark	Verdict
	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		N/A
3.11 (8.2.3.a)	Class II luminaire:		---
	- basic insulated metal parts not accessible during starter or lamp replacement		P
	- basic insulation not accessible other than during starter or lamp replacement		P
	- 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:		---
	Ordinary luminaire:		---
	- voltage under load (V)		N/A
	- no-load voltage (V)		N/A
	- touch current if applicable (mA)		N/A
	One conductive part insulated if required		N/A
	Other than ordinary luminaire:		---
	- nominal voltage (V)		N/A
	Class III luminaire only for connection to SELV		N/A
	Class III luminaire not provided with means for protective earthing		N/A
1.11 (8.2.4)	Portable luminaire have protection independent of supporting surface		N/A
3.11 (8.2.5)	Compliance with the standard test finger or relevant probe		P
3.11 (8.2.6)	Covers reliably secured		P
3.11 (8.2.7)	Luminaire other than below with capacitor > 0,5 μF not exceed 50 V 1 min after disconnection		N/A
	Portable luminaire with capacitor > 0,1 μF (0.25) not exceed 34 V 1 s after disconnection		N/A
	Other luminaires with capacitor > 0,1 μF (0.25) with plug and track adaptors not exceed 60 V 5 s after disconnection		N/A



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Clause	Requirement + Test	Result - Remark	Verdict
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 (12.3)	Endurance test:		---
	- mounting-position.....:	on a mast arm	---
	- test temperature (°C).....:	50 °C	---
	- total duration (h).....:	240h	---
	- supply voltage: Un factor; calculated voltage (V)....:	240V; 1,1; 264V	---
	- lamp used	LED module – NITEKO	---
3.12 (12.3.2)	After endurance test:		---
	- no part unserviceable		P
	- luminaire not unsafe		P
	- no damage to track system		N/A
	- marking legible		P
	- no cracks, deformation etc.		P
3.12 (12.4)	Thermal test (normal operation)	(see Annex 2)	P
3.12 (12.5)	Thermal test (abnormal operation)	(see Annex 2)	N/A
3.12 (12.6)	Thermal test (failed lamp control gear condition):		---
3.12 (12.6.1)	Through wiring or looping-in wiring loaded by a current of (A)		---
	- case of abnormal conditions		---
	- electronic lamp control gear		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		---
	- case of abnormal conditions		---
	- thermal link		N/A
	- manual reset cut-out		N/A
	- auto reset cut-out		N/A
	- measured mounting surface temperature (°C)		N/A
	- track-mounted luminaires		N/A
3.12 (12.7)	Thermal test (failed lamp control gear in plastic luminaires):		---
3.12 (12.7.1)	Luminaire without temperature sensing control		---



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Clause	Requirement + Test	Result - Remark	Verdict
3.12 (12.7.1.1)	Luminaire with fluorescent lamp ≤ 70W		---
	Test method 12.7.1.1 or Annex W		---
	Test according to 12.7.1.1:		---
	- case of abnormal conditions		---
	- Ballast failure at supply voltage (V)		---
	- Components retained in place after the test		N/A
	- Test with standard test finger after the test		N/A
	Test according to Annex W:		---
	- case of abnormal conditions		---
	- measured winding temperature (°C): at 1,1 Un		---
	- measured temperature of fixing point/exposed part (°C): at 1,1 Un		---
	- calculated temperature of fixing point/exposed part (°C)		---
	Ball-pressure test.....	See Table 3.15 (13.2.1)	N/A
3.12 (12.7.1.2)	Luminaire with discharge lamp, fluorescent lamp > 70W, transformer > 10 VA		---
	- case of abnormal conditions		---
	- measured winding temperature (°C): at 1,1 Un		---
	- measured temperature of fixing point/exposed part (°C): at 1,1 Un		---
	- calculated temperature of fixing point/exposed part (°C)		---
	Ball-pressure test.....	See Table 3.15 (13.2.1)	N/A
3.12 (12.7.1.3)	Luminaire with short circuit proof transformers ≤ 10 VA		N/A
	- case of abnormal conditions		---
	- Components retained in place after the test		N/A
	- Test with standard test finger after the test		N/A
3.12 (12.7.2)	Luminaire with temperature sensing control		---
	- thermal link.....	Yes <input type="checkbox"/> No <input type="checkbox"/>	---
	- manual reset cut-out.....	Yes <input type="checkbox"/> No <input type="checkbox"/>	---
	- auto reset cut-out	Yes <input type="checkbox"/> No <input type="checkbox"/>	---
	- case of abnormal conditions		---
	- highest measured temperature of fixing point/ exposed part (°C):		---
	Ball-pressure test:.....	See Table 3.15 (13.2.1)	N/A
3.12.1 (-)	Temperature reduction if for outdoor use only	-10°C	P



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Clause	Requirement + Test	Result - Remark	Verdict
3.12.2 (-)	(See above)		---
3.12.3 (-)	Glass covers used within the thermal limits declared by the glass manufacturer		P

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		---
3.13 (9.2)	Tests for ingress of dust, solid objects and moisture:		---
	- classification according to IP	IP66	---
	- mounting position during test.....	on a mast arm	---
	- fixing screws tightened; torque (Nm).....	to pipe 15Nm	---
	- tests according to clauses	9.2.2, 9.2.7	---
	- electric strength test afterwards		P
	a) no deposit in dust-proof luminaire		N/A
	b) no talcum in dust-tight luminaire	IP6X	P
	c) no trace of water on current-carrying parts or on insulation where it could become a hazard	IPX6	P
	c.1) For luminaires without drain holes – no water entry	IPX6	P
	c.2) For luminaires with drain holes – no hazardous water entry		N/A
	d) no water in watertight or pressure watertight luminaire		N/A
	e) no contact with live parts (IP 2X)		N/A
	e) no entry into enclosure (IP 3X and IP 4X)		N/A
	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	IPX6	P
	g) no damage of protective shield or glass envelope	IP66	P
3.13 (9.3)	Humidity test 48 h		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		---
	Insulation resistance (MΩ).....		---
	SELV		---
	- between current-carrying parts of different polarity:	>1,3 MΩ (including DALI circuit)	P
	- between current-carrying parts and mounting surface	>1,3 MΩ (including DALI circuit)	P



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Clause	Requirement + Test	Result - Remark	Verdict
	- between current-carrying parts and metal parts of the luminaire.....:	>1,3 MΩ (including DALI circuit)	P
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts		N/A
	- Insulation bushings as described in Section 5		N/A
	Other than SELV		---
	- between live parts of different polarity.....:	>2,6 MΩ	P
	- between live parts and mounting surface	>5,2 MΩ	P
	- between live parts and metal parts.....:	>5,2 MΩ	P
	- between live parts of different polarity through action of a switch.....:		N/A
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts	>2,6 MΩ	P
	- Insulation bushings as described in Section 5		N/A
3.14 (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).....:		N/A
	SELV		---
	- between current-carrying parts of different polarity:	500V (including DALI circuit)	P
	- between current-carrying parts and mounting surface	500V (including DALI circuit)	P
	- between current-carrying parts and metal parts of the luminaire.....:	500V (including DALI circuit)	P
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts		N/A
	- Insulation bushings as described in Section 5		N/A
	Other than SELV		---
	- between live parts of different polarity.....:	1480V	P
	- between live parts and mounting surface	2960V	P
	- between live parts and metal parts.....:	2960V	P
	- between live parts of different polarity through action of a switch.....:		N/A
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts	1480V	P
	- Insulation bushings as described in Section 5		N/A
3.14 (10.3)	Touch current or protective conductor current (mA):	$I_{touch} < 0,49 \text{ mA}$	P



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Clause	Requirement + Test	Result - Remark	Verdict
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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

3.7 (11.2)	TABLE: Creepage distances and clearances							P
	Minimum distances (mm) for a.c. (50/60 Hz) sinusoidal voltages							P
	Applicable part of IEC 60598-1 Table 11.1* and 11.2*							P
	Insulation type **	Measured clearance	Required		Measured creepage	Required		
			clearance	*Table		creepage	*Table	
Distance 1:	B	>1,86	1,43	11.1	>1,86	1,43	11.1	
Working voltage (V)					U _{in} =240V AC;		—	
PTI					< 600 <input type="checkbox"/> ≥ 600 <input checked="" type="checkbox"/>		—	
Pulse voltage if applicable (kV)					---		—	
Supplementary information: (1) live parts of different polarity								
Distance 2:	B+S	> 3,7	1,43+1,43	11.1	> 3,7	1,43+1,43	11.1	
Working voltage (V)					U _{out} =240V DC		—	
PTI					< 600 <input type="checkbox"/> ≥ 600 <input checked="" type="checkbox"/>		—	
Pulse voltage if applicable (kV)							—	
Supplementary information: (2a) live parts and accessible metal parts, (3) parts which may become live due to the breakdown of basic insulation and accessible metal parts; (4) the outer surface of a flexible cord or cable and an accessible metal part to which it is secured by means of a cord grip, cable carrier or clip of insulating material; (6) live parts and other metal parts between them and the supporting surface								
Distance 3:	B	>1,5	1,15	11.1	> 1,5	1,15	11.1	
Working voltage (V)					U _{out} = 200V DC		—	
PTI					< 600 <input type="checkbox"/> ≥ 600 <input checked="" type="checkbox"/>		—	
Pulse voltage if applicable (kV)					---		—	
Supplementary information: (1) live parts of different polarity								
Distance 4:	B+S	> 3,0	1,15+1,15	11.1	> 3,0	1,15+1,15	11.1	
Working voltage (V)					U _{out} = 200V DC		—	
PTI					< 600 <input type="checkbox"/> ≥ 600 <input checked="" type="checkbox"/>		—	
Pulse voltage or U _p if applicable (kV)					---		—	
Supplementary information: (2a) live parts and accessible metal parts; (3) parts which may become live due to the breakdown of basic insulation and accessible metal parts; (6) live parts and other metal parts between them and the supporting surface								



IEC 60598-2-3							
Clause	Requirement + Test				Result - Remark		Verdict
Distance 5:	B	>0,34	0,26	11.1	>0,8	0,62	11.1
Working voltage (V)					Uout = 60V DC		---
PTI					< 600 <input type="checkbox"/> ≥ 600 <input checked="" type="checkbox"/>		---
Pulse voltage or U_P if applicable (kV)					---		---
Supplementary information: (1) live parts of different polarity							
Distance 6:	B+S	> 0,68	0,26+0,26	11.1	> 1,6	0,62+0,62	11.1
Working voltage (V)					Uout = 60V DC		---
PTI					< 600 <input type="checkbox"/> ≥ 600 <input checked="" type="checkbox"/>		---
Pulse voltage or U_P if applicable (kV)					---		---
Supplementary information: (2a) live parts and accessible metal parts; (3) parts which may become live due to the breakdown of basic insulation and accessible metal parts; (6) live parts and other metal parts between them and the supporting surface							

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

3.15 (13.2.1)	TABLE: Ball Pressure Test of Thermoplastics				N/A
Allowed impression diameter (mm)				2,0 mm	---
Object/ Part No. / Material	Manufacturer/ trademark	Test temperature (°C)		Impression diameter (mm)	
Supplementary information:					

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:						

3.15 (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



IEC 60598-2-3

Clause	Requirement + Test	Result - Remark		Verdict
LED optics	LEDiL Oy	No	---	P
LED module cover	NITEKO	No	---	P
Any flame or glowing of the sample extinguished within 30 s of withdrawing the glow-wire, and any burning or molten drop did not ignite the underlying parts (Yes/No)..... :				
Supplementary information:				

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:				

IEC 60598-2-3						
Clause	Requirement + Test			Result - Remark	Verdict	
ANNEX 1	TABLE: Critical components information					
Object / part No.	Code	Manufacturer / trademark	Type / model	Technical data	Standard	Mark(s) of conformity ¹⁾
Description:	Terminal block					
Supply terminal block – connector (knife switch)	A	Yuyao Sineyi Electronic Technology Co. Ltd.	M29	16A, 450VAC, T110, 4kV, pol.2	EN 61984 EN 60998-2-1 EN 60998-1	TÜV SÜD
Terminal block of LED module	A	WAGO	2060	130V, 9A, 0,75mm ²	EN 60998-2-2 EN 60998-1	DEKRA
Description:	Internal wire					
Internal wire	A	Italian Cable Company SPA	UG4G4	1x0,75mm ² , T180	IMQ CPT-013 Ed. 2000	IMQ
Internal wire	A	SALCAVI TECHNIC SPA	FR5FR5F T 180°C	1x0,75mm ² , 180°C	CEI 20-51 Ed.2013	IMQ
Description:	LED module					
LED module (based on LED chips)	B	NITEKO	NITEKO 3 LEDs BOARD (SEM.CS.3LED)	Inom 700mA 34,3VDC tc=90°C CCT 2700K, 3000K, 4000K, 5000K, 5700K RG2 Ethr=1040lx	EN 60598-1 EN 62471 IEC TR/62778	Tested in equipment – see test report LO- 18.041/18.00 5/IV/E
Description:	LED chips + optics					
LED chips	B	Nichia	NV4W144ART (white and warm white – Cat. No. 180301)	CCT 2700K, 3000K, 4000K, 5000K, 5700K	EN 60598-1 EN 62471 IEC TR/62778	Tested in equipment see test report LO- 18.041/18.00 5/IV/E
LED optics	A	LEDIL Oy	---	PMMA	EN 60598-1	Tested in equipment

IEC 60598-2-3

Clause	Requirement + Test	Result - Remark	Verdict
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Description:		Lamp control gear				
Lamp control gear	B	PHILIPS	Xi LP 110W 0.3-1.0A SI 230V C150 sXt (929000964706)	U _{in} 220-240V, 50/60Hz; U _{out} max 200V DC; T _c 85°C	EN 61347-2-13 EN 61347-1 EN 62384	ENEC 05
			Xitanium Xi FP 150W 0.30-1.0A SNLDAE 230V S240 sXt (9290009623..) (929001644306)	U _{in} 220-240V, 50/60Hz; U _{out} max 260V DC; T _c 90°C		
			Xi FP 100W 0.2-0.7A SNLDAE 230V C165 sXt (929001522006) (929001650006)	U _{in} 220-240V, 50/60Hz; U _{out} max 190V DC; T _c 85°C		
			Xi FP 40W 0.3-1.0A SNLDAE 230V S175sXt (929000998306)	U _{in} 220-240V, 50/60Hz; U _{out} max 60V DC; T _c 90°C		
			Xi FP 40W 0.2-0.7A SNLDAE 230V S175sXt (929000989206)	U _{in} 220-240V, 50/60Hz; U _{out} max 100V DC; T _c 85°C		

Description:		Surge Protective Device				
SPD	B	PHILIPS	Xtreme Surge Protector II (929001607106)	Type 3, class III, 230V AC, 50/60Hz, 10kV, t _c =80°C	EN 61643-11	DEKRA

Description:		insulation				
Insulating lining (thermal adhesive tape)	A	Bergquist Company	Bond-Ply 800	V-0, 4-6kV	EN 60598-1	Tested in equipment
sleeves	A	BM Connecting Cables	Thermo-shrinkable tubing - series S	135°C, 24kV/mm	EN 60598-1	Tested in equipment

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 60598-2-3

Clause	Requirement + Test	Result - Remark	Verdict
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ANNEX 2	TABLE: Temperature measurements, thermal tests of Section 12		P
	Type reference	GS12H-WA1-AN	---
	Lamp used.....	4x NITEKO 3 LEDs BOARD	---
	Lamp control gear used	Xi LP 110W 0.3-1.0A SI 230V C150 sXt	---
	Mounting position of luminaire.....	On a mast arm	---
	Supply wattage (W)	100W	---
	Supply current (A).....	---	---
	Calculated power factor	---	---
	Table: measured temperatures corrected for ta = 40 °C:		P
	- abnormal operating mode	---	---
	- test 1: rated voltage	240V AC	---
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage.....	1,06x240V = 254V AC	---
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage	---	---
	- test 4: 1,1 times rated voltage or 1,05 times rated wattage.....	---	---
	Through wiring or looping-in wiring loaded by a current of A during the test	---	---

Temperature measurements, (°C)

Part	Ambient	Clause 12.4 – normal				Clause 12.5 – abnormal	
		test 1	test 2	test 3	limit	test 4	limit
Tc LED board no. 1	40	66	---	---	90	---	---
Tc LED board no. 2		72	---	---	90	---	---
Lamp control gear Tc		70	---	---	85	---	---
Supply terminal block – connector		---	47	---	85	---	---
LED module terminal block		---	61	---	85	---	---
Supply wire		---	46	---	90	---	---
Internal wire		---	53	---	180	---	---



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



IEC 60598-2-3			
Clause	Requirement + Test	Result - Remark	Verdict
ANNEX 4	Screwless terminals (part of the luminaire)		
(15)	SCREWLESS TERMINALS		---
(15.2)	Type of terminal.....:		---
	Rated current (A).....:		---
(15.3.1)	Material		N/A
(15.3.2)	Clamping		N/A
(15.3.3)	Stop		N/A
(15.3.4)	Unprepared conductors		N/A
(15.3.5)	Pressure on insulating material		N/A
(15.3.6)	Clear connection method		N/A
(15.3.7)	Clamping independently		N/A
(15.3.8)	Fixed in position		N/A
(15.3.10)	Conductor size		N/A
	Type of conductor		N/A
(15.5)	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		---
	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		---
	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



IEC 60598-2-3

Clause	Requirement + Test	Result - Remark	Verdict
(15.6.2.2)	Pull test pin or tab terminals (4 samples); pull (N)		N/A
(15.6.3)	Electrical tests		---
	Tests according 15.6.3.1 + 15.6.3.2 in IEC 60598-1		N/A

(15.6.3.1) (15.6.3.2)	TABLE: Contact resistance test / Heating tests										N/A
	Voltage drop (mV) after 1 h										---
terminal	1	2	3	4	5	6	7	8	9	10	
voltage drop (mV)											
	Voltage drop of two inseparable joints										
	Voltage drop after 10th alt. 25th cycle										
	Max. allowed voltage drop (mV)										---
terminal	1	2	3	4	5	6	7	8	9	10	
voltage drop (mV)											
	Voltage drop after 50th alt. 100th cycle										
	Max. allowed voltage drop (mV)										---
terminal	1	2	3	4	5	6	7	8	9	10	
voltage drop (mV)											
	Continued ageing: voltage drop after 10th alt. 25th cycle										
	Max. allowed voltage drop (mV)										---
terminal	1	2	3	4	5	6	7	8	9	10	
voltage drop (mV)											
	Continued ageing: voltage drop after 50th alt. 100th cycle										
	Max. allowed voltage drop (mV)										---
terminal	1	2	3	4	5	6	7	8	9	10	
voltage drop (mV)											
Supplementary information:											



Błąd! Nie można odnaleźć źródła odwołania.

IEC60598_2_3K - ATTACHMENT

Clause	Requirement + Test	Result - Remark	Verdict
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**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 + A1:2011 used in conjunction with
EN 60598-1:2015

Annex Form No. : EU_GD_IEC60598_2_3K

Annex Form Originator : IMQ S.p.A.

Master Annex Form : 2016-12

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CENELEC COMMON MODIFICATIONS (EN)

3.5 (3)	MARKING		
3.5 (3.3.101)	For luminaires not supplied with terminal block: Adequate warning on the package		N/A

3.6 (4)	CONSTRUCTION		
3.6 (4.11.6)	Electro-mechanical contact systems		N/A

3.10 (5)	EXTERNAL AND INTERNAL WIRING		
3.10 (5.2.1)	Connecting leads	connector	P
	- without a means for connection to the supply		N/A
	- terminal block specified		N/A
	- relevant information provided		N/A
	- compliance with 4.6, 4.7.1, 4.7.2, 4.10.1, 11.2, 12 and 13.2 of Part 1		N/A
3.10 (5.2.2)	Cables equal to EN 50525		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		P

ZB	ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)		
(3.3)	DK: power supply cords of class I luminaires with label		N/A



Błąd! Nie można odnaleźć źródła odwołania.

IEC60598_2_3K - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
(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 (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:		
	- 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



IEC 60598-2-3

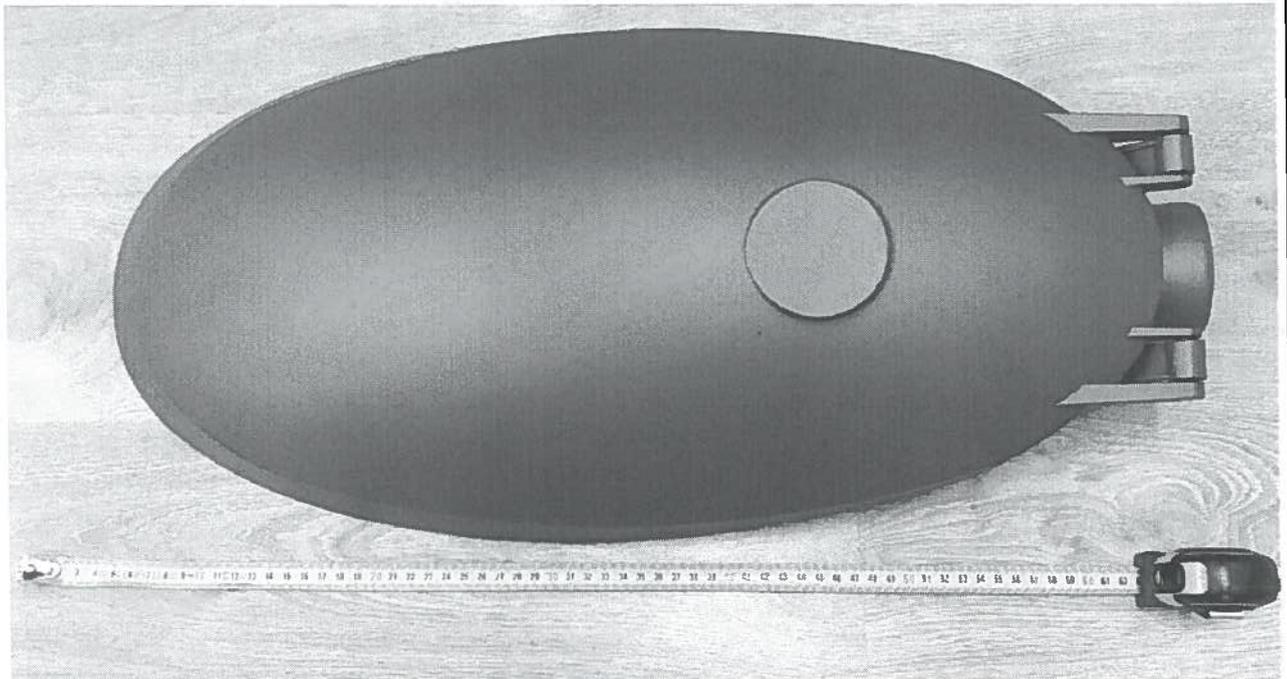
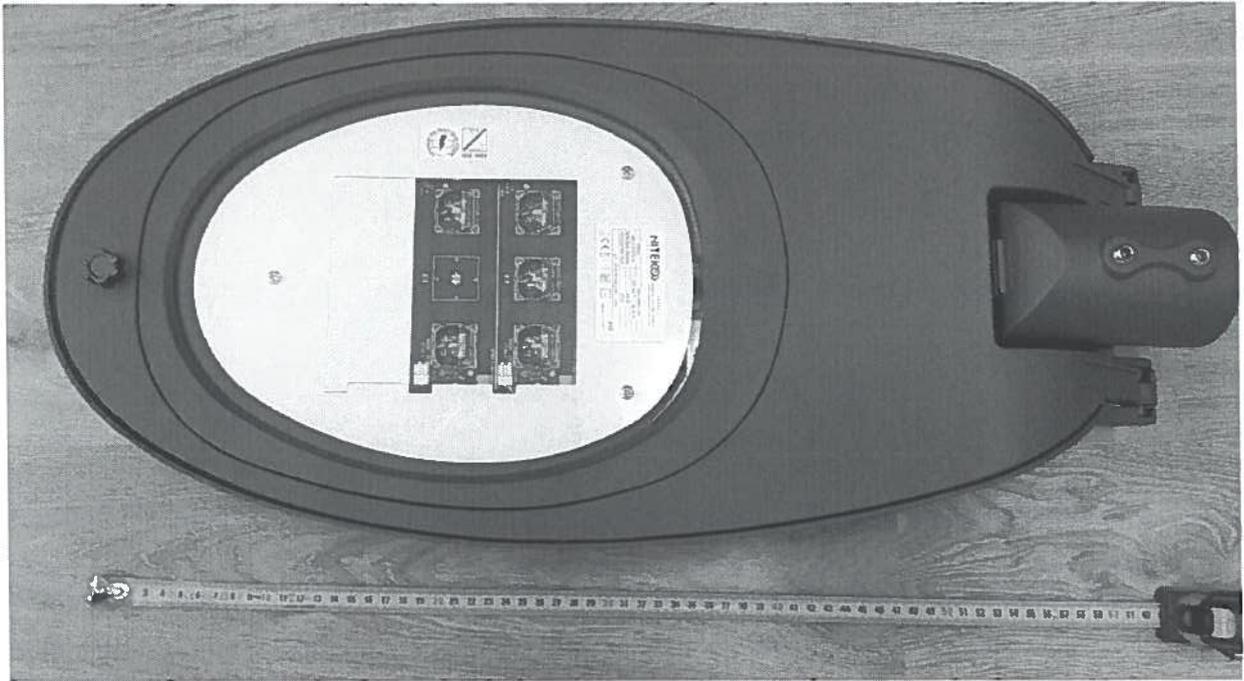
Clause	Requirement + Test	Result - Remark	Verdict
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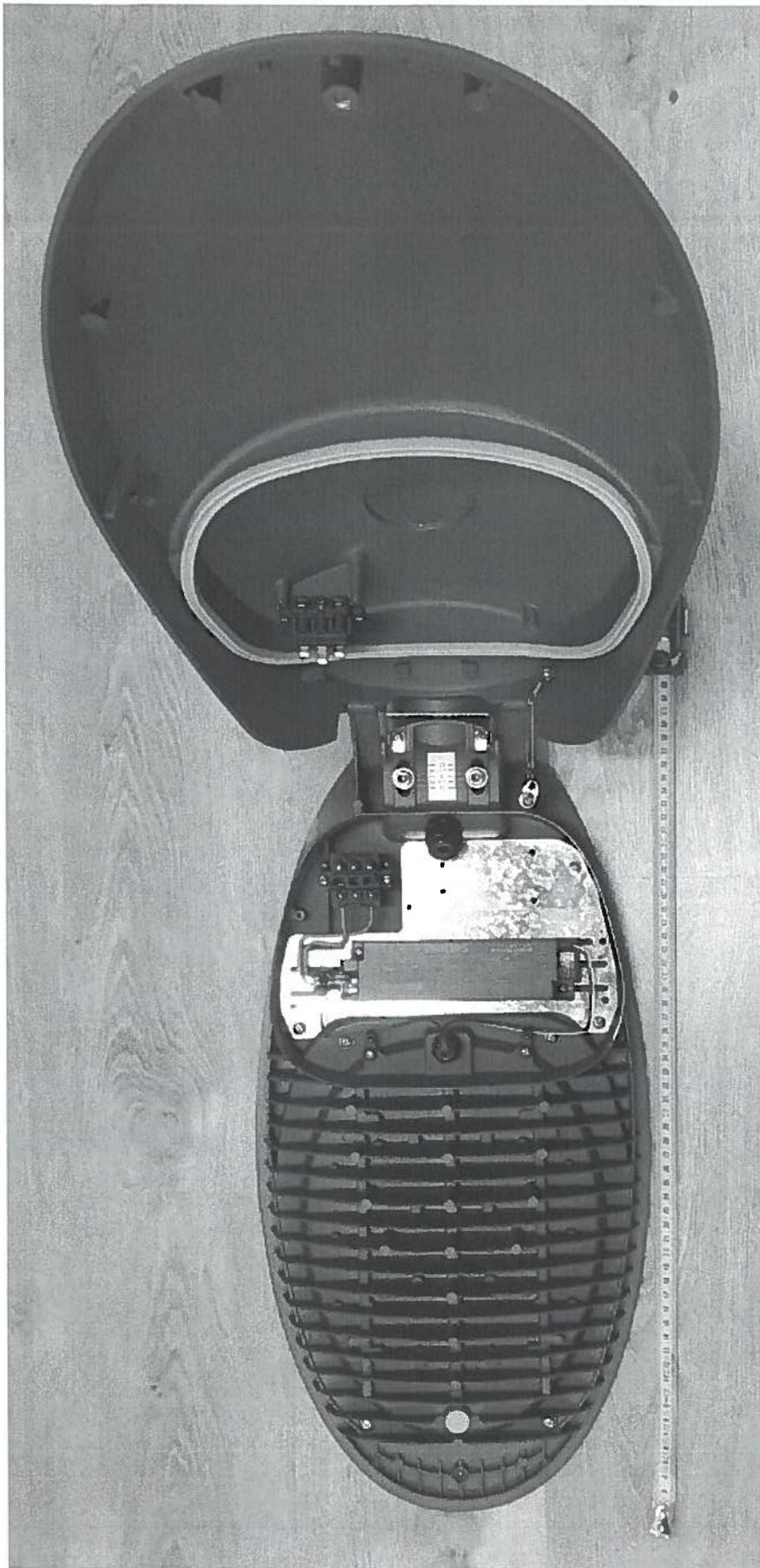
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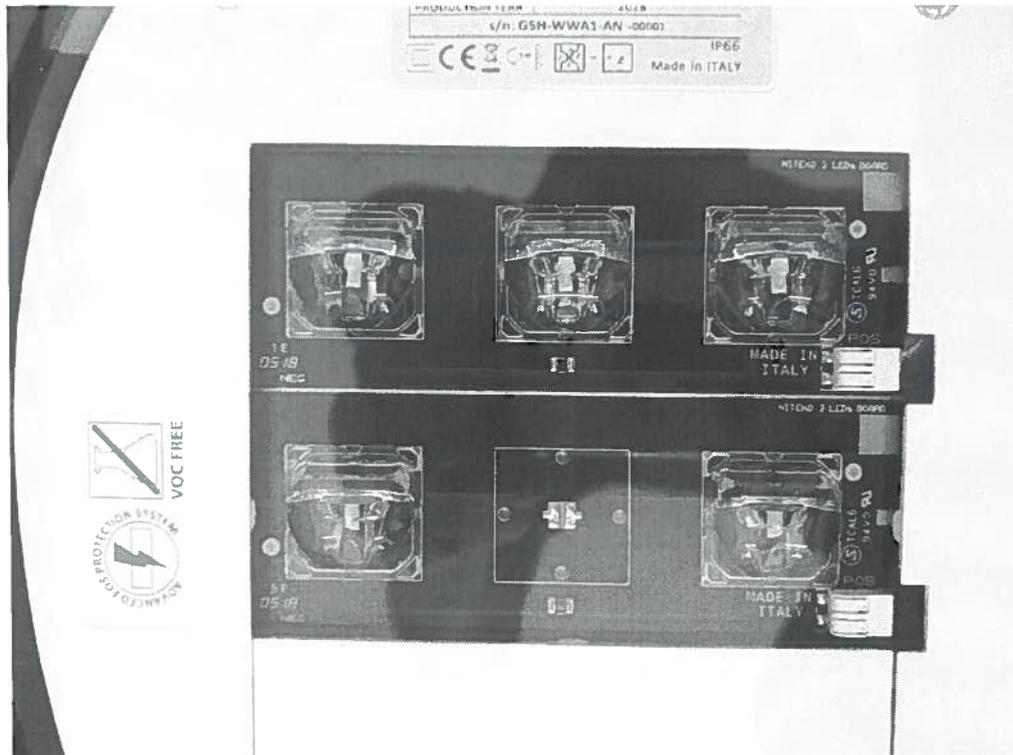
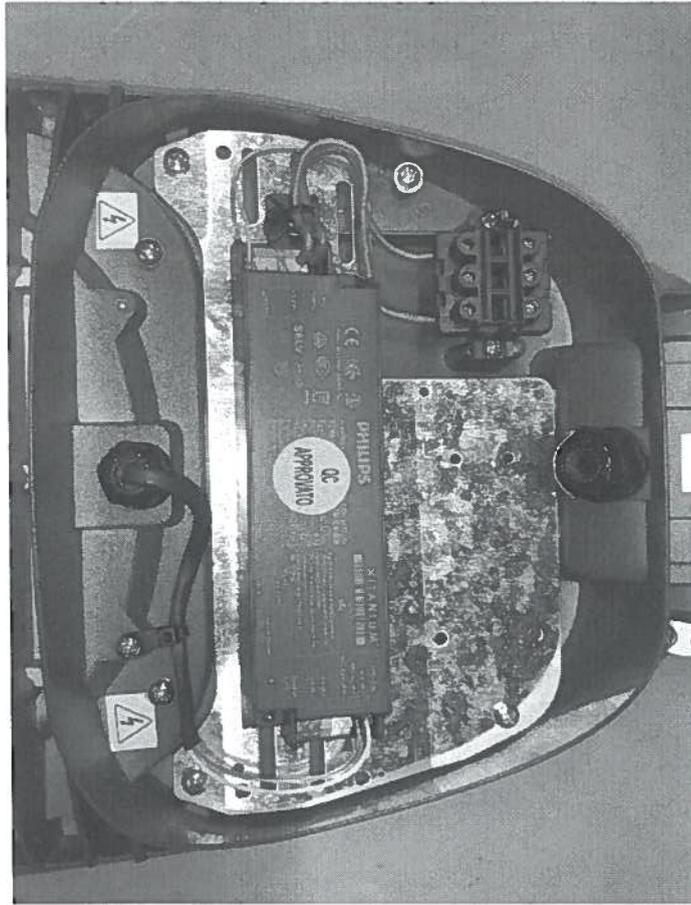
Annex A: Tests of overpower condition according to EN 62031:2008+A1:2013+A2:2015			
13.2	Module withstands overpower condition >15 min.		P
	Module with automatic protective device or power limiter, test performed 15 min. at limit.		N/A
	During the tests, tissue paper, spread below module, does not ignite		P

ANNEX B: Photographs of the products

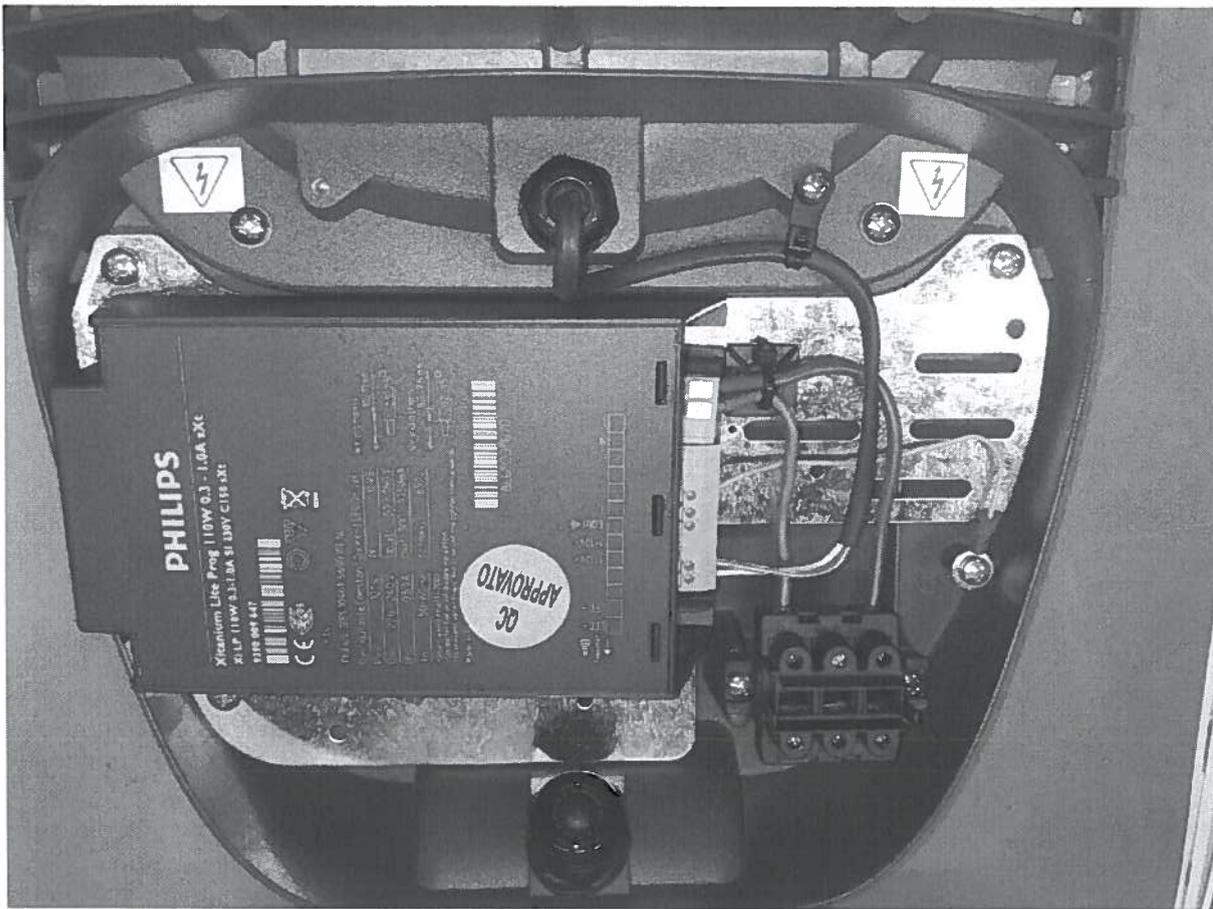
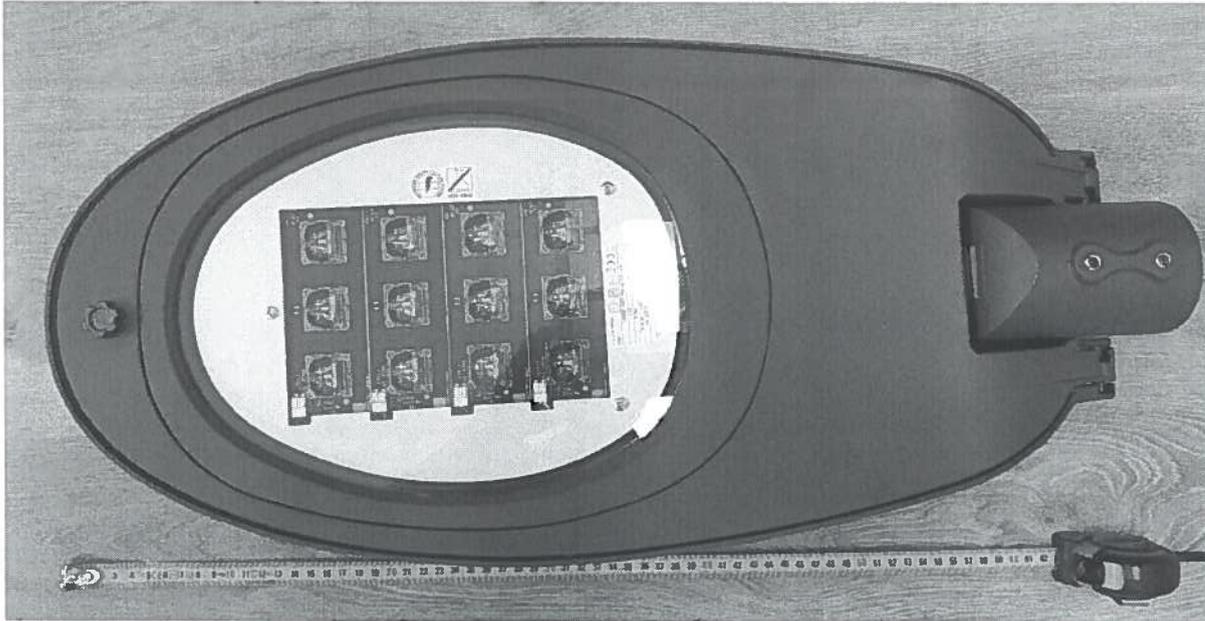
G5H-WWA1-AN

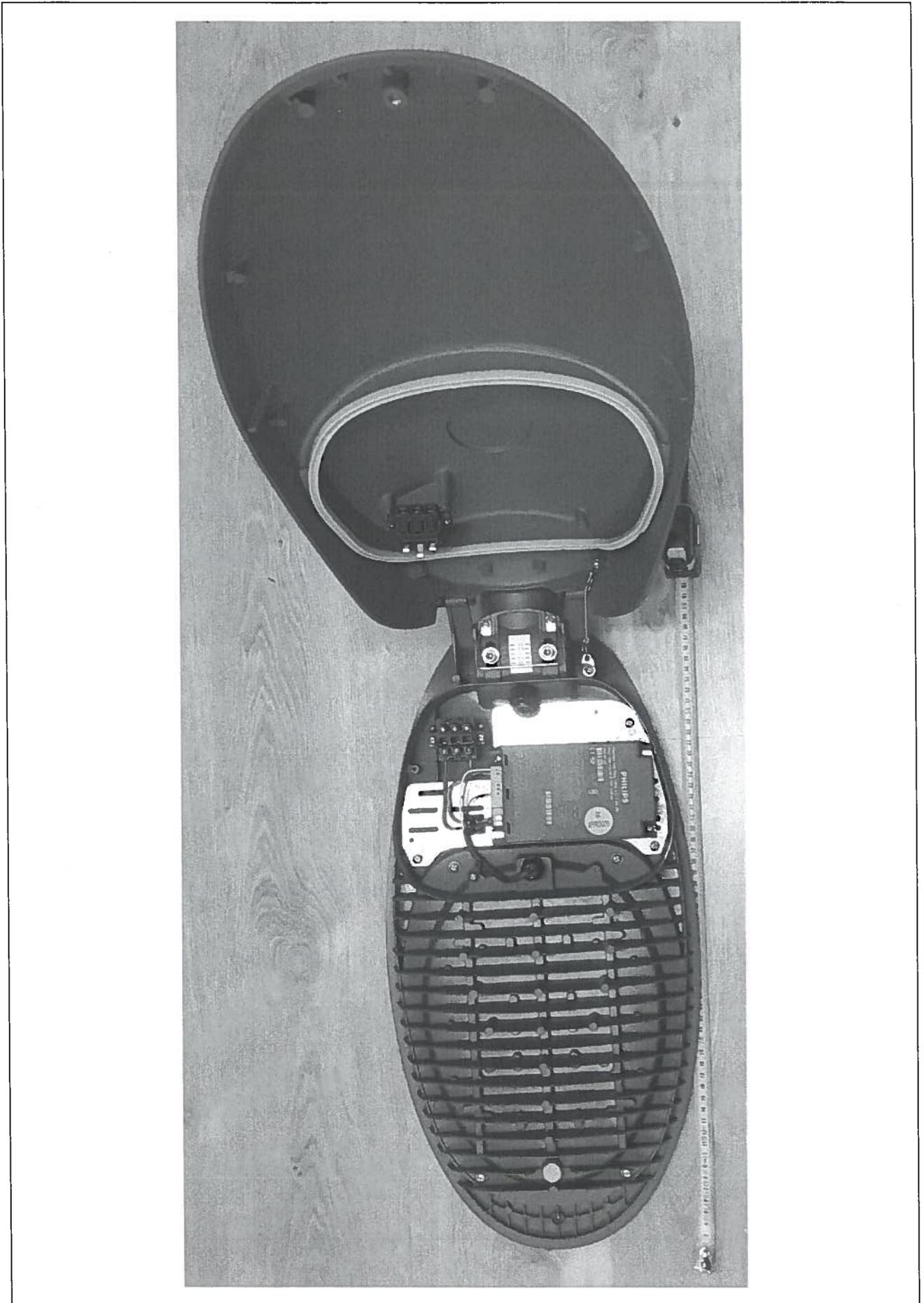




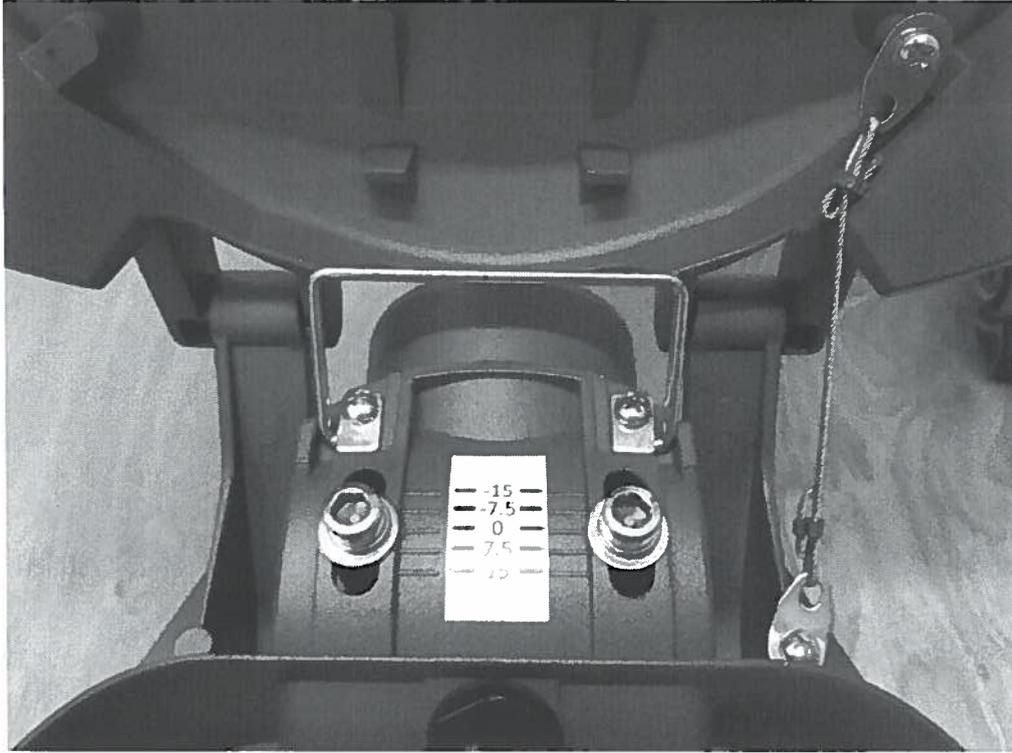


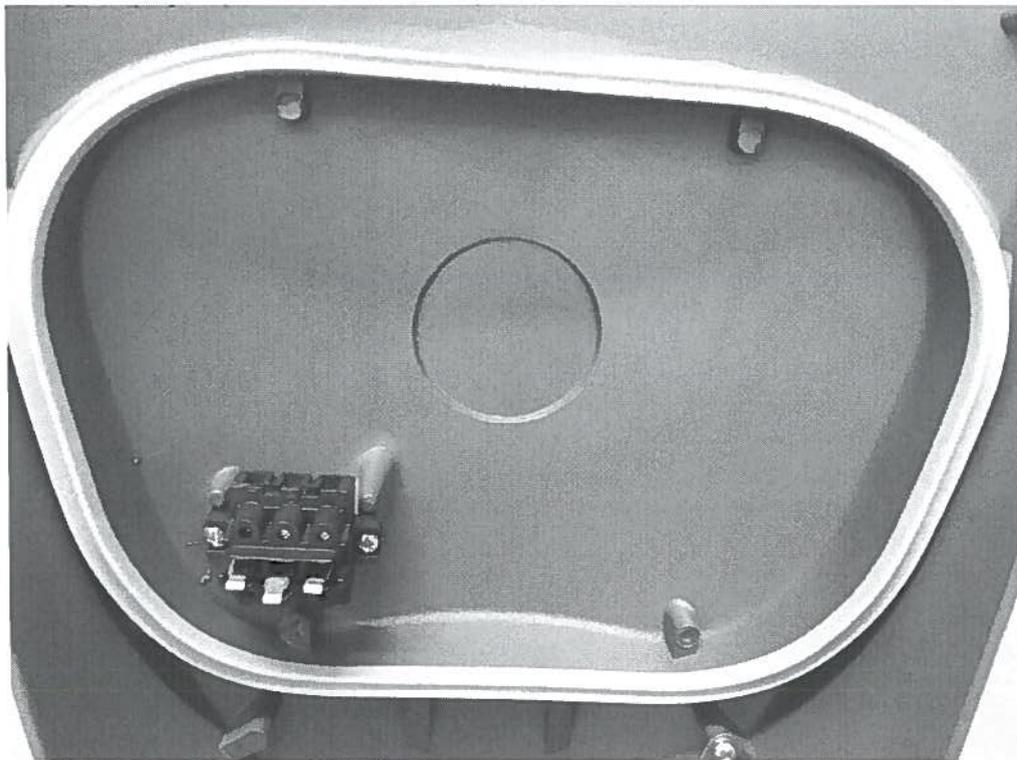
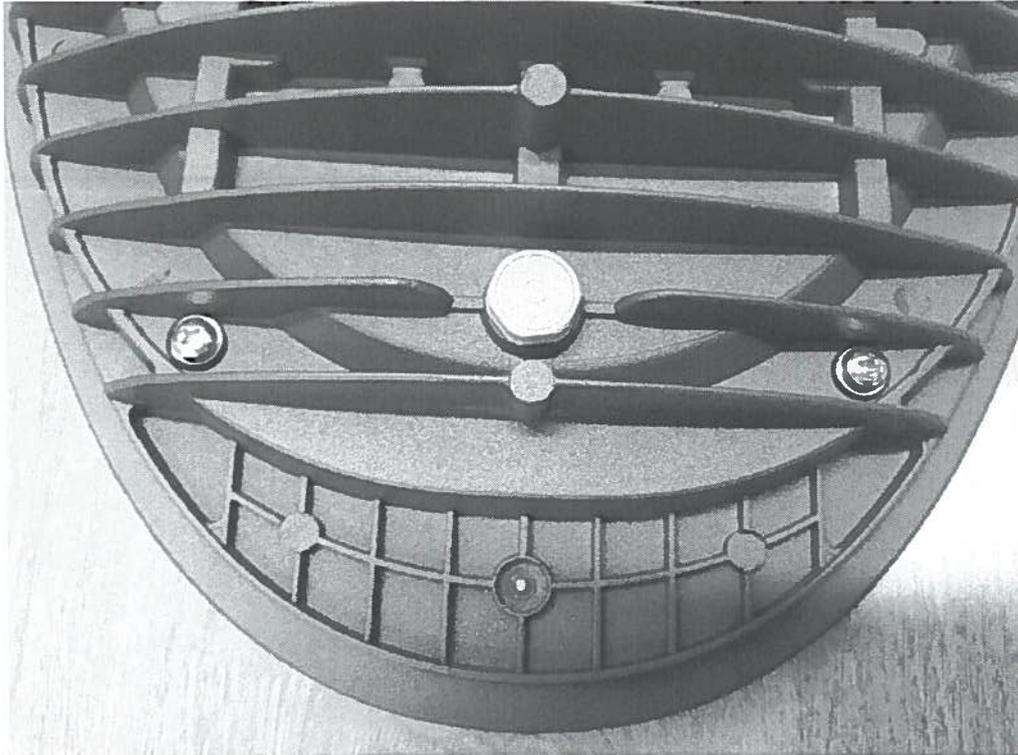
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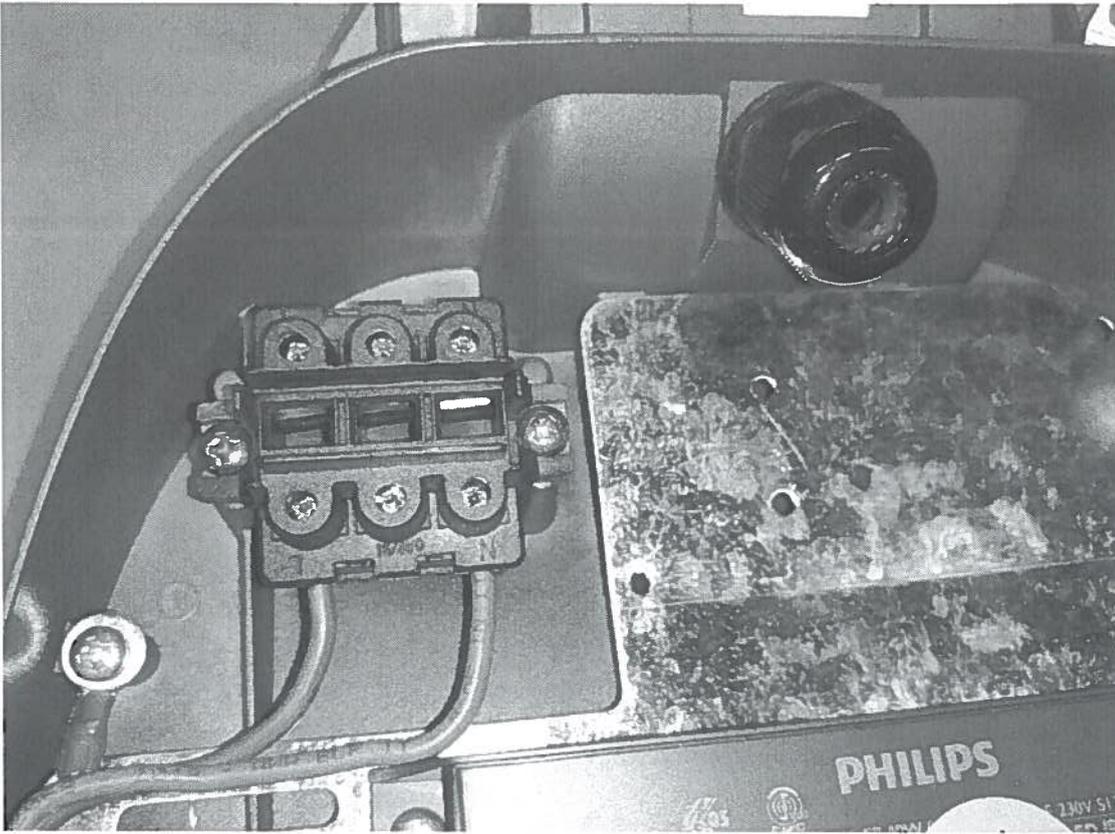




General view







LED module scheme:

