

## 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, &gt; 25W)

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

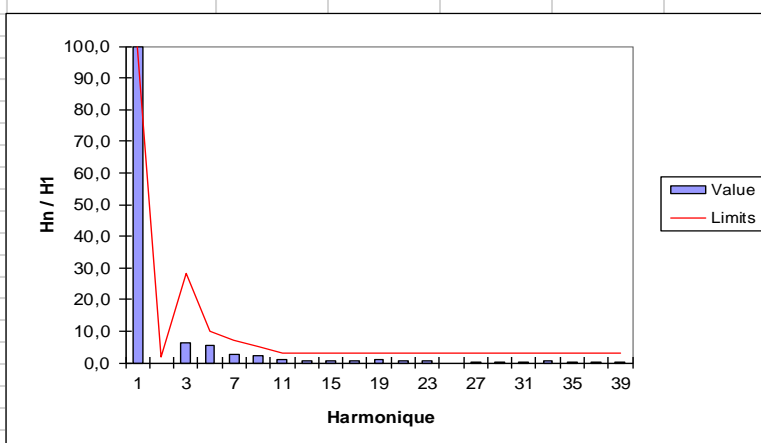
Date 23/06/2014

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
$\eta$ rms	83,2%	Pmoy	26,23 W
$\eta$ 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**

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**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

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**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

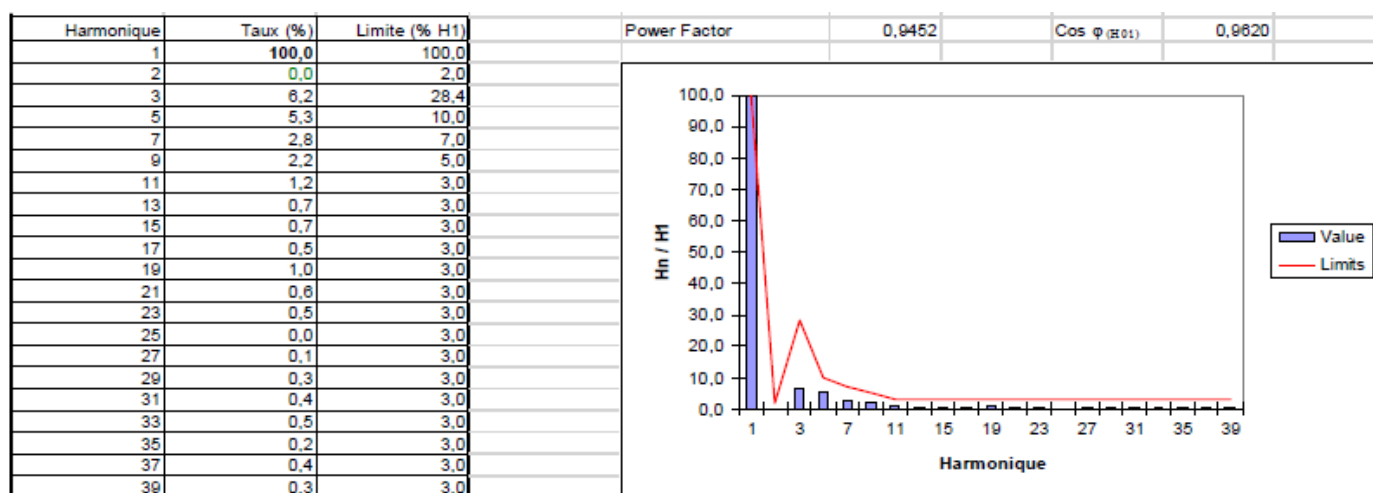
**VOLTANA-1 8 LED-uri LG 3535 Gen 2 – Balast Tridonic LCI 27W 1A****Armonice, PF și Eficiența**

Emisii armonice (IEC 61000-3-2 Clasa C, &gt;25W)

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

Data: 23.06.2014

Operator MAY



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

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

# Lumen maintenance report

## LED information

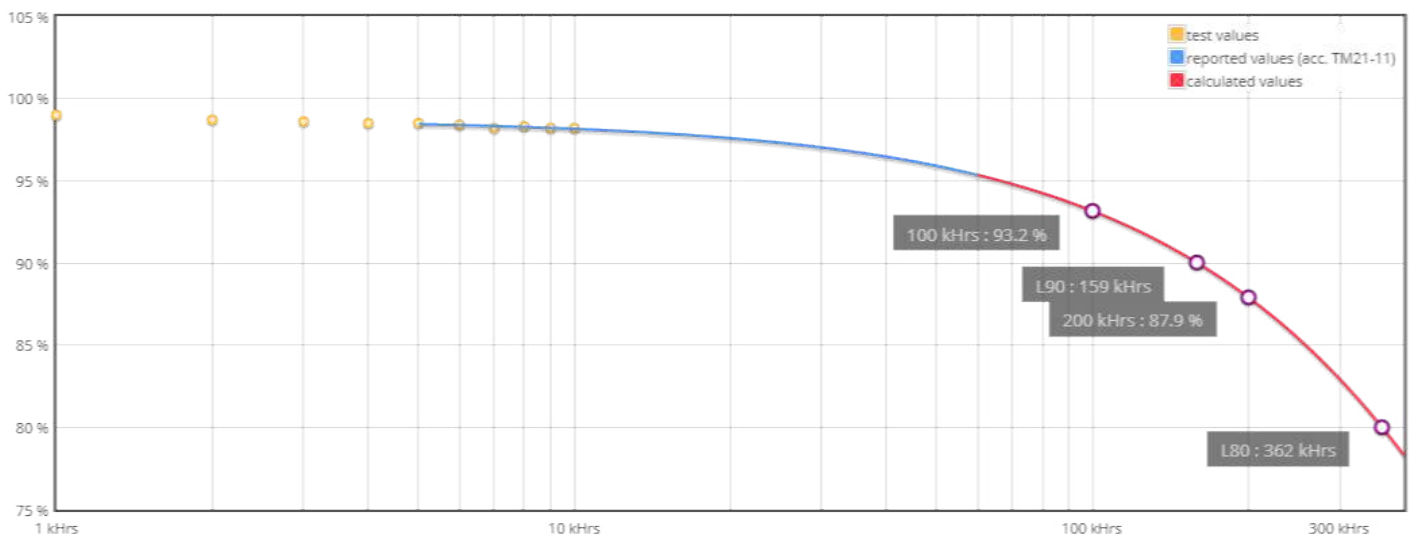
LED type	LH351C
LED current	1000 mA
Ts	55°C
Description	SLED-19-031

## Projection data

Test duration	10000 hrs	$\alpha$	5.811E-007
Time used for projection	5000 to 10000hrs	$\beta$	0.987

L (%)	Time (kHrs)
80.0	362
87.9	200
90.0	159
93.2	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, 030130, 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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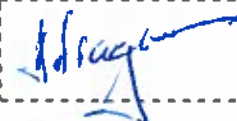
**DATELE TEHNICE ALE PRODUSULUI:****CORP DE ILUMINAT CU LED-uri tip VOLTANA1 8L – Cod VOLTA1-000457**

- 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 <sub>a</sub> )	: + 55 °C
- Clasa de protecție	: I
- Dispersor carcasă	: sticlă securizată tratată termic cu grosimea de 5mm;
- Carcasă de protecție	: Aluminiiu 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.

	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
<b>GRAD DE PROTECȚIE ÎMPOTRIVA IMPACTURILOR MECANICE</b>			
<b>5 PRESCRIȚII GENERALE PENTRU ÎNCERCĂRI</b>			
<b>5.1</b>	<b>Condiții atmosferice pentru încercări</b> 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
<b>5.2</b>	<b>Carcase supuse încercării</b> 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
<b>5.3</b>	<b>Prevederi indicate în standardul particular de produs</b> 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
<b>6 ÎNCERCĂRI PENTRU VERIFICAREA PROTECȚIEI ÎMPOTRIVA IMPACTURILOR MECANICE</b>			
<b>6.1</b>	Încercarea specificată în acest standard este încercare de tip.	Încercare de tip IK 10	P
<b>6.2</b>	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
<b>6.3</b>	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

	<b>ELECTRIC PRODUCTS CERTIFICATION INDEPENDENT BODY – OICPE</b>		 <b>LICPE</b>
	<b>Laboratorul de Încercări pentru Certificarea Produselor Electrice</b>		
<b>Raport de Încercări nr. 97 / 2019</b>			<b>Pag. 4 / 6</b>
<b>Articol din DN</b>	<b>Cerință conform SR EN 62262:2004</b>	<b>Rezultate</b>	<b>Mod de îndeplinire a cerinței</b>
	energie corespunde gradului de protecție. Pot fi specificate montaje și suporturi alternative în standardul particular de produs, adecvate produsului.		
<b>6.4</b>	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).	<b>P</b>
<b>6.5</b>	<b>Evaluarea încercării</b> 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)	<b>P</b>
<b>7</b>	<b>APARATE DE ÎNCERCARE</b> 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	<b>P</b>

#### 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

<b>Denumire încercare (Punct RI)</b>	<b>Mărimea măsurată/calculată</b>	<b>Aparat de măsură /tip/serie sau inventar</b>	<b>Certificat de etalonare/emitent</b>	<b>Incertitudinea extinsă [U]</b>	<b>Factor de extindere [k]</b>
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 %.

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	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

ANEXĂ

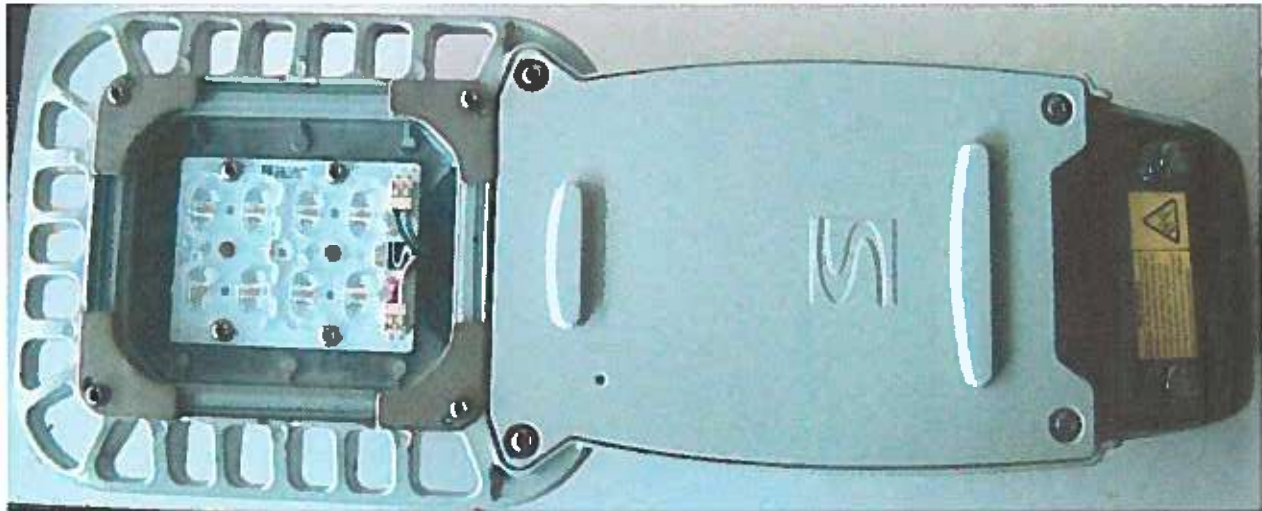
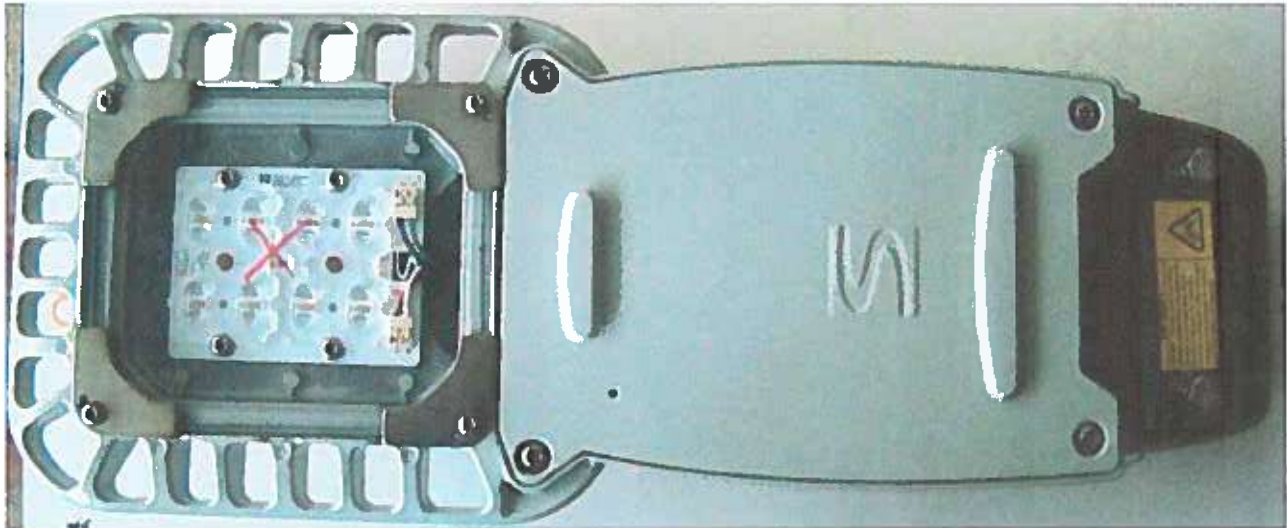


Fig. 1 – Corpul de iluminat VOLTANA 1-8L – Cod VOLTA1-000457 înainte de verificarea la impact (IK 10)



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

	ELECTRIC PRODUCTS CERTIFICATION INDEPENDENT BODY – OICPE		 <b>LICPE</b>
	Laboratorul de Încercări pentru Certificarea Produselor Electrice		
Raport de Încercări nr. 97 / 2019			Pag. 6 / 6
Articol din DN	Cerință conform SR EN 62262:2004	Rezultate	Mod de îndeplinire a cerinței



**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
<b><u>IP6X</u></b> : -Luminaire switched ON until stable T° -Talcum in suspension (blowing ON) -After 1', luminaire OFF -Talcum for 3 hours	OK.
<b><u>IPX6</u></b> : - Luminaire switched ON until stable T° - Luminaire switched OFF and immediately sprayed with water jet - Hose $\Phi$ 12,5 mm - Water pressure: 1 kg/cm <sup>2</sup> - 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".

**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
<b>IP6X :</b> -Aparatul de iluminat pornit până la T° stabilă -Talc în suspensie (suflantă pornită) -După 1', aparatul este închis -Talc 3 ore	VALIDAT.
<b>IPX6 :</b> -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	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

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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**

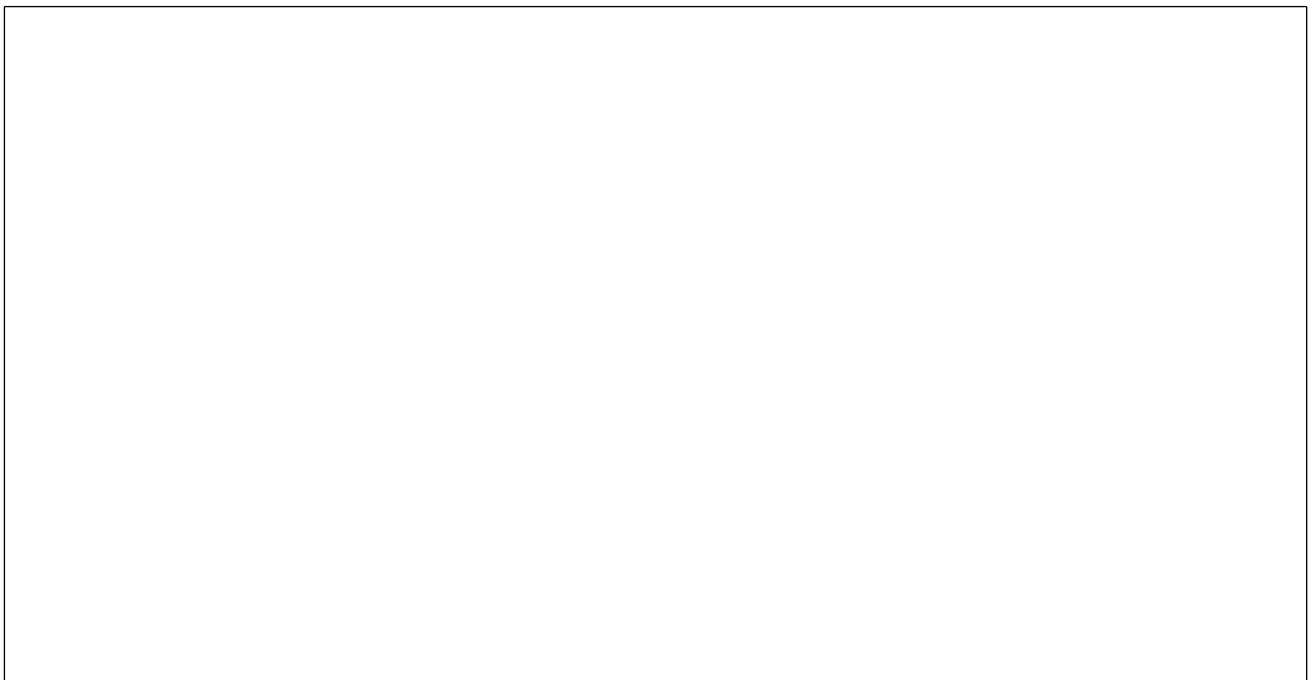
### Power & Print

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

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

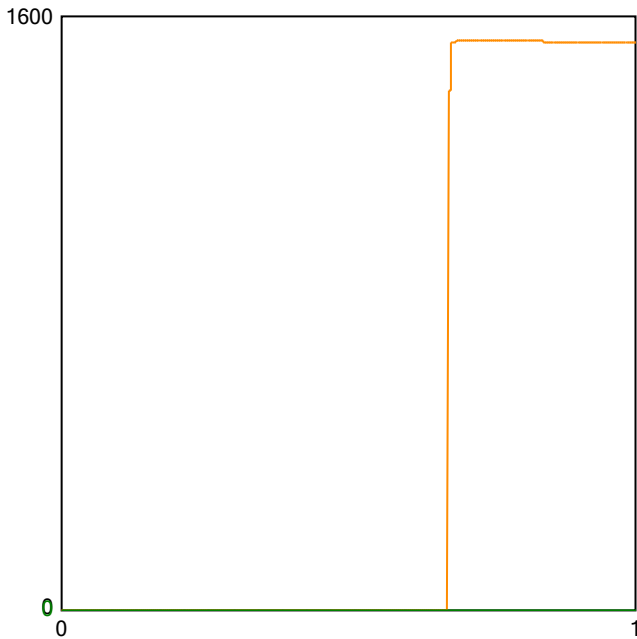
Active

### 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 :



Colorimetry

File Preset Options Extra Calibration Info

Preset: CRI

Auto: ref: illuminant - Planckian radiator, CCT= 3841 K

Auto: ref: illuminant - Planckian radiator, CCT= 3841 K

Chromaticity difference DC= 6.0E-4

JIS color sample

R1=68.3	R8=46.9	R15=59.9
R2=80.1	R9=39.9	
R3=90.3	R10=54.3	
R4=70.6	R11=67.4	
R5=69.1	R12=48.8	
R6=72.7	R13=70.4	
R7=78.6	R14=94.7	
		Re=62.15 (mean value of R1 - R15)

Auto: ref: illuminant - Planckian radiator, CCT= 3841 K

Chromaticity difference DC= 6.0E-4

JIS color sample

R1=68.3	R8=46.9	R15=59.9
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R6=72.7	R13=70.4	
R7=78.6	R14=94.7	
		Re=62.15 (mean value of R1 - R15)

Transfer data to table

Target

Calibration File: #1 no accessory

Measurement Mode: Radiance

Weighting Function: None

Average: 1

Cont: 10

Hold Integration Time

Quick mode

Measurement

#1

Transfer data to table

auto

Luminance  $L_v$  2.515E+2  $\frac{cd}{m^2}$

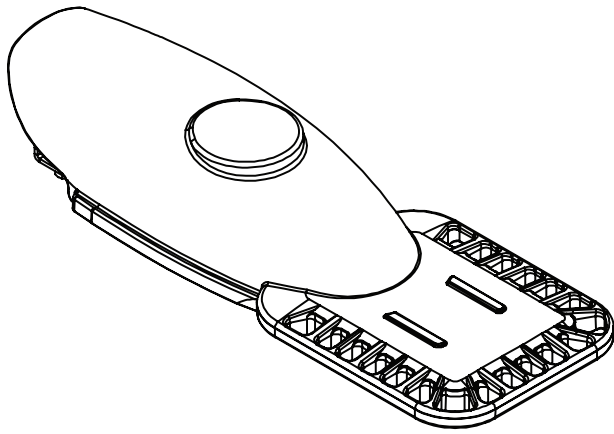
Radiance  $L_e$  7.129E-1  $\frac{W}{sr \cdot m^2}$  (380-780nm)

Corr. Color Temp CCT 3841 K

Chromaticity x 0.3873 y 0.3799

Chromaticity u' 0.2284 v' 0.5040

QUIT



# Schröder

## VOLTANA 1

Installation instructions



IEC  
EN60598



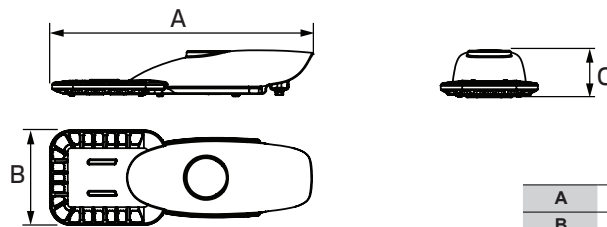
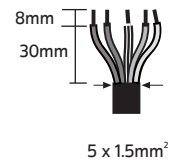
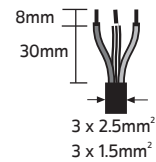
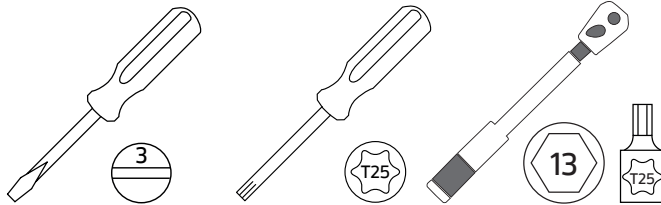
4-8m

350-1400mA  
10-41W

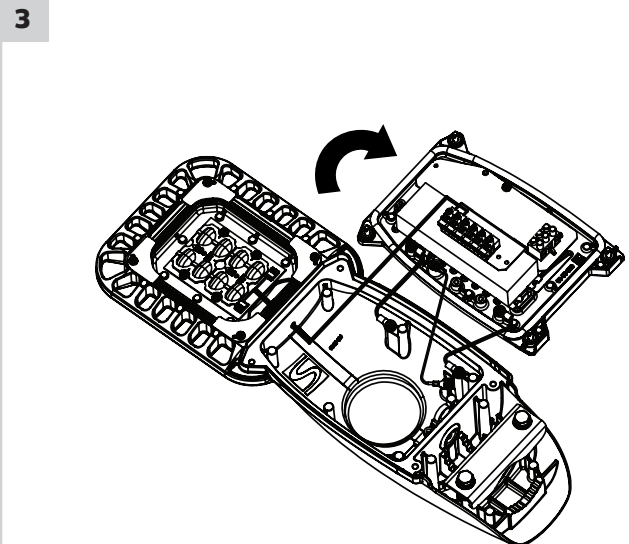
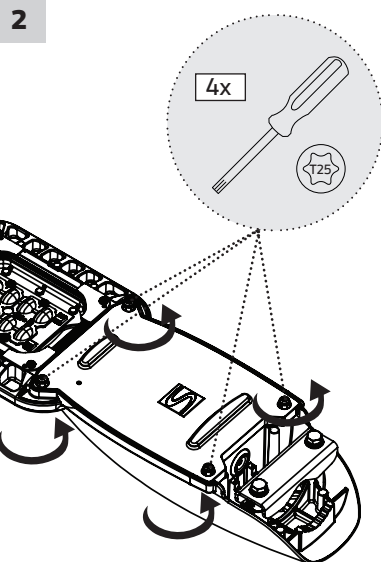
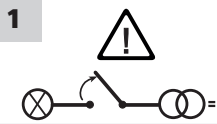
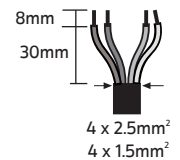
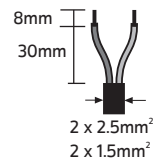
220-240V  
50/60Hz

IP  
66

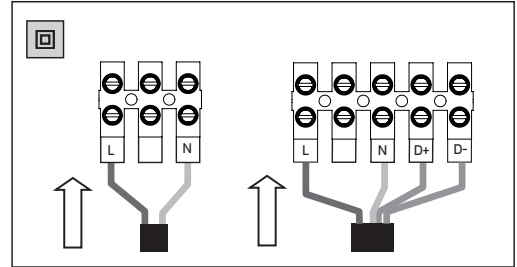
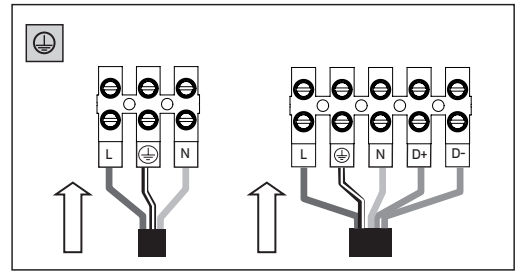
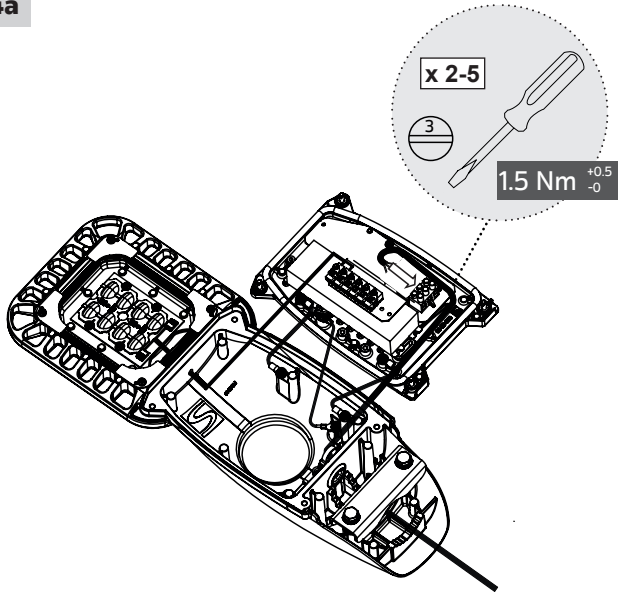
IK  
08



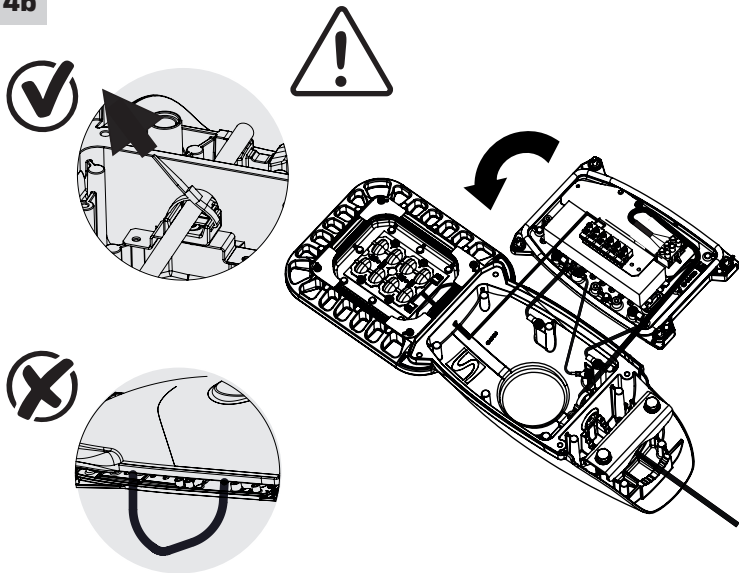
Voltana1	
A	501mm
B	181mm
C	87mm
	3.5kg
CxS	0.015m <sup>2</sup>



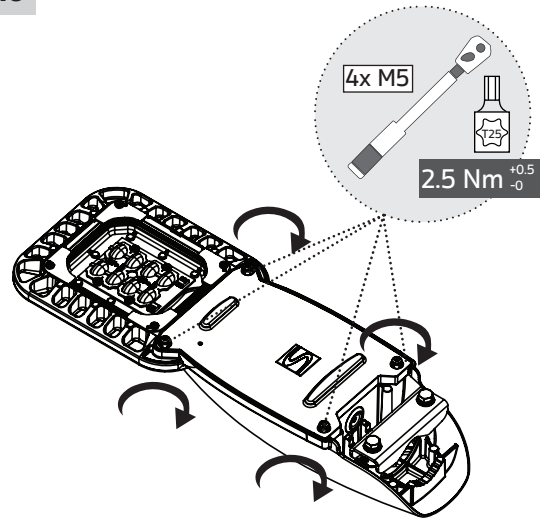
4a



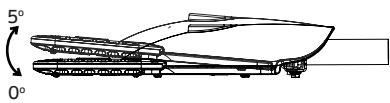
4b



4c

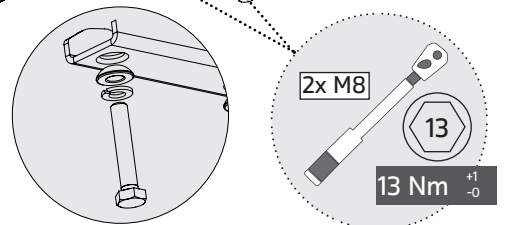
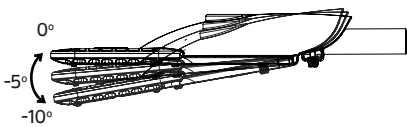
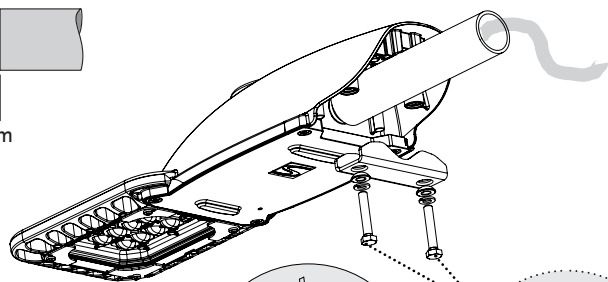
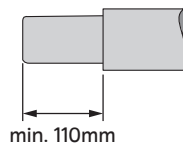
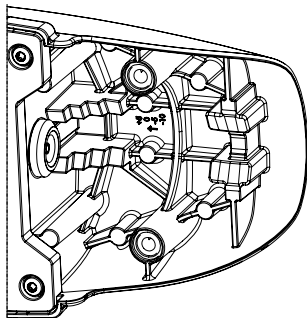


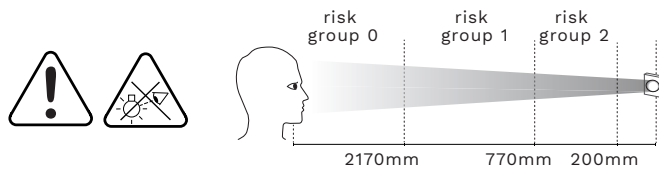
5



- 2x M8 x 60
- 2x M8 x 45

	Ø42	Ø48	Ø60
-10°			
-5°		M8 x 45	M8 x 60
0°			
+5°			





<p><b>SAFETY INSTRUCTIONS</b> The light source contained in this luminaire shall only be replaced by the manufacturer or his service agent or a similar qualified person. Always switch off the power prior to installation, maintenance or repair activities.</p> <p><b>RISK GROUP 2 - CAUTION!</b> Hazardous optical radiation may be emitted from this product. Do not stare at the luminaire when operating as it may be harmful to the eyes. The luminaire should be positioned so that prolonged staring at the luminaire at a distance of less than 0.77m is not expected.</p> <p>In case of PVC insulated mains cable, the installer MUST ensure that the WHOLE cable is protected against climatic conditions, especially UV rays and rain, by making sure that the cable is contained inside the luminaire and pole</p> <p><b>Y-connection:</b> In case of damage to the wire, it has to be replaced only by the manufacturer, distributor or by an expert, to avoid risks.</p>	<p><b>ISTRUZIONI DI SICUREZZA</b> La sorgente di luce contenuta in questo sistema di illuminazione dovrà essere sostituita solo dal produttore, dal suo agente di servizio o da una persona con qualifica simile.</p> <p>Staccare sempre il filo della corrente prima di iniziare operazioni di installazione, manutenzione o riparazione.</p> <p><b>GRUPPO DI RISCHIO 2 - ATTENZIONE!</b> Questo prodotto può emettere radiazioni ottiche potenzialmente pericolose. Non fissare la sorgente accesa. Potrebbe essere dannoso per gli occhi. L'apparecchio dovrebbe essere posizionato in modo da non permettere di fissare a lungo l'apparecchio a una distanza inferiore di 0.77m.</p> <p>In caso di cavo di alimentazione isolato in PVC, l'installatore DEVE garantire che il cavo INTERO sia protetto dalle condizioni climatiche, in particolare dai raggi UV e dalla pioggia, assicurandosi che il cavo sia contenuto all'interno del corpo illuminante e del palo</p> <p><b>Collegamento Y:</b> in caso di danneggiamento, il cavo deve essere sostituito esclusivamente dal costruttore, dal distributore o da un tecnico esperto per evitare rischi.</p>	<p><b>VEILIGHEIDSIJNSTRUCTIES</b> De lichtbron in deze armatuur dient uitsluitend door de fabrikant, diens onderhoudsvertegenwoordiger of een persoon met vergelijkbare kwalificaties te worden vervangen.</p> <p>Schakel altijd de stroom uit voordat u aan installatie, onderhoud of reparaties begint.</p> <p><b>RISICOGROEP 2 - LET OP!</b> Bij dit product kan eventueel gevaarlijke optische straling voorkomen. Staar niet in de brandende lamp. Dit kan schadelijk zijn voor de ogen. Het armatuur moet worden geplaatst zodat staren in het armatuur op een afstand kleiner dan 0.77meter niet verwacht wordt.</p> <p>In het geval van PVC-geïsoleerde voedingskabels MOET de installateur ervoor zorgen dat de GEHELE kabel wordt beschermd tegen klimaatomstandigheden, met name UV-stralen en regen, door ervoor te zorgen dat de kabel zich in het armatuur en de paal bevindt</p> <p><b>Y-verbinding:</b> in geval van schade aan de draad dient deze te worden vervangen door de fabrikant, de distributeur of door een expert, om risico's te vermijden.</p>	<p><b>SIKKERHEDSIJNSTRUKTIONER</b> Lyskilden i dette armatur må kun udskiftes af producenten, af en vedligeholdelsesvirksomhed udeget af producenten eller af en tilsvarende kvalificeret virksomhed.</p> <p>Sluk altid for strømmen inden påbegyndelse af installation, vedligeholdelse eller reparation.</p> <p><b>Risikogrupper 2 - ADVARSEL!</b> Produktet kan muligvis udsende farlig optisk stråling. Kig ikke direkte ind i armaturet under drift, det kan være skadeligt for øjnene. Armaturet skal placeres således så langvarig stirren ind i armaturet, på en afstand der er tættere end 0.77m, undgå.</p> <p>I tilfælde af PVC-isoleret ledning SKAL elektrikereren sikre, at HELE kablet er beskyttet mod klimatiske forhold, dette gælder især UV-stråler og regn. Elektrikereren skal derfor sørge for, at kablet forbliver inde i armaturet og masten.</p> <p><b>Type Y montering:</b> Hvis det eksterne kabel eller ledning på dette armatur er beskadiget, må det kun udskiftes af producenten eller af en kvalificeret partner til producenten eller tilsvarende kvalificeret person, for at undgå skader.</p>
<p><b>SICHERHEITSHINWEISE</b> Die Lichtquelle in dieser Leuchte darf nur vom Hersteller bzw. von dessen Kundendienst oder einer ähnlich qualifizierten Person ausgetauscht werden.</p> <p>Schalten Sie die Stromversorgung vor Installations-, Wartungs- und Reparaturarbeiten stets ab.</p> <p><b>Risikogrupper 2 - VORSICHT!</b> Von diesem Produkt kann möglicherweise gefährliche optische Strahlung ausgehen. Es ist darauf zu achten, dass man im eingeschalteten Zustand der Leuchte nicht innerhalb einer Distanz von 0.77m direkt in die Leuchte schaut. Dies könnte schädlich für Ihre Augen sein.</p> <p>Bei Verwendung eines PVC-isolierten Netzkabels MUSS der Installateur sicherstellen, dass das GESAMTE Kabel vor klimatischen Bedingungen -insbesondere vor UV-Strahlen und Regen- geschützt ist, indem sichergestellt wird, dass das Kabel in der Leuchte und dem Mast verschlossen ist</p> <p><b>Y-Verbindung:</b> Falls die Leitung beschädigt ist, darf diese nur vom Hersteller, dem Händler oder einem Experten ersetzt werden, um Risiken zu vermeiden.</p>	<p><b>INSTRUKCJA BEZPIECZEŃSTWA</b> Źródło światła zamontowane w tej oprawie może być wymieniane wyłącznie przez producenta, pracownika serwisu lub inną wykwalifikowaną osobę.</p> <p>Przed rozpoczęciem instalacji, konserwacji lub naprawy należy bezwzględnie odłączyć zasilanie elektryczne.</p> <p><b>GRUPA RYZYKA 2 - OSTRZEŻENIE</b> Produkt może emitować niebezpieczne promieniowanie optyczne skierowane dla oczu. Nie należy patrzeć bezpośrednio na pracującą źródło światła. Oprawa powinna być tak zamontowana, aby jej długotrwała obserwacja była możliwa z odległości nie mniejszej niż 0.77m.</p> <p>W przypadku kabla sieciowego izolowanego PVC instalator MUSI upewnić się, że kabel CAŁY jest chroniony przed warunkami klimatycznymi, w szczególności przed promieniowaniem UV i deszczem, upewniając się, że kabel znajduje się wewnątrz oprawy i stupa.</p> <p><b>Połączenie Y:</b> ze względów bezpieczeństwa uszkodzony przewód powinien zostać wymieniony wyłącznie przez producenta, dystrybutora lub wykwalifikowanego elektryka.</p>	<p><b>инструкция безопасности</b> замену источника света для этого светильника должен выполнять только проив.водитель, сервисный агент, производитель или специалист с аналогичной квалификацией.</p> <p>Перед проведением установки, сервисного обслуживания или ремонта всегда отключайте питание устройства.</p> <p><b>ГРУППА РИСКА 2 - ВНИМАНИЕ!</b> Возможно опасное оптическое излучение от этого изделия. Не смотрите на источник света. Может быть вредно для глаз. Светильник должен быть расположен таким образом, чтобы было невозможно смотреть на него с расстояния менее 0.77м.</p> <p>В случае кабеля питания с ПВХ изоляцией, монтажник ДОЛЖЕН обеспечить защиту ВСЕГО кабеля от воздействия климатических условий, особенно от ультрафиолетовых лучей и дождя, убедившись, что кабель находится внутри светильника и опоры.</p> <p><b>Подключение Y:</b> в случае повреждения кабеля его замена производится только производителем, дистрибутором или экспертом.</p>	<p><b>INSTRUCȚIUNI DE EXPLOATARE</b> Sursa de lumină din acest corp de iluminat trebuie înlocuită numai de producător sau de reprezentantul său de service sau o persoană ce deține calificări similare.</p> <p>Opriți întotdeauna alimentarea electrică înainte de lucrările de instalare, întreținere sau reparații.</p> <p><b>GRUP DE RISC 2 - ATENȚIE!</b> Este posibil ca acest produs să emită radiații optice periculoase. Nu priviți direct înspre lampa aflată în stare de funcționare. Acest lucru poate fi dăunător ochilor. Aparatul de iluminat trebuie să fie poziționat astfel încât să nu fie posibil, în mod normal, privitul direct înspre lampă, la o distanță mai mică de 0.77m.</p> <p>În cazul cablului de alimentare cu izolație din PVC, instalatorul TREBUIE să se asigure că TOT cablul este protejat împotriva condițiilor climatice, mai ales împotriva razelor UV și a ploii, asigurându-se că acest cablu este plasat în interiorul aparatului de iluminat și al stălpului</p> <p><b>Conexiune Y:</b> În caz de deteriorare a firului, acesta trebuie înlocuit numai de către producător, distribuitor sau un expert, pentru evitarea riscurilor.</p>
<p><b>INSTRUCTIONS DE SECURITE</b> La source lumineuse contenue dans ce luminaire doit être uniquement remplacée par le fabricant, son agent de maintenance ou une autre personne disposant des qualifications appropriées.</p> <p>Mettez toujours l'appareil hors tension avant toute opération d'installation, d'entretien ou de réparation.</p> <p><b>RISQUE GROUPE 2 - ATTENTION !</b> Ce produit émet potentiellement des rayons dangereux pour la vue. Regarder directement la source lumineuse et de manière continue pourrait causer des lésions aux yeux. Le luminaire doit être installé de façon à ne pas pouvoir regarder la source lumineuse directement de manière continue à moins de 0.77m.</p> <p>Dans le cas d'un câble secteur isolé en PVC, l'installateur DOIT s'assurer que le câble ENTIER est protégé contre les conditions climatiques, en particulier les rayons UV et la pluie, en s'assurant que le câble est contenu à l'intérieur du luminaire et du poteau</p> <p><b>Connexion Y:</b> si le câble est endommagé, il ne peut être remplacé que par le fabricant, par le distributeur ou par un expert, afin d'éviter tout risque.</p>	<p><b>INSTRUCCIONES DE SEGURIDAD</b> Solo el fabricante, un agente del servicio técnico o persona con cualificación similar puede sustituir la fuente de luz de este sistema de iluminación.</p> <p>Apague siempre el interruptor de alimentación antes de realizar tareas de instalación, mantenimiento o reparación.</p> <p><b>GRUPO DE RIESGO 2 - ¡PRECAUCIÓN!</b> radiación óptica posiblemente peligrosa emitida por este producto. No mire a la lámpara en funcionamiento. Puede ser dañino para los ojos. El sistema de iluminación debe instalarse de modo que la mirada fija prolongada a la luminaria, a una distancia menor de 0.77m no se espere.</p> <p>En el caso de un cable aislado de PVC, el instalador DEBE asegurarse de que todo el cable esté protegido contra las condiciones climáticas, especialmente los rayos UV y la lluvia, asegurándose de que el cable esté dentro de la luminaria y el poste</p> <p><b>Conexión Y:</b> si el cable se daña, solo debe reemplazarlo el fabricante, un distribuidor o un experto para evitar riesgos.</p>	<p><b>INSTRUÇÕES DE SEGURANÇA</b> A fonte de luz no interior deste candeeiro deve ser substituída apenas pelo fabricante, pelo seu técnico de assistência ou por uma pessoa com qualificação equivalente.</p> <p>Desligue sempre a alimentação antes de proceder a actividades de instalação, manutenção ou reparação.</p> <p><b>GRUPO DE RISCO 2 - ATENÇÃO!</b> Possível risco ótico por radiação emitida a partir deste produto. Não olhar para a luz em funcionamento. Pode ser prejudicial para os olhos. A luminária deve ser posicionada de modo a que não seja expectável um olhar prolongado para a luminária em funcionamento a uma distância inferior a 0.77m.</p> <p>No caso de cabo de alimentação com isolamento em PVC, o instalador DEVE assegurar que TODO o cabo é protegido das condições climáticas, especialmente raios UV e chuva, certificando-se que o cabo está contido dentro da luminária e da coluna.</p> <p><b>Ligação Y:</b> em caso de danos no fio, este tem de ser substituído apenas pelo fabricante, distribuidor ou por um técnico especializado, para evitar riscos.</p>	<p><b>SÄKERHETSINSTRUKTIONER</b> Lyskällan skall monteras i denna armatur får endast ersättas av en Schröder-anställd eller annan kvalificerad person.</p> <p>Stäng alltid av strömmen före installation, underhåll eller reparation.</p> <p><b>Risikgrupp 2 - VARNING!</b> Eventuellt farligt optisk strålning från denna produkt. Stirra ej på driftlampan. Kan vara skadligt för ögonen. Armaturen bör placeras så att långvarigt stirrande in i armaturen på ett avstånd som är närmare än 0.77m ej är möjligt.</p> <p>Vid PVC-isolerad kabel måste installatören se till att hela kabeln är skyddad mot klimatförhållanden, särskilt UV-strålar och regn, genom att se till att kabeln monteras inuti armaturen och stolpen</p> <p><b>Typ Y-anslutning:</b> Om den externa kabeln eller ledningen på denna armatur är skadad, får den endast bytas ut av tillverkaren eller av en servicepartner till tillverkaren eller motsvarande kvalificerad person, för att undvika skador</p>
<p><b>BIZTONSÁGI ÚTMUTATÓ</b> A lámpatestben található fényforrást kizárólag a gyártó, szervizképviseelője vagy hivatalos szakszerviz szakembere cserélheti ki.</p> <p>A szerelés, karbantartás és javítás előtt minden esetben vegyessen áramtalanítást.</p> <p><b>KOCKÁZATI CSOPORT 2 - VIGYÁZATI!</b> A berendezés veszélyes optikai sugárzást bocsáthat ki! Ne nézzete bele a bekapcsolt lámpatestbe! Szemet károsító hatás léphet fel. A lámpatestet úgy ajánlott pozícionálni, hogy rálátás esetén a lámpatest ne legyen 0.77m-nél közelebb.</p> <p>PVC szigetelésű tápkábel esetén a telepítőnek biztosítania KELL, hogy a TELJES kábel védett legyen az éghajlati viszonyoktól, különösen az UV sugárzástól és az esőtől, úgyelve arra, hogy a kábel a lámpatest és az oszlop belsejében legyen.</p> <p><b>Y-csatlakozó:</b> A sérült vezetékét kizárólag a gyártó, forgalmazó vagy szakember cserélheti ki a kockázatok elkerülése végett.</p>	<p><b>安全守则</b> 该灯具内的光源仅可由维修人员、指定代理商或具备资质的人员进行更换。 在安装、维护和维修灯具之前必须首先切断电源。 <b>风险群体 2 - 注意!</b> 有害的光学射线有可能从产品中发出。不要凝视正在工作的光源。有可能对眼睛产生危害。灯具应被合理位置安装。尽可能避免长时间在0.77米以内凝视。 <b>Y类附件:</b> 如果灯具外部电缆被破坏，电缆必须由制造商或服务代理商或者有资质的人员及时更换从而避免伤害。</p>	<p><b>інструкція безпеки</b> Джерело світла, що міститься у цьому світильнику, повинен замінювати лише виробник, його сервісний агент або кваліфікована особа. Завжди вимикайте живлення перед встановленням, доглядом або ремонтом. <b>ГРУПА РИЗИКУ 2 - УВАГА!</b> Можливість небезпечної оптичного випромінювання від цього продукту. Уникайте прямого погляду на вмищене джерело світла. Може бути шкідливо для очей. Світильник має бути розташований так, щоб уникнути його тривалого споглядання з відстані ближче, ніж 0.77м. У випадку кабелю живлення із ПВХ ізоляцією, монтажник ПОВИНЕН забезпечити захист ВСЬОГО кабелю від впливу кліматичних умов, особливо від ультрафіолетових променів та дощу, переконатися, що кабель знаходиться всередині світильника та опори</p> <p><b>Y-з'єднання:</b> у разі пошкодження дроту його має замінити лише виробник, дистрибутор чи експерт, щоб уникнути ризиків.</p>	<p><b>UPUTSTVA</b> Izvor svetla u ovom rasvetnom telu može da zameni samo proizvođač, njegov servisni agent ili na sličan način kvalifikovana osoba.</p> <p>Uvek isključite napajanje pre instalacije, održavanja ili popravke.</p> <p><b>GRUPA RIZIKA 2 - PAŽNJA!</b> Proizvod može emitovati štetno optičko zračenje. Izbegavati vizuelni kontakt sa svetlosnim izvorom dok je u radu. Moguće oštećenje vida. Svetliku treba pozicionirati tako da se ne očekuje duži vizuelni kontakt sa izvorom sa razdaljinu manje od 0.77m.</p> <p>U slučaju napojnog kabla sa PVC izolacijom, izvođač MORA obezbediti zaštitu CELOG kabla od klimatskih uslova, posebno UV zračenja i kiše, tako što će osigurati da se kabal nalazi unutar svetiljke i stupa.</p> <p><b>Y-veza:</b> U slučaju oštećenja žice zamenu mora da obavi isključivo proizvođač, distributer ili stručnjak kako bi se izbegao rizik.</p>
<p><b>AR</b></p> <p>تعليمات السلامة: في حالة الحاجة لتغير مصدر الضوء، يتم ذلك من خلال الشركة المصنعة او الوكيل الممثل لعمل ذلك و شخص مؤهل لذلك. دائماً فصل الدائرة الكهربائية قبل تركيب او صيانة الجهاز. تحذير: هذا المنتج مصنف ضمن مجموعة الخطأ 2 خطر انبعاث اشعاع ضوئي، لا تنظر مباشرة الى الجهاز و هو مضاء لان ذلك مؤذي للعين. الجهاز يجب ان يركب بشكل يضمن ان التحديق بمصدر الضوء من مسافة اقل من 0.77 م غير متوقفة. يجب على الشخص الذي يوصل الجهاز بالدائرة الكهربائية التأكد من ان محمي من التيارات المناخية و خاصة الاشعة فوق البنفسجية و لمطر من خلال التأكد ان الكابل محوي بدائل العود و الجهاز. في حالة الحاجة لتغير الملائك الداخلي، يتم ذلك من خلال الشركة المصنعة او الوكيل الممثل لعمل ذلك و شخص مؤهل لذلك. دائماً فصل الدائرة الكهربائية قبل تركيب او صيانة الجهاز.</p>			

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# 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

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This certificate is only valid combined with the publication on the following web address: [www.sgs.com/ee](http://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**

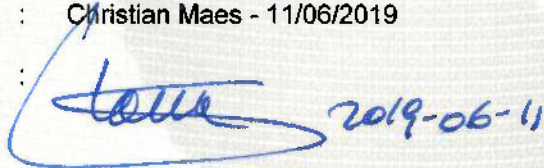
This certificate is based on test report No. P1540-44-IIc.

**Conclusion**

The examination proved that all certification requirements were met.

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

Certification Manager :



*[Handwritten signature]* 2019-06-11

#### FACTORY LOCATION(S)

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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



ENEC Certification Body registered under ID # 02. Validity of ENEC and ENEC+ licences can be checked at [www.enec.com](http://www.enec.com)

# LICENCE

to use the ENEC+ Mark



**ENEC+ Licence No.: 21219**

Under the conditions given in the "Rules concerning the use of the CEBEC mark" complemented by the ENEC+ Agreement under contract 1173/2, the licence to use the ENEC+ Mark with suffix 02, as shown above, has been issued to:

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

**For the product:**

Street lighting

**Trade name(s):**

SCHREDER

**Type(s)/Model(s):**

VOLTANA 0, VOLTANA 1, VOLTANA 2, VOLTANA 3, VOLTANA 4

**Complying with the following EPRS for performance:**

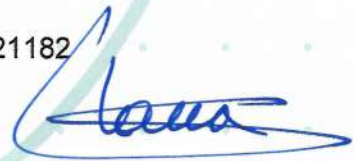
EPRS 003:2014

**Based on test report No. P1540-44\_3535-XPG3-LH351C\_022019**

**This licence is conditional to the validity of the ENEC Licence No.: 21182**

**Date:** 2019-04-16

**Signature:**



**Name:** Calogero LANA  
**Position:** Certification Manager

**Characteristics :**

Description	:	Street lighting
Rated voltage (Un)	:	200-240 V
Rated frequency	:	50-60 Hz
Class	:	class II
Rated power	:	10-110 W
Colour temperature	:	3000-4000 K (CCT)
Luminous flux	:	746-13179 lm
Efficacy (lm/W)	:	59-158 lm/W

---

## 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

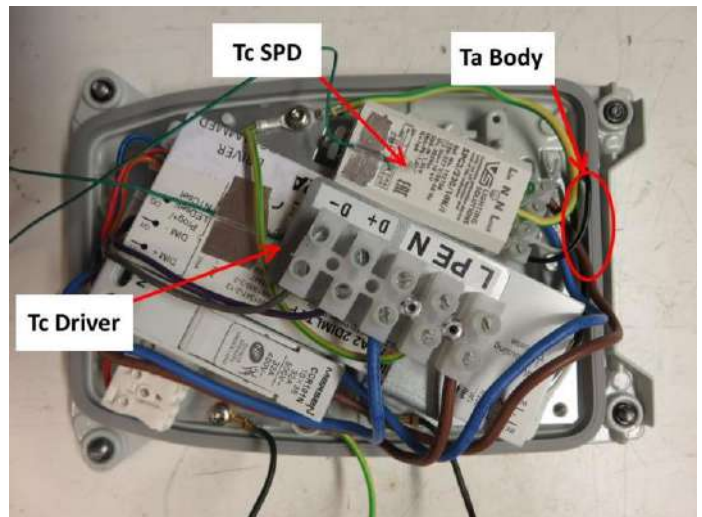
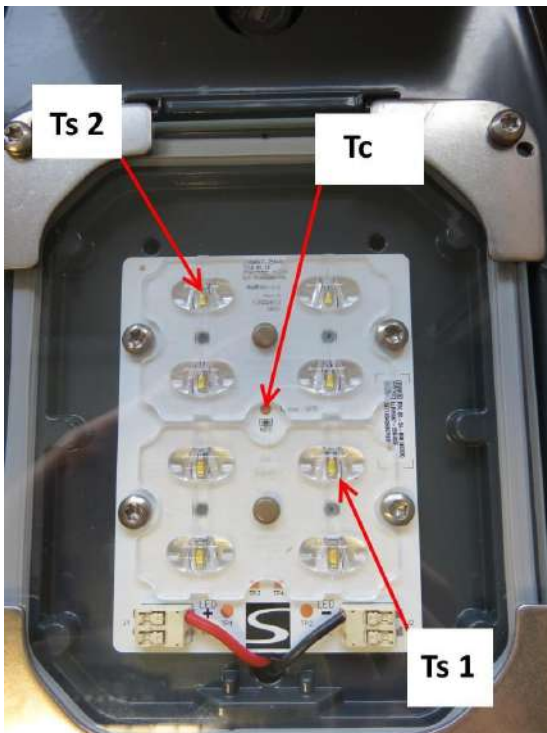
## Test @ 1250mA

### 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
$\Delta Ts$	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 :-



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)

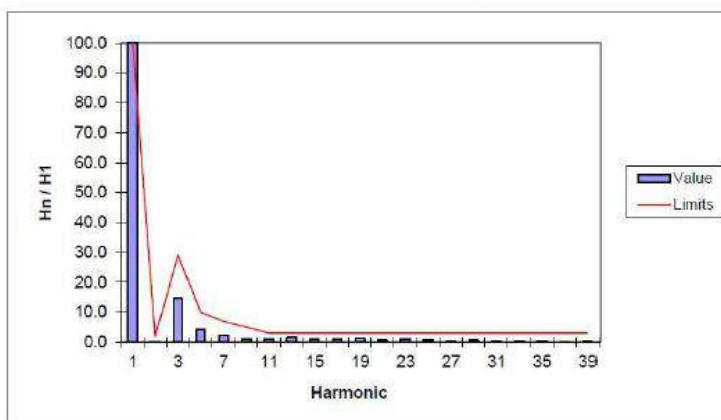
Driver : Meanwell 40W 1400mA PLD-Series / 00-73-737 Tc max 90°C  
 SPD: Vossloh Lighting Solutions SPC3 230/10 K

Date 06-03-19

Operator FKY Norma AQ number E068

Harmonic	Taux (%)	Limite (% H1)
1	100.0	100.0
2	0.2	2.0
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
$\eta_{rms}$	85.2%	Pavg	34.3 W
$\eta_{avg}$	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



FORM L-54 Edition 01 – Revision 00 - Date: 14/06/2018

## 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, BEDŐ Péter, BOS Peter

LAB : 06/12/2018

**D180859**

1/2



# Test details

## Test(s)

Name	Description	Result
Test @ 1250mA		Informative

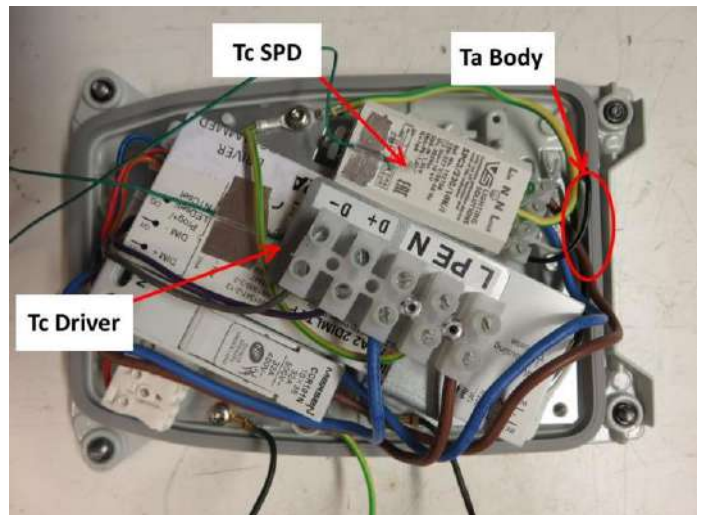
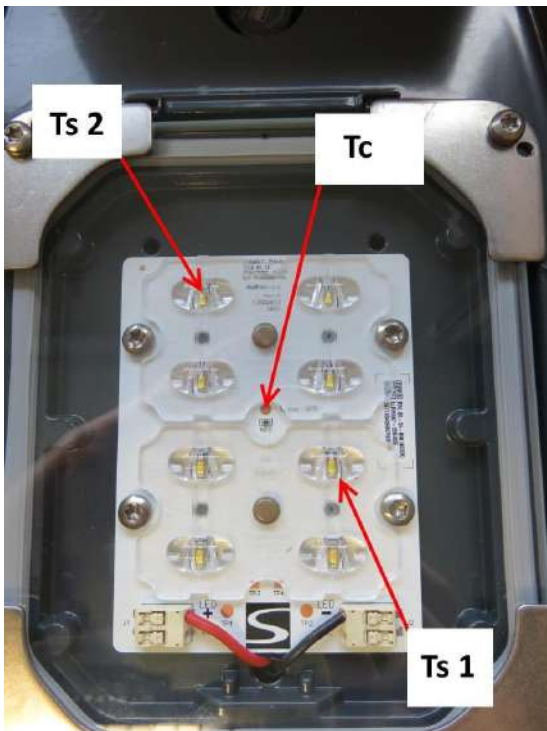
## Test @ 1250mA

### 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
$\Delta Ts$	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 :-



**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

Informatii generale

Subiect: : VOLTANA 1 - 8 LEDs Osram 50W driver

Solicitat de: PELBART Peter

Creat la data: 20/11/2018

Test numarul: D180859

Norma de referinta standardele IEC/EN 60598-1

Esantion(e): E180661

Dosar: P-F18051

**CERINTELE TESTULUI:**

Operator: MESPOUILLE Loic



Aparat : VOLTANA 1  
Numar leduri 8  
Led : LG Innotek 3535 Gen4 TOP  
Driver: Optotronic OT50/120-277/1A2 2DIM LT2 P / 00-14-565  
Info driver: Tc max : 80°C  
Curent (mA) : 1250  
SPD : Vossloh Lighting Solutions SPC3 230/10 K

**Echipament de măsurare:**

Fluke Norma 4000 - HF Powermeter - (E110) : Masuratori electrice Keithley 2701 (E081) – Ethernet Multimeter/Data Acquisition System : Masuratori termice si VF Led

Alimentare electrica :

APT 300XAC AC alimentare electrica (E113)

Tensiune de alimentare: 230V 50 Hz

**Metodă de măsurare a temperaturii racordului**

Măsurarea temperaturii racordului prin măsurarea temperaturii bazei și măsurătoare electrică

$$T_j = T_b + R_{jb} \times P_{led}$$

**CONCLUZII: Informativ**

$\Delta T_s < 80^\circ C$  fara risc de crapatura de lipire  
Ta: 50°C limitata de driver; conform IEC 60598-2-3 si IEC 60598-2-5 (folosit numai exterior)  
Ta: 40°C limitata de driver; folosit interior si standard UL  
Tq: 25°C limitata de driver; conform IEC 62722-2-1  
Tq dat pentru 100kore durata de viata

Traducător și Interpret Autorizat  
LINDAS S.P.A. SIELLA  
Amplificator de limbă  
Engleză, Franceză  
*Loic Mespouille*

Detalii test

Test(e):

Name	Description	Result
Test @ 1250mA		Informative

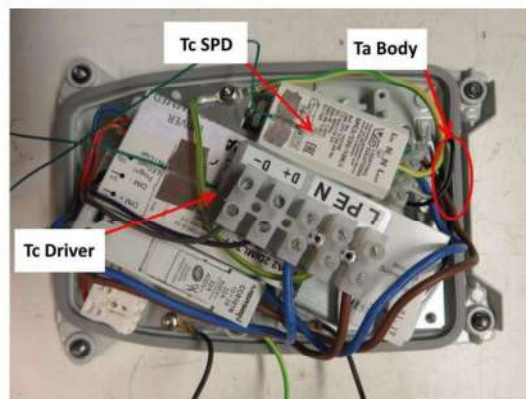
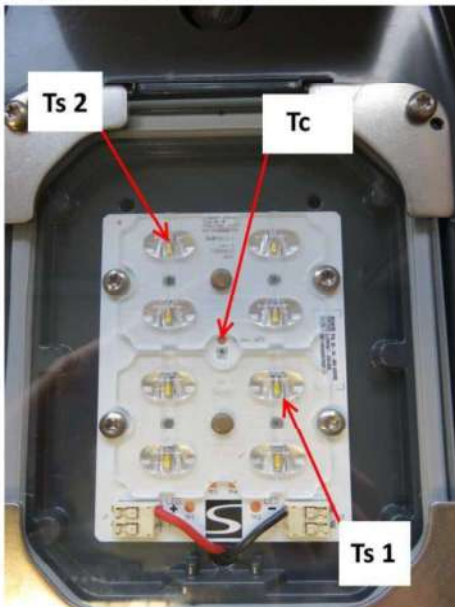
Test @ 1250 mA

Rezultate :

	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
Δ Ts	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%		

Disponerea senzorilor termici:



# VOLTANA 1

## 5136

Optic	5136
Protector	Flat glass
Source	8 Samsung LH351C
Matrix	425182



## 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 <sup>2</sup> )

\* 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 (%)	84.8	G Class (EN 13201-2)	G3	I 70-80-90-95 (cd)	555 - 60 - X - X
DLOR (%)	84.8	G* (EN 13201 2015)	G*3	CIE flux code N 1→5 (%)	51.3 - 80.6 - 98.2 - 100.0 - 84.8
ULOR (%)	0.0	Imax (cd)	556	Gradient 90°	30cd
ULR (%)	0.0	Aperture 0-180°	76 - 76	Gradient 270°	11cd
Incl ULR 4%	-45/45°	Aperture 90-270°	29 - 14		

## 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	1289	129	845	B1 U0 G0	230
8	NW 740	500	14	2096	1778	127	1165	B1 U0 G1	230
8	NW 740	700	19	2810	2384	125	1562	B1 U0 G1	230
8	NW 740	1000	28	3760	3190	114	2089	B1 U0 G1	230
8	NW 740	1050	29	3905	3313	114	2170	B1 U0 G1	230
8	NW 740	1250	37	4443	3769	102	2469	B2 U0 G1	230
8	NW 740	1400	41	4805	4076	102	2670	B2 U0 G1	230
8	WW 730	350	10	1440	1222	122	800	B1 U0 G0	230
8	WW 730	500	14	1986	1685	120	1103	B1 U0 G1	230
8	WW 730	700	19	2663	2259	119	1479	B1 U0 G1	230
8	WW 730	1000	28	3563	3022	108	1979	B1 U0 G1	230
8	WW 730	1050	29	3699	3138	108	2055	B1 U0 G1	230
8	WW 730	1250	37	4209	3571	97	2339	B1 U0 G1	230
8	WW 730	1400	41	4552	3861	97	2529	B2 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

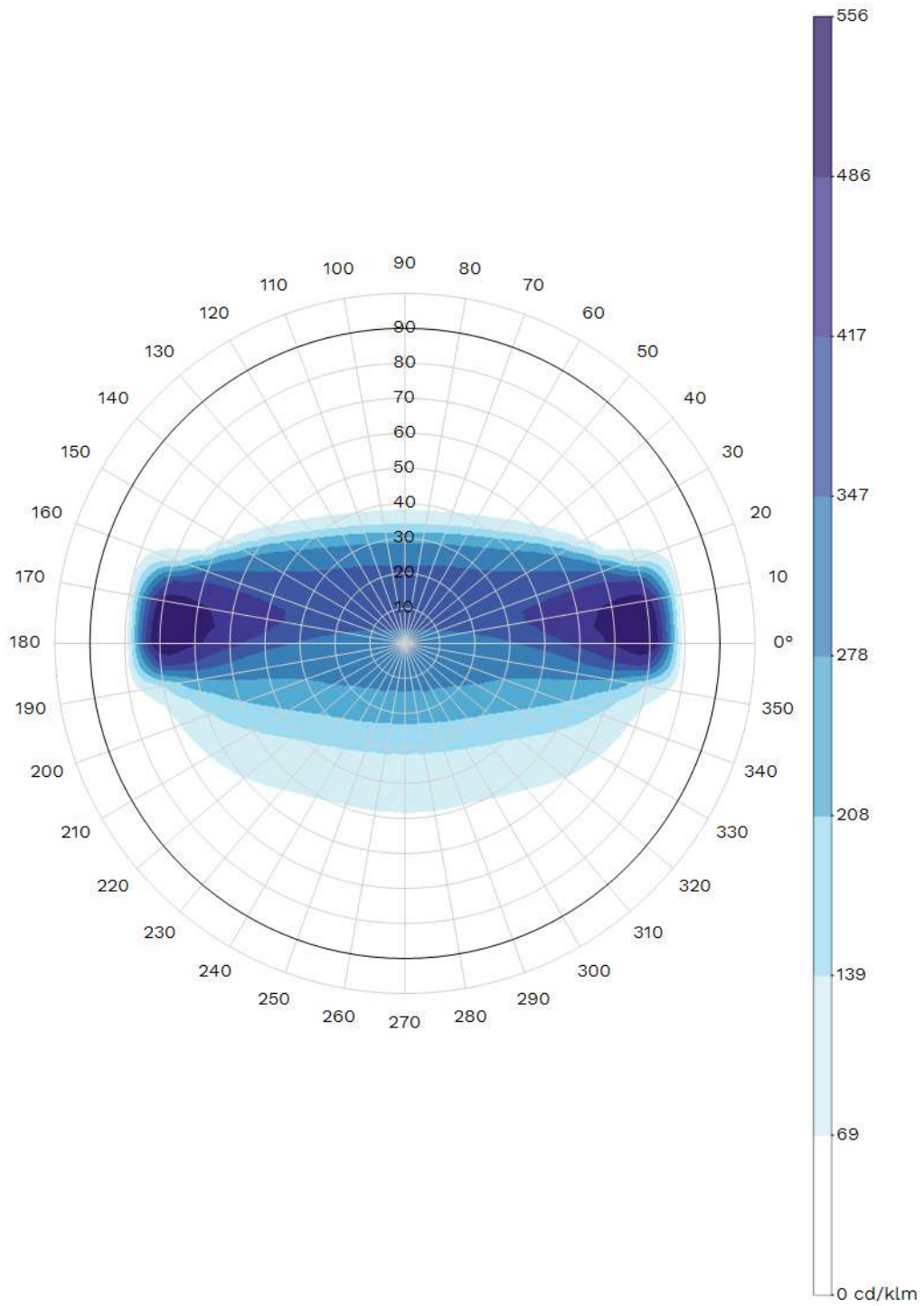
### OPTIONS

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

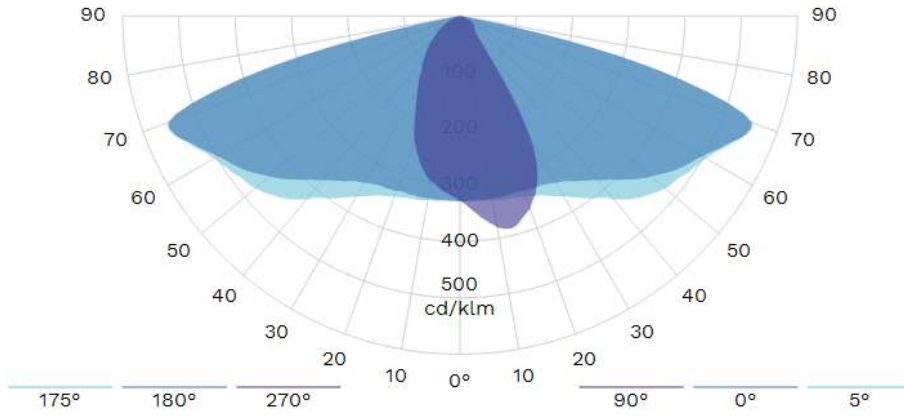
VOLTANA 1 - 5136 - 8 Samsung LH351C - Flat glass - 425182

20/05/2020

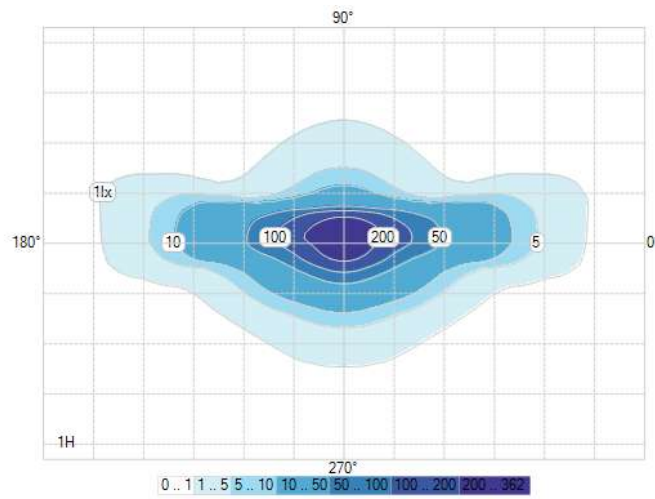
- Photocell



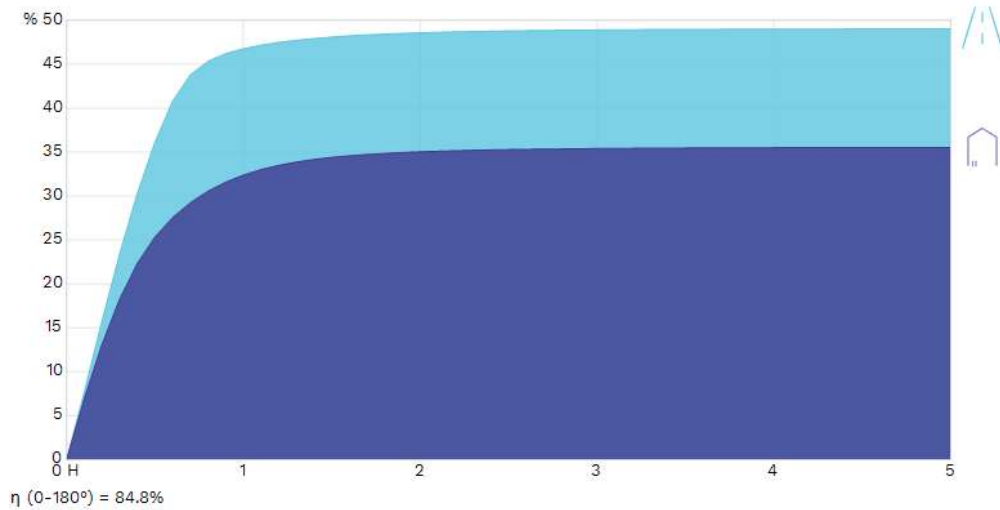
Polar/Cartesian diagram



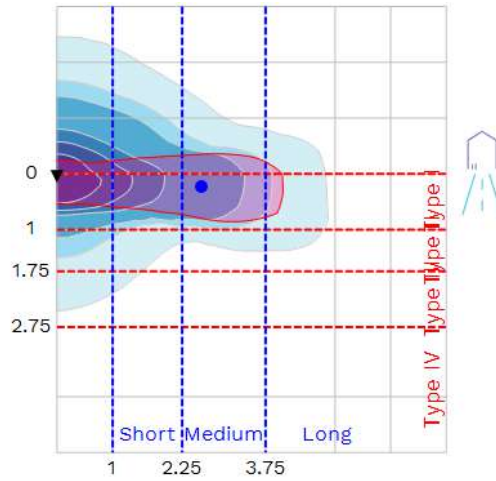
Isolux



K-Curve

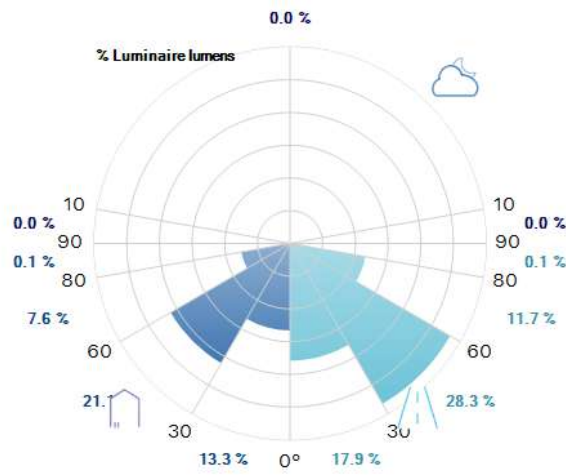


IES Roadway Classification / Nema Classification

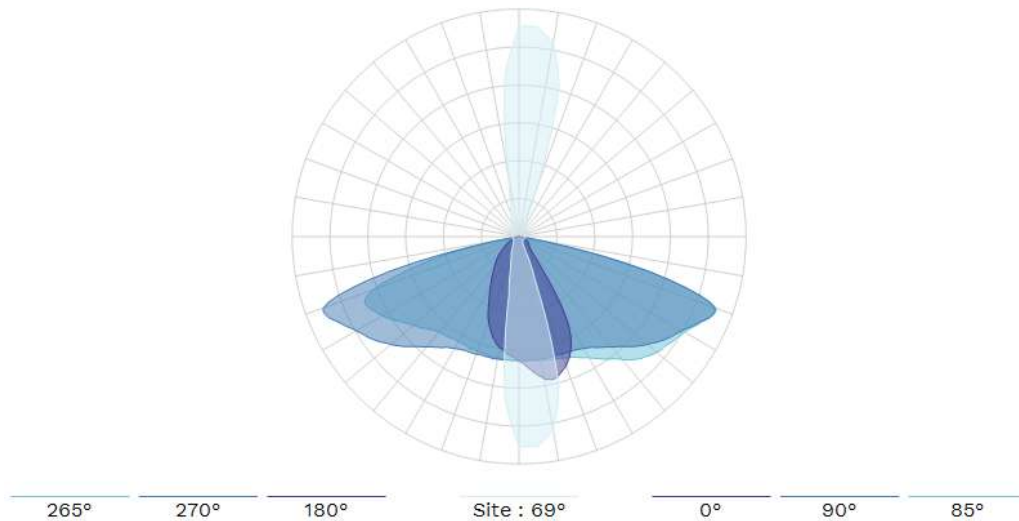


I - Medium

Luminaire classification system (LCS)



Intensity diagram in max Cone and in CPlane



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<http://www.schreder.com>

# Voltana



Designer : Thomas Coulbeaut



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

Voltana delivers sustainable solutions that dramatically reduce energy consumption and improve lighting levels with the lowest investment.

The Voltana family is available with multiple lumen packages thanks to the various sizes, driving currents and numerous light distributions - from very narrow to extra wide - to light all rural and urban landscapes.

This luminaire is designed for side-entry and post-top mounting and can be adapted on-site thanks to an incorporated inclination system to optimise the photometry.

Voltana can be managed by several control systems. It can operate in a closed independent network with sensors or in a global network of a city through wireless communication.



IP 66	IK 08	
	CE	



## Concept

Voltana is composed of a high-pressure die-cast aluminium body and a fixation piece in steel with one or two fixation clamps. Voltana is equipped with LensoFlex®2 photometric engines, offering optimised photometrical performance with a minimum total cost of ownership.

This highly efficient luminaire is available in five sizes to provide towns and cities with the ideal tool to improve lighting levels, generate energy savings, reduce their ecological footprint and bring aesthetic coherence.

Depending on the size of the model, Voltana incorporates different numbers of LEDs, from 6 to 32, to provide a wide range of lumen packages. This family of luminaires can be mounted using a standard side-entry clamp fixation for Ø42-60mm spigots. Thanks to an incorporated inclination system, the angle can be adjusted on-site.

As an option, universal fixation pieces are available for spigots from Ø42 to Ø76mm for post-top and side-entry mounting.



Precise on-site adjustment thanks to an incorporated inclination system.



Voltana provides easy access for maintenance.

## Types of application

- URBAN & RESIDENTIAL STREETS
- BRIDGES
- BIKE & PEDESTRIAN PATHS
- RAILWAY STATIONS & METROS
- CAR PARKS
- LARGE AREAS
- SQUARES & PEDESTRIAN AREAS
- ROADS & MOTORWAYS

## Key advantages

- 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



The Voltana range is available with a wide range of LensoFlex®2 photometries.



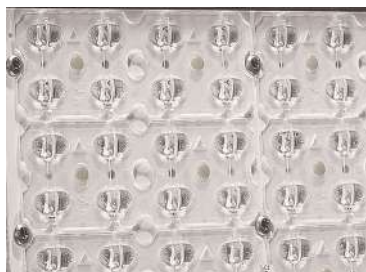
Voltana is available with universal fixation pieces for spigots ranging from Ø42 to Ø76mm (optional).



LensoFlex®2

LensoFlex®2 is based upon the addition principle of photometric distribution. Each LED is associated with a specific PMMA lens that generates the complete photometric distribution of the luminaire. The number of LEDs in combination with the driving current determines the intensity level of the light distribution.

The proven LensoFlex®2 concept includes a glass protector to seal the LEDs and lenses into the luminaire body.



ProFlex™

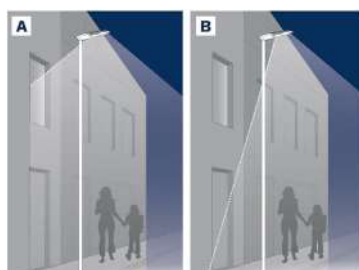
The ProFlex™ photometric engine integrates the lenses into a polycarbonate protector. This integration increases the output and reduces the reflection inside the optical unit. The polycarbonate used for the ProFlex™ photometric engine offers essential characteristics such as high optical clarity for a superior light transmission, better impact resistance compared to glass and a long life span with UV-stabilisation treatment. The ProFlex™ concept enables a compact design with a thin optical compartment. It provides extensive light distributions so that the spacing between the luminaires can be increased.



Back Light control

As an option, the LensoFlex®2 modules can be equipped with a Back Light control system.

This additional feature minimises light spill from the back of the luminaire to avoid intrusive light towards buildings.



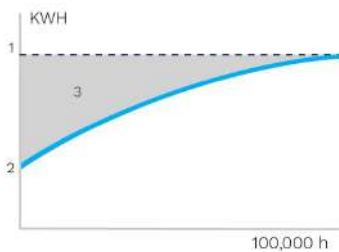
A. Without Back Light control | B. With Back Light control



### Constant Light Output (CLO)

This system compensates for the depreciation of luminous flux to avoid excess lighting at the beginning of the installation's service life. Luminous depreciation over time must be taken into account to ensure a predefined lighting level during the luminaire's useful life.

Without a CLO feature, this simply means increasing the initial power upon installation in order to make up for luminous depreciation. By precisely controlling the luminous flux, the energy needed to reach the required level can be maintained throughout the luminaire's life.



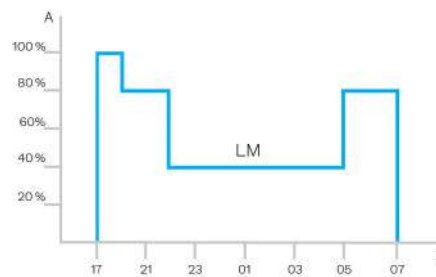
1. Standard lighting level | 2. LED lighting consumption with CLO | 3. Energy savings



### Custom dimming profile

Intelligent luminaire drivers can be programmed with complex dimming profiles. Up to five combinations of time intervals and light levels are possible. This feature does not require any extra wiring.

The period between switching on and switching off is used to activate the preset dimming profile. The customised dimming system generates maximum energy savings while respecting the required lighting levels and uniformity throughout the night.



A. Performance | B. Time

# Owlet IoT

Owlet IoT remotely controls luminaires in a lighting network, creating opportunities for improved efficiency, accurate real-time data and energy savings of up to 85%.



## ALL-IN-ONE

The LUCO P7 CM controller includes the most advanced features for optimised asset management. It also provides an integrated photocell and operates with an astronomical clock for seasonal dimming profile adaptations.

## EASY TO DEPLOY

Thanks to wireless communication, no cabling is needed. The network is not subject to physical constraints or limitations. From a single control unit to an unlimited network, you can expand your lighting scheme at any time. With real-time geolocation and automatic detection of luminaire features, commissioning is quick and easy.

## USER-FRIENDLY

Once a controller is installed on a luminaire, the luminaire automatically appears with its GPS coordinates on a web-based map.

An easy-to-use dashboard enables each user to organise and customise screens, statistics and reports. Users can gain relevant, real-time insights.

The Owlet IoT web application can be accessed at all times from anywhere in the world with a device connected to the Internet. The application adapts to the device to offer an intuitive and user-friendly experience.

Real-time notifications can be pre-programmed to monitor the most important elements of the lighting scheme.



## SECURE

The Owlet IoT system uses a local wireless mesh communication networks to control the on-site luminaires combined with a remote control system utilising the cloud to ensure smooth data transfers to and from the central management system.

The system uses encrypted IP V6 communication to protect data transmission in both directions. Using a secure APN, Owlet IoT ensures a high level of protection.

In the exceptional case of a communication failure, the built-in astronomical clock and photocell will take over to switch the luminaires on and off, thus avoiding a complete blackout at night.

## EFFICIENT

Thanks to sensors and/or pre-programmed settings, lighting scenarios can be easily adapted to cope with live events, providing the right lighting levels at the right time and in the right place.

The integrated utility grade meter offers the highest accuracy available on the market today, enabling decisions based on real figures.

Accurate real-time feedback and clear reporting ensures that the network operates efficiently and maintenance is optimised.

When LED luminaires are switched on, the inrush current can create problems for the electricity grid. Owlet IoT incorporates an algorithm to preserve the grid at all times.

## OPEN

The LUCO P7 CM controller can be plugged onto the standard 7 pin NEMA socket and operates through either a DALI or 1-10V interface to control the luminaire.

Owlet IoT is based on the IPv6 protocol. This method for addressing devices can generate an almost unlimited number of unique combinations to connect non-traditional components to the Internet or computer network.

Through open APIs, Owlet IoT can be integrated into existing or future global management systems.

## GENERAL INFORMATION

Recommended installation height	4m to 12m   13' to 39'
FutureProof	Easy replacement of the photometric engine and electronic assembly on-site
Driver included	Yes
CE Mark	Yes
ENEC certified	Yes
ENEC+ certified	Yes
ROHS compliant	Yes
Testing standard	LM 79-08 (all measurements in ISO17025 accredited laboratory)

## HOUSING AND FINISH

Housing	Aluminium
Optic	PMMA Polycarbonate
Protector	Tempered glass Polycarbonate
Housing finish	Polyester powder coating
Standard colour(s)	RAL 7038
Tightness level	IP 66
Impact resistance	IK 08
Vibration test	Compliant with ANSI C 136-31 standard, 3G load Compliant with modified IEC 68-2-6 (0.5G)
Access for maintenance	By loosening screws on the bottom cover

· Any other RAL or AKZO colour upon request

· Polycarbonate (Proflex™) protector only for 6 LED version of Voltana 0

## OPERATING CONDITIONS

Operating temperature range (Ta)	-30 °C up to +50 °C / -22 °F up to 122 °F with wind effect
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· Depending on the luminaire configuration. For more details, please contact us.

## ELECTRICAL INFORMATION

Electrical class	Class I EU, Class II EU
Nominal voltage	220-240V – 50-60Hz
Power factor (at full load)	0.9
Surge protection options (kV)	10
Electromagnetic compatibility (EMC)	EN 61547 / EN 61000-4-2, -3, -4, -5, -6, -8, -11
Control protocol(s)	1-10V, DALI
Control options	Bi-power, Custom dimming profile, Remote management
Socket	NEMA 7-pin (optional)
Associated control system(s)	Owlet Nightshift Owlet IoT

· 7-pin Nema socket only available for Voltana 2-3-4

## OPTICAL INFORMATION

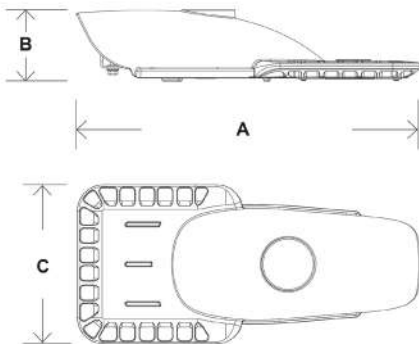
LED colour temperature	3000K (Warm White 730) 3000K (Warm White 830) 4000K (Neutral White 740)
Colour rendering index (CRI)	>70 (Warm White 730) >80 (Warm White 830) >70 (Neutral White 740)
Upward Light Output Ratio (ULOR)	0%

## LIFETIME OF THE LEDS @ TQ 25°C

All configurations	100,000h - L80
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## DIMENSIONS AND MOUNTING

AxBxC (mm   inch)	VOLTANA 0 - 416x91x156   16.4x3.6x6.1 VOLTANA 1 - 501x87x181   19.7x3.4x7.1 VOLTANA 2 - 518x108.5x240   20.4x4.3x9.4 VOLTANA 3 - 641x111x240   25.2x4.4x9.4 VOLTANA 4 - 555x112x380   21.9x4.4x15.0
Weight (kg   lbs)	VOLTANA 0 - 2.6   5.7 VOLTANA 1 - 3.5   7.7 VOLTANA 2 - 4.6   10.1 VOLTANA 3 - 5.6   12.3 VOLTANA 4 - 7.5   16.5
Aerodynamic resistance (CxS)	VOLTANA 0 - 0.01 VOLTANA 1 - 0.02 VOLTANA 2 - 0.02 VOLTANA 3 - 0.02 VOLTANA 4 - 0.03
Mounting possibilities	Side-entry slip-over – Ø42mm Side-entry slip-over – Ø48mm Side-entry slip-over – Ø60mm Post-top slip-over – Ø42mm Post-top slip-over – Ø48mm Post-top slip-over – Ø60mm Post-top slip-over – Ø76mm





Luminaire	Number of LEDs	Current (mA)	Luminaire output flux (lm) Warm White 830		Luminaire output flux (lm) Neutral White 740		Luminaire output flux (lm) Warm White 730		Power consumption (W)	Luminaire efficacy (lm/W)	Photometry
			Min	Max	Min	Max	Min	Max			
VOLTANA 0	6	700	-	-	1800	1900	1700	1800	15.1	126	
	6	1050	-	-	2500	2600	2400	2400	22.6	115	
	8	350	-	-	1000	1300	1000	1200	9.8	133	
	8	500	-	-	1500	1800	1400	1700	13.7	131	
	8	700	-	-	2000	2400	1900	2300	19.4	127	
	8	1000	-	-	2700	3200	2500	3100	28.3	113	
	8	1050	-	-	2700	3300	2600	3200	29.3	113	
	8	1250	-	-	3100	3800	2900	3600	37.4	102	






Tolerance on LED flux is  $\pm 7\%$  and on total luminaire power  $\pm 5\%$



Luminaire	Number of LEDs	Current (mA)	Luminaire output flux (lm) Warm White 830		Luminaire output flux (lm) Neutral White 740		Luminaire output flux (lm) Warm White 730		Power consumption (W)	Luminaire efficacy (lm/W)	Photometry
			Min	Max	Min	Max	Min	Max			
VOLTANA 1	8	350	-	-	900	1300	900	1200	9.8	133	
	8	500	-	-	1300	1800	1200	1700	13.7	131	
	8	700	-	-	1800	2400	1700	2300	19.4	124	
	8	1000	-	-	2400	3200	2300	3000	28.3	113	
	8	1050	-	-	2500	3300	2400	3200	29.3	113	
	8	1250	-	-	2800	3800	2700	3600	37.4	102	
	8	1400	-	-	3100	4100	2900	3900	40.5	101	

Tolerance on LED flux is  $\pm 7\%$  and on total luminaire power  $\pm 5\%$



Luminaire	Number of LEDs	Current (mA)	Luminaire output flux (lm) Warm White 830		Luminaire output flux (lm) Neutral White 740		Luminaire output flux (lm) Warm White 730		Power consumption (W)	Luminaire efficacy (lm/W)	Photometry
			Min	Max	Min	Max	Min	Max			
VOLTANA 2	16	350	-	-	2100	2600	2000	2500	18.4	141	
	16	500	-	-	2900	3600	2700	3400	28.1	138	
	16	700	-	-	3900	4900	3700	4600	39.1	134	
	16	1000	-	-	5200	6500	4900	6200	53	123	
	16	1050	-	-	5400	6800	5100	6400	58	117	

Tolerance on LED flux is  $\pm 7\%$  and on total luminaire power  $\pm 5\%$



Luminaire	Number of LEDs	Current (mA)	Luminaire output flux (lm) Warm White 830		Luminaire output flux (lm) Neutral White 740		Luminaire output flux (lm) Warm White 730		Power consumption (W)	Luminaire efficacy (lm/W)	Photometry
			Min	Max	Min	Max	Min	Max			
VOLTANA 3	24	350	2500	3000	2700	3300	-	-	27.4	122	
	24	350	-	-	3700	3700	3500	3500	26.4	140	
	24	500	3300	4100	3600	4500	-	-	39.4	115	
	24	500	-	-	5100	5100	4800	4800	38.1	134	
	24	700	4300	5300	4800	5900	-	-	56.5	105	
	24	700	-	-	6800	6800	6500	6500	54.5	125	
	24	1000	5600	6800	6100	7500	-	-	85	91	
	24	1000	-	-	9000	9000	8500	8500	79	114	

Tolerance on LED flux is  $\pm 7\%$  and on total luminaire power  $\pm 5\%$



Luminaire	Number of LEDs	Current (mA)	Luminaire output flux (lm) Warm White 830		Luminaire output flux (lm) Neutral White 740		Luminaire output flux (lm) Warm White 730		Power consumption (W)	Luminaire efficacy (lm/W)	Photometry
			Min	Max	Min	Max	Min	Max			
VOLTANA 4	32	350	3400	4100	3700	4500	-	-	36.5	126	
	32	350	-	-	5100	5100	4800	4800	34.9	146	
	32	500	4600	5500	5100	6100	-	-	52	118	
	32	500	-	-	7000	7000	6600	6600	50.5	139	
	32	700	6000	7200	6600	7900	-	-	74	107	
	32	700	-	-	9400	9400	8900	8900	71	132	
	32	1000	7800	9400	8600	10300	-	-	111	97	
	32	1000	-	-	12400	12400	11700	11700	101	123	

Tolerance on LED flux is  $\pm 7\%$  and on total luminaire power  $\pm 5\%$

