

DECLARAȚIE DE CONFORMITATE



SCHRÉDER ROMANIA S.R.L., cu sediul în Cluj - Napoca, str. Corneliu Coposu, nr. 167A, Jud. Cluj, România, înregistrată la Registrul Comerțului cu nr. J12/1759/1998, membră a SCHRÉDER GROUP, în calitate de furnizori de aparate de iluminat marca SCHRÉDER

Declarăm pe propria răspundere că aparatul de iluminat: **VOLTANA**

Versiune: VOLTANA 1, VOLTANA 2, VOLTANA 3, VOLTANA 4

Echipare: VOLTANA 1: 8 LED-uri / VOLTANA 2: 16 LED-uri / VOLTANA 3: 24 LED-uri / VOLTANA 4: 32 LED-uri

Clasa electrică: I sau II

Caracteristici: Voltana 1 Max. 1400mA, Voltana 2 Max. 1050mA, Voltana 3, Voltana 4 Max. 1000mA

Etanșeitate compartiment optic: IP 66

Etanșeitate compartiment aparataj: IP 66

Tensiune nominală: 120 - 277 V – 50 - 60 Hz

Cu condiția ca acesta să fie instalat, întreținut și utilizat în conformitate cu standardele de instalare și instrucțiunile producătorului. Este în conformitate cu următoarele directive sau standarde:

- EN 60598-1 (2015 + A11 2009)
- EN 60598-2-1 (1979)
- EN 60598-2-3 (2016 + A1 2011)
- EN 60598-2-5 (2015)
- EN 61547 (2009)
- EN 61347 (2015)
- EN 55015 (2013)
- EN 61000-3-2 (2014) & 3-3 (2013)
- EN 62471 (2008)
- EN 62493 (2010)
- EN 62262 (2002)
- IEC 62696 (2011)
- IEC 62722-1 (2016)
- IEC 62722-2-1 (2016)
- Directiva 2014/30/EU
- Directiva 2014/35/EU
- Directiva 2009/125/EC
- Directiva 2012/19/EU
- Directiva 2003/108/EC
- Directiva RoHS 2011/65/EU (RoHS 2)
- R.D. 1890/2008, 14 Noiembrie
- R.D. 154/1.995, 3 Februarie
- R.D. 842/2002, 2 August

SCHRÉDER ROMANIA S.R.L.
Director General,

Alexandru SIRCA

Eliberat,
Ianuarie 2020, Cluj-Napoca

Laboratory Service PHYSICAL TEST REPORT



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

Subject: VOLTANA -1 8 led's LG 3535 Gen 2 - Driver Tridonic LCI 27 W 1A

Sample n°: P-E14349

From: HUS

Test purpose: Electrical measurements @ 1A

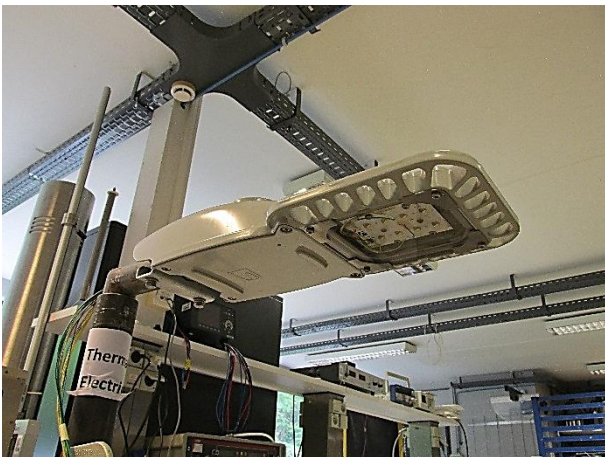
Remarks: 0 serie sample identified # 2

Test request n°: P-D14483

Folder n°: P-F14057

TEST CONDITIONS:

Operator: ABRY Marc



Driver: Tridonic LCI 27 W 1000 mA
Engineering sample

Load: 8 led's LG 3535 Gen 2

Power Supply:

Elgar Tw 3500-4

Supply voltage: 230 V 50 Hz

Measurement device:

Fluke Norma 4000 (HF Powermeter, User 10, filter OFF)

CONCLUSIONS:

- Efficiency: 83,2 %
- PF: 0,94
- THD: 19,0 %
- Harmonics distribution complies with the IEC/EN 61000-3-2 Standard.

Duplicate to: MM P. Bedo, C. Horvath, C. Marville, M. Thijs

LAB 26/06/2014

J.P. Harchies

A handwritten signature in blue ink, appearing to read "Harchies".

P-14E483

VOLTANA -1 8 led's LG 3535 Gen 2 - Driver Tridonic LCI 27 W 1A**Harmonics, PF & Efficiency**

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

VOLTANA 1
8 led's LG 3535 Gen II
Tridonic LCI 27W - 1000mA

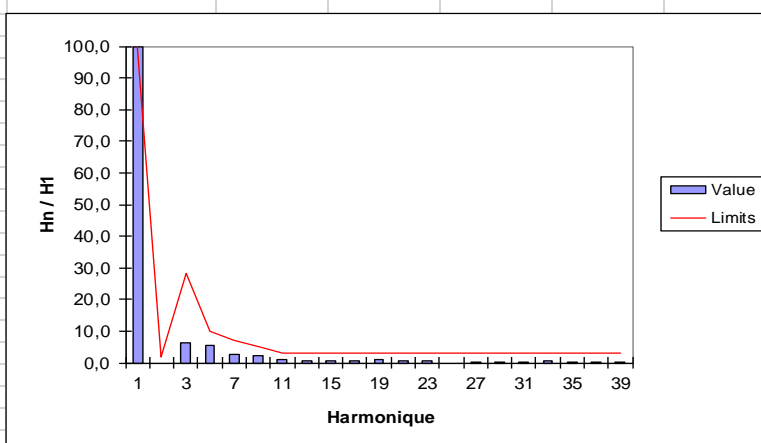
Date 23/06/2014

Operator MAY

Power Factor 0,9452

Cos $\varphi_{(H01)}$ 0,9620

Harmonique	Taux (%)	Limite (% H1)
1	100,0	100,0
2	0,0	2,0
3	6,2	28,4
5	5,3	10,0
7	2,8	7,0
9	2,2	5,0
11	1,2	3,0
13	0,7	3,0
15	0,7	3,0
17	0,5	3,0
19	1,0	3,0
21	0,6	3,0
23	0,5	3,0
25	0,0	3,0
27	0,1	3,0
29	0,3	3,0
31	0,4	3,0
33	0,5	3,0
35	0,2	3,0
37	0,4	3,0
39	0,3	3,0



input		output 1	
Urms	230,0 V	Urms	25,72 V
Irms	145 mA	Irms	1,02 A
Prms	31,54 W	Prms	26,23 W
S	33,37 VA		
Q	-10,90 VAR		
FP	0,9452		
$I_{(H01)}$	143 mA	Umoy	25,72 V
Cos $\varphi_{(H01)}$	0,9620	Imoy	1,02 A
η rms	83,2%	Pmoy	26,23 W
η moy	83,2%		
THD	19,0%		

Laborator teste
RAPORT DE TEST FIZIC

R-Tech
Rue de Mons 3 - B-4000 Liège - Belgia
Tel. :+32 4 224 71 40 - Fax :+32 4 224 25 90
Membră a Schröder Group

Subiect: VOLTANA-1 8 LED-uri LG 3535 Gen 2 – Balast Tridonic LCI 27W 1A

Eșantion nr.: P-E14349

Solicitant: HUS

Scopul testului: **Măsurători electrice la 1A**

Observații: mostră serie 0 identificată cu nr. 2

Cerere de efectuare test nr.: P-D14483

Dosar nr.: P-F14057

CERINTELE TESTULUI:

Operator: ABRY Marc



Balast: Tridonic LCI 27W 1000 mA
Mostră inginerie

Sarcina: 8 LED-uri LG 3535 Gen 2

Sursă de alimentare

Elgar Tw 3500-4

Tensiune de alimentare: 230V 50 Hz

Echipament de măsurare:

Fluke Norma 4000 (analizor de putere de precizie HF, user 10, filtru OFF)

CONCLUZII:

- Eficiența: 83,2%
 - PF: 0,94
 - THD 19,0%
 - Distribuție armonice conform standard IEC/EN 61000-3-2
-

Duplicat pentru: MM P. Bedo, C. Horvath, C. Marville, M. Thijs

LAB 26.06.2014

J.P. Harchies

(Semnătură indescifrabilă)

P-14E483

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

VOLTANA-1 8 LED-uri LG 3535 Gen 2 – Balast Tridonic LCI 27W 1A**Armonice, PF și Eficiența**

Emisii armonice (IEC 61000-3-2 Clasa C, >25W)

VOLTANA 1
8 LED-uri LG 3535 Gen II
Tridonic CI 27W -1000 mA

Data: 23.06.2014

Operator MAY

Harmonique	Taux (%)	Limite (% H1)	Power Factor	0,9452	Cos $\varphi_{(H01)}$	0,9620
1	100,0	100,0				
2	0,0	2,0				
3	6,2	28,4				
5	5,3	10,0				
7	2,8	7,0				
9	2,2	5,0				
11	1,2	3,0				
13	0,7	3,0				
15	0,7	3,0				
17	0,5	3,0				
19	1,0	3,0				
21	0,6	3,0				
23	0,5	3,0				
25	0,0	3,0				
27	0,1	3,0				
29	0,3	3,0				
31	0,4	3,0				
33	0,5	3,0				
35	0,2	3,0				
37	0,4	3,0				
39	0,3	3,0				

input		output 1	
U _{rms}	230,0 V	U _{rms}	25,72 V
I _{rms}	145 mA	I _{rms}	1,02 A
P _{rms}	31,54 W	P _{rms}	26,23 W
S	33,37 VA		
Q	-10,90 VAR		
FP	0,9452		
I _(H01)	143 mA	U _{moy}	25,72 V
Cos $\varphi_{(H01)}$	0,9620	I _{moy}	1,02 A
η_{rms}	83,2%	P _{moy}	26,23 W
η_{moy}	83,2%		
THD	19,0%		

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

Lumen maintenance report

LED information

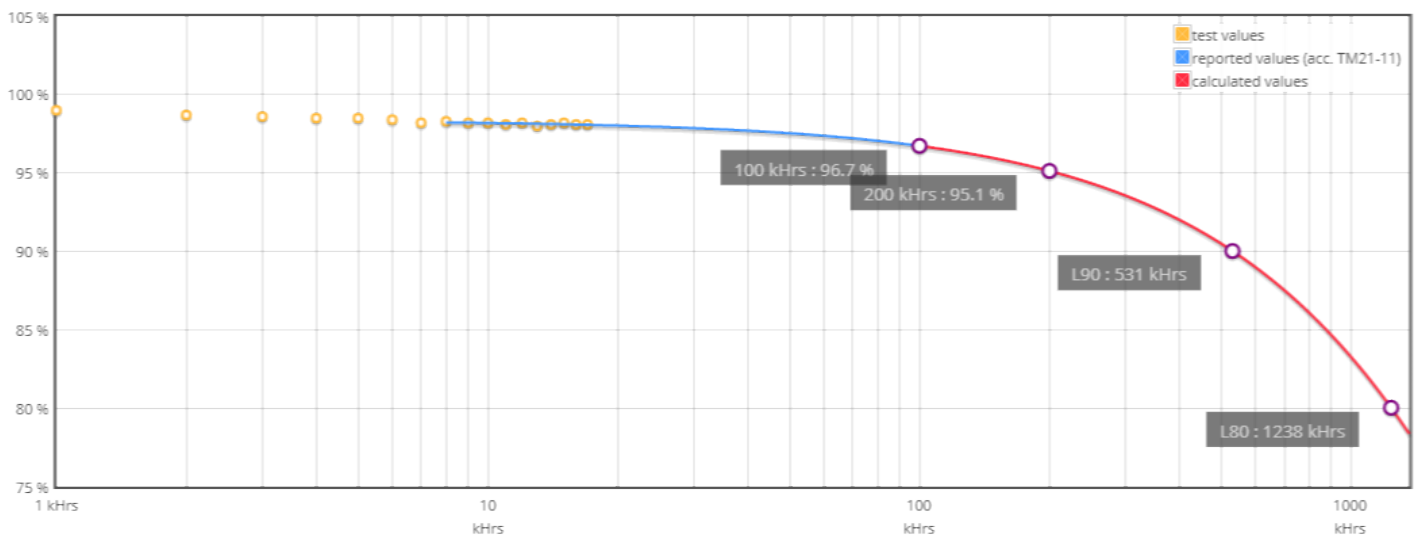
LED type LH351C
LED current 1000 mA
Ts 55°C
Description SLED-19-031-R02

Projection data

Test duration 17000 hrs **α** 1.667E-007
Time used for projection 8000 to 17000hrs **β** 0.984

L (%)	Time (kHrs)
80.0	1239
90.0	532
95.1	200
96.7	100

Projection graphic



LxB50 results according to LM-80 and TM-21-11 procedures and norms.

LxBy results derived from LxB50 according to IEC 62717 Annex C.



ELECTRIC PRODUCTS CERTIFICATION INDEPENDENT BODY - OICPE

ORGANISM INDEPENDENT PENTRU CERTIFICAREA PRODUSELOR ELECTRICE

SOCIETATE CU RĂSPUNDERE LIMITATĂ

SPLAIUL UNIRII Nr. 313, CORP M-1, D3-14, 030138, BUCUREȘTI, ROMÂNIA,

J40/3946/2009; Tel. : +40 21 589 33 05 Tel/Fax : +40 21 346 49 35; <http://www.oicpe.ro>



LICPE

**LABORATORUL DE ÎNCERCĂRI PENTRU CERTIFICAREA
PRODUSELOR ELECTRICE**

Testing Laboratory for Electrical Products Certification

RAPORT DE ÎNCERCĂRI

TEST REPORT

Nr. 97 / 20.03.2019

Pag. 1 / 6

Exemplar nr. 1 din 2

ÎNCERCAREA SOLICITATĂ

Required Test

Verificarea gradului de protecție asigurat prin carcase împotriva impacturilor mecanice din exterior – IK10 conform SR EN 62262:2004, cap. 5, cap. 6 și cap. 7

PRODUSUL

Equipment

CORP DE ILUMINAT CU LED-uri
tip VOLTANA1 8L – Cod VOLTA1-000457

PRODUCĂTOR

Manufacturer

TUNGSRAM-Schröder Zrt., Ungaria

CLIENT (nume, adresă, cerere)

Customer (name, address, order)

SCHRÖDER ROMANIA S.R.L
Cluj-Napoca / 400228, Str. Corneliu Coposu,
Nr. 167A
Cerere nr. 76/08.03.2019

MANAGER LABORATOR

Laboratory Manager

Ing. Nicolae LICSandru

DIRECTOR TEHNIC OICPE

OICPE Technical Director

Ing. Dragoș ROSMETENIUC



Rezultatele încercărilor se referă numai la produsele încercate.

Test results refers only to tested products.

Acest document poate fi reprodus numai în întregime.

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**DATELE TEHNICE ALE PRODUSULUI:****CORP DE ILUMINAT CU LED-uri tip VOLTANA1 8L – Cod VOLTA1-000457**

- Tensiune nominală	: 230 V~
- Frecvența nominală	: 50 Hz
- Putere consumată	: 29 W
- Sursa alimentare	: model
- Factor de putere	: > 0,97
- Sursă de lumină	: 1 modul LED cu 8 LED-uri : 2 module a câte 4 lentile tip 5136 - PMMA (producător Schröder)
- Grad protecție	: IP 66
- Rezistența la impact	: IK10
- Temperatura ambiantă maximă nominală (t _a)	: + 55 °C
- Clasa de protecție	: I
- Dispersor carcasă	: sticlă securizată tratată termic cu grosimea de 5mm;
- Carcasă de protecție	: Aluminu turnat sub presiune
- Masă	: 3,45 kg
- Dimensiuni de gabarit	: [501 x 181 x 88] mm
- Înălțimea de montare	: 4 - 12 m
- Utilizare	: iluminatul șoselelor, străzilor, aleilor și pentru alte locuri de interes public

Lot / Serie / An fabricație : / 2019
Felul produsului : serie curentă
Data primirii produsului : 08.03.2019
Perioada încercărilor : 08.03.2018 – 19.03.2019
Modul de prelevare: : conform procedurii PG-11, OICPE
Număr de produse încercate : 1 bucată

Responsabil de încercări



Ing. Daniel DRAGNEA

OPINII ȘI INTERPRETĂRI:

Rezultatele încercării pentru verificarea rezistenței la impact mecanic exterior IK10, din prezentul Raport de Încercări, atestă conformitatea produsului „CORP DE ILUMINAT CU LED-uri tip VOLTANA 1-8L – Cod VOLTA1-000457 ” cu cerințele cap. 5; 6 și 7 din SR EN 62262:2004.



Articol din DN	Cerință conform SR EN 62262:2004	Rezultate	Mod de îndeplinire a cerinței
GRAD DE PROTECȚIE ÎMPOTRIVA IMPACTURILOR MECANICE			
5 PRESCRIȚII GENERALE PENTRU ÎNCERCĂRI			
5.1	Condiții atmosferice pentru încercări		
	Dacă nu este specificat altfel în standardul particular de produs, încercările trebuie efectuate în condiții atmosferice standard pentru încercările definite în CEI 60068-1: - domeniul de temperaturi: de la 15 °C până la 35 °C; - presiune atmosferică: de la 86 kPa până la 106 kPa (de la 860 mbar până la 1060 mbar)	Măsurat : 17 °C Măsurat : 965 mbar	P P
5.2	Carcase supuse încercării		
	Fiecare carcasă supusă încercării trebuie să fie curată și în stare nouă, completă și cu toate părțile la locul lor, dacă nu este prevăzut altfel în standardul particular de produs.	1 bucată CORP DE ILUMINAT CU LED-uri VOLTANA1 8L – Cod VOLTA1-000457, curat și în stare nouă complet și cu toate părțile la locul lor.	P
5.3	Prevederi indicate în standardul particular de produs		
	Standardul particular de produs trebuie să prevadă: - definiția pentru «carcasă» așa cum se aplică la tipul particular de echipament; - mijlocul de încercare (de exemplu ciocanul pendular, ciocanul cu resort sau ciocanul vertical, a se vedea articolul 7); - numărul de eșantioane supuse la încercări; - condițiile de montaj, asamblarea și poziționarea eșantioanelor, de exemplu prin utilizarea unei suprafețe artificiale (tavan, podea sau perete) cu scopul de a simula condițiile destinate de serviciu, atât cât este posibil; - condiționarea care trebuie utilizată, dacă se aplică; - dacă încercarea se efectuează sub tensiune; - dacă încercarea se efectuează cu părțile mobile în mișcare; - numărul de impacturi și punctele lor de aplicare (a se vedea 6.4). În absența unor astfel de precizări în standardul particular de produs, trebuie aplicate condițiile din acest standard.	Standardul particular de produs SR EN 60598-2-3:2004 + A1:2012 + AC:2015 prevede condițiile în care trebuie să se realizeze verificarea gradului de protecție la impacturi mecanice. N = 1 (un) impact S-au aplicat condițiile din standardul SR EN 60598-2-3:2004 + A1:2012 + AC:2015 art. 3.6 5.2.1 referitor la numărul de impacturi.	P P P
6	ÎNCERCĂRI PENTRU VERIFICAREA PROTECȚIEI ÎMPOTRIVA IMPACTURILOR MECANICE		
6.1	Încercarea specificată în acest standard este încercare de tip.	Încercare de tip IK 10	P
6.2	Verificarea protecției împotriva impacturilor mecanice se efectuează prin aplicarea de lovituri carcasei de încercat. Articolul 7 descrie dispozitivele care se utilizează pentru această încercare.	A se vedea articolul 7 din prezentul RI	P
6.3	În timpul încercării, carcasa trebuie montată pe un suport rigid și în conformitate cu instrucțiunile de utilizare ale fabricantului. Se consideră că un suport este suficient de rigid dacă deplasarea sa este mai mică sau cel mult egală cu 0,1 mm sub efectul unei lovituri aplicate direct și a cărei	Corp de iluminat cu LED-uri VOLTANA 1 – 8L – Cod VOLTA1-000457 montat pe suport rigid.	P

	ELECTRIC PRODUCTS CERTIFICATION INDEPENDENT BODY – OICPE		 LICPE
	Laboratorul de Încercări pentru Certificarea Produselor Electrice		
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Articol din DN	Cerință conform SR EN 62262:2004	Rezultate	Mod de îndeplinire a cerinței
	energie corespunde gradului de protecție. Pot fi specificate montaje și suporturi alternative în standardul particular de produs, adecvate produsului.		
6.4	Numărul de impacturi (lovituri) trebuie să fie de cinci pe fiecare față expusă, dacă nu este specificat altfel în standardul particular de produs. Loviturile trebuie distribuite normal pe fețele carcasei (sau carcaselor) de încercat. În niciun caz nu trebuie aplicate mai mult de trei lovituri în jurul aceluiași punct al carcasei. Standardul particular de produs trebuie să specifice punctele pentru aplicarea loviturilor.	Corpul de iluminat VOLTANA1 8L – Cod VOLTA1-000457 a fost pregătit pentru încercarea la impact mecanic. Numărul de impacturi aplicate - 1 impact în zona centrală a dispersorului conform SR EN 60598-2-3:2004 + A1:2012 + AC:2015 art. 3.6.5.2.1 (Vezi Fig. 1 și Fig. 2 din Anexă).	P
6.5	Evaluarea încercării Standardul particular de produs trebuie să specifice criteriile pe care se bazează acceptarea sau respingerea carcasei, și în particular: - deteriorările admise; - criteriul de verificare privind menținerea securității și siguranței echipamentului.	Dispersorul carcasei din sticlă securizată tratată termic a rezistat la impactul central aplicat - IK 10 (Vezi Fig. 3 - Anexă)	P
7	APARATE DE ÎNCERCARE Încercările trebuie realizate prin utilizarea unia din aparatele de încercare descrise în CEI 60068-2-75. Standardele particulare de produs trebuie să specifice tipurile de aparate de încercare care sunt adecvate.	Produsul a fost încercat conform testului Ehc: Ciocan vertical, descris în SR EN 60068-2-75:2015 Pentru IK 10: - Dispozitivul corespunde cu figura A.3 din SR EN 60068-2-75:2015 - Greutate ciocan: 5 kg - Înălțime: 400 mm. - Energie de impact: 20 J	P

Mod de îndeplinire a cerinței:

- P** - Cerința este îndeplinită
NP - Cerința nu este îndeplinită
NA - Cerința nu este aplicabilă acestui tip de produs

INCERTITUDINI DE MĂSURARE

Denumire încercare (Punct RI)	Mărimea măsurată/calculată	Aparat de măsură /tip/serie sau inventar	Certificat de etalonare/emitent	Incertitudinea extinsă [U]	Factor de extindere [k]
Impact mecanic (cod IK) 5, 6 și 7	Masă	Aparat de cântărit cu funcționare neautomată/R1/ CAS Tip EP-10 Seria 96070397	CE460/2017/ IPROEB Bistrița (LE 018)	2,9 g	2
	Dimensiuni	Ruletă de măsurare S3489 A34W	01.01-911/2017/ INM (CIPM MRA)	0,22 mm	2
	Temperatură/umiditate	Higrometru electronic cu traductor electrochimic seria 41843	2224/ 2017 METROMAT Brașov (LE 008)	0,5 °C/ 2,6 % rH	2

Incertitudinea atribuită este incertitudinea extinsă obținută prin multiplicarea incertitudinii standard cu factorul de extindere $k = 2$, și a fost estimată în conformitate cu SR Ghid ISO/CEI 98-3:2010. Valoarea măsurandului se află în intervalul de valori desemnat cu o probabilitate de 95,45 %.

	ELECTRIC PRODUCTS CERTIFICATION INDEPENDENT BODY – OICPE		 LICPE
	Laboratorul de Încercări pentru Certificarea Produselor Electrice		
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ANEXĂ

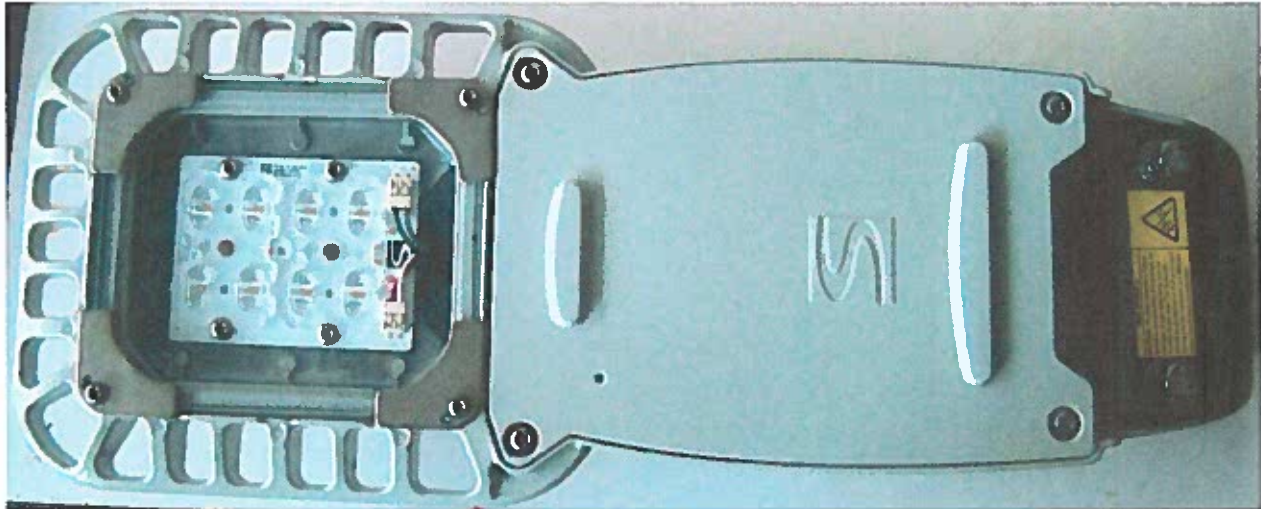


Fig. 1 – Corpul de iluminat VOLTANA 1-8L – Cod VOLTA1-000457 înainte de verificarea la impact (IK 10)



Fig. 2 – Corpul de iluminat VOLTANA 1-8L – Cod VOLTA1-000457 pregătit pentru verificarea impact (IK 10)

	ELECTRIC PRODUCTS CERTIFICATION INDEPENDENT BODY – OICPE		 LICPE
	Laboratorul de Încercări pentru Certificarea Produselor Electrice		
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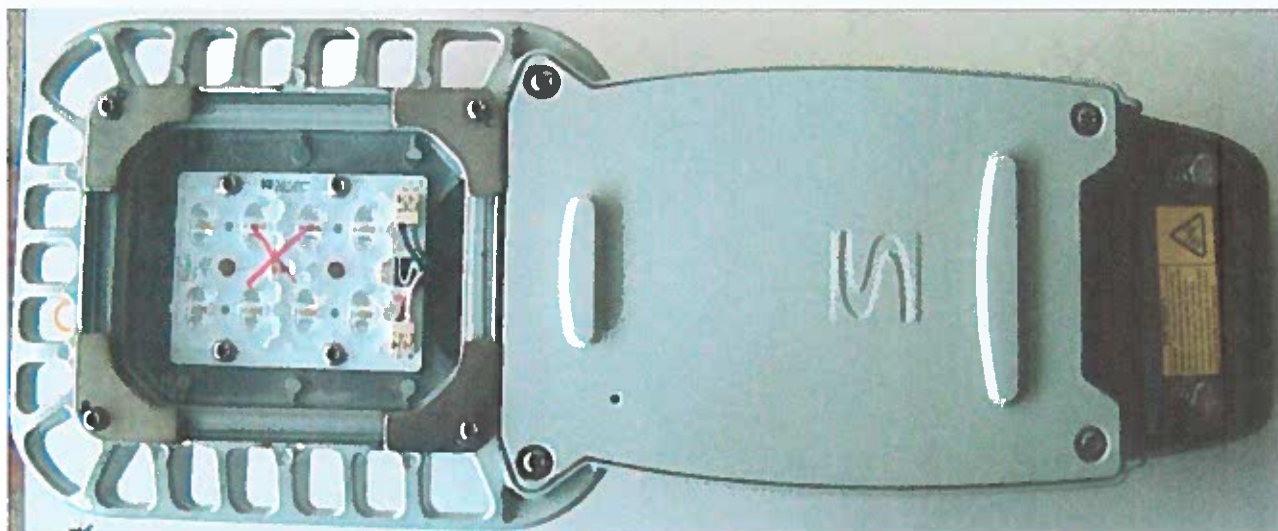


Fig. 3 – Corpul de iluminat VOLTANA 1-8L – Cod VOLTA1-000457 după verificarea la impact (IK 10) - punctul de impact a fost marcat cu markerul de culoare roșie

Laboratory Service PHYSICAL TEST REPORT



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

Subject: VOLTANA-1 8 led's @ 1A

Sample n°:

Test purpose: Tightness test IP66 following IEC/EN 60598-1 Standard

Remarks:

Test request n°: P-D14677

Folder n°: P-F14057

TEST CONDITIONS:

Operator: BOMBIL Patrick

Preconditioning: endurance test

Test	Result
IP6X : -Luminaire switched ON until stable T° -Talcum in suspension (blowing ON) -After 1', luminaire OFF -Talcum for 3 hours	OK.
IPX6 : - Luminaire switched ON until stable T° - Luminaire switched OFF and immediately sprayed with water jet - Hose Φ 12,5 mm - Water pressure: 1 kg/cm ² - Spraying distance: 3 m - Duration of test: 3 minutes	OK.

CONCLUSIONS:

VOLTANA-1 8 led's @ 1A satisfies the IP66 test following IEC/EN 60598-1 Standard.

Duplicate to: Mr M. Thijs
LAB 17/09/2014
J.P. Harchies

//P-14E677

A handwritten signature in blue ink, appearing to read "Harchies", with a horizontal line drawn underneath it.

Laborator teste
RAPORT DE TEST FIZIC

R-Tech
Rue de Mons 3 - B-4000 Liège - Belgia
Tel. :+32 4 224 71 40 - Fax :+32 4 224 25 90
Membră a Schröder Group

Subiect: VOLTANA- 1 16 Led @ 1A
Eșantion nr.:

Scopul testului: Test nivel etanșeitate IP66 conform standardului IEC/EN 60598-1

Observații:
Cerere de efectuare test nr.: P-D14677
Dosar nr.: P-F14057

CERINȚELE TESTULUI:

Operator: BOMBIL Patrick

Pregătire: test de rezistență

Test	Rezultat
<p>IP6X : -Aparatul de iluminat pornit până la T° stabilă -Talc în suspensie (suflantă pornită) -După 1', aparatul este închis -Talc 3 ore</p>	VALIDAT.
<p>IPX6 : -Aparatul de iluminat pornit până la T° stabilă -Aparatul de iluminat închis și pus imediat sub jet de apă -Φ furtun 12,5 mm -Presiunea apei: 1 kg/cm2 -Distanța de pulverizare: 3 m -Durata testului: 3 minute</p>	VALIDAT.

CONCLUZII:

VOLTANA-1 8 Led @ 1A a trecut testul IP66 conform Standard IEC/EN 60598-1.

Duplicat pentru: Mr M. Thijs
LAB 17.09.2014
J.P. Harchies
(Semnătură indescifrabilă)

//P-14E677

pagina 1/1

Subsemnata **CAMELIA TILIHAI**, traducător autorizat de M.J. nr. autorizație 25136/2014, certific exactitatea traducerii **din limba engleză**, cu textul înscrisului în original, care a fost văzut de mine.

Traducător



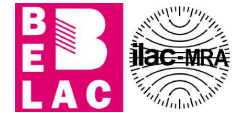
LED Flux measurement

FORM-L-41 ED1 REV 2

Date : **16-01-19**

Operator : **FCE**

Filename : **2019_58.xml**



226 - TEST

NBN EN ISO/IEC 17025 : 2005

LEDs

Trademark : **Samsung**

Entry number : **39R005-2**

Type : **LH351C**

Power (Catalogue) : **0,00** W

BIN Description : **40-70M-4-TB-RB**

Flux : **0** lm/LED

Part number : **Unknown**

Color or CCT (Theoretical) : **NW**

Number of LEDs : **8**

Lenses

Trademark : **None**

Type : **None**

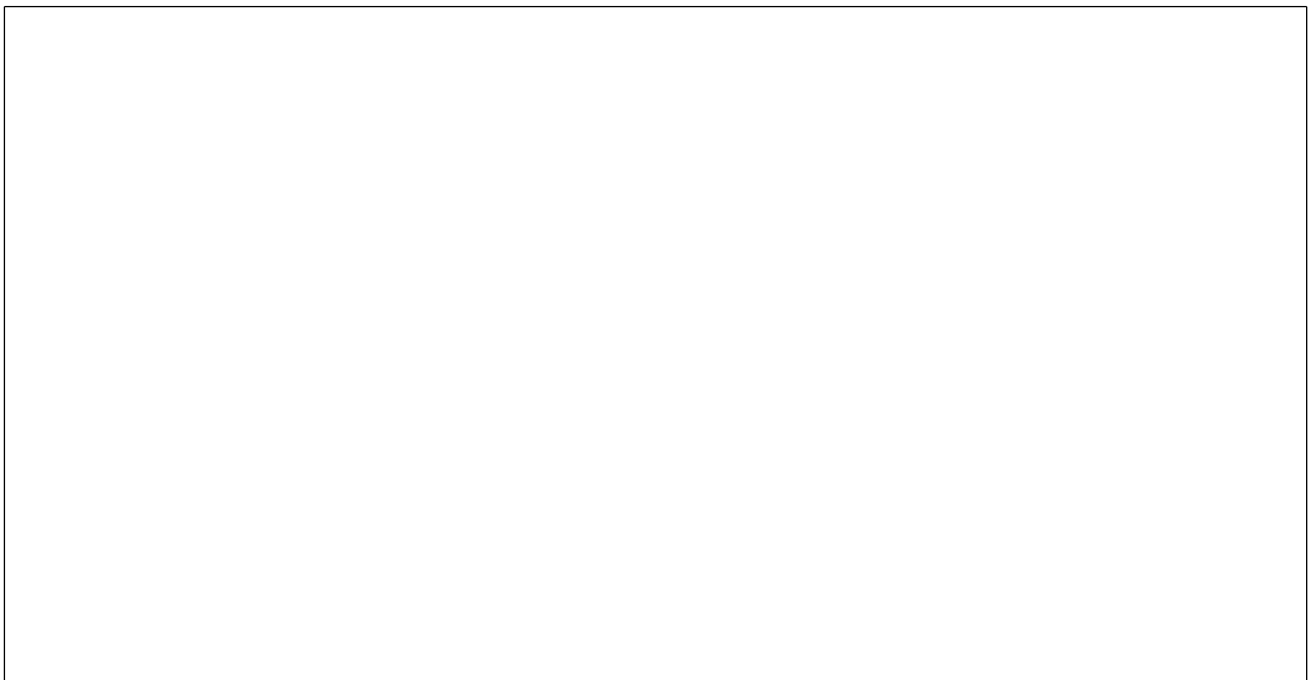
Power & Print

Type : **DELTA SM400-AR-4**

Print description : **00-71-636 A - Voltana 1**

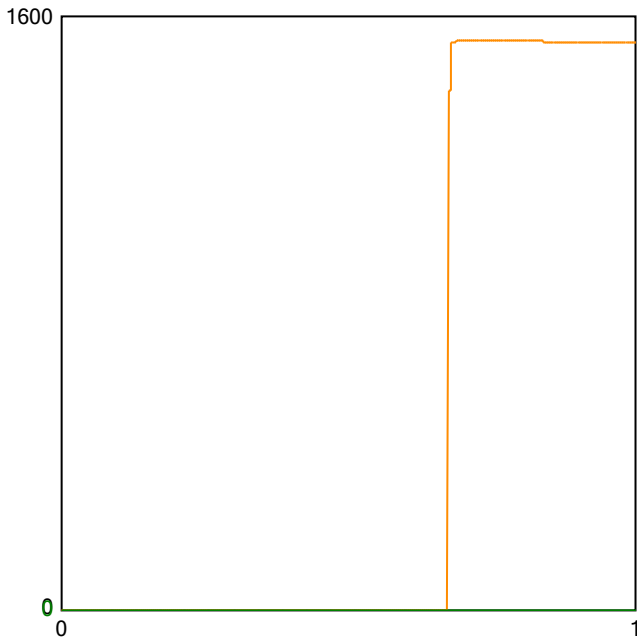
Active

Picture



Sphere photometric measurement

Maximum flux : **1538** lumens



Operating condition

Position in sphere :



Ambient sphere T ° : **24,3**

Electrical measurement

● Secondary electrical measurement

Voltage : **22,37** V

Current : **0,350** A

Power : **7,82** Watt

→ LEDs light efficiency at 25° :

196,6 lm/W

192,2 lm/Led

● Primary electrical measurement

Voltage : **N/A** V

Current : **N/A** A

Power : **N/A** Watt

Cos φ : **N/A**

→ Driver losses : **N/A** %

→ LEDS & Driver light efficiency :

N/A lm/W

Description :

Flux @25°/350mA - pcb Voltana 1 - 8 Samsung LH351C - pcb N°2

Comment :

FORM-L-41 ED1 REV 2



226 - TEST

Approved by :



RTECH-PHOTOMETRY LABORATORY

Testreport : Measurement of luminous intensity distribution related to the standard
NBN-EN 13032-1; NBN-EN 13032-4; CIE 121-1996; CIE S 025/E; IES LM-79-08 and procedures PT-P-01
and PT-P-02

rue de Mons, 3 B-4000 LIEGE - Tel : 04/224.71.40 - Fax : 04/224.25.90
Measurement for Schröder group.

LED

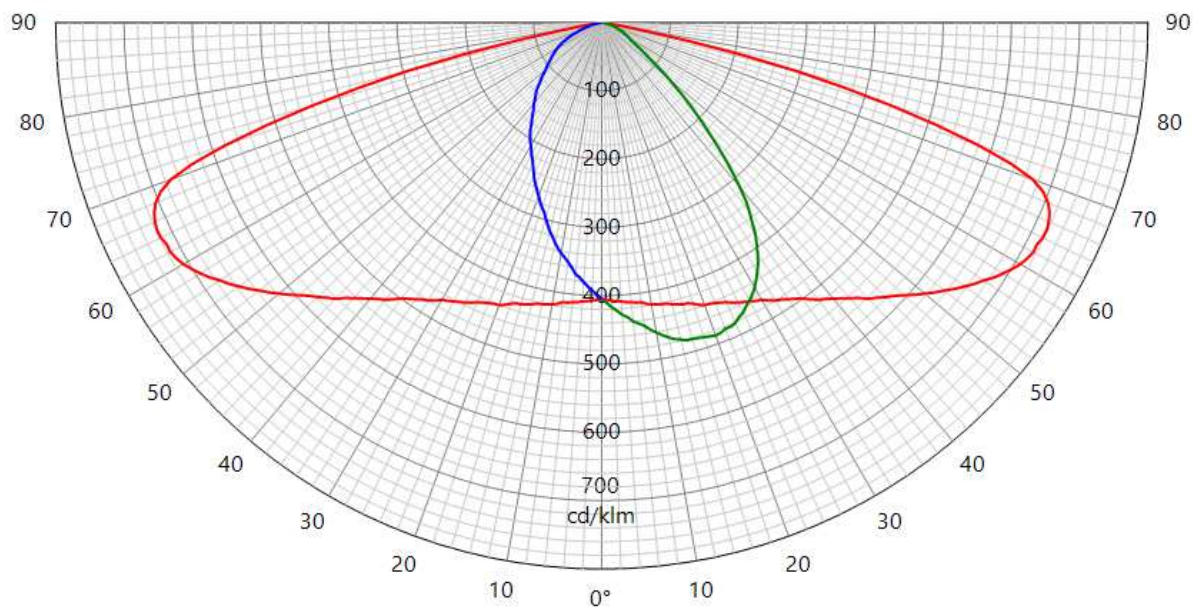
Origin TUNGSRAM-Schröder Zrt. Hungary	Production TUNGSRAM-Schröder Zrt. Hungary	Luminaire VOLTANA 1	Inclination 0°	Request # FD39017
Source				
Type LED	BIN 40-70M-4-TB-RB	Trademark Samsung	Reference LH351C	# LEDs 8
Master -	Reflector Schröder Led assembly Medium Assembled 0.0°			No 5137
Protector Refractor Lens				
Protector Lens	Glass Extra Clear Flat Smooth Gaggione 5137 PMMA			
Laboratory observation				
VOLTANA 1 with 8 SAMSUNG LH351C Used flux for efficiency matrix calculation = 1538 lm - CCT = 3841 K - CRI = 72,07 (see sphere test report 2019/58 on appendix).				
Purpose DOC	Sample date 08-01-2019		Sample # 39R005	
Observation				
DOC VOLTANA 1 with lenses 5137 Flux coefficient multiplier (only for efficiency matrix): From 350 to 500 mA : 1,379 From 350 to 700 mA : 1,849 From 350 to 1000 mA : 2,474 Fixture powered with driver Philips Xi FP 22W 0,3-1,0A SNLDAE 230V S175 sXt DALI for matrix @350/500/700mA Fixture powered with driver Philips Xi FP 40W 0,3-1,0A SNLDAE 230V S175 sXt DALI for matrix @1000mA				
Notes				
The publication of this report in another form than the original one is not allowed without agreement of the laboratory. This report concerns type tests on one or a series of specimens.				

Asked by RCA	Measured by CLD	Approved by RLABO	Appendix 1	  226-TEST NBN EN ISO/IEC 17025 : 2005	42520
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LUMINOUS INTENSITY DIAGRAM

Origin TUNGSRAM-Schröder Zrt. Hungary		Production TUNGSRAM-Schröder Zrt. Hungary		Luminaire VOLTANA 1		Inclination 0°		Request # FD39017	
Source	Type LED	BIN 40-70M-4-TB-RB	Trademark Samsung	Reference LH351C	# LEDs 8	Reflector 5137			
Reflector	Schreder Led assembly Medium Assembled 0.0°				No	5137			
Matrices	425201		Φ 0-90° = 1312lm - 90-180° = 0lm			Absolute measurement			
Protector Refractor Lens	Protector Glass Extra Clear Flat Smooth - VOLTANA 1 Lens 8 x Gaggione 5137 PMMA								
Observation	<p>Matrix in total flux @350 mA</p> <p>Light losses due to thermal stabilization: 1 %</p> <p>Electrical measurement on LED (#1): Voltage = 22.32 V Current = 0.350 A Power = 7.81 W</p> <p>Electrical measurement on driver (#1): Voltage = 230.00 V Current = 0.046 A Power = 10.19 W PF = 0.957</p> <p>Total luminaire power = 10.19 W : Lm/Watt = 128.79 lm/W</p> <p>Driver #1 : See observations for driver details - PCB 00-71-636 A</p>								

Plane	I Peak	Peak position	Index	I zero	Laboratory ambient t°	Measurement date	↕
10 - 170	719	65	S	405	24.9°	04-02-2019	
90	488	20	D				
270	405	0	G				



42520

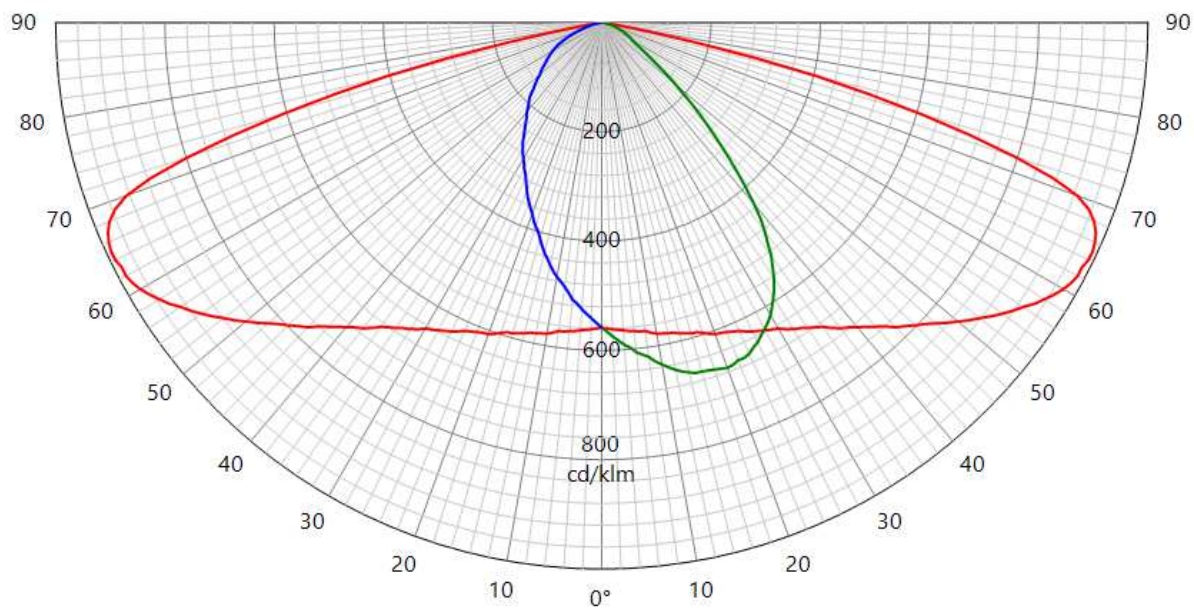
LUMINOUS INTENSITY DIAGRAM

Origin TUNGSRAM-Schröder Zrt. Hungary		Production TUNGSRAM-Schröder Zrt. Hungary		Luminaire VOLTANA 1		Inclination 0°		Request # FD39017	
Source	Type LED	BIN 40-70M-4-TB-RB	Trademark Samsung	Reference LH351C	# LEDs 8	Reflector 5137			
Reflector	Schreder Led assembly Medium Assembled 0.0°				No	5137			
Matrices	425202		η 0-90° = 85.3% - 90-180° = 0.0%		Relative measurement				
Protector Refractor Lens	Protector Glass Extra Clear Flat Smooth - VOLTANA 1 Lens 8 x Gaggione 5137 PMMA								
Observation	<p>Matrix in efficiency @350 mA</p> <p>Light losses due to thermal stabilization: 1 %</p> <p>Electrical measurement on LED (#1): Voltage = 22.32 V Current = 0.350 A Power = 7.81 W</p> <p>Electrical measurement on driver (#1): Voltage = 230.00 V Current = 0.046 A Power = 10.19 W PF = 0.957</p> <p>Total luminaire power = 10.19 W</p> <p>Driver #1 : See observations for driver details - PCB 00-71-636 A</p>								
Plane	I Peak	Peak position	Index	I zero	Laboratory ambient t°	Measurement date		↕	
10 - 170	468	65	S	263	24.9°	04-02-2019			
90	317	20	D						
270	263	0	G						
									42520

LUMINOUS INTENSITY DIAGRAM

Origin TUNGSRAM-Schröder Zrt. Hungary		Production TUNGSRAM-Schröder Zrt. Hungary		Luminaire VOLTANA 1		Inclination 0°		Request # FD39017		
Source		Type LED	BIN 40-70M-4-TB-RB	Trademark Samsung		Reference LH351C	# LEDs 8	Reflector 5137		
Reflector		Schreder Led assembly Medium Assembled 0.0°					No	5137		
Matrices		425203		Φ 0-90° = 1810lm - 90-180° = 0lm			Absolute measurement			
Protector Refractor Lens		Protector Glass Extra Clear Flat Smooth - VOLTANA 1 Lens 8 x Gaggione 5137 PMMA								
Observation		<p>Matrix in total flux @500 mA</p> <p>Light losses due to thermal stabilization: 1,5 %</p> <p>Electrical measurement on LED (#1): Voltage = 22.76 V Current = 0.500 A Power = 11.38 W</p> <p>Electrical measurement on driver (#1): Voltage = 230.00 V Current = 0.063 A Power = 14.16 W PF = 0.974</p> <p>Total luminaire power = 14.16 W : Lm/Watt = 127.81 lm/W</p> <p>Driver #1 : See observations for driver details - PCB 00-71-636 A</p>								

Plane	I Peak	Peak position	Index	I zero	Laboratory ambient t°	Measurement date	↕
10 - 170	992	65	S	558	24.9°	06-02-2019	
90	672	20	D				
270	558	0	G				

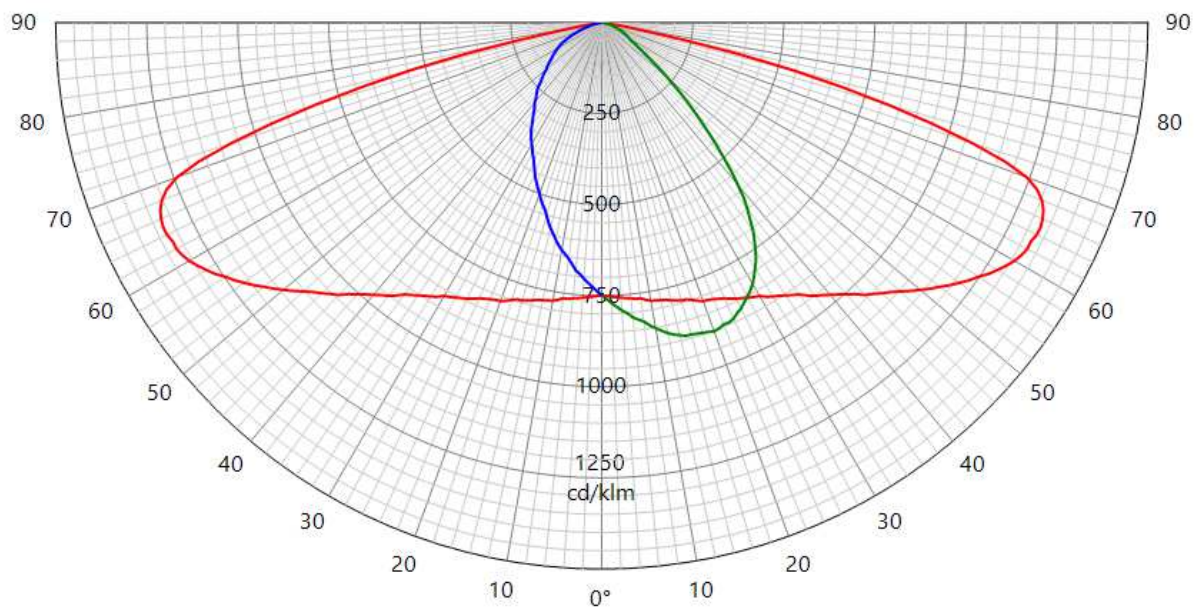


42520

LUMINOUS INTENSITY DIAGRAM

Origin TUNGSRAM-Schröder Zrt. Hungary		Production TUNGSRAM-Schröder Zrt. Hungary		Luminaire VOLTANA 1		Inclination 0°		Request # FD39017	
Source	Type LED	BIN 40-70M-4-TB-RB	Trademark Samsung	Reference LH351C	# LEDs 8	Reflector 5137			
Reflector	Schreder Led assembly Medium Assembled 0.0°				No	5137			
Matrices	425204		Φ 0-90° = 2427lm - 90-180° = 0lm			Absolute measurement			
Protector Refractor Lens	Protector Glass Extra Clear Flat Smooth - VOLTANA 1 Lens 8 x Gaggione 5137 PMMA								
Observation	<p>Matrix in total flux @700 mA</p> <p>Light losses due to thermal stabilization: 2 %</p> <p>Electrical measurement on LED (#1): Voltage = 23.26 V Current = 0.700 A Power = 16.29 W</p> <p>Electrical measurement on driver (#1): Voltage = 230.00 V Current = 0.087 A Power = 19.79 W PF = 0.985</p> <p>Total luminaire power = 19.79 W : Lm/Watt = 122.62 lm/W</p> <p>Driver #1 : See observations for driver details - PCB 00-71-636 A</p>								

Plane	I Peak	Peak position	Index	I zero	Laboratory ambient t°	Measurement date	↕
10 - 170	1330	65	S	749	24.9°	06-02-2019	
90	902	20	D				
270	749	0	G				

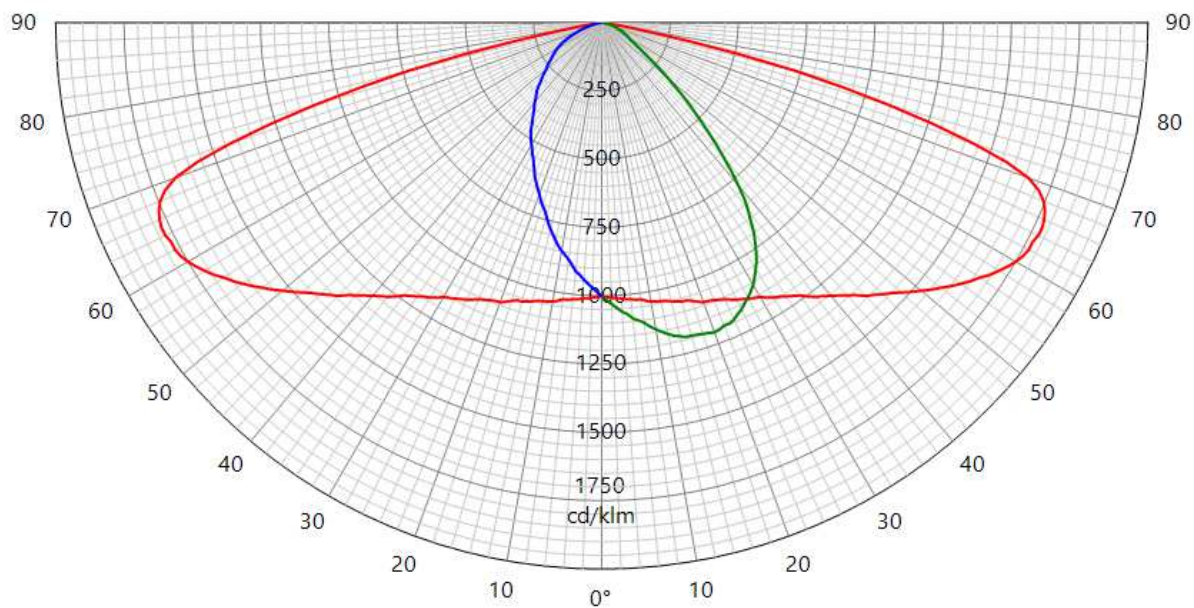


42520

LUMINOUS INTENSITY DIAGRAM

Origin TUNGSRAM-Schröder Zrt. Hungary		Production TUNGSRAM-Schröder Zrt. Hungary		Luminaire VOLTANA 1		Inclination 0°		Request # FD39017	
Source	Type LED	BIN 40-70M-4-TB-RB	Trademark Samsung	Reference LH351C	# LEDs 8	Reflector 5137			
Reflector	Schreder Led assembly Medium Assembled 0.0°				No	5137			
Matrices	425205		Φ 0-90° = 3247lm - 90-180° = 0lm			Absolute measurement			
Protector Refractor Lens	Protector Glass Extra Clear Flat Smooth - VOLTANA 1 Lens 8 x Gaggione 5137 PMMA								
Observation	<p>Matrix in total flux @1000 mA</p> <p>Light losses due to thermal stabilization: 2,5 %</p> <p>Electrical measurement on LED (#1) : Voltage = 23.93 V Current = 1.000 A Power = 23.93 W</p> <p>Electrical measurement on driver (#1) : Voltage = 230.00 V Current = 0.128 A Power = 28.74 W PF = 0.978</p> <p>Total luminaire power = 28.74 W : Lm/Watt = 112.97 lm/W</p> <p>Driver #1 : See observations for driver details - PCB 00-71-636 A</p>								

Plane	I Peak	Peak position	Index	I zero	Laboratory ambient t°	Measurement date	↕
10 - 170	1779	65	S	1002	24.9°	06-02-2019	
90	1206	20	D				
270	1002	0	G				



42520

CONFORMITY STATEMENT

Measurement fulfil Standards:

NBN-EN 13032-1
NBN-EN 13032-4
NBN-EN 17025:2005
CIE 121-1996
LM79-08
CIE S 025

Measurement quantities measured:

Light distribution in relative or absolute photometry
Led alone cold lumen package
Led CCT and CRI
Power consumption of the fitting
Lm/watt

Electrical measurement, if not specified:

Primary values are AC with 50Hz frequency
Secondary values on SSL are DC

CCT, CRI and chromaticity coordinates: are measured in Ulbricht sphere.
If specified Main test report refer to sphere extra test report.

Light distribution are measured on gonio. If not otherwise specified, measurement is done at 50 Hz

Number of hours operated prior to measurement: if not otherwise specified, 0 hours (no aging).

Stabilization time: If not otherwise specified, a minimal stabilization time of 0.5 hour is applied; and measurement will start when it exists no more variation above 0.5% in 15 minutes

Total operating time of the product including stabilization:
45 minutes have to be added by measurement.
Minimal operating time is 75 minutes

Luminous intensity distribution: available on electronic file with
.mat format (internal Schröder format)
.ldt format (European standard)
.IES format (American standard)

Statement of uncertainties (K=2, 95% of confidence level):
Uncertainties calculated based on a typical Schröder fitting and PCBA

Intensity measurement: +/- 3%
Angle: +/- 0.5°
Flux: +/- 2.5%
Electrical DC
Power: +/- 0.25%
Voltage: +/- 0.15%
Current: +/- 0.15%
Electrical AC
Power: +/- 0.15%
Voltage: +/- 0.3%
Current: +/- 0.3%
Temperature: +/- 0.65%

ISP2000	JETI	
CCT:	+/- 5%	+/-7.5%
CRI:	+/- 2%	+/-2.75%
x/y:	+/- 2%	+/-4.6%

lm/Watt: +/-3.5%

Measuring instruments in use:

Gonio 1

Type C with Moving mirror

Manufacturer: LMT Lichtmesstechnik GmbH Berlin, Helmholtzstrasse 9 10587 Berlin, Germany

Type: GO-DS 2000

Calibration: traceable to PTB (Physikalisch-Technische Bundesanstalt D-Braunschweig) and METAS (Federal Institute of Metrology, CH-Bern)

Photometric test distance: By default 10 meter, on request 30 meter.

Gonio 2

Type C

Manufacturer: Technoteam Bildverarbeitung, Werner-von-Siemens-Strasse 5 98693 Ilmenau, Germany

Calibration: traceable to BIPM (Bureau International des Poids et Mesures F-Sèvres)

Photometric test distance: Near Field

Sphere n°1

4p geometry

Manufacturer: LMT Lichtmesstechnik GmbH, Helmholtzstrasse 9 10587 Berlin, Germany

Type: UL2000 + U1000 V-Lambda photometer

Calibration: traceable to BIPM (Bureau International des Poids et Mesures F-Sèvres)

Sphere n°2

4p geometry

Manufacturer: Instrument Systems GmbH, Neumarkter Str. 83, 81673 Muenchen, Germany

Type ISP2000 + Spectroradiometer CAS120 and CAS140

Calibration: traceable to NIST

Colorimetric portable spectroradiometer

Manufacturer: JETI Technische Instrumente GmbH, Tatzendpromenade 2 07745 Jena

Type: SPECBOS 1201

Calibration: traceable to NIST

Multimeters

Manufacturer: Agilent

Type: 34401A

Calibration: traceable to BIPM (Bureau International des Poids et Mesures F-Sèvres)

Wattmeters

Manufacturer: Yokogawa

Type: WT210 and WT310

Calibration: traceable to BIPM (Bureau International des Poids et Mesures F-Sèvres)

Thermometers

Amarell Precision

Type: Liquid in glass N63833

Calibration: traceable to LBT (Laboratoire Belge de Thermométrie)

LICENCE

No. 21182 - Issue No 3

Issued to:
Applicant:
R-Tech
Rue de Mons, 3
4000 LIEGE
Belgium

Licensee:
Schreder S.A.
Rue de Lusambo, 67
1190 BRUXELLES
Belgium



Product : road, square, street, flood lighting
Trade name(s) : SCHREDER
Type(s)/model(s) : VOLTANA 0, VOLTANA 1, VOLTANA 2, VOLTANA 3,
VOLTANA 4

The product and any acceptable variation thereto is specified in the annex to this licence and the documents therein referred to.

SGS CEBEC hereby declares that the above-mentioned product has been certified on the basis of:

- a type test according to the standard specified in annex
- an inspection of the production location
- a certification agreement with the number 1173

SGS CEBEC hereby grants the right to use the CEBEC certification mark

The ENEC/CEBEC certification mark may be applied to the product as specified in this licence for the duration of the ENEC/CEBEC certification agreement and under the conditions of the ENEC/CEBEC certification agreement.

This licence is issued on: 11/06/2019

ir. C. Lana,
Certification Manager

© Only integral publication of this certificate, including the annex, is allowed
This certificate is only valid combined with the publication on the following web address: www.sgs.com/ee



SPECIFICATION OF THE CERTIFIED PRODUCT

Product data

Product	:	road, square, street, flood lighting
Trade name(s)	:	SCHREDER
Type(s)/Model(s)	:	VOLTANA 0, VOLTANA 1, VOLTANA 2, VOLTANA 3, VOLTANA 4
description	:	Street lighting
rated voltage (Un)	:	200-240 V
rated frequency	:	50-60 Hz
rated secondary current (In SEC)	:	max. 1400 mA (LED)
class	:	class II
degree of protection	:	IP66
additional information	:	IK08

Additional information

The VOLTANA range is IK08 according to EN 62262:2002 / IEC TR 62696 :2011.

Product data - type VOLTANA 1

lamp(s)	:	8 LEDs (G4L, G4TOP, XP-G3, 351C, 351D)
rated ambient temperature (ta)	:	max. 55°C
rated power	:	max. 41 W

Product data - type VOLTANA 2

lamp(s)	:	16 LEDs (G4L, G4TOP, XP-G3, 351C, 351D)
rated ambient temperature (ta)	:	max. 45°C
rated power	:	max. 58 W

Product data - type VOLTANA 3

lamp(s)	:	24 LEDs (G4L, G4TOP, XP-G3, 351C, 351D)
rated ambient temperature (ta)	:	max. 50°C
rated power	:	max. 80 W

Product data - type VOLTANA 4

lamp(s) : 32 LEDs (G4L, G4TOP, XP-G3, 351C, 351D)
rated ambient temperature (ta) : max. 55°C
rated power : max. 110 W

Product data - type VOLTANA 0

lamp(s) : 6, 8 LEDs (G4L, G4TOP, XP-G3, 351C, 351D)
rated ambient temperature (ta) : max. 55°C
rated power : max. 38 W

TESTS**Test requirements**

EN 60598-1:2015
EN 60598-2-3:2003 + A1:2011

Test results

The test results are laid down in certification file ref. 618719/23.

Remarks

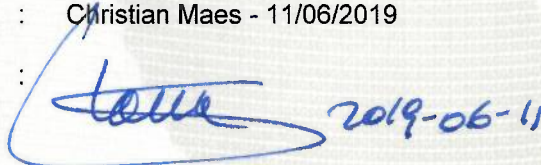
This certificate is based on test report No. P1540-44-Ilc.

Conclusion

The examination proved that all certification requirements were met.

Reviewed by, project leader : Christian Maes - 11/06/2019

Certification Manager :



[Signature] 2019-06-11

FACTORY LOCATION(S)

Schreder TOV
Vul. Mykulynetska 46B
46000 TERNOPIIL
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

Schröder Iluminação S.A.
Rua da Fraternidade Operária, n° 3
2795-491 CARNAXIDE, OEIRAS
Portugal

Comatelec S.A.
Z.I.
18400 SAINT FLORENT S/CHER
France

Schröder Hungary Plc.
Tópart 2
2084 PILISSZENTIVAN
Hungary

Thermal Test LED

General information

Subject : VOLTANA 1 - 8 LEDs Osram 50W driver

Asked by : PELBÁRT Péter

Created on : 20/11/2018

Test number : D180859

Reference norm : IEC/EN 60598-1 Standard

Sample(s) : E180661

Folder : P-F18051

Test conditions

Luminaire : VOLTANA 1

Number of LED : 8

LED : LG Innotek 3535 Gen4 TOP

Driver : Optotronic OT50/120-277/1A2 2DIM LT2 P / 00-14-565

Driver info : Tc max 80°C

Driver current (mA) : 1250

SPD : Vossloh Lighting Solutions SPC3 230/10 K

Measurements devices :

Fluke Norma 4000 - HF Powermeter - (E110) : Electrical measurements

Keithley 2701 (E081) – Ethernet Multimeter/Data Acquisition System :

Thermal & VF led measurements

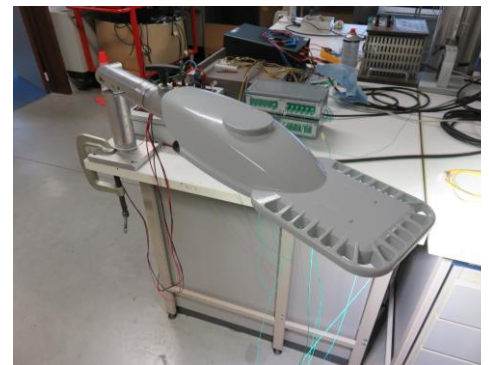
Power Supply :

APT 300XAC AC power supply (E113)

Supply voltages: 230 V 50 Hz


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

Operator : MESPOUILLE Loic



IMG_0893

Conclusion

 Informative

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

Ta: 50°C limited by driver; according IEC 60598-2-3 and IEC 60598-2-5 (outdoor use only)

Ta: 40°C limited by driver; indoor use and UL standard

Tq: 25°C limited by driver; according IEC 62722-2-1

Tq given for 100 khrs of lifetime

Validated by :

GHYSENS Gilles

Duplicate to : VERBEECK Philippe, PELBÁRT Péter, HORVÁTH

Csaba, BEDŮ Péter, BOS Peter

LAB : 06/12/2018

D180859

1/2



Test details

Test(s)

Name	Description	Result
Test @ 1250mA		Informative

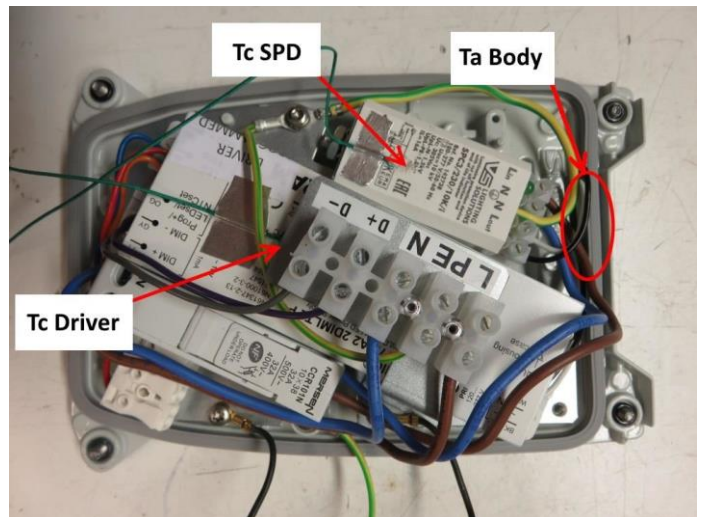
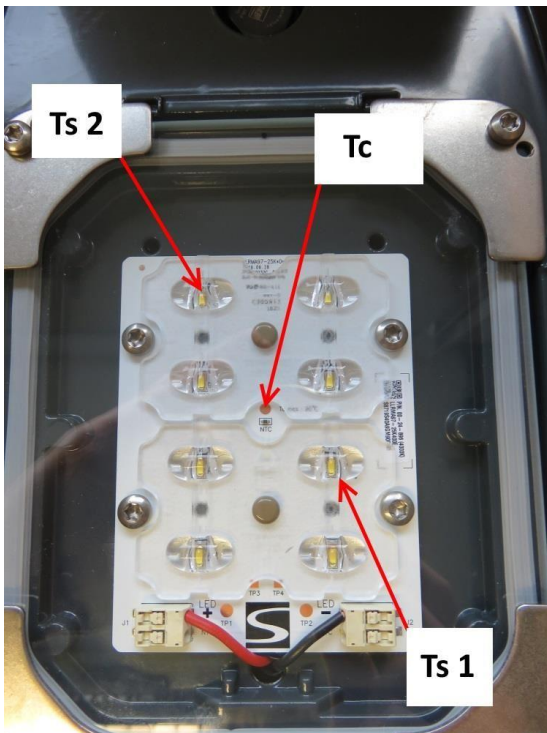
Test @ 1250mA

Result(s)

	Ts 1	Ts 2	Ts 6	Tc driver	Tc SPD	Ta cable
Limite T°				80 °C	80 °C	90 °C
Junction T°	72.8 °C	75.3 °C				
Thermocouple T°	57.4 °C	60.0 °C	48.0 °C	61.3 °C	40.5 °C	38.7 °C
Room	22.9 °C	22.9 °C	22.9 °C	22.9 °C	22.9 °C	22.9 °C
E led	3.11V	3.11V				
I led	1.235A	1.235A				
P led	3.84W	3.84W				
Rth junction-base	4.0 °C	4.0 °C				
Heating			25.1 K	38.4 K	17.7 K	15.8 K
ΔTs	34.6 K	37.1 K				

ME primaire		ME secondaire	
U	230.1V	U	24.8V
I	0.172A	I	1.235A
P	38.1 W	P	30.6 W
PF	0.963		
Efficiency	80%		

Thermal sensors position and measured LEDs :-



Electrical measurements

General information

Subject : VOLTANA 1 - 8 led's SAMSUNG LH351C - Meanwell 40W driver - 1400mA

Asked by : PELBÁRT Péter

Created on : 25/02/2019

Validated on : 21/03/2019

Test number : D190149

Sample(s) : E180663, E190099

Folder : P-F18051

Test conditions

Luminaire : VOLTANA 1

Number of LED : 8

LED : Samsung LH351C

Driver : Meanwell 40W 1400mA PLD-Series / 00-73-737

Driver current (mA) : 1400

SPD : Vossloh Lighting Solutions SPC3 230/10 K

Measurements devices :

Fluke Norma 4000 - HF Powermeter - (E068) : Electrical measurements

Power supply :

APT 300XAC AC power supply (E103)

Supply voltages: 230 V 50 Hz

Operator : KOY Fiston



IMG_2343

Conclusion



Informative

PF : 0,97

Efficiency : 85,2%

THD : 16,0%

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

Validated by :

GHYSENS Gilles

Duplicate to : VERBEECK Philippe, PELBÁRT Péter, HORVÁTH

Csaba, BEDŐ Péter, BOS Peter

LAB : 26/03/2019

D190149

1/2



Measurements

Test(s)

Name	Description	Result
Test @ 1400mA		Informative

Test @ 1400mA

Annex(es)

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

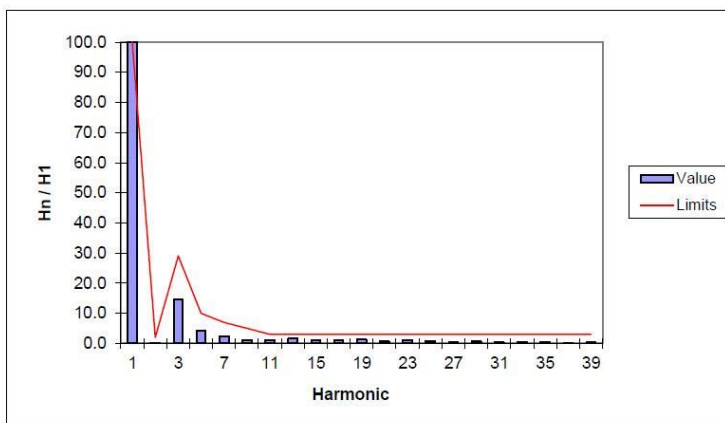
Driver : Meanwell 40W 1400mA PLD-Series / 00-73-737 Tc max 90°C
 SPD: Vossloh Lighting Solutions SPC3 230/10 K

Date 06-03-19

Operator FKY Norma AQ number E068

Harmonic	Taux (%)	Limite (% H1)
1	100.0	100.0
2	0.2	2.0
3	14.7	29.1
5	4.3	10.0
7	2.5	7.0
9	1.0	5.0
11	1.0	3.0
13	1.7	3.0
15	1.0	3.0
17	1.2	3.0
19	1.3	3.0
21	0.7	3.0
23	1.0	3.0
25	0.8	3.0
27	0.5	3.0
29	0.7	3.0
31	0.4	3.0
33	0.4	3.0
35	0.5	3.0
37	0.2	3.0
39	0.3	3.0

Power Factor 0.9693 Cos $\varphi_{(H01)}$ 0.9816



input		output 1	
Urms	230.0 V	Urms	24.8 V
Irms	0.181 A	Irms	1.391 A
Prms	40.3 W	Prms	34.3 W
S	41.5 VA		
Q	-10.2 VAR		
PF	0.9693		
$I_{(H01)}$	0.178 A	Uavg	24.7 V
CoS $\varphi_{(H01)}$	0.9816	Iavg	1.384 A
η_{rms}	85.2%	Pavg	34.3 W
η_{avg}	85.1%		
THD	16.0%		

VOLTANA 1- 8 SAMSUNG LH351C - Meanwell 40W - 1400m

Laborator teste
RAPORT DE TEST FIZIC
FORM L-54 Edition 01 – Revision 00 - Date: 14/06/2018

R-Tech
Rue de Mons 3 - B-4000 Liège - Belgia
Tel. :+32 4 224 71 40 - Fax :+32 4 224 25 90
Membră a Schröder Group

Măsurători electrice

Informații generale

Subiect : VOLTANA 1 - 8 led's SAMSUNG LH351C - Meanwell 40W driver - 1400mA

Solicitat de : PELBÁRT Péter

Creat la : 25/02/2019

Validat la : 21/03/2019

Număr test : D190149

Eșantion(e): E180663, E190099

Dosar : P-F18051

Condiții test

Aparat : VOLTANA 1

Număr de LED-uri : 8

LED : Samsung LH351C

Balast : Meanwell 40W 1400mA PLD-Series / 00-73-737

Curent balast (mA) : 1400

SPD : Vossloh Lighting Solutions SPC3 230/10 K

Echipament de masurare :

Fluke Norma 4000 – Analizor de putere de precizie HF - (E068):
Masurători electrice

Alimentare :

APT 300XAC AC power supply (E103)

Alimentare: 230 V 50 Hz

Operator : KOY Fiston



IMG_2343

Concluzii

Informativ

Factor de putere : 0,97

Eficiența : 85,2%

THD : 16,0%

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

Validat de :
GHYSENS Gilles
(semnătură indescrifabilă)

Duplicat pentru : VERBEECK Philippe, PELBÁRT Péter,
HORVÁTH
Csaba, BEDŐ Péter, BOS Peter
LAB : 26/03/2019

D190149

1/2

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

Măsurători

Test(e)

Nume	Descriere	Rezultat
Test @ 1400mA		Informativ

Test @ 1400mA

Anexa(e)

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

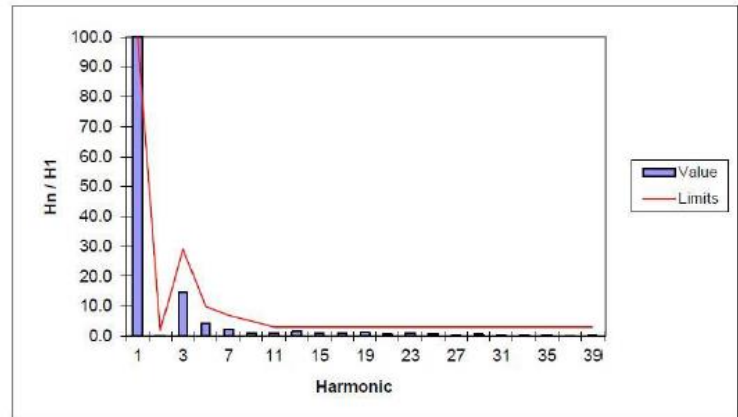
Driver : Meanwell 40W 1400mA PLD-Series / 00-73-737 Tc max 90°C
 SPD: Vossloh Lighting Solutions SPC3 230/10 K

Date 06-03-19

Operator FKY Norma AQ number E068

Harmonic	Taux (%)	Limite (% H1)
1	100.0	100.0
2	0.2	2.0
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5	4.3	10.0
7	2.5	7.0
9	1.0	5.0
11	1.0	3.0
13	1.7	3.0
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17	1.2	3.0
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29	0.7	3.0
31	0.4	3.0
33	0.4	3.0
35	0.5	3.0
37	0.2	3.0
39	0.3	3.0

Power Factor 0.9693 Cos $\varphi_{(H01)}$ 0.9816



input		output 1	
Urms	230.0 V	Urms	24.8 V
Irms	0.181 A	Irms	1.391 A
Prms	40.3 W	Prms	34.3 W
S	41.5 VA		
Q	-10.2 VAR		
PF	0.9693		
$I_{(H01)}$	0.178 A	Uavg	24.7 V
Cos $\varphi_{(H01)}$	0.9816	Iavg	1.384 A
η_{rms}	85.2%	Pavg	34.3 W
η_{avg}	85.1%		
THD	16.0%		

VOLTANA 1- 8 SAMSUNG LH351C - Meanwell 40W - 1400m

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

Laboratory Service PHYSICAL TEST REPORT



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

Subject: VOLTANA-1 8 led's @ 1A – Class I

Sample n°:

Test purpose: EMC tests according to EN 55015 & EN 61547 Standards

Remarks:

Test request n°: P-D14689

Folder n°: P-F14057

TEST CONDITIONS:

Operator: ULg - EMC

Test Summary

EN 55015 & EN 61547 Standards

Emission

Standard	Limit / Level	Result	
		PASS	FAIL
EN 55015 Conducted Emission 9kHz- 30 MHz		X	
EN 55015 Annex B 30 MHz – 300 MHz		X	

Immunity

Standard	Limit / Level	Result	
		PASS	FAIL
EN 61000-4-5	0.5 , 1 , 2 & 4 kV M.D. Impulse + @ 90° Impulse - @ 270° 20' between impulse Criteria B required	X	

Driver: LG Innotek PISE-A 027A – 27W 1A – Rev.0.4

CONCLUSIONS:

VOLTANA-1 8 led's driven by LG Innotek PISE-A 027A 27 W driver @ 1A complies with the CISPR/EN 55015 and EN 61547 Standards.

Remark: Surge protection tested OK up to 4 KV for both Differential and Common modes (Max ULg facilities).

Duplicate to: Mr M. Thijs
LAB 18/09/2014
J.P. Harchies

//P-14E689

Subiect: VOLTANA-1 8 LED-uri @ 1A - Clasa I

Eșantion nr.:

Scopul testului: Teste EMC, conform standardelor EN 55015 și EN 61547

Observații:

Cerere de efectuare test nr.: P-D14689

Dosar nr.: P-F14057

CERINTELE TESTULUI:

Operator: ULg-EMC

Rezumatul testului:

Standardele EN 55015 și EN 61547

Emisie:

Standard	Limită/Nivel	Rezultat	
		TRECUT	PICAT
Emisie condusă EN 55015 9kHz - 30 MHz		x	
EN 55015 Anexa B 30MHz- 300 MHz		x	

Imunitate:

Standard	Limită/Nivel	Rezultat	
		TRECUT	PICAT
EN 61000-4-5	0.5, 1, 2 & 4 kV M.D. Impuls + @ 90° Impuls - @ 270° 20' între impulsuri Cerințe criteriul B	x	

Balast: LG Innotek PISE-A 027A – 27W 1A - Rev.0.4

CONCLUZII:

VOLTANA-1 cu 8 LED-uri acționat @ 1A de către balastul LG Innotek PISE-A 027A 27 W este conform standardelor CISPR/EN 55015 și EN 61547.

Observație: Protecția la supratensiuni testată este declarată conformă, până la 4 KV pentru ambele moduri, Comun și Diferențial (facilități Max ULg).

Duplicat pentru: Mr M. Thijs

LAB 18.09.2014

J.P. Harchies

[Semnătură indescifrabilă]

//P-14E689

pagina 1/1



Thermal Test LED

General information

Subject : VOLTANA 1 – 8 led's SAMSUNG LH351C - Meanwell 40W driver - 1400mA

Asked by : RAMASZ Gábor

Created on : 25/02/2019

Validated on : 21/03/2019

Test number : D190148

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

Sample(s) : E180663, E190099

Folder : P-F18051

Test conditions

Luminaire : VOLTANA 1

Number of LED : 8

LED : Samsung LH351C

Driver : Meanwell 40W 1400mA PLD-Series / 00-73-737

Driver info : Tc max 90°C

Driver current (mA) : 1400

SPD : Vossloh Lighting Solutions SPC3 230/10 K

Measurements devices :

Fluke Norma 4000 - HF Powermeter - (E068) : Electrical measurements

Keithley 2701 (E080) – Ethernet Multimeter/Data Acquisition System :

Thermal & VF led measurements

Power Supply :

APT 300XAC AC power supply (E103)

Supply voltages: 230 V 50 Hz


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

Operator : KOY Fiston



IMG_2344

Conclusion

 Informative

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

Ta: 50°C limited by lenses; according IEC 60598-2-3 and IEC 60598-2-5 (outdoor use only)

Ta: 40°C limited by lenses; indoor use and UL standard

Tq: 25°C limited by lenses; according IEC 62722-2-1

Tq given for 50 khrs of lifetime

Validated by :

GHYSENS Gilles

Duplicate to : RAMASZ Gábor, PELBÁRT Péter, HEYMANS

Tom, HORVÁTH Csaba, BEDŐ Péter, BOS Peter

LAB : 26/03/2019

D190148

1/2



Test details

Test(s)

Name	Description	Result
Test @ 1400mA		Informative

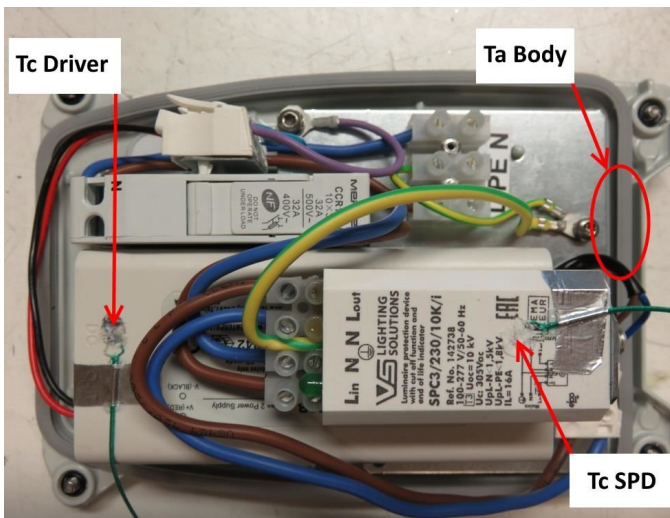
Test @ 1400mA

Result(s)

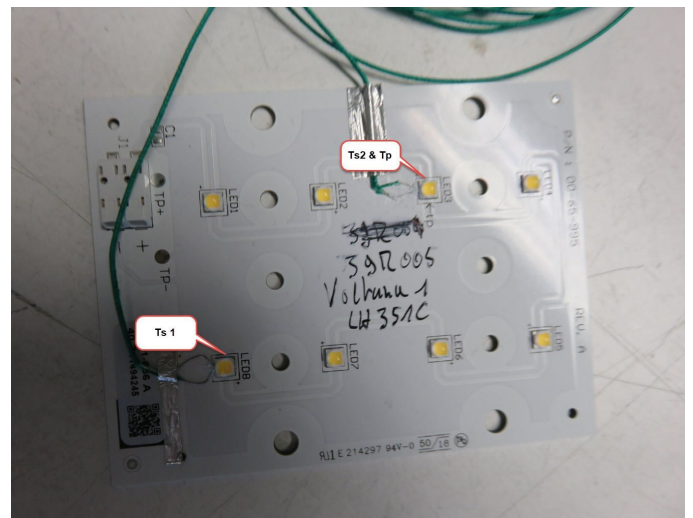
	Ts1	Ts2 & Tp	Tc driver1	Tc SPD	Ta Body
T° limite			90 °C	80 °C	90 °C
Junction T°	76.1 °C	80.8 °C			
Thermocouple T°	63.1 °C	67.9 °C	59.7 °C	48.4 °C	36.9 °C
Room	25.3 °C	25.3 °C	25.3 °C	25.3 °C	25.3 °C
E led	3.10V	3.10V			
I led	1.391A	1.391A			
P led	4.31W	4.31W			
Rth jonction-base	3.0 °C	3.0 °C			
Heating			34.4 K	23.1 K	11.6 K
ΔTs	37.9 K	42.6 K			

Primary EM		Secondary EM dr1	
U	230.0V	U	24.8V
I	0.181A	I	1.391A
P	40.3 W	P	34.4 W
PF	0.969		
Efficiency	85%		

Thermal sensors disposition



IMG_pos_MW_body



IMG_18182

Laborator teste
RAPORT DE TEST FIZIC

R-Tech
Rue de Mons 3 - B-4000 Liège - Belgia
Tel. : +32 4 224 71 40 - Fax : +32 4 224 25 90
Membră a Schröder Group

TEST TERMIC LED

INFORMAȚII GENERALE:

Subiect: VOLTANA 1 – 8 led's SAMSUNG LH351C - Meanwell 40W driver - 1400mA
Solicitat de: RAMASZ Gábor
Creat la : 25/02/2019
Validat la: 21/03/2019
Număr test : D190148
Standarde de referință : Standardele IEC/EN 60598-1; 60598-2-3; 60598-2-5
Eșantion nr: E180663, E190099
Dosar nr.: P-F18051

CERINȚELE TESTULUI:

Operator: MESPOUILLE Loic

Aparat : VOLTANA 1
Număr de LED-uri : 8
LED : Samsung LH351C
Balast : Meanwell 40W 1400mA PLD-Series / 00-73-737
Informații balast : Tc max 90°C
Curent Balast (mA) : 1400
SPD : Vossloh Lighting Solutions SPC3 230/10 K
Aparate de măsură :



Fluke Norma 4000 - HF Powermeter - (E068) : Electrical measurements Kei
Multimeter/Data Acquisition System : Thermal & VF led measurements

Alimentare :

APT 300XAC AC power supply (E103)
Tensiune de alimentare: 230 V 50 Hz

Metodă de măsurare a temperaturii racordului: Măsurarea temperaturii racordului prin măsurarea temperaturii bazei și măsurătoare electrică

$T^{\circ}j = T^{\circ}b + R_{jb} \times P_{led}$

CONCLUZII:

Informativ:

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

Ta: la 50°C limitat de lentile și balast; conform IEC 60598-2-3 și IEC 60598-2-5 (doar uz exterior)

Tq: la 40°C limitat de lentile și balast; uz interior și standard UL

Tq: la 25°C limitat de lentile; conform IEC 62722-2-1

Duplicat pentru: RAMASZ Gábor, PELBÁRT Péter, HEYMANS Tom, HORVÁTH Csaba, BEDŐ Péter, BOS Peter

LAB : 26/03/2019

Validat de: GHYSENS Gilles

(Semnătură indescifrabilă)

// **D190148**

Detalii test:

Test(e)

Nume	Descriere	Rezultat
Test @ 1400mA		Informativ

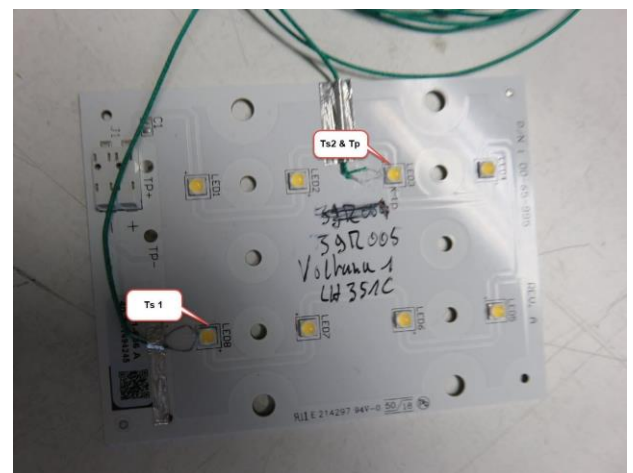
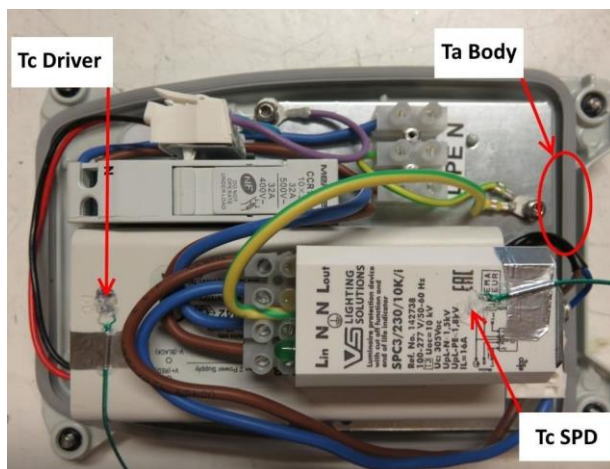
Test @ 1400mA

Rezultat(e)

	Ts1	Ts2 & Tp	Tc driver1	Tc SPD	Ta Body
T° limite			90 °C	80 °C	90 °C
Junction T°	76.1 °C	80.8 °C			
Thermocouple T°	63.1 °C	67.9 °C	59.7 °C	48.4 °C	36.9 °C
Room	25.3 °C	25.3 °C	25.3 °C	25.3 °C	25.3 °C
E led	3.10V	3.10V			
I led	1.391A	1.391A			
P led	4.31W	4.31W			
Rth jonction-base	3.0 °C	3.0 °C			
Heating			34.4 K	23.1 K	11.6 K
Δ Ts	37.9 K	42.6 K			

Primary EM		Secondary EM dr1	
U	230.0V	U	24.8V
I	0.181A	I	1.391A
P	40.3 W	P	34.4 W
PF	0.969		
Efficiency	85%		

Disponere senzori termici



D190148




VOLTANA 1

5137

Optic	5137
Protector	Flat glass
Source	8 Samsung LH351C
Matrix	425202




Characteristics

							
501	181	87	3.5	IP 66	IK 08	I EU, II EU	0.015
Length (mm)	Width (mm)	Height (mm)	Weight (kg)	Tightness level*	Impact resistance*	Electrical class*	CxS (m ²)

* According to IEC-EN60598 and IEC-EN62262

Features

The ultimate, cost-effective, performing family of luminaires that pays for itself

- Cost-effective and efficient lighting solution for a fast return on investment
- High performance with safety and comfort
- 5 sizes for flexibility
- IP 66 tightness level
- ThermiX® to withstand high temperatures
- Designed to incorporate the Owlet range of control solutions

Types of application

- Square and park
- Roundabout
- Residential road
- Urban road

Information for 1000 lm matrix

Efficacy (%)	85.3	G Class (EN 13201-2)	G4	I 70-80-90-95 (cd)	437 - 35 - X - X
DLOR (%)	85.3	G* (EN 13201 2015)	G*3	CIE flux code N 1→5 (%)	45.7 - 80.1 - 98.7 - 100.0 - 85.3
ULOR (%)	0.0	Imax (cd)	468	Gradient 90°	14cd
ULR (%)	0.0	Aperture 0-180°	75 - 75	Gradient 270°	6cd
Incl ULR 4%	-44/42°	Aperture 90-270°	37 - 7		

Photometrical characteristics

LED count	Colour code	Current (mA)	Luminaire power (W)	Source flux (lm)	Luminaire output flux (lm)	Luminaire efficacy (lm/W)	Peak (cd)	BUG Rating	Voltage (V)
Ambient temp = 25°									
8	NW 740	350	10	1520	1297	130	711	B1 U0 G0	230
8	NW 740	500	14	2096	1789	128	980	B1 U0 G0	230
8	NW 740	700	19	2810	2398	126	1314	B1 U0 G1	230
8	NW 740	1000	28	3760	3209	115	1758	B1 U0 G1	230
8	NW 740	1050	29	3905	3332	115	1826	B1 U0 G1	230
8	NW 740	1250	37	4443	3791	102	2077	B1 U0 G1	230
8	NW 740	1400	41	4805	4100	103	2246	B1 U0 G1	230
8	WW 730	350	10	1440	1229	123	673	B1 U0 G0	230
8	WW 730	500	14	1986	1694	121	928	B1 U0 G0	230
8	WW 730	700	19	2663	2272	120	1245	B1 U0 G1	230
8	WW 730	1000	28	3563	3040	109	1666	B1 U0 G1	230
8	WW 730	1050	29	3699	3157	109	1730	B1 U0 G1	230
8	WW 730	1250	37	4209	3592	97	1968	B1 U0 G1	230
8	WW 730	1400	41	4552	3884	97	2128	B1 U0 G1	230

Tolerance on flux +- 7% - Tolerance on power +- 5%

Summary

CONCEPT

Family of 6 road LED luminaires

Recommended installation height: between 4.00 and 12.00m

For optimal heat dissipation, the driver and LED engine are in separate compartments and juxtaposed in a horizontal section

HOUSING & FINISH

- Housing in high-pressure, die-cast aluminium, polyester powder coated
- Colour: RAL 7038

INSTALLATION

- Luminaire can be fixed by side-entry with a clamp, suitable for 42-60mm diameter
- Built-in inclination steps: -10°, -5°, 0°, 5°
- Post-top adapter diameter 48-60mm or 76mm, tightened with 2 stainless steel screws
- Direct access to the driver compartment with screws for easy maintenance on-site

OPTICAL UNIT

- Protected against lens degradation by 5mm thick extra-clear hardened glass
- Flatbed PCB with acrylic lens overlay principle
- Various photometric distributions: from narrow road to motorway, medium and large area
- CRI > 70
- ULOR: 0%

LED lumen depreciation

- Lifetime residual flux @ Tq=25°C @ 100.000 hrs: 350mA & 500mA; 90%; 700mA: 80%; 1A: 70%

ELECTRICAL

- Class I or Class II
- Input voltage: 120-277V - 50-60Hz
- Power factor > 90% at full load
- Surge protection: 4kV minimum (10kV + 10kA optional)
- Thermal protection on LED PCBA (see Thermix concept)

STANDARDS & CERTIFICATIONS

- CE
- ENEC
- LM79-80
- ROHS
- Certified for 3G vibration
- All measurements in ISO17025 accredited laboratory

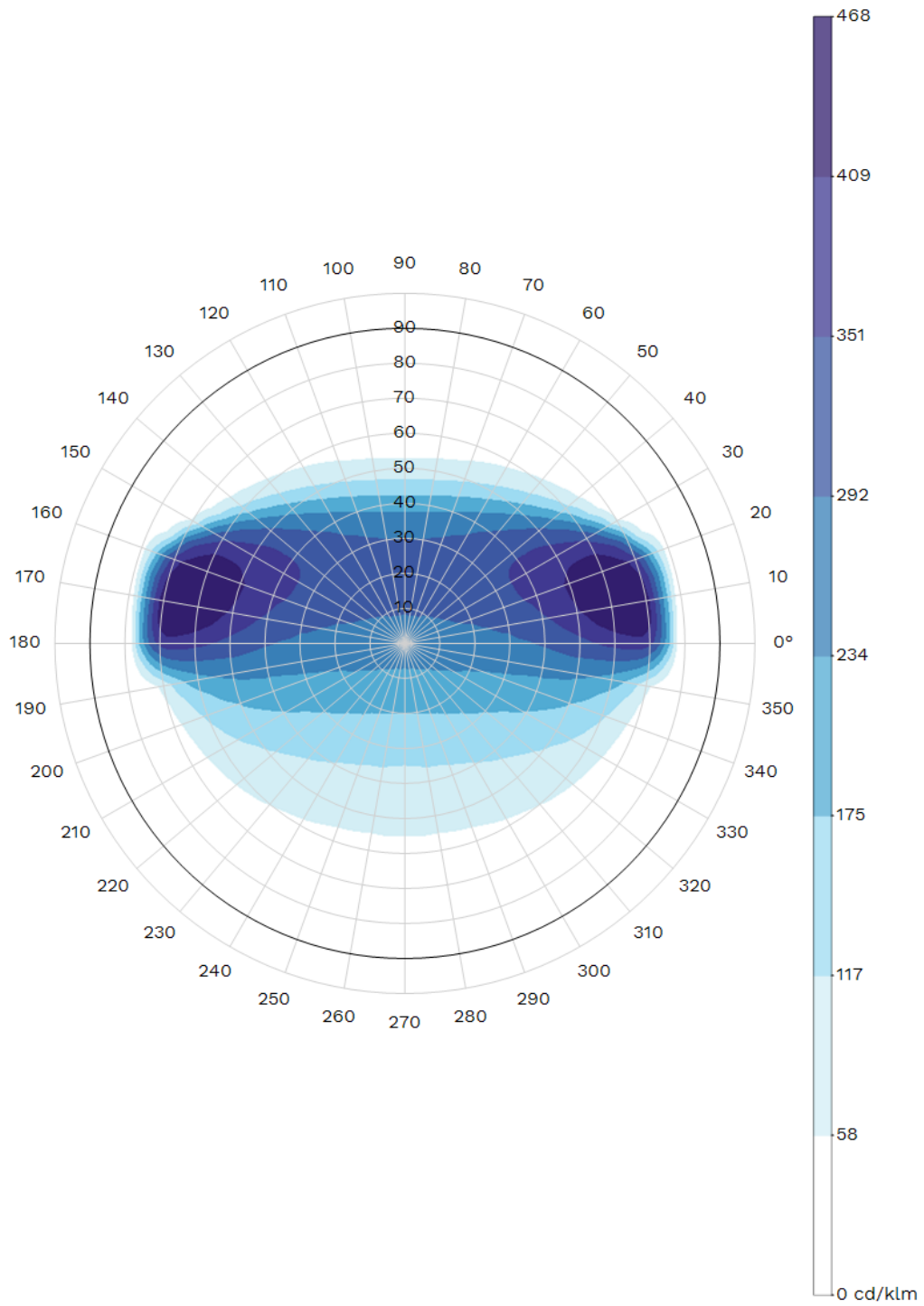
OPTIONS

- Other RAL or AKZO colours
- Back Light control system
- OWLET remote management
- Custom dimming profile

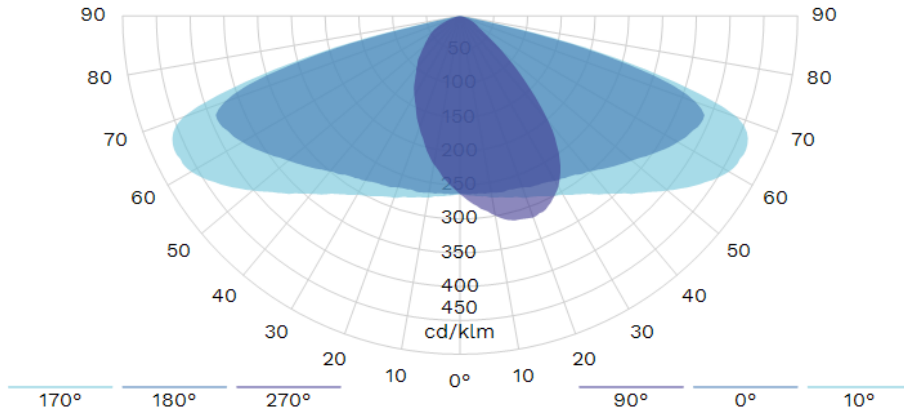
VOLTANA 1 - 5137 - 8 Samsung LH351C - Flat glass - 425202

11/08/2020

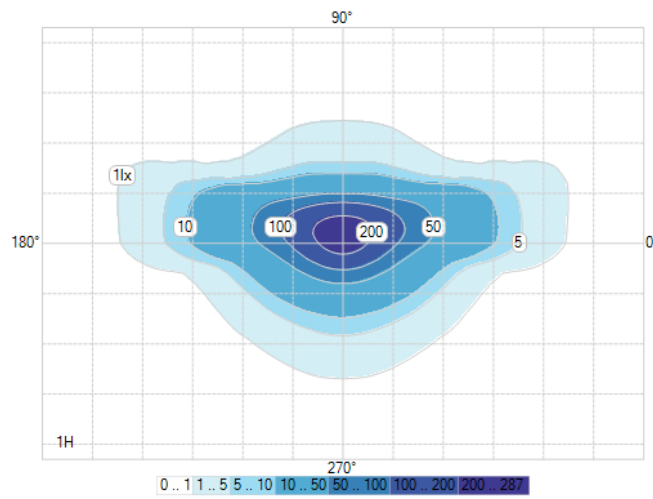
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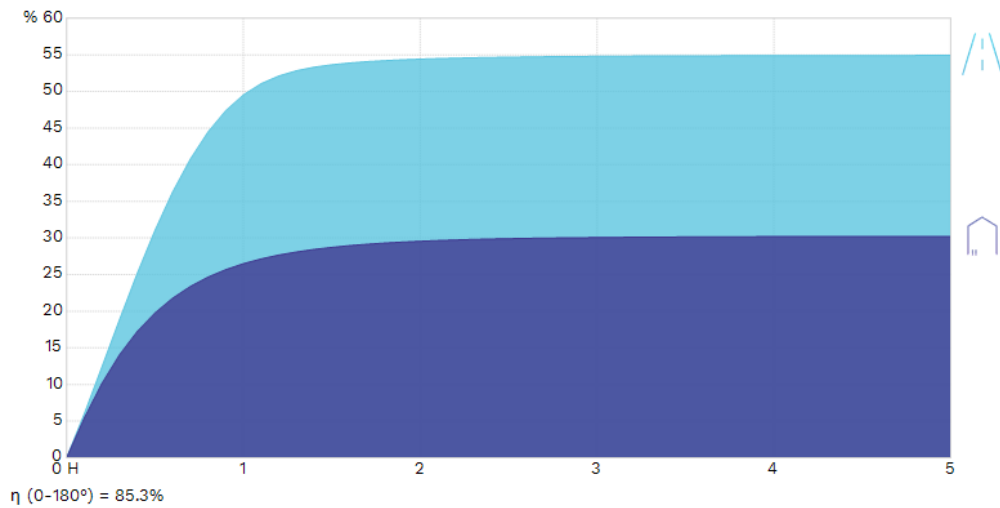
Polar/Cartesian diagram



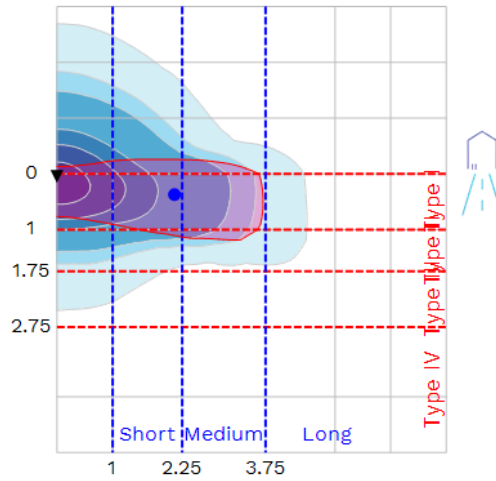
Isolux



K-Curve

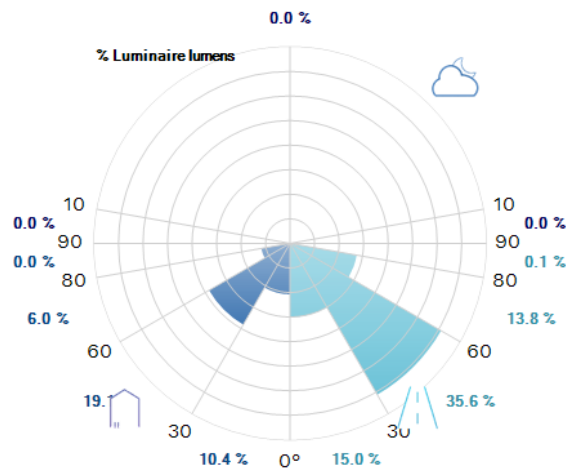


IES Roadway Classification / Nema Classification

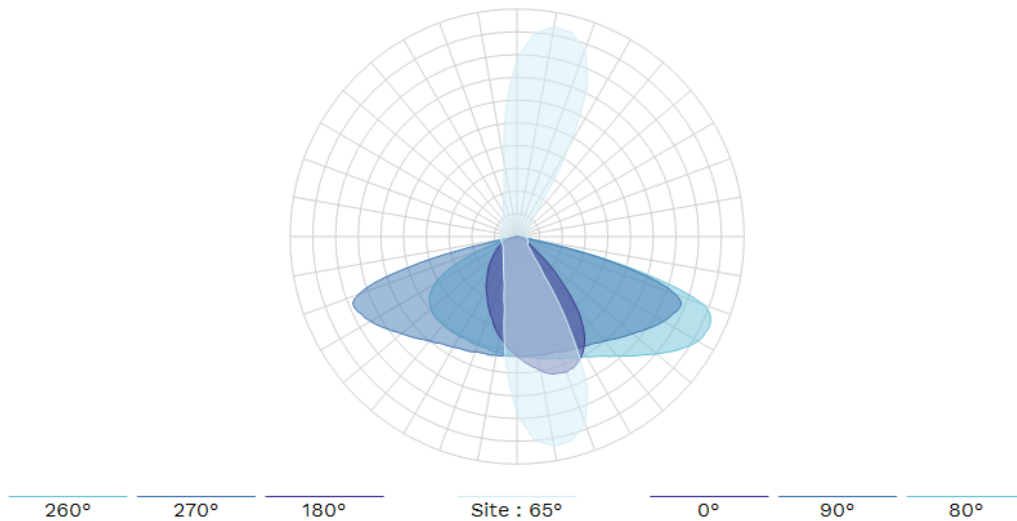


II - Short

Luminaire classification system (LCS)



Intensity diagram in max Cone and in CPlane



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<http://www.schreder.com>