



Test Laboratuvarları

LVT Test Laboratuvarları Ltd. Şti.

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AB-0341-T
23-529-R0-N1-1
03-23

DENEY RAPORU

Test Report

1/62

Müşteri Client	: BSI AYDINLATMA SAN. ve TİC. A.Ş.
Adres Address	: BAŞKENT OSB, 20.CADDE B/3 BLOK NO:4 MALIKÖY, SINCAN, ANKARA / TÜRKİYE
İmalatçı Manufacturer	: BSI AYDINLATMA SAN. ve TİC. A.Ş.
Teklif Numarası Order No	: 23-529-R0
Deney Numunesi Test Sample	: DEKORATİF LED AYDINLATMA ARMATÜRÜ (MODEL / CODE: iServo / AC 8038 DOUBLE SIDED)
Marka Trade Mark	: BSI
Deney Metodu Test Method	: TS EN 60598-2-2:2012
Deney Tarihi Date of Test	: 14.02.2023 – 15.03.2023
Toplam Sayfa Sayısı Total Number of Pages	: 62
Basım Tarihi Date of Issue	: 20.03.2023

Deney laboratuvarı olarak faaliyet gösteren LVT Test Laboratuvarları Ltd. Şti. TÜRKAK' tan AB-0341-T numarası ile IEC/ISO TS EN 17025:2017 standardına göre akredite edilmiştir.

LVT Test Laboratuvarları Ltd. Şti. accredited by TÜRKAK under registration number AB-0341-T for IEC/ISO 17025:2017 as test laboratory.

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

Mühür
Seal

Deney Sorumlusu
Person in Charge of Test

Bölüm Müdürü
Department Manager



Mustafa YETİŞEN

Ata Gürül AKSLANLI

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FRT.81/Rev08/0422

İçindekiler

Contents

	Sayfa
	Page
1. Numunelerin Tanımı (Definition of the Samples).....	3
2. Deney Sonuçları (Test Results).....	3
3. Çevre Şartları (Environmental Conditions).....	3
4. Deney Metodundan Sapma, Ekleme ve Çıkarmalar (Deviations , Additions & Cutbacks from the Test Method)...	3
5. Şartnamelere Uygunluk (Conformity to Specifications).....	3
6. Dağıtım Bilgileri (Distrubition Information).....	4
7. Açıklama (Explanations).....	4
8. Ölçüm Belirsizliği (Uncertainty of Measurement).....	4
9. Deney Uygulamaları (Test Applications).....	5
10. Deney ve Ölçüm Bilgileri (Test & Measuring Arrangements).....	42
11. Deney Osilogramları (Test Oscillograms).....	43
12. Deney Fotoğrafları (Test Photographs).....	44
13. Firma Dokümanları (Documentation of Client).....	49



1. **Numunelerin Tanımı** : **Dekoratif Led Aydınlatma Armatürü (Model / Code: iServo / AC 8038 Double Sided)**
Definition of the Samples *Decorative LED Lighting Fixture (Model:/ Code iServo / AC 8038 Double Sided)*
- 1.1 **Decorative LED Lighting Fixture (Model:/ Code iServo / AC 8038 Double Sided)** **(23-529-R0-N1)**
Decorative LED Lighting Fixture (Model:/ Code iServo / AC 8038 Double Sided)
- Numune Kabul Tarihi : 13.02.2023
Receiving Date
- Numune Seri No : Test Sample
Serial No
- Tip : iServo / AC 8038 double Sided
Type
- Kutup Sayısı : L, N, PE
Number of Poles
- Beyan Gerilimi U_n : 220 – 240V
Rated Voltage
- Beyan Akımı I_n : 500mA
Rated Current
- Beyan Frekans f_n : 50/60Hz
Rated Frequency
- Beyan Koruma Derecesi IP : 67
Rated Degree of Protection
- Numune Boyutları mm : See Documentation of Client
Dimensions of the Sample
- Numune Ağırlığı kg : 2.45
Weight of the Sample
- Cihaz – Malzeme Listesi : See Critical Component List
Device – Component List

2. **Deney Sonuçları** : Deney sonuçları, müşteri tarafından laboratuvara teslim edilen ve sadece deneyi yapılan numuneye aittir.
Test Results *The test results only belong to the tested sample(s) delivered to the laboratory by client.*

Numune <i>Sample</i>	Uygulanan Deney <i>Applied Test</i>	Sonuç <i>Result</i>
Dekoratif Led Aydınlatma Armatürü (Model / Code: iServo / AC 8038 Double Sided) <i>Decorative LED Lighting Fixture (Model:/ Code iServo / AC 8038 Double Sided)</i>	TS EN 60598-2-2:2012	Olumlu <i>Passed</i>

3. **Çevre Şartları**
Environmental Conditions

- 3.1 **Ortam Sıcaklığı** : (20 – 30) °C
Ambient Temperature

- 3.2 **Ortam Nemi** : (30 – 60) %Rh
Ambient Moisture

4. **Deney Metodundan Sapma, Ekleme ve Çıkarmalar** : Deneyler; standart deney metoduna göre uygulanmıştır.
Deviations, Additions & Cutbacks from the Test Method *Tests were made according to the clauses of the relevant standards.*

5. **Şartnamelere Uygunluk (Gerekli Hallerde)** : -
Conformity to Specifications (If Necessary)

LVT Test Laboratuvarları Ltd. Şti.

AB-0341-T

23-529-R0-
N1-1

03-23

4/62

6. **Dağıtım Bilgileri**
Distribution Information : BSI AYDINLATMA SAN. ve TİC. A.Ş.

7. **Açıklama**
Explanation : -

8. **Ölçüm Belirsizliği**
Uncertainty of Measurement : -





Test Laboratuvarları

Aydınlatma Armatürleri Güvenlik Deneyleri

Gömme Armatürler

Luminaires Safety Tests
Recessed Luminaires

9. Deney Uygulamaları:

Test Applications

TEST REPORT

IEC 60598-2-2

Luminaires

Part 2: Particular requirements:

Section Two – Recessed luminaires

Test specification:

Standard : IEC 60598-2-2:2011 used in conjunction with IEC 60598-1:2020

Test procedure : Type Test

Non-standard test method : N/A

TRF template used..... : IECEE OD-2020-F1:2021, Ed.1.4

Test Report Form No. : IEC60598_2_2G

Test Report Form(s) Originator : Intertek Semko AB

Master TRF : Dated 2021-08-20

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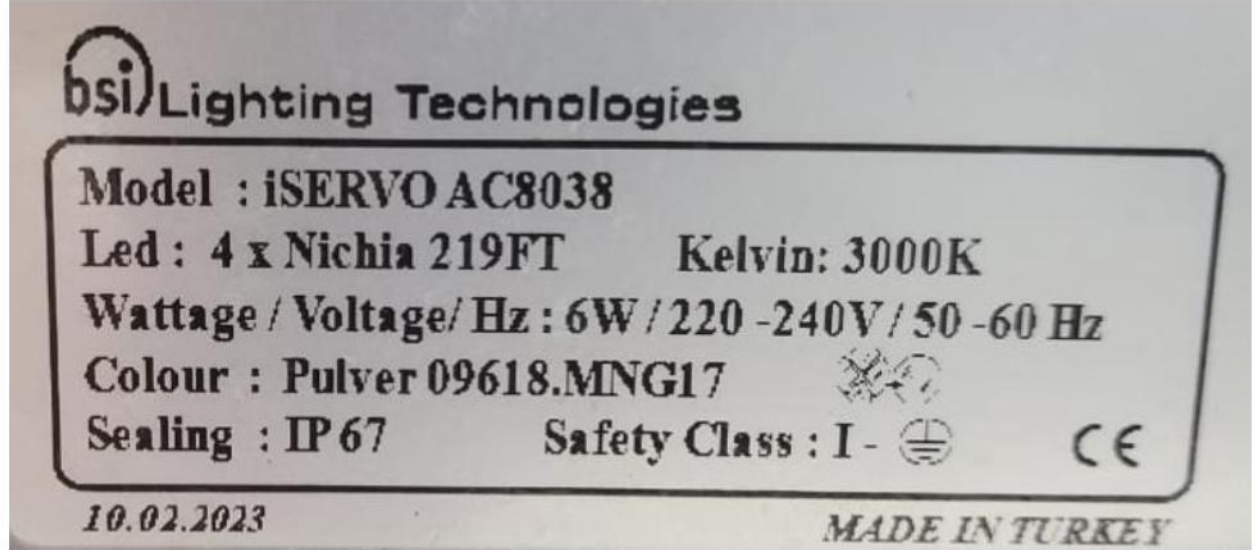
Aydınlatma Armatürleri Güvenlik Deneyleri

Gömme Armatürler

*Luminaires Safety Tests
Recessed Luminaires*

Copy of marking plate:

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Test Laboratuvarları

Aydınlatma Armatürleri Güvenlik Deneyleri

Gömme Armatürler

Luminaires Safety Tests
Recessed Luminaires

Test item particulars	Decorative LED Lighting Fixture (Model:/ Code iServo / AC 8038 Double Sided)
Classification of installation and use	Class I and normal use. (See clause 2.5.)
Supply Connection	Permanently Supply Connection
..... :	
Possible test case verdicts:	
- test case does not apply to the test object : N/A	
- test object does meet the requirement : P (Pass)	
- test object does not meet the requirement : F (Fail)	
Testing	
Date of receipt of test item : 13.02.2023	
Date (s) of performance of tests : 14.02.2023 – 15.03.2023	
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.	
Clause numbers between brackets refer to clauses in IEC 60598-1	
General product information: Recessed luminaire with 220 - 240V, 50/60 Hz supply and 6W power consumption, iServo AC 8038 Double Sided model number.	





Aydınlatma Armatürleri Güvenlik Deneyleri

Gömme Armatürler

Luminaires Safety Tests
Recessed Luminaires

Test Laboratuvarları

P:Passed, F:Fail, N/A:Not Applicable

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

2.3 (0)	GENERAL TEST REQUIREMENTS		P
2.3 (0.3)	More sections applicable.....:	Yes ☐ No ☒ Section/s:	—
2.3 (0.5)	Components	(see Annex 1)	—
2.3 (0.7)	Information for luminaire design in light sources standards		—
2.3 (0.7.2)	Light source safety standard		—
	Luminaire design in the light source safety standard		P

2.5 (2)	CLASSIFICATION OF LUMINAIRES		P
2.5 (2.2)	Type of protection	Class I.	—
2.5 (2.3)	Degree of protection.....:	IP 67.	—
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		P
2.6 (3.2)	Mandatory markings	Necessary information are distinctly and durably marked on the luminaire (see Table 3.1). Each marking in Table 3.1 are read with the corresponding subclause as detailed in the table. See label.	P
	Position of the marking	Labels and markings are positioned so that they can be seen during use and installation.	P
	Format of symbols/text	The label is designed in accordance with the dimensions given in the TS EN IEC 60598-1:2021 standard. See label.	P
2.6 (3.3)	Additional information		P
	Language of instructions	English.	P
2.6 (3.3.1)	Combination luminaires	The luminaire is not combination luminaire.	N/A
2.6 (3.3.2)	Nominal frequency in Hz	50/60 Hz.	P
2.6 (3.3.3)	Operating temperature	See LED Driver.	N/A





Aydınlatma Armatürleri Güvenlik Deneyleri Gömme Armatürler

*Luminaires Safety Tests
Recessed Luminaires*

Test Laboratuvarları

2.6 (3.3.5)	Wiring diagram	The luminaire is connected to the mains with a cable. The connections are in the installation guide. See documentation of client.	P
2.6 (3.3.6)	Special conditions	No special condition.	N/A
2.6 (3.3.7)	Metal halide lamp luminaire – warning	The luminaire does not have metal halide lamp.	N/A
2.6 (3.3.8)	Limitation for semi-luminaires	The luminaire is not semi-luminaire.	N/A
2.6 (3.3.9)	Power factor and supply current	>0.95 pF and 500 mA supply current.	P
2.6 (3.3.10)	Suitability for use indoors	The luminaire is not use indoor.	N/A
2.6 (3.3.11)	Luminaires with remote control	The luminaire does not have remote control.	N/A
2.6 (3.3.12)	Clip-mounted luminaire – warning	The luminaire is not clip-mounted luminaire.	N/A
2.6 (3.3.13)	Specifications of protective shields	Metal case provides protection. The metal case has IK10 mechanical strength.	P
2.6 (3.3.14)	Symbol for nature of supply	Symbol for nature of supply is not given, but frequency value is given. This is sufficient for the feed symbol.	N/A
2.6 (3.3.15)	Rated current of socket outlet	The luminaire does not have socket-outlet.	N/A
2.6 (3.3.16)	Rough service luminaire	The luminaire is not rough service luminaire.	N/A
2.6 (3.3.17)	Mounting instruction for type Y, type Z and some type X attachments		P
2.6 (3.3.18)	Non-ordinary luminaires with PVC cable	The luminaire does not have supply cord.	N/A
2.6 (3.3.19)	Protective conductor current in instruction if applicable	The supply current of the luminaire is not > 20 A and a protective electric current greater than 10 mA does not create a conductor current.	N/A
2.6 (3.3.20)	Provided with information if not intended to be mounted within arm's reach		N/A
2.6 (3.3.21)	Non-replaceable and non-user replaceable light sources information provided		N/A
2.6 (3.3.22)	Controllable luminaires, classification of insulation provided	Insulation is provided with internal components. Components are certified according to relevant standards. See documentation of client.	N/A





Aydınlatma Armatürleri Güvenlik Deneyleri Gömme Armatürler

*Luminaires Safety Tests
Recessed Luminaires*

Test Laboratuvarları

2.6 (3.3.23)	Luminaire without controlgear provided with necessary information for selection of appropriate component	The luminaire is delivered with all connections made. Connection to the main grid is made only by manufacturer personnel.	N/A
2.6 (3.3.24)	If not supplied with terminal block, information on the packaging		N/A
2.6 (3.3.25)	Luminaires employing light sources emitting UV on mains wiring, information provided	The luminaire is not use employing light sources emitting UV.	N/A
2.6 (3.3.26)	Wall mounted luminaire using external flexible cable or cord longer than 0.3 m, information provided	The luminaire does not have external flexible cord or cord longer than 30 cm.	N/A
2.6 (3.4)	Test with water	Tried to remove it by rubbing lightly for 15 s with a piece of cloth soaked with water. There is a tape protection on the label.	P
	Test with hexane	It was rubbed with petroleum ether for another 15 seconds using a cloth. There is a tape protection on the label.	P
	Legible after test	After the test, the marking is legible, marking label is not easily removable and they is show no curling. There is a tape protection on the label.	P
	Label attached		P

2.7 (4)	CONSTRUCTION		P
2.7 (4.2)	Components replaceable without difficulty	Luminaires incorporating components or parts intended to be replaceable is so designed that there is sufficient space to permit replacement of such components or parts without difficulty and without impairing safety.	P
2.7 (4.3)	Wireways smooth and free from sharp edges	Wireways are smooth and free from sharp edges, burrs, flashes and the like, which might cause abrasion of the insulation of the wiring. Parts such as metal set screws are not protrude into wireways. Compliance is checked by inspection and, if necessary, by dismantling and reassembling the luminaire.	P
2.7 (4.4)	Lampholders		N/A





Aydınlatma Armatürleri Güvenlik Deneyleri

Gömme Armatürler

Luminaires Safety Tests
Recessed Luminaires

Test Laboratuvarları

2.7 (4.4.1)	Integral lampholder	The luminaire does not have lampholder.	N/A
2.7 (4.4.2)	Wiring connection		N/A
2.7 (4.4.3)	Lampholder for end-to-end mounting		N/A
2.7 (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
2.7 (4.4.5)	Peak pulse voltage		N/A
2.7 (4.4.6)	Centre contact		N/A
2.7 (4.4.7)	Parts in rough service luminaires resistant to tracking		N/A
2.7 (4.4.8)	Lamp connectors		N/A
2.7 (4.4.9)	Caps and bases correctly used		N/A
2.7 (4.4.10)	Light source for lampholder or connection according IEC 60061 not connected another way		N/A
2.7 (4.5)	Starter holders		N/A
	Starter holder in luminaires other than class II	The luminaire does not have starter.	N/A
	Starter holder class II construction		N/A
2.7 (4.6)	Terminal blocks		P
	Tails	Adequate space for this terminal block is provided within the luminaire, or within a box delivered with the luminaire, or specified by the manufacturer.	P
	Unsecured blocks	The luminaire does not have unsecured block.	N/A
2.7 (4.7)	Terminals and supply connections		N/A
2.7 (4.7.1)	Contact to metal parts	The luminaire is not a frequently adjusted class I or class II fixed luminaire or portable luminaire.	N/A
2.7 (4.7.2)	Test 8 mm live conductor		N/A
	Test 8 mm earth conductor		N/A
2.7 (4.7.3)	Terminals for supply conductors		N/A





Aydınlatma Armatürleri Güvenlik Deneyleri

Gömme Armatürler

Luminaires Safety Tests
Recessed Luminaires

Test Laboratuvarları

2.7 (4.7.3.1)	Welded method and material		N/A
	- stranded or solid conductor		N/A
	- spot welding		N/A
	- welding between wires		N/A
	- Type Z attachment		N/A
	- mechanical test according to 15.6.2		N/A
	- electrical test according to 15.6.3		N/A
	- heat test according to 15.6.3.2.3 and 15.6.3.2.4		N/A
2.7 (4.7.4)	Terminals other than supply connection		N/A
2.7 (4.7.5)	Heat-resistant wiring/sleeves		N/A
2.7 (4.7.6)	Multi-pole plug		N/A
	- test at 30 N		N/A
2.7 (4.8)	Switches		N/A
	- adequate rating	The luminaire does not have switch.	N/A
	- adequate fixing		N/A
	- polarized supply		N/A
	- compliance with IEC 61058-1 for electronic switches		N/A
2.7 (4.9)	Insulating lining and sleeves		N/A
2.7 (4.9.1)	Retainment	The luminaire does not have insulating lining or sleeve.	N/A
	Method of fixing.....:		N/A
2.7 (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
2.7 (4.10)	Double or reinforced insulation		N/A
2.7 (4.10.1)	No contact, mounting surface – accessible metal parts – wiring of basic insulation		N/A
	Safe installation fixed luminaires		N/A
	Capacitors and switches		N/A
2.7 (4.10.2)	Assembly gaps:		N/A
	- not coincidental		N/A
	- no straight access with test probe		N/A
2.7 (4.10.3)	Retainment of insulation:		N/A
	- fixed		N/A





Aydınlatma Armatürleri Güvenlik Deneyleri Gömme Armatürler

Luminaires Safety Tests
Recessed Luminaires

Test Laboratuvarları

	- unable to be replaced; luminaire inoperative		N/A
	- sleeves retained in position		N/A
	- lining in lampholder		N/A
2.7 (4.10.4)	Protective impedance device		N/A
	Basic and supplementary insulation bridged by resistor(s) or appropriate capacitor	The luminaire does not have protective impedance device.	N/A
	Double or reinforced insulation bridged by at least two separate resistors in series or appropriate capacitor(s)		N/A
	Capacitors comply with IEC 60384-14		N/A
	Resistors comply with test (a) in 14.2 of IEC 60065		N/A
2.7 (4.11)	Electrical connections and current-carrying parts		P
2.7 (4.11.1)	Contact pressure	Electrical connections are so designed that contact pressure is not transmitted through insulating material other than ceramic, pure mica or other material with characteristics which are at least equivalent, unless there is sufficient resilience in the metallic parts to compensate for any possible shrinkage of the insulating material. Compliance is checked by inspection.	P
2.7 (4.11.2)	Screws:		P
	- self-tapping screws	Screws are not used in current-carrying sections. Only terminals have screws. The screws used in the terminals comply with this standard.	P
	- thread-cutting screws		P
2.7 (4.11.3)	Screw locking:		P
	- spring washer		P
	- rivets	The luminaire does not have rivet.	N/A
2.7 (4.11.4)	Material of current-carrying parts	Current-carrying parts is of copper, an alloy containing at least 50 % copper, or a material having at least equivalent characteristics. (Current is carried only by cables.) See documentation of client.	P
2.7 (4.11.5)	No contact to wood or mounting surface	Current-carrying parts are not in direct contact with the mounting surface or wood.	P





Aydınlatma Armatürleri Güvenlik Deneyleri

Gömme Armatürler

Luminaires Safety Tests
Recessed Luminaires

Test Laboratuvarları

2.7 (4.11.6)	Electro-mechanical contact systems	The luminaire does not have electro-mechanical contact system.	N/A
2.7 (4.12)	Screws and connections (mechanical) and glands		P
2.7 (4.12.1)	Screws not made of soft metal	Screws are not made of a material which is soft or liable to creep.	P
	Screws of insulating material	The screw is not made of insulating material.	N/A
	Torque test: torque (Nm); part		P
	Torque test: torque (Nm); part		N/A
	Torque test: torque (Nm); part		N/A
2.7 (4.12.2)	Screws with diameter < 3 mm screwed into metal		N/A
2.7 (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
2.7 (4.12.5)	Screwed glands; force (Nm)	The luminaire does not have gland.	N/A
2.7 (4.13)	Mechanical strength		P
2.7 (4.13.1)	Impact tests:		P
	- fragile parts; energy (Nm)	0.2 J.	P
	- other parts; energy (Nm)	0.35 J.	P
	1) live parts		P
	2) linings		N/A
	3) protection		P
	4) covers		N/A
2.7 (4.13.2)	Metal parts have adequate mechanical strength	Metal parts enclosing live parts does have adequate mechanical strength. Compliance is checked by the appropriate tests of 4.13.3 to 4.13.5.	P





Aydınlatma Armatürleri Güvenlik Deneyleri

Gömme Armatürler

Luminaires Safety Tests
Recessed Luminaires

Test Laboratuvarları

2.7 (4.13.3)	Straight test finger	A straight unjointed test finger is used, with the same dimensions as the standard test finger specified in IEC 60529. The finger is pressed against the surface with a force of 30 N. During the test, metal parts are not touch live parts. After the test, covers are not be excessively deformed and the luminaire is continue to meet the requirements of Section 11.	P
2.7 (4.13.4)	Rough service luminaires		N/A
	- IP54 or higher	The luminaire is not rough service luminaire.	N/A
	a) fixed		N/A
	b) hand-held		N/A
	c) delivered with a stand		N/A
	d) for temporary installations and suitable for mounting on a stand		N/A
2.7 (4.13.6)	Tumbling barrel		N/A
2.7 (4.14)	Suspensions, fixings and means of adjusting		N/A
2.7 (4.14.1)	Mechanical load:		N/A
	A) four times the weight	The luminaire is installed on the ground.	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
2.7 (4.14.2)	Load to flexible cables		N/A
	Mass (kg)		—
	Stress in conductors (N/mm ²)		N/A
	Mass (kg) of semi-luminaire		N/A
	Bending moment (Nm) of semi-luminaire		N/A
2.7 (4.14.3)	Adjusting devices:		N/A
	- flexing test; number of cycles	The luminaire does not have adjusting device.	N/A
	- strands broken		N/A





Aydınlatma Armatürleri Güvenlik Deneyleri Gömme Armatürler

Luminaires Safety Tests
Recessed Luminaires

Test Laboratuvarları

	- electric strength test afterwards		N/A
2.7 (4.14.4)	Telescopic tubes: cords not fixed to tube; no strain on conductors		N/A
2.7 (4.14.5)	Guide pulleys	The luminaire does not have guide pulley.	N/A
2.7 (4.14.6)	Strain on socket-outlets	The luminaire does not have socket-outlet.	N/A
2.7 (4.15)	Flammable materials		N/A
	- glow-wire test 650°C.....:	See Test Table 2.16 (13.3.2)	N/A
	- spacing ≥ 30 mm		N/A
	- screen withstanding test of 13.3.1		N/A
	- screen dimensions		N/A
	- no fiercely burning material		N/A
	- thermal protection		N/A
	- electronic circuits exempted		N/A
2.7 (4.15.2)	Luminaires made of thermoplastic material with lamp control gear		N/A
	a) construction		N/A
	b) temperature sensing control		N/A
	c) surface temperature		N/A
2.7 (4.16)	Luminaires for mounting on normally flammable surfaces		P
	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
2.7 (4.16.1)	Lamp control gear spacing:		N/A
	- spacing 35 mm		N/A
	- spacing 10 mm		N/A
2.7 (4.16.2)	Thermal protection:		P
	- in lamp control gear	See documentation of client.	P
	- external		N/A
	- fixed position		N/A
	- temperature marked lamp control gear	110.	P
2.7 (4.16.3)	Design to satisfy the test of 12.6	(see clause 12.6)	N/A
2.7 (4.17)	Drain holes		N/A
	Clearance at least 5 mm	The luminaire does not have drain hole.	N/A
2.7 (4.18)	Resistance to corrosion		P





Aydınlatma Armatürleri Güvenlik Deneyleri Gömme Armatürler

*Luminaires Safety Tests
Recessed Luminaires*

Test Laboratuvarları

2.7 (4.18.1)	- rust-resistance	Ferrous parts luminaires, the rusting of which might cause the luminaire to become unsafe, is adequately protected against rusting. All grease was removed from the parts to be tested. The parts was then immersed for 10 min in a %10 solution of ammonium chloride in water at a temperature of 25°C. After the parts have been dried for 10 min in a heating cabinet at a temperature of 100°C±5°C, their surfaces was show no sign of rust. The test was applied only to screws, mounting metal and part of the enclosure.	P
2.7 (4.18.2)	- season cracking in copper		N/A
2.7 (4.18.3)	- corrosion of aluminium	See documantation of client.	P
2.7 (4.19)	Ignitors compatible with ballast	The luminaire does not have ignitor.	N/A
2.7 (4.20)	Rough service vibration	The luminaire is not rough service luminaire.	N/A
2.7 (4.21)	Protective shield		N/A
2.7 (4.21.1)	Shield fitted if tungsten halogen lamps or metal halide lamps		N/A
	Shield of glass if tungsten halogen lamps		N/A
2.7 (4.21.2)	Particles from a shattering lamp not impair safety		N/A
2.7 (4.21.3)	No direct path		N/A
2.7 (4.21.4)	Impact test on shield		N/A
	Glow-wire test on lamp compartment	See Test Table 2.16 (13.3.2)	N/A
2.7 (4.22)	Attachments to lamps not cause overheating or damage		N/A
2.7 (4.23)	Semi-luminaires comply Class II		N/A





Aydınlatma Armatürleri Güvenlik Deneyleri

Gömme Armatürler

Luminaires Safety Tests
Recessed Luminaires

Test Laboratuvarları

*2.7 (4.24)	Photobiological hazards		*N/A
*2.7 (4.24.1)	No excessive UV radiation if tungsten halogen lamps and metal halide lamps (Annex P)	These tests were not applied because they were not within the scope of accreditation.	*N/A
*2.7 (4.24.2)	Retinal blue light hazard		*N/A
	Class of risk group assessed according to IEC/TR 62778		—
	Luminaires with E_{thr} :		*N/A
	a) Fixed luminaires		*N/A
	- distance x m, borderline between RG1 and RG2		*N/A
	- marking and instruction according 3.2.23		*N/A
	b) Portable and handheld luminaires		*N/A
	- marking according 3.2.23 if RG1 exceeded at 200 mm according to IEC/TR 62778		*N/A
	Portable luminaires for children IEC 60598-2-10 and Mains socket outlet nightlights IEC 60598-2-12 not exceed RG1 at 200 mm according to IEC/62778		*N/A
2.7 (4.25)	Mechanical hazard		P
	No sharp point or edges	Luminaire does have no sharp points or edges that could, during installation, normal use, or maintenance, create a hazard for the user.	P
2.7 (4.26)	Short-circuit protection		N/A
2.7 (4.26.1)	Adequate means of uninsulated accessible SELV or PELV parts	The luminaire does not have uninsulated accessible SELV or PELV parts of opposite polarity.	N/A
2.7 (4.26.2)	Short-circuit test with test chain according 4.26.3		N/A
	Test chain not melt through		N/A
	Test sample not exceed values of Table 12.1 and 12.2		N/A
2.7 (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
2.7 (4.28)	Fixing of thermal sensing control		N/A

* Deney/Deneyler akreditasyon kapsamı dahilinde değildir.

* The test/tests are not within the scope of accreditation.





Aydınlatma Armatürleri Güvenlik Deneyleri

Gömme Armatürler

Luminaires Safety Tests
Recessed Luminaires

Test Laboratuvarları

	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)		—
	100 cycles between t min and t max		N/A
	Temperature sensing control still in position		N/A
2.7 (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
2.7 (4.30)	Luminaires with non-user replaceable light source		N/A
	If protective cover provide protection against electric shock and marked with “caution, electric shock risk” symbol:		N/A
	One fixing means requiring the use of a tool for its removal		N/A
2.7 (4.31)	Insulation between circuits		P
	Circuits insulated from LV supply fulfil requirements according 4.31.1 – 4.31.3		P
	Controllable luminaires requiring same level of insulation for all components, the insulation between control terminals and LV supply fulfil requirements according 4.31.1 – 4.31.3	The luminaire does not have controllable luminaire.	N/A
2.7 (4.31.1)	SELV or PELV circuits		P
	Used SELV or PELV source		P
	Voltage ≤ ELV		P
	PELV circuit shall have one pole connected to functional earth	The luminaire does not have PELV circuit.	N/A
	The connection between PELV and earth shall comply with functional earth		N/A
	Insulating of SELV or PELV circuits from LV supply		P
	Insulating of SELV or PELV circuits from other non SELV circuits		N/A
	Insulating of SELV or PELV circuits from FELV	The luminaire does not have FELV circuit.	N/A
	Insulating of SELV or PELV circuits from other SELV or PELV circuits		N/A
	SELV or PELV circuits insulated from accessible parts according Table X.1		P





Aydınlatma Armatürleri Güvenlik Deneyleri

Gömme Armatürler

*Luminaires Safety Tests
Recessed Luminaires*

Test Laboratuvarları

	Plugs not able to make any electrical contact socket-outlets of other voltage systems	The luminaire does not have plug.	N/A
	Socket outlets does not admit plugs of other voltage systems	The luminaire does not have socket-outlet.	N/A
	Plugs and socket-outlets does not have protective conductor contact		N/A
2.7 (4.31.2)	FELV circuits		N/A
	Used FELV source	The luminaire does not have FELV circuit.	N/A
	Voltage $\leq$ ELV		N/A
	Insulating of FELV circuits from LV supply		N/A
	FELV circuits insulated from accessible parts according Table X.1		N/A
	Plugs not able to make any electrical contact socket-outlets of other voltage systems		N/A
	Socket outlets does not admit plugs of other voltage systems		N/A
	Socket-outlets does not have protective conductor contact		N/A
2.7 (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
2.7 (4.32)	Overvoltage protective devices		N/A
	Comply with IEC 61643-11	The luminaire does not have overvoltage protective device.	N/A
	External to controlgear and connected to earth:		N/A
	- only in fixed luminaires		N/A
	- only connected to protective earth		N/A
2.7(4.33)	Luminaire powered via information technology communication cabling		N/A
	Luminaire shall fulfil the requirement for Class III		N/A





Aydınlatma Armatürleri Güvenlik Deneyleri

Gömme Armatürler

Luminaires Safety Tests
Recessed Luminaires

Test Laboratuvarları

	Rated voltage of luminaire shall be within range of ES1, not exceed maximum voltage rated to used connector		N/A
	The luminaire shall be designed in line with the limits of the electrical parameters of a PSE.		N/A
	No hazard with 130% rated input voltage minimum 7.5VDC for circuit greater than 5VDC		N/A
	No hazard with 150% rated input voltage for circuit equal to or less than 5VDC		N/A
2.7(4.34)	Electromagnetic field (EMF)	See the relevant test report.	N/A
	Compliance to IEC 62493:2015	See the relevant test report.	N/A
2.7(4.35)	Protection against moving fan blades	The luminaire does not have moving part.	N/A
	Fan blades not accessible when installed and wired as in normal use and replacing light sources or components		N/A
	This test is not necessary for fans have leading edges and tips rounded with a radius of not less than 0,5mm and:		N/A
	Hardness less than D60 Shore, or		N/A
	Peripheral speed less than 15m/s supplied with rated voltage, or		N/A
	Fan has input power not exceeding 2W supplied with rated voltage.		N/A
2.7(4.36)	Track-mounted luminaires	The luminaire is not track-mounted luminaire.	N/A
	Tested according to Annex A of IEC 60570		N/A

2.8 (11)	CREEPAGE DISTANCES AND CLEARANCES		P
2.8 (11.2.1)	Impulse withstand category (Normal category II)	Category II ☒ Category III ☐	—
	Category III according Annex U		N/A
	Protected against pollution, reduced creepage and clearance according Annex P of IEC 61347-1		P
2.8 (11.2.2)	Creepage distances for frequency up to 30 kHz	See Test Table 2.8 (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 2.8 (11.2) II	N/A
	- Requirements according IEC 60664-4 for controlgear not covered by IEC 61347	See Test Table 2.8 (11.2) II	N/A
2.8 (11.2.3)	Clearances for frequency up to 30 kHz	See Test Table 2.8 (11.2) I	P
	Clearances distances for frequency over 30 kHz:		N/A
	- Controlgear marked with U_P	See Test Table 2.8 (11.2) II	N/A





Aydınlatma Armatürleri Güvenlik Deneyleri

Gömme Armatürler

*Luminaires Safety Tests
Recessed Luminaires*

Test Laboratuvarları

	- Requirements according IEC 60664-4 for controlgear not covered by IEC 61347	See Test Table 2.8 (11.2) II	N/A
--	---	------------------------------	-----

2.9 (7)	PROVISION FOR EARTHING		P
2.9 (7.2.1 + 7.2.3)	Accessible metal parts		P
	Metal parts in contact with supporting surface		P
	Resistance < 0,5 Ω		P
	Self-tapping screws used		N/A
	Thread-forming screws		N/A
	Thread-forming screw used in a grove		N/A
	Earth makes contact first		P
	Terminal blocks with integrated screwless earthing contacts tested according Annex V	No such part.	N/A
	Protective earthing of the luminaire not via built-in control gear		P
2.9 (7.2.2 + 7.2.3)	Earth continuity in joints, etc.		P
2.9 (7.2.4)	Locking of clamping means		P
	Compliance with 4.7.3		P
	Terminal blocks with integrated screwless earthing contacts tested according Annex V		P
2.9 (7.2.5)	Earth terminal integral part of connector socket	The connector used is certified. See documentation of client.	P
2.9 (7.2.6)	Earth terminal adjacent to mains terminals		P
2.9 (7.2.7)	Electrolytic corrosion of the earth terminal	Checked by the test in clause 4.18.	P
2.9 (7.2.8)	Material of earth terminal		P
	Contact surface bare metal		P
2.9 (7.2.10)	Class II luminaire for looping-in	The luminaire is not Class II luminaire.	N/A
	Double or reinforced insulation to functional earth		N/A
2.9 (7.2.11)	Earthing core coloured green-yellow		P
	Length of earth conductor		P
2.9 (7.2.12)	PELV circuit connected to protective earth for functional purpose	The luminaire does not have PELV circuit.	N/A





Aydınlatma Armatürleri Güvenlik Deneyleri

Gömme Armatürler

Luminaires Safety Tests
Recessed Luminaires

Test Laboratuvarları

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

2.10 (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

2.11 (5)	EXTERNAL AND INTERNAL WIRING		P
2.11 (5.2)	Supply connection and external wiring		P
2.11 (5.2.1)	Means of connection	Screw terminal.	P
	Outdoor luminaire has not PVC insulated external wiring if not class III or SELV ≤ 25 V a.c./60 V d.c./25V peak interrupted DC voltage with frequency between 10Hz and 200Hz or protected from outdoor environment		P
2.11 (5.2.2)	Type of cable	Supply cord is not provided.	N/A
	Nominal cross-sectional area (mm ²).....		N/A
	Cables equal to IEC 60227 or IEC 60245		N/A
2.11 (5.2.3)	Type of attachment, X, Y or Z		N/A
2.11 (5.2.5)	Type Z not connected to screws		N/A
2.11 (5.2.6)	Cable entries:		P
	- suitable for introduction		P
	- adequate degree of protection		P
2.11 (5.2.7)	Cable entries through rigid material have rounded edges	The luminaire does not have rigid material.	P
2.11 (5.2.8)	Insulating bushings:		N/A
	- suitably fixed	The luminaire does not have rigid material.	N/A
	- material in bushings		N/A
	- material not likely to deteriorate		N/A
	- tubes or guards made of insulating material		N/A
2.11 (5.2.9)	Locking of screwed bushings		N/A
2.11 (5.2.10)	Cord anchorage:		N/A
	- covering protected from abrasion	The luminaire does not have cord anchorage.	N/A
	- clear how to be effective		N/A
	- no mechanical or thermal stress		N/A





Aydınlatma Armatürleri Güvenlik Deneyleri

Gömme Armatürler

*Luminaires Safety Tests
Recessed Luminaires*

Test Laboratuvarları

	- no tying of cables into knots etc.		N/A
	- insulating material or lining		N/A
2.11 (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
2.11 (5.2.10.2)	Adequate cord anchorage for type Y and type Z attachment		N/A
2.11 (5.2.10.3)	Tests:		N/A
	- impossible to push cable; unsafe		N/A
	- pull test: 25 times; pull (N)		N/A
	- torque test: torque (Nm)		N/A
	- displacement ≤ 2 mm		N/A
	- no movement of conductors		N/A
	- no damage of cable or cord		N/A
	- function independent of electrical connection		N/A
2.11 (5.2.10.4)	Exemption from cord anchorage test in 5.2.10.3 if maximum current 2A, including short circuit current.	The luminaire is Class I luminaire.	N/A
	Prior to the operation of an overcurrent limiting device and the following conditions and test requirements are met		N/A
	Ordinary SELV Class III luminaire at voltage not exceeding 25Vrms or 60VDC		N/A
	Ordinary PELV Class III luminaire at voltage not exceeding 12Vrms or 30VDC		N/A
	Other than ordinary Class III luminaire at voltage not exceeding 12Vrms or 30VDC		N/A
	Pull test 30N for 1min		N/A
2.11 (5.2.11)	External wiring passing into luminaire		N/A
2.11 (5.2.12)	Looping-in terminals		N/A





Aydınlatma Armatürleri Güvenlik Deneyleri

Gömme Armatürler

Luminaires Safety Tests
Recessed Luminaires

Test Laboratuvarları

2.11 (5.2.13)	Wire ends not tinned		N/A
	Wire ends tinned: no cold flow		P
2.11 (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)	The luminaire is Class I luminaire.	N/A
2.11 (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, additional requirements apply:		N/A
	a) Polarization		N/A
	b) Protection against electric shock		N/A
	c) Mechanical locking		N/A
	d) Early contact making		N/A
	e) Protection against short circuit poles		N/A
	f) Cable Clamp		N/A
2.11 (5.2.17)	No standardized interconnecting cables properly assembled		N/A
2.11 (5.2.18)	Used plug in accordance with		N/A
	- IEC 60083	The luminaire does not have plug.	N/A
	- other standard		N/A
2.11 (5.3)	Internal wiring		P
2.11 (5.3.1)	Internal wiring of suitable size and type	Size: 0.75mm ² . Type: H05RR-F.	P
	Through wiring		P
	- not delivered/ mounting instruction		P
	- factory assembled		P
	- socket outlet loaded (A)	The luminaire does not have socket-outlet.	N/A
	- temperatures	(see Annex 2)	P
	Green-yellow for earth only		P
2.11 (5.3.1.1)	Internal wiring connected directly to fixed wiring		P
	Cross-sectional area (mm ²)	0.75mm ² .	P





Aydınlatma Armatürleri Güvenlik Deneyleri Gömme Armatürler

Luminaires Safety Tests
Recessed Luminaires

Test Laboratuvarları

	Insulation thickness (mm)	Cable does have certificate. See documentantation of client.	N/A
	Extra insulation added where necessary		N/A
2.11 (5.3.1.2)	Internal wiring connected to fixed wiring via internal current-limiting device		N/A
	Cross-sectional area (mm ²)	The luminaire does not have current-limiting device.	N/A
2.11 (5.3.1.3)	Double or reinforced insulation for class II	The luminaire is Class I luminaire.	N/A
2.11 (5.3.1.4)	Conductors without insulation	No such part.	N/A
2.11 (5.3.1.5)	SELV current-carrying parts		N/A
2.11 (5.3.1.6)	Insulation thickness other than PVC or rubber		N/A
2.11 (5.3.2)	Sharp edges etc.		P
	No moving parts of switches etc.	The luminaire does not have switch.	N/A
	Joints, raising/lowering devices		N/A
	Telescopic tubes etc.		N/A
	No twisting over 360°		P
2.11 (5.3.3)	Insulating bushings:		N/A
	- suitable fixed	The luminaire does not have insulating bushing.	N/A
	- material in bushings		N/A
	- material not likely to deteriorate		N/A
	- cables with protective sheath		N/A
2.11 (5.3.4)	Joints and junctions effectively insulated		N/A
2.11 (5.3.5)	Strain on internal wiring	Internal wiring does not protrude outside the enclosure.	N/A
2.11 (5.3.6)	Wire carriers		N/A
2.11 (5.3.7)	Wire ends not tinned		N/A
	Wire ends tinned: no cold flow		P
2.11 (5.4)	Test to determine suitability of conductors having a reduced cross-sectional area		N/A
	Under test the temperature of the luminaire wiring insulation not exceed the limits stated in Table 12.2	(see Annex 2)	N/A
	No damage to luminaire wiring after test		N/A





Aydınlatma Armatürleri Güvenlik Deneyleri

Gömme Armatürler

*Luminaires Safety Tests
Recessed Luminaires*

Test Laboratuvarları

2.12 (8)	PROTECTION AGAINST ELECTRIC SHOCK		P
2.12 (8.2.1)	Live parts not accessible		P
	Basic insulated parts not used on the outer surface without appropriate protection		P
	Basic insulated parts not accessible with standard test finger on portable, settable and adjustable luminaires	The luminaire is fixed luminaire.	N/A
	Basic insulated parts not accessible with Ø 50 mm probe from outside, other types of luminaires		P
	Lamp and starterholders in portable and adjustable luminaires comply with double or reinforced insulation requirements	The luminaire does not have starterholder.	N/A
	Basic insulation only accessible under lamp or starter replacement		N/A
	Protection in any position		P
	Double-ended tungsten filament lamp	The luminaire does not have 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
2.12 (8.2.2)	Portable luminaire adjusted in most unfavourable position	The luminaire is fixed luminaire.	N/A
2.12 (8.2.3.a)	Class II luminaire:		N/A
	- basic insulated metal parts not accessible during starter or lamp replacement	The luminaire is Class I luminaire.	N/A
	- basic insulation not accessible other than during starter or lamp replacement		N/A
	- glass protective shields not used as supplementary insulation		N/A
2.12 (8.2.3.b)	BC lampholder of metal in class I luminaires shall be earthed	The luminaire does not have BC lampholder.	N/A
2.12 (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 (V)		N/A
	- touch current if applicable (mA)		N/A
	One conductive part insulated if required		N/A
	Other than ordinary luminaire:		N/A
	- nominal voltage (V)		N/A
	Class III luminaire only for connection to SELV		N/A





Aydınlatma Armatürleri Güvenlik Deneyleri

Gömme Armatürler

*Luminaires Safety Tests
Recessed Luminaires*

Test Laboratuvarları

	Class III luminaire not provided with means for protective earthing		N/A
2.12 (8.2.3.d)	PELV circuit may have exposed current carrying parts under the following conditions:		N/A
	For ordinary luminaires voltage not exceed 12 VRMS or 30VDC (under load and no load)		N/A
	For other than ordinary, voltage nor exceed 12 VRMS or 30VDC (under load and no load)		N/A
	If voltage exceed, only the earthed pole may be accessible, other pole shall be insulated accordance with 10.2.2		N/A
	Class III luminaires are accepted by connection to SELV source or PELV source		N/A
2.12 (8.2.4)	Portable luminaire has protection independent of supporting surface		N/A
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)	Luminaire other than below with capacitor > 0,5 μ F not exceed 50 V 1 min after disconnection		N/A
	Portable luminaire with capacitor > 0,1 μ F (0.25) not exceed 34 V 1 s after disconnection		N/A
	Other luminaires with capacitor > 0,1 μ F (0.25) with plug and track adaptors not exceed 60 V 5 s after disconnection		N/A
2.12 (-)	Parts within the ceiling space provide same degree of protection against electric shock as parts below the ceiling space		N/A

2.13 (12)	ENDURANCE TEST AND THERMAL TEST		P
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 2.14		—
2.13 (12.2)	Selection of lamps and ballasts		—
	Lamp used according Annex B	(Lamp used see Annex 2)	—
	Controlgear if separate and not supplied	(Controlgear used see Annex 2)	—
2.13 (12.3)	Endurance test		P
	a) mounting-position	Normal use.	—
	b) test temperature (°C)	35 °C.	—
	c) total duration (h)	240 h.	—
	d) supply voltage (V)	264 V.	—
	d) if not equipped with controlgear, constant voltage/current (V) or (A)	-	—
	e) luminaire ceases to operate		—





Aydınlatma Armatürleri Güvenlik Deneyleri

Gömme Armatürler

Luminaires Safety Tests
Recessed Luminaires

Test Laboratuvarları

2.13 (12.3.2)	After endurance test:		P
	- no part unserviceable		P
	- luminaire not unsafe		P
	- no damage to track system	The luminaire does not have track system.	N/A
	- 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)	N/A
2.13 (12.6)	Thermal test (failed lamp control gear condition):		N/A
2.13 (12.6.1)	Through wiring or looping-in wiring loaded by a current of (A)		—
	- case of abnormal conditions		—
	- electronic lamp control gear		N/A
	- measured winding temperature (°C): at 1,1 Un		—
	- measured mounting surface temperature (°C) at 1,1 Un		N/A
	- calculated mounting surface temperature (°C)		N/A
	- track-mounted luminaires		N/A
2.13 (12.6.2)	Temperature sensing control		N/A
	- case of abnormal conditions		—
	- thermal link		N/A
	- manual reset cut-out		N/A
	- auto reset cut-out		N/A
	- measured mounting surface temperature (°C)		N/A
	- track-mounted luminaires		N/A
2.13 (12.7)	Thermal test (failed lamp control gear in plastic luminaires):		N/A
2.13 (12.7.1)	Luminaire without temperature sensing control		N/A
2.13 (12.7.1.1)	Luminaire with fluorescent lamp ≤ 70W		N/A
	Test method 12.7.1.1 or Annex W		—
	Test according to 12.7.1.1:		N/A
	- case of abnormal conditions		—
	- Ballast failure at supply voltage (V)		—
	- Components retained in place after the test		N/A





Aydınlatma Armatürleri Güvenlik Deneyleri

Gömme Armatürler

Luminaires Safety Tests
Recessed Luminaires

Test Laboratuvarları

	- 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	See Test Table 2.16 (13.2.1)	N/A
2.13 (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	See Test Table 2.16 (13.2.1)	N/A
2.13 (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
2.13 (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:	See Test Table 2.16 (13.2.1)	N/A
2.13.1 (-)	Wiring, for connection to the supply, not reach unsafe temperature		P
	- measured temperature of the cable (°C)		P





Aydınlatma Armatürleri Güvenlik Deneyleri

Gömme Armatürler

Luminaires Safety Tests
Recessed Luminaires

Test Laboratuvarları

2.14 (9)	RESISTANCE TO DUST AND MOISTURE		P
2.14 (-)	If IP > IP 20 the order of tests as specified in clause 2.13		P
2.14 (9.2)	Tests for ingress of dust, solid objects and moisture:		P
	- classification according to IP	IP 67.	—
	- mounting position during test	Normal use.	—
	- fixing screws tightened; torque (Nm)		—
	- tests according to clauses	Clause 9.2.2 and 9.2.8.	—
	- electric strength test afterwards	500 V, 1480 V and 2960 V.	P
	a) no deposit in dust-proof luminaire		N/A
	b) no talcum in dust-tight luminaire	IP6X.	P
	c) no trace of water on current-carrying parts or on insulation where it could become a hazard		P
	c.1) For luminaires without drain holes – no water entry	The luminaire does not have drain hole.	N/A
	c.2) For luminaires with drain holes – no hazardous water entry		N/A
	d) no water in watertight or pressure watertight luminaire or high pressure and temperature water jet-proof luminaire or high pressure and cold water jet-proof luminaire		P
	e) no contact with live parts (IP 2X)	IP6X.	N/A
	e) no entry into enclosure (IP 3X and IP 4X)	IP6X.	N/A
	e) no contact with live parts through drain holes and ventilation slots (IP3X and IP4X)	IP6X.	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		P
2.14 (9.3)	Humidity test 48 h	%93 Rh, 25°C.	P

2.15 (10)	INSULATION RESISTANCE AND ELECTRIC STRENGTH		P
2.15 (10.2.1)	Insulation resistance test	The insulation resistance is measured with a DC voltage of approximately 500V and 100V, 1 min after the application of the voltage.	P
	Cable or cord covered by metal foil or replaced by a metal rod of mm Ø		—
	Insulation resistance (MΩ)		—
	SELV/PELV		P
	- between current-carrying parts of different polarity :		N/A





Aydınlatma Armatürleri Güvenlik Deneyleri

Gömme Armatürler

*Luminaires Safety Tests
Recessed Luminaires*

Test Laboratuvarları

	- between current-carrying parts and mounting surface		P
	- between current-carrying parts and metal parts of the luminaire		P
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts		N/A
	- Insulation bushings as described in Section 5	The luminaire does not have insulating bushing.	N/A
	Other than SELV/PELV		P
	- between live parts of different polarity		N/A
	- between live parts and mounting surface		P
	- between live parts and metal parts		P
	- between live parts of different polarity through action of a switch		N/A
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts		N/A
	- Insulation bushings as described in Section 5	The luminaire does not have insulating bushing.	N/A
2.15 (10.2.2)	Electric strength test		P
	Dummy lamp	The luminaire does not have dummy lamp.	N/A
	Luminaires with ignitors after 24 h test	The luminaire does not have ignitor.	N/A
	Luminaires with manual ignitors		N/A
	Test voltage (V)	500V, 1480V, 2960V.	P
	SELV/PELV		P
	- between current-carrying parts of different polarity :		N/A
	- between current-carrying parts and mounting surface	500V applied.	P
	- between current-carrying parts and metal parts of the luminaire	500V applied.	P
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts		N/A
	- Insulation bushings as described in Section 5	The luminaire does not have insulating bushing.	N/A
	Other than SELV/PELV		P
	- between live parts of different polarity		N/A
	- between live parts and mounting surface	1480V applied.	P
	- between live parts and metal parts	1480V applied.	P





Aydınlatma Armatürleri Güvenlik Deneyleri

Gömme Armatürler

Luminaires Safety Tests
Recessed Luminaires

Test Laboratuvarları

	- 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	The luminaire does not have insulating bushing.	N/A
2.15 (10.3)	Touch current or protective conductor current (mA):		P

2.16 (13)	RESISTANCE TO HEAT, FIRE AND TRACKING		N/A
2.16 (13.2.1)	Ball-pressure test.....:	See Test Table 2.16 (13.2.1) The terminal is certified. The manufacturer confirms its suitability. See documentation of client	N/A
2.16 (13.3.1)	Needle-flame test (10 s).....:	See Test Table 2.16 (13.3.1) The terminal is certified. The manufacturer confirms its suitability. See documentation of client	N/A
2.16 (13.3.2)	Glow-wire test (650°C)	See Test Table 2.16 (13.3.2) The terminal is certified. The manufacturer confirms its suitability. See documentation of client	N/A
2.16 (13.4)	Proof tracking test (IEC 60112).....:	See Test Table 2.16 (13.4) The terminal is certified. The manufacturer confirms its suitability. See documentation of client	N/A





Aydınlatma Armatürleri Güvenlik Deneyleri

Gömme Armatürler

Luminaires Safety Tests
Recessed Luminaires

Test Laboratuvarları

2.8 (11.2)	TABLE I: Creepage distances and clearances						N/A
	Minimum distances (mm) for a.c. up to 30 kHz sinusoidal voltages						N/A
	Applicable part of IEC 60598-1 Table 11.1.A*, 11.1.B* and 11.2*						N/A
	Insulation type **	Measured clearance	Required		Measured creepage	Required	
			clearance	*Table		creepage	*Table
Distance 1:							
Working voltage (V)							—
PTI.....					< 600 ☐	≥ 600 ☐	—
Pulse voltage or U_P if applicable (kV)					-		—
Supplementary information: The terminal and driver is certified. The manufacturer confirms its suitability. See documentation of client							
Distance 2:							
Working voltage (V)							—
PTI.....					< 600 ☐	≥ 600 ☐	—
Pulse voltage or U_P if applicable (kV)							—
Supplementary information:							
Distance 3:							
Working voltage (V)							—
PTI.....					< 600 ☐	≥ 600 ☐	—
Pulse voltage or U_P if applicable (kV)							—
Supplementary information:							

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





Aydınlatma Armatürleri Güvenlik Deneyleri
Gömme Armatürler
Luminaires Safety Tests
Recessed Luminaires

Test Laboratuvarları

2.8 (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.

2.16 (13.2.1)	TABLE: Ball Pressure Test of Thermoplastics						N/A
Allowed impression diameter (mm)					2		—
Object/ Part No./ Material		Manufacturer/ trademark	Test temperature (°C)		Impression diameter (mm)		
Supplementary information: The terminal is certified. The manufacturer confirms its suitability. See documentation of client.							





Aydınlatma Armatürleri Güvenlik Deneyleri

Gömme Armatürler

Luminaires Safety Tests
Recessed Luminaires

Test Laboratuvarları

2.16 (13.3.1)	TABLE: Needle-flame test (IEC 60695-11-5)					N/A
Object/ Part No./ Material	Manufacturer/ trademark	Duration of application of test flame (ta); (s)	Ignition of specified layer Yes/No	Duration of burning (tb) (s)	Verdict	
Supplementary information: The terminal is certified. The manufacturer confirms its suitability. See documentation of client						

2.16 (13.3.2)	TABLE: Glow-wire test (IEC 60695-2-11)					N/A
Glow wire temperature		650°C				—
Object/ Part No./ Material	Manufacturer/ trademark	Ignition of specified layer Yes/No	Duration of burning (tb) (s)	Verdict		
Supplementary information: The terminal is certified. The manufacturer confirms its suitability. See documentation of client						

2.16 (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: The terminal is certified. The manufacturer confirms its suitability. See documentation of client						





Aydınlatma Armatürleri Güvenlik Deneyleri

Gömme Armatürler

Luminaires Safety Tests
Recessed Luminaires

Test Laboratuvarları

ANNEX 1		TABLE: Critical components information					P
Object / part No.	Code	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity ¹⁾	
LED Driver	C	EAGLERISE	LS-6-500 SI	PRI : 220 – 240V _{AC} , 50/60Hz, 0.11A _{max} , SEC: 2.8 – 12V _{DC} , 500mA, 23V _{DCmax} , P _{RATED} : 6W _{max}	EN 61347-1, EN 61347-2-13; EN 62384	Declared	
Description:		See details for documantation.					
Connector	C	TECHNO	THR.390.S3D	IP68, max 32A, max 450V _{AC} , 85°C, PTI 250.	UL94, EN 60998-1:2004	Declared	
Terminal	C	ONKA	5010	0.75mm ² – 1.5 mm ² , max 17.5A, max 400V	EN 60998-2-1	Declared	
Cable	C	ÜNTEL	H05RR-F	3x0.75mm ²	EN 50525-2-21, EN 60245-4	Declared	
Description:		See details for documantation.					
Supplementary information:							
1) Provided evidence ensures the agreed level of compliance. See OD-CB2039.							
The codes above have the following meaning:							
A - The component is replaceable with another one, also certified, with equivalent characteristics							
B - The component is replaceable if authorised by the test house							
C - Integrated component tested together with the appliance							
D - Alternative component							





Aydınlatma Armatürleri Güvenlik Deneyleri
Gömme Armatürler
Luminaires Safety Tests
Recessed Luminaires

Test Laboratuvarları

ANNEX 2	TABLE: Thermal tests of Section 12			P			
	Type reference	iServo AC 8038 Double Sided.	—				
	Lamp used	LED (L90B50)	—				
	Lamp control gear used	LS-6-500 SI	—				
	Mounting position of luminaire	Normal use.	—				
	Supply wattage (W)	6	—				
	Supply current (A)	0.5	—				
	Temperatures in test 1 - 4 below are corrected for ta (°C)		—				
	- abnormal operating mode		—				
1.12 (12.4)	- test 1: rated voltage	220 – 240	—				
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current	255	—				
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage		—				
	Through wiring or looping-in wiring loaded by a current of A during the test		—				
1.12 (12.5)	- test 4: 1,1 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current		—				
Temperature measurements (°C)							
Part	Ambient	Cl. 12.4 – normal				Cl. 12.5 – abnormal	
		test 1	test 2	test 3	limit	test 4	limit
LED Driver	25	62.0 – 61.5	61.5	-	85	-	-
LED Cooling	25	64.6 – 64.6	64.9	-	Information	-	-
Internal Cable	25	52.0 – 52.0	52.5	-	85	-	-
Mounting Surface	25	31.7 – 31.9	31.7	-	90	-	-
Enclosure	25	29.9 – 30.3	29.9	-	90	-	-
Supplementary information:							





Aydınlatma Armatürleri Güvenlik Deneyleri

Gömme Armatürler

Luminaires Safety Tests
Recessed Luminaires

Test Laboratuvarları

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

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





Aydınlatma Armatürleri Güvenlik Deneyleri

Gömme Armatürler

Luminaires Safety Tests
Recessed Luminaires

Test Laboratuvarları

(15.3.6)	Clear connection method		N/A
(15.3.7)	Clamping independently		N/A
(15.3.8)	Fixed in position		N/A
(15.3.10)	Conductor size		N/A
	Type of conductor		N/A
(15.5)	Terminals and connections for internal wiring		N/A
(15.5.1)	Mechanical tests		N/A
(15.5.1.1.1)	Pull test spring-type terminals (4 N, 4 samples)		N/A
(15.5.1.1.2)	Pull test pin or tab terminals (4 N, 4 samples)		N/A
	Insertion force not exceeding 50 N		N/A
(15.5.1.2)	Permanent connections: pull-off test (20 N)		N/A
(15.5.2)	Electrical tests		N/A
	Voltage drop (mV) after 1 h (4 samples)		N/A
	Voltage drop of two inseparable joints		N/A
	Number of cycles:		—
	Voltage drop (mV) after 10th alt. 25th cycle (4 samples)		N/A
	Voltage drop (mV) after 50th alt. 100th cycle (4 samples)		N/A
	After ageing, voltage drop (mV) after 10th alt. 25th cycle (4 samples)		N/A
	After ageing, voltage drop (mV) after 50th alt. 100th cycle (4 samples)		N/A
(15.6)	Terminals and connections for external wiring		N/A
(15.6.1)	Conductors		N/A
	Terminal size and rating		N/A
15.6.2	Mechanical tests		N/A
(15.6.2.1)	Pull test spring-type terminals or welded connections (4 samples); pull (N)		N/A
(15.6.2.2)	Pull test pin or tab terminals (4 samples); pull (N)		N/A
(15.6.3)	Electrical tests		N/A
	Tests according 15.6.3.1 + 15.6.3.2 in IEC 60598-1		N/A





Aydınlatma Armatürleri Güvenlik Deneyleri

Gömme Armatürler

Luminaires Safety Tests
Recessed Luminaires

Test Laboratuvarları

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





Aydınlatma Armatürleri Güvenlik Deneyleri

Gömme Armatürler

Luminaires Safety Tests
Recessed Luminaires

Test Laboratuvarları

10. Deney ve Ölçüm Bilgileri:

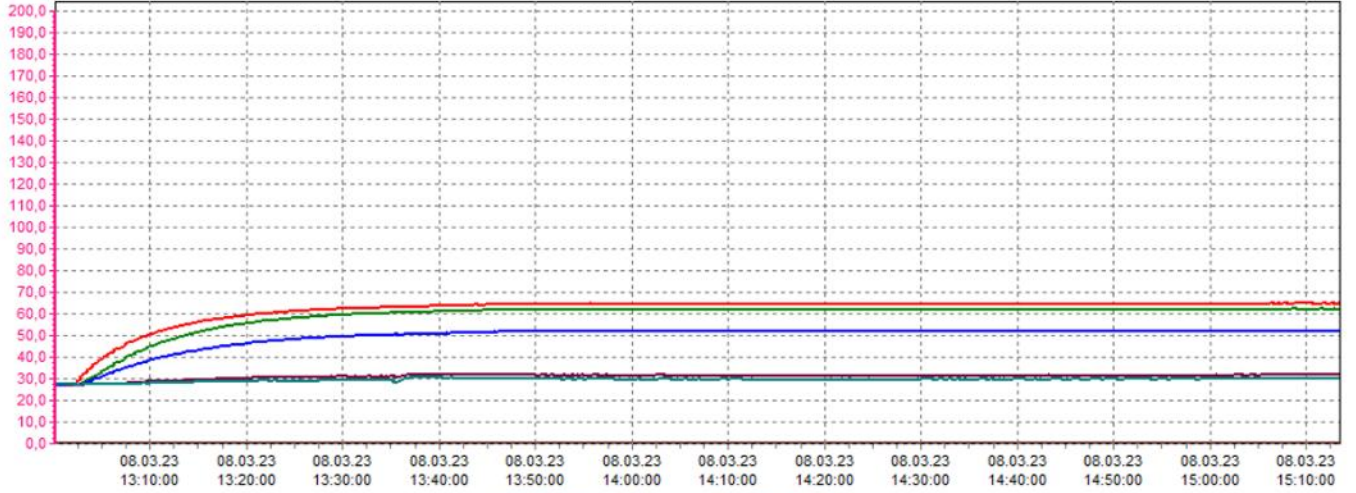
Test and Measuring Arrangement

Cihaz Device	İmalatçı Manufacturer	Seri No. / Kod Serial No / Code	Sertifika No Certificate No	Kalibrasyon Tarihi Calibration Date
Humidity Temperature Meter	CEM	LC349	S2200681	May/2023
Temperature Rise Data Logger	ELİMKO	LC5	109101	May/2023
Portable Variac	VARSAN	LC380	63411	April/2023
Digital Caliper	ACCUD	LC365	6212	January/2023
Torque Meter	BMS TORQUE SOLUTIONS	LC316	2153322	December/2024
Humidity Cabinet	NÜKLEON	LC215	22/1479	June/2023
Dielectric Test Equipment	REK	LC482	2202495	May/2023
Earth Contunity	REK	LC481	2202496	June/2023
Osilloscope	RIGOL	LC30	22015	March/2023
Touch Current Simulator	CSK	LC88	146402	October/2023
Insulation resistance tests	WUHAN	LC475	2201008	February/2023
Test Finger	-	LC205	20KD2313	July/2023
Newtonmeter	NK-500	LC204	2256986	November/2023
Multimeter	FLUKE	LC1	E2207722	October/2023
Digital Scales	TEM STAR	LC480	141101	June/2023
Test Finger	-	LC205	20KD2313	July/2023
Portable Variac	DHUMA	LC484	-	-
Perforated Metal Housing	LVT	LC393	-	-
Etuv	MEGATHERM	LC100	156801	July/2023
Harmonic & Flicker Tester	TTI	LC96	E2203396	April/2023
Spring Hammer (0,35J)	-	LC219	63402	April/2023
Spring Hammer (0,2J)	-	LC219	63405	April/2023

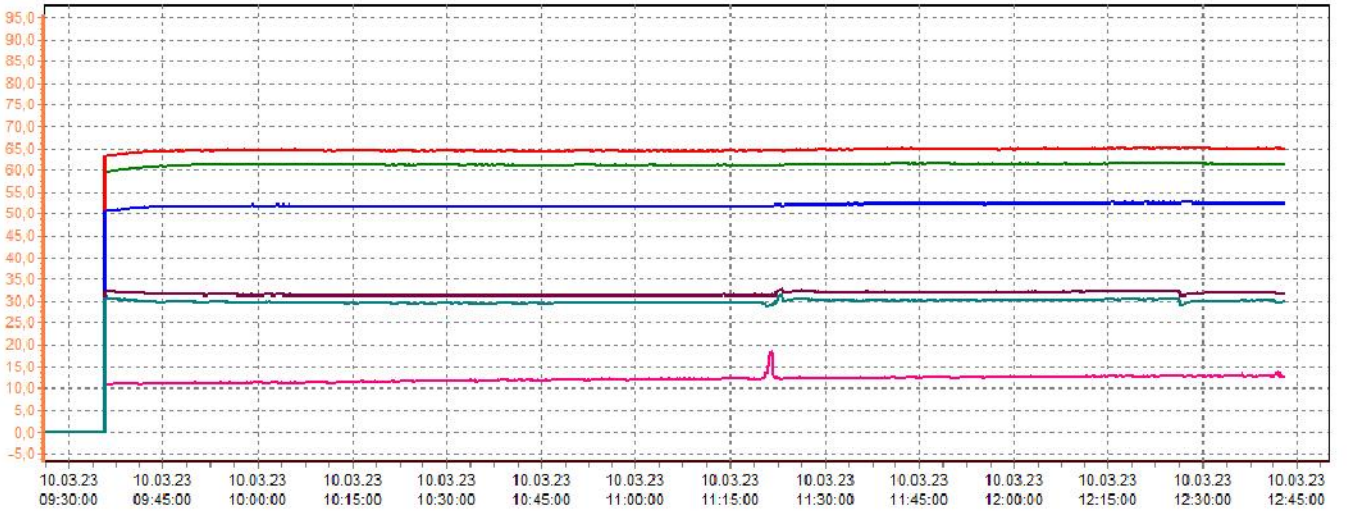


11. Deney Osilogramları:

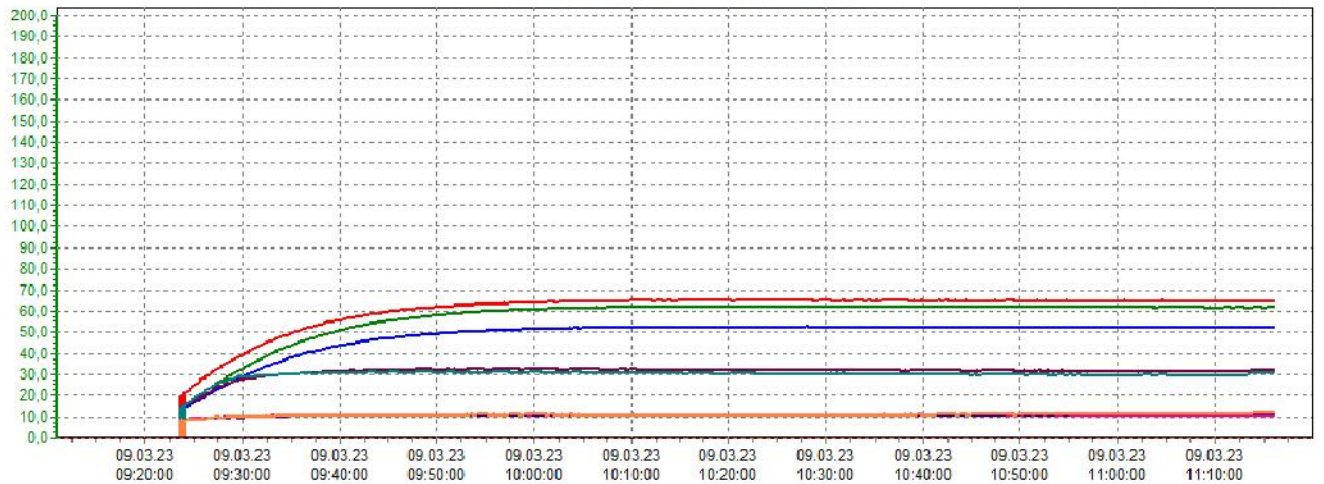
Test Oscillograms



220V 50 Hz Temperature Rise Test



240V 50 Hz Temperature Rise Test



255V 50 Hz Temperature Rise Test

12. Deney Fotoğrafları:

Test Photographs



Photograph 1: General View



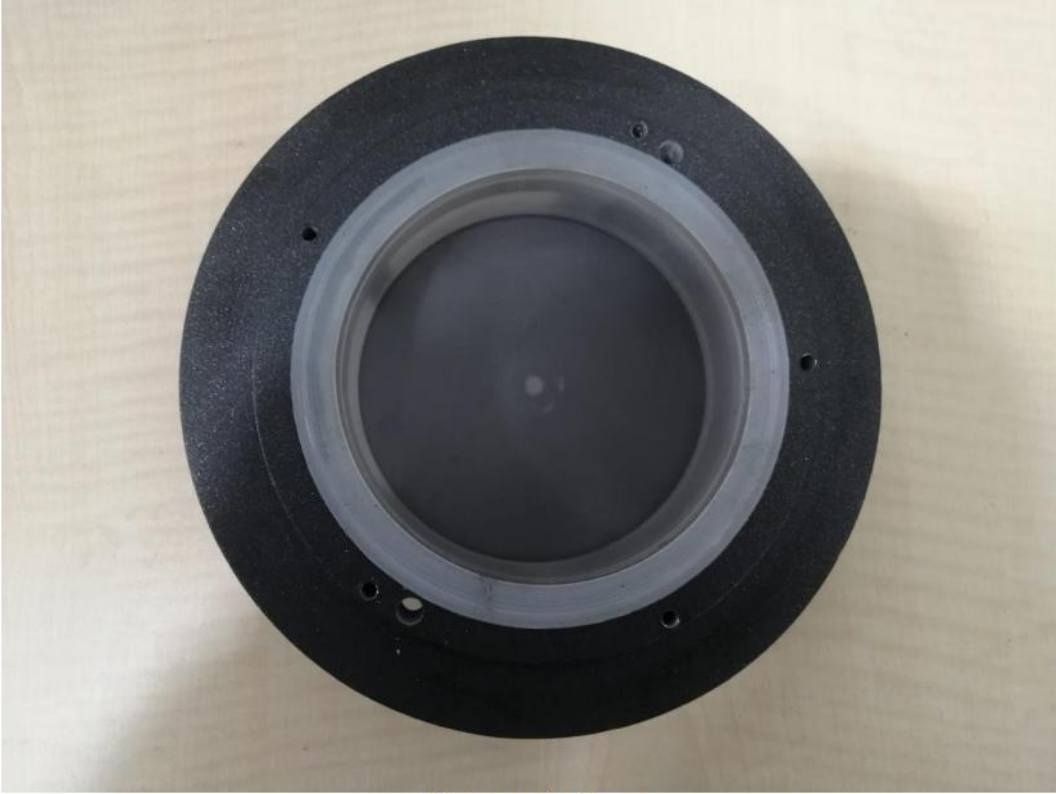
Photograph 2: Under View



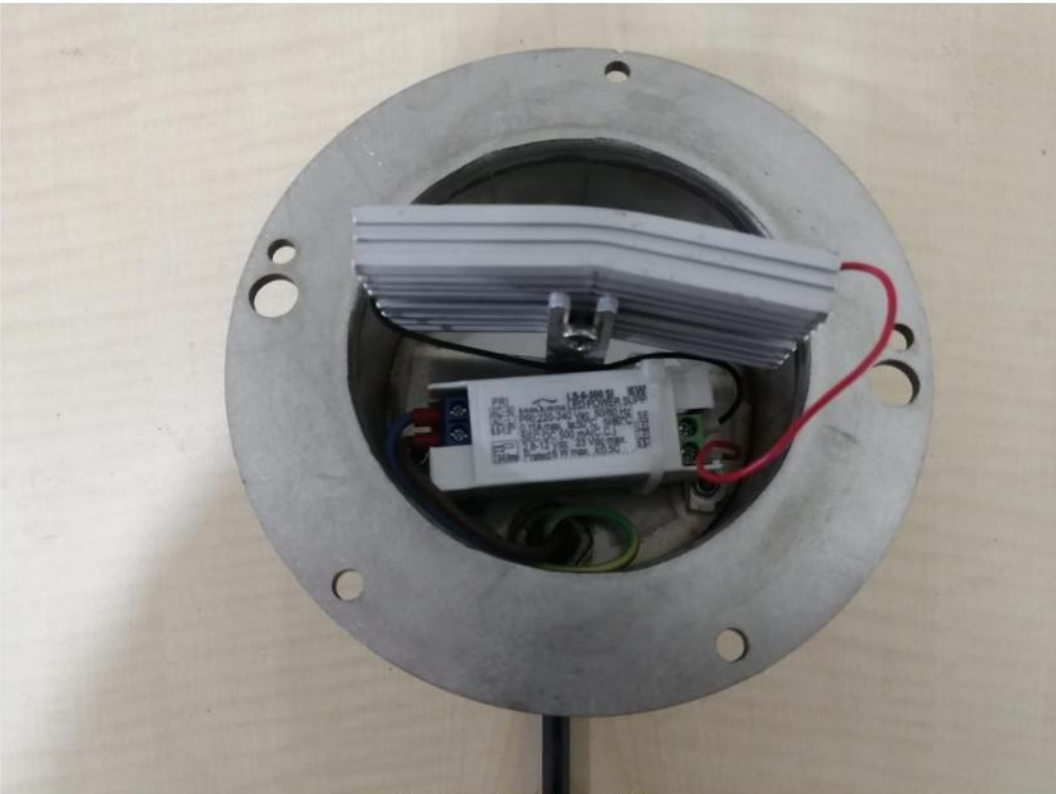
Photograph 3: Top of View (No Enclosure)



Photograph 4: Under View (No Enclosure)



Photograph 5: Cover



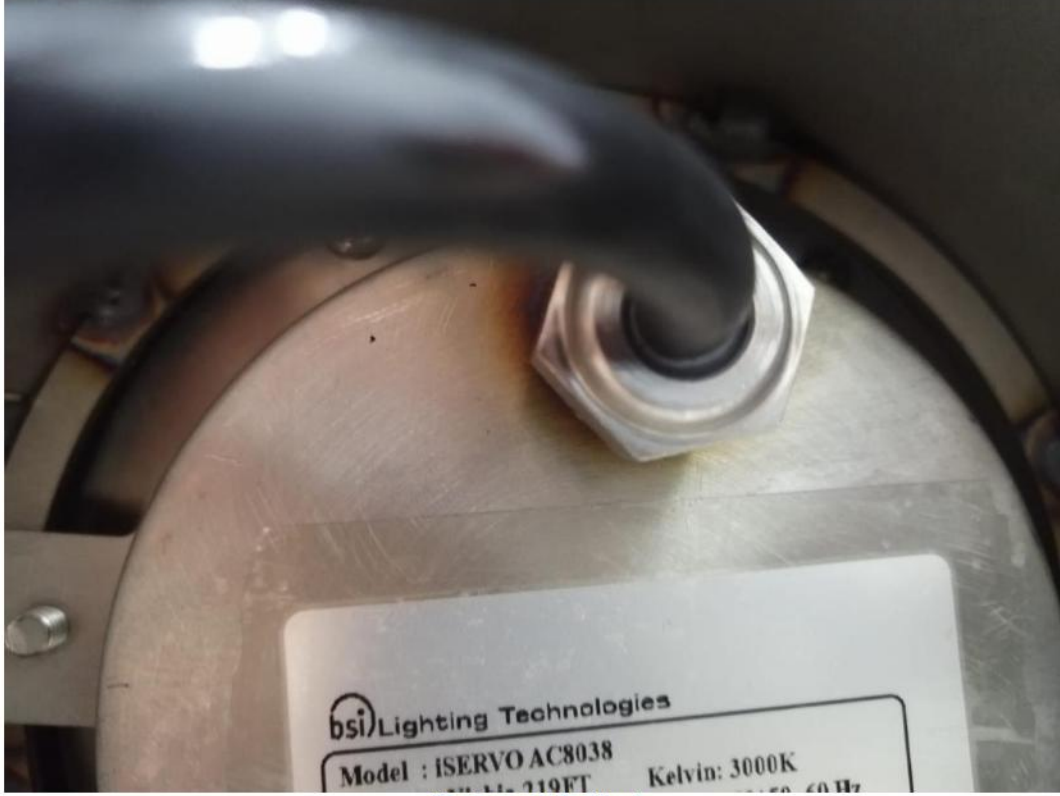
Photograph 6: Internal View



Photograph 7: LED Driver



Photograph 8: LED



Photograph 9: Gland



Photograph 10: Terminal

13. Firma Dokümanları:

Documentation of Client



iSERVO INSTALLATION GUIDE



PRODUCT FEATURES:

Ground recessed round LED luminaire for installation outdoor for walk over and drive over with high mechanical strength.
Ideal to illuminate walking paths, squares or driveways.
Designed to last in extremely harsh environments.

RECOMMENDATIONS FOR THE USER:

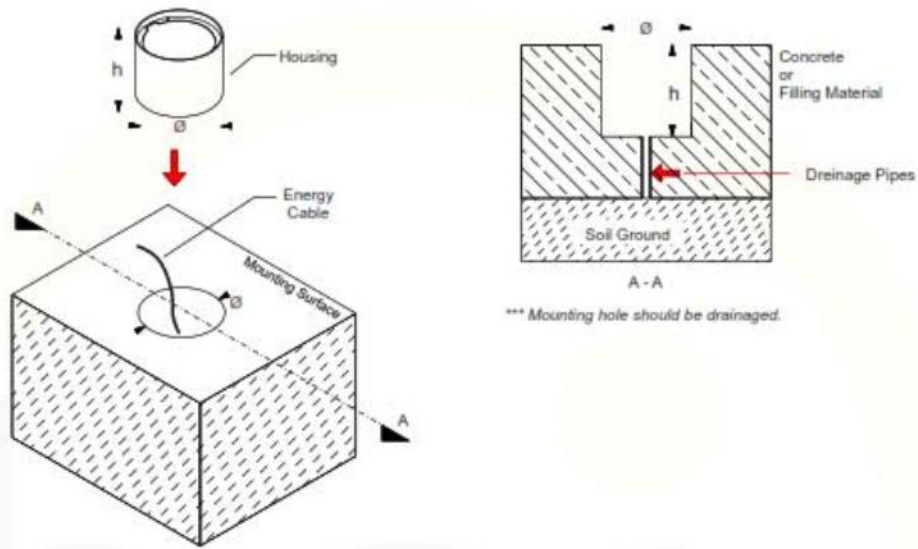
- 1) Before the installation, make sure that there is no voltage.
- 2) Do not touch the fitting when it is working on / switched on
- 3) Do not look at the fitting directly or from a short distance.
- 4) Disconnect / switch off the fitting before changing the lamps

NOTES:

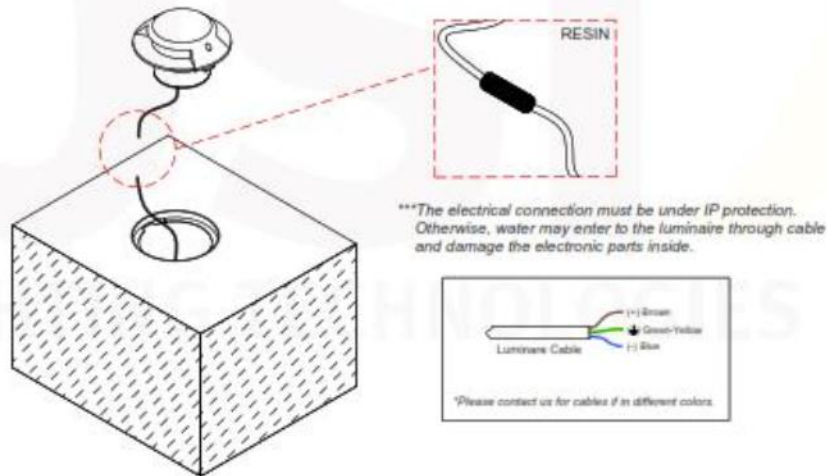
- Technical amendments are reserved.
- CE – Conformity mark
- The manufacturer is then discharged from liability when damage is caused by improper use or installation.
- Clean luminaire regularly with solvent-free cleansers from dirt and deposits. Do not use high pressure cleaners.

iSERVO INSTALLATION GUIDE

- 1) - Mounting hole is opens.
- Complete the drainage and place the housing.

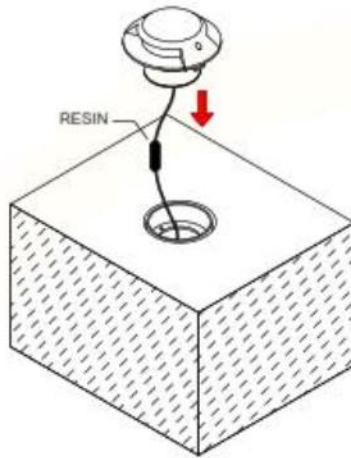


- 2) Electrical connection is done.

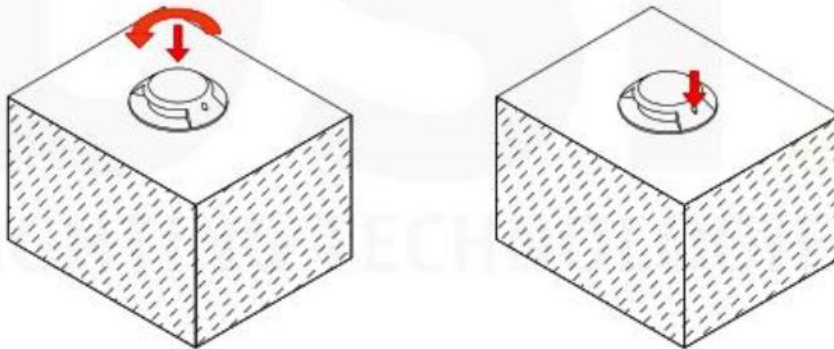


iSERVO INSTALLATION GUIDE

3) The luminaire is placed on the housing.



4) The luminaire is rotated like 30° and tightened the screws.





Test Laboratuvarları

Aydınlatma Armatürleri Güvenlik Deneyleri Gömme Armatürler

*Luminaires Safety Tests
Recessed Luminaires*

 iServo



AC8032



AC8034



AC8036



AC8038

Ground recessed round LED luminaire for installation outdoor for walk over and drive over with high mechanical strength. Ideal to illuminate walking paths, squares or driveways.

Designed to last in extremely harsh environments.



bsilighting.com



Test Laboratuvarları

Aydınlatma Armatürleri Güvenlik Deneyleri

Gömme Armatürler

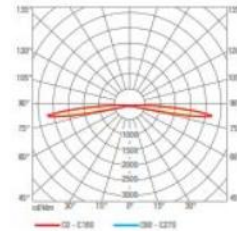
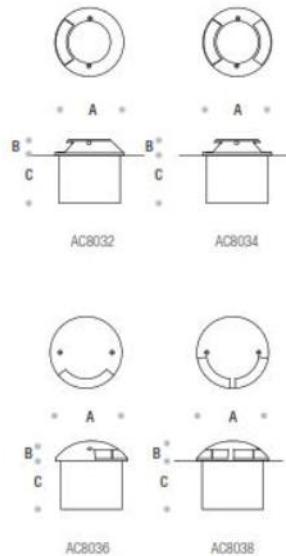
Luminaires Safety Tests

Recessed Luminaires



CODE	POWER CONSUMPTION	LUMEN OUTPUT (lm) 3000K / 4000K	COLOUR TEMPERATURE	A (mm)	B (mm)	C (mm)
AC8032 SINGLE SIDED	3W	225 / 255	3000K / 4000K	157	34	110
AC8034 DOUBLE SIDED	6W	450 / 510	3000K / 4000K	157	34	110
AC8036 SINGLE SIDED	3W	225 / 255	3000K / 4000K	160	45	110
AC8038 DOUBLE SIDED	6W	450 / 510	3000K / 4000K	160	45	110

LED Type	High efficiency LEDs, available in 2700K, 3000K, 4000K, 5000K, 6500K CCT tolerance within a 3-step MacAdams ellipse and LM80 compliant.
Nominal Voltage	220V-240V AC, 50/60Hz
Color Rendering Index	CRi> 80 standard and CRi>90 on request.
Optics	One Sided - Two Sided
Materials	Corrosion resistant double layer polyester powder coated paint finish die cast aluminium housing with stainless steel screws (A4 grade) and silicone gaskets. Power unit is built in. Available in anthracite gray as a standard finish or any desired RAL colour. Includes recessing box.
Optional Coating	Marine grade.
Diffuser	High impact and heat resistant polycarbonate with UV protection.
LED Specification	L90B50 > 100000 hours life time.
Energy Efficiency Class (EEC)	A++
Operating Temperature	-40°C / +55°C
Power Factor	>0.95
Protection Class	IP67
Impact Resistance	IK10
Load Rating	40 kN
Insulation Class	Class I
Installation	Recessing box to be placed at ground level 20 cm drainage gravel for water evacuation. Connection via junction boxes.
Conformity	Complies with European Standards EN 60598 and CE certified.



For detailed data on lighting, electrical technology and for tender texts: ballighting.com



6W Constant Current -LS Series



■ Approve



Features

- Class II, SELV, independent
- Input Voltage: 220-240VAC
- Protections: SCP/OLP/OVP
- Power Factor: 0.5C
- Efficiency: 76%
- 5 years warranty

Applications

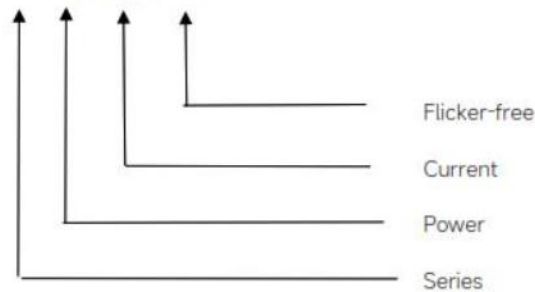
- LED down light, LED spot light

◆ Description

LS-6-XXX SI is a 6W constant current LED driver with 120-700mA output current. With it's compact dimensions from 76 x 22 x 20 mm it is easy to integrate in LED spot, down light products. To ensure trouble-free operation, protection is provided against output short circuit and over Load.

◆ Model code

LS-6-XXX SI





Test Laboratuvarları

Aydınlatma Armatürleri Güvenlik Deneyleri

Gömme Armatürler

Luminaires Safety Tests
Recessed Luminaires



LS-6-XXX SI

◆ Specification

Output	Constant Current	120mA	150mA	200mA	...	700mA
	Voltage Range	8.5-40VDC		7.5-30VDC	...	2.5-9VDC
	Unload voltage Max.	59VDC		45VDC	...	25VDC
	Current Accuracy	±5%				
	Output HF current ripple(>1KHz)	±5%				
	Output LF current ripple(≤120Hz)	±5%				
	SVM	≤0.4				
	Pst	≤1				
	Efficiency(Typ.)	≥76%				
Input	Rated input voltage	220-240VAC				
	Range of input voltage	176-264VAC				
	Rated input voltage(DC)	NA				
	Frequency(Hz)	50/60 Hz				
	Displacement factor	≥0.5				
	Power Factor	0.5C				
	Input Current max	0.11A				
	Start-up time	< 0.5S				
	No Load Power	≤0.5W				
Protection	Over Load Protection	103-150%				
		YES/Auto Resume				
	Over Voltage Protection	> 59VDC	>45VDC	...	>25VDC	
		YES/Auto Resume				
Environment	Short circuit Protection	YES/Auto Resume				
	Operating Temperature	-20°C~+50°C				
	Humidity	20%-90%RH				
	Tc	80°C				
	Storage Temperature	-25°C~+60°C				
	Life time	> 50000h@Tc=75°C,230VAC				
Surface	Dimension	76X22X20(LXWXH)mm				
standards	EN 61347-1; EN61347-2-13; EN62384; EN55015; EN61000-3-2 ; EN61000-3-3; EN 61547;					
Others	ErP	EU 2019/2020				
	RoHS	RoHS (2011/65/EU) (EU)2015/863				
Note	1.All parameters NOT specially mentioned are measured at 240VAC input , full load and 25°C of ambient temperature. 2.Ripple & Noise are measured at 20MHz of bandwidth by using a 300mm twisted pair-wire terminated with a 0.1uF & 47 uF parallel capacitor.					

Stock code : 002922

2 / 6

Article information 2022/ 05/15

REV: A

lighting.eaglerise.com

DZ-YF3-02-09A

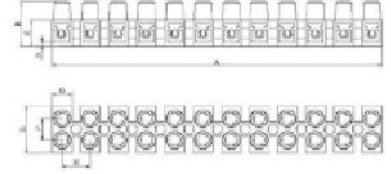




NO:0 0,75-1,5mm² POLIAMIT SIRA KLEMENSLER (OSK)

Ürün Kodu:

Ürün Kodu: 5010



<https://onka.com.tr/no-0-0-75-1-5mm2-poliamit-sira-klemensler-osk>

Ölçüler	
Ölçüler(mm)	
No	No. 0
Kutup sayısı	12
Tork (Nm)	0,4
Soyma boyu (mm)	6
Kesit (mm ²)	0,75 -1,5
Akım (A)	17,5
Voltaj (V)	400
A (mm)	91,2
B (mm)	13,8
C (mm)	8,8
D (mm)	2
E(mm)	14,8
F(mm)	6
G (mm)	5,4
H (mm)	7,8
Adet/Kutu	100

Materyaller	
İzolasyon materyali	PA
Kontak	CK45 Çelik
Bağlantı tipi	Vidali / Çelik
Norm	EN-60998-2-1



Test Laboratuvarları

Aydınlatma Armatürleri Güvenlik Deneyleri

Gömme Armatürler

Luminaires Safety Tests

Recessed Luminaires



TÜRK STANDARDLARI ENSTİTÜSÜ
TÜRK STANDARDLARINA UYGUNLUK BELGESİ
TURKISH STANDARDS INSTITUTION
CERTIFICATE OF CONFORMITY TO TURKISH STANDARDS

Markanın Tanımı Description of the Mark
TSE TSE

BELGE NUMARASI
REFERENCE NUMBER OF LICENCE

007896-TSE-02/01

BELGENİN İLK VERİLİŞ TARİHİ
DATE OF FIRST ISSUE OF LICENCE

14.07.2009

BELGENİN SON GEÇERLİLİK TARİHİ
LICENCE VALID UNTIL

15.07.2021

BELGE SAHİBİ KURULUŞUN ADI
NAME OF THE LICENCE HOLDER

ONKA ELEKTRİK MALZEMELERİ SAN.VE TİC.LTD.ŞTİ.

BELGE SAHİBİ KURULUŞUN ADRESİ
ADDRESS OF THE LICENCE HOLDER

Y.DUDULLU MH KEYAP SAN SİT E 1 BLK NO:77 /3 ÜMRANIYE
İSTANBUL/TÜRKİYE

ÜRETİM YERİ ADI
NAME OF THE MANUFACTURING PLACE

ONKA ELEKTRİK MALZEMELERİ SANAYİ VE TİCARET LIMITED
ŞİRKETİ

ÜRETİM YERİ ADRESİ
ADDRESS OF THE MANUFACTURING PLACE

İNÖNÜ MAH. BALÇIK KÖYÜ YOLU ÜZERİ GEP OSB SANAYİ SİT. İÇİ
CUMHURİYET CAD. NO:27 GEBZE KOCAELİ / TÜRKİYE

İPTAL EDİLEN BELGE NUMARASI (Varsa)
INDICATION OF SUPERSEDED LICENCE (if any)

14.10.01/TSE-9521

TESCİLLİ TİCARİ MARKASI
REGISTERED TRADE MARK

ONKA

İLGİLİ TÜRK STANDARDI
RELATED TURKISH STANDARD

TS 10487 EN 60998-2-1 / 13.10.2005

BELGE KAPSAMI
SCOPE OF LICENCE

• VIDALI SIKIŞTIRMALI BAĞLANTI UCU OLAN, ÇOK YOLLU BAĞLAMA DÜZENİ (SIRA KLEMENS)
OSK SERİSİ; BEYAN BAĞLANTI KAPASİTESİ 1.5 MM²(DAHİL)'DEN 25 MM²(DAHİL)'E KADAR ; BEYAN YALITIM
GERİLİMİ 400 V (1.5 MM²(DAHİL)'DEN 10 MM²(DAHİL)'E KADAR) – 500 V (16 MM²(DAHİL)'DEN 25 MM²(DAHİL)'E
KADAR) ; EK YAPILAN, ELEKTRİK ÇARPMASINA KARŞI KORUMALI, TESPİT TERTİBATI BULUNAN, T İŞARETİ
BULUNMAYAN



e-imza/e-signed

08.07.2020

Belgelendirme Merkezi Başkanı Adına
AHMET NURSI KARTAL

TSE İSTANBUL BELGELENDİRME MÜDÜRÜ

*Bu belge, belgelendirilen ürünün, üretim yerinin Enstitümüzün belirlediği şartları karşıladığını da gösterir.

*Bu belge, hiç bir suretle tahrif edilemez. Kusmen veya akummasını zorlaştıracak şekilde çoğaltılamaz, kopya ve alıntı yapılamaz.

*TSE İSTANBUL BELGELENDİRME MÜDÜRLÜĞÜ * Adres: Çayirova Tren İstasyonu Yanı ÇAYIROVA/İSTANBUL * Telefon: 262 72 31 27 31 Faks: 262 72 31 60 6

*TSE BELGELENDİRME MERKEZİ BAŞKANLIĞI. Adres: Necatibey Cad. No:112 08100 Bakanlıklar/ANKARA – Telefon: 0 312 416 64 61 / 416 64 27, Faks:0 312 416 68 17 E-posta:

tbm@tse.org.tr / web : www.tse.org.tr

<https://evrakkontrol.tse.org.tr/BelgeDogrulama.aspx?pr=3&koraov> adresinden belgenin doğruluğunu ve geçerliliğini sorgulayınız.



1 / 1





Test Laboratuvarları

Aydınlatma Armatürleri Güvenlik Deneyleri

Gömme Armatürler

Luminaires Safety Tests
Recessed Luminaires



THR.390.S3D

TH390 - In-line circular mini-joint connector type "I" IP68

MADE IN ITALY



KIT

IP68



GENERAL DESCRIPTION

Type of installation	Joint connector (re-usable/re-accessible)
Type of product (Family)	TEETUBE® - In-line and junction circular connectors IP68/IP69K
Product name (Series)	TH390 - In-line circular mini-joint connector tipo "I" IP68
Product configuration	In-line joint connector
Type of Fixation	With quick-fix mounting clip * Mounting clip to be ordered separately (code 800302CC).
Colour	Black (Plastic components) - Techno green (Rubber components)
Outer dimension	Φ 32 mm x 82 mm

ELECTRICAL CHARACTERISTICS

Number of poles	3
Contact marking	L - N - E
Type of connection	screw (M3 - max. 0.5 Nm)
Operating current	max. 32A
Operating voltage	max. 450V AC

i Contact our Customer Service for availability of other markings.

MECHANICAL CHARACTERISTICS

Protection against solid/water (IP)	IP68 (50m,1h)
Corrosion resistance	Salt mist, 1.000 ore, 5% salt solutions, 35°C EN60068-2-11:2000, Test Ka (168h)

i Contact our Customer Service for availability of products with different IP and IK protection degrees.

CABLE CHARACTERISTICS

Wire cross-section min. - max. (Stranded cable)	0.5 mm ² - 4.0 mm ²
Wire cross-section min. - max. (Solid cable)	0.5 mm ² - 4.0 mm ²
Cable diameter min. - max.	6.0 mm - 13.5 mm * Accessories e riduttori per cavi incluse nella confezione.

MATERIAL CHARACTERISTICS

Body	PA66 GF UL94 V0 GWT 960°C
Connector housing	PA66 GF UL94 V0 GWT 960°C
Cable gland	PA66 UL94 V2 GWT 850°C
Sealing	Silicone
Grommets	TPE
Contacts	CuZn (nickel plated)
Screws	Steel (rivestimento Zinco)
Material properties	Halogen Free
T marking	T 85°C

INSTALLATION INSTRUCTIONS

- IST TH390T-402T v01 techno PDF • 1 MB
- IST TH390I-400I v01 techno PDF • 924 KB
- IST TH390L-401L v01 techno PDF • 1 MB
- Guidelines Installation PDF • 753 KB

CERTIFICATIONS AND TEST REPORTS

- CE-TH390 DOC • 142 KB
- TEETUBE CA0201889-I-2085 PDF • 3 MB

MARKETING COLLATERALS

- Cameriere pag intera • 2 MB
- pannello techno 04 vert 80x120 LOW • 633 KB

DRAWINGS

- THB390A1A-A1BSTEP ZIP • 3 MB • **CONFIDENTIAL DOCUMENT**





Test Laboratuvarları

Aydınlatma Armatürleri Güvenlik Deneyleri

Gömme Armatürler

Luminaires Safety Tests

Recessed Luminaires



Operating temperature range	-40°C / +125°C
Proof Tracking Index (PTI)	PTI 250

i Contact our Customer Service for more information on additional tests and approvals.

INDUSTRY STANDARDS

Standard number	EN 60998-1:2004
-----------------	-----------------

PACKAGING INFORMATION

Packaging method	single packed unit
Quantity (product/bag)	1 product/bag
Quantity (product/box)	50 bags/box
Unit weight	51,3 gram/bag
Box dimension	400 x 210 x 170

i Accessories and installation instructions included in the kit.





Test Laboratuvarları

Aydınlatma Armatürleri Güvenlik Deneyleri
Gömme Armatürler
Luminaires Safety Tests
Recessed Luminaires



Markanın Tanımı Description of the Mark
TSE veya/ve TSE veya/ve TSE

BELGE NUMARASI
REFERENCE NUMBER OF LICENCE

000083-TSE-06/01

BELGENİN İLK VERİLİŞ TARİHİ
DATE OF FIRST ISSUE OF LICENCE

04.12.1997

BELGENİN SON GEÇERLİLİK TARİHİ
LICENCE VALID UNTIL

13.08.2019

BELGE SAHİBİ KURULUŞUN ADI
NAME OF THE LICENCE HOLDER

ÜNTEL KABLOLARI SANAYİ VE TİCARET ANONİM ŞİRKETİ

BELGE SAHİBİ KURULUŞUN ADRESİ
ADDRESS OF THE LICENCE HOLDER

DEMİRCİLER KÖYÜ MAKİNA O.S.B. 6.CD. NO:4 DİLOVASI
KOCAELİ/TÜRKİYE

ÜRETİM YERİ ADI
NAME OF THE MANUFACTURING PLACE

ÜNTEL KABLOLARI SAN. VE TİC.A.Ş.

ÜRETİM YERİ ADRESİ
ADDRESS OF THE MANUFACTURING PLACE

DEMİRCİLER KÖYÜ DİLOVASI S.S. MAKİNA İML. SANAYİCİLERİ ORG.
SAN. BÖLG. 97 PARSEL 6.CAD.NO:4 P.K. :41455
DİLOVASI/KOCAELİ KOCAELİ / TÜRKİYE

İPTAL EDİLEN BELGE NUMARASI (Varsa)
INDICATION OF SUPERSEDED LICENCE (if any)

14.0.10.0.01.00/TSE-65425

TESCİLLİ TİCARİ MARKASI
REGISTERED TRADE MARK

ÜNTEL

İLGİLİ TÜRK STANDARDI
RELATED TURKISH STANDARD

TS EN 50525-2-21:2011 / Elektrik Kabloları - Beyan gerilimi en çok 450
/ 750 V dahil olan düşük gerilimli enerji kabloları- Bölüm 2-21-Genel
uygulamalar için kablolar -Çapraz bağlı elastomerik yalıtımlı bükülgen
kablolar / 22.11.2011

BELGE KAPSAMI
SCOPE OF LICENCE

OLAĞAN POLİKLOROPREN VEYA DİĞER EŞ DEĞER SENTETİK ELASTOMER KILIFLI BÜKÜLGEN KABLO

H05 RR-F 3,4,5 DAMARLI
H05 RN-F



e-imza/e-signed

27.07.2018

Belgelendirme Merkezi Başkanı Adına
GÜRSEL ERATAK

ELEKTROTEKNİK SEKTÖRÜ MÜDÜRÜ

*Bu belge, belgelendirilen ürünün, üretim yerinin Enstitümüzün belirlediği şartları karşıladığını da gösterir.

*Bu belge hiç bir suretle tanıtı edilemez, kısmen veya okunmasını zorlaştıracak şekilde çoğaltılamaz, kızırtı ve silinisi yapılamaz.

*TSE ELEKTROTEKNİK SEKTÖRÜ MÜDÜRLÜĞÜ * Adres: Necatibey Cad.No:112 06100 Bakanlıklar/ANKARA * Tel: 0312 416 83 96* Faks: 0312-416 86 17

*TSE BELGELENDİRME MERKEZİ BAŞKANLIĞI, Adres: Necatibey Cad. No:112 06100 Bakanlıklar/ANKARA – Tel: 0 312 416 84 81 / 416 84 27, Faks: 0 312 416 86 17

e-posta : tse@tse.org.tr , web : www.tse.org.tr

<https://evrakkontrol.tse.org.tr/BelgeDogrulama.aspx?p=pxrxfux> adresinden belgenin doğruluğunu ve geçerliliğini sorgulayınız.



1 / 1





KAUÇUK KABLolar



H05RR-F

EPR YALITIMLI VE EPR KILIFLI BÜKÜLGEN KABLO
EPR INSULATED AND EPR SHEATHED FLEXIBLE CABLE

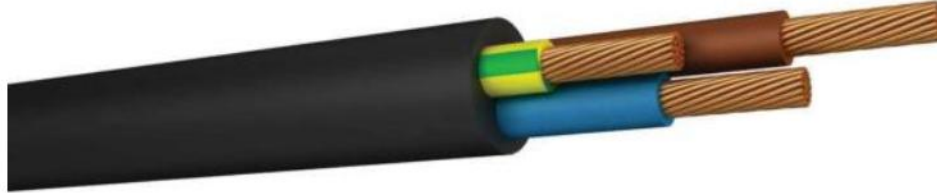
300/500 V

KABLO YAPISI

- * İLETKEN : Elektrolitik tavlı, sınıf 5 bükülü çıplak bakır teller (isteğe bağlı kalaylı iletken)
- * AYIRICI : İletkenlerin üzerine uygun bir ayırıcı bant uygulanabilir
- * İZOLASYON : E14 Tipi kauçuk (EPR) bileşik
- * DAMAR RENKLERİ : HD 308'e uygun
- * KILIF : EM3 Tipi elastomer bileşik
- * RENK : Siyah (isteğe bağlı olarak diğer renkler)

CABLE STRUCTURE

- * CONDUCTOR : Electrolytic annealed, class 5 stranded plain copper wires (tinned conductor on request)
- * SEPARATOR : A suitable tape may be applied over the conductor
- * INSULATION : E14 Type rubber (EPR) compound
- * CORE IDENTIFICATION : Acc. to HD 308
- * SHEATH : EM3 Type elastomer compound
- * COLOR : Black (other colors on request)



TASARIM ÖZELLİKLERİ / DESIGN FEATURES

- KONSTRÜKSİYON / CONSTRUCTION : EN 50525-2-21, HD 22.4, DIN VDE 0282-4, BS 6500, BS 7919, IEC 60245-4
- GENEL ÖZELLİKLER / GENERAL REQUIREMENTS : EN 50525-1, HD 22.1, DIN VDE 0282-1, IEC 60245-1
- KULLANMA KILAVUZU / GUIDE TO USE : HD 516, DIN VDE 0298-300
- ELEKTRİKSEL DENEYLER / ELECTRICAL TESTS : EN 50395, IEC 60245-2
- ELEKTRİKSEL OLMAYAN DENEYLER / NON-ELECTRICAL TESTS : EN 50396, IEC 60245-2
- İLETKEN DİRENCİ / CONDUCTOR RESISTANCE : EN/IEC 60228, HD 383, DIN VDE 0295, BS 6360

ÇALIŞMA KARAKTERİSTİKLERİ / OPERATING CHARACTERISTICS

- İLETKEN İŞLETME SICAKLIĞI / CONDUCTOR OPERATING TEMPERATURE : Max. 60°C
- İLETKEN KISA DEVRE SICAKLIĞI / CONDUCTOR SHORT-CIRCUIT TEMPERATURE : Max. 200°C
- KABLO YÜZEY SICAKLIĞI / TEMP. ON CABLE SURFACE : Max. +50°C
- EN DÜŞÜK TESİSAT SICAKLIĞI / MIN INSTALLATION TEMPERATURE : -25°C
- MIN. BÜKME YARIÇAP / MIN BENDING RADIUS : HD 516 Tab.7c
- AKIM TAŞIMA KAPASİTELERİ / CURRENT CARRYING CAPACITIES : HD 516, VDE 0298-4
- ALEVİ İLETMİZ / FLAME RETARDANT : EN/IEC 60332-1-2, DIN VDE 0482-332-1-2
- YAĞA DAYANIKLI / OIL RESISTANT : HD/EN/IEC 60811-2-1, DIN VDE 0473-811-2-1
- OZON DAYANIMI / OZONE RESISTANT
- SOĞUĞA DAYANIKLI / COLD RESISTANT





Test Laboratuvarları

Aydınlatma Armatürleri Güvenlik Deneyleri

Gömme Armatürler

Luminaires Safety Tests

Recessed Luminaires

RUBBER CABLES

H05RR-F

KULLANIM ALANI

Bu kablolar, sıcak yüzeylere temas riskinin bulunduğu ofis ve mutfaklarda kullanılan sabit yada taşınabilir ekipmanların bağlantıları için kullanılabilirler.

ORTAM

Bina içi, geçici bina dışı, kuru ve ıslak ortamlarda kullanılabilir.

GÜVENLİK

Yanma esnasında alevi iletmez ve kendiliğinden sönerler. Zira ve endüstriyel atölyelerde veya kalıcı bina dışı kullanımlara uygun değildir. Kalıcı bina dışı kullanımlar yada ekstra beklentiler için özel üretim yapılabilir. Mekanik gerilmeli sistemler için uygun değildir. Doğrudan toprak altına gömülmemelidir.

APPLICATION

These cables can be used for fixed and mobile equipment connections that are used in offices and kitchens where there is a risk of contacting with hot surfaces.

ENVIRONMENT

It can be used indoor, temporary outdoor, dry and wet environments.

SAFETY

It's flame retardant and self extinguishes during fire. It's not suitable for permanent outdoor use or agricultural and industrial workshops. Special production can be available for permanent outdoor use or unusual request. It's not suitable for mechanical stresses systems. It shouldn't buried directly underground.

İLETKEN SAYISI X KESİT NO. CONDUCTORS X CROSS-SECTION (mm ²)	DIŞ ÇAP OUTER DIAMETER Min.-Max. (mm)	BAKIR FAKTÖRÜ COPPER FACTOR (kg / km)	KABLO AĞIRLIĞI CABLE WEIGHT (kg / km)
2x0,75	5,7 - 7,4	14,4	58
2x1	6,1 - 8	19,2	71
2x1,5	7,6 - 9,8	28,8	105
2x2,5	9 - 11,6	48	185
2x4	10,6 - 13,7	76,8	218
3x0,75	6,2 - 8,1	21,6	74
3x1	6,5 - 8,5	28,8	85
3x1,5	8 - 10,4	43,2	125
3x2,5	9,6 - 12,4	72	180
3x4	11,3 - 14,5	115,2	262
3x6	12,8 - 16,3	172,8	348
4x0,75	6,8 - 8,8	28,8	78
4x1	7,1 - 9,3	38,4	103
4x1,5	9 - 11,6	57,6	160
4x2,5	10,7 - 13,8	96	228
4x4	12,7 - 16,2	153,6	335
4x6	14,2 - 18,1	230,4	404
5x0,75	7,6 - 9,9	36	99
5x1	8 - 10,3	48	134
5x1,5	9,8 - 12,7	72	180
5x2,5	11,9 - 15,3	120	278
5x4	14,6 - 18,6	192	430

* Dış çaplar EN 60719 standardına göre hesaplanmıştır.

* The overall dimensions of cables have been calculated in accordance with EN 60719



13

