



Test Report issued under the responsibility of:

ezú electrotechnical
testing
institute

TEST REPORT
IEC 60598-2-2
Luminaires
Part 2: Particular requirements
Section 2: Recessed luminaires

Report Number..... : 700590-01/01

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Name of Testing Laboratory Elektrotechnický zkušební ústav s.p.
preparing the Report : Pod Lisem 129, 171 02 Praha 71 – Troja, Czech Republic

Applicant's name : LUG LIGHT FACTORY SP. Z O. O.

Address : 65-127 Zielona Góra ul. Gorzowska 11; Polska

Test specification:

Standard : IEC 60598-2-2:2011 (Third Edition) used in conjunction with
IEC 60598-1:2014 (Eighth Edition)
EN 60598-2-2:2012 used in conjunction with
EN 60598-1:2015

Test procedure..... : CB / ENEC Scheme

Non-standard test method..... : N/A

Test Report Form No. : IEC60598_2_2D

Test Report Form(s) Originator.... : Intertek Semko AB

Master TRF : 2014-09

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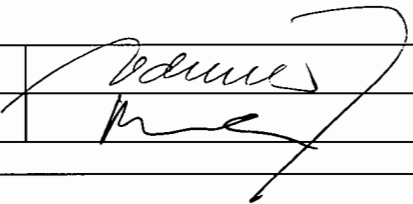
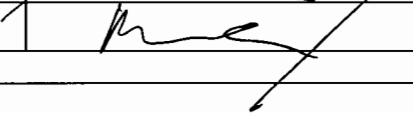
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General disclaimer:

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Test item description	Recessed luminaires – in ceiling	
Trade Mark	 LUG	
Manufacturer.....	LUG LIGHT FACTORY SP. Z O. O 65-127 Zielona Góra ul. Gorzowska 11; Polska	
Model/Type reference	LUGCLASSIC LB LED p/t 600x600, 625x625	
Ratings	220-240 V, 50-60 Hz, 40 W, IP20/40, 	
Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):		
☒	CB Testing Laboratory:	
Testing location/ address		Elektrotechnický zkušební ústav s.p. Pod Lisem 129, 171 02 Praha 71-Troja, Czech Republic
☐	Associated CB Testing Laboratory:	
Testing location/ address		---
Tested by (name, function, signature)		Pavel Vodrážka 
Approved by (name, function, signature) ...		Lukáš Burda 
☐	Testing procedure: TMP/CTF Stage 1:	
Testing location/ address		---
Tested by (name, function, signature)		
Approved by (name, function, signature) ...		
☐	Testing procedure: WMT/CTF Stage 2:	
Testing location/ address		---
Tested by (name + signature)		
Witnessed by (name, function, signature) ..		
Approved by (name, function, signature) ...		
☐	Testing procedure: SMT/CTF Stage 3 or 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):

Annex 1: components (one page)

Annex 2: temperature measurements, thermal tests of Section 12 (two pages)

Annex 5: photo (four pages)

Annex 6: installation (one page)

European group differences and national differences (two pages)

Photobiological safety of lamps and lamps system - Blue light hazard (one page)

Summary of testing:**Tests performed (name of test and test clause):**

All required tests.

Testing location:

same address as on page 2.

Summary of compliance with National Differences: ---**List of countries addressed**

☐ 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.



Test item particulars :	
Classification of installation and use : Recessed luminaires – in ceiling	
Supply Connection : Screwless terminal block in driver :	
Possible test case verdicts:	
- test case does not apply to the test object : —	
- 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. 3. 2017	
Date (s) of performance of tests : 4. 4. 2017 + 30. 5. 2017	
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 ☒ comma / ☐ point is used as the decimal separator.	
Manufacturer's Declaration per sub-clause 4.2.5 of IEC 60598-2-13:	
The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided	☐ Yes ☒ Not applicable
When differences exist; they shall be identified in the General product information section.	
Name and address of factory (ies) : —	
General product information:	
Recessed luminaires – in ceiling	
The body of the luminaire is made of sheet.	
Type of protection: class II.	
Degree of protection: IP20, optical part IP40	
Luminaires suitable for normally flammable surfaces.	
Operating temperature: 25°C	
All tests were performed on type: LUGCLASSIC LB LED p/t 600x600 300061.001152 LUGCLASSIC LB LED p/t 625x625 300061.001154	
Used light source: LED module - LUG ML 1501801	

IEC 60598-2-2			
Clause	Requirement + Test	Result - Remark	Verdict
2.3 (0)	GENERAL TEST REQUIREMENTS		
2.3 (0.1)	Information for luminaire design considered	Standard Yes ☒ No ☐	—
2.3 (0.3)	More sections applicable	Yes ☐ No ☒	—

2.4 (2)	CLASSIFICATION		
2.5 (2.2)	Type of protection	Class II	—
2.5 (2.3)	Degree of protection	IP20	—
2.5 (2.4)	Luminaire suitable for direct mounting on normally flammable surfaces	Yes ☒ No ☐	—
2.5 (2.5)	Luminaire for normal use	Yes ☒ No ☐	—
	Luminaire for rough service	Yes ☐ No ☒	—

2.6 (3)	MARKING		
2.6 (3.2)	Mandatory markings		P
	Position of the marking		P
	Format of symbols/text		P
2.6 (3.3)	Additional information		P
	Language of instructions		P
2.6 (3.3.1)	Combination luminaires		---
2.6 (3.3.2)	Nominal frequency in Hz		P
2.6 (3.3.3)	Operating temperature		---
2.6 (3.3.4)	Symbol or warning notice		---
2.6 (3.3.5)	Wiring diagram		---
2.6 (3.3.6)	Special conditions		---
2.6 (3.3.7)	Metal halide lamp luminaire – warning		---
2.6 (3.3.8)	Limitation for semi-luminaires		---
2.6 (3.3.9)	Power factor and supply current		---
2.6 (3.3.10)	Suitability for use indoors		P
2.6 (3.3.11)	Luminaires with remote control		---
2.6 (3.3.12)	Clip-mounted luminaire – warning		---
2.6 (3.3.13)	Specifications of protective shields		---
2.6 (3.3.14)	Symbol for nature of supply		---
2.6 (3.3.15)	Rated current of socket outlet		---

IEC 60598-2-2			
Clause	Requirement + Test	Result - Remark	Verdict
2.6 (3.3.16)	Rough service luminaire		---
2.6 (3.3.17)	Mounting instruction for type Y, type Z and some type X attachments		---
2.6 (3.3.18)	Non-ordinary luminaires with PVC cable		---
2.6 (3.3.19)	Protective conductor current in instruction if applicable		---
2.6 (3.3.20)	Provided with information if not intended to be mounted within arm's reach		---
2.6 (3.3.21)	Non replaceable and non-user replaceable light sources information provided		---
	Cautionary symbol		---
2.6 (3.3.22)	Controllable luminaires, classification of insulation provided		---
2.6 (3.4)	Test with water		P
	Test with hexane		P
	Legible after test		P
	Label attached		P

2.7 (4)	CONSTRUCTION		
2.7 (4.2)	Components replaceable without difficulty		P
2.7 (4.3)	Wireways smooth and free from sharp edges		P
2.7 (4.4)	Lampholders		
2.7 (4.4.1)	Integral lampholder		---
2.7 (4.4.2)	Wiring connection		---
2.7 (4.4.3)	Lampholder for end-to-end mounting		---
2.7 (4.4.4)	Positioning		---
	- pressure test (N)		---
	After test the lampholder comply with relevant standard sheets and show no damage		---
	After test on single-capped lampholder the lampholder have not moved from its position and show no permanent deformation		---
	- bending test (N)		---
	After test the lampholder have not moved from its position and show no permanent deformation		---
2.7 (4.4.5)	Peak pulse voltage		---
2.7 (4.4.6)	Centre contact		---

IEC 60598-2-2			
Clause	Requirement + Test	Result - Remark	Verdict
2.7 (4.4.7)	Parts in rough service luminaires resistant to tracking		---
2.7 (4.4.8)	Lamp connectors		---
2.7 (4.4.9)	Caps and bases correctly used		---
2.7 (4.4.10)	Light source for lampholder or connection according IEC 60061 not connected another way		---
2.7 (4.5)	Starter holders		
	Starter holder in luminaires other than class II		---
	Starter holder class II construction		---
2.7 (4.6)	Terminal blocks		
	Tails		P
	Unsecured blocks		P
2.7 (4.7)	Terminals and supply connections		
2.7 (4.7.1)	Contact to metal parts		---
2.7 (4.7.2)	Test 8 mm live conductor		P
	Test 8 mm earth conductor		P
2.7 (4.7.3)	Terminals for supply conductors		P
2.7 (4.7.3.1)	Welded method and material		
	- stranded or solid conductor		---
	- spot welding		---
	- welding between wires		---
	- Type Z attachment		---
	- mechanical test according to 15.8.2		---
	- electrical test according to 15.9		---
	- heat test according to 15.9.2.3 and 15.9.2.4		---
2.7 (4.7.4)	Terminals other than supply connection		---
2.7 (4.7.5)	Heat-resistant wiring/sleeves		---
2.7 (4.7.6)	Multi-pole plug		---
	- test at 30 N		---
2.7 (4.8)	Switches		
	- adequate rating		---
	- adequate fixing		---
	- polarized supply		---
	- compliance with IEC 61058-1 for electronic switches		---

IEC 60598-2-2			
Clause	Requirement + Test	Result - Remark	Verdict
2.7 (4.9)	Insulating lining and sleeves		
2.7 (4.9.1)	Retainment		---
	Method of fixing		---
2.7 (4.9.2)	Insulated linings and sleeves:		
	Resistant to a temperature > 20 °C to the wire temperature or		---
	a) & c) Insulation resistance and electric strength		---
	b) Ageing test. Temperature (°C)		---
2.7 (4.10)	Double or reinforced insulation		
2.7 (4.10.1)	No contact, mounting surface – accessible metal parts – wiring of basic insulation		P
	Safe installation fixed luminaires		P
	Capacitors and switches		---
	Interference suppression capacitors according to IEC 60384-14		---
2.7 (4.10.2)	Assembly gaps:		
	- not coincidental		---
	- no straight access with test probe		---
2.7 (4.10.3)	Retainment of insulation:		
	- fixed		---
	- unable to be replaced; luminaire inoperative		---
	- sleeves retained in position		---
	- lining in lampholder		---
2.7 (4.11)	Electrical connections and current-carrying parts		
2.7 (4.11.1)	Contact pressure		P
2.7 (4.11.2)	Screws:		
	- self-tapping screws		---
	- thread-cutting screws		---
2.7 (4.11.3)	Screw locking:		
	- spring washer		---
	- rivets		---
2.7 (4.11.4)	Material of current-carrying parts		P
2.7 (4.11.5)	No contact to wood or mounting surface		P
2.7 (4.11.6)	Electro-mechanical contact systems		---
2.7 (4.12)	Screws and connections (mechanical) and glands		

IEC 60598-2-2			
Clause	Requirement + Test	Result - Remark	Verdict
2.7 (4.12.1)	Screws not made of soft metal		---
	Screws of insulating material		---
	Torque test: torque (Nm); part.....:		---
	Torque test: torque (Nm); part.....:		---
	Torque test: torque (Nm); part.....:		---
2.7 (4.12.2)	Screws with diameter < 3 mm screwed into metal		---
2.7 (4.12.4)	Locked connections:		
	- fixed arms; torque (Nm).....:		---
	- lampholder; torque (Nm)		---
	- push-button switches; torque 0,8 Nm.....:		---
2.7 (4.12.5)	Screwed glands; force (Nm).....:		---
2.7 (4.13)	Mechanical strength		
2.7 (4.13.1)	Impact tests:		
	- fragile parts; energy (Nm).....:		---
	- other parts; energy (Nm)	0,35	P
	1) live parts		P
	2) linings		P
	3) protection		P
	4) covers		P
2.7 (4.13.3)	Straight test finger		P
2.7 (4.13.4)	Rough service luminaires		
	- IP54 or higher		---
	a) fixed		---
	b) hand-held		---
	c) delivered with a stand		---
	d) for temporary installations and suitable for mounting on a stand		---
2.7 (4.13.6)	Tumbling barrel		---
2.7 (4.14)	Suspensions, fixings and means of adjusting		
2.7 (4.14.1)	Mechanical load:		
	A) four times the weight		---
	B) torque 2,5 Nm		---
	C) bracket arm; bending moment (Nm).....:		---
	D) load track-mounted luminaires		---

IEC 60598-2-2			
Clause	Requirement + Test	Result - Remark	Verdict
	E) clip-mounted luminaires, glass-shelve. Thickness (mm)		---
	Metal rod. diameter (mm)		---
	Fixed luminaire or independent control gear without fixing devices		---
2.7 (4.14.2)	Load to flexible cables		
	Mass (kg)		---
	Stress in conductors (N/mm ²)		---
	Mass (kg) of semi-luminaire		---
	Bending moment (Nm) of semi-luminaire		---
2.7 (4.14.3)	Adjusting devices:		
	- flexing test; number of cycles		---
	- strands broken		---
	- electric strength test afterwards		---
2.7 (4.14.4)	Telescopic tubes: cords not fixed to tube; no strain on conductors		---
2.7 (4.14.5)	Guide pulleys		---
2.7 (4.14.6)	Strain on socket-outlets		---
2.7 (4.15)	Flammable materials		---
	- glow-wire test 650°C	See Test Table 2.16 (13.3.2)	
	- spacing ≥ 30 mm		---
	- screen withstanding test of 13.3.1		---
	- screen dimensions		---
	- no fiercely burning material		---
	- thermal protection		---
	- electronic circuits exempted		---
2.7 (4.15.2)	Luminaires made of thermoplastic material with lamp control gear		
	a) construction		---
	b) temperature sensing control		---
	c) surface temperature		---
2.7 (4.16)	Luminaires for mounting on normally flammable surfaces		
	No lamp control gear	(compliance with Section 12)	---
2.7 (4.16.1)	Lamp control gear spacing:		
	- spacing 35 mm		---
	- spacing 10 mm		---

IEC 60598-2-2			
Clause	Requirement + Test	Result - Remark	Verdict
2.7 (4.16.2)	Thermal protection:		
	- in lamp control gear		P
	- external		---
	- fixed position		---
	- temperature marked lamp control gear	T100 OSRAM	P
2.7 (4.16.3)	Design to satisfy the test of 12.6	(see clause 12.6)	---
2.7 (4.17)	Drain holes		
	Clearance at least 5 mm		---
2.7 (4.18)	Resistance to corrosion		
2.7 (4.18.1)	- rust-resistance		---
2.7 (4.18.2)	- season cracking in copper		---
2.7 (4.18.3)	- corrosion of aluminium		---
2.7 (4.19)	Igniters compatible with ballast		---
2.7 (4.20)	Rough service vibration		---
2.7 (4.21)	Protective shield		
2.7 (4.21.1)	Shield fitted if tungsten halogen lamps or metal halide lamps		---
	Shield of glass if tungsten halogen lamps		---
2.7 (4.21.2)	Particles from a shattering lamp not impair safety		---
2.7 (4.21.3)	No direct path		---
2.7 (4.21.4)	Impact test on shield		---
	Glow-wire test on lamp compartment.....:	See Test Table 2.16 (13.3.2)	---
2.7 (4.22)	Attachments to lamps not cause overheating or damage		---
2.7 (4.23)	Semi-luminaires comply Class II		---
2.7 (4.24)	Photobiological hazards		
2.7 (4.24.1)	No excessive UV radiation if tungsten halogen lamps and metal halide lamps (Annex P)		---
2.7 (4.24.2)	Retinal blue light hazard		
	Luminaires with E_{thr} :		
	a) Fixed luminaires		---
	- distance x m, borderline between RG1 and RG2....:		---
	- marking and instruction according 3.2.23		---
	b) Portable and handheld luminaires		---

IEC 60598-2-2			
Clause	Requirement + Test	Result - Remark	Verdict
	- marking according 3.2.23 if RG1 exceeded at 200 mm according to IEC/TR 62778		---
	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		---
2.7 (4.25)	Mechanical hazard		
	No sharp point or edges		P
2.7 (4.26)	Short-circuit protection		
2.7 (4.26.1)	Adequate means of uninsulated accessible SELV parts		---
2.7 (4.26.2)	Short-circuit test with test chain according 4.26.3		
	Test chain not melt through		---
	Test sample not exceed values of Table 12.1 and 12.2		---
2.7 (4.27)	Terminal blocks with integrated screwless earthing contacts		
	Test according Annex V		---
	Pull test of terminal fixing (20 N)		---
	After test, resistance < 0,05 Ω		---
	Pull test of mechanical connection (50 N)		---
	After test, resistance < 0,05 Ω		---
	Voltage drop test, resistance < 0,05 Ω		---
2.7 (4.28)	Fixing of thermal sensing control		
	Not plug-in or easily replaceable type		---
	Reliably kept in position		---
	No adhesive fixing if UV radiations from a lamp can degrade the fixing		---
	Not outside the luminaire enclosure		---
	Test of adhesive fixing:		
	Max. temperature on adhesive material (°C).....:		
	100 cycles between t min and t max		---
	Temperature sensing control still in position		---
2.7 (4.29)	Luminaires with non-replaceable light source		
	Not possible to replace light source		---
	Live part not accessible after parts have been opened by hand or tools		---
2.7 (4.30)	Luminaires with non-user replaceable light source		

IEC 60598-2-2			
Clause	Requirement + Test	Result - Remark	Verdict
	If protective cover provide protection against electric shock and marked with "caution, electric shock risk" symbol:		
	Minimum two fixing means		---
2.7 (4.31)	Insulation between circuits		
	Circuits insulated from LV supply fulfil requirements according 4.31.1 – 4.31.3		---
	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		---
2.7 (4.31.1)	SELV circuits		
	Used SELV source		---
	Voltage $\leq$ ELV		---
	Insulating of SELV circuits from LV supply		---
	Insulating of SELV circuits from other non SELV circuits		---
	Insulating of SELV circuits from FELV		---
	Insulating of SELV circuits from other SELV circuits		---
	SELV circuits insulated from accessible parts according Table X.1		---
	Plugs not able to enter socket-outlets of other voltage systems		---
	Socket outlets does not admit plugs of other voltage systems		---
	Plugs and socket-outlets does not have protective conductor contact		---
2.7 (4.31.2)	FELV circuits		
	Used FELV source		---
	Voltage $\leq$ ELV		---
	Insulating of FELV circuits from LV supply		---
	FELV circuits insulated from accessible parts according Table X.1		---
	Plugs not able to enter socket-outlets of other voltage systems		---
	Socket outlets does not admit plugs of other voltage systems		---
	Socket-outlets does not have protective conductor contact		---
2.7 (4.31.3)	Other circuits		

IEC 60598-2-2			
Clause	Requirement + Test	Result - Remark	Verdict
	Other circuits insulated from accessible parts according Table X.1		---
	Class II construction with equipotential bonding for protection against indirect contacts with live parts:		
	- conductive parts are connected together		---
	- test according 7.2.3 of above		---
	- conductive part not cause an electric shock in case of an insulation fault		---
	- equipotential bonding in master/slave applications		---
	- master luminaire provided with terminal for accessible conductive parts of slave luminaires		---
	- slave luminaire constructed as class I		---
2.7 (4.32)	Overvoltage protective devices		
	Comply with IEC 61643-11		---
	External to controlgear and connected to earth:		
	- only in fixed luminaires		---
	- only connected to protective earth		---

2.8 (11)	CREEPAGE DISTANCES AND CLEARANCES		
2.8 (11.2)	Creepage distances and clearances	See Table 1.7 (11.2)	
	Working voltage (V)	220 – 240	—
	Rated pulse voltage (kV)		—
	Voltage form	Sinusoidal ☒ Non-sinusoidal ☐	—
	PTI	< 600 ☒ ≥ 600 ☐	—
	Impulse withstand category (Normal category II) (Category III Annex U)	Category II ☒ Category III ☐	—

2.9 (7)	PROVISION FOR EARTHING		
2.9 (7.2.1 + 7.2.3)	Accessible metal parts		---
	Metal parts in contact with supporting surface		---
	Resistance < 0,5 Ω		---
	Self-tapping screws used		---
	Thread-forming screws		---
	Thread-forming screw used in a grove		---

IEC 60598-2-2			
Clause	Requirement + Test	Result - Remark	Verdict
	Earth makes contact first		---
	Terminal blocks with integrated screwless earthing contacts tested according Annex V		---
	Protective earthing of the luminaire not via built-in control gear		---
2.9 (7.2.2 + 7.2.3)	Earth continuity in joints, etc.		---
2.9 (7.2.4)	Locking of clamping means		---
	Compliance with 4.7.3		---
	Terminal blocks with integrated screwless earthing contacts tested according Annex V		---
2.9 (7.2.5)	Earth terminal integral part of connector socket		---
2.9 (7.2.6)	Earth terminal adjacent to mains terminals		---
2.9 (7.2.7)	Electrolytic corrosion of the earth terminal		---
2.9 (7.2.8)	Material of earth terminal		---
	Contact surface bare metal		---
2.9 (7.2.10)	Class II luminaire for looping-in		---
	Double or reinforced insulation to functional earth		---
2.9 (7.2.11)	Earthing core coloured green-yellow		---
	Length of earth conductor		---

2.10 (14)	SCREW TERMINALS		
	Separately approved; component list	(see Annex 1)	---
	Part of the luminaire	(see Annex 3)	---

2.10 (15)	SCREWLESS TERMINALS AND ELECTRICAL CONNECTIONS		
	Separately approved; component list	(see Annex 1)	P
	Part of the luminaire	(see Annex 4)	---

2.11 (5)	EXTERNAL AND INTERNAL WIRING		
2.11 (5.2)	Supply connection and external wiring		
2.11 (5.2.1)	Means of connection	Screwless terminal block in driver	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		---
2.11 (5.2.2)	Type of cable	H03VV-F	P

IEC 60598-2-2			
Clause	Requirement + Test	Result - Remark	Verdict
	Nominal cross-sectional area (mm ²)	2x0,5	P
	Cables equal to IEC 60227 or IEC 60245		P
2.11 (5.2.3)	Type of attachment, X, Y or Z		---
2.11 (5.2.5)	Type Z not connected to screws		---
2.11 (5.2.6)	Cable entries:		
	- suitable for introduction		P
	- adequate degree of protection		P
2.11 (5.2.7)	Cable entries through rigid material have rounded edges		---
2.11 (5.2.8)	Insulating bushings:		
	- suitably fixed		P
	- material in bushings		P
	- material not likely to deteriorate		P
	- tubes or guards made of insulating material		P
2.11 (5.2.9)	Locking of screwed bushings		---
2.11 (5.2.10)	Cord anchorage:		
	- covering protected from abrasion		---
	- clear how to be effective		---
	- no mechanical or thermal stress		---
	- no tying of cables into knots etc.		---
	- insulating material or lining		---
2.11 (5.2.10.1)	Cord anchorage for type X attachment:		
	a) at least one part fixed		---
	b) types of cable		---
	c) no damaging of the cable		---
	d) whole cable can be mounted		---
	e) no touching of clamping screws		---
	f) metal screw not directly on cable		---
	g) replacement without special tool		---
	Glands not used as anchorage		---
	Labyrinth type anchorages		---
2.11 (5.2.10.2)	Adequate cord anchorage for type Y and type Z attachment		---

IEC 60598-2-2			
Clause	Requirement + Test	Result - Remark	Verdict
2.11 (5.2.10.3)	Tests:		
	- impossible to push cable; unsafe		---
	- pull test: 25 times; pull (N).....:		---
	- torque test: torque (Nm)		---
	- displacement ≤ 2 mm		---
	- no movement of conductors		---
	- no damage of cable or cord		---
	- function independent of electrical connection		---
2.11 (5.2.11)	External wiring passing into luminaire		P
2.11 (5.2.12)	Looping-in terminals		---
2.11 (5.2.13)	Wire ends not tinned		P
	Wire ends tinned: no cold flow		---
2.11 (5.2.14)	Mains plug same protection		---
	Class III luminaire plug		---
	No unsafe compatibility		---
2.11 (5.2.16)	Appliance inlets (IEC 60320)		---
	Installation couplers (IEC 61535)		---
	Other appliance inlet or connector according relevant IEC standard		---
2.11 (5.2.17)	No standardized interconnecting cables properly assembled		---
2.11 (5.2.18)	Used plug in accordance with		
	- IEC 60083		---
	- other standard		---
2.11 (5.3)	Internal wiring		
2.11 (5.3.1)	Internal wiring of suitable size and type	H05V-U	P
	Through wiring		
	- not delivered/ mounting instruction		---
	- factory assembled		---
	- socket outlet loaded (A).....:		---

IEC 60598-2-2			
Clause	Requirement + Test	Result - Remark	Verdict
	- temperatures	(see Annex 2)	---
	Green-yellow for earth only		---
2.11 (5.3.1.1)	Internal wiring connected directly to fixed wiring		
	Cross-sectional area (mm ²)	0,5	P
	Insulation thickness		P
	Extra insulation added where necessary		---
2.11 (5.3.1.2)	Internal wiring connected to fixed wiring via internal current-limiting device		
	Adequate cross-sectional area and insulation thickness		P
2.11 (5.3.1.3)	Double or reinforced insulation for class II		---
2.11 (5.3.1.4)	Conductors without insulation		---
2.11 (5.3.1.5)	SELV current-carrying parts		---
2.11 (5.3.1.6)	Insulation thickness other than PVC or rubber		---
2.11 (5.3.2)	Sharp edges etc.		P
	No moving parts of switches etc.		---
	Joints, raising/lowering devices		---
	Telescopic tubes etc.		---
	No twisting over 360°		---
2.11 (5.3.3)	Insulating bushings:		
	- suitable fixed		---
	- material in bushings		---
	- material not likely to deteriorate		---
	- cables with protective sheath		---
2.11 (5.3.4)	Joints and junctions effectively insulated		---
2.11 (5.3.5)	Strain on internal wiring		---
2.11 (5.3.6)	Wire carriers		---
2.11 (5.3.7)	Wire ends not tinned		---
	Wire ends tinned: no cold flow		---
2.12 (8)	PROTECTION AGAINST ELECTRIC SHOCK		
2.12 (8.2.1)	Live parts not accessible		P

IEC 60598-2-2			
Clause	Requirement + Test	Result - Remark	Verdict
	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		---
	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		---
	Basic insulation only accessible under lamp or starter replacement		---
	Protection in any position		P
	Double-ended tungsten filament lamp		---
	Insulation lacquer not reliable		P
	Double-ended high pressure discharge lamp		---
	Relevant warning according to 3.2.18 fitted to the luminaire		---
2.12 (8.2.2)	Portable luminaire adjusted in most unfavourable position		---
2.12 (8.2.3.a)	Class II luminaire:		
	- basic insulated metal parts not accessible during starter or lamp replacement		---
	- basic insulation not accessible other than during starter or lamp replacement		---
	- glass protective shields not used as supplementary insulation		---
2.12 (8.2.3.b)	BC lampholder of metal in class I luminaires shall be earthed		---
2.12 (8.2.3.c)	SELV circuits with exposed current carrying parts:		
	Ordinary luminaire:		
	- touch current		---
	- no-load voltage		---
	Other than ordinary luminaire:		
	- nominal voltage		---
2.12 (8.2.4)	Portable luminaire have protection independent of supporting surface		---

IEC 60598-2-2			
Clause	Requirement + Test	Result - Remark	Verdict
2.12 (8.2.5)	Compliance with the standard test finger or relevant probe		P
2.12 (8.2.6)	Covers reliably secured		P
2.12 (8.2.7)	Discharging of capacitors $\geq 0,5 \mu\text{F}$		---
	Portable plug connected luminaire with capacitor		---
	Other plug connected luminaire with capacitor		---
	Discharge device on or within capacitor		---
	Discharge device mounted separately		---

2.13 (12)	ENDURANCE TEST AND THERMAL TEST		
2.13.1 (-)	If IP > IP 20 relevant test of (12.4), (12.5) and (12.6) after (9.2) before (9.3) specified in 4.13		—
2.13 (12.3)	Endurance test:		
	- mounting-position	Recessed	—
	- test temperature (°C)	35	—
	- total duration (h)	240	—
	- supply voltage: Un factor; calculated voltage (V)	264	—
	- lamp used	LED modules LUG	—
2.13 (12.3.2)	After endurance test:		
	- no part unserviceable		P
	- luminaire not unsafe		P
	- no damage to track system		---
	- marking legible		P
	- no cracks, deformation etc.		P
2.13 (12.4)	Thermal test (normal operation)	(see Annex 2)	P
2.13 (12.5)	Thermal test (abnormal operation)	(see Annex 2)	---
2.13 (12.6)	Thermal test (failed lamp control gear condition):		
2.13 (12.6.1)	Through wiring or looping-in wiring loaded by a current of (A)		—
	- case of abnormal conditions.....	Driver - output short-circuit (Philips)	—
	- electronic lamp control gear		P
	- measured winding temperature (°C): at 1,1 Un		—
	- measured mounting surface temperature (°C) at 1,1 Un	29	P

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Clause	Requirement + Test	Result - Remark	Verdict
	- calculated mounting surface temperature (°C)		---
	- track-mounted luminaires		---
2.13 (12.6.2)	Temperature sensing control		
	- case of abnormal conditions.....		—
	- thermal link		---
	- manual reset cut-out		---
	- auto reset cut-out		---
	- measured mounting surface temperature (°C).....		---
	- track-mounted luminaires		---
2.13 (12.7)	Thermal test (failed lamp control gear in plastic luminaires):		
2.13 (12.7.1)	Luminaire without temperature sensing control		---
2.13 (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		---
	- Test with standard test finger after the test		---
	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 2.16 (13.2.1)	---
2.13 (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.....		—

IEC 60598-2-2			
Clause	Requirement + Test	Result - Remark	Verdict
	- calculated temperature of fixing point/exposed part (°C)		—
	Ball-pressure test.....	See Table 2.16 (13.2.1)	---
2.13 (12.7.1.3)	Luminaire with short circuit proof transformers ≤ 10 VA		---
	- case of abnormal conditions.....		—
	- Components retained in place after the test		---
	- Test with standard test finger after the test		---
2.13 (12.7.2)	Luminaire with temperature sensing control		
	- 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.....	See Table 2.16 (13.2.1)	---
2.13.1 (-)	Wiring, for connection to the supply, not reach unsafe temperature		
	- measured temperature of the cable (°C)	39 ...152; 40 ...154	P

2.14 (9)	RESISTANCE TO DUST, SOLID OBJECTS AND MOISTURE		
2.14 (-)	If IP > IP 20 the order of tests as specified in clause 2.12		
2.14 (9.2)	Tests for ingress of dust, solid objects and moisture:		—
	- classification according to IP	IP20 optical part IP40	—
	- mounting position during test	Recessed in ceiling	—
	- fixing screws tightened; torque (Nm).....		—
	- tests according to clauses	9.2.0	—
	- electric strength test afterwards		P
	a) no deposit in dust-proof luminaire		---
	b) no talcum in dust-tight luminaire		---
	c) no trace of water on current-carrying parts or on insulation where it could become a hazard		---
	d) i) For luminaires without drain holes – no water entry		---
	d) ii) For luminaires with drain holes – no hazardous water entry		---

IEC 60598-2-2			
Clause	Requirement + Test	Result - Remark	Verdict
	e) no water in watertight luminaire		---
	f) no contact with live parts (IP 2X)	IP2x	P
	f) no entry into enclosure (IP 3X and IP 4X)		---
	f) no contact with live parts (IP3X and IP4X)		---
	g) no trace of water on part of lamp requiring protection from splashing water		---
	h) no damage of protective shield or glass envelope		---
2.14 (9.3)	Humidity test 48 h		P

2.15 (10)	INSULATION RESISTANCE AND ELECTRIC STRENGTH		
2.15 (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 :		---
	- between current-carrying parts and mounting surface	>110 MΩ	P
	- between current-carrying parts and metal parts of the luminaire	>110 MΩ	P
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts		---
	- Insulation bushings as described in Section 5		---
	Other than SELV		
	- between live parts of different polarity		---
	- between live parts and mounting surface.....	>550 MΩ	P
	- between live parts and metal parts	>550 MΩ	P
	- between live parts of different polarity through action of a switch		---
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts		---
	- Insulation bushings as described in Section 5		---
2.15 (10.2.2)	Electric strength test		P
	Dummy lamp		---

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Clause	Requirement + Test	Result - Remark	Verdict
	Luminaires with ignitors after 24 h test		---
	Luminaires with manual ignitors		---
	Test voltage (V)		---
	SELV		
	- between current-carrying parts of different polarity :		---
	- between current-carrying parts and mounting surface	500 V	P
	- between current-carrying parts and metal parts of the luminaire	500 V	P
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts		---
	- Insulation bushings as described in Section 5		---
	Other than SELV		
	- between live parts of different polarity		---
	- between live parts and mounting surface	2920 V	P
	- between live parts and metal parts	2920 V	P
	- between live parts of different polarity through action of a switch		---
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts		---
	- Insulation bushings as described in Section 5		
2.15 (10.3)	Touch current (mA)	<0,003	P
	Protective conductor current (mA)		---

2.16 (13)	RESISTANCE TO HEAT, FIRE AND TRACKING		
2.16 (13.2.1)	Ball-pressure test	See Test Table 2.16 (13.2.1)	---
2.16 (13.3.1)	Needle-flame test (10 s)	See Test Table 2.16 (13.3.1)	---
2.16 (13.3.2)	Glow-wire test (650°C)	See Test Table 2.16 (13.3.2)	---
2.16 (13.4)	Proof tracking test (IEC 60112)	See Test Table 2.16 (13.4)	---

IEC 60598-2-2							
Clause	Requirement + Test			Result - Remark			Verdict
2.8 (11.2)	TABLES: Creepage distances and clearances						
Table 11.1	Minimum distances (mm) for a.c. (50/60 Hz) sinusoidal voltages						
RMS working voltage (V) not exceeding		50	150	250	500	750	1000
Creepage distances							
Required basic insulation, P _{TI} ≥ 600		0,6	0,8	1,5	3	4	5,5
Measured		---	---	---	---	---	---
Required basic insulation, P _{TI} < 600		1,2	1,6	2,5	5	8	10
Measured		>1,2	---	---	---	---	---
Required supplementary insulation P _{TI} ≥ 600		---	0,8	1,5	3	4	5,5
Measured		---	---	---	---	---	---
Required supplementary insulation P _{TI} < 600		---	1,6	2,5	5	8	10
Measured		---	---	---	---	---	---
Required reinforced insulation		---	3,2	5	6	8	11
Measured		---	---	>5	---	---	---
Clearances							
Required basic insulation		0,2	0,8	1,5	3	4	5,5
Measured		>0,2	---	---	---	---	---
Required supplementary insulation		---	0,8	1,5	3	4	5,5
Measured		---	---	---	---	---	---
Required reinforced insulation		---	1,6	3	6	8	11
Measured		---	---	>3	---	---	---
Table 11.2	Minimum distances (mm) for non-sinusoidal pulse voltages						
Rated pulse voltage (peak kV)		2,0	2,5	3,0	4,0	5,0	6,0
Required clearances		1,0	1,5	2	3	4	5,5
Measured		---	---	---	---	---	---
Rated pulse voltage (peak kV)		10	12	15	20	25	30
Required clearances		11	14	18	25	33	40
Measured		---	---	---	---	---	---
Rated pulse voltage (peak kV)		50	60	80	100	---	---
Required clearances		75	90	130	170	---	---
Measured		---	---	---	---	---	---

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

List of used test equipment

Device	Type	Inv. No.
Greisinger - thermometer	GHT 1200 A	20211
High voltage transformer KIKUSUI	TOS 5301	00110285
Voltmeter	EL20	14672
Power supply KIKUSUI	PCR500M	00110185
Multimeter FLUKE	1587	551734
Load gauge 10N	BRNO	21369
Caliper	MITUTOYO	551392
Test finger	BRNO	21364
Impact test aparature	F 22.50	4994
Touch and leakage current measurement		N 700054

[illegible]

ANNEX 2		TABLE: Temperature measurements (thermal tests of Section 12)					
	Type reference.....	LUGCLASSIC LB LED 600 x 600 300061.00152					
	Lamp used	8 x LED modules					
	Lamp control gear used	OSRAM OPTOTRONIC INTELLIGENT OTi DALI 50/220-240/1A4 LT2 FAN 220-240 V, T100 tc80					
	Mounting position of luminaire.....	Recessed in ceiling					
	Supply wattage (W)	42,4					
	Supply current (A).....	---					
	Calculated power factor	---					
	Table: measured temperatures corrected for ta = 25 °C:						
	- abnormal operating mode	Temperature marked control gear T100					
	- test 1: rated voltage.....	230					
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage	243,8					
	- 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
LED driver tc	25,4	52	---	---	80	---	---
LED module tc	25,4	44	---	---	75	---	---
LED wires	25,4	---	36	---	90	---	---
External wiring in driver	25,4	---	35	---	90	---	---
Terminal block	25,4	---	35	---	85	---	---
Mounting surface ↑ 20 mm	25,4	---	32	---	90	---	---
External wiring - light surface	25,4	---	39	---	90	---	---
Supplementary information: Not used: temperature marked lamp control gear T100.							

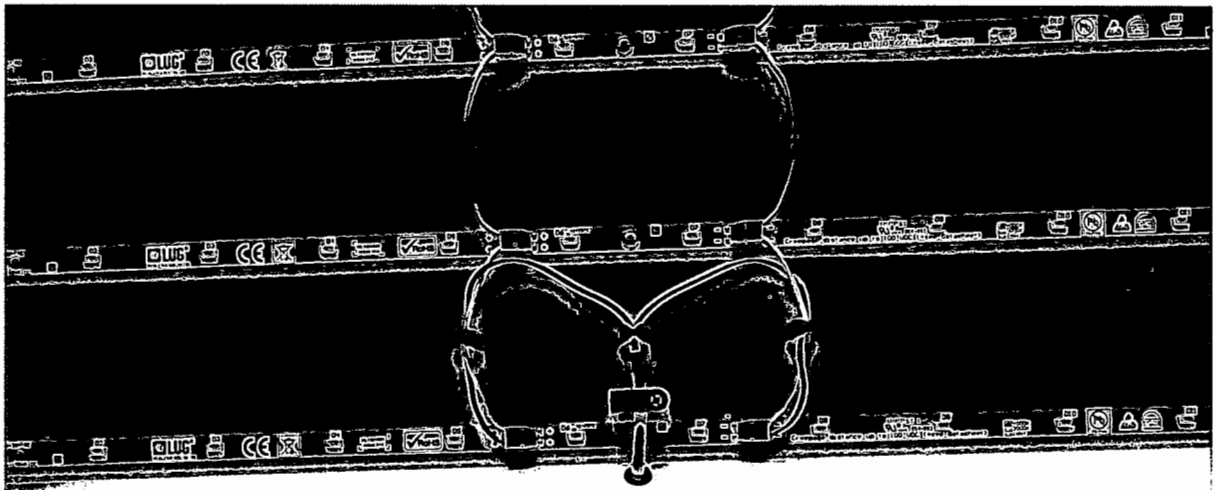
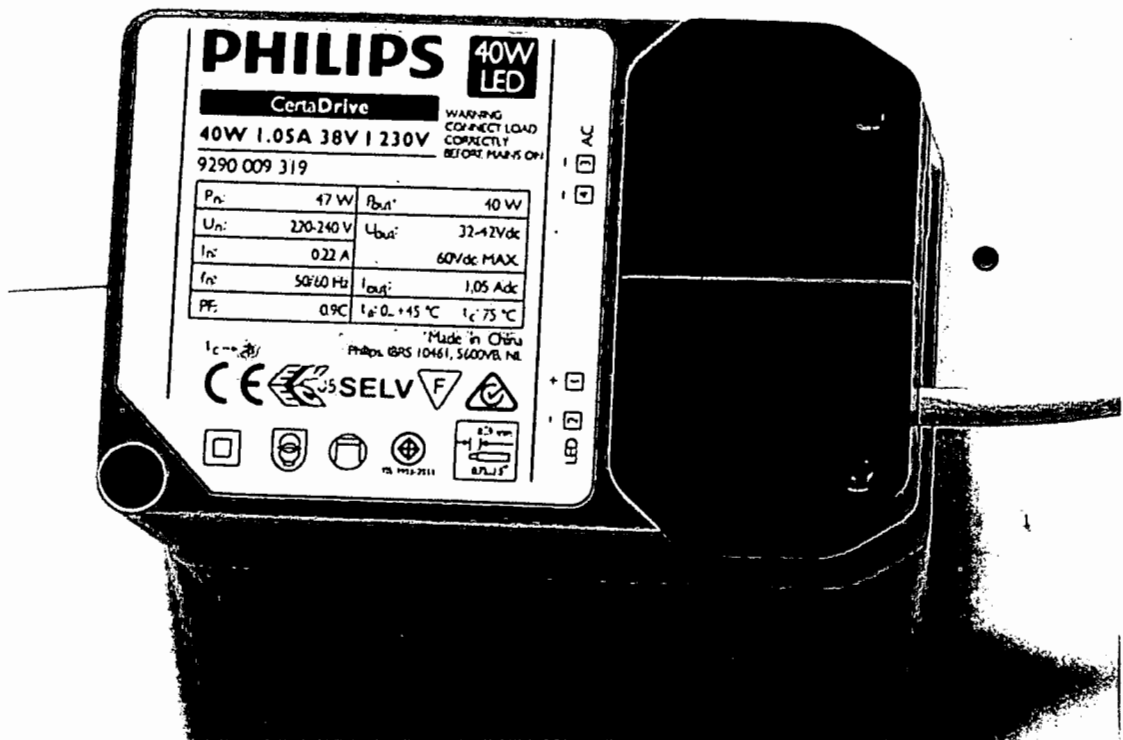
ANNEX 2		TABLE: Temperature measurements, thermal tests of Section 12					
	Type reference.....	LUGCLASSIC LB LED 625 x 625 300061.00154		---			
	Lamp used	8 x LED module		---			
	Lamp control gear used.....	PHILIPS Cert Drive 40W, 1,05A 38V 220-240 V, tc 75°		---			
	Mounting position of luminaire.....	Recessed in ceiling		---			
	Supply wattage (W)	39,7 W		---			
	Supply current (A).....	---		---			
	Calculated power factor	---		---			
	Table: measured temperatures corrected for ta = 25 °C:						
	- abnormal operating mode	Driver - ouput short-circuit		---			
	- test 1: rated voltage	230		---			
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage	243,8		---			
	- 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
LED driver tc	25,3	57	---	---	75	---	---
LED module tc	25,3	47	---	---	75	---	---
LED wires	25,3	---	42	---	90	---	---
External wiring in driver	25,3	---	38	---	90	---	---
Terminal block	25,3	---	38	---	85	---	---
Mounting surface ↑ 20 mm	25,3	---	37	---	90	---	---
External wiring - light surface	25,3	---	40	---	90	---	---
Supplementary information: abnormal operating mode: Driver - ouput short-circuit Clause 12.6							

ANNEX 3		Screw terminals (part of the luminaire)	
	not applicable		---
ANNEX 4		Screwless terminals (part of the luminaire)	
	not applicable		---

ANNEX 5

Photo

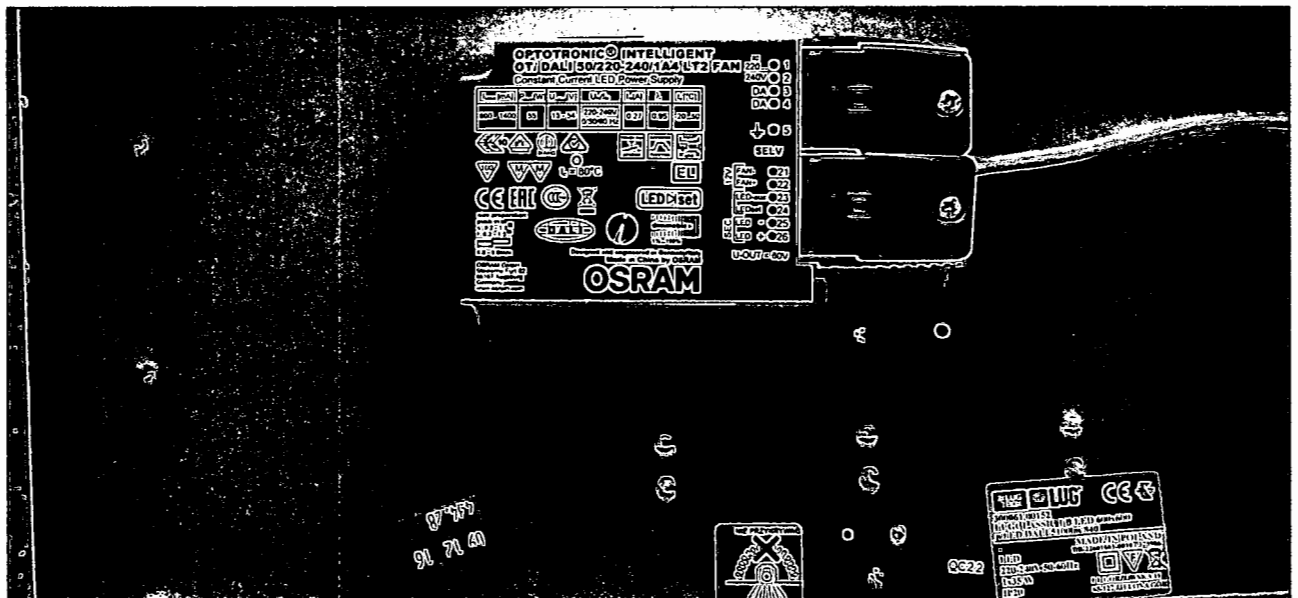
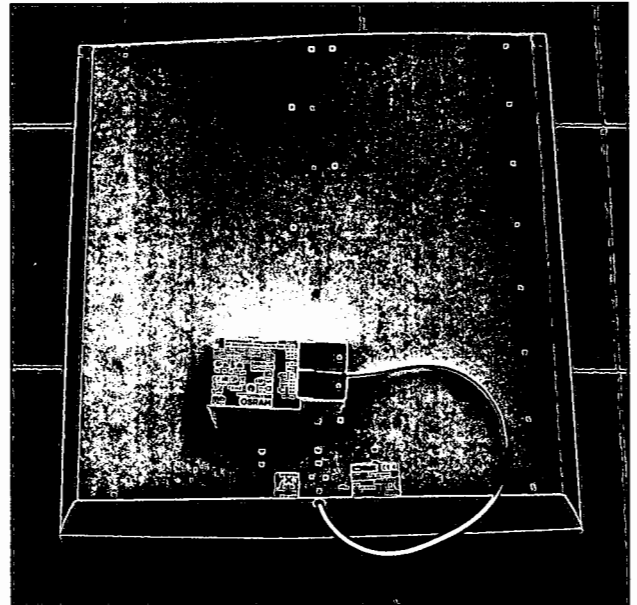
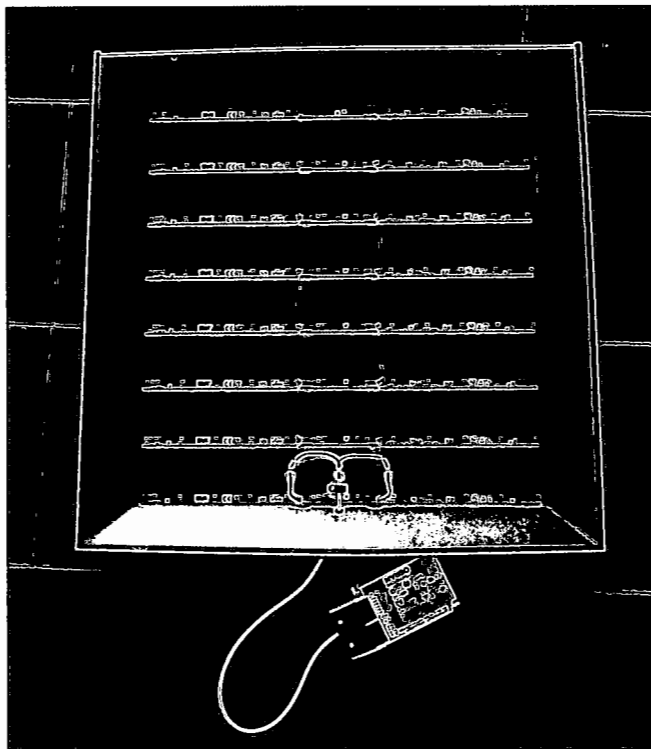
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ANNEX 5

Photo

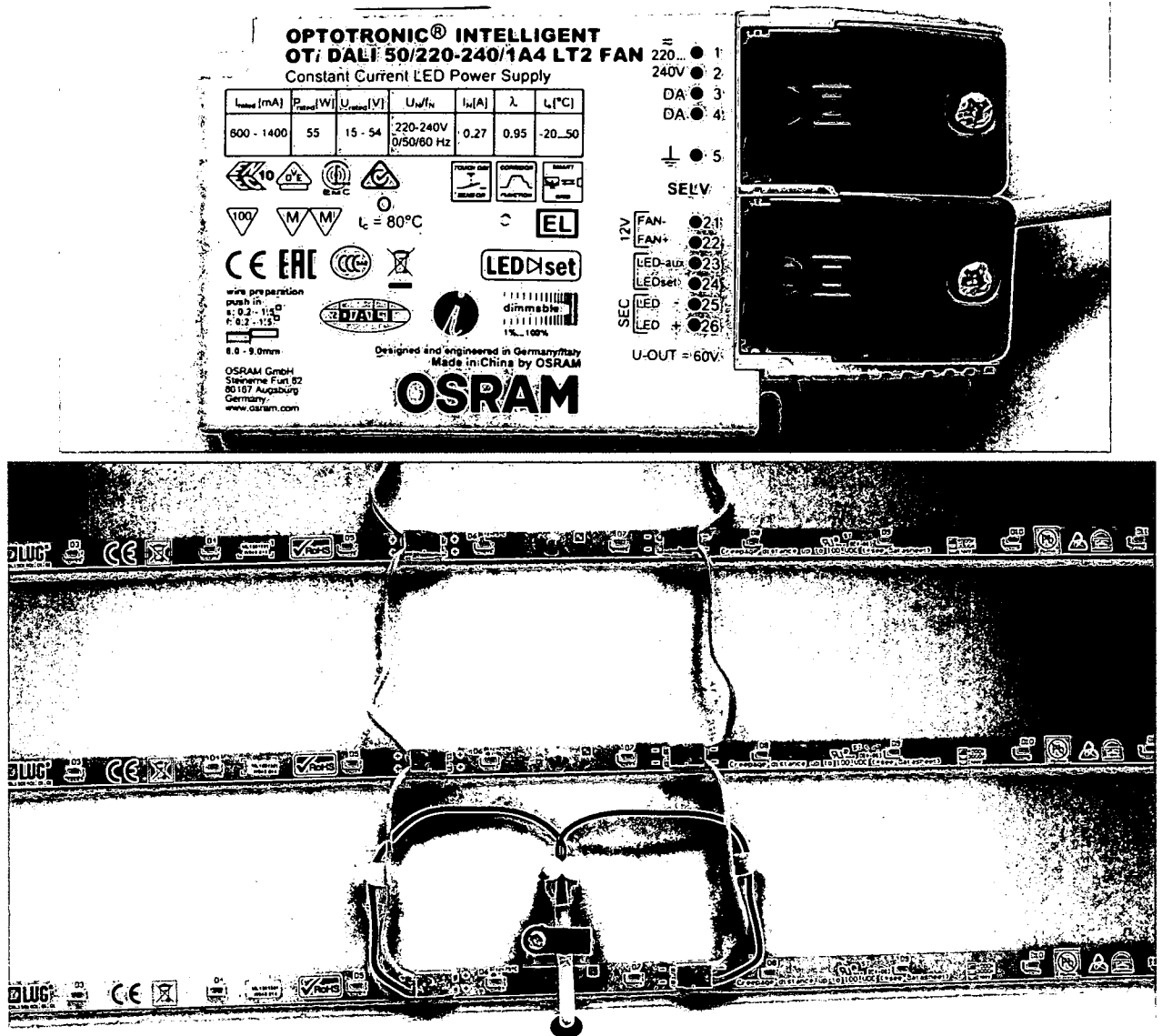
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ANNEX 5

Photo

300061.00152



ANNEX 6

Instalation



LUG Light Factory Sp. z o.o.
65-127 Zielona Góra, ul. Górczewska 11
e-mail: handlowy@lug.pl
tel: +48 68 411 72 68 | 69 | 70 | 71 | 79 |
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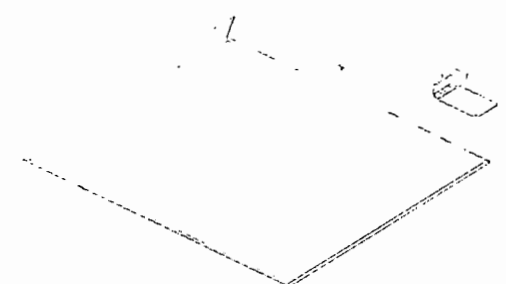
INFORMACJE OGÓLNE
Wszystkie informacje zawarte w tym dokumencie należy czytać uważnie przed rozpoczęciem instalacji. Wszelkie zmiany w dokumencie bez zgody producenta są niedopuszczalne. Wszelkie uwagi zgłaszać do producenta. Wszelkie prawa zastrzeżone. Wszelkie informacje techniczne podane w dokumencie mają charakter poglądowy. Wszelkie informacje techniczne podane w dokumencie mają charakter poglądowy. Wszelkie informacje techniczne podane w dokumencie mają charakter poglądowy.



INSTALLATION INSTRUCTION

LUGCLASSIC LB PLX PT

Wszystkie informacje zawarte w tym dokumencie należy czytać uważnie przed rozpoczęciem instalacji. Wszelkie zmiany w dokumencie bez zgody producenta są niedopuszczalne. Wszelkie uwagi zgłaszać do producenta. Wszelkie prawa zastrzeżone. Wszelkie informacje techniczne podane w dokumencie mają charakter poglądowy. Wszelkie informacje techniczne podane w dokumencie mają charakter poglądowy. Wszelkie informacje techniczne podane w dokumencie mają charakter poglądowy.



WYMIARY | DIMENSIONS | DIMENSIONS
DIMENSIONES | РАЗМЕРЫ | ABMESSUNGEN

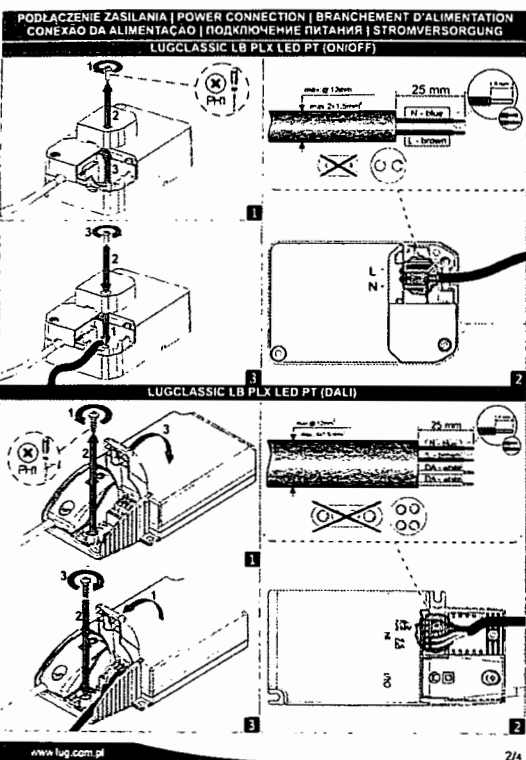
Technical drawing of a square light fixture. The drawing includes a top view and a side view. The top view shows a square with side length A. The side view shows a square with side length B. The dimensions C and D are the width and height of the mounting bracket. The dimensions E and F are the width and height of the mounting bracket. The drawing also shows the mounting holes and the mounting bracket.

Symbol	Value	Value
Alumini	50	50
Brass	55	470
Clamp	55	0.20
Clamp	400	0.15
Clamp	200	200

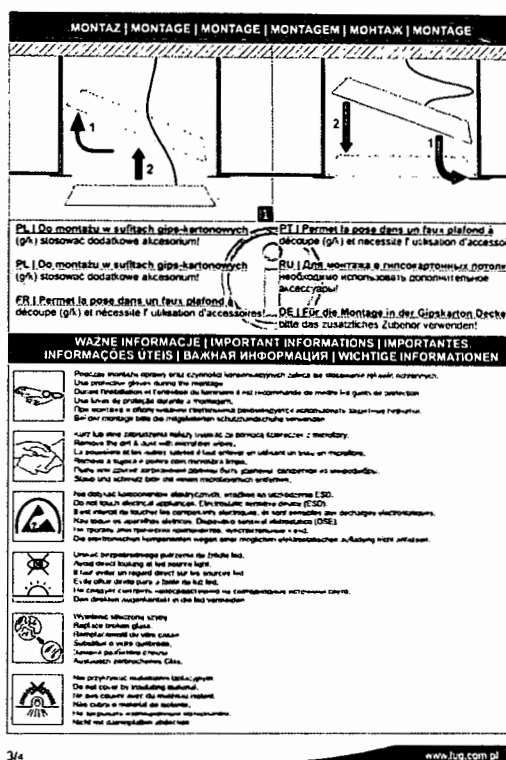
A row of six certification and safety logos: CE, RoHS, WEEE, a square logo with a circle inside, a triangle logo with a circle inside, and a crossed-out triangle logo.

INSTRUKCJA BUDOWY

1/a



2/a



3/a

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

PART 2: PARTICULAR REQUIREMENTS
SECTION 1: FIXED GENERAL PURPOSE LUMINAIRES

Differences according to : EN 60598-2-2:2012 used in conjunction with
EN 60598-1:2015

Annex Form No. : EU_GD_IEC60598_2_2D

Annex Form Originator : OVE

Master Annex Form : 2015-04

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IEC 60598-2-2

Clause	Requirement + Test	Result - Remark	Verdict
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CENELEC COMMON MODIFICATIONS (EN)

1.5 (3)	MARKING		
1.5 (3.3.101)	For luminaires not supplied with terminal block: Adequate warning on the package		---

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

1.10 (5)	EXTERNAL AND INTERNAL WIRING		
1.10 (5.2.1)	Connecting leads		---
	- without a means for connection to the supply		---
	- terminal block specified		---
	- relevant information provided		---
	- compliance with 4.6, 4.7.1, 4.7.2, 4.10.1, 11.2, 12 and 13.2 of Part 1		---
1.10 (5.2.2)	Cables equal to EN 50525		---
	Replace table 5.1 – Supply cord		---

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

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

ZB	ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)		
(3.3)	DK: power supply cords of class I luminaires with label		---
(4.5.1)	DK: socket-outlets		---
(5.2.1)	CY, DK, FI, GB: type of plug		---

ZC	ANNEX ZC, NATIONAL DEVIATIONS (EN)		
(4 & 5)	FR: Shuttered socket-outlets 10/16A		---
	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		---
	- 650°C for indoor luminaires		---
	GB: Requirements according to United Kingdom Building Regulation		---

ATTACHMENT TO TEST REPORT 700590-01/01
ČSN EN 62471:2009
Photobiological safety of lamps and lamps systems
(Blue light hazard)

Measured values

Risk	Symbol	Measured value	Group
Blue light	L_B	11,92 W.m ⁻² .sr ⁻¹	Exempt

Measured with supply voltage 230 V. Ambient temperature 25 °C. Measured at 500 lx distance.

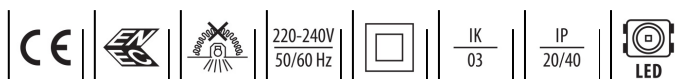
Conclusion

Light source can be considered as low risk light source – Risk Group 0 (RG 0).

Emission limits for risk groups of continuous wave lamps						
Risk	Action spectrum	Symbol	Units	Emission Measurement		
				Exempt	Low risk	Mod risk
				Limit	Limit	Limit
Blue light	B(λ)	L_B	W.m ⁻² .sr ⁻¹	100	10000	4000000

Lukáš Fér

Measured by: Lukáš Fér

**300061.00150****LUGCLASSIC LB LED p/t 600x600 40W 4400lm 4000K****белый**

Современный светильник, предназначенный для подвесных модульных потолков, для источников LED.

**МЕХАНИЧЕСКИЕ
ХАРАКТЕРИСТИКИ**

монтаж: непосредственно на конструкции потолка
Корпус: порошковым покрытием листовая сталь
цвет: белый
Не закрывайте изоляционным материалом: да

**ЭЛЕКТРИЧЕСКИЕ
ХАРАКТЕРИСТИКИ**

Эффективность питания: 95%
мощность: 220-240V 50/60Hz
источник света: Да
выходной ток [mA]: 1050
оборудование: ED
Замена обычной технологии [W]: 4x14W T5 (76W)
тип источника: LED

**ОПТИЧЕСКИЕ
ХАРАКТЕРИСТИКИ**

распределение света: вращение симметричный
Способ свечения: прямой
Плафон: абажур с плексиглаза (PLX)
CRI/Ra: ≥80
Световой поток LED [лм]: 5100
Световой поток [лм]: 4400
Цветовая температура [K]: 4000
UGR: <19

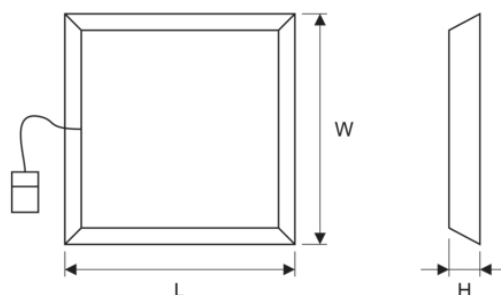
ОБЩИЕ ДАННЫЕ

продолжительность жизни (L80B10): 100 000 h
продолжительность жизни (TM21 L90B10): 30 000 h
Диапазон рабочих температур: 0°С ... +40°С
гарантия: 5 года
Применение: офисы, классы, актовый зал



Код	оборудование	Мощность LED [Вт]	Мощность системы [Вт]	Световой поток LED [лм]	Световой поток [лм]	эффективность [lm/W]	Цветовая температура [K]	CRI/Ra	UGR
300061.00150	ED	35	40	5100	4400	110	4000	≥80	<19

Код	Размеры [mm] L W H	Вырежт е размеры [mm] L W	Поддоны количество	Количество в упаковке	Вес нетто [кг]
300061.00150	595 595 80	600 600	40	1	3,3



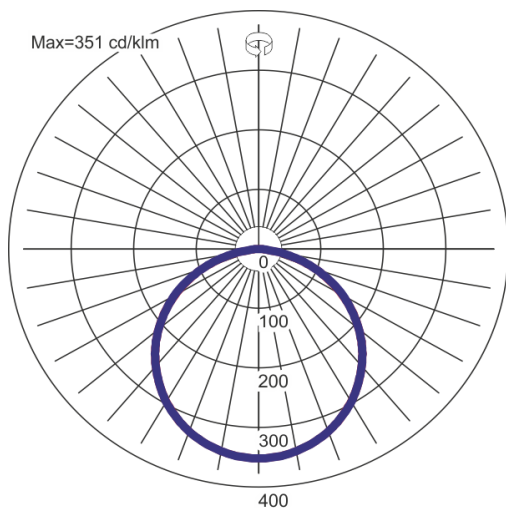
ACCESSORIES



150210.00605

Рамка для монтажа в потолок из гипсокартона 595x595

КРИВЫЕ СВЕТОВОГО ПУЧКА





ДЕКЛАРАЦИЯ СООТВЕТСТВИЯ ТРЕБОВАНИЙ

LB/2016/02/011



Мы

LUG Light Factory Spółka z o.o.
ul. Gorzowska 11
65-127 Zielona Góra

заявляет под свою исключительную ответственность, что изделие

ИМЯ	LUGCLASSIC LB LED p/t
группа	Светильники растровые и модульные
Заводская	ПРИКРЕПЛЕНИЕ

в соответствии с положениями следующих актов:

Directive 2014/30/EU of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to electromagnetic compatibility

Directive 2014/35/EU of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of electrical equipment designed for use within certain voltage limits

Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment

Directive 2009/125/EC of the European Parliament and of the Council of 21 October 2009 establishing a framework for the setting of ecodesign requirements for energy-related products

и следующие стандарты:

PN-EN 60598-1:2011
EN 60598-2-1:1989
PN-EN 55015:2013-10
PN-EN 61547:2009
PN-EN 61000-3-2:2014-10

PN-EN 61000-3-3:2013-10
PN-EN 50581:2013
PN-EN 62471:2010
PN-EN 60598-2-2:2012

LUG Light Factory Sp. z o.o.
Inżynier Laboratorium
Laboratory Engineer
mgr inż. Marcin Białas

Опубликовано

DYREKTOR
DS. TECHNICZNYCH

mgr inż. Mariusz Ejsmont

Уполномоченное лицо подписи



ДЕКЛАРАЦИЯ СООТВЕТСТВИЯ ТРЕБОВАНИЙ

LB/2016/02/011



ПРИКРЕПЛЕНИЕ

Заводская

300061.00149	300061.00151	300061.00153	300061.00155
300061.00150	300061.00152	300061.00154	300061.00156

Номера Производитель аксессуаров

150210.00605

Данная декларация действительна для всех серийных номеров, произведенных по данному символу завода.

WAŻNE INFORMACJE | IMPORTANT INFORMATION | IMPORTANTES INFORMAÇÕES ÚTEIS | ВАЖНАЯ ИНФОРМАЦИЯ | WICHTIGE INFORMATIONEN



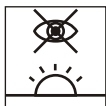
Podczas montażu oprawy oraz czynności konserwacyjnych zaleca się stosowanie rękawic ochronnych.
Use protective gloves during the montage.
Durant l'installation et l'entretien du luminaire il est recommande de mettre les gants de protection.
Use luvas de proteção durante a montagem.
При монтаже и обслуживании светильника рекомендуется использовать защитные перчатки.
Bei der Montage bitte die mitgelieferten Schutzhandschuhe verwenden.



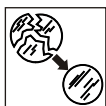
Kurz lub inne zabrudzenia należy usuwać za pomocą ściereczek z microfibry.
Remove the dirt & dust with microfiber wipes.
La poussière et les autres saletés il faut enlever en utilisant un tissu en microfibre.
Remova a sujeira e poeira com microfibra limpa.
Пыль или другие загрязнения должны быть удалены салфеткой из микрофибры.
Staub und Schmutz bitte mit einem Microfasertuch entfernen.



Nie dotykać komponentów elektrycznych, wrażliwe na uszkodzenia esd.
Do not touch electrical appliances. Electrostatic sensitive device (esd).
Il est interdit de toucher les composants électriques, ils sont sensibles aux décharges électrostatiques.
Não toque os aparelhos elétricos. Dispositivo sensível eletrostático (dse).
Не трогать электрических компонентов, чувствительные к esd.
Die elektronischen Komponenten wegen einer möglichen elektrostatischen Aufladung nicht anfassen.



Unikać bezpośredniego patrzenia na źródła led.
Avoid direct looking at led source light.
Il faut éviter un regard direct sur les sources led.
Evite olhar direto para a fonte de luz led.
Не следует смотреть непосредственно на светодиодные источники света.
Den direkten Augenkontakt in die Led vermeiden.



Wymienić stłuczoną szybę.
Replace broken glass.
Remplacement du vitre cassé.
Substituir o vidro quebrado.
Заменить разбитое стекло.
Austausch zerbrochenes Glas.



Nie przykrywać materiałem izolacyjnym.
Do not cover by insulating material.
Ne pas couvrir avec du matériau isolant.
Não cubra o material de isolante.
Не закрывать изоляционным материалом.
Nicht mit Dämmplatten abdecken.



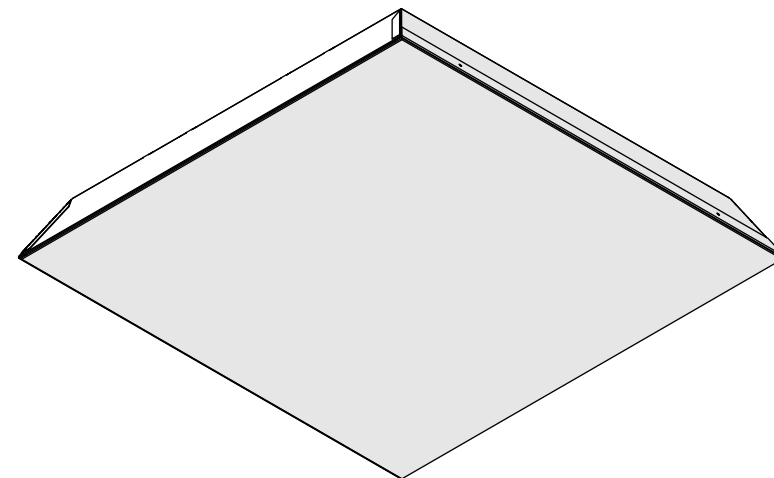
INSTALLATION INSTRUCTION

Version 10/2017/002

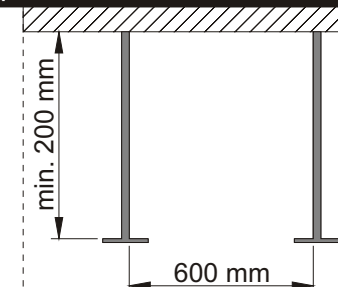
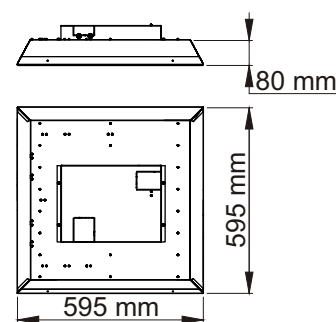
LUGCLASSIC LB LED AW

INSTRUKCJA MONTAŻU | ИНСТРУКЦИЯ ПО МОНТАЖУ | MONTAGEANLEITUNG | INSTRUCTIONS DE MONTAGE | NÁVOD K MONTÁŽI | SZERELÉSI UTASÍTÁSOK
MONTERINGSVEJLEDNING | INSTRUÇÕES DE MONTAGEM | MONTERINGSVEJLEDNING | INSTRUCCIONES DE MONTAJE | KOKOONPANO - JA KIINNITYSONJEET
MONTAGE INSTRUCTIE | INSTRUZIONI DI MONTAGGIO | ИНСТРУКЦІЯ З МОНТАЖУ | MONTAJ YÖNERGESİ

- | | | |
|---|--|--|
| PL MONTAŻU POWINNA DOKONAĆ OSOBA POSIADAJĄCA ODPOWIEDNIE UPRAWNIENIA. | GB INSTALLATION MUST BE PERFORMED BY AN AUTHORIZED TECHNICIAN. | FR LA MONTAGE DOIT FAIRE UNE PERSONNE QUI POSSEDER LES EXPERIENCES COMPETENTES. |
| BR/PT A INSTALAÇÃO TEM QUE SER FEITA POR UM TÉCNICO AUTORIZADO. | RU МОНТАЖ НУЖЕН БЫТЬ СОВЕРШЕН ЧЕРЕЗ ЛИЦО ИМЕЮЩЕ СООТВЕТСТВЕННЫЕ ПРАВА. | DE DIE MONTAGE MUSS VON EINER PERSON MIT ERFORDERLICHEN KENNTNISSEN DURCHFÜHRT WERDEN. |



WYMIARY | DIMENSIONS | DIMENSIONS DIMENSIONES | РАЗМЕРЫ | ABMESSUNGEN



1



LUG Light Factory Sp. z o.o.

65-127 Zielona Góra, ul. Gorzowska 11

e-mail: handlowy@lug.pl

tel. +48 68 411 72 68 | 69 | 70 | 71 | 79 |

fax +48 68 411 72 88 | 89

INFORMACJA KGO

W sprawie odbioru zużytych opraw prosimy kontaktować się z Organizacją Odzysku Sprzętu Elektrycznego i Elektronicznego BIOSYSTEM ELEKTRORECYCLING S.A.

30-556 Kraków ul. Wodna 4

tel. 012 29 666 25

KRS 0000256584

nr WEE E0000628S

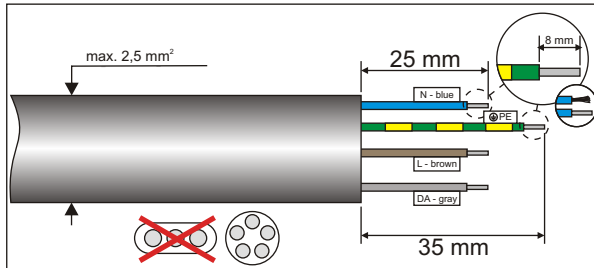
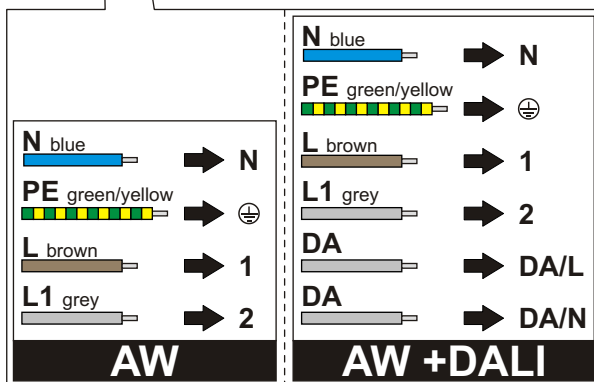
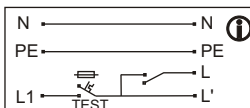
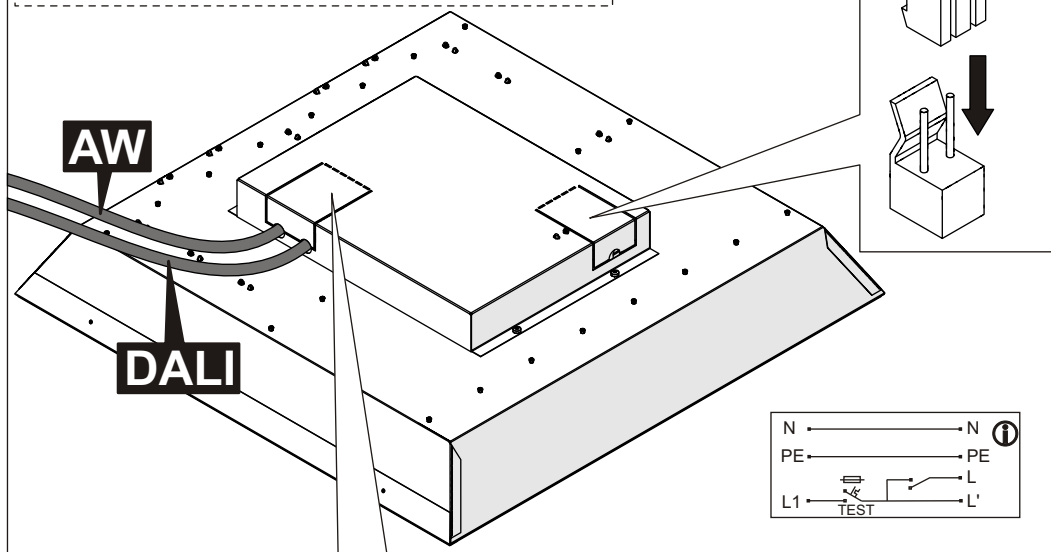
www.bioelektro.pl, www.biosystem.pl

Biuro@bioelektro.pl

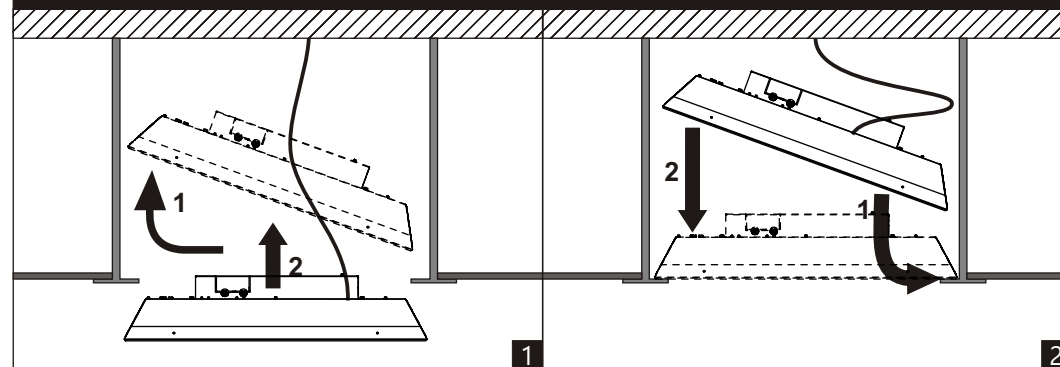


**PODŁĄCZENIE ZASILANIA | POWER CONNECTION | BRANCHEMENT D'ALIMENTATION
CONEXÃO DA ALIMENTAÇÃO | ПОДКЛЮЧЕНИЕ ПИТАНИЯ | STROMVERSORGUNG**

Podłączyć baterię przed oddaniem obiektu do użytku!
Connect the battery before putting the facility into service!
Il faut brancher la batterie en avant de la mise l'utilisation du bâtiment
Ligue a bateria antes de pôr a unidade em serviço!
Подключить Аккумулятор Перед Сдачей Объекта К Использованию!
Akku anschließen bevor die Gebäude zum Nutzung abgegeben wird!



MONTAŻ | MONTAGE | MONTAGE | MONTAGEM | МОНТАЖ | MONTAGE



PL | Do montażu w sufitach gips-kartonowych
(g/k) stosować dodatkowe akcesorium!

PT | Permet la pose dans un faux plafond à
découpe (g/k) et nécessite l'utilisation d'accessoires!

PL | Do montażu w sufitach gips-kartonowych
(g/k) stosować dodatkowe akcesorium!

RU | Для монтажа в гипсокартонных потолках
необходимо использовать дополнительное
аксессуары!

FR | Permet la pose dans un faux plafond à
découpe (g/k) et nécessite l'utilisation d'accessoires!

DE | Für die Montage in der Gipskarton Decke
bitte das zusätzliche Zubehör verwenden!

Deklaracja Zgodności WE

(EC Declaration of Conformity, EG - Konformitätsklärung, Déclaration de conformité)

06/005/15/CE

My (We, Wir, Nous)

LUG Light Factory Spółka z o. o.
65-127 Zielona Góra, ul. Gorzowska 11

deklarujemy z pełną odpowiedzialnością, że wyrób:

(hereby declare on our own responsibility, that the product:, hiermit bestätigen wir, dass die leuchte:,

déclarons sous notre seule responsabilité que le produit:)

Typ wyrobu:	OPRAWY RASTROWE I MODUŁOWE
(Model type:, Typenart:, Type du produit:)	(Louver & recessed luminaires)
	(Raster und modulleuchten; Persiennes et modulaire)
Nazwa wyrobu:	LUGCLASSIC LB LED PLX PT
(Model name:, Nom du produit:, Bezeichnung:)	(220-240V/50/60Hz, IP40)
Oznaczenie fabryczne:	ZAŁĄCZNIK (Annex, Anbau, Annexe)
(Type number:, Art.Nr. :,Référence:)	

jest zgodny z postanowieniami następujących dyrektyw:

(is in conformity with the following directives:, entspricht die Bestimmungen der folgenden Richtlinien:,

est conforme aux dispositions des directives suivantes:)

ErP

(Eco-design of Energy-Related Products)

RoHS

(Restriction of Hazardous Substances)

Niskonapięciowa

(LVD, EG-Niederspannungsrichtlinie, Basse tension)

Kompatybilności elektromagnetycznej

(EMC, Compatibilité électromagnétique, Elektromagnetische Verträglichkeit)

2009/125/WE (2009/125/EG, EC)

2011/65/WE (2011/65/EG, EC)

2006/95/WE (2006/95/EG, EC)

2004/108/WE (2004/108/EG, EC)

oraz z następującymi normami: (and with the following standards:, und folgende Normen:, ainsi que les normes suivantes:)

PN-EN 60598-1:2011

EN 60598-2-1:1989

PN-EN 55015:2013-10

PN-EN 61547:2009

PN-EN 61000-3-2:2007/A2:2010

PN-EN 61000-3-3:2013-10

PN-EN 62471:2010

PN-EN 60598-2-2:2012

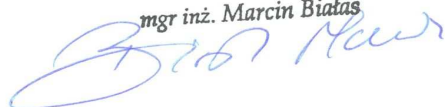
rok oznaczenia produktu symbolem CE:

15

(implementation year of the EC regulation:, Anbringung der CE-Kennzeichnung:, année de marquage du produit par le symbole CE:)

LUG Light Factory Sp. z o.o.
Inżynier Laboratorium
Laboratory Engineer

mgr inż. Marcin Białas



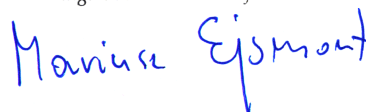
.....
Wystawił:

(Compiled by:, Zusammengestellt von:, Publié:)

Zielona Góra, 2015-10-28

DYREKTOR
DS. TECHNICZNYCH

mgr inż. Mariusz Ejsmont



.....
Podpis osoby upoważnionej

(Signature of authorized person, Unterschrift des Bevollmächtigten,

Signature de la personne autorisée)

Strona (Page, Seite) 1 / 2

LUGCLASSIC LB LED PLX PT

Oznaczenie fabryczne:*(Type number., Art.Nr. ;Référéence:)*

300061.00149

300061.00150

300061.00151

300061.00152

300061.00153

300061.00154

300061.00155

300061.00156

Model:

LUGCLASSIC LB LED PT 4500lm 830

LUGCLASSIC LB LED PT 4700lm 840

LUGCLASSIC LB LED PT 4500lm 830 DALI

LUGCLASSIC LB LED PT 4700lm 840 DALI

LUGCLASSIC LB LED PT 4500lm 830 625

LUGCLASSIC LB LED PT 4700lm 840 625

LUGCLASSIC LB LED PT 4500lm 830 DALI 625

LUGCLASSIC LB LED PT 4700lm 840 DALI 625

ELEKTROTECHNICKÝ ZKUŠEBNÍ ÚSTAV



ELECTROTECHNICAL TESTING INSTITUTE - CZECH REPUBLIC
ELEKTROTECHNISCHE PRUFANSTALT - TSCHIECHISCHE REPUBLIK
INSTITUT ELECTROTECHNIQUE D'ESSAIS - REPUBLIQUE TCHÈQUE
ЭЛЕКТРОТЕХНИЧЕСКИЙ ИСПЫТАТЕЛЬНЫЙ ИНСТИТУТ - ЧЕШСКАЯ РЕСПУБЛИКА

Pod Lisem 129, 171 02 Praha 8 - Troja

CERTIFICATE

No.: 1170479

Product: Fixed general purpose luminaires, recessed luminaires

Type: LUGCLASSIC LB LED PT
variants: 600X600, 625X625

Rating: 220-240 V, 50-60 Hz, 40 W, IP20 (optical part IP40), class II

Ordering firm: LUG Light Factory Sp. z o.o.
ul. Gorzowska 11, 65-127 Zielona Góra, Poland

Manufacturer: LUG Light Factory Sp. z o.o.
ul. Gorzowska 11, 65-127 Zielona Góra, Poland

Factories: LUG Light Factory Sp. z o.o.
ul. Gorzowska 11, 65-127 Zielona Góra, Poland

Trade mark:

The test results are stated in the test-report No.: 700590-01/01 of: 30.05.2017

A sample of the product was found to be in conformity with:
EN 60598-1:15, EN 60598-2-2:12

Other data:

The validity of the certificate is limited to: 31.07.2020

14.07.2017

Prague

Mgr. Miroslav Sedláček
Head of Certification Body



Stamp



700590-01



Ref. Certif. No.

CZ-2764

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

Fixed general purpose luminaires, recessed luminaires

Name and address of the applicant
Nom et adresse du demandeurLUG Light Factory Sp. z o.o.
ul. Gorzowska 11, 65-127 Zielona Góra, PolandName and address of the manufacturer
Nom et adresse du fabricantLUG Light Factory Sp. z o.o.
ul. Gorzowska 11, 65-127 Zielona Góra, PolandName and address of the factory
Nom et adresse de l'usineLUG Light Factory Sp. z o.o.
ul. Gorzowska 11, 65-127 Zielona Góra, PolandRatings and principal characteristics
Valeurs nominales et caractéristiques principales220-240 V, 50-60 Hz, 40 W, IP20 (optical part IP40),
class IITrademark (if any)
Marque de fabrique (si elle existe)Model / Type Ref.
Ref. De typeLUGCLASSIC LB LED PT
variants: 600X600, 625X625Additional information (if necessary)
Information complémentaire (si nécessaire)A sample of the product was tested and found
to be in conformity with
Un échantillon de ce produit a été essayé et a été
considéré conforme à laAs shown in the Test Report Ref. No. which forms part
of this Certificate
Comme indiqué dans le Rapport d'essais numéro de
référence qui constitue partie de ce Certificat

PUBLICATION

EDITION

IEC 60598-1
IEC 60598-2-22014
2011

700590-01/01 of: 30.05.2017

This CB Test Certificate is issued by the National Certification Body
Ce Certificat d'essai OC est établi par l'Organisme National de CertificationElektrotechnický zkušební ústav, s.p.
Pod Lisem 129, 171 02 Praha 8 – Troja
Czech Republic

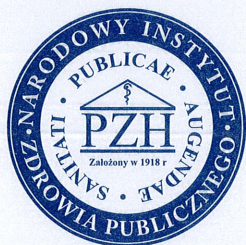
Date: 14.07.2017



Signature: Miroslav Sedláček

Certification and Inspection Manager





**NARODOWY INSTYTUT ZDROWIA PUBLICZNEGO
- PAŃSTWOWY ZAKŁAD HIGIENY**

**NATIONAL INSTITUTE OF PUBLIC HEALTH
- NATIONAL INSTITUTE OF HYGIENE**

**ZAKŁAD HIGIENY ŚRODOWISKA
DEPARTMENT OF ENVIRONMENTAL HYGIENE**

24 Chocimska 00-791 Warsaw • Phone (22) 5421354; (22) 5421349 • Fax (22) 5421287 • e-mail: sek-zhk@pzh.gov.pl

ATEST HIGIENICZNY

HK/B/0997/01/2014

HYGIENIC CERTIFICATE

ORYGINAŁ

Wyrób / product: **Oprawa oświetleniowa: LUGCLASSIC**
modele: PAR, PPAR, SLA, PLX, MPRM, PRM, LED, ECO LED, LB ECO LED,
typ montażu: NT, PT, GK,
typ źródła światła: T5, T8, LED

Zawierający / containing: stal, aluminium i inne składniki wg dokumentacji producenta

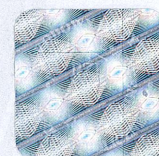
Przeznaczony do / destined: oświetlania pomieszczeń w obiektach szpitalnych i budynkach opieki zdrowotnej, a także w zakładach przemysłowych branży kosmetycznej i spożywczej

Wymieniony wyżej produkt odpowiada wymaganiom higienicznym przy spełnieniu następujących warunków
/ is acceptable according to hygienic criteria with the following conditions:

- Atest nie dotyczy parametrów technicznych i walorów użytkowych
- Zastosowanie wyrobów musi być zgodne z przepisami dotyczącymi obiektu, w którym są one montowane

Wytwórca / producer:

LUG Light Factory Sp. z o. o.
65-127 Zielona Góra
ul. Gorzowska 11



Niniejszy dokument wydano na wniosek / this certificate issued for:

LUG Light Factory Sp. z o. o.
65-127 Zielona Góra
ul. Gorzowska 11

Atest może być zmieniony lub unieważniony po przedstawieniu stosownych dowodów przez którąkolwiek stronę. Niniejszy atest traci ważność po 2019-08-29 lub w przypadku zmian w recepturze albo w technologii wytwarzania wyrobu.

**The certificate may be corrected or cancelled after appropriate motivation.
The certificate loses its validity after 2019-08-29
or in the case of changes in composition or in technology of production.**

Data wydania atestu higienicznego: 29 sierpnia 2014

The date of issue of the certificate: 29th August 2014

Kierownik
Zakładu Higieny Środowiska

[Signature]
dr Bożena Krogulska

Reprodukowanie, kopiowanie, fotografowanie, skanowanie, digitalizacja Atestu Higienicznego w celach marketingowych bez zgody NIZP-PZH jest zabronione.

proj. T. Podsiady

**LUG**[®]LUG Light Factory Ltd.
Producer of Professional Lighting Fittings

PHOTOMETRIC TEST REPORT

Test Report according to LM-79 / EN13032

1. Device Under Test specification:

TEST REPORT NO. :	029/2016
TEST PROTOCOL NO. :	4040, 1586
PLACE/DATE:	ZIELONA GÓRA, 20.07.2016
TESTED AND COMPILED BY:	ROBERT TRACZ
APPROVED BY:	MARIUSZ EJSMONT
DEVICE UNDER TEST:	LIGHT FITTING
LUMINAIRE NAME:	LUGCLASSIC LB LED
ARTICLE NO:	903061.00274
MANUFACTURER:	LUG LIGHT FACTORY
VERSION INFO:	PMMA DIFFUSER
LED MODULE:	ML 1501801.W840.01A tc=75°C max, CE
LAMP IDENTIFICATION :	LED 4000K
LED DRIVER:	PHILIPS CERTA DRIVE 40W, tc=75°C max, CE, ENEC
INPUT VOLTAGE/FREQUENCY:	230V/50Hz
LUMINAIRE DIMENSIONS :	L: 0.595/W : 0.595 m / H : 0.060 m
LIGHT OUTPUT DIMENSIONS :	L : 0.575 m / W : 0.575 m

2. Goniophotometry Test Results:

LUMINOUS FLUX :	4653lm
ACTIVE POWER :	42,3W
EFFICIENCY :	110lm/W
RMS SUPPLY CURRENT	0,191A
POWER FACTOR:	0,962
RMS SUPPLY VOLTAGE :	230,0V
FREQUENCY :	50,0Hz
CURRENT THD (IEC) :	10 %
NORMALIZED PERFORMANCE :	UTE C 71-121 : 1.00 D
LIGHT DISTRIBUTION ANGLE:	112°
ACCURACY :	± 5 %
AMBIENT TEMPERATURE :	25 °C ± 1 °C

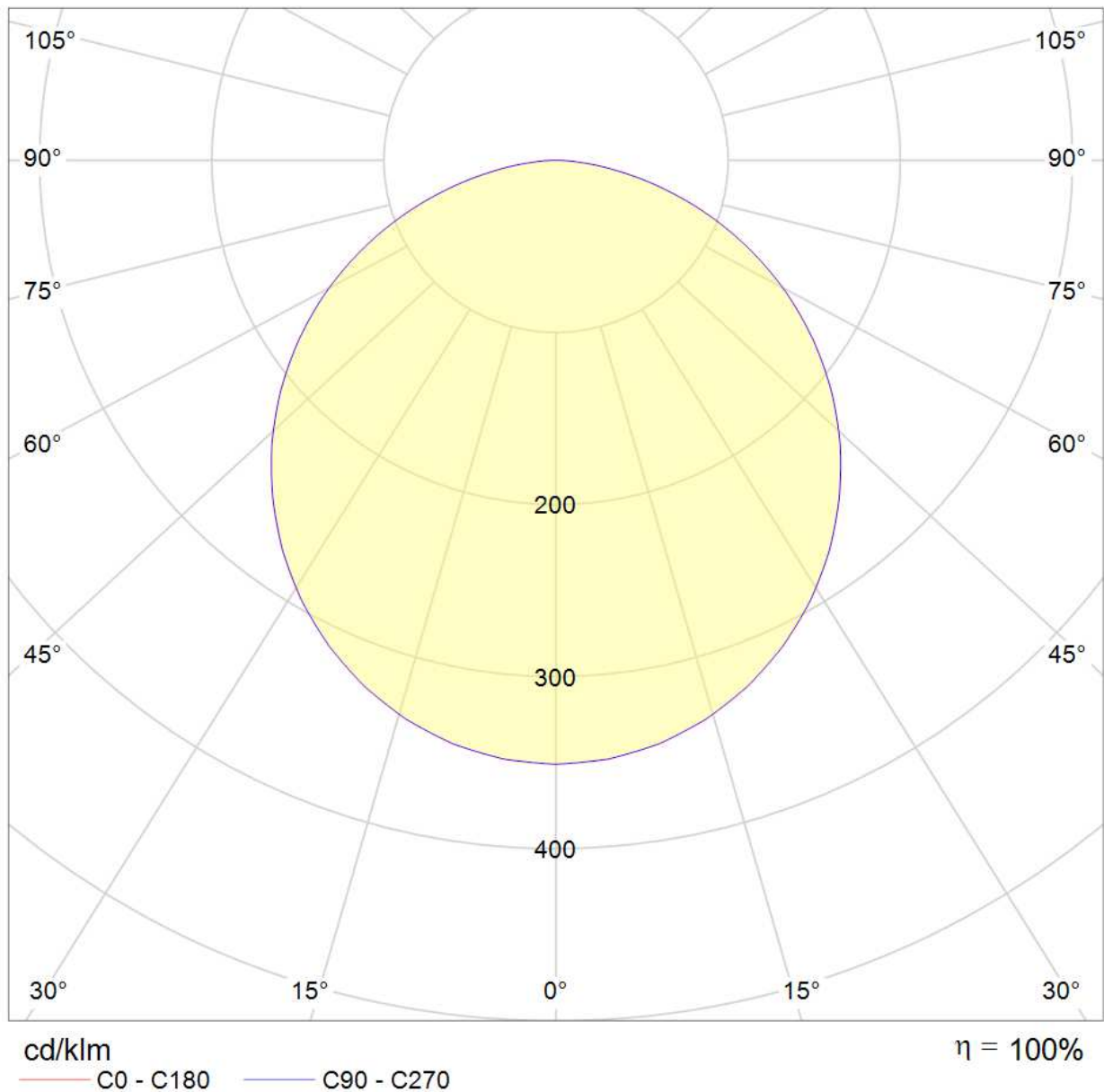


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3. LIGHT DISTRIBUTION (POLAR) CURVE :



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4. LUMINOUS INTENSITY DISTRIBUTION in cd/1000lm :

	C0°	C15°	C30°	C45°	C60°	C75°	C90°
0°	351	351	351	351	351	351	351
5°	349.3	349.4	349.4	349.3	349.4	349.3	349.2
10°	344.3	344.6	344.5	344.3	344.5	344.6	344.4
15°	336.4	336.5	336.5	336.5	336.6	336.6	336.2
20°	325.5	325.7	325.6	325.7	325.6	325.8	325.2
25°	311.7	312	311.9	311.9	311.9	312.2	311.6
30°	295.6	295.9	295.7	295.7	295.6	295.7	295.4
35°	277	277.2	277.1	277.2	277.1	277.2	276.8
40°	256.1	256.4	256.4	256.5	256.2	256.5	255.9
45°	233.5	233.9	233.6	233.8	233.5	233.8	233.4
50°	209	209.3	209	209.2	208.9	209.2	208.8
55°	182.8	183	182.7	182.9	182.6	182.9	182.5
60°	155.1	155.2	155.2	155.2	154.9	155	154.8
65°	125.8	126.2	125.7	126	125.6	125.9	125.6
70°	96.1	96.3	95.9	96	95.6	95.9	95.6
75°	66	66.3	65.8	66	65.6	65.9	65.4
80°	37.9	37.9	37.7	37.7	37.4	37.4	37.2
85°	14.2	14.3	14.2	14.2	14.1	14.1	13.8
90°	0	0	0	0	0	0	0

5. SPHERE SPECTROMETRY (CIE Colorimetric Parameters)

MEASURED CCT :	4026K
MEASURED CRI:	83,5
CHROMATICITY COORDINATES :	x=0.3792 y=0.3758
COLOR RATIO:	R=0.183 G=0.781 B=0.036
PEAK WAVELENGTH:	448nm
DOMINANT WAVELENGTH:	597,9nm
	u(u')=0.2247 v=0.3340 v'=0.5010

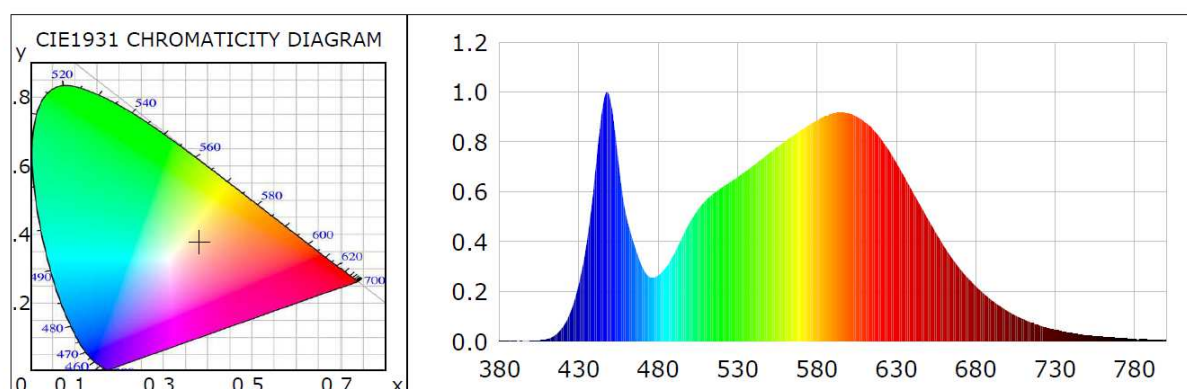
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6. LIGHT SPECTRAL DISTRIBUTION :

R1 =82	R2 =88	R3 =94	R4 =84	R5 =83	R6 =85	R7 =86	R8 =67
R9 =13	R10=73	R11=83	R12=67	R13=83	R14=97	R15=76	



7. TEST INFORMATION

Photometric Method: sphere-spectroradiometer Lisun LMS-9000A(Plus)

Scan Range: 380nm~800nm:1nm

Sphere diameter: 1.50m, 4PI

Stabilization Time: 60 min

Integration Time: 31.04 ms

Goniophotometer type C-Gama Spectro Color[®]

Precision of angle settings 0,2°

Precision of position read 0,005°

Photometer – luxmeter Digi02 Spectro Color[®], accuracy: class a

Powermeter with harmonic analyser: PF9811 Everfine, accuracy: class 0,5

AC testing power source DPS1005 Everfine

8. AUTHORIZED SIGNATURES

Tested by:

Approved by: