

DENEY RAPORU
TEST REPORT

AB-1374-T

2024-PTC-3713-1

12-24

Müşteri Adı / Adresi:

Customer name / address

ECOWAT ELEKTRİK AYDINLATMA SAN. VE TİC. A.Ş

HALİL RIFAT PAŞA MAH. YÜZER HAVUZ SOK. PERPA TİCARET MERKEZİ, A BLOK
K:8 NO:763 ŞİŞLİ/İSTANBUL/TÜRKİYE

İstek Numarası

Order No.

2024-PTC-3713

Numunenin adı ve tarifi

Name and identity of test item

LİNEER LED ARMATÜR / LINEAR LED LUMINAIRE

Numunenin kabul tarihi

The date of receipt of test item

15.10.2024

Açıklamalar

Remarks

Ürün ilgili testlerden geçmiştir, lütfen raporu inceleyiniz.

The product passed related tests, see report below.

Deneyin yapıldığı tarih

Date of Test

16.10.2024 –01.11.2024

Raporun Sayfa Sayısı

Number of pages of the Report

50

Deney laboratuvarı olarak faaliyet gösteren PTC Ürün Test ve Belgelendirme San. Tic. Ltd. Şti., TÜRKAK'tan AB-1374-T akreditasyon dosya numarası ile TS EN ISO IEC 17025:2017 standardına göre akredite edilmiştir.

PTC Ürün Test ve Belgelendirme San. Tic. Ltd. Şti. accredited by TÜRKAK under registration number AB-1374-T accreditation file no for TS EN ISO IEC 17025:2017 as test laboratory"

Türk Akreditasyon Kurumu(TÜRKAK) deney raporlarının tanınırlığı konusunda Avrupa Akreditasyon Birliği(EA) ile Çok Taraflı Anlaşma ve Uluslararası Laboratuvar Akreditasyon Birliği(ILAC) ile karşılıklı tanıma anlaşması imzalamıştır.

Turkish Accreditation Agency (TURKAK) is a signatory to the European co-operation for Accreditation (EA) Multilateral Agreement (MLA) and to the International Laboratory Accreditation Cooperation (ILAC) Mutual Recognition Arrangement (MRA) for the recognition of test reports

Deney ve /veya ölçüm sonuçları, genişletilmiş ölçüm belirsizlikleri (olması halinde) ve deney metotları bu sertifikanın tamamlayıcı kısmı olan takip eden sayfalarda verilmiştir.

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

Seal

Tarih

Date

Deneyi Yapan Personel

Person in Performing the Test

Deney Sorumlusu

Person in Charge of Test

Laboratuvar Teknik

Yöneticisi

Laboratory Technical

Manager



05.12.2024

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PTC Ürün Test ve Belgelendirme San. Tic. Ltd. Şti.

Örnek Mahallesi Udi Hasanbey Sokak Reis Plaza No: 31A Ataşehir/İstanbul-Turkey

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	PTC ÜRÜN TEST VE BELGELENDİRME SAN. TİC. LTD. ŞTİ DENEY RAPORU TEST REPORT	<table><tr><td>AB-1374-T</td></tr><tr><td>2024-PTC-3713-1</td></tr><tr><td>12-24</td></tr></table>	AB-1374-T	2024-PTC-3713-1	12-24
AB-1374-T					
2024-PTC-3713-1					
12-24					
Deney Standardı / Test Standard: TS EN IEC 60598-2-1:2021 Aydınlatma Armatürleri Bölüm 2: Özel Kurallar - Kısım Bir : Genel Amaçlı, Sabit / Luminaires-Part 2: Particular Requirements-Section One: Fixed General Purpose Luminaires					
Akreditasyon Kapsamında Uygulanan Deneyler <i>List of Tests applied under Accreditation Scope:</i>	Akreditasyon Kapsamı Dışında Uygulanan Deneyler <i>List of Tests not applied under Accreditation Scope:</i>				

- 1.6(3.4) **İşaretleme Deneyi / Durability**
- 1.7(4.12.1) **Tork Testi / Torque Test**
- 1.7(4.13.1) **Mekanik Dayanım Darbe Testi / Impact Test**
- 1.7(4.14.1) **Askı ve Sabitleyici Güvenlik Testi/**
Suspension and Fixing Safety Test
- 1.12(8.2.5) **Elektrik Çarpmasına Karşı Koruma /**
Protection Against Electric Shock
- 1.13(12.3.1) **Dayanıklılık Deneyi / Endurance Test**
- 1.13(12.4.1) **Isıl Deney(Normal Çalışma) /**
Thermal Test(Normal Operation)
- 1.14(9.2) **IP Testi / IP Test**
- 1.14(9.3) **Nem Deneyi / Humidity Test**
- 1.15(10.2.1) **Yalıtım Direnci / Insulation Resistance Test**
- 1.15(10.2.2) **Elektriksel Dayanım / Electric Strength Test**
- 1.15(10.3) **Dokunma Akımı / Touch Current Test**
- 1.16(13.2.1) **Bilye Basınç Deneyi / Ball-Pressure Test**
- 1.16(13.3.2) **Kızaran Tel Deneyi / Glow Wire Test**

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Dok.No: PR.20-RP.46 / Rev.Tarihi: 13.02.2023 / Rev. No: 01

Sayfa/Page 2 / 50

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TS EN IEC 60598-1/A11 :2022 & TS EN IEC 60598-2-1:2021

Rapor Numarası <i>Report number</i>	: 2024-PTC-3713-1
Veriliş Tarihi <i>Date of issue</i>	: 05.12.2024
Toplam Sayfa Sayısı <i>Total number of pages</i>	: 50
Deneyi Yapan Laboratuvar <i>Testing Laboratory</i>	: PTC ÜRÜN TEST VE BELGELENDİRME
Adres <i>Address</i>	: Örnek Mahallesi Udi Hasanbey Sokak Reis Plaza No: 31A Ataşehir / İSTANBUL
Deney Adresi <i>Testing Location</i>	: Örnek Mahallesi Udi Hasanbey Sokak Reis Plaza No: 31A Ataşehir / İSTANBUL
Başvuranın Adı <i>Applicant's name</i>	: ECOWAT ELEKTRİK AYDINLATMA SAN. VE TİC. A.Ş
Adresi <i>Address</i>	: HALİL RIFAT PAŞA MAH. YÜZER HAVUZ SOK. PERPA TİCARET MERKEZİ, A BLOK K:8 NO:763 ŞİŞLİ/İSTANBUL/TÜRKİYE
Deney Ayrıntıları <i>Test Specifications</i>	
Standard	: TS EN IEC 60598-1/A11 :2022 ; TS EN IEC 60598-2-1:2021
Deney Prosedürü <i>Test procedure</i>	: Uygunluk Testi / <i>Compliance Test</i>
Standard Dışı Deney Yöntemi <i>Non-standard test method</i>	: -
Deney Raporu Form No <i>Test report form no</i>	: PR.20-RP.01
Deney Rapor Form(ları) Oluşturan <i>Test report form(s) originator</i>	: PTC
Ana TRF <i>Master TRF</i>	: 2018-01
Deney ve/veya ölçüm sonuçları, genişletilmiş ölçüm belirsizlikleri (olması halinde) ve deney metotları bu sertifikanın tamamlayıcı kısmı olan takip eden sayfalarda verilmiştir. Bu rapor laboratuvar gönderilen numunelere uygulanan deney/deneyler sonucu hazırlanmıştır. Müşteriye ait diğer numuneleri kapsamaz. <i>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. This report was prepared according to test results of specimens sent to laboratory. It doesn't contain other specimens belonging to customer.</i>	
Deney Numunesi Açıklaması <i>Test item description</i>	: LİNEER LED ARMATÜR / LINEAR LED LUMINAIRE
Marka <i>Trade Mark</i>	: Tekwat
Üretici <i>Manufacturer</i>	: ECOWAT ELEKTRİK AYDINLATMA SAN. VE TİC. A.Ş
Model/Tip <i>Model /Type reference</i>	: LNR-200-64WATT
Beyan Değerleri <i>Ratings</i>	: 220-240V AC; 50/60Hz; IP40; Class I; 64W
Bu rapor, Laboratuvarımızın yazılı izni olmadan kısmen kopyalanıp çoğaltılamaz. İmzasız ve mühürlü raporlar geçersizdir. <i>This report may not be copied or reproduced in part without the written permission of the Laboratory. Signed and unsealed reports are invalid</i>	

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Ek Dosya Listesi (Eklerin içerdiği sayfa sayısı dahil) :

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

Ek.1 / Attachment.1 - Ölçüm Cihazları / Measuring Equipments

Ek.2 / Attachment.2 - Görsel Dökümanlar / Photo Documentation

Deney Özeti / Summary of testing : Uygulanan deneyler aşağıdaki listede verilmiştir. / *The applied tests are in the list below*

Alt Modeller/ Sub-models: LNR-30-10WATT; LNR-45-14WATT; LNR-60-18WATT; LNR-90-27WATT; LNR-100-30WATT; LNR-120-36WATT; LNR-150-45WATT; LNR-165-50WATT; LNR-180-54WATT; LNR-200-64WATT

Gerçekleştirilen testler (test adı ve test maddesi)

Tests performed (name of test and test clause):

- 1.6(3.4) **İşaretleme Deneyi / Durability**
- 1.7(4.12.1) **Tork Testi / Torque Test**
- 1.7(4.13.1) **Mekanik Dayanım Darbe Testi / Impact Test**
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- 1.16(13.2.1) **Bilye Basınç Deneyi / Ball-Pressure Test**
- 1.16(13.3.2) **Kızaran Tel Deneyi / Glow Wire Test**

Test yeri / Testing location:

Örnek Mahallesi Udi Hasanbey Sokak Reis
Plaza No: 31A Ataşehir / İSTANBUL

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Etiket plakasının kopyası / Copy of marking plate:



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Deney Numunesinin Ayrıntıları : <i>Test item particulars</i>	LİNEER LED ARMATÖR / LİNEAR LED LUMINAIRE
Kurulum ve kullanım sınıflandırması : <i>Classification of installation and use</i>	IP40 ve Sınıf I / <i>IP40 and Class I</i>
Besleme Bağlantısı : <i>Supply Connection</i>	Besleme Kablosu/Supply Cable
Karar Kuralı / Decision Rule Müşteri ile yapılan sözleşmede kararlaştırıldığı şekilde tüm test sonuçlarına "Basit Karar Kuralı" uygulanmıştır. Bu bağlamda, güven düzeyi ve ölçüm belirsizliği göz önünde bulundurulmaksızın, elde edilen deney sonucu, yalnızca deneyin yapılmasında referans alınan standartta belirtilen sınırlar içinde olup olmamasına bağlı olarak "Geçti" ya da "Kaldı" şeklinde değerlendirilmiştir. / <i>As agreed in the contract with the customer, "Simple Decision Rule" was applied to all test results. In this context, without taking into account the confidence level and measurement uncertainty, test result was evaluated as "Pass" or "Fail" depending only on whether it was within the limits specified in the referenced standard.</i> Uygunluk ifadeleri şu şekilde raporlanır / <i>Conformity statements are reported as follows;</i> GEÇTİ : Ölçülen değer kabul sınırının altında <i>PASS : Measured value is below the acceptance limit</i> KALDI : Ölçülen değer kabul sınırının üzerinde <i>FAIL : Measured value is above the acceptance limit</i>	

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Olası Deney Durumu Kararları/ Possible test case verdicts:

- deney durumu deney numunesi için geçerli değildir...: test case does not apply to the test object	N/A
- deney numunesi gereksinimi karşılıyor.....: test object does meet the requirement	P (Pass / Geçti)
- deney numunesi gereksinimi karşılamıyor.....: test object does not meet the requirement	F (Fail / Kaldı)
-deney akreditasyon kapsamında bulunmamaktadır...: test not within the scope of the accreditation	O/S (Out of Scope / Kapsam Dışı)

Deney / Testing..... :

Numunenin Alındığı Tarih/.....: 15.10.2024
Date of receipt of test item

Test(ler)in Gerçekleştirilme Tarihi 16.10.2024 –01.11.2024
Date (s) of performance of tests

Genel Açıklamalar / General Remarks

Bu raporda sunulan test sonuçları yalnızca test edilen nesneyle ilgilidir. Bu rapor, yayınlayan test laboratuvarının yazılı onayı olmaksızın tamamen veya kısmen çoğaltılamaz.

“(Bakınız Kutu #)” rapora eklenen ek bilgilere işaret etmektedir.

“Ekli tabloya bakınız”, rapora eklenen bir tabloya atıfta bulunmaktadır.

Parantez içerisindeki madde numaraları, ilgili deney standardında geçen maddelere karşılık gelir.

The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory. “(See Enclosure #)” refers to additional information appended to the report. “(See appended table)” refers to a table appended to the report.

Bu rapor boyunca ☐ nokta / ☒virgül ondalık ayracı olarak kullanılır.

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

Genel Ürün Bilgileri / General Product Information:

Numune 220-240V AC gerilimle çalışmaktadır. / The sample is operating at 220-240V AC voltage.

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1.4 (0)	GENERAL TEST REQUIREMENTS		P
1.4 (0.3)	More sections applicable..... :	Yes ☐ No ☒ Section/s:	—
1.4 (0.5)	Components	(see Annex 1)	—
1.4 (0.7)	Information for luminaire design in light sources standards		—
1.4 (0.7.2)	Light source safety standard		—
	Luminaire design in the light source safety standard		N/A

1.5 (2)	CLASSIFICATION OF LUMINAIRES		P
1.5 (2.2)	Type of protection	Class I	P
1.5 (2.3)	Degree of protection..... :	IP40	—
1.5 (2.4)	Luminaire suitable for direct mounting on normally flammable surfaces..... :	Yes ☒ No ☐	—
1.5 (2.5)	Luminaire for normal use	Yes ☒ No ☐	—
	Luminaire for rough service	Yes ☐ No ☒	—

1.6 (3)	MARKING		P
1.6 (3.2)	Mandatory markings		P
	Position of the marking		P
	Format of symbols/text		P
1.6 (3.3)	Additional information		P
	Language of instructions	TR	P
1.6 (3.3.1)	Combination luminaires		N/A
1.6 (3.3.2)	Nominal frequency in Hz	50/60Hz	P
1.6 (3.3.3)	Operating temperature		N/A
1.6 (3.3.5)	Wiring diagram		N/A
1.6 (3.3.6)	Special conditions		N/A

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1.6 (3.3.7)	Metal halide lamp luminaire – warning		N/A
1.6 (3.3.8)	Limitation for semi-luminaires		N/A
1.6 (3.3.9)	Power factor and supply current		N/A
1.6 (3.3.10)	Suitability for use indoors		N/A
1.6 (3.3.11)	Luminaires with remote control		N/A
1.6 (3.3.12)	Clip-mounted luminaire – warning		N/A
1.6 (3.3.13)	Specifications of protective shields		N/A
1.6 (3.3.14)	Symbol for nature of supply	AC	P
1.6 (3.3.15)	Rated current of socket outlet		N/A
1.6 (3.3.16)	Rough service luminaire		N/A
1.6 (3.3.17)	Mounting instruction for type Y, type Z and some type X attachments	Type Y	P
1.6 (3.3.18)	Non-ordinary luminaires with PVC cable		N/A
1.6 (3.3.19)	Protective conductor current in instruction if applicable		N/A
1.6 (3.3.20)	Provided with information if not intended to be mounted within arm's reach		N/A
1.6 (3.3.21)	Non replaceable and non-user replaceable light sources information provided		P
1.6 (3.3.22)	Controllable luminaires, classification of insulation provided		N/A
1.6 (3.3.23)	Luminaires without control gear provided with necessary information for selection of appropriate component		N/A

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1.6 (3.3.24)	If not supplied with terminal block, information on the packaging		N/A
1.6 (3.3.25)	Luminaires employing light sources emitting UV on mains wiring, information provided		N/A
1.6 (3.3.26)	Wall mounted luminaire using external flexible cable or cord longer than 0.3 m, information provided		N/A
1.6 (3.4)	Test with water	15s	P
	Test with hexane	15s	P
	Legible after test		P
	Label attached		P

1.7 (4)	CONSTRUCTION		P
1.7 (4.2)	Components replaceable without difficulty		N/A
1.7 (4.3)	Wireways smooth and free from sharp edges		P
1.7 (4.4)	Lamp holders		N/A
1.7 (4.4.1)	Integral lamp holder		N/A
1.7 (4.4.2)	Wiring connection		N/A
1.7 (4.4.3)	Lamp holder for end-to-end mounting		N/A
1.7 (4.4.4)	Positioning		N/A
	- pressure test (N)		—
	After test the lamp holder comply with relevant standard sheets and show no damage		N/A
	After test on single-capped lamp holder the lamp holder has not moved from its position and show no permanent deformation		N/A
	- bending test (N)		—
	After test the lamp holder has not moved from its position and show no permanent deformation		N/A
1.7 (4.4.5)	Peak pulse voltage		N/A
1.7 (4.4.6)	Centre contact		N/A

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1.7 (4.4.7)	Parts in rough service luminaires resistant to tracking		N/A
1.7 (4.4.8)	Lamp connectors		N/A
1.7 (4.4.9)	Caps and bases correctly used		N/A
1.7 (4.4.10)	Light source for lamp holder or connection according IEC 60061 not connected another way		N/A
1.7 (4.5)	Starter holders		N/A
	Starter holder in luminaires other than class II		N/A
	Starter holder class II construction		N/A
1.7 (4.6)	Terminal blocks		N/A
	Tails		N/A
	Unsecured blocks		N/A
1.7 (4.7)	Terminals and supply connections		P
1.7 (4.7.1)	Contact to metal parts		N/A
1.7 (4.7.2)	Test 8 mm live conductor		P
	Test 8 mm earth conductor		P
1.7 (4.7.3)	Terminals for supply conductors		P
1.7 (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
1.7 (4.7.4)	Terminals other than supply connection		P
1.7 (4.7.5)	Heat-resistant wiring/sleeves		N/A

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1.7 (4.7.6)	Multi-pole plug		N/A
	- test at 30 N		N/A
1.7 (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
1.7 (4.9)	Insulating lining and sleeves		P
1.7 (4.9.1)	Retainment		P
	Method of fixing.....:		P
1.7 (4.9.2)	Insulated linings and sleeves:		P
	Resistant to a temperature > 20 °C to the wire temperature or		P
	a) & c) Insulation resistance and electric strength		N/A
	b) Ageing test. Temperature (°C)		N/A
1.7 (4.10)	Double or reinforced insulation		N/A
1.7 (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
1.7 (4.10.2)	Assembly gaps:		N/A
	- not coincidental		N/A
	- no straight access with test probe		N/A
1.7 (4.10.3)	Retainment of insulation:		N/A
	- fixed		N/A
	- unable to be replaced; luminaire inoperative		N/A
	- sleeves retained in position		N/A

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	- lining in lamp holder		N/A
1.7 (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 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
1.7 (4.11)	Electrical connections and current-carrying parts		P
1.7 (4.11.1)	Contact pressure		P
1.7 (4.11.2)	Screws:		P
	- self-tapping screws		P
	- thread-cutting screws		N/A
1.7 (4.11.3)	Screw locking:		N/A
	- spring washer		N/A
	- rivets		N/A
1.7 (4.11.4)	Material of current-carrying parts		P
1.7 (4.11.5)	No contact to wood or mounting surface		P
1.7 (4.11.6)	Electro-mechanical contact systems		N/A
1.7 (4.12)	Screws and connections (mechanical) and glands		P
1.7 (4.12.1)	Screws not made of soft metal		P
	Screws of insulating material		N/A
	Torque test: torque (Nm); part.....:		N/A

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	Torque test: torque (Nm); part.....:	Side Cover Screw:0,60Nm	P
	Torque test: torque (Nm); part.....:		N/A
1.7 (4.12.2)	Screws with diameter < 3 mm screwed into metal		N/A
1.7 (4.12.4)	Locked connections:		N/A
	- fixed arms; torque (Nm)		N/A
	- lamp holder; torque (Nm)		N/A
	- push-button switches; torque 0,8 Nm		N/A
1.7 (4.12.5)	Screwed glands; force (Nm)	3,25Nm	P
1.7 (4.13)	Mechanical strength		P
1.7 (4.13.1)	Impact tests:		P
	- fragile parts; energy (Nm)	0,20Nm	P
	- other parts; energy (Nm)	0,35Nm	P
	1) live parts		P
	2) linings		P
	3) protection		P
	4) covers		P
1.7 (4.13.2)	Metal parts have adequate mechanical strength		P
1.7 (4.13.3)	Straight test finger	30N	P
1.7 (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

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	d) for temporary installations and suitable for mounting on a stand		N/A
1.7 (4.13.6)	Tumbling barrel		N/A
1.7 (4.14)	Suspensions, fixings and means of adjusting		P
1.7 (4.14.1)	Mechanical load:		P
	A) four times the weight	7x4=28Kg	P
	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
1.7 (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
1.7 (4.14.3)	Adjusting devices:		N/A
	- flexing test; number of cycles		N/A
	- strands broken		N/A
	- electric strength test afterwards		N/A
1.7 (4.14.4)	Telescopic tubes: cords not fixed to tube; no strain on conductors		N/A
1.7 (4.14.5)	Guide pulleys		N/A

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1.7 (4.14.6)	Strain on socket-outlets		N/A
1.7 (4.15)	Flammable materials		P
	- glow-wire test 650°C	See Test Table 1.15 (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
1.7 (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
1.7 (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
1.7 (4.16.1)	Lamp control gear spacing:		P
	- spacing 35 mm		P
	- spacing 10 mm		P
1.7 (4.16.2)	Thermal protection:		N/A
	- in lamp control gear		N/A
	- external		N/A
	- fixed position		N/A
	- temperature marked lamp control gear		N/A

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1.7 (4.16.3)	Design to satisfy the test of 12.6	(see clause 12.6)	N/A
1.7 (4.17)	Drain holes		N/A
	Clearance at least 5 mm		N/A
1.7 (4.18)	Resistance to corrosion		N/A
1.7 (4.18.1)	- rust-resistance		N/A
1.7 (4.18.2)	- season cracking in copper		N/A
1.7 (4.18.3)	- corrosion of aluminium		N/A
1.7 (4.19)	Ignitors compatible with ballast		N/A
1.7 (4.20)	Rough service vibration		O/S
1.7 (4.21)	Protective shield		N/A
1.7 (4.21.1)	Shield fitted if tungsten halogen lamps or metal halide lamps		N/A
	Shield of glass if tungsten halogen lamps		N/A
1.7 (4.21.2)	Particles from a shattering lamp not impair safety		N/A
1.7 (4.21.3)	No direct path		N/A
1.7 (4.21.4)	Impact test on shield		N/A
	Glow-wire test on lamp compartment	See Test Table 1.15 (13.3.2)	N/A
1.7 (4.22)	Attachments to lamps not cause overheating or damage		N/A
1.7 (4.23)	Semi-luminaires comply Class II		N/A
1.7 (4.24)	Photobiological hazards		O/S
1.7 (4.24.1)	No excessive UV radiation if tungsten halogen lamps and metal halide lamps (Annex P)		O/S
1.7 (4.24.2)	Retinal blue light hazard		O/S

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	Class of risk group assessed according to IEC/TR 62778		—
	Luminaires with E_{thr} :		O/S
	a) Fixed luminaires		O/S
	- distance x m, borderline between RG1 and RG2		O/S
	- marking and instruction according 3.2.23		O/S
	b) Portable and handheld luminaires		O/S
	- marking according 3.2.23 if RG1 exceeded at 200 mm according to IEC/TR 62778		O/S
	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		O/S
1.7 (4.25)	Mechanical hazard		P
	No sharp point or edges		P
1.7 (4.26)	Short-circuit protection		N/A
1.7 (4.26.1)	Adequate means of uninsulated accessible SELV / PELV parts		N/A
1.7 (4.26.2)	Short-circuit test with test chain according 4.26.3:		N/A
	Supply source ES1 PSE		N/A
	Test chain not melt through		N/A
	Test sample not exceed values of Table 12.1 and 12.2		N/A
1.7 (4.27)	Terminal blocks with integrated screwless protective 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

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	Voltage drop test, resistance < 0,05 Ω		N/A
1.7 (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) ...:		—
	100 cycles between t min and t max		N/A
	Temperature sensing control still in position		N/A
1.7 (4.29)	Luminaires with non-replaceable light source		
	Not possible to replace light source		N/A
	Live part not accessible after parts have been opened by hand or tools		N/A
1.7 (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 requiring use of tool		P
1.7 (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		N/A
1.7 (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

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	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 make any electrical contact with 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
1.7 (4.31.2)	FELV circuits		N/A
	Used FELV source		N/A
	Voltage $\leq$ ELV		N/A
	Insulating of FELV circuits from LV supply		N/A
	FELV circuits insulated from accessible parts according Table X.1		N/A
	Plugs not able to make any electrical contact with socket-outlets of other voltage systems		N/A
	Socket outlets does not admit plugs of other voltage systems		N/A
	Socket-outlets have protective conductor contact		N/A
1.7 (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

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	- 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
1.7 (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
1.7 (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	(see Annex 2)	N/A
1.7 (4.34)	Electromagnetic fields (EMF)		N/A
	No harmful electromagnetic fields		N/A
1.7 (4.35)	Protection against moving fan blades		N/A
	Test with a standard test finger		N/A
	Test with test probe acc. to Figure 13 (IEC 61032) for portable luminaire		N/A
	Blades rounded with radius ≥ 0.5 mm and:		N/A
	-hardness less than D60 Shore		N/A
	-peripheral speed less than 15 m/s		N/A
	-input power of fan ≤ 2 W at rated voltage		N/A
1.7 (4.36)	Track-mounted luminaires		N/A

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	Test in accordance with Annex A of IEC60570:2003/AMD2:2019		N/A
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1.8 (11)	CREEPAGE DISTANCES AND CLEARANCES		P
1.8 (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		N/A
1.8 (11.2.2)	Creepage distances for frequency up to 30 kHz	See Test Table 1.8 (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 1.8 (11.2) II	N/A
	- Requirements according IEC 60664-4 for controlgear not covered by IEC 61347	See Test Table 1.8 (11.2) II	N/A
1.8 (11.2.3)	Clearances for frequency up to 30 kHz	See Test Table 1.8 (11.2) I	P
	Clearances distances for frequency over 30 kHz:		N/A
	- Controlgear marked with U_P	See Test Table 1.8 (11.2) II	N/A
	- Requirements according IEC 60664-4 for controlgear not covered by IEC 61347	See Test Table 1.8 (11.2) II	N/A

1.9 (7)	PROVISION FOR EARTHING		P
1.9 (7.2.1 + 7.2.3)	Accessible metal parts		P
	Metal parts in contact with supporting surface		P
	Resistance < 0,5 Ω :	0,08	P
	Self-tapping screws used		P
	Thread-forming screws		N/A

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	Thread-forming screw used in a grove		N/A
	Protective earth makes contact first		P
	Terminal blocks with integrated screwless protective earthing contacts tested according Annex V		N/A
	Protective earthing of the luminaire not via built-in control gear		P
1.9 (7.2.2 + 7.2.3)	Protective earth continuity in joints, etc.		P
1.9 (7.2.4)	Locking of clamping means		P
	Compliance with 4.7.3		P
1.9 (7.2.5)	Protective earth terminal integral part of connector socket		N/A
1.9 (7.2.6)	Protective earth terminal adjacent to mains terminals		P
1.9 (7.2.7)	Electrolytic corrosion of the protective earth terminal		N/A
1.9 (7.2.8)	Material of protective earth terminal		P
	Contact surface bare metal		P
1.9 (7.2.10)	Class II luminaire for looping-in		N/A
	Double or reinforced insulation to functional earth		N/A
1.9 (7.2.11)	Protective earthing core coloured green-yellow		P
	Length of protective earthing conductor		P
1.9 (7.2.12)	PELV circuit connected to protective earth for functional purpose		N/A

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

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

1.11 (5)	EXTERNAL AND INTERNAL WIRING	P
1.11 (5.2)	Supply connection and external wiring	P
1.11 (5.2.1)	Means of connection : 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	P N/A
1.11 (5.2.2)	Type of cable : H05VV-F	P
	Nominal cross-sectional area (mm ²)..... : 2x0,75mm ²	P
	Cables equal to IEC 60227 or IEC 60245	N/A
1.11 (5.2.3)	Type of attachment, X, Y or Z Type Y	P
1.11 (5.2.5)	Type Z not connected to screws	P
1.11 (5.2.6)	Cable entries:	P
	- suitable for introduction	P
	- adequate degree of protection	P
1.11 (5.2.7)	Cable entries through rigid material have rounded edges	P
1.11 (5.2.8)	Insulating bushings:	N/A
	- suitably fixed	N/A
	- material in bushings	N/A

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	- material not likely to deteriorate		N/A
	- tubes or guards made of insulating material		N/A
1.11 (5.2.9)	Locking of screwed bushings		N/A
1.11 (5.2.10)	Cord anchorage:		P
	- covering protected from abrasion		P
	- clear how to be effective		P
	- no mechanical or thermal stress		P
	- no tying of cables into knots etc.		P
	- insulating material or lining		N/A
1.11 (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
1.11 (5.2.10.2)	Adequate cord anchorage for type Y and type Z attachment	Type Y	P
1.11 (5.2.10.3)	Tests:		P
	- impossible to push cable; unsafe		P
	- pull test: 25 times; pull (N)..... :	60N	P
	- torque test: torque (Nm) :	0,25Nm	P
	- displacement $\leq$ 2 mm	1	P

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	- no movement of conductors		P
	- no damage of cable or cord		P
	- function independent of electrical connection		N/A
1.11 (5.2.10.4)	Luminaire with/ designed for use with supply cord with maximum current of 2A:		N/A
	- Ordinary Class III luminaire supplied with SELV ≤ 25V RMS/60V DC		N/A
	- Ordinary Class III luminaire supplied with PELV ≤12V RMS/30V DC		N/A
	- Other than ordinary Class III luminaire supplied with voltage ≤12V RMS/30V DC		N/A
	Pull test of 30N		N/A
1.11 (5.2.11)	External wiring passing into luminaire		P
1.11 (5.2.12)	Looping-in terminals		N/A
1.11 (5.2.13)	Wire ends not tinned		P
	Wire ends tinned: no cold flow		P
1.11 (5.2.14)	Mains plug same protection		N/A
	Class III luminaire plug		N/A
	No unsafe compatibility		N/A
1.11 (5.2.15)	Connectors for Class III luminaires (IEC 60603 or IEC 62680)		N/A
1.11 (5.2.16)	Appliance inlets (IEC 60320)		N/A
	Installation couplers (IEC 61535)		N/A
	Appliance inlet or connector systems (IEC 61984)		N/A
1.11 (5.2.17)	No standardized interconnecting cables properly assembled		N/A

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1.11 (5.2.18)	Used plug in accordance with	N/A
	- IEC 60083	N/A
	- other standard	N/A
1.11 (5.3)	Internal wiring	P
1.11 (5.3.1)	Internal wiring of suitable size and type	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 protective earth only	N/A
1.11 (5.3.1.1)	Internal wiring connected directly to fixed wiring	P
	Cross-sectional area (mm ²) : 0,75 mm ²	P
	Insulation thickness (mm) : 0,68 mm	P
	Extra insulation added where necessary	N/A
1.11 (5.3.1.2)	Internal wiring connected to fixed wiring via internal current-limiting device	N/A
	Cross-sectional area (mm ²) :	N/A
1.11 (5.3.1.3)	Double or reinforced insulation for class II	N/A
1.11 (5.3.1.4)	Conductors without insulation	N/A
1.11 (5.3.1.5)	SELV/PELV current-carrying parts	N/A
1.11 (5.3.1.6)	Insulation thickness other than PVC or rubber	N/A
1.11 (5.3.2)	Sharp edges etc.	P
	No moving parts of switches etc.	N/A

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	Joints, raising/lowering devices		N/A
	Telescopic tubes etc.		N/A
	No twisting over 360°		P
1.11 (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
1.11 (5.3.4)	Joints and junctions effectively insulated		N/A
1.11 (5.3.5)	Strain on internal wiring		N/A
1.11 (5.3.6)	Wire carriers		N/A
1.11 (5.3.7)	Wire ends not tinned		N/A
	Wire ends tinned: no cold flow		N/A
1.11 (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

1.12 (8)	PROTECTION AGAINST ELECTRIC SHOCK		P
1.12 (8.2.1)	Live parts not accessible		P
	Basic insulated parts not used on the outer surface without appropriate protection		P

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	Basic insulated parts not accessible with standard test finger on portable, settable and adjustable luminaires		N/A
	Basic insulated parts not accessible with Ø 50 mm probe from outside, other types of luminaires		P
	Lamp and starter holders 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
1.12 (8.2.2)	Portable luminaire adjusted in most unfavourable position		N/A
1.12 (8.2.3.a)	Class II luminaire:		N/A
	- basic insulated metal parts not accessible		N/A
	- required insulation from live parts in compliance with Table X.1		N/A
			N/A
	- glass protective shields not used as supplementary insulation		N/A
1.12 (8.2.3.b)	BC lamp holder of metal in class I luminaires shall be connected to protective earth		N/A
1.12 (8.2.3.c)	SELV circuits with exposed current carrying parts:		N/A
	Ordinary luminaire:		N/A
	- voltage under load/ no-load AC (V) :		N/A

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	- voltage under load/ no-load DC (V).....:		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
	- voltage under load/ no-load AC (V) :		N/A
	- voltage under load/ no-load DC (V).....:		N/A
	- interrupted DC voltage (V)		N/A
	Class III luminaire only for connection to SELV/PELV		N/A
			N/A
1.12 (8.2.3.d)	PELV circuits with exposed current carrying parts:		N/A
	Ordinary luminaire:		N/A
	- voltage under load/ no-load AC (V) :		N/A
	- voltage under load/ no-load DC (V).....:		N/A
	Other than ordinary luminaire:		N/A
	- voltage under load/ no-load AC (V) :		N/A
	- voltage under load/ no-load DC (V).....:		N/A
	One pole insulated if required		N/A
1.12 (8.2.4)	Portable luminaire has protection independent of supporting surface		N/A
1.12 (8.2.5)	Compliance with the standard test finger or relevant probe		P
1.12 (8.2.6)	Covers reliably secured		N/A

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1.12 (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

1.13 (12)	ENDURANCE TEST AND THERMAL TEST		P
1.13 (-)	If IP > IP 20 relevant test of (12.4), (12.5), (12.6) and (12.7) after (9.2) before (9.3) as specified in 1.14		—
1.13 (12.2)	Selection of lamps and ballasts		—
	Lamp used according Annex B	(Lamp used see Annex 2)	—
	Control gear if separate and not supplied	(Control gear used see Annex 2)	—
1.13 (12.3)	Endurance test		P
	a) mounting-position	Normal Position	—
	b) test temperature (°C).....	35°C	—
	c) total duration (h)	240h	—
	d) supply voltage (V)	264V	—
	d) if not equipped with control gear, constant voltage/current (V) or (A)		—
1.13 (12.3.1d)	d) Class III luminaires powered via information technology communication cable:		N/A
	- voltage under normal operation (V).....		—
	- voltage under abnormal operation (V).....		—
	e) luminaire ceases to operate		—
	f) luminaire with constant light output function		N/A

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1.13 (12.3.2)	After endurance test:		P
	- no part unserviceable		P
	- luminaire not unsafe		P
	- no damage to track system		N/A
	- marking legible		P
	- no cracks, deformation etc.		P
1.13 (12.4)	Thermal test (normal operation)	(see Annex 2)	P
1.13 (12.5)	Thermal test (abnormal operation)	(see Annex 2)	N/A
1.13 (12.6)	Thermal test (failed lamp control gear condition):		N/A
1.13 (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
1.13 (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

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1.13 (12.7)	Thermal test (failed lamp control gear in plastic luminaires):	N/A
1.13 (12.7.1)	Luminaire without temperature sensing control	N/A
1.13 (12.7.1.1)	Luminaire with fluorescent lamp $\leq 70W$	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
	- 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 1.15 (13.2.1)
1.13 (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 1.15 (13.2.1)

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1.13 (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
1.13 (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 1.15 (13.2.1)	N/A

1.14 (9)	RESISTANCE TO DUST AND MOISTURE		P
1.14 (-)	If IP > IP 20 the order of tests as specified in clause 1.12		P
1.14 (9.2)	Tests for ingress of dust, solid objects and moisture:		P
	- classification according to IP :	IP40	—
	- mounting position during test :	Normal Position	—
	- fixing screws tightened; torque (Nm) :	-	—
	- tests according to clauses :	9.2.0	—
	- electric strength test afterwards	1480V	P
	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 on insulation where it could become a hazard		N/A
	c.1) For luminaires without drain holes – no water entry		N/A

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	c.2) For luminaires with drain holes – no hazardous water entry		N/A
	d) no water in watertight, pressure watertight, high pressure and temperature water jet-proof or high pressure and cold water jet-proof luminaire		N/A
	e) no contact with live parts (IP 2X)		N/A
	e) no entry into enclosure (IP 3X and IP 4X)		P
	e) no contact with live parts through drain holes and ventilation slots (IP3X and IP4X)		P
	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
1.14 (9.3)	Humidity test 48 h	25°C; %93 RH	P

1.15 (10)	INSULATION RESISTANCE AND ELECTRIC STRENGTH		P
1.15 (10.2.1)	Insulation resistance test		P
	Cable or cord covered by metal foil or replaced by a metal rod of mm Ø :		—
	Insulation resistance (MΩ):999,9 MΩ		P
	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

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	- between live parts of different polarity	999,9 MΩ	P
	- between live parts and mounting surface	999,9 MΩ	P
	- between live parts and metal parts.....	999,9 MΩ	P
	- between live parts of different polarity through action of a switch.....		N/A
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts		N/A
	- Insulation bushings as described in Section 5 :		N/A
1.15 (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): 1480V		P
	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	1480V	P
	- between live parts and metal parts.....	1480V	P
	- between live parts of different polarity through action of a switch.....		N/A

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	- 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
1.15 (10.3)	Touch current (mA).....:	0,09mA	P
	Protective conductor current (mA).....:		N/A

1.16 (13)	RESISTANCE TO HEAT, FIRE AND TRACKING		P
1.16 (13.2.1)	Ball-pressure test :	See Test Table 1.16 (13.2.1)	P
1.16 (13.3.1)	Needle-flame test (10 s) :	See Test Table 1.16 (13.3.1)	N/A
1.16 (13.3.2)	Glow-wire test (650°C) :	See Test Table 1.16 (13.3.2)	P
1.16 (13.4)	Proof tracking test (IEC 60112) :	See Test Table 1.16 (13.4)	N/A

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1.8 (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	1,41	1,10	11.1.B	16,76	2,41	11.1.A	
Working voltage (V)					240V AC		—	
PTI					< 600 ☒ ☐ ≥ 600		—	
Pulse voltage or U_P if applicable (kV)							—	
Supplementary information:								
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:								

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

1.8 (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 **	Measure d clearanc e	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)							—	

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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.

1.16 (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)	
Diffuser	-	75	1,00	
Side Cover Plastic	-	75	0,80	
Supplementary information:				

1.16 (13.3.1)	TABLE: Needle-flame test				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:					

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1.16 (13.3.2)	TABLE: Resistance to heat and fire - Glow wire tests				P
Object/ Part No./ Material	Manufacturer/ trademark	GWT (°C) : 650			Verdict
		t _E (s)	t _I (s)	t _R (s)	
Diffuser	-	-	-	-	P
Side Cover Plastic	-	-	-	-	P
Ignition of the specified layer placed underneath the test specimen (Yes/No)					
Supplementary information:					

1.16 (13.4)	TABLE: Proof tracking test				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.	Cod e	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity 1)
Driver	B	LİFUD	LF- FM080YSIII	Output:250V DC; 50/60Hz; Tc: 95°C;80W	IEC 61347	CE

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External Cable	B	HANOĞLU KABLO	H05VV-F	2x0,75mm ²	IEC 60227	CE
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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

ANNEX 2	TABLE: Thermal tests of Section 12		p
	Type reference	LNR-200-64WATT	—
	Lamp used	LED	—
	Lamp control gear used	LF-FM080YSIII	—
	Mounting position of luminaire	-	—
	Supply wattage (W)	64W	—
	Supply current (A)	-	—
	Temperatures in test 1 - 4 below are corrected for ta (°C)		—
	- abnormal operating mode		—
1.13 (12.4)	- test 1: rated voltage	240V	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current	254V	—

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	- 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 :		—
1.13 (12.5)	- test 4: 1,1 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current or 130/150% of rated input voltage :		—

Temperature measurements (°C)

Part	Ambient	Cl. 12.4 – normal				Cl. 12.5 – abnormal	
		test 1	test 2	test 3	limit	test 4	limit
LED	25°C	57,3	-	-	-	-	-
Internal Cable	25°C	28,8	-	-	-	-	-
Driver	25°C	51,6	54,43	-	90	-	-
External Cable	25°C	47,9	-	-	-	-	-
Diffuser	25°C	49,5	-	-	-	-	-
Terminal	25°C	25,2	-	-	-	-	-
Metal Enclosure	25°C	26,3	-	-	-	-	-

Supplementary information:

ANNEX 3	Screw terminals (part of the luminaire)	N/A
(14)	SCREW TERMINALS	N/A
(14.2)	Type of terminal..... :	—
	Rated current (A) :	—

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Madde Clause	İstenen Deneyler Test Requirements	Açıklamalar Remarks	Sonuç Verdict
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(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):		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)		P
(15)	SCREWLESS TERMINALS		P
(15.2)	Type of terminal.....		—
	Rated current (A)		—
(15.3.1)	Material		P

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TS EN IEC 60598-1/A11 :2022 & TS EN IEC 60598-2-1:2021

Madde Clause	İstenen Deneyler Test Requirements	Açıklamalar Remarks	Sonuç Verdict
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(15.3.2)	Clamping		P
(15.3.3)	Stop		P
(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		P
(15.3.8)	Fixed in position		P
(15.3.10)	Conductor size		P
	Type of conductor		P
(15.5)	Terminals and connections for internal wiring		P
(15.5.1)	Mechanical tests		P
(15.5.1.1.1)	Pull test spring-type terminals (4 N, 4 samples):	4Nm	P
(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)	20Nm	P
(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

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Madde Clause	İstenen Deneyler Test Requirements	Açıklamalar Remarks	Sonuç Verdict
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	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

(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	

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Madde Clause	İstenen Deneyler Test Requirements	Açıklamalar Remarks	Sonuç Verdict
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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:										

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EK DOSYA 1 / ATTACHMENT 1

Ölçüm Cihazları / Measuring Equipments

Cihaz Adı Device name	Model Tipi Model Type	Üretici Manufacturer	Son Kalb. Tarihi Last Cal. Date	Gelecek Kalb. Tarihi Next Cal. Date	Test Maddesi Test Item
AC Güç Kaynağı / AC Power Supply	1009	Baysallar Elektrik San. Ve Tic. Ltd. Şti.	23.01.2024	23.01.2025	1.13(12.3.1) and 1.13(12.4)
Multitester	M12094	Metrel	18.12.2024	18.12.2025	1.15(10.2.1),1.15(10.2.2) and 1.14(10.3)
Klimatik Test Kabini / Climatic Test Cabinet	TK 252	Nüve	22.08.2024	22.08.2025	1.15(9.3.1)
Yüksek Gerilim Test Cihazı / High Voltage Test Device	MT-78X	Multitech	19.08.2024	19.08.2025	1.15(10.2.1)
Yaylı Darbe Çekicileri / Spring impact Hammers	MT-SH-X	Multitech	20.02.2024	20.02.2025	1.7(4.13.1)
Kumpas / Caliper	MC090-51	TorQ	19.08.2024	19.08.2025	1.16(13.2.1)
Torkmetre / Torkmeter	TS120HX		05.02.2024	05.02.2025	1.7(4.12.1)
IP Elektriksel Temas Devresi / IP Electrical Touch Circuit	-	Teknik Medikal ve Mekatronik Teknolojileri	21.02.2024	21.02.2025	1.12(8.2.5)
32 Kanallı Tarayıcı Sıcaklık Ölçer / 32 Channel Scanner Temperature Meter	CKT 4000	CKT	19.08.2024	19.08.2025	1.13(12.4.1)
Terazi / Scales	DS-150-D	Densi	26.02.2024	26.02.2025	1.7(4.14.1)
Rüzgara Dayanıklı Kabin	-	-	-	-	1.13(12.4)
Petrol Eteri/Petroleum Ether	ASO-46-L50	Liva	-	-	1.6(3.4)
Sterilizatör / Sterilizer	-	Nüve	26.02.2024	26.02.2025	1.16(13.2.1)
Bilye Basıncı Test Aparatı	-	Medikal Mek.	21.08.2024	21.08.2027	1.16(13.2.1)
Kızaran Tel Cihazı / Glow Wire Test	RH15120	Multitech	16.02.2024	16.02.2025	1.16(13.3.2)

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EK DOSYA 2 / ATTACHMENT 2

Görsel Dökümanlar / Photo Documentation

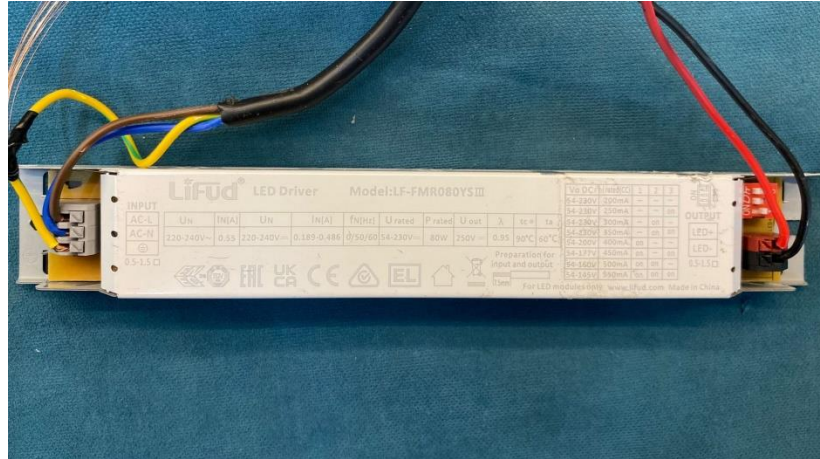


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