

Doc No: FRM-LAB-009a

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TEST RAPORU
TEST REPORT

TL-806
18-TST-0105-21/R2
11-18

Müşterinin Adı Adresi
Customer name/address

İstek Numarası

Order No

Numunenin Adı ve Tarifi

Name and identity of test item

Numunenin kabul tarihi

The date of receipt of test item

Açıklamalar

Remarks

: BSI AYDINLATMA ELEK. ELEKT. SAN. TIC. A.Ş.
Konutkent Mah. 3029 Cad. No: 3/91 06810, Çankaya, Ankara, TURKEY

: 18-TST-0105

: iRUTA Aydınlatma Elemanı
iRUTA Light Element

: 02.11.2018

: DGC'ye , TS EN 60598-2-3 standardı uyarınca müşterinin belirttiği kısmi testler uygulanmıştır. Bu rapor 18-TST-0105-21/R1 no'lu raporun yerini almıştır. 18-TST-0105-21/R1 no'lu rapor geçersizdir.

Partial tests which have been stated by costumer were applied to EUT according to TS EN 60598-2-3 standard. This report was replaced to report no 18-TST-0105-21/R1. The report with no 18-TST-0105-21/R1 is no more valid

Deneyin Yapıldığı Tarih

Date of Test

Raporun Sayfa Sayısı

Number of Pages of the Report

:08.11.2018-09.11.2018 / 13.02.2019

:20

Deney laboratuvarı olarak faaliyet gösteren TÜV AUSTRIA TURK, International Accreditation Service, Inc. (IAS) TL-806 ile TS EN ISO/IEC 17025 Nisan 2012 standardına göre akredite edilmiştir.

TÜV AUSTRIA TURK is accredited by International Accreditation Service, Inc. (IAS) under registration number TL-806 for TS EN ISO/IEC 17025 April 2012 as a test laboratory.

International Accreditation Service, Inc. (IAS) deney raporlarının tanınırlığı konusunda Avrupa Akreditasyon Birliği(EA) ile Çok Taraflı Anlaşma ve Uluslararası Laboratuvar Akreditasyon Birliği(ILAC) ile karşılıklı tanıma anlaşması imzalamıştır.

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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.

Bu rapor, laboratuvara gönderilen numunelere uygulanan deney/deneyler sonucu hazırlanmıştır. Müşteriye ait diğer numuneleri kapsamaz.

This report was prepared according to test results of specimens sent to laboratory. It doesn't contain other specimens belonging to customer.



Deney Sorumlusu
Person in charge of test

Saltuk Buğra GÜNEŞ

Onaylayan
Approval

Gürhan CANSIZ

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1.1 DGC, Çevre Şartları ve Sembollerin Tanımları (Description of the EUT, Environmental Conditions and Symbol Definitions)

Markası / Brand	: BSI AYDINLATMA
Modeli / Model	: RUTA - 1354
Seri Numarası / Serial Number	: Test numunesi/Test sample
Tanımı / Description	: iRUTA Aydınlatma Elemanı iRUTA Light Element
Beyan Gücü / Rated Power	: 57 W
Beyan Gerilimi / Rated Voltage	: 120-240VAC
Çevre Şartları / Environmental Conditions	: 23,4°C, %54 Rh

Deneyler sırasında ölçülen çevre şartları ilgili sayfalarda belirtilmiştir.
(The environmental conditions are measured during tests, are determined related pages.)

Sembollerin Tanımı / Definitions of Symbols
DGC= Deneyden Geçen Cihaz
EUT=Equipment Under Test



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

Report Number.....	18-TST-0105-21/R2
Date of issue.....	13.02.2019
Total number of pages	20
Name of Testing Laboratory preparing the Report	TÜV AUSTRIA TURK Belgelendirme Eğitim ve Gözetim Hizmetleri Ltd. Şti.
Applicant's name	BSI AYDINLATMA ELEK. ELEKT. SAN. TIC. A.Ş.
Address	Konutkent Mah. 3029 Cad. No: 3/91 06810, Çankaya, Ankara
Test specification:	
Standard.....	IEC 60598-2-3:2002, AMD1:2011 used in conjunction with IEC 60598-1:2014, AMD1:2017
Test procedure	LVD
Non-standard test method	N/A
Test Report Form No.	IEC60598_2_3L
Test Report Form(s) Originator	Intertek Semko AB
Master TRF	Dated 2018-03-09

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General disclaimer:

The test results presented in this report relate only to the object tested.
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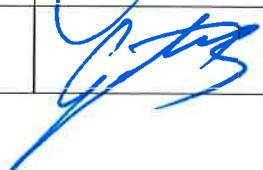
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Test item description	İRUTA Light Element	
Trade Mark	RUTA 1354	
Manufacturer.....	BSI AYDINLATMA	
Model/Type reference	RUTA 1354	
Ratings	120-240 V AC / 50 Hz / 57 W	
Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):		
☒ Testing Laboratory:	TÜV AUSTRIA TURK Belgelendirme Eğitim ve Gözetim Hizmetleri Ltd. Şti.	
Testing location/ address	1. Organize Sanayi Bölgesi Uygurlar Caddesi No:1 06935, Sincan, Ankara, TURKEY	
Tested by (name, function, signature)	Saltuk Buğra GÜNEŞ	
Approved by (name, function, signature)....	Gürhan CANSIZ	



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

Summary of testing:

Tests performed (name of test and test clause):

3.8 (7) PROVISION FOR EARTHING

3.13 (9) RESISTANCE TO DUST AND MOISTURE

3.14 (10) INSULATION RESISTANCE AND
ELECTRIC STRENGTH

3.16(4.24) PHOTOBIOLOGICAL HAZARDS

Testing location:

TÜV AUSTRIA TURK Belgelendirme Eğitim ve
Gözetim Hizmetleri Ltd. Şti.

1. Organize Sanayi Bölgesi Uygurlar Caddesi No:1
06935, Sincan, Ankara, TURKEY

Summary of compliance with National Differences:

List of countries addressed

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



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Copy of marking plate:

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



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Test item particulars	
Classification of installation and use: Fixed luminaire	
Supply Connection: Type Y	
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: 02.11.2018	
Date (s) of performance of tests: 08.11.2018-09.11.2018 / 13.02.2019	
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	
Manufacturer's Declaration per sub-clause 4.2.5 of IEC 60598-1:	
The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided	☐ Yes ☒ Not applicable
When differences exist; they shall be identified in the General product information section.	
Name and address of factory (ies) :	BSI AYDINLATMA ELEK. ELEKT. SAN. TIC. A.Ş. Konutkent Mah. 3029 Cad. No: 3/91 06810, Çankaya, Ankara, TURKEY
General product information: STREET LED LUMINAIRE	

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3.2 (0)	GENERAL TEST REQUIREMENTS	—
3.2 (0.3)	More sections applicable : Yes ☒ No ☐ Section/s:	—
3.2 (0.5)	Components (see Annex 1)	—
3.2 (0.7)	Information for luminaire design in light sources standards	—
3.2 (0.7.2)	Light source safety standard :	—
	Luminaire design in the light source safety standard	P

3.4 (2)	CLASSIFICATION OF LUMINAIRES	—
3.4 (2.2)	Type of protection : Class I	P
3.4 (2.3)	Degree of protection : IP 66	—
3.4 (2.4)	Luminaire suitable for direct mounting on normally flammable surfaces : Yes ☒ No ☐	—
3.4 (2.5)	Luminaire for normal use : Yes ☒ No ☐	—
	Luminaire for rough service : Yes ☐ No ☒	—
3.4 (-)	Modes of installation of road or street lighting	—
	a) on a pipe Yes ☒ No ☐	—
	b) on a mast arm Yes ☒ No ☐	—
	c) on a post top Yes ☐ No ☒	—
	d) on span or suspension wires Yes ☐ No ☒	—
	e) on a wall Yes ☐ No ☒	—



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3.6 (4.24)	PHOTOBIOLOGICAL HAZARDS	—
3.6 (4.24.1)	No excessive UV radiation if tungsten halogen lamps and metal halide lamps (Annex P)	N/A
3.6 (4.24.2)	Retinal blue light hazard	P
	Class of risk group assessed according to IEC/TR 62778	Led luminaire – Risk group 2
	Luminaires with E_{thr}	P
	a) Fixed luminaires	P
	- distance x m, borderline between RG1 and RG2	2360mm, RG2 see in Page 20
	- marking and instruction according 3.2.23	P
	b) Portable and handheld luminaires	N/A
	- marking according 3.2.23 if RG1 exceeded at 200 mm according to IEC/TR 62778	N/A
	Portable luminaires for children IEC 60598-2-10 and Mains socket outlet nightlights IEC 60598-2-12 not exceed RG1 at 200 mm according to IEC/62778	N/A

3.8 (7)	PROVISION FOR EARTHING	—
3.8 (7.2.1 + 7.2.3)	Accessible metal parts	P
	Metal parts in contact with supporting surface	P
	Resistance < 0,5 Ω	0,02 Ω
	Self-tapping screws used	N/A
	Thread-forming screws	N/A
	Thread-forming screw used in a groove	N/A
	Earth makes contact first	P
	Terminal blocks with integrated screwless earthing contacts tested according Annex V	N/A

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	Protective earthing of the luminaire not via built-in control gear		P
3.8 (7.2.2 + 7.2.3)	Earth continuity in joints, etc.	0,02Ω	P
3.8 (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		N/A
3.8 (7.2.5)	Earth terminal integral part of connector socket		P
3.8 (7.2.6)	Earth terminal adjacent to mains terminals		N/A
3.8 (7.2.7)	Electrolytic corrosion of the earth terminal		P
3.8 (7.2.8)	Material of earth terminal		P
	Contact surface bare metal		P
3.8 (7.2.10)	Class II luminaire for looping-in		N/A
	Double or reinforced insulation to functional earth		N/A
3.8 (7.2.11)	Earthing core coloured green-yellow		N/A
	Length of earth conductor		N/A
3.8.1 (-)	Attachment prevented from rotation		N/A



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3.13 (9)	RESISTANCE TO DUST AND MOISTURE	P
3.13.1 (-)	If IP > IP 20 the order of tests as specified in clause 3.12	P
3.13 (9.2)	Tests for ingress of dust, solid objects and moisture:	P
	- classification according to IP.....: IP 66	—
	- mounting position during test: Normal Operation Position	—
	- fixing screws tightened; torque (Nm).....:	—
	- tests according to clauses: 9.2.2 / 9.2.7	—
	- electric strength test afterwards	N/A
	a) no deposit in dust-proof luminaire	P
	b) no talcum in dust-tight luminaire	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	P
	c.2) For luminaires with drain holes – no hazardous water entry	N/A
	d) no water in watertight or pressure watertight luminaire	N/A
	e) no contact with live parts (IP 2X)	N/A
	e) no entry into enclosure (IP 3X and IP 4X)	N/A
	e) no contact with live parts through drain holes and ventilation slots (IP3X and IP4X)	N/A
	f) no trace of water on part of lamp requiring protection from splashing water	N/A
	g) no damage of protective shield or glass envelope	P
3.13 (9.3)	Humidity test 48 h	N/A



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3.14 (10)	INSULATION RESISTANCE AND ELECTRIC STRENGTH		P
3.14 (10.2.1)	Insulation resistance test		P
	Cable or cord covered by metal foil or replaced by a metal rod of mm Ø		—
	Insulation resistance (MΩ).....	>199,9 MΩ	—
	SELV		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		P
	- between live parts of different polarity		N/A
	- between live parts and mounting surface	>199,9 MΩ	P
	- between live parts and metal parts	>199,9 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
3.14 (10.2.2)	Electric strength test		P
	Dummy lamp		P
	Luminaires with ignitors after 24 h test		N/A

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	Luminaires with manual ignitors		N/A
	Test voltage (V)	2 x 240 + 1000 = 1480 V	P
	SELV		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		P
	- between live parts of different polarity		N/A
	- between live parts and mounting surface	2 x 240 + 1000 = 1480 V	P
	- between live parts and metal parts	2 x 240 + 1000 = 1480 V	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
3.14 (10.3)	Touch current or protective conductor current (mA):	Normal Condition: 0,175 mA Reverse Condition : 0,178 mA	P



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ANNEX 1	TABLE: Critical components information					P
Object / part No.	Code	Manufactu rer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformit y ¹⁾
CABLE	C	PEKTAŞ	3x1,5TTR	PVC	TS EN 50525- 2-11:2011	KEMA- KEUR
LED	C	NICHIA	NF2L757GRT-V1	3x3mm MLD power led	Lm-80	-
PCB	C	TD ELEKTRO NIK	X-ML60205NCNF-757xx- 48	12 Pieces 3x3 mm led 51x60cm PCB	-	-
Led driver	C	Texrun	MLA60-700P-IPC	60W 700mA - 20...+60°C	EN 61347-2- 13	-
Led driver	D	MEAN WELL	ELG-75-C700	75W 700mA 53-107V	EN 61347-2- 13	-
Led driver	D	Tridonic	LCI 65W / 700mA OTD EC	65W 700mA 198- 264V 50/60Hz	EN 61347-2- 13	-
Led driver	D	VS	186774.82 ECXd1 400.309	110-277V 75W 700ma	EN 61347-2- 13	-
Terminals	C	Techno	THB391	IP 68 max. 32A max.450V	-	-
Lens	C	LIMBUS	TLS12NI-CT757ST-M2M3- V1	ASYMETRIC -40....+150°C	-	-

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

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List of test equipment used:

A completed list of used test equipment shall be provided in the Test Reports when a Customer's Testing Facility according to CTF stage 1 or CTF stage 2 procedure has been used.

Other forms with a different layout but containing corresponding information are also acceptable.

Note: This page may be removed when CTF stage 1 CTF stage 2 are not used. See also clause 4.8 in OD 2020 for more details.

Clause	Measurement / testing	Testing / measuring equipment / material used, (Equipment ID)	Range used	Last Calibration date	Calibration due date
7	PROVISION FOR EARTHING	LAB-001 - 17370695	1KV - 5kV AC/DC 10A-25A 500VDC - 99Mohm 230VAC 50Hz 100mA	21.05.2018	21.05.2019
10	INSULATION RESISTANCE AND ELECTRIC STRENGTH	LAB-001 - 17370695	1KV - 5kV AC/DC 10A-25A 500VDC - 99Mohm 230VAC 50Hz 100mA	21.05.2018	21.05.2019
		LAB-002 - UL002608	230VAC 500uA-1000uA 1mA-50mA	22.05.2018	22.05.2019
9	IP TEST	LAB-042 - 17062810001	X6 1 dk 100 debi X5 1 dk 12,5 debi	18.07.2018	18.07.2019
		LAB-010 - IPTC-01	IP 5X IP 6X	Does not require calibration.	Does not require calibration.
4	Photobiological hazards	LAB-008	200nm-1650nm	04.06.2018	01.06.2019
		LAB-046	0-5M	13.06.2018	13.06.2019



Bu rapor, laboratuvarın yazılı izni olmadan kısmen kopyalanıp çoğaltılamaz. İmzasız ve mühürlü raporlar geçersizdir.

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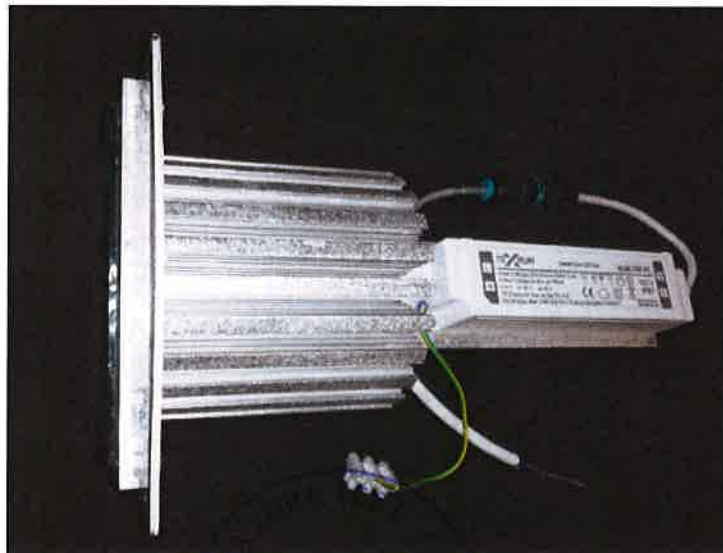
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TL-806
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11-18

3.1

DGC'nin Fotoğrafları (Photos of EUTs)



Bu rapor, laboratuvarın yazılı izni olmadan kısmen kopyalanıp çoğaltılamaz. İmzasız ve mühürsüz raporlar geçersizdir.

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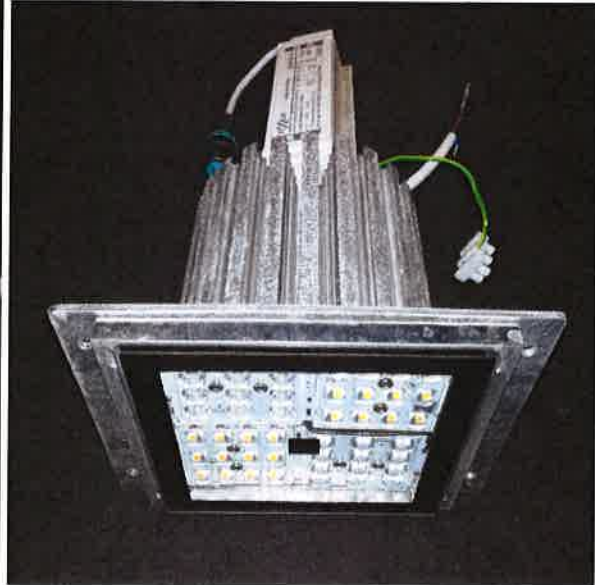
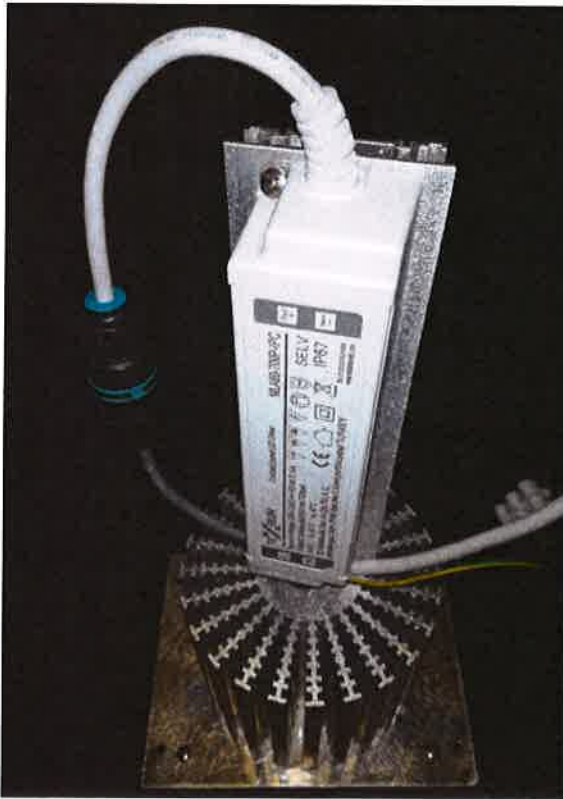
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3.1

DGC'nin Fotoğrafları (Photos of EUTs)



bsi Lighting Technologies
Product : iRuta Decor
Led : TLS-001-15S60205NF-48
Kelvin : 4000 K
Driver : Texrun MLA60-700P - IPC
Woltage/Voltage/Hz : 57 W / 200 -240 V / 50 Hz
Colour : Anthracite Gray
Sealing : IP 65
Safety Class : I
30.10.2018
MADE IN TURKEY



Bu rapor, laboratuvarın yazılı izni olmadan kısmen kopyalanıp çoğaltılamaz. İmzasız ve mühürsüz raporlar geçersizdir.

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3.2**Komponent Beyanı (Compenent declaration)****BSI Aydınlatma San Tic A.Ş.**
Lighting Technologies

06.11.2018

DEKLARASYON

Firmamız tarafından üretilen iRuta Décor model cihazların aşağıda belirtilen componentlerin karşılığı gelen teknik dataların doğruluğunu ve standartların gereksinimleri karşılıklarını beyan ederiz.

TABLE: Components					
Object / part No.	Manufacturer/ trademark	Model	Technical data	Standard	Mark(s) of conformity
KABLO	PEKTAŞ	3x1,5 TTR	OLAĞAN PVC KILIFLI ELEKTRİK KABLOLARI	TS EN 50525-2- 11:2011	Kema -Keur
LED	Nichia	NP2L757GRT-V1	3x3mm kılıflı M/D POWER LED	LM-80 TEST RAPORU	
PCB	TD elektronik	X-ML60205NCF- 757xx-4B	12 adet 3x3mm kılıflı ledli 51x60cm PCB		
SÜRÜCÜ	VS	186774.62 ECXd1 400.309 110-277V	75W 700mA 38-107 V -40 ... +60 °C	EN 61347-1 EN 61347-2-13 EN 61547 EN 61000-3-2 EN 61000-3-3 EN 62384 EN 55015	
SÜRÜCÜ	MEAN WELL	BLG-75-C700	75W 700Ma 53 ~ 107V	ENEC EN61347-1, EN61347-2-13 Independent, EN62384;	
SÜRÜCÜ	TRIDONIC	LCO 75W 700mA RxCL SNC2	75W 700mA 100 ~ 240 V 50 / 60 Hz -40 ... +85 °C	EN 61347-2-13 C5e	
KLEMENS	TECHNO	THB391	IP 68 Operating current max. 32A Operating voltage max. 450V AC		
MERCEK	LIMBUS	TLS12NI- CT7575T-M2M3- V1	ASYMETRIC -40 ... +105 °C		

BSİ AYDINLATMA ELEK. ELEKT. SAN. TİC. A.Ş.
Konutkent Mah. 3029 Cad. No: 3/91 06810, Çankaya, Ankara, TURKEY
T: +90.312.472.42.50 F: +90.312.255 15 95
bsilighting.com - info@bsilighting.com
MERSİS NO: 7651371784968136 REGISTRY NO: 3599371

BSİ AYDINLATMA
ELEK. ELEKT. SAN. VE TİC. A.Ş.
Konutkent Mah. 3029 Cad. No: 3/91 06810
Çankaya, Ankara, TÜRKİYE T.C. RESMİ YERİ
Tic. Sic. No: 3599371 Vergi No: 7651371784968136
Web: www.bsilighting.com E-mail: info@bsilighting.com

Bu rapor, laboratuvarın yazılı izni olmadan kısmen kopyalanıp çoğaltılamaz. İmzasız ve mühürlü raporlar geçersizdir.

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21/R2

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3.2**Fotobiyolojik Tehlikeler Deney Sonucu (Photobiological hazards test result)**

Model : IRUTA

Number :

Manufacturer: BSI AYDINLATMA

Tester : SALTUK BUGRA (Assessor:

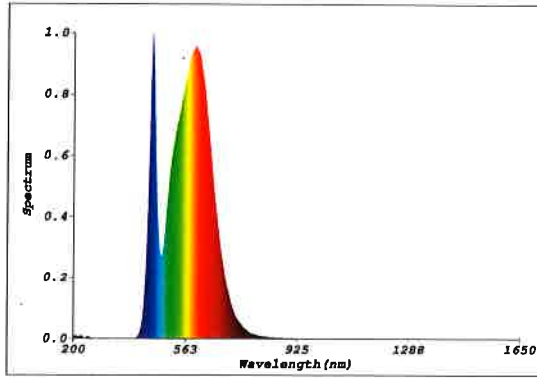
Instrument : OST-300(EVERFINE)

Temperature : 25.3deg

RH : 65.0%

Remarks : ---EN 62471:2008

B(L) & R(L)



LB RFOV (mrad)	Measured (W/m2/sr)	Limit (W/m2/sr)
100(Exempt Risk Group)	7.05e+01	1.0e+02
11(Risk Group 1)	4.08e+02	1.0e+04
1.7(Risk Group 2)	3.43e+03	4.0e+06
LR RFOV (mrad)	Measured (W/m2/sr)	Limit (W/m2/sr)
11(Exempt Risk Group)	6.0e+03	4.7e+05
11(Risk Group 1)	6.0e+03	4.7e+05
1.7(Risk Group 2)	5.0e+04	1.2e+06

Color Parameters:

Chromaticity Coordinate: x=0.3849 y=0.3790/u'=0.2271 v'=0.5032 Tc=3898K

Dominant WL: Ld=579.6nm Peak WL: Lp=455.0nm Purity=29.3% Red Ratio: R=20.2%

Render Index: Ra=83.4 FWHM=30.0nm

R1 =82 R2 =90 R3 =95 R4 =81 R5 =81 R6 =85 R7 =87

R8 =67 R9 =16 R10=75 R11=79 R12=60 R13=84 R14=97 R15=77

Photo Parameters(CX Condition: Single Test, IP = 3749):

Distance = 2360.0mm

Alpha = 0.0593rad

E = 502.0lx

Es = 8.4e-03W/m2 * Tmax_Es = 3566s

Eb = 2.67e+00 W/m2 Tmax is not needed

Euva = 1.6e-03 W/m2 Tmax_Euva > 1000s

Elr = 1.3e-01 W/m2 Tmax_Elr > 1000s

Eh = 1.7e+01 W/m2 Tmax_Eh > 10s

LB = 4.08e+02 W/m2/Sr Tmax_LB < 2449s

LR = 6.0e+03 W/m2/Sr Tmax_LR > 10s

Lr = 6.4e+01 W/m2/Sr (Tmax is not needed)

LB(5mrad): 6.97e+02 W/m2/Sr

LR(5mrad): 5.0e+04 W/m2/Sr

Result:

Lamp Type: Risk Group 2

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