

SGS

CEBEC

Organismul de certificare ENEC înregistrat sub ID # 02. Valabilitatea ENEC+ licențe ENEC pot fi verificate pe www.enec.com

LICENTA

Pentru folosirea ENEC+ Marca înregistrată

Licenta Nr.: 22136

În condițiile prevăzute de directiva "Reguli privind folosirea mărcii înregistrate CEBEC" completată de Acordul ENEC+ în temeiul contractului 1173/2, licența de a folosi ENEC+ marca înregistrată cu sufixul 02, după cum se arată mai jos, a fost eliberată către:

Schröder S.A
Rue de Lusambo, 67
1190 Brussels
Belgium

Pentru produsul:

Aparate de iluminat stradal

Nume de înregistrare:

SCHREDER

Tipul modelului:

IZYLUM 1(led LH351C), IZYLUM 2(led LH351C), IZYLUM 3(led LH351C), IZYLUM 4(led LH351C), IZYLUM 5(led LH351C), IZYLUM 1(OSCONIQ 3030S), IZYLUM 2(OSCONIQ 3030S), IZYLUM 3(OSCONIQ 3030S), IZYLUM 4(OSCONIQ 3030S), IZYLUM 5(OSCONIQ 3030S),

În conformitate cu EPRS pentru performanță:

EPRS 003 2018, EN 62722-1:2014, EN 62722-2-1:2014
EN 62722-1:2016, EN 62722-2-1:2016

În conformitate cu raportul de testare nr. P1580-82_LH351C-OSCONIQ_012021

Această Licență este condiționată de valabilitatea Licenței ENEC nr: 22049

Data: 2021-03-30

Semnatura:

Nume: Calogero LANA
Pozitie: Manager Certificari

Această licență a fost eliberată în condițiile prezumției și condiționată de faptul că titularul licenței deține toate drepturile legale necesare cu privire la produsul prezentat pentru testare și certificare.

SGS Belgium NV – Division SGS CEBEC, Riverside Business Park, Bld Internationalelaan 55, Building K, BE-1070 Brussels
Tel. +32 2 556 00 20 – cebec.info@sgs.com

Traducător și Interpret Autorizat
LIMBĂȘAN DANIELA
Aut. M.J. Nr. 14531/2005
Engleză, Franceză

Characteristics

Descriere	:	Iluminat stradal, pietre
Tensiune nominala (Un)	:	220-240 V
Frecventa nominala	:	50-60 Hz
Indice de redare al culorilor (CRI)	:	70; 80(LH351C) 70 (OSCONIQ 3030S)
Temperatura culoare (CCT)	:	2200K, 2700 K, 3000 K, 4000K (LH351C) 3000 K, 4000K (OSCONIQ 3030S)
Clasa	:	clasa I

Tip IZYLUM 1 (led LH351C) :

Putere nominala	:	Max. 65W
Sursa(e)	:	Max. 20 (Lensoflex 4: LH351C)
Flux luminos	:	Max. 7700 lm (Max 1000 mA)
Eficacitate (lm/W)	:	Max. 153 lm/W
Curent nominal	:	Max 1000 mA (Tq 15°C) / Max 700 mA (Tq 25°C)

Tip IZYLUM 2 (led LH351C):

Putere nominala	:	Max. 110W
Sursa(e)	:	Max. 40 (Lensoflex 4: LH351C)
Flux luminos	:	Max. 14004 lm (Max 870 mA)
Eficacitate (lm/W)	:	Max. 166 lm/W
Curent nominal	:	Max 870 mA (Tq 15°C) / Max 700 mA (Tq 25°C)

Tip IZYLUM 3 (led LH351C) :

Putere nominala	:	Max. 162W
Sursa(e)	:	Max. 80 (Lensoflex 4: LH351C)
Flux luminos	:	Max. 22556 lm
Eficacitate (lm/W)	:	Max. 171 lm/W
Curent nominal	:	Max 700 mA(Tq 25°C)

Tip IZYLUM 4 (led LH351C):

Putere nominala	:	Max. 218W
Sursa(e)	:	Max. 120 (Lensoflex 4: LH351C)
Flux luminos	:	Max. 30019 lm (Max 600 mA)
Eficacitate (lm/W)	:	Max. 170 lm/W
Curent nominal	:	Max 600 mA (Tq 15°C) / Max 500 mA (Tq 25°C)


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Tip IZYLUM 5 (led LH351C):

Putere nominala	:	Max. 280W
Sursa(e)	:	Max. 120 (Lensoflex 4: LH351C)
Flux luminos	:	Max. 35328 lm(Max 750 mA)
Eficacitate (lm/W)	:	Max. 171 lm/W
Curent nominal	:	Max 750 mA (Tq 15°C) / Max 500 mA (Tq 25°C)

Tip IZYLUM 1 (OSCONIQ 3030S) :

Putere nominala	:	Max. 56W
Sursa(e)	:	Max. 40 (<u>OSCONIQ 3030S</u>)
Flux luminos	:	Max. 6621 lm
Eficacitate (lm/W)	:	Max. 149 lm/W
Curent nominal	:	Max 200 mA (Tq 25°C)

Tip IZYLUM 2 (OSCONIQ 3030S):

Putere nominala	:	Max. 109W
Sursa(e)	:	Max. 80 (<u>OSCONIQ 3030S</u>)
Flux luminos	:	Max. 12878 lm
Eficacitate (lm/W)	:	Max. 164 lm/W
Curent nominal	:	Max 200 mA (Tq 25°C)

Tip IZYLUM 3 (OSCONIQ 3030S) :

Putere nominala	:	Max. 167W
Sursa(e)	:	Max. 160 (<u>OSCONIQ 3030S</u>)
Flux luminos	:	Max. 22368 lm
Eficacitate (lm/W)	:	Max. 171 lm/W
Curent nominal	:	Max 162 mA(Tq 25°C)

Tip IZYLUM 4 (OSCONIQ 3030S):

Putere nominala	:	Max. 214W
Sursa(e)	:	Max. 240 (<u>OSCONIQ 3030S</u>)
Flux luminos	:	Max. 28630 lm
Eficacitate (lm/W)	:	Max. 172 lm/W
Curent nominal	:	Max 140 mA (Tq 25°C)

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Tip IZYLUM 5 (OSCONIQ 3030S):

Putere nominala	:	Max. 275W
Sursa(e)	:	Max. 240 (<u>OSCONIQ 3030S</u>)
Flux luminos	:	Max. 33531 lm
Eficacitate (lm/W)	:	Max. 171 lm/W
Curent nominal	:	Max 750 mA (Tq 15°C) / Max 500 mA (Tq 25°C)


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LICENȚĂ

Nr. 22049 înlocuiește nr. 21792

Eliberat pentru:

Aplicant:

R-Tech

Rue de Mons, 3

4000 LIEGE

Belgia

Posesor licență:

Schreder S.A.

Rue de Lusambo, 67

B-1190 BRUXELLES

Belgia

Produs : aparate de iluminat căi de circulație, piețe, stradal

Nume de înregistrare : SCHREDER

Tipul modelului : IZYLUM 1, IZYLUM 2 , IZYLUM 3, IZYLUM 4, IZYLUM 5

Produsul și orice versiune este menționat în Anexa la această licență precum și documentele la care se referă.

SGS CEBEC, prin prezenta, declară că produsul mai sus menționat a fost certificat în baza:

- testelor tip conforme standardului specificat în anexă
- inspecției la locul de producție
- documentului de certificare cu nr. 1173

SGS CEBEC, marcă de calitate înregistrată, garantează prin prezenta dreptul de a folosi marca de certificare CEBEC

Marca de certificare ENEC/CEBEC poate fi aplicată pe produsul specificat în această licență pe durata valabilității documentului de certificare ENEC/CEBEC, și conform condițiilor documentului de certificare ENEC/CEBEC.

Licența a fost eliberată la 18/01/2021

Semnătură indescifrabilă

ir. C. Lana,

Director Certificare

Este permisă numai publicarea integrală a acestei certificări, inclusiv anexa.

Acest certificat este valid doar împreună cu publicarea adresei: www.sgs.com/ee

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ANEXĂ LA LICENȚA ENEC/CEBEC Nr. 22049
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DATELE TEHNICE ALE PRODUSULUI CERTIFICAT

Date produs

Produs : Căi de circulație, piețe, stradal
Nume de marcă : SCHREDER
Tipul(uri) : IZYLUM 1, IZYLUM 2 , IZYLUM 3, IZYLUM 4, IZYLUM 5
Descriere : Iluminat stradal
Tensiune nominală : 220-240 V
Tip alimentare : current alternativ
Frecvența nominală : 50-60 Hz
Clasa : clasa I
Grad de etanșitate : IP 66, IP67
Rezistența la impact : IK09

Informatii suplimentare:

- IZYLUM 1 cu 20 LED-uri Lensoflex 4 LH351C @700mA ta 50°C cu echipament de control LG PISE-A075X si PISE-A075Y
- IZYLUM 4 cu max 120 LED-uri Lensoflex 4 LH351C @ max 500mA ta 55°C cu echipament de control Philips LP/FP 150W 0.2-0.7 230V S240
- IZYLUM 5 cu max 240 LED-uri Midflex2 OSCONIQ @ max 700mA & IZYLUM 5 cu max 120 LED-uri Lensoflex 4 LH351C @ max 500mA ta 55°C cu echipament de control Philips SR 110W 0.2-0.7A SNEMP 230V C150 sXt, PISE-A165X sau PISEA165Y

Informatii produs- tip IZYLUM 1

Putere nominală : max. 65W
Lampă(i) : max 20 led-uri (Lensoflex4: LH351C)
max 40 led-uri (midflex 2 Osconiq 3030)
Temperatura nominala ambientala : max. 55°C

Informatii produs- tip IZYLUM 2

Putere nominală : max. 110W
Lampă(i) : max 40 led-uri (Lensoflex4: LH351C)
max 80 led-uri (midflex 2 Osconiq 3030)
Temperatura nominala ambientala : max. 55°C

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630733/14

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ANEXĂ LA LICENȚA ENEC/CEBEC Nr. 22049

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Informatii produs- tip IZYLUM 3

Putere nominală	: max. 167 W
Lampă(i)	: max 80 led-uri (Lensoflex4: LH351C) max 160 led-uri (midflex 2 Osconiq 3030)
Temperatura nominala ambientala	: max. 55°C

Informatii produs- tip IZYLUM 4

Putere nominală	: max. 218 W
Lampă(i)	: max 120 led-uri (Lensoflex4: LH351C) max 240 led-uri (midflex 2 Osconiq 3030)
Temperatura nominala ambientala	: max. 50°C

Informatii produs- tip IZYLUM 5

Putere nominală	: max. 280 W
Lampă(i)	: max 120 led-uri (Lensoflex4: LH351C) max 240 led-uri (midflex 2 Osconiq 3030)
Temperatura nominala ambientala	: max. 50°C

Cerinte teste

EN 60598-1:2015 + A1:2018

EN 60598-2-3:2003+A1:2011

Rezultate teste

Rezultatele testelor se gasesc in certificatul cu numarul 630733/14

Observatii

Acest certificat are la bază raportul testului Nr. P1580-82-1c.

ANEXĂ LA LICENȚA ENEC/CEBEC Nr. 22049
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Concluzie :

Verificarea a demonstrat că toate cerințele au fost îndeplinite.

Verificat de către, coordonator proiect

Christian Maes –18/01/2021

Manager Certificare

semnătură indescifrabilă, data

Daniela
Traducător și Interpret Autorizat
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630733/14

ANEXĂ LA LICENȚA ENEC/CEBEC Nr. 22049
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Adresa fabricilor

Schreder TOV
Vul. Mykulynetska 46 B
46000 TERNOPIL
Ukraine

Schreder (China) Lighting Industrial Co, Ltd
No 40 Xinye 2 Street, Tianjin Economic Technological Development Zone West Zone,
300462 Tianjin City , P.R. China
China

Socelec S.A
Av de Roanne, 66
Poligono Industrial EL HENARES
19180 MARCHAMALO (GUADALAJARA)
Spain

Schreder Iluminacao S A
Rua da Fraternidade Operaria n' 3
2795-491 CARNAXIDE OEIRAS
Portugal

Schreder Hungary Plc.
Topart 2
2084 PILISSZENTIVAN Hungary


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630733/14

ANSI/IES LM-80 Test Report

Report Issue Date : September 08, 2021 **Report Number :** I-190520-096-I-03
Testing Start Date : August 17, 2019 **Testing Completion Date :** July 30, 2021
Revision Number : 03 **Test Duration :** 18 000 h

Manufacturer Information :

Applicant : Seoul Semiconductor Co., LTD
Address : 97-11, Sandan-ro 163, Danwon-gu, Ansan, Gyeonggi-do, Korea 15429

Description of Test Samples :

Classification : LED Package
PKG Name : 5050
Part Number : STW8LAPA
Drive Current : 500 mA

Test Procedure :

ANSI/IES LM-80-15 Approved Method for Measuring Luminous Flux and Color Maintenance of LED Packages, Arrays and Modules



Tested by



JinHwi Han, Research Engineer

Approved by



YoungJoon WON, Laboratory Manager

Seoul Semiconductor Testing Laboratory(TL-688) is accredited to ISO/IEC 17025:2017 for the above test procedure by IAS, USA which is a signatory to ILAC-MRA.

Seoul Semiconductor Testing Laboratory

If you need to verify the authenticity of this report, please contact the below address.
97-11, Sandan-ro 163, Danwon-gu, Ansan, Gyeonggi-do, Korea 15429, E-mail: LM80@seoulsemicon.com

Applicable Series Model Numbers

This LM-80 report is applicable to the following

Model Name	Forward Current	Typical VF	Power	LED Number	Power Density	Current Density	Minimum Spacing	CCT
STW8LAPA Tested	500 mA	5.9 V	2.9 W	10	0.51 W/mm ²	175 mA/mm ²	0.2 mm	≥2200 K
STWxL8PA	400 mA	5.9 V	2.4 W	8	0.51 W/mm ²	172 mA/mm ²	0.3 mm	≥2200 K
STWxL8SA	100 mA	24.0 V	2.4 W	8	0.51 W/mm ²	172 mA/mm ²	0.3 mm	≥2200 K

※ 'x' means CRI & can contain 0, 7, 8, and 9.

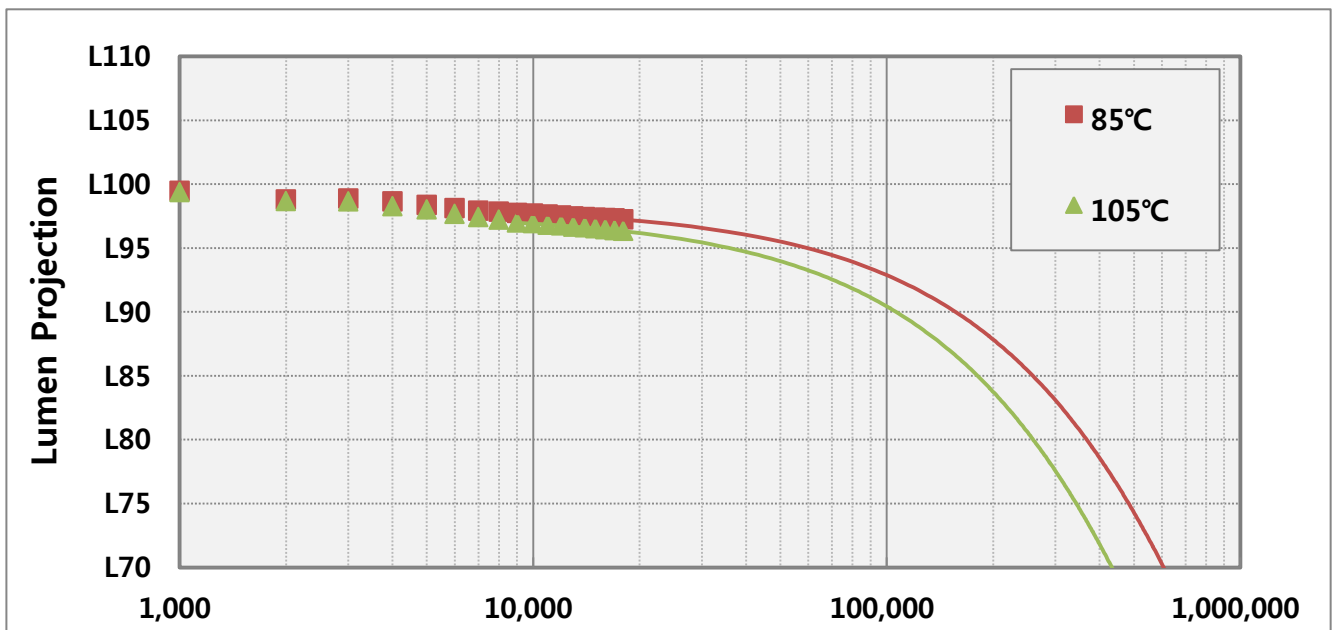


SEOUL SEMICONDUCTOR

1. Test Summary

Items	Nominal Case Temperature	
	85 °C	105 °C
Number of LED tested	20	20
Drive and Measurement Current	500 mA	500 mA
Test Duration	18 000 h	18 000 h
Actual Case Temperature	≥83.2 °C	≥103.0 °C
Actual Ambient Temperature	≥81.9 °C	≥103.9 °C
Air Flow Velocity	≤0.20 m/s	≤0.20 m/s
Averaged Initial Luminous Flux	437.5 lm	434.8 lm
Initial Nominal CCT	2700 K	2700 K
Average Initial CRI	81	81
Total Input Power	2.9 W	2.9 W
Average Current Density (mA/mm ²)	175	175
Average Power Density (W/mm ²)	0.51	0.51
Minimum Spacing from die edge to die edge	0.2 mm	0.2 mm
Average Lumen Maintenance	97.2 %	96.3 %
Average Chromacity Shift	0.001 5	0.002 2
α	5.580E-07	7.687E-07
B	0.982	0.977
TM-21 Projection L ₇₀	>108000	>108000
TM-21 Projection L ₈₀	>108000	>108000
TM-21 Projection L ₉₀	>108000	106000

※ The results shown in this certificate refer only to the sample(s) tested unless otherwise stated.
This test report cannot be reproduced, except in full.



2. IES LM-80-08 Test Report Requirement :

Number of LED Light Sources Tested

See the Test Summary

Description of LED Light Sources

See the Description of Test samples at the cover of certificate

Description of auxiliary equipment

Active cooling Test System

Temperature controlling chamber for LED package/array/module consists of the water cooling heat-sink plates to control the case temperature of each device and of the power supply required by LM-80 test conditions.

Measurement System

Photometric measurement tester for LED package/array/module consists of the integrating sphere with temperature controlling system(TEC) and of programmable current source meter.

Operating Cycle

Constant Direct Current (DC)

Ambient Conditions Including Airflow, Temperature and Relative Humidity

Airflow : < 1 m/s

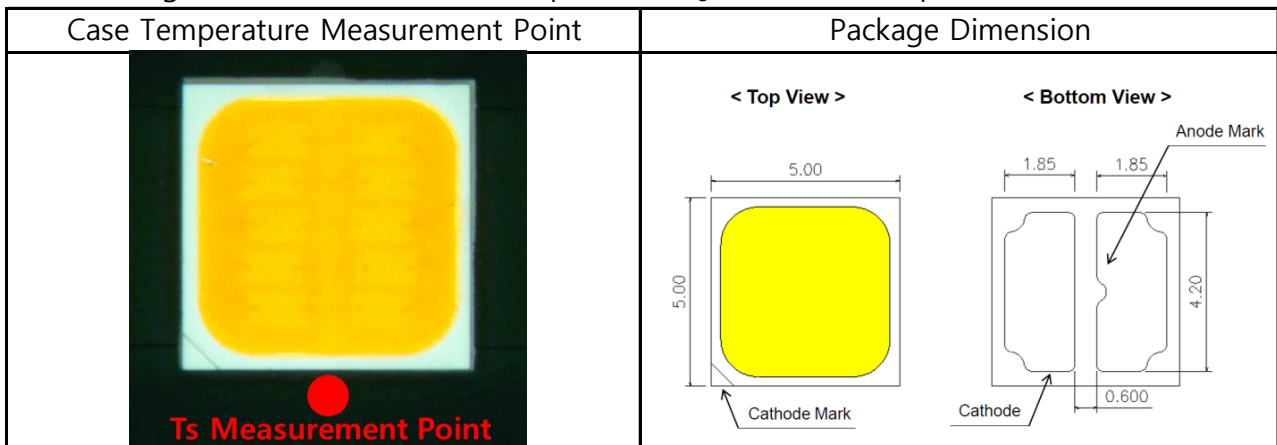
Ambient temperature : ≥ -5 °C of Nominal T_A

(See the Test Summary for actual T_A)

Relative Humidity : $\leq 65\%$ RH

Case Temperature (Test Point Temperature)

See the figure below, for the case temperature (T_S) measurement point and dimension



Drive Current of the LED Light Source During Lifetime Test

See the Test Summary

Initial Luminous Flux and Forward Voltage at Photometric Measurement Current

See the Test Summary

Lumen Maintenance Data for Each Individual LED Light Source Along with Median Value, Standard Deviation, Minimum and Maximum Lumen Maintenance Value for All of the LED Light Sources

See the table of each data set

Observation of LED light Sources Failures

No failure observed

LED Light Source Monitoring Interval

See the table of each data set

Photometric Measurement Uncertainty

Seoul Semiconductor maintain a tolerance of $\pm 3.0\%$ at 95 % confidence level ($k = 2$)

Chromaticity Shift Over the Measurement Time

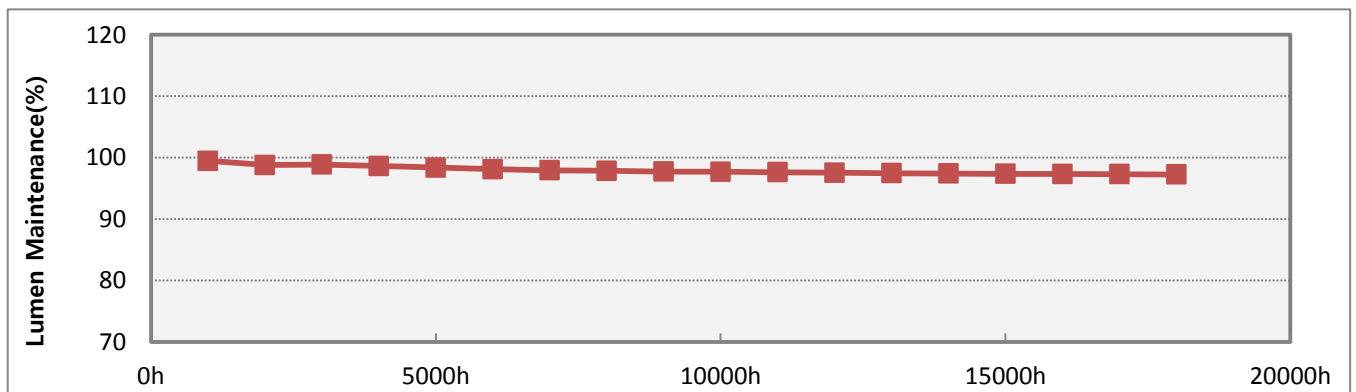
See the table of each data set

DUT Sampling Method

Each test condition is made with 20 samples that are randomly taken from 40 samples of 3 manufacturing lot. Each test sample is tested for LM-80 under 2 different temperature condition.

3. 85°C Data Set

No.	Initial Characteristics			Lumen Maintenance								
	V _f (V)	Flux (lm)	CCT (K)	1000 h	2000 h	3000 h	4000 h	5000 h	6000 h	7000 h	8000 h	9000 h
01	5.87	436.88	2798	98.6	97.9	98.1	98.1	97.7	97.6	97.3	97.2	97.1
02	5.88	441.46	2777	98.9	98.4	98.4	98.0	97.7	97.4	97.1	97.0	96.8
03	5.88	436.09	2800	99.6	99.0	99.2	98.9	98.5	98.2	98.1	97.9	97.7
04	5.88	427.82	2820	98.6	97.9	98.0	98.0	97.8	97.5	97.3	97.1	96.9
05	5.87	435.54	2810	100.0	99.1	98.9	98.7	98.4	98.1	97.9	97.8	97.7
06	5.89	444.50	2797	99.8	99.2	99.2	98.9	98.7	98.5	98.3	98.2	97.9
07	5.88	444.25	2767	99.8	99.2	99.3	99.0	98.9	98.6	98.4	98.4	98.3
08	5.88	435.74	2780	99.3	98.5	99.1	98.6	98.2	97.9	97.9	97.8	97.8
09	5.90	439.82	2837	99.8	98.7	98.9	98.6	98.2	98.0	97.8	97.7	97.6
10	5.92	442.44	2801	99.4	98.8	98.9	98.5	98.3	98.0	97.8	97.8	97.7
11	5.89	444.70	2804	99.4	98.6	98.8	98.6	98.3	98.0	97.9	97.8	97.8
12	5.87	424.26	2779	99.0	98.2	98.9	98.1	97.8	97.5	97.4	97.4	97.4
13	5.88	433.45	2789	99.7	99.2	99.0	99.0	98.7	98.4	98.2	98.1	98.0
14	5.85	434.99	2795	99.8	99.1	99.1	99.1	98.8	98.2	98.0	98.0	97.8
15	5.86	444.10	2778	99.8	99.1	99.0	98.9	98.8	98.6	98.4	98.3	98.1
16	5.88	436.97	2794	99.6	99.1	98.9	98.7	98.6	98.4	98.1	98.0	97.9
17	5.87	435.11	2775	99.8	99.1	99.0	98.9	98.6	98.4	98.3	98.2	98.1
18	5.89	435.45	2811	99.1	98.4	98.4	98.1	98.1	97.8	97.6	97.4	97.3
19	5.90	442.81	2790	99.9	99.3	99.3	99.3	98.9	98.7	98.6	98.5	98.3
20	5.89	433.87	2801	99.7	99.1	99.1	99.0	98.6	98.5	98.2	98.3	98.2
Ave.	5.88	437.51	2795	99.5	98.8	98.9	98.6	98.4	98.1	97.9	97.8	97.7
Med.	5.88	436.48	2796	99.7	99.0	99.0	98.7	98.5	98.1	98.0	97.9	97.8
Min.	5.85	424.26	2767	98.6	97.9	98.0	98.0	97.7	97.4	97.1	97.0	96.8
Max.	5.92	444.70	2837	100.0	99.3	99.3	99.3	98.9	98.7	98.6	98.5	98.3
σ	0.02	5.56	17	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4

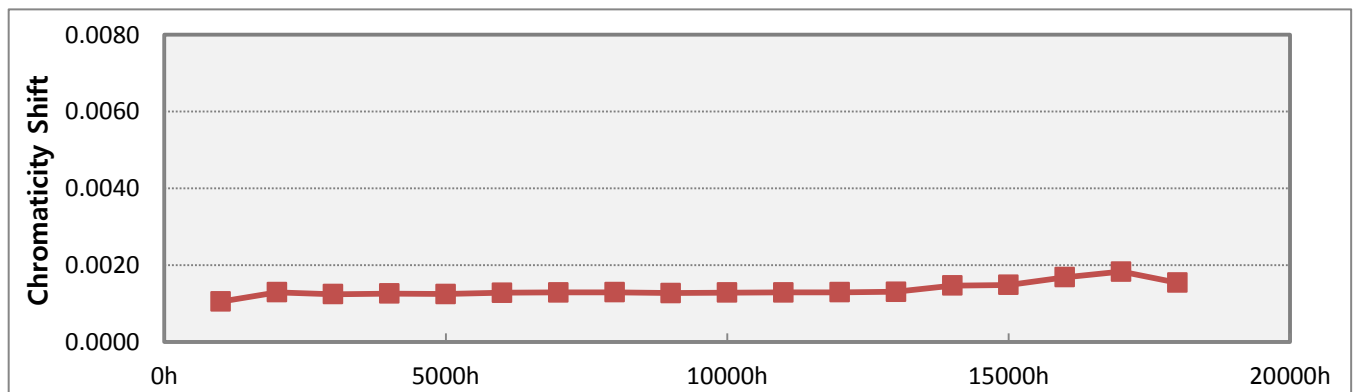


3. 85°C Data Set

No.	Lumen Maintenance									
	10000 h	11000 h	12000 h	13000 h	14000 h	15000 h	16000 h	17000 h	18000 h	
01	97.1	97.0	96.9	96.8	96.5	96.5	96.5	96.4	96.4	
02	96.8	96.7	96.7	96.6	96.2	96.2	96.0	96.1	96.0	
03	97.7	97.6	97.5	97.5	97.2	97.2	97.1	97.1	97.1	
04	96.7	96.7	96.7	96.6	97.2	97.1	97.1	97.1	96.9	
05	97.7	97.5	97.6	97.4	97.5	97.5	97.4	97.4	97.3	
06	97.9	97.9	97.8	97.7	97.4	97.4	97.4	97.3	97.3	
07	98.4	98.2	98.2	98.1	98.1	98.1	98.0	98.0	98.0	
08	97.8	97.7	97.7	97.6	97.3	97.3	97.3	97.2	97.2	
09	97.6	97.6	97.5	97.4	97.5	97.4	97.4	97.4	97.3	
10	97.7	97.6	97.5	97.4	97.0	96.9	96.9	96.9	96.8	
11	97.7	97.8	97.7	97.6	97.5	97.5	97.5	97.5	97.4	
12	97.4	97.3	97.2	97.0	95.8	95.8	95.8	95.8	95.7	
13	97.9	97.9	97.9	97.8	98.0	98.0	98.0	97.9	97.9	
14	97.7	97.7	97.6	97.5	97.7	97.7	97.7	97.7	97.6	
15	98.0	98.0	97.9	97.8	98.0	97.9	97.9	97.8	97.8	
16	97.8	97.7	97.8	97.6	97.8	97.8	97.8	97.8	97.7	
17	98.1	98.0	97.9	97.9	98.1	98.0	98.0	98.0	98.0	
18	97.2	97.2	97.2	97.0	97.4	97.4	97.4	97.3	97.3	
19	98.3	98.1	98.1	98.1	97.7	97.7	97.6	97.5	97.5	
20	98.3	98.1	97.9	97.8	98.1	98.1	98.1	98.0	98.0	
Ave.	97.7	97.6	97.6	97.5	97.4	97.4	97.3	97.3	97.2	
Med.	97.7	97.7	97.6	97.5	97.5	97.4	97.4	97.4	97.3	
Min.	96.7	96.7	96.7	96.6	95.8	95.8	95.8	95.8	95.7	
Max.	98.4	98.2	98.2	98.1	98.1	98.1	98.1	98.0	98.0	
σ	0.5	0.4	0.4	0.4	0.6	0.6	0.6	0.6	0.6	

3. 85°C Data Set

No.	Initial Characteristics			Chromaticity Shift du'v'								
	u'	v'	CRI	1000 h	2000 h	3000 h	4000 h	5000 h	6000 h	7000 h	8000 h	9000 h
01	0.2588	0.5233	81	0.0014	0.0016	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015
02	0.2594	0.5247	81	0.0011	0.0013	0.0013	0.0015	0.0014	0.0015	0.0015	0.0015	0.0016
03	0.2586	0.5235	81	0.0010	0.0012	0.0011	0.0012	0.0011	0.0012	0.0012	0.0013	0.0013
04	0.2580	0.5222	82	0.0011	0.0014	0.0013	0.0014	0.0013	0.0014	0.0014	0.0014	0.0013
05	0.2585	0.5217	82	0.0009	0.0013	0.0013	0.0014	0.0014	0.0015	0.0015	0.0015	0.0015
06	0.2583	0.5254	81	0.0010	0.0012	0.0011	0.0012	0.0011	0.0012	0.0012	0.0012	0.0013
07	0.2595	0.5264	81	0.0010	0.0012	0.0011	0.0011	0.0011	0.0011	0.0011	0.0011	0.0011
08	0.2589	0.5264	81	0.0010	0.0012	0.0012	0.0012	0.0012	0.0012	0.0012	0.0012	0.0011
09	0.2576	0.5209	82	0.0010	0.0013	0.0012	0.0012	0.0012	0.0012	0.0012	0.0012	0.0012
10	0.2587	0.5227	81	0.0011	0.0013	0.0012	0.0012	0.0012	0.0012	0.0012	0.0012	0.0012
11	0.2587	0.5224	81	0.0011	0.0013	0.0012	0.0012	0.0012	0.0012	0.0012	0.0012	0.0012
12	0.2590	0.5260	81	0.0010	0.0013	0.0012	0.0013	0.0012	0.0013	0.0013	0.0013	0.0013
13	0.2591	0.5237	81	0.0012	0.0014	0.0014	0.0013	0.0013	0.0013	0.0013	0.0013	0.0013
14	0.2588	0.5236	81	0.0009	0.0012	0.0012	0.0011	0.0011	0.0012	0.0012	0.0012	0.0012
15	0.2592	0.5257	81	0.0010	0.0013	0.0012	0.0012	0.0012	0.0012	0.0012	0.0012	0.0011
16	0.2590	0.5227	81	0.0011	0.0013	0.0013	0.0013	0.0013	0.0014	0.0014	0.0014	0.0014
17	0.2596	0.5241	81	0.0011	0.0013	0.0013	0.0013	0.0013	0.0013	0.0013	0.0013	0.0012
18	0.2584	0.5222	82	0.0012	0.0015	0.0014	0.0014	0.0014	0.0014	0.0014	0.0014	0.0014
19	0.2585	0.5260	81	0.0010	0.0012	0.0012	0.0011	0.0011	0.0012	0.0012	0.0011	0.0011
20	0.2586	0.5233	81	0.0010	0.0012	0.0012	0.0012	0.0012	0.0012	0.0012	0.0012	0.0012
Ave.	0.2588	0.5238	81	0.0011	0.0013	0.0012	0.0013	0.0012	0.0013	0.0013	0.0013	0.0013
Med.	0.2587	0.5235	81	0.0010	0.0013	0.0012	0.0012	0.0012	0.0012	0.0012	0.0012	0.0012
Min.	0.2576	0.5209	81	0.0009	0.0012	0.0011	0.0011	0.0011	0.0011	0.0011	0.0011	0.0011
Max.	0.2596	0.5264	82	0.0014	0.0016	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0016
σ	0.0005	0.0017	0.3	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001

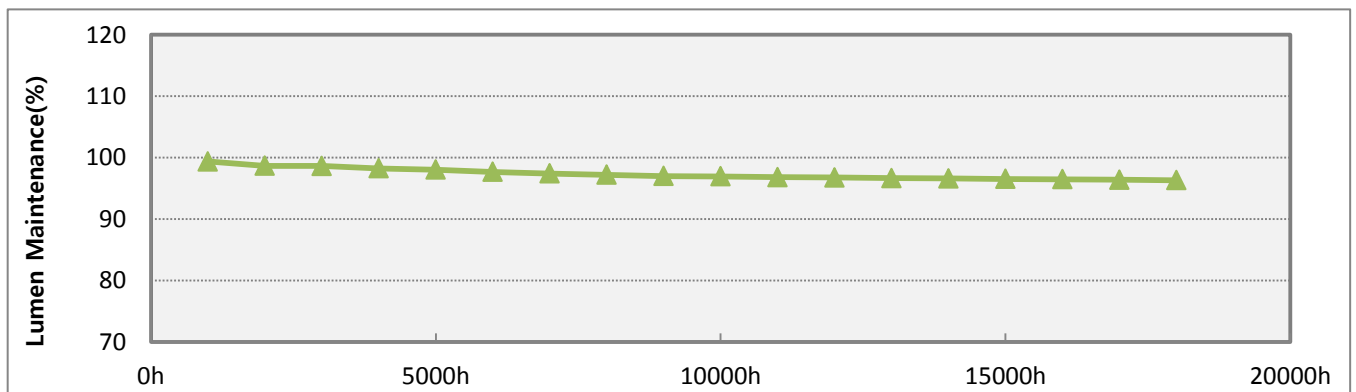


3. 85°C Data Set

No.		Chromaticity Shift du'v'								
		10000 h	11000 h	12000 h	13000 h	14000 h	15000 h	16000 h	17000 h	18000 h
01		0.0016	0.0015	0.0015	0.0016	0.0019	0.0019	0.0022	0.0023	0.0019
02		0.0017	0.0016	0.0017	0.0017	0.0020	0.0020	0.0022	0.0023	0.0021
03		0.0013	0.0013	0.0013	0.0014	0.0016	0.0016	0.0018	0.0021	0.0016
04		0.0014	0.0013	0.0014	0.0014	0.0015	0.0015	0.0018	0.0020	0.0016
05		0.0015	0.0015	0.0015	0.0015	0.0017	0.0017	0.0020	0.0020	0.0018
06		0.0013	0.0013	0.0013	0.0013	0.0015	0.0015	0.0017	0.0019	0.0016
07		0.0011	0.0011	0.0011	0.0011	0.0012	0.0012	0.0014	0.0017	0.0012
08		0.0012	0.0011	0.0012	0.0011	0.0013	0.0013	0.0016	0.0015	0.0013
09		0.0012	0.0012	0.0012	0.0012	0.0014	0.0014	0.0015	0.0018	0.0014
10		0.0012	0.0012	0.0012	0.0012	0.0016	0.0016	0.0019	0.0020	0.0019
11		0.0012	0.0012	0.0012	0.0012	0.0013	0.0013	0.0014	0.0017	0.0013
12		0.0013	0.0013	0.0013	0.0014	0.0016	0.0016	0.0017	0.0020	0.0018
13		0.0013	0.0013	0.0013	0.0013	0.0014	0.0014	0.0016	0.0017	0.0014
14		0.0012	0.0012	0.0012	0.0012	0.0013	0.0013	0.0016	0.0017	0.0013
15		0.0011	0.0012	0.0012	0.0012	0.0014	0.0014	0.0016	0.0016	0.0016
16		0.0014	0.0014	0.0014	0.0014	0.0015	0.0015	0.0017	0.0018	0.0015
17		0.0012	0.0012	0.0012	0.0012	0.0013	0.0013	0.0015	0.0017	0.0013
18		0.0014	0.0014	0.0014	0.0014	0.0015	0.0015	0.0017	0.0017	0.0015
19		0.0011	0.0011	0.0011	0.0011	0.0013	0.0013	0.0016	0.0017	0.0016
20		0.0012	0.0012	0.0012	0.0012	0.0012	0.0013	0.0014	0.0016	0.0012
Ave.		0.0013	0.0013	0.0013	0.0013	0.0015	0.0015	0.0017	0.0018	0.0015
Med.		0.0012	0.0012	0.0012	0.0013	0.0014	0.0014	0.0017	0.0017	0.0015
Min.		0.0011	0.0011	0.0011	0.0011	0.0012	0.0012	0.0014	0.0015	0.0012
Max.		0.0017	0.0016	0.0017	0.0017	0.0020	0.0020	0.0022	0.0023	0.0021
σ		0.0002	0.0001	0.0001	0.0001	0.0002	0.0002	0.0002	0.0002	0.0003

4. 105°C Data Set

No.	Initial Characteristics			Lumen Maintenance								
	V _f (V)	Flux (lm)	CCT (K)	1000 h	2000 h	3000 h	4000 h	5000 h	6000 h	7000 h	8000 h	9000 h
01	5.88	422.27	2755	99.4	98.9	98.9	98.6	98.2	97.8	97.4	97.1	96.9
02	5.86	431.64	2794	99.8	99.1	99.1	98.8	98.7	98.3	98.0	97.9	97.7
03	5.85	433.47	2787	99.3	98.7	98.9	98.5	98.4	97.9	97.8	97.5	97.4
04	5.88	446.24	2771	99.3	98.7	98.6	98.3	98.1	97.8	97.6	97.3	97.0
05	5.89	445.66	2791	99.6	98.9	98.9	98.5	98.4	98.0	97.8	97.6	97.4
06	5.87	439.13	2810	98.8	98.0	98.2	97.7	97.4	97.2	96.9	96.7	96.6
07	5.87	436.18	2797	99.2	98.5	98.6	98.2	97.9	97.5	97.2	97.0	96.6
08	5.91	435.08	2829	97.6	96.9	97.0	96.6	96.2	95.8	95.6	95.4	95.2
09	5.87	443.07	2807	99.5	98.8	98.8	98.3	98.1	97.7	97.4	97.2	96.9
10	5.85	427.70	2772	99.8	99.1	99.2	99.0	98.8	98.5	98.1	97.9	97.6
11	5.86	427.34	2795	99.8	99.1	99.0	98.7	98.6	98.2	98.0	97.8	97.6
12	5.89	433.38	2805	99.3	98.5	98.5	98.1	97.9	97.5	97.2	97.0	96.9
13	5.87	437.34	2812	99.4	98.6	98.5	98.3	97.9	97.6	97.4	97.2	96.9
14	5.90	440.28	2798	99.4	98.5	98.3	97.9	97.8	97.5	97.2	96.9	96.9
15	5.90	427.17	2791	99.7	99.1	98.9	98.6	98.3	98.0	97.7	97.6	97.5
16	5.87	422.21	2831	99.6	98.8	98.9	98.3	98.1	97.6	97.5	97.4	97.2
17	5.88	440.07	2805	99.2	98.5	98.4	98.0	97.6	97.5	97.2	96.9	96.6
18	5.89	445.15	2778	99.4	98.9	98.6	98.4	98.2	97.8	97.7	97.4	97.5
19	5.86	440.37	2786	99.6	98.9	98.8	98.2	97.8	97.4	97.0	96.7	96.3
20	5.87	422.65	2817	99.7	98.7	98.8	98.3	98.2	97.6	97.6	97.5	97.2
Ave.	5.88	434.82	2797	99.4	98.7	98.6	98.3	98.0	97.7	97.4	97.2	97.0
Med.	5.87	435.63	2796	99.4	98.7	98.8	98.3	98.1	97.7	97.5	97.3	96.9
Min.	5.85	422.21	2755	97.6	96.9	97.0	96.6	96.2	95.8	95.6	95.4	95.2
Max.	5.91	446.24	2831	99.8	99.1	99.2	99.0	98.8	98.5	98.1	97.9	97.7
σ	0.02	7.89	19	0.5	0.5	0.5	0.5	0.6	0.5	0.5	0.6	0.6

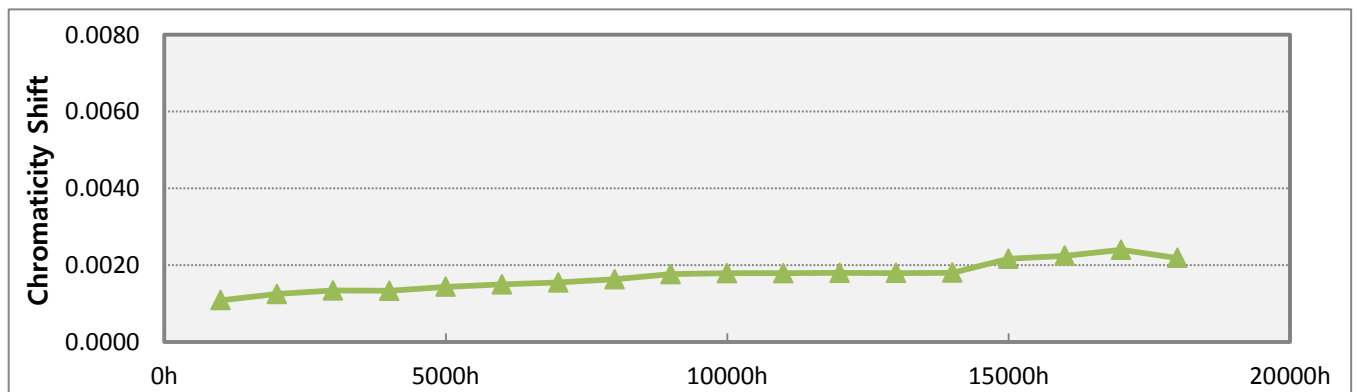


4. 105°C Data Set

No.	Lumen Maintenance									
	10000 h	11000 h	12000 h	13000 h	14000 h	15000 h	16000 h	17000 h	18000 h	
01	96.8	96.6	96.7	96.5	96.5	96.5	96.4	96.4	96.3	
02	97.7	97.5	97.6	97.4	97.3	97.3	97.2	97.1	97.1	
03	97.4	97.3	97.3	97.0	97.0	97.1	97.0	97.0	96.9	
04	96.8	96.6	96.7	96.5	96.5	96.4	96.3	96.3	96.2	
05	97.3	97.3	97.1	97.0	97.0	96.9	96.8	96.8	96.7	
06	96.5	96.5	96.4	96.3	96.2	96.2	96.1	96.0	96.0	
07	96.6	96.5	96.6	96.4	96.4	96.4	96.3	96.3	96.2	
08	95.1	94.9	94.9	94.9	94.8	94.5	94.5	94.4	94.3	
09	96.8	96.7	96.6	96.5	96.4	96.2	96.2	96.1	96.0	
10	97.6	97.6	97.5	97.5	97.3	97.4	97.4	97.3	97.2	
11	97.5	97.5	97.4	97.4	97.3	97.4	97.4	97.3	97.2	
12	96.9	96.8	96.7	96.5	96.6	96.6	96.5	96.5	96.4	
13	96.8	96.8	96.7	96.6	96.5	96.5	96.4	96.3	96.2	
14	96.7	96.6	96.5	96.5	96.4	96.3	96.2	96.1	96.1	
15	97.4	97.3	97.2	97.2	97.0	97.2	97.2	97.1	97.0	
16	97.4	97.1	96.9	96.9	97.0	96.8	96.7	96.6	96.6	
17	96.5	96.5	96.4	96.3	96.1	96.2	96.2	96.1	96.0	
18	97.3	97.3	97.1	97.0	96.9	96.6	96.5	96.5	96.4	
19	96.3	96.2	96.2	96.1	96.0	95.7	95.6	95.6	95.5	
20	97.5	96.8	96.8	96.8	97.0	96.4	96.5	96.2	96.2	
Ave.	96.9	96.8	96.8	96.7	96.6	96.5	96.5	96.4	96.3	
Med.	96.9	96.8	96.7	96.6	96.6	96.5	96.4	96.3	96.3	
Min.	95.1	94.9	94.9	94.9	94.8	94.5	94.5	94.4	94.3	
Max.	97.7	97.6	97.6	97.5	97.3	97.4	97.4	97.3	97.2	
σ	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.7	

4. 105°C Data Set

No.	Initial Characteristics			Chromaticity Shift du'v'								
	u'	v'	CRI	1000 h	2000 h	3000 h	4000 h	5000 h	6000 h	7000 h	8000 h	9000 h
01	0.2601	0.5261	81	0.0010	0.0012	0.0012	0.0013	0.0015	0.0015	0.0016	0.0017	0.0020
02	0.2589	0.5234	81	0.0010	0.0011	0.0011	0.0011	0.0012	0.0013	0.0013	0.0014	0.0015
03	0.2592	0.5233	81	0.0011	0.0013	0.0013	0.0013	0.0014	0.0015	0.0015	0.0016	0.0017
04	0.2594	0.5261	81	0.0011	0.0012	0.0013	0.0013	0.0014	0.0014	0.0014	0.0015	0.0016
05	0.2586	0.5256	81	0.0010	0.0012	0.0012	0.0012	0.0013	0.0013	0.0013	0.0014	0.0016
06	0.2586	0.5216	82	0.0012	0.0013	0.0014	0.0014	0.0015	0.0015	0.0015	0.0016	0.0017
07	0.2586	0.5242	81	0.0011	0.0013	0.0013	0.0013	0.0014	0.0015	0.0016	0.0017	0.0018
08	0.2575	0.5229	82	0.0014	0.0015	0.0016	0.0016	0.0018	0.0018	0.0019	0.0020	0.0022
09	0.2579	0.5254	81	0.0011	0.0013	0.0014	0.0014	0.0015	0.0016	0.0017	0.0018	0.0020
10	0.2600	0.5228	82	0.0010	0.0011	0.0015	0.0015	0.0015	0.0016	0.0017	0.0018	0.0018
11	0.2585	0.5250	81	0.0010	0.0011	0.0011	0.0011	0.0011	0.0012	0.0012	0.0013	0.0014
12	0.2585	0.5230	81	0.0012	0.0013	0.0014	0.0014	0.0014	0.0015	0.0016	0.0016	0.0017
13	0.2582	0.5227	82	0.0011	0.0013	0.0019	0.0019	0.0019	0.0020	0.0021	0.0021	0.0022
14	0.2589	0.5227	82	0.0011	0.0013	0.0013	0.0013	0.0014	0.0015	0.0015	0.0016	0.0018
15	0.2593	0.5224	81	0.0011	0.0011	0.0012	0.0012	0.0013	0.0014	0.0014	0.0015	0.0016
16	0.2576	0.5217	82	0.0011	0.0013	0.0013	0.0012	0.0013	0.0014	0.0014	0.0014	0.0016
17	0.2586	0.5226	82	0.0011	0.0013	0.0013	0.0013	0.0014	0.0015	0.0015	0.0016	0.0017
18	0.2591	0.5258	81	0.0011	0.0013	0.0013	0.0013	0.0013	0.0014	0.0014	0.0015	0.0016
19	0.2588	0.5259	81	0.0011	0.0013	0.0014	0.0014	0.0016	0.0018	0.0019	0.0021	0.0022
20	0.2579	0.5232	81	0.0011	0.0012	0.0012	0.0012	0.0013	0.0014	0.0014	0.0014	0.0016
Ave.	0.2587	0.5238	81	0.0011	0.0012	0.0013	0.0013	0.0014	0.0015	0.0015	0.0016	0.0018
Med.	0.2586	0.5233	81	0.0011	0.0013	0.0013	0.0013	0.0014	0.0015	0.0015	0.0016	0.0017
Min.	0.2575	0.5216	81	0.0010	0.0011	0.0011	0.0011	0.0011	0.0012	0.0012	0.0013	0.0014
Max.	0.2601	0.5261	82	0.0014	0.0015	0.0019	0.0019	0.0019	0.0020	0.0021	0.0021	0.0022
σ	0.0007	0.0015	0.4	0.0001	0.0001	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002



4. 105°C Data Set

No.	Chromaticity Shift du'v'									
	10000 h	11000 h	12000 h	13000 h	14000 h	15000 h	16000 h	17000 h	18000 h	
01	0.0020	0.0019	0.0020	0.0020	0.0020	0.0023	0.0024	0.0026	0.0023	
02	0.0015	0.0014	0.0015	0.0015	0.0015	0.0019	0.0019	0.0021	0.0019	
03	0.0017	0.0017	0.0017	0.0018	0.0018	0.0020	0.0021	0.0022	0.0020	
04	0.0017	0.0017	0.0017	0.0017	0.0017	0.0021	0.0022	0.0024	0.0021	
05	0.0016	0.0016	0.0016	0.0016	0.0016	0.0020	0.0020	0.0023	0.0020	
06	0.0017	0.0017	0.0017	0.0017	0.0017	0.0020	0.0021	0.0023	0.0020	
07	0.0019	0.0019	0.0018	0.0019	0.0019	0.0023	0.0023	0.0025	0.0023	
08	0.0022	0.0022	0.0022	0.0022	0.0022	0.0026	0.0027	0.0028	0.0027	
09	0.0020	0.0020	0.0020	0.0020	0.0021	0.0024	0.0025	0.0026	0.0025	
10	0.0018	0.0019	0.0018	0.0018	0.0019	0.0022	0.0023	0.0025	0.0022	
11	0.0014	0.0014	0.0014	0.0014	0.0014	0.0017	0.0018	0.0019	0.0017	
12	0.0017	0.0017	0.0018	0.0017	0.0017	0.0021	0.0022	0.0023	0.0021	
13	0.0023	0.0023	0.0023	0.0023	0.0023	0.0027	0.0028	0.0030	0.0028	
14	0.0018	0.0018	0.0018	0.0018	0.0018	0.0022	0.0023	0.0025	0.0022	
15	0.0016	0.0016	0.0016	0.0016	0.0016	0.0018	0.0019	0.0020	0.0018	
16	0.0016	0.0016	0.0016	0.0016	0.0016	0.0020	0.0020	0.0021	0.0020	
17	0.0017	0.0017	0.0018	0.0018	0.0018	0.0021	0.0022	0.0024	0.0022	
18	0.0016	0.0016	0.0016	0.0016	0.0016	0.0021	0.0021	0.0022	0.0021	
19	0.0023	0.0023	0.0023	0.0023	0.0023	0.0028	0.0029	0.0030	0.0028	
20	0.0016	0.0016	0.0016	0.0016	0.0016	0.0019	0.0020	0.0022	0.0019	
Ave.	0.0018	0.0018	0.0018	0.0018	0.0018	0.0022	0.0022	0.0024	0.0022	
Med.	0.0017	0.0017	0.0017	0.0017	0.0018	0.0021	0.0022	0.0023	0.0021	
Min.	0.0014	0.0014	0.0014	0.0014	0.0014	0.0017	0.0018	0.0019	0.0017	
Max.	0.0023	0.0023	0.0023	0.0023	0.0023	0.0028	0.0029	0.0030	0.0028	
σ	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	



Iluminat Straseni 2023

Lucrări de strămutare a liniilor electrice aeriene LEA 0,4 kV, str. Ștefan cel Mare, or. Strășeni și Modernizarea sistemului de iluminare stradală, cu lungimea de 3,7 km, str. Ștefan cel Mare, sectorul 1 (PC0+00.00 - PC 10+50.00)

Obiect

str. Ștefan cel Mare, MD 3701, MOLDOVA, Strășeni, mun.Strășeni, str.M.Eminescu 32

Cuprins

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Cuprins	2
Listă corpuri de iluminat	3

Date tehnice privind produsul

Schröder - IZYLUM 3 5308 Flat glass 80 LEDs@350mA NW 740 230V 00-36-984	4
447852 (1x 80 LEDs@350mA NW 740 230V 00-36-984)	

Stradă Stefan cel Mare · Alternativă 1

Rezumat (până la EN 13201:2015)	5
---------------------------------------	---

Listă corpuri de iluminat

 Φ_{total}

66440 lm

 P_{total}

410.0 W

Eficiența luminoasă

162.0 lm/W

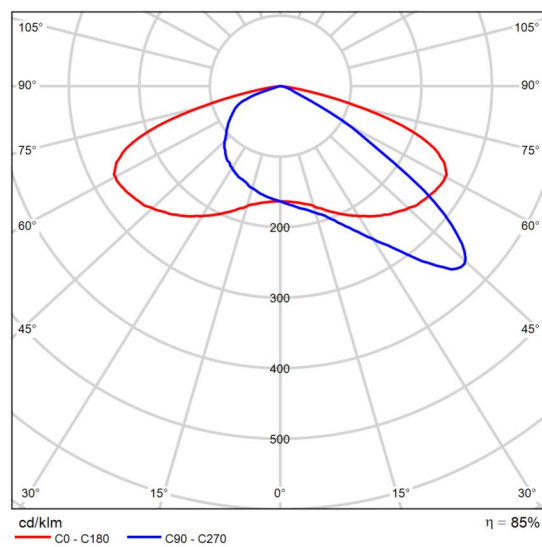
buc.	Producător	Nr.articol	Nume articol	P	Φ	Eficiența luminoasă
5	Schröder	447852	IZYLUM 3 5308 Flat glass 80 LEDs@350mA NW 740 230V 00-36-984 447852	82.0 W	13288 lm	162.1 lm/W

Fișa de date privind produsul

Schröder - IZYLUM 3 5308 Flat glass 80 LEDs@350mA NW 740 230V 00-36-984 447852



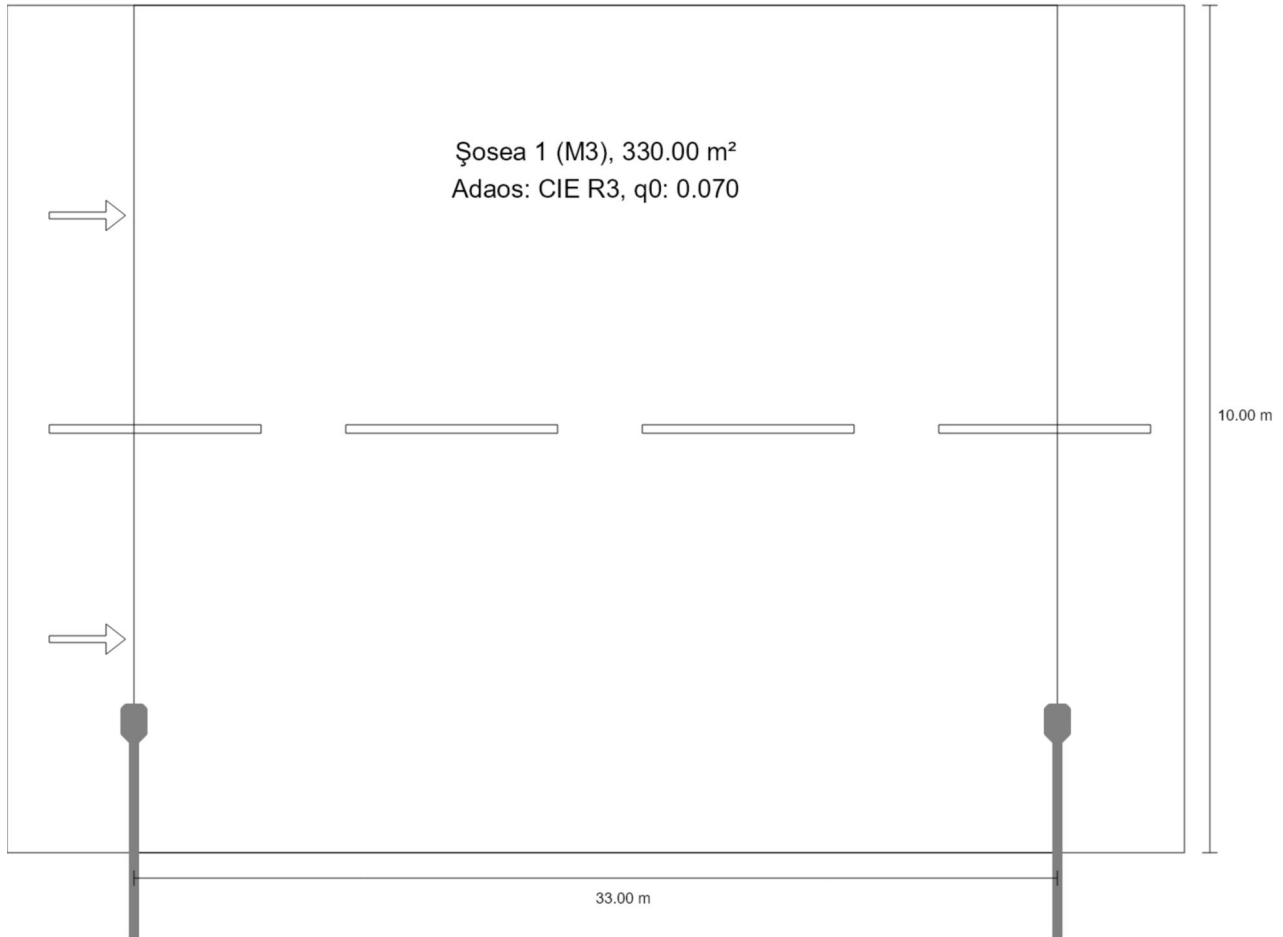
Nr.articol	447852
P	82.0 W
$\Phi_{\text{Lampă}}$	15680 lm
$\Phi_{\text{Corp de iluminat}}$	13288 lm
η	84.75 %
Eficiența luminoasă	162.1 lm/W
CCT	4000 K
CRI	70



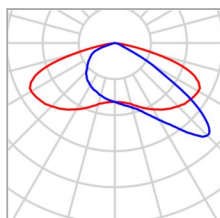
CDIL polar

Stradă Stefan cel Mare · Alternativă 1

Rezumat (până la EN 13201:2015)



Stradă Stefan cel Mare · Alternativă 1

Rezumat (până la EN 13201:2015)

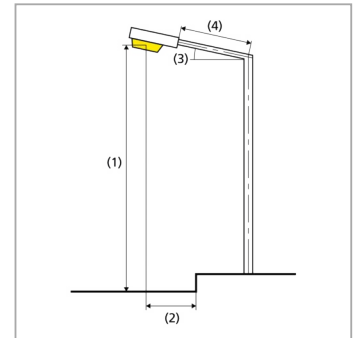
Producător	Schröder	P	82.0 W
Nr.articol	447852	$\Phi_{Lampă}$	15680 lm
Nume articol	IZYLUM 3 5308 Flat glass 80 LEDs@350mA NW 740 230V 00-36-984 447852	$\Phi_{Corp\ de\ iluminat}$	13288 lm
Dotare	1x 80 LEDs@350mA NW 740 230V 00-36- 984	η	84.75 %

Stradă Stefan cel Mare · Alternativă 1

Rezumat (până la EN 13201:2015)

IZYLUM 3 5308 Flat glass 80 LEDs@350mA NW 740 230V 00-36-984 447852 (Pe o parte Jos)

Distanță stâlp	33.000 m
(1) Înălțimea punctului de lumină	8.500 m
(2) Ieșirea în consolă a punctului de lumină	1.500 m
(3) Înclinare consolă	0.0°
(4) Lungime consolă	2.500 m
Număr anual de ore de funcționare	4000 h: 100.0 %, 82.0 W
Putere / traseu	2460.0 W/km
ULR / ULOR	0.00 / 0.00
Intensități luminoase max. Orice direcție ce formează unghiul dat cu verticala în jos a corpurilor de iluminat instalate pentru utilizare.	≥ 70°: 361 cd/klm ≥ 80°: 50.6 cd/klm ≥ 90°: 0.00 cd/klm
Clasă intensitate luminoasă Valorile intensității luminoase în [cd/klm] pentru calculul clasei intensității luminoase se referă la fluxul luminos al corpului de iluminat, conform EN 13201:2015.	G*4
Clasă index ornamente	D.6
MF	0.85



Stradă Stefan cel Mare · Alternativă 1

Rezumat (până la EN 13201:2015)

Rezultate pentru câmpurile de evaluare

Pentru instalare s-a luat în calcul un factor de întreținere de 0.85.

	Mărime	Calculat	Nominal	Conform
Șosea 1 (M3)	L_m	1.20 cd/m ²	≥ 1.00 cd/m ²	✓
	U_o	0.56	≥ 0.40	✓
	U_l	0.64	≥ 0.60	✓
	TI	10 %	≤ 15 %	✓
	R_{EI}	0.45	≥ 0.30	✓

Rezultate pentru indicatorii de eficiență energetică

	Mărime	Calculat	Consumul de energie
Stradă Stefan cel Mare	D_p	0.012 W/lx*m ²	-
IZYLUM 3 5308 Flat glass 80 LEDs@350mA NW 740 230V 00-36-984 447852 (Pe o parte Jos)	D_e	1.0 kWh/m ² an	328.0 kWh/an
IZYLUM 3 5308 Flat glass 80 LEDs@350mA NW 740 230V 00-36-984 447852 (Iluminat stradal)	IPEA*	A10+ (2.16)	-
IZYLUM 3 5308 Flat glass 80 LEDs@350mA NW 740 230V 00-36-984 447852 (Pe o parte Jos - Iluminat stradal)	IPEI*	A5+ (0.31)	-

Electrical measurements

General information

Subject : IZYLUM Size 3 - 60 led's LH351C - OSRAM 100W driver 600mA - Nema - CL II

Asked by : SZÜGYI János Péter

Created on : 25/10/2019

Test number : D191001

Sample(s) : E190757

Folder : P-F19086

Test conditions

Luminaire : IZYLUM 3

Number of LED : 60

LED : Samsung LH351C

Driver : Optotronic OT100/120-277/800 2DIM LT2 P / 00-14-566

Number of driver(s) : 1

Driver current (mA) : 600

Driver info : Tc (max) 85 °C


SPD : Izyhub full control fuse CLII 01-01-810

Operator : KOY Fiston



IMG_5370

Conclusion

 Informative

Conclusion :

PF : 0,98

Efficiency : 90,9%

THD : 11,4%

Harmonics : OK according to IEC 61000-3-2, Class C, > 25 W

Validated by :

GHYSENS Gilles

Duplicate to : SZÜGYI János Péter, HORVÁTH Csaba, BEDŐ

Péter, BOS Peter

LAB : 19/11/2019

D191001

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Test(s) details

Test(s)

Name	Description	Result
Test @ 600mA		Success

Test @ 600mA

Annex(es)

Harmonic current emissions (IEC 61000-3-2, Class C, > 25W)

Driver : Optotronic OT100/120-277/800 2DIM LT2 P / 00-14-566

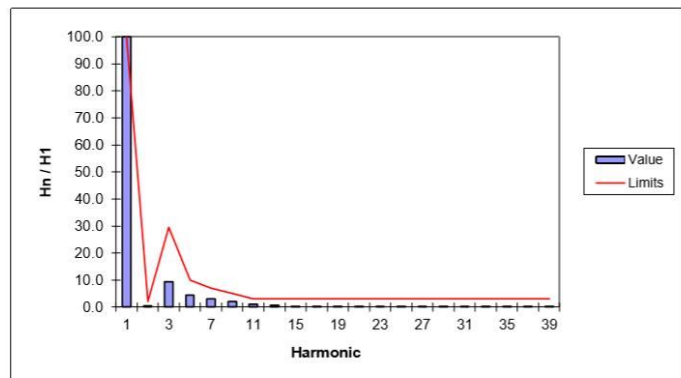
Tc (max) 85 °C

Date 05/11/2019

Operator FKY Norma AQ number E110

Harmonic	Taux (%)	Limite (% H1)
1	100.0	100.0
2	0.4	2.0
3	9.4	29.5
5	4.3	10.0
7	3.0	7.0
9	2.0	5.0
11	1.2	3.0
13	0.7	3.0
15	0.4	3.0
17	0.2	3.0
19	0.1	3.0
21	0.1	3.0
23	0.2	3.0
25	0.2	3.0
27	0.2	3.0
29	0.2	3.0
31	0.2	3.0
33	0.1	3.0
35	0.2	3.0
37	0.1	3.0
39	0.1	3.0

Power Factor 0.9826 Cos $\varphi_{(H01)}$ 0.9889



input		output 1	
Urms	229.9 V	Urms	170.2 V
Irms	0.520 A	Irms	0.628 A
Prms	117.5 W	Prms	106.8 W
S	119.6 VA		
Q	-22.2 VAR		
PF	0.9826		
$I_{(H01)}$	0.517 A	Uavg	170.2 V
Cos $\varphi_{(H01)}$	0.9889	Iavg	0.627 A
η_{rms}	90.9%	Pavg	106.7 W
η_{avg}	90.9%		
THD	11.4%		

IZYLUM Size 3 - 60 LH351C - OSRAM 100W

Measurement equipment :

Norma 4000 (E110)

APT (E102)

Quantities measured :

Qualification of the thermal limits and measurement of the electrical behavior of a luminaire according to PT-S-07

Uncertainties :

Statement of uncertainties (K=2, 95% of confidence level):

Temperature: 0,6 °K

Voltage (AC): 0,33%

Current (AC): 0,33 %

Power (AC): 0,27%

Voltage (DC): 0,3 %

Current (DC): 0,3%

Power (DC): 0,23%

Anemometer: $\pm 0,27$ m/s

Decision rules :

No pass/fail criteria applied on electrical measurements

End of test report :

Laborator teste
RAPORT DE TEST FIZIC



R-Tech
Rue de Mons 3 – B-4000 Liège – Belgium
Tel.: +32 4 224 71 40 – Fax: +32 4 224 25 90
Member of Schröder Group

FORMULAR L-54 Editia 01 – Revizia 02 - Data: 14/11/2019

Măsurători electrice

Informații generale

Subiect : IZYLUM Size 3 - 60 led's LH351C - OSRAM 100W driver 600mA - Nema - CL II

Solicitat de: SZÜGYI János Péter

Creat la: 25/10/2019

Număr test: D191001

Eșantion(e): E190757

Dosar: P-F19086

Cerințele testului

Aparat: IZYLUM 3

Număr de LED: 60 LED : Samsung LH351C

Driver : Optotronic OT100/120-277/800 2DIM LT2 P / 00-14-566

Număr de driver(e) : 1

Curent driver (mA) : 600

Driver info : Tc (max) 85 °C

SPD : Izyhub full control fuse CLII 01-01-810

Operator : KOY Fiston



IMG_5370

Concluzii



Informativ

Concluzii :

PF : 0,98

Eficiența : 90,9%

THD : 11,4%

Armonici : OK conform IEC 61000-3-2, Class C, > 25 W

Validat de:
GHYSENS Gilles
(semnătură indescifrabilă)

Duplicat pentru : SZÜGYI János Péter, HORVÁTH Csaba,
BEDŐ
Péter, BOS Peter
LAB : 19/11/2019

D191001

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Traducător și Interpret Autorizat
LIMBĂȘAN DANIELA
Aut.M.J. Nr. 14531/2005
Engleză, Franceză

Detalii test(e)

Test(e)

Nume	Descriere	Rezultat
Test @ 600mA		Succes

Test @ 600mA

Anexa(e)

Harmonic current emissions (IEC 61000-3-2, Class C, > 25W)

Driver : Optotronic OT100/120-277/800 2DIM LT2 P / 00-14-566

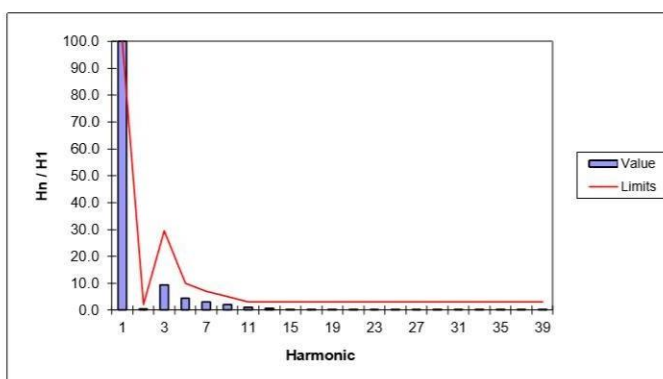
Tc (max) 85 °C

Date 05/11/2019

Operator FKY Norma AQ number E110

Power Factor 0.9826 Cos φ (H01) 0.9889

Harmonic	Taux (%)	Limite (% H1)
1	100.0	100.0
2	0.4	2.0
3	9.4	29.5
5	4.3	10.0
7	3.0	7.0
9	2.0	5.0
11	1.2	3.0
13	0.7	3.0
15	0.4	3.0
17	0.2	3.0
19	0.1	3.0
21	0.1	3.0
23	0.2	3.0
25	0.2	3.0
27	0.2	3.0
29	0.2	3.0
31	0.2	3.0
33	0.1	3.0
35	0.2	3.0
37	0.1	3.0
39	0.1	3.0



input		output 1	
Urms	229.9 V	Urms	170.2 V
Irms	0.520 A	Irms	0.628 A
Prms	117.5 W	Prms	106.8 W
S	119.6 VA		
Q	-22.2 VAR		
PF	0.9826		
$I_{(H01)}$	0.517 A	Uavg	170.2 V
Cos φ (H01)	0.9889	Iavg	0.627 A
η rms	90.9%	Pavg	106.7 W
η avg	90.9%		
THD	11.4%		

IZYLUM Size 3 - 60 LH351C - OSRAM 100W

Traducător și Interpret Autorizat
LIMBĂȘAN DANIELA
 Aut. M. J. Nr. 14531/2005
 Engleză, Franceză

Echipament de măsură :

Keithley cu termocuplu tip K (E082)

Norma 4000 (E068)

APT (E135)

Cantități măsurate :

Calificarea limitelor termice și măsurarea comportamentului electric al unui corp de iluminat conform PT-S-07

Incertitudini :

Delarație de incertitudini (K=2, 95% of confidence level):

Temperatură: 0,6 °K

Tensiune (AC): 0,33% Curent(AC): 0,33 %

Putere (AC): 0,27%

Tensiune(DC): 0,3 % Curent (DC): 0,3%

Putere (DC): 0,23%

Anemometeru: ± 0,27 m/s

Reguli de decizie :

Criterii de trecere/esuat aplicate măsurătorilor electrice.

Sfârșitul testului :

Traducător și Interpret Autorizat
LIMBĂȘAN DANIELA
Aut.M.J. Nr. 14531/2005
Engleză, Franceză

Thermal Test LED

General information

Subject : IZYLUM 3 - 60 led's LH351C - OSRAM 100W driver 550mA - Nema - CL II

Asked by : SZÜGYI János Péter

Created on : 15/11/2019

Started on : 19/11/2019

Test number : D191063

Reference norm : IEC/EN 60598-1; 60598-2-3; 60598-2-5 Standards

Sample(s) : E190757

Folder : P-F19086

Test conditions

Luminaire : IZYLUM 3

Number of LED : 60

LED : Samsung LH351C

Driver : Optotronic OT100/120-277/800 2DIM LT2 P / 00-14-566

Number of driver(s) : 1

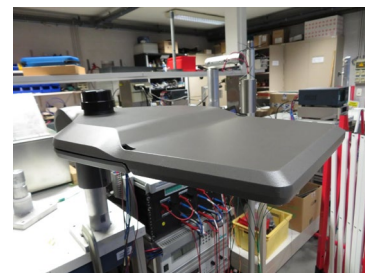
Driver info : Tc (max) 85°C

Driver current (mA) : 550

SPD : Izyhub full control Fuse CLII 01-01-810


Junction Temperature measurement method : Junction temperature measurement by base temperature measurement and electrical measurement. $T^j = T^b + R_{jb} \times I_{led}$

Operator : KOY Fiston



IMG_5455

Conclusion

 Informative

Conclusion :

$\Delta T_s < 80^\circ\text{C}$ no risk of solder crack

Ta: 55°C limited by driver; according IEC 60598-2-3 and IEC 60598-2-5 (outdoor use only)

Ta: 45°C limited by driver; indoor use and UL standard

Tq: 30°C limited by driver; according IEC 62722-2-1

Tq given for 100 khrs of lifetime

Validated by :

GHYSENS Gilles

Duplicate to : SZÜGYI János Péter, HORVÁTH Csaba, BEDŐ

Péter, BOS Peter

LAB : 27/11/2019

D191063

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Test(s) details

Test(s)

Name	Description	Result
Test @ 550mA		Informative

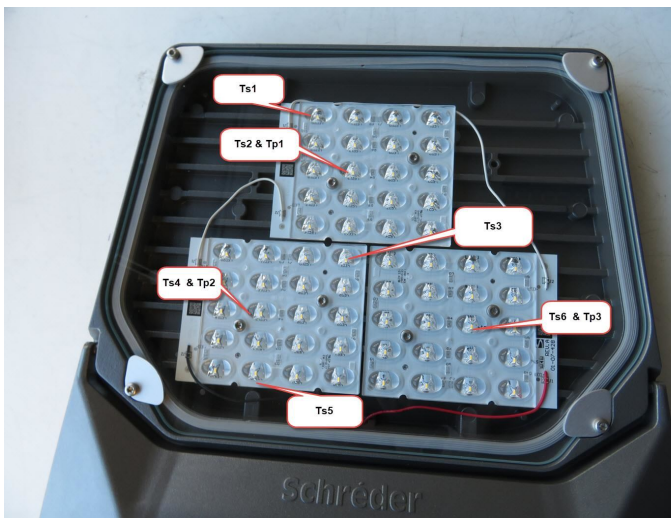
Test @ 550mA

Result(s)

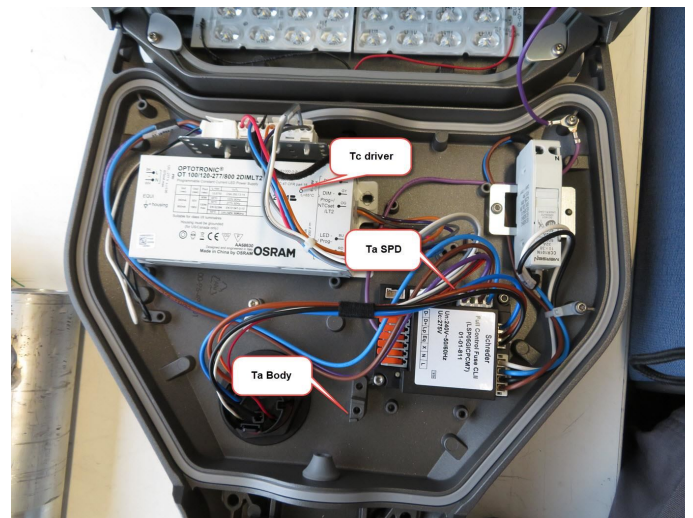
	Ts1	Ts2 & Tp1	Ts3	Ts4 & Tp2	Ts5	Ts6 & Tp3	Tc driver	Ta SPD	Ta Body
T° limite							85 °C	70 °C	90 °C
Junction T°	71.8 °C	72.2 °C	72.9 °C	72.0 °C	71.5 °C	72.9 °C			
Thermocouple T°	67.2 °C	67.6 °C	68.2 °C	67.3 °C	66.9 °C	68.3 °C	64.2 °C	37.1 °C	38.1 °C
Room	24.7 °C	24.7 °C	24.7 °C	24.7 °C	24.7 °C	24.7 °C	24.7 °C	24.7 °C	24.7 °C
E led	2.82V	2.82V	2.82V	2.82V	2.82V	2.82V			
I led	0.553A	0.553A	0.553A	0.553A	0.553A	0.553A			
P led	1.56W	1.56W	1.56W	1.56W	1.56W	1.56W			
Rth jonction-base	3.0 °C	3.0 °C	3.0 °C	3.0 °C	3.0 °C	3.0 °C			
Heating							39.5 K	12.4 K	13.4 K
ΔTs	42.5 K	42.9 K	43.5 K	42.6 K	42.2 K	43.6 K			

Primary EM		Secondary EM dr1	
U	230.0V	U	169.3V
I	0.460A	I	0.553A
P	103.6 W	P	93.6 W
PF	0.979		
Efficiency	90%		

Annex(es)



IMG_5341



IMG_5368

Test room temperature (°C) : 24.7

Measurement equipment :

Keithley with thermocouples type K (E097)
Norma 4000 (E110)
APT (E102)

Quantities measured :

Qualification of the thermal limits and measurement of the electrical behavior of a luminaire according to PT-S-07

Uncertainties :

Statement of uncertainties (K=2, 95% of confidence level):

Temperature: 0,6 °K
Voltage (AC): 0,33%
Current (AC): 0,33 %
Power (AC): 0,27%
Voltage (DC): 0,3 %
Current (DC): 0,3%
Power (DC): 0,23%
Anemometer: ± 0,27 m/s

Decision rules :

No pass/fail criteria applied on electrical measurements

Pass/fail criteria on thermal qualification

At the announced Ta, no component is above its maximum limit of operation reduced by the uncertainty on the temperature measurement: pass

At the announced Ta, at least 1 component is above its maximum limit of operation augmented by the uncertainty on the temperature measurement: fail

At the announced Ta, at least 1 component is at its maximum limit of operation ± the uncertainty on the temperature measurement and no other component is above its maximum limit of operation augmented by the uncertainty on the temperature measurement: pass with remark

According to IEC 60598-2-3 and IEC 60598-2-5 Standards, the maximum limit of every component can be augmented by 10 K provided that the luminaire is intended for outdoor use only.

At the announced Tq, no component is above its selected performance limit of operation reduced by the uncertainty on the temperature measurement: pass

At the announced Tq, at least 1 component is above its selected performance limit of operation augmented by the uncertainty on the temperature measurement: fail

At the announced Tq, at least 1 component is at its selected performance limit of operation ± the uncertainty on the temperature measurement and no other component is above its selected performance limit of operation augmented by the uncertainty on the temperature measurement: pass with remark

According to IEC 62722-2-1, the selected performance limit cannot be augmented by 10 K even if the luminaire is intended for outdoor use.

Any Ta/Tq defined value will be rounded down to the nearest multiple of 5.

End of test report :

Laborator teste
RAPORT DE
TEST FIZIC



R-Tech
Rue de Mons 3 – B-4000 Liège – Belgium
Tel.: +32 4 224 71 40 – Fax: +32 4 224 25 90
Member of Schröder Group

FORM L-54 Edition 01 – Revision 02 - Date: 14/11/2019

Test termic LED

Informații generale

Subiect : IZYLUM 3 - 60 led's LH351C - OSRAM 100W driver 550mA - Nema - CL II

Solicitat de:: SZÜGYI János Péter

Creat la:: 15/11/2019

Data:: 19/11/2019

Număr test:: D191063

Standard referință: EC/EN 60598-1; 60598-2-3; 60598-2-5 Standards

Eșantion(e): E190757

Folder : P-F19086

Condiții testare

Aparat : IZYLUM 3

Numar de LED-uri: 60

LED : Samsung LH351C

Driver : Optotronic OT100/120-277/800 2DIM LT2 P / 00-14-566

Numar de driver(e): 1

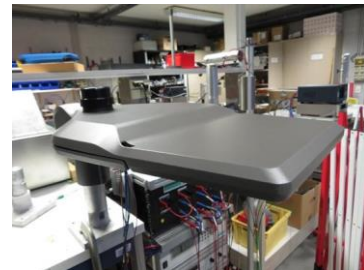
Driver info : Tc (max) 85°C

Driver current (mA) : 550

SPD : Izyhub full control Fuse CLII 01-01-810

Metoda de masurare temperature jonctiune: Măsurarea temperaturii de jonctiune prin măsurarea temperaturii de bază și măsurări electrice. $T^j = T^b + R_{jb} \times P_{led}$

Operator : KOY Fiston



IMG_5455

Concluzii



Informativ

Concluzii :

$\Delta T_s < 80^\circ C$ fără risc de crăpături de sudură

Ta: 55°C limitat de driver; conform IEC 60598-2-3 si IEC 60598-2-5 (uz exterior)

Ta: 45°C limitat de driver; uz interior conform UL standard

Tq: 30°C limitat de driver; conform IEC 62722-2-1

Tq dat pentru 100 khrs durata de viata

Validat de: Duplicat pentru :: SZÜGYI János
GHYSENS Gilles Péter, HORVÁTH Csaba, BEDŐ
(semnatura) Péter, BOS Peter
indescifrabila) LAB : 27/11/2019

D191063

1/3

Traducător și Interpret Autorizat
LIMBĂȘAN DANIELA
Aut. M.J. Nr. 14531/2005
Engleză, Franceză

Detalii teste

Test(e)

Nume	Descriere	Rezultat
Test @ 550mA		Informativ

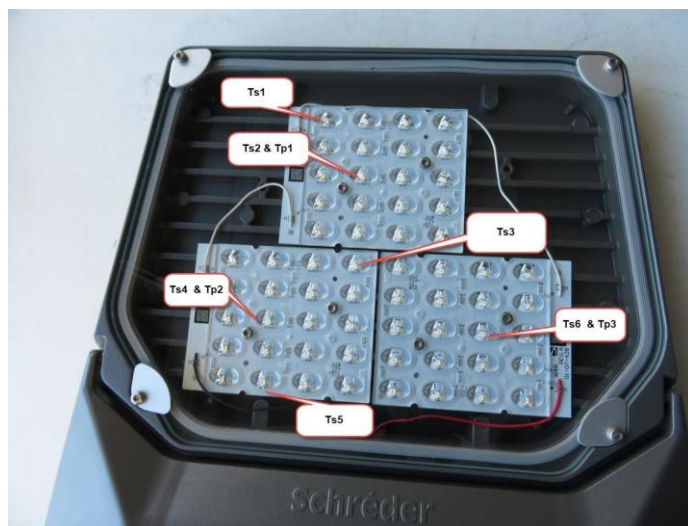
Test @ 550mA

Rezultat(e)

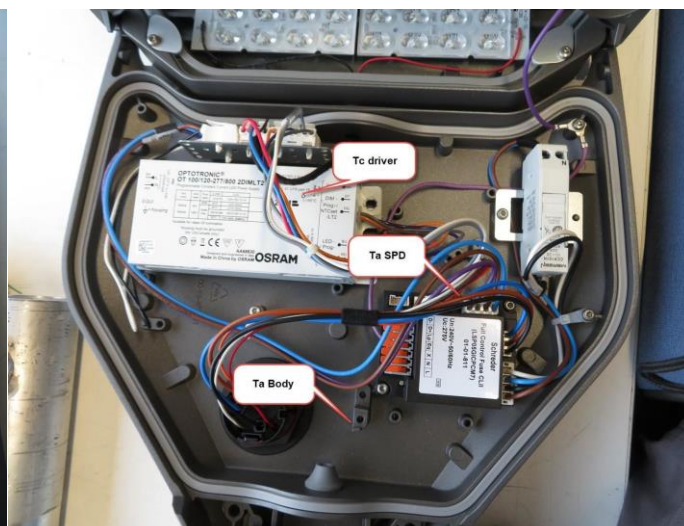
	Ts1	Ts2 & Tp1	Ts3	Ts4 & Tp2	Ts5	Ts6 & Tp3	Tc driver	Ta SPD	Ta Body
T° limite							85 °C	70 °C	90 °C
Junction T°	71.8 °C	72.2 °C	72.9 °C	72.0 °C	71.5 °C	72.9 °C			
Thermocouple T°	67.2 °C	67.6 °C	68.2 °C	67.3 °C	66.9 °C	68.3 °C	64.2 °C	37.1 °C	38.1 °C
Room	24.7 °C	24.7 °C	24.7 °C	24.7 °C	24.7 °C	24.7 °C	24.7 °C	24.7 °C	24.7 °C
E led	2.82V	2.82V	2.82V	2.82V	2.82V	2.82V			
I led	0.553A	0.553A	0.553A	0.553A	0.553A	0.553A			
P led	1.56W	1.56W	1.56W	1.56W	1.56W	1.56W			
Rth jonction-base	3.0 °C	3.0 °C	3.0 °C	3.0 °C	3.0 °C	3.0 °C			
Heating							39.5 K	12.4 K	13.4 K
Δ Ts	42.5 K	42.9 K	43.5 K	42.6 K	42.2 K	43.6 K			

Primary EM		Secondary EM dr1	
U	230.0V	U	169.3V
I	0.460A	I	0.553A
P	103.6 W	P	93.6 W
PF	0.979		
Efficiency	90%		

Anexă(e)



IMG_5341



IMG_5368

Traducător și Interpret Autorizat
LIMBĂȘAN DANIELA
 Aut. M.J. Nr. 14531/2005
 Engleză, Franceză

Temperatura camerei de test (°C) : 24.7

Echipamente de măsurare:

Keithley with thermocouples type K (E097)
Norma 4000 (E110)
APT (E102)

Cantitati masurate :

Calificarea limitelor termice și măsurarea comportamentului electric al unui corp de iluminat conform PT-S-07

Incertitudini :

Declarație de incertitudini (K=2, 95% of confidence level):

Temperatura: 0,6 °K
Tensiune (AC): 0,33%
Curent (AC): 0,33 %
Putere (AC): 0,27%
Tensiune (DC): 0,3 %
Curent (DC): 0,3%
Putere (DC): 0,23%
Anemometeru: ± 0,27 m/ss

Reguli de decizie:

Nu se aplică criteriile de trecere / defecțiune la măsurători electrice

Criterii de trecere / eșec privind calificarea termică

La Ta anunțat, nicio componentă nu depășește limita maximă de funcționare, redusă de incertitudinea cu privire la măsurarea temperaturii: trece

La Ta anunțat, cel puțin o componentă este peste limita maximă de funcționare crescută de incertitudinea cu privire la măsurarea temperaturii: eșuează

La Ta anunțat, cel puțin o componentă se află la limita maximă de funcționare ± incertitudinea măsurătorii de temperatură și nicio altă componentă nu depășește limita maximă de funcționare, mărită de incertitudinea cu privire la măsurarea temperaturii: trece cu remarcă

Conform standardelor IEC 60598-2-3 și IEC 60598-2-5, limita maximă a fiecărei componente poate fi mărită cu 10 K cu condiția ca corpul de iluminat să fie destinat exclusiv utilizării în aer liber.

La Tq anunțat, nicio componentă nu depășește limita de funcționare aleasă, redusă de incertitudinea cu privire la măsurarea temperaturii: trece

La Tq anunțat, cel puțin o componentă este peste limita de funcționare aleasă, crescută de incertitudinea cu privire la măsurarea temperaturii: eșuează

La Tq anunțat, cel puțin o componentă se află la limita de funcționare selectată a acesteia ± incertitudinea pe măsurarea temperaturii și nici o altă componentă nu depășește limita de funcționare selectată a acesteia, mărită de incertitudinea cu privire la măsurarea temperaturii: trece cu remarcă

Conform IEC 62722-2-1, limita de performanță selectată nu poate fi mărită cu 10 K, chiar dacă corpul de iluminat este destinat utilizării exterioare.

Orice valoare definită Ta / Tq va fi rotunjită la cel mai apropiat multiplu de 5.

Sfârșitul testului:

EMC test

General information

Subject : IZYLUM 3 Class I - 60LED - 550mA - OSRAM 100W

Asked by : LERHO Xavier

Created on : 08/01/2020

Started on : 08/01/2020

Test number : D200023

Reference norm : EN 55015 Standard

Sample(s) : E190761

Folder : P-F19086

Test conditions

Luminaire : IZYLUM 3

Operator : LERHO Xavier

Electrical class : Class I EU

Driver : Optotronic OT100/120-277/800 2DIM LT2 P / 00-14-566

Number of driver(s) : 1

Current setting (mA) : 550

Dimming minimum value : 30 (SC)

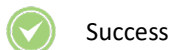
Dimming protocol : 0-10V

Control system : NEMA Socket

Overvoltage protection : IZYHUB Full Control Fuse Cl. I (01-01-808)

Testing facility : BER - R-Tech

Conclusion



Conclusion :

IZYLUM 3 Class I with OSRAM 100W driver complies with in "Conducted emissions" & "CDNE method" tests (EN55015) in internal lab.

Validated by :


LERHO Xavier

Duplicate to : SZÜGYI János Péter, Dorflinger Tamas

LAB : 08/01/2020

D200023

1/2



Test(s) details

Test(s)

Name	Description	Result
Internal compliance	Emission measurements (EN 55015): - Radiated emissions (CDNE method) - Conducted emissions	Success

Internal compliance

Result(s)

Internal report (SPOT database): 190554, 190561, 190574 & 190575

FORMULAR L-54 Editia 01 – Revizia 02 - Data: 14/11/2019

Test EMC

Informații generale

Subiect : IZYLUM 3 Class I - 60LED - 550mA - OSRAM 100W

Solicitant: LERHO Xavier

Creat la: 08/01/2020

Data: 08/01/2020

Număr test: D200023

Standard referință: EN 55015 Standard

Eșantion(e) : E190761

Dosar: P-F19086

Condiții test

Aparat: IZYLUM 3

Operator : LERHO Xavier

Clasă electrică: Class I EU

Driver : Optotronic OT100/120-277/800 2DIM LT2 P / 00-14-566

Număr de driver(e) : 1

Setare curent(mA) : 550 Valoare

minima dimare: 30 (SC) Protocol

dimare: 0-10V

Sistem de control: Priza NEMA

Protecție la supratensiune: IZYHUB Full Control Fuse Cl. I (01-01-808)

Facilitate de testare: BER - R-Tech

Concluzii



Succes

Concluzii :

IZYLUM 3 Class I cu driverul OSRAM 100W respectă testele "Emisiile conduse" și "metoda CDNE"(EN55015) din laborator intern

Validat de :

Duplicate to : SZÜGYI János Péter, Dorflinger Tamas

D200023

LERHO Xavier

LAB : 08/01/2020

1/2

(semnatura indescifrabila)


Traducător și Interpret Autorizat
LIMBĂȘAN DANIELA
Aut. M.J. Nr. 14531/2005
Engleză, Franceză

Nume	Descriere	Rezultat
Conformitate internă	Măsurători ale emisiilor (EN 55015): -Emisiile radiate (metoda CDNE) -Emisii conduse	Succes

Conformitate internă

Rezultat(e)

Raport intern (baza de date SPOT): 190554, 190561, 190574 & 190575


Traducător și Interpret Autorizat
LIMBĂȘAN DANIELA
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