CGS TEST HİZMETLERİ TEKNİK KONTROL VE BELGELENDİRME ANONİM ŞİRKETİ

Kayışdağı Mah. Gülçin Sok. No:2/2 Ataşehir
İstanbul/TURKİYE

Deney Raporu
Test Report

Test TS EN ISO/IEC 17025 AB-1316-T

AB-1316-T
LVD-183-89R1.0
12-22

Müşterinin adı /adresi: *Customer name/address*	*Mutlusan Elektrik Plastik Elektrik San. Ve Tic. A.Ş./ İOSB Mah. Enkoop Cad. No:7 Başakşehir-İstanbul / TÜRKİYE*
İstek Numarası : Order no.	*05082022bo2*
Numunenin Adı ve Tarifi : Name and identity of test item	**888 888 000320: Slim Sensörlü Armatür Ledli** /Slim Sensor Luminaire Led
Numunenin Kabul tarihi : The date of receipt of test item	*27.08.2022*
Açıklamalar : Remarks	*Ürün uygulanan testlerden geçmiştir. lütfen raporu inceleyiniz. LVD-183-89 numaralı rapor revize edilmiştir. Revizyon sebebi ayniyet beyanı değişikliğidir. 01.12.2022 tarihinden itibaren LVD-183-89 numaralı rapor geçersizdir. 01.12.2022 tarihinden itibaren LVD-183-89R1.0 numaralı rapor geçerlidir.* / The product passes applied tests, see report below. Report LVD-183-89 has been revised. The reason for the revision is the identity declaration update. As of 01.12.2022, the report numbered LVD-183-89 is invalid. As of 01.12.2022, the report numbered LVD-183-89R1.0 is valid.
Deneyin yapıldığı tarih : Date of Test	*27.08.2022 to 07.10.2022*
Raporun Sayfa Sayısı: Number of pages of the Report	*40 sayfa* / pages

Deney laboratuvarı olarak faaliyet gösteren CGS TEST HİZMETLERİ A.Ş., TÜRKAK'tan AB-1316-T ile TS EN ISO/IEC 17025 Aralık 2017 standardına göre akredite edilmiştir.

CGS TEST HİZMETLERİ A.Ş. accredited by TÜRKAK under registration AB-1316-T for TS EN ISO/IEC 17025 December 2017 as test laboratory.

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The test and/or measurement results, the uncertainties (if applicable) with confidence probability and test methods are given on the following pages which are part of this report.

Mühür/Kaşe Seal	***Tarih*** Date	***Deney Sorumlusu*** Person in charge of test	***Onaylayan*** Approval ***Tarih/*** Date ***05.12.2022***
	05.12.2022	***Fatma Betül İNAL***	***Yüksel YILDIZ***

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

Report Reference No.	:	LVD-183-89R1.0
Date of issue:		05.12.2022
Contents	:	40 Pages
Testing Laboratory	:	CGS TEST HİZMETLERİ TEKNİK KONTROL VE BELGELENDİRME A.Ş.
Address	:	KAYIŞDAĞI MAHALLESI GÜLÇIN SK. NO:2/2 ATAŞEHIR/İSTANBUL
Testing location	:	CGS TEST HİZMETLERİ TEKNİK KONTROL VE BELGELENDİRME A.Ş.
Address	:	KAYIŞDAĞI MAHALLESI GÜLÇIN SK. NO:2/2 ATAŞEHIR/İSTANBUL
Applicant's name	:	MUTLUSAN PLASTİK ELEKTRİK SAN. VE TİC. A.Ş.
Address	:	İOSB MAH. ENKOOP CAD. NO: 7 BAŞAKŞEHIR / İSTANBUL
Test specification:		
Standard	:	EN IEC 60598-2-1:2021 used in conjunction with EN IEC 60598-1:2021
Test procedure	:	Compliance Testing
Non-standard test method	:	N/A
Test Report Form No.	:	F510_04_R8.0
Test Report Form(s) Originator	:	Intertek Semko AB (Modified by CGS)
Master TRF	:	2016-04

Test item description	:	**Slim Sensor Luminaire Led**
Trade Mark	:	Mutlusan electric
Manufacturer	:	Mutlusan Plastik Elektrik San. ve Tic. A.Ş.
Model/Type reference	:	**888 888 000320**
Ratings	:	**230VAC 50Hz 18W ClassII IP40 -25+45C**

Test item particulars:	Slim Sensor Luminaire Led
Classification of installation and use:	Class II & Fixed Luminaire
Supply Connection:	Supply connection with tails
:	
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)
- test cannot be applied in this laboratory:	LNA
-non-requested test or inspection by the customer:	NRT
Testing:	
Date of receipt of test item:	27.08.2022
Date (s) of performance of tests:	27.08.2022 to 07.10.2022

General remarks:

The test results presented in this report relate only to the object tested.
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"(See Enclosure #)" refers to additional information appended to the report.
"(See appended table)" refers to a table appended to the report.

The manufacturer/client may declare submodels with similar design with the tested product. The submodels shall have identical components, circuit designs and mechanical construction with the tested model to be categorized as submodel. Submodels may have less power consumption and/or number of functions. However, safety functions cannot be reduced. The manufacturer/client is fully responsible to check if submodels have compliance as the tested model.

Throughout this report a ☒ comma / ☐ point is used as the decimal separator.

Clause numbers between brackets refer to clauses in IEC 60598-1

General product information:

Slim shaped LED armature.

It is suitable to install to ceiling or wall.

Only suitable for indoor use.

The rated voltage is 220-240 V AC

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Summary of testing: The applied tests are listed below.

Tests performed (name of test and test clause):	**Testing location:**
1.5 (3.4) Marking Test 1.6 (4.12.1) Torque Test 1.6 (4.13) Mechanical strength Test 1.6 (4.14.1) Mechanical load Test 1.7 (11) Creepage Distances and Clearances 1.11 (8) Protection Against Electric Shock 1.12 (12.3) Endurance Test 1.12 (12.4) Thermal Test (normal operation) 1.13 (9.3) Humidity Test 1.14 (10.2.1) Insulation Resistance Test 1.14 (10.2.2) Electric Strength Test 1.14 (10.3) Touch Current 1.15 (13.2.1) Ball-pressure Test 1.15 (13.3.1) Needle flame Test (10 s) 1.15 (13.3.2) Glow wire Test (650°C)	CGS TEST HİZMETLERİ TEKNİK KONTROL VE BELGELENDİRME ANONİM ŞİRKETİ Kayışdağı Mahallesi Gülçin Sokak No:2/2 Ataşehir İSTANBUL/TÜRKİYE

Copy of marking plate:

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1.2 (0)	GENERAL TEST REQUIREMENTS		P
1.2 (0.1)	Information for luminaire design considered	Yes ☐ No ☒ Lamp standard:	—
1.2 (0.3)	More sections applicable .....:	Yes ☐ No ☒ Section: IEC 60598-2-1	—
1.2 (0.5)	Components	(see Annex 1)	
1.2 (0.7)	**Information for luminaire design in light sources standards**		
1.2 (0.7.2)	Light source safety standard ..... :		
	Luminaire design in the light source safety standard		N/A

1.4 (2)	CLASSIFICATION		P
1.4 (2.2)	Type of protection .....:	Class II	—
1.4 (2.3)	Degree of protection .....:	IP_{40}	—
1.4 (2.4)	Luminaire suitable for direct mounting on normally flammable surfaces.....:	Yes ☐ No ☒	—
1.4 (2.5)	Luminaire for normal use .....:	Yes ☒ No ☐	—
	Luminaire for rough service .....:	Yes ☐ No ☒	—

1.5 (3)	MARKING		P
1.5 (3.2)	Mandatory markings		P
	Position of the marking	At back of the luminaire	P
	Format of symbols/text	Suitable	P
1.5 (3.3)	Additional information		P
	Language of instructions	In official language	P
1.5 (3.3.1)	Combination luminaires		N/A
1.5 (3.3.2)	Nominal frequency in Hz	50/60 Hz	P
1.5 (3.3.3)	Operating temperature	-20 °C to + 45 °C	P
1.5 (3.3.5)	Wiring diagram		N/A
1.5 (3.3.6)	Special conditions	No special conditions	N/A
1.5 (3.3.7)	Metal halide lamp luminaire – warning	No halide lamp	N/A
1.5 (3.3.8)	Limitation for semi-luminaires		N/A
1.5 (3.3.9)	Power factor and supply current		N/A
1.5 (3.3.10)	Suitability for use indoors	For indoor use only	P
1.5 (3.3.11)	Luminaires with remote control		N/A
1.5 (3.3.12)	Clip-mounted luminaire – warning		N/A
1.5 (3.3.13)	Specifications of protective shields		N/A

1.5 (3.3.14)	Symbol for nature of supply		P
1.5 (3.3.15)	Rated current of socket outlet		N/A
1.5 (3.3.16)	Rough service luminaire		N/A
1.5 (3.3.17)	Mounting instruction for type Y, type Z and some type X attachments	Type Y	P
1.5 (3.3.18)	Non-ordinary luminaires with PVC cable	For indoor use only	P
1.5 (3.3.19)	Protective conductor current in instruction if applicable	Class II luminaire	N/A
1.5 (3.3.20)	Provided with information if not intended to be mounted within arm's reach		N/A
1.5 (3.3.21)	Luminaires with non-replaceable and non-user replaceable light source, the instruction sheet shall contain the substance of the following information:		N/A
	For non replacable lightsources: "The light source of this luminaire is not replaceable; when the light source reaches its end of life the whole luminaire shall be replaced"		N/A
	For non-user replaceable light sources: "The light source contained in this luminaire shall only be replaced by the manufacturer or his service agent or a similar qualified person."		P
	Symbol for risk of electric shock		N/A
1.5 (3.3.22)	For controllable luminaires the classification of insulation that has been maintained between LV supply and control conductors shall be provided. E.g. basic insulation, reinforced insulation.		N/A
1.5 (3.3.23)	Luminaires delivered without control-gear shall be provided with the necessary information for the selection of the appropriate component together with the highest allowed U_{out} value of the control-gear and the maximum U_p or equivalent peak voltage U_p where pulse voltages are used.		N/A
	In addition, the classification of insulation of the external control-gear that has been maintained between LV supply and secondary output shall be provided if there is a need for at least basic insulation.		N/A
	For luminaires that require no insulation between LV supply and output of the external control-gear no additional information is required.		N/A
	For luminaires that require basic insulation between the primary and secondary part of the control-gear the substance of the following information is required:		N/A
	External control-gear shall provide at least basic insulation between LV supply and output		N/A

	For luminaires that are not classified as Class III but require double or reinforced insulation between the primary and secondary part of the controlgear the substance of the following information is required:		N/A
	External control-gear shall provide at least double or reinforced insulation between LV supply and output		N/A
	For luminaires that are classified as Class III, an indication that the controlgear shall be SELV is required.		N/A
1.5 (3.3.24)	Where the terminal block is not supplied with the luminaire, the packaging shall contain the following wording:		P
	"Terminal block not included. Installation must be performed by a qualified person."		P
1.5 (3.3.25)	Luminaire manufacturers shall provide information about the protection for on-site mains wiring for luminaires employing light sources that emit UV on the mains wiring insulation. The information shall contain the substance of the following:		N/A
	"For installation, the use of additional UV resistant sleeves is required for on-site mains supply cables which are not UV resistant (in particular some halogen-free low smoke cable)."		N/A
1.5 (3.3.26)	For fixed wall mounted and portable wall mounted luminaires using an external flexible cable or cord longer than 30 cm, the manufacturer's instructions shall include the substance of the following wording:		N/A
	"To reduce the risk of strangulation the flexible wiring connected to this luminaire shall be effectively fixed to the wall if the wiring is within arm's reach".		N/A
1.5 (3.4)	Test with water	15s	P
	Test with hexane	15s	P
	Legible after test		P
	Label attached		P

1.6 (4)	**CONSTRUCTION**		**P**
1.6 (4.2)	Components replaceable without difficulty		N/A
1.6 (4.3)	Wireways smooth and free from sharp edges		P
1.6 (4.4)	**Lampholders**		N/A
1.6 (4.4.1)	Integral lampholder		N/A
1.6 (4.4.2)	Wiring connection		N/A
1.6 (4.4.3)	Lampholder for end-to-end mounting		N/A
1.6 (4.4.4)	Positioning		N/A

	- pressure test (N) .....:		—
	After test the lampholder comply with relevant standard sheets and show no damage		N/A
	After test on single-capped lampholder the lampholder have not moved from its position and show no permanent deformation		N/A
	- bending test (N) .....:		---
	After test the lampholder have not moved from its position and show no permanent deformation		N/A
1.6 (4.4.5)	Peak pulse voltage		N/A
1.6 (4.4.6)	Centre contact		N/A
1.6 (4.4.7)	Parts in rough service luminaires resistant to tracking		N/A
1.6 (4.4.8)	Lamp connectors		N/A
1.6 (4.4.9)	Caps and bases correctly used		N/A
1.6 (4.4.10)	Light source for lampholder or connection according IEC 60061 not connected another way		N/A
1.6 (4.5)	**Starter holders**		N/A
	Starter holder in luminaires other than class II		N/A
	Starter holder class II construction		N/A
1.6 (4.6)	**Terminal blocks**		N/A
	Tails		N/A
	Unsecured blocks		N/A
1.6 (4.7)	**Terminals and supply connections**		N/A
1.6 (4.7.1)	Contact to metal parts		N/A
1.6 (4.7.2)	Test 8 mm live conductor		N/A
	Test 8 mm earth conductor		N/A
1.6 (4.7.3)	Terminals for supply conductors		N/A
1.6 (4.7.3.1)	Welded connections:		N/A
	- stranded or solid conductor		N/A
	- spot welding		N/A
	- welding between wires		N/A
	- Type Z attachment		N/A
	- mechanical test according to 15.6.2		N/A
	- electrical test according to 15.6.3		N/A
	- heat test according to 15.6.3.2.3 and 15.6.3.2.4		N/A
1.6 (4.7.4)	Terminals other than supply connection		N/A
1.6 (4.7.5)	Heat-resistant wiring/sleeves		N/A

1.6 (4.7.6)	Multi-pole plug		N/A
	- test at 30 N		N/A
1.6 (4.8)	**Switches:**		N/A
	- adequate rating		N/A
	- adequate fixing		N/A
	- polarized supply		N/A
	- compliance with IEC 61058-1 for electronic switches		N/A
1.6 (4.9)	**Insulating lining and sleeves**		**P**
1.6 (4.9.1)	Retainment		P
	Method of fixing.....:	Heat shrinkable tube used to surround of lamp control gear	P
1.6 (4.9.2)	Insulated linings and sleeves		N/A
	Resistant to a temperature > 20 °C to the wire temperature or		N/A
	a) & c) Insulation resistance and electric strength		N/A
	b) Ageing test. Temperature (°C).....:		N/A
1.6 (4.10)	**Insulation of Class II luminaires**		P
1.6 (4.10.1)	No contact, mounting surface – accessible metal parts – wiring of basic insulation	Not metal encased luminaire	N/A
	Safe installation fixed luminaires		N/A
	Capacitors and switches		N/A
1.6 (4.10.2)	Assembly gaps:		P
	- not coincidental		P
	- no straight access with test probe		P
1.6 (4.10.3)	Retainment of insulation:		P
	- fixed		P
	- unable to be replaced; luminaire inoperative		P
	- sleeves retained in position		N/A
	- lining in lampholder		N/A
1.6 (4.10.4)	Protective impedance device		N/A
	Basic and supplementary insulation bridged by resistor(s) or appropriate capacitor		N/A
	Double or reinforced insulation bridged by appropriate and at least two resistors or two Y2 capacitors or one Y1 capacitor		N/A
	Y1 or Y2 capacitors comply with IEC 60384-14		N/A
	Resistors comply with test (a) in 14.2 of IEC 60065		N/A

1.6 (4.11)	**Electrical connections**		N/A
1.6 (4.11.1)	Contact pressure		N/A
1.6 (4.11.2)	Screws:		N/A
	- self-tapping screws		N/A
	- thread-cutting screws		N/A
1.6 (4.11.3)	Screw locking:		N/A
	- spring washer		N/A
	- rivets		N/A
1.6 (4.11.4)	Material of current-carrying parts	Separately approved component	N/A
1.6 (4.11.5)	No contact to wood or mounting surface		P
1.6 (4.11.6)	Electro-mechanical contact systems		N/A
1.6 (4.12)	**Mechanical connections and glands**		**P**
1.6 (4.12.1)	Screws not made of soft metal		P
	Screws of insulating material		N/A
	Torque test: torque (Nm); part .....:		N/A
	Torque test: torque (Nm); part .....:	2,8 mm; 0,40 Nm	P
	Torque test: torque (Nm); part .....:		N/A
1.6 (4.12.2)	Screws with diameter < 3 mm screwed into metal		N/A
1.6 (4.12.4)	Locked connections:		N/A
	- fixed arms; torque (Nm) .....:		N/A
	- lampholder; torque (Nm).....:		N/A
	- push-button switches; torque 0,8 Nm .....:		N/A
1.6 (4.12.5)	Screwed glands; force (Nm) .....:		N/A
1.6 (4.13)	**Mechanical strength**		**P**
1.6 (4.13.1)	Impact tests:		P
	- fragile parts; energy (Nm) .....:	0,2 Nm (Translucent cover)	P
	- other parts; energy (Nm).....:	0,35 Nm (Enclosure)	P
	1) live parts	Not have become accessible	P
	2) linings		N/A
	3) protection		N/A
	4) covers		P
1.6 (4.13.2)	Metal parts have adequate mechanical strength		N/A
1.6 (4.13.3)	Straight test finger		N/A
1.6 (4.13.4)	Rough service luminaires		N/A
	- IP54 or higher		N/A
	a) fixed		N/A

	b) hand-held		N/A
	c) delivered with a stand		N/A
	d) for temporary installations and suitable for mounting on a stand		N/A
1.6 (4.13.6)	Tumbling barrel		N/A
1.6 (4.14)	**Suspensions and adjusting devices**		**N/A**
1.6 (4.14.1)	Mechanical load:		N/A
	A) four times the weight	Mounting apparatus was not provided by the manufacturer	N/A
	B) torque 2,5 Nm		N/A
	C) bracket arm; bending moment (Nm) .....:		N/A
	D) load track-mounted luminaires		N/A
	E) clip-mounted luminaires, glass-shelve. Thickness (mm) .....:		N/A
	Metal rod. diameter (mm) .....:		N/A
	Fixed luminaire or independent control gear without fixing devices		N/A
1.6 (4.14.2)	Load to flexible cables		N/A
	Mass (kg) .....:		N/A
	Stress in conductors (N/mm²) .....:		N/A
	Mass (kg) of semi-luminaire .....:		N/A
	Bending moment (Nm) of semi-luminaire .....:		N/A
1.6 (4.14.3)	Adjusting devices:		N/A
	- flexing test; number of cycles .....:		N/A
	- strands broken		N/A
	- electric strength test afterwards		N/A
1.6 (4.14.4)	Telescopic tubes: cords not fixed to tube; no strain on conductors		N/A
1.6 (4.14.5)	Guide pulleys		N/A
1.6 (4.14.6)	Strain on socket-outlets		N/A
1.6 (4.15)	**Flammable materials:**		**P**
	- glow-wire test 650 °C	See Test Table 5.15 (13.3.2)	P
	- spacing ≥ 30 mm		N/A
	- screen withstanding test of 13.3.1		N/A
	- screen dimensions		N/A
	- no fiercely burning material		P
	- thermal protection		N/A
	- electronic circuits exempted		N/A

1.6 (4.15.2)	Luminaires made of thermoplastic material with lamp control gear		P
	a) construction		P
	b) temperature sensing control		N/A
	c) surface temperature		N/A
1.6 (4.16)	**Luminaires for mounting on normally flammable surfaces**		N/A
	No lamp control gear	(compliance with Section 12)	N/A
	Provided with adaptor for a track meet the requirements for direct mounting on normally flammable surfaces		N/A
1.6 (4.16.1)	Lamp control gear spacing:		N/A
	- spacing 35 mm		N/A
	- spacing 10 mm		N/A
1.6 (4.16.2)	Thermal protection:		N/A
	- in lamp control gear	No thermal protection	N/A
	- external		N/A
	- fixed position		N/A
	- temperature marked lamp control gear		N/A
1.6 (4.16.3)	Design to satisfy the test of 12.6		N/A
1.6 (4.17)	**Drain holes**		N/A
	Clearance at least 5 mm		N/A
1.6 (4.18)	**Resistance to corrosion**		N/A
1.6 (4.18.1)	- rust-resistance		N/A
1.6 (4.18.2)	- season cracking in copper		N/A
1.6 (4.18.3)	- corrosion of aluminium		N/A
1.6 (4.19)	Ignitors compatible with ballast		N/A
1.6 (4.20)	Rough service vibration		N/A
1.6 (4.21)	**Protective shield:**		N/A
1.6 (4.21.1)	Shield fitted		N/A
	Shield of glass if tungsten halogen lamps		N/A
1.6 (4.21.2)	Particles from a shattering lamp not impair safety		N/A
1.6 (4.21.3)	No direct path		N/A
1.6 (4.21.4)	Impact test on shield		N/A
	Glow-wire test on lamp compartment		N/A
1.6 (4.22)	Attachments to lamps		N/A
1.6 (4.23)	Semi-luminaires comply Class II		N/A
1.6 (4.24)	**Photobiological hazards**		LNA

1.6 (4.24.1)	No excessive UV radiation if tungsten halogen lamps and metal halide lamps (Annex P)		N/A
1.6 (4.24.2)	Retinal blue light hazard		LNA
	Class of risk group assessed according to IEC/TR 62778.....:		
	Luminaires with E_{thr}:		LNA
	a) Fixed luminaires		LNA
	- distance x m, borderline between RG1 and RG2 ..:		LNA
	- marking and instruction according 3.2.23		LNA
	b) Portable and handheld luminaires		N/A
	- marking according 3.2.23 if RG1 exceeded at 200 mm according to IEC/TR 62778		N/A
	Portable luminaires for children IEC 60598-2-10 and Mains socket outlet nightlights IEC 60598-2-12 not exceed RG1 at 200 mm according to IEC/62778		N/A
1.6 (4.25)	**Mechanical hazards**		**P**
	No sharp point or edges		P
1.6 (4.26)	**Short-circuit protection:**		N/A
1.6 (4.26.1)	Uninsulated accessible SELV/PELV parts		N/A
1.6 (4.26.2)	Short-circuit test		N/A
1.6 (4.26.3)	Test chain according to Figure 29		N/A
1.6 (4.27)	**Terminal blocks with integrated screwless earthing contacts**		N/A
	Test according Annex V		N/A
	Pull test of terminal fixing (20 N)		N/A
	After test, resistance < 0,05 Ω		N/A
	Pull test of mechanical connection (50 N)		N/A
	After test, resistance < 0,05 Ω		N/A
	Voltage drop test, resistance < 0,05 Ω		N/A
1.6 (4.28)	**Fixing of thermal sensing control**		N/A
	Not plug-in or easily replaceable type		N/A
	Reliably kept in position		N/A
	No adhesive fixing if UV radiations from a lamp can degrade the fixing		N/A
	Not outside the luminaire enclosure		N/A
	Test of adhesive fixing:		N/A
	Max. temperature on adhesive material (°C) ..... :		N/A
	100 cycles between t min and t max		N/A
	Temperature sensing control still in position		N/A

1.6 (4.29)	**Luminaires with non-replaceable light source**		**N/A**
	Not possible to replace light source		N/A
	Live part not accessible after parts have been opened by hand or tools		N/A
1.6 (4.30)	**Luminaires with non-user replaceable light source**		**P**
	If protective cover provide protection against electric shock and marked with "caution, electric shock risk" symbol:		N/A
	At least one fixing means		P
1.6 (4.31)	**Insulation between circuits**		**P**
	Circuits insulated from LV supply fulfil requirements according 4.31.1 – 4.31.3		N/A
	Controllable luminaires requiring same level of insulation for all components, the insulation between control terminals and LV supply fulfil requirements according 4.31.1 – 4.31.3		N/A
1.6 (4.31.1)	SELV or PELV circuits		N/A
	Used SELV/PELV source		N/A
	Voltage ≤ ELV		N/A
	Insulating of SELV/PELV circuits from LV supply		N/A
	Insulating of SELV/PELV circuits from other non SELV/PELV circuits		N/A
	Insulating of SELV/PELV circuits from FELV		N/A
	Insulating of SELV/PELV circuits from other SELV/PELV circuits		N/A
	SELV/PELV 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
1.6 (4.31.2)	FELV circuits		N/A
	Used FELV source		N/A
	Voltage ≤ ELV		N/A
	Insulating of FELV circuits from LV supply		N/A
	FELV circuits insulated from accessible parts according Table X.1		N/A
	Plugs not able to enter socket-outlets of other voltage systems		N/A
	Socket outlets does not admit plugs of other voltage systems		N/A

	Plugs and socket-outlets does not have protective conductor contact		N/A
1.6 (4.31.3)	Other circuits		P
	Other circuits insulated from accessible parts according Table X.1		P
	Class II construction with equipotential bonding for protection against indirect contacts with live parts		N/A
	- conductive parts are connected together		N/A
	- test according 7.2.3		N/A
	- conductive part not cause an electric shock in case of an insulation fault		N/A
	- equipotential bonding in master/slave applications		N/A
	- master luminaire provided with terminal for accessible conductive parts of slave luminaires		N/A
	- slave luminaire constructed as class I		N/A
1.6 (4.32)	**Overvoltage protective devices**		N/A
	Comply with IEC 61643-11		N/A
	External to controlgear and connected to earth:		N/A
	- only in fixed luminaires		N/A
	- only connected to protective earth		N/A
1.6 (4.33)	**Luminaire powered via information technology communication cabling**		N/A
	Requirements for Class III luminaire		N/A
	Rated voltage within the range of ES1 and does not exceed maximum voltage of used connector		N/A
	Luminaire does not create any hazard from overvoltage		N/A
1.6 (4.34)	**Electromagnetic fields (EMF)**		**LNA**
	Compliance is checked according to IEC 62493:2015		LNA
1.6 (4.35)	**Protection against moving fan blades**		N/A
	Motor driven fan blades for active cooling of luminaires shall not be accessible when the luminaire has been installed and wired as in normal use, and when it is opened as necessary for replacing replaceable light sources or (replaceable) components		N/A
	The test is carried out with a standard test finger, when inserted into openings with a force of 30 N		N/A
	Test with test probe acc. to Figure 13 (IEC 61032) for portable luminaire		N/A
	No contact to the fan blade shall be made		N/A
1.6 (4.36)	**Track-mounted luminaires**		N/A

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	Track-mounted luminaires shall be tested in accordance with Annex A of IEC 60570:2003/AMD2:2019.		N/A
1.7 (11)	**CREEPAGE DISTANCES AND CLEARANCES**		**P**
	Creepage distances and clearances..... :		P
1.7 (11.2.1)	Impulse withstand category (Normal category II) (Category III Annex U)	Category II ☒ Category III ☐	—
	Protected against pollution, reduced creepage and clearance according Annex P of IEC 61347-1		P
	Creepage distances for frequency up to 30 kHz	See Test Table 1.7 (11.2) I	P
	Creepage distances for frequency over 30 kHz:		N/A
	- Controlgear marked with $\hat{U}_{OUT}$ and f_{UOUT} according IEC 61347-1, clause 7.1, item w	See Test Table 1.7 (11.2) II	N/A
	- Requirements according IEC 60664-4 for controlgear not covered by IEC 61347	See Test Table 1.7 (11.2) II	N/A
1.7 (11.2.3)	Clearances for frequency up to 30 kHz	See Test Table 1.7 (11.2) I	P
	Clearances distances for frequency over 30 kHz:		N/A
	- Controlgear marked with U_P		N/A
	- Requirements according IEC 60664-4 for controlgear not covered by IEC 61347	See Test Table 1.7 (11.2) II	N/A
1.8 (7)	**PROVISION FOR EARTHING**		**N/A**
1.8 (7.2.1 + 7.2.3)	Accessible metal parts	Not metal encased, class II luminaire	N/A
	Metal parts in contact with supporting surface		N/A
	Resistance < 0,5 Ω .....:		N/A
	Self-tapping screws used		N/A
	Thread-forming screws		N/A
	Thread-forming screw used in a grove		N/A
	Earth makes contact first		N/A
	Terminal blocks with integrated screwless earthing contacts tested according Annex V		N/A
	Protective earthing of the luminaire not via built-in control-gear		N/A
1.8 (7.2.2 + 7.2.3)	Earth continuity in joints etc.		N/A
1.8 (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
1.8 (7.2.5)	Earth terminal integral part of connector socket		N/A
1.8 (7.2.6)	Earth terminal adjacent to mains terminals		N/A

1.8 (7.2.7)	Electrolytic corrosion of the earth terminal		N/A
1.8 (7.2.8)	Material of earth terminal		N/A
	Contact surface bare metal		N/A
1.8 (7.2.10)	Class II luminaire for looping-in		N/A
	Double or reinforced insulation to functional earth		N/A
1.8 (7.2.11)	Earthing core coloured green-yellow		N/A
	Length of earth conductor		N/A
1.8 (7.2.12)	PELV circuit connected to protective earth for functional purpose		N/A

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

1.9 (15)	**SCREWLESS TERMINALS AND ELECTRICAL CONNECTIONS**		**N/A**
	Separately approved; component list	(see Annex 1)	N/A
	Part of the luminaire	(see Annex 4)	N/A

1.10 (5)	**EXTERNAL AND INTERNAL WIRING**		**P**
1.10 (5.2)	**Supply connection and external wiring**		P
1.10 (5.2.1)	Means of connection.....:	Connecting with leads	P
	Outdoor luminaire has not PVC insulated external wiring if not Class III or SELV/PELV circuits ≤ 25 V AC/60 V DC/25 V peak interrupted DC voltage with frequency 10Hz -200 Hz or protected from outdoor environment	Indoor luminaire	N/A
1.10 (5.2.2)	Type of cable.....:	H03VVH2-F	P
	Nominal cross-sectional area (mm²).....:	2 x 0,75 mm	P
	Cables equal to IEC 60227 or IEC 60245		P
1.10 (5.2.3)	Type of attachment, X, Y or Z	Type Y	P
1.10 (5.2.5)	Type Z not connected to screws		N/A
1.10 (5.2.6)	Cable entries:		P
	- suitable for introduction		P
	- adequate degree of protection		P
1.10 (5.2.7)	Cable entries through rigid material have rounded edges		N/A
1.10 (5.2.8)	Insulating bushings:		N/A

	- suitably fixed		N/A
	- material in bushings		N/A
	- material not likely to deteriorate		N/A
	- tubes or guards made of insulating material		N/A
1.10 (5.2.9)	Locking of screwed bushings		N/A
1.10 (5.2.10)	Cord anchorage:		P
	- covering protected from abrasion		P
	- clear how to be effective		N/A
	- no mechanical or thermal stress		P
	- no tying of cables into knots etc.		P
	- insulating material or lining		N/A
1.10 (5.2.10.1)	Cord anchorage for type X attachment:		N/A
	a) at least one part fixed		N/A
	b) types of cable		N/A
	c) no damaging of the cable		N/A
	d) whole cable can be mounted		N/A
	e) no touching of clamping screws		N/A
	f) metal screw not directly on cable		N/A
	g) replacement without special tool		N/A
	Glands not used as anchorage		N/A
	Labyrinth type anchorages		N/A
1.10 (5.2.10.2)	Adequate cord anchorage for type Y and type Z attachment		P
1.10 (5.2.10.3)	Tests:		P
	- impossible to push cable; unsafe		P
	- pull test: 25 times; pull (N) .....:	60 N	P
	- torque test: torque (Nm).....:	0,15 Nm	P
	- displacement ≤ 2 mm		P
	- no movement of conductors		P
	- no damage of cable or cord		P
	- function independent of electrical connection		P
1.10 (5.2.10.4)	Exemption from the need for a cord anchorage		N/A
	Maximum current of 2 A, including short circuit current		N/A

	- Ordinary Class III luminaire supplied with SELV at a voltage not exceeding 25 V RMS or 60 V ripple free DC		N/A
	- Ordinary Class III luminaire supplied with PELV at a voltage not exceeding 12 V RMS or 30 V ripple free DC;		N/A
	- Other than ordinary Class III luminaire supplied at a voltage not exceeding 12 V RMS or 30 V ripple free DC		N/A
	-Tests:		N/A
	Pull test of 30 N		N/A
1.10 (5.2.11)	External wiring passing into luminaire		P
1.10 (5.2.12)	Looping-in terminals		N/A
1.10 (5.2.13)	Wire ends not tinned		N/A
	Wire ends tinned: no cold flow		N/A
1.10 (5.2.14)	Mains plug same protection		N/A
	Class III luminaire plug		N/A
	No unsafe compatibility		N/A
1.10 (5.2.15)	Connectors for Class III luminaires (IEC 60603 or IEC 62680)		N/A
1.10 (5.2.16)	Appliance inlets (IEC 60320)		N/A
	Installation couplers (IEC 61535)		N/A
	For appliance inlet or connector systems according to IEC 61984		N/A
	Polarization		N/A
	Protection against electric shock		N/A
	Mechanical locking		N/A
	Early contact making		N/A
	Protection against short circuit of poles		N/A
	Cable clamp		N/A
1.10 (5.2.17)	No standardized interconnecting cables properly assembled		N/A
1.10 (5.2.18)	Used plug in accordance with		N/A
	- IEC 60083		N/A
	- other standard		N/A
1.10 (5.3)	**Internal wiring**		**P**
1.10 (5.3.1)	Internal wiring of suitable size and type	0,75 mm²	P
	Through wiring		P
	- not delivered/ mounting instruction		N/A
	- factory assembled		P

	- socket outlet loaded (A) ..... :		N/A
	- temperatures..... :	(see Annex 2)	P
	Green-yellow for earth only		N/A
1.10 (5.3.1.1)	Internal wiring connected directly to fixed wiring		N/A
	Cross-sectional area (mm²) ..... :		N/A
	Insulation thickness		N/A
	Extra insulation added where necessary		N/A
1.10 (5.3.1.2)	Internal wiring connected to fixed wiring via internal current-limiting device		N/A
	Adequate cross-sectional area and insulation thickness		N/A
1.10 (5.3.1.3)	Double or reinforced insulation for class II	No metal part	N/A
1.10 (5.3.1.4)	Conductors without insulation		N/A
1.10 (5.3.1.5)	SELV/PELV current-carrying parts		N/A
1.10 (5.3.1.6)	Insulation thickness other than PVC or rubber		N/A
1.10 (5.3.2)	Sharp edges etc.		P
	No moving parts of switches etc.		P
	Joints, raising/lowering devices		N/A
	Telescopic tubes etc.		N/A
	No twisting over 360°		P
1.10 (5.3.3)	Insulating bushings:		N/A
	- suitable fixed		N/A
	- material in bushings		N/A
	- material not likely to deteriorate		N/A
	- cables with protective sheath		N/A
1.10 (5.3.4)	Joints and junctions effectively insulated		P
1.10 (5.3.5)	Strain on internal wiring		P
1.10 (5.3.6)	Wire carriers		N/A
1.10 (5.3.7)	Wire ends not tinned		P
	Wire ends tinned: no cold flow		P
1.10 (5.4)	**Test to determine suitability of conductors having a reduced cross-sectional area**		N/A
	Under test the temperature of the luminaire wiring insulation not exceed the limits stated in Table 12.2		N/A
	No damage to luminaire wiring after test		N/A

1.11 (8)	**PROTECTION AGAINST ELECTRIC SHOCK**		**P**
1.11 (8.2.1)	Live parts not accessible		P

	Basic insulated parts not used on the outer surface without appropriate protection		P
	Basic insulated parts not accessible with standard test finger on portable and adjustable luminaires		N/A
	Basic insulated parts not accessible with Ø 50 mm probe from outside, within arm's reach, on other types of luminaires		P
	Lamp and starterholders in portable and adjustable luminaires comply with double or reinforced insulation requirements		N/A
	Basic insulation only accessible under lamp or starter replacement		N/A
	Protection in any position		P
	Double-ended tungsten filament lamp		N/A
	Insulation lacquer not reliable		N/A
	Double-ended high pressure discharge lamp		N/A
	Relevant warning according to 3.2.18 fitted to the luminaire		N/A
1.11 (8.2.2)	Portable luminaire adjusted in most unfavourable position		N/A
1.11 (8.2.3.a)	Class II luminaire:		N/A
	- basic insulated metal parts not accessible during starter or lamp replacement		N/A
	- basic insulation not accessible other than during starter or lamp replacement		N/A
	- glass protective shields not used as supplementary insulation		N/A
1.11 (8.2.3.b)	BC lampholder of metal in class I luminaires shall be earthed		N/A
1.11 (8.2.3.c)	SELV circuits with exposed current carrying parts		N/A
	Ordinary luminaire:		N/A
	- voltage under load (V) .....:		N/A
	- no-load voltage .....:		N/A
	- interrupted DC voltage (V).....:		N/A
	- touch current if applicable (mA).....:		N/A
	One conductive part insulated if required		N/A
	Other than ordinary luminaire:		N/A
	- nominal voltage .....:		N/A
	- interrupted DC 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 (8.2.3.d)	PELV circuits with exposed current carrying parts		N/A
	Ordinary luminaire:		N/A
	- voltage under load (V) .....:		N/A
	- no-load voltage .....:		N/A
	Other than ordinary luminaire:		N/A
	- voltage under load (V) .....:		N/A
	- no-load voltage .....:		N/A
	One pole insulated if required		N/A
1.11 (8.2.4)	Portable luminaire have protection independent of supporting surface		N/A
1.11 (8.2.5)	Compliance with the standard test finger or relevant probe		P
1.11 (8.2.6)	Covers reliably secured		P
1.11 (8.2.7)	Luminaire other than below with capacitor > 0,5 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

1.12 (12)	ENDURANCE TEST AND THERMAL TEST		P
1.12 (-)	If IP > IP 20 relevant test of (12.4), (12.5) and (12.6) after (9.2) before (9.3) specified in 1.13		—
1.12 (12.2)	Selection of lamps and ballasts		
	Lamp used according Annex B	LED Luminaire	
	Controlgear if separate and not supplied	(Controlgear used see Annex 2)	
1.12 (12.3)	Endurance test:		P
	a) mounting-position ..... :	Normal use	—
	b) test temperature (°C)..... :	50 °C	—
	c) total duration (h) ..... :	24 h x 10 =240 h	—
	d) supply voltage ..... :	240V x 1,1=264V	—
	d) if not equipped with controlgear, constant voltage/current (V) or (A) ..... ;		—
	d) Class III luminaires powered via information technology communication cable:		
	- voltage under normal operation (V).....:	240 V	

	- Components retained in place after the test		N/A
	- Test with standard test finger after the test		N/A
	Test according to Annex W:		N/A
	- case of abnormal conditions		—
	- measured winding temperature (°C): at 1,1 Un . :		—
	- measured temperature of fixing point/exposed part (°C): at 1,1 Un ..... :		—
	- calculated temperature of fixing point/exposed part (°C) ..... :		—
	Ball-pressure test:		N/A
1.12 (12.7.1.2)	Luminaire with discharge lamp, fluorescent lamp > 70W, transformer > 10 VA		N/A
	- case of abnormal conditions		—
	- measured winding temperature (°C): at 1,1 Un . :		—
	- measured temperature of fixing point/exposed part (°C): at 1,1 Un ..... :		—
	- calculated temperature of fixing point/exposed part (°C) ..... :		—
	- Ball-pressure test:		N/A
1.12 (12.7.1.3)	Luminaire with short circuit proof transformers ≤ 10 VA		N/A
	- case of abnormal conditions		—
	- Components retained in place after the test		N/A
	- Test with standard test finger after the test		N/A
1.12 (12.7.2)	Luminaire with temperature sensing control		N/A
	- thermal link	Yes ☐ No ☐	—
	- manual reset cut-out	Yes ☐ No ☐	—
	- auto reset cut-out	Yes ☐ No ☐	—
	- case of abnormal conditions		—
	- highest measured temperature of fixing point/exposed part (°C): ..... :		—
	Ball-pressure test:		N/A

1.13 (9)	**RESISTANCE TO DUST, SOLID OBJECTS AND MOISTURE**		**P**
1.13 (-)	If IP > IP 20 the order of the test specified in clause 1.12		—
1.13 (9.2)	Tests for ingress of dust, solid objects and moisture:		P
	- classification according to IP ..... :	IP40	—
	- mounting position during test..... :		—

	- fixing screws tightened; torque (Nm) .....:		—
	- tests according to clauses .....:		—
	- electric strength test afterwards		N/A
	a) no deposit in dust-proof luminaire		N/A
	b) no talcum in dust-tight luminaire		N/A
	c) no trace of water on current-carrying parts or SELV parts or where it could become a hazard		N/A
	c.1) For luminaires without drain holes – no water entry		N/A
	c.2) For luminaires with drain holes – no hazardous water entry		N/A
	d) no water in watertight luminaire		N/A
	e) no contact with live parts (IP 2X)		P
	e) no entry into enclosure (IP 3X and IP 4X)		N/A
	e) no contact with live parts (IP3X and IP4X)		N/A
	f) no trace of water on part of lamp requiring protection from splashing water		N/A
	g) no damage of protective shield or glass envelope		N/A
1.13 (9.3)	Humidity test 48 h	93 % Rh; 25 °C	P

1.14 (10)	**INSULATION RESISTANCE AND ELECTRIC STRENGTH**		**P**
1.14 (10.2.1)	Insulation resistance test		P
	Cable or cord covered by metal foil or replaced by a metal rod of mm Ø .....:		—
	Insulation resistance (MΩ)	4 MΩ	—
	SELV/PELV:		N/A
	- between current-carrying parts of different polarity.....:		N/A
	- between current-carrying parts and mounting surface .....:		N/A
	- between current-carrying parts and metal parts of the luminaire .....:		N/A
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts .....:		N/A
	- Insulation bushings as described in Section 5 ...:		N/A
	Other than SELV/PELV:		P
	- between live parts of different polarity .....:		N/A
	- between live parts and mounting surface .....:	>999,9 MΩ	P

	- between live parts and metal parts.....:		N/A
	- between live parts of different polarity through action of a switch .....:	No switch	N/A
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts .....:		N/A
	- Insulation bushings as described in Section 5 ...:		N/A
1.14 (10.2.2)	Electric strength test		P
	Dummy lamp		N/A
	Luminaires with ignitors after 24 h test		N/A
	Luminaires with manual ignitors		N/A
	Test voltage (V):		N/A
	SELV/PELV:		N/A
	- between current-carrying parts of different polarity.....:		N/A
	- between current-carrying parts and mounting surface .....:		N/A
	- between current-carrying parts and metal parts of the luminaire .....:		N/A
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts .....:		N/A
	- Insulation bushings as described in Section 5 ...:		N/A
	Other than SELV/PELV:		P
	- between live parts of different polarity .....:		N/A
	- between live parts and mounting surface.....:	2960 V AC; No breakdown	P
	- between live parts and metal parts.....:		N/A
	- between live parts of different polarity through action of a switch .....:		N/A
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts .....:		N/A
	- Insulation bushings as described in Section 5 ...:		N/A
1.14 (10.3)	Touch current or protective conductor current (mA) .....:	0,1951 mA	P

1.15 (13)	**RESISTANCE TO HEAT, FIRE AND TRACKING**		P
1.15 (13.2.1)	Ball-pressure test:	See Table 1.15 (13.2.1)	P
1.15 (13.3.1)	Needle flame test (10 s):	See Table 1.15 (13.3.1)	P
1.15 (13.3.2)	Glow-wire test (650°C):	See Table 1.15 (13.3.2)	P
1.15 (13.4.1)	Proof tracking test(IEC 60112):		N/A

1.7 (11.2)	TABLE I: Creepage distances and clearances							P
Minimum distances (mm) for a.c. up to 30 kHz sinusoidal voltages								
Applicable part of IEC 60598-1 Table 11.1.A*, 11.1.B* and 11.2*								
	Insulation type **	Measured clearance	Required		Measured creepage	Required		
			clearance	*Table		creepage	*Table	
Distance 1:	B	3,78	1,5	11.1	3,78	2,5	11.1	
Working voltage (V) ..... :					250 V DC			—
PTI ..... :					< 600 ☒	≥ 600 ☐		—
Pulse voltage or U_P if applicable (kV) ..... :								—
Supplementary information: Between positive and negative parts (Lamp control gear PCB output)								
Distance 2:	B	2,62	1,5	11.1	2,62	2,5	11.1	
Working voltage (V) ..... :					240 V AC			—
PTI ..... :					< 600 ☒	≥ 600 ☐		—
Pulse voltage or U_P if applicable (kV) ..... :								—
Supplementary information: Between line and neutral parts (Lamp control gear PCB input)								
Distance 3:	B	6,53	1,5	11.1	6,53	2,5	11.1	
Working voltage (V) ..... :					250 V DC			—
PTI ..... :					< 600 ☒	≥ 600 ☐		—
Pulse voltage or U_P if applicable (kV) ..... :								—
Supplementary information: Between "+" & "-" poles on led PCB								

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

1.7 (11.2)	TABLE II: Creepage distances and clearances							N/A
Minimum distances (mm) for a.c. higher than 30 kHz sinusoidal voltages								
Applicable part of IEC 61347-1 Table 7 and 8* or IEC 60664-4 Table 1 and 2								
Distances	Insulation type **	Measured clearance	Required		Measured creepage	Required		
			clearance	*Table		creepage	*Table	
Distance 1:								
Working voltage (V)								—
Frequency if applicable (kHz)								—
PTI					< 600 ☐	≥ 600 ☐		—
Peak value of the working voltage $\hat{U}_{out}$ if applicable (kV)								—
Supplementary information:								
Distance 2:								

Working voltage (V)			—
Frequency if applicable (kHz)			—
PTI	< 600 ☐	≥ 600 ☐	—
Peak value of the working voltage $\hat{U}_{out}$ if applicable (kV)			—
Supplementary information:			
Distance 3:			
Working voltage (V)			—
Frequency if applicable (kHz)			—
PTI	< 600 ☐	≥ 600 ☐	—
Peak value of the working voltage $\hat{U}_{out}$ if applicable (kV)			—
Supplementary information:			

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

1.15 (13.2.1)	TABLE: Ball Pressure Test of Thermoplastics		P
Allowed impression diameter (mm)	2		—
Object/ Part No./ Material	Manufacturer/ trademark	Test temperature (°C)	Impression diameter (mm)
Lamp control gear PCB	Undefined	125 °C	< 2
Enclosure	Undefined	75 °C	1,25
Diffuser	Undefined	75 °C	1,25
Supplementary information:			

1.15 (13.3.1)	TABLE: Needle-flame test (IEC 60695-11-5)				P
Object/ Part No./ Material	Manufacturer/ trademark	Duration of application of test flame (ta); (s)	Ignition of specified layer Yes/No	Duration of burning (tb) (s)	Verdict
Lamp control gear PCB / Surface of the test specimen	Undefined	10	No	-	P
Lamp control gear PCB / Edge of the test specimen	Undefined	10	Yes	-	P
Supplementary information:					

1.15 (13.3.2)	TABLE: Glow-wire test (IEC 60695-2-11)			P
Glow wire temperature	650°C			—
Object/ Part No./ Material	Manufacturer/ trademark	Ignition of specified layer Yes/No	Duration of burning (tb) (s)	Verdict
Enclosure	Undefined	No	-	P
Diffuser	Undefined	No	-	P
Supplementary information:				

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

ANNEX 1	TABLE: Critical components information					P
object/part No.	code	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity
Cable Tube	B	WOER	RSFR-H	Operating temperature: -55°C to 125°C	UL 224	UL (E203950)
Connection wire	B	GMS KABLO	HO3VVH2-F	2 x 0,75 mm	TS EN 50525-2-11	TSE (000259-HAR-07/02)
LED Control Gear	C	Undefined	Undefined	Without load:285 V DC; With load:250 V DC; Cl. 1.15 (13.2.1); Cl. 1.15 (13.3.1);	EN 60598-2-1	Tested with appliance
LED PCB	C	Undefined	Undefined	Cl. 1.7 (11.2)	EN 60598-2-1	Tested with appliance
Enclosure	C	Undefined	Undefined	Cl. 1.15 (13.3.2)	EN 60598-2-1	Tested with appliance
Diffuser	C	Undefined	Undefined	Cl. 1.15 (13.3.2)	EN 60598-2-1	Tested with appliance
Supplementary Information:						

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

	ANNEX 2: temperature measurements, thermal tests of Section 12	N/A

	Type reference ..... :	016 038 701500	—
	Lamp used..... :	LED Luminaire	—
	Lamp control gear used..... :	Undefined	—
	Mounting position of luminaire..... :	Wall or ceiling mounted	—
	Supply wattage (W) ..... :	20,57 W	—
	Supply current (A)..... :	0,15 A	—
	Calculated power factor..... :	0,538	—
	Table: measured temperatures corrected for ta (°C)..... :	40 °C	—
	- abnormal operating mode ..... :		—
	- test 1: rated voltage..... :		—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage..... :	240 x 1,06 = 254,4 V 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 (°C) of part	Clause 12.4 – normal				Clause 12.5 – abnormal	
	test 1	test 2	test 3	limit	test 4	limit
LED		81,4 °C		*		
LED PCB		65,7		*		
AC Cable		38,0 °C		90 °C		
DC Cable		39,3 °C		90 °C		
Coil of Control Gear	57,4 °C			105 °C		
Capacitor of Control Gear		47,7 °C		105 °C		
Diffusor		46,6 °C		**		
Enclosure		39,8 °C		**		
PCB of Control Gear		65,6 °C		**		

Supplementary information:

(*)There is no specific limitation according to EN 60598-1 standard. However, the temperature rise is determined in order to inform client.

(**)The test limit in Clause 1.15 (13.2.1) is taken as reference.

	ANNEX 3: screw terminals (part of the luminaire)	N/A

(14)	SCREW TERMINALS		N/A
(14.2)	Type of terminal ..... :		—
	Rated current (A) ..... :		—
(14.3.2.1)	One or more conductors		N/A
(14.3.2.2)	Special preparation		N/A
(14.3.2.3)	Terminal size		N/A
	Cross-sectional area (mm²) ..... :		N/A
(14.3.3)	Conductor space (mm) ..... :		N/A
(14.4)	Mechanical tests		N/A
(14.4.1)	Minimum distance		N/A
(14.4.2)	Cannot slip out		N/A
(14.4.3)	Special preparation		N/A
(14.4.4)	Nominal diameter of thread (metric ISO thread) . :		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

	ANNEX 4: screwless terminals (part of the luminaire)	N/A

(15)	**SCREWLESS TERMINALS**		N/A
(15.2)	Type of terminal..... :		—
	Rated current (A) ..... :		—
(15.3.1)	Material		N/A
(15.3.2)	Clamping		N/A
(15.3.3)	Stop		N/A
(15.3.4)	Unprepared conductors		N/A
(15.3.5)	Pressure on insulating material		N/A
(15.3.6)	Clear connection method		N/A
(15.3.7)	Clamping independently		N/A
(15.3.8)	Fixed in position		N/A
(15.3.10)	Conductor size		N/A
	Type of conductor		N/A
(15.5)	Terminalsand connections for internal wiring		N/A
(15.5.1)	Mechanical Tests		N/A
(15.5.1.1.1)	Pull test spring-type terminals (4 N, 4 samples)....:		N/A
(15.5.1.1.2)	Pull test pin or tab terminals (4 N, 4 samples).....:		N/A
	Insertion force not exceeding 50 N		N/A
(15.5.1.2)	Permanent connections: pull-off test (20 N)		N/A
(15.5.2)	Electrical tests		N/A
	Voltage drop (mV) after 1 h (4 samples) ..... :		N/A
	Voltage drop of two inseparable joints		N/A
	Number of cycles..... :		—
	Voltage drop (mV) after 10th alt. 25th cycle (4 samples)..... :		N/A
	Voltage drop (mV) after 50th alt. 100th cycle (4 samples)..... :		N/A
	After ageing, voltage drop (mV) after 10th alt. 25th cycle (4 samples)..... :		N/A
	After ageing, voltage drop (mV) after 50th alt. 100th cycle (4 samples)..... :		N/A
(15.6)	Terminals and connections for external wiring		N/A
(15.6.1)	Conductors		N/A
	Terminal size and rating		N/A

(15.6.2)	Mechanical Tests										N/A
(15.6.2.1)	Pull test spring-type terminals or welded connections (4 samples); pull (N) ..... :										N/A
(15.6.2.2)	Pull test pin or tab terminals (4 samples); pull (N) .....:										N/A
(15.6.3)	Contact resistance test										N/A
	Voltage drop (mV) after 1 h										N/A
terminal	1	2	3	4	5	6	7	8	9	10	
voltage drop (mV)											N/A
	Voltage drop of two inseparable joints										N/A
	Voltage drop after 10th alt. 25th cycle										N/A
	Max. allowed voltage drop (mV) ..... :										—
terminal	1	2	3	4	5	6	7	8	9	10	
voltage drop (mV)											N/A
	Voltage drop after 50th alt. 100th cycle										N/A
	Max. allowed voltage drop (mV) ..... :										—
terminal	1	2	3	4	5	6	7	8	9	10	
voltage drop (mV)											N/A
	Continued ageing: voltage drop after 10th alt. 25th cycle										N/A
	Max. allowed voltage drop (mV) ..... :										—
terminal	1	2	3	4	5	6	7	8	9	10	
voltage drop (mV)											N/A
	Continued ageing: voltage drop after 50th alt. 100th cycle										N/A
	Max. allowed voltage drop (mV) ..... :										—
terminal	1	2	3	4	5	6	7	8	9	10	
voltage drop (mV)											N/A

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ATTACHMENT 1

Equipment of measurements

Equipment No	Kind of equipment	Model Type	Manufacturer	Last Cal Date	Next Cal Date	Last Ver Date	Next Ver Date	Test Clause of EN 60598-1
E-054	CE compact tester	C.A 6160	Chauvin Arnoux	3.01.2022	3.01.2023	21.06.2022	21.12.2022	Section 7 & Cl.1.14(10.2.1 & 10.2.2)
E-042	AC Supply	---	VARSAN	---	---	---	---	Voltage Supply
E-071	Datalogger	GL200A	Graphtech	19.10.2021	19.10.2022	21.06.2022	21.12.2022	Cl. 1.12 (12.4.1)
E-008	Oscilloscope	UTD2012CEX	UNI-T	11.10.2021	11.10.2022	14.05.2022	14.11.2022	Cl. 1.14 (10.3)
E-009	Oscilloscope Probe	UT-P04	UNI-T	11.10.2021	11.10.2022	14.05.2022	14.11.2022	Cl. 1.14 (10.3)
E-004	Climatic Chamber	---	ULMEKA Mekatronik Sistemler	18.10.2021	18.10.2022	14.05.2022	14.11.2022	Cl. 1.13(9.3)
E-095	Touch Current Measurement	MTFIG4	MULTITECH	22.03.2022	24.03.2023	---	---	Cl. 1.14(10.3)
E-033	Temperature-Humidity Meter	30.3166.02.S2	TFA	19.10.2021	19.10.2022	---	---	Environmental Conditions
E-035	Torque Screw	7441/TİP I	WERA	18.10.2021	18.10.2023	---	---	Cl 1.6(4.12.1)
E-036	Torque Screw	7440/TİP I	WERA	18.10.2021	18.10.2023	---	---	Cl 1.6(4.12.1)
E-102	Digital Calliper	2310-7110	DASQUA	22.12.2021	22.12.2022	---	---	Cl 1.7 (11)
E-053	Keyless Measurement Adapter	---	CGS TEST A.Ş.	---	---	---	---	Cl. 1.14(10.3)
E-076	Timer	DIGITAL	LOYKA	23.12.2021	23.12.2022	---	---	Timer
E-067	Power Meter	PM-15	SEW	23.10.2021	23.10.2022	---	---	Cl 1.12(12.3.1& 12.4.1)
E-050	Pull and Torque Test Apparatus	---	CGS TEST A.Ş.	---	---	---	---	Cl 1.10 (5.2.10.3)
E-117	Endurance Timer	CT-9180	CATA	---	---	---	---	Cl 1.12 (12.3.1)
E-057	Etuv Oven	FRN	DİZAYN	27.01.2022	27.01.2023	6.08.2022	6.02.2023	Cl 1.12(12.3.1& 12.4.1)
E-088	Mounting Apparatus	---	CGS TEST A.Ş.	---	-----	-----	---	---
E-082	Insulation Transformer	İZL-1	CSK Elektrik Elektronik San. ve Tic. Ltd. Şti	---	-----	---	---	---
E-077	Ball-Pressure Test	BP-2014	EMS	28.12.2021	28.12.2023	21.06.2022	21.12.2022	Cl 1.9 (13.2.1)

	Apparatus							
E-076	Stopwatch	DIGITAL	LOYKA	23.12.2021	23.12.2022	---	---	Timer
E-035	Torque Hand Tool	7441/TİP I	WERA	18.10.2021	18.10.2023	---	---	Cl 1.6 (4.12.1)
E-036	Torque Hand Tool	7440/TİP I	WERA	18.10.2021	18.10.2023	---	---	Cl 1.6 (4.12.1)
E-034	Etuv Oven	T12	HERAEUS	18.10.2021	18.10.2022	18.05.2022	18.11.2022	Cl 1.15 (13.2.1)
E-007	Needle-Flame Test Apparatus	---	ULMEKA Mekatronik Sistemler	19.10.2021	19.10.2022	20.04.2022	20.10.2022	Cl 1.15 (13.3.1)
E-005	Glow-Wire Test Apparatus	---	ULMEKA Mekatronik Sistemler	18.10.2021	18.10.2022	21.04.2022	21.10.2022	Cl 1.15 (13.3.2)

ATTACHMENT 2
Photo Documentation

Photo documentation

Product View

Product View