

Alulírott a TUNGSRAM-Schröder Világítási Berendezések Zrt. H-2084 Pilisszentiván, Tópart 2., mint gyártó, kizárólagos felelősségében kijelentem, hogy az alábbi termékek a CE-jelölés követelményeivel összhangban, megfelelnek a lent részletezett direktíváknak és szabványoknak. / Under sole responsibility of TUNGSRAM-Schröder Lighting Equipment Co. Ltd. H-2084 Pilisszentiván, Tópart 2. as manufacturer I declare that following products are in conformity with the below detailed EU directives and standards in line with CE marking.

VOLTANA lámpatestek / luminaires

CE jelölés éve/ Year of CE marking was affixed: 2016

1. Egyedi termékazonosító (Pl.: Projektszám/ Megrendelészám/ Szériaszám, Gyártási dátum) / Individual product identification (E.g. Project number, Order number, Serial number, Manufacturing date):

2. Műszaki specifikáció/ Technical specification

Termék leírása/ Product Description	Közvilágítási lámpatest / Road & Urban lighting luminaire
Bemeneti teljesítmény @ Ta = 25°C* / Input Power @ Ta = 25°C	8 W – 31 W (Voltana 0); 10 W – 29 W (Voltana 1); 20 W – 56 W (Voltana 2); 28 W – 80 W (Voltana 3); 37 W – 110 W (Voltana 4); 70 W – 212 W (Voltana 5)
Ledek száma/ Number of LEDs	6 - 8 Led (Voltana 0), 8 Led (Voltana 1), 16 LED (Voltana 2); 24 Led (Voltana 3); 32 Led (Voltana 4); 64 Led (Voltana 5)
Dimenzió (Hossz x Szélesség x Magasság) / Dimensions (LxWxH)	416 x 156 x 91 mm (Voltana 0), 501 x 181 x 87 mm (Voltana 1); 518 x 240 x 108,5 mm (Voltana 2); 641 x 240 x 111 mm (Voltana 3), 555 x 380 x 112 mm (Voltana 4); 705 x 480 x 109 mm (Voltana 5)
Hálózati feszültség / Line Voltage	200V – 240V (Voltana 0); 220-240V (Voltana 1-5)
Hálózati frekvencia / Line frequency	50 – 60 Hz
Érintésvédelmi osztály (IEC) / Electrical Safety Class (IEC)	Class I. / Class II
Védettségi érték / Enclosure Tightness	IP66
Törési szilárdság / Enclosure Mechanical Withstand Impact	IK08

3. ENEC jelölés/ ENEC marking

ENEC tanúsítvány hivatkozási száma Reference number of ENEC Certification	No. 20254 / 20255 (Voltana 0); No. 20113 / 20114 (Voltana 1 -5)
ENEC tanúsítvány kiállítás dátuma / Issue date of ENEC Certification	2017.03.15. (Voltana 0); 2016.10.14. (Voltana 1-5)
ENEC test jegyzőkönyv hivatkozási száma/ Reference number of ENEC Test report	P1560-Ia / P1560-IIa, (Voltana 0); P1540-44-I./ P1540-44-II. (Voltana 1-5)

4. EU Direktívák, rendeletek / EU directives, regulations


Hivatkozási szám / Reference n°	Title/ Cím
2014/35/EU	Low Voltage Directive
2014/30/EU	E.M.C. Directive
2011/65/EU	RoHS Directive
2009/125/EC	Eco-design Directive

E nyilatkozat fent leírt tárgya összhangban van az egyes veszélyes anyagok elektromos és elektronikus berendezésekben való alkalmazásának korlátozásáról szóló, 2011. június 8-i 2011/65/EU európai parlamenti és tanácsi irányelvvel. / The object of the declaration described above is in conformity with Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment.

5. Szabványok/ Standards

Hivatkozási szám / Reference n°	Title/ Cím
EN 60598-2-3:2003 + A1:2011	Luminaires for road and street lighting
EN 60598-1:2015+ A11:2009	Luminaires - General requirements and tests
EN 62471:2008	Photobiological safety of lamps and lamp systems
EN 55015:2013	Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment (CISPR 15)
EN 61000-3-2:2014	Limits for harmonic current emissions
EN 61000-3-3:2013	Electromagnetic compatibility (EMC). Limits. Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current ≤ 16 A per phase and not subject to conditional connection (IEC 61000-3-3:2013)
EN 61547:2009	Equipment for general lighting purpose, immunity requirements
EN 62493:2010	Assessment of Lighting Equipment related to Human Exposure to Electromagnetic Fields
EN 62722-1:2016	Luminaire performance. Part 1: General requirements
EN 62722-2-1: 2016	Luminaire performance. Part 2-1: Particular requirements for LED luminaires

Pilisszentiván, 2017.06.16.


Tungsram-Schröder
Világítási Berendezések Zrt.
 2084 Pilisszentiván, Tópart u. 2.
 Működésirányítási Igazgató / Quality Director

Lumen maintenance report

LED information

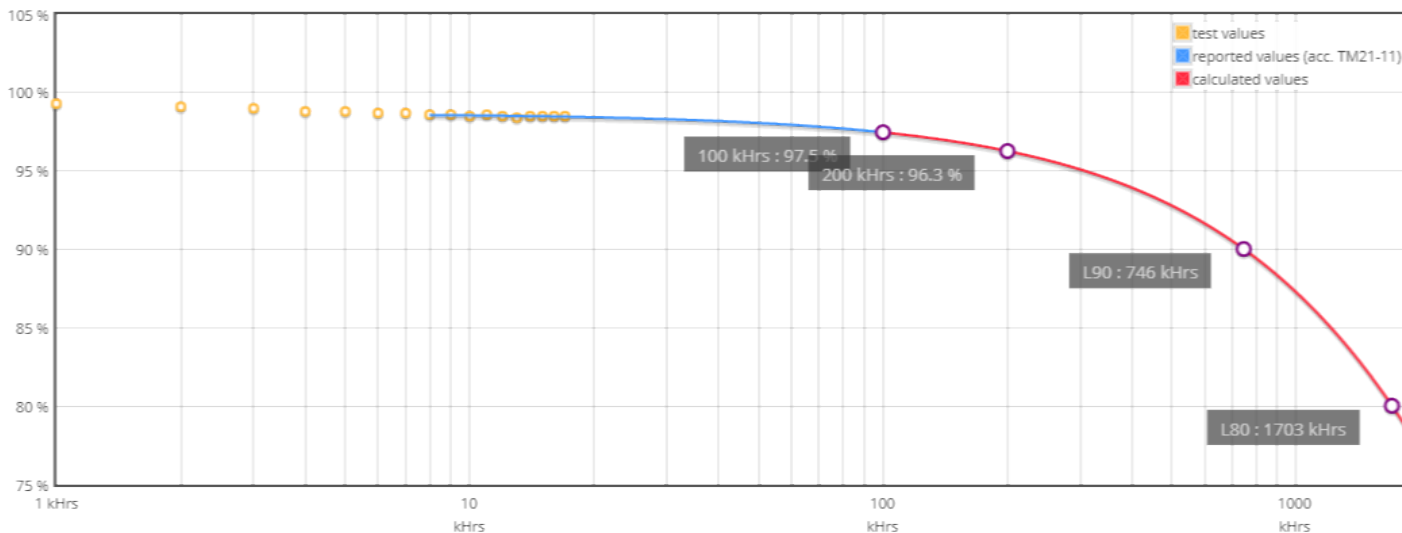
LED type LH351C
LED current 700 mA
Ts 55°C
Description SLED-19-030-R02

Projection data

Test duration 17000 hrs **α** 1.230E-007
Time used for projection 8000 to 17000hrs **β** 0.987

L (%)	Time (kHrs)
80.0	1705
90.0	748
96.3	200
97.5	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.

Lumen maintenance report

LED information

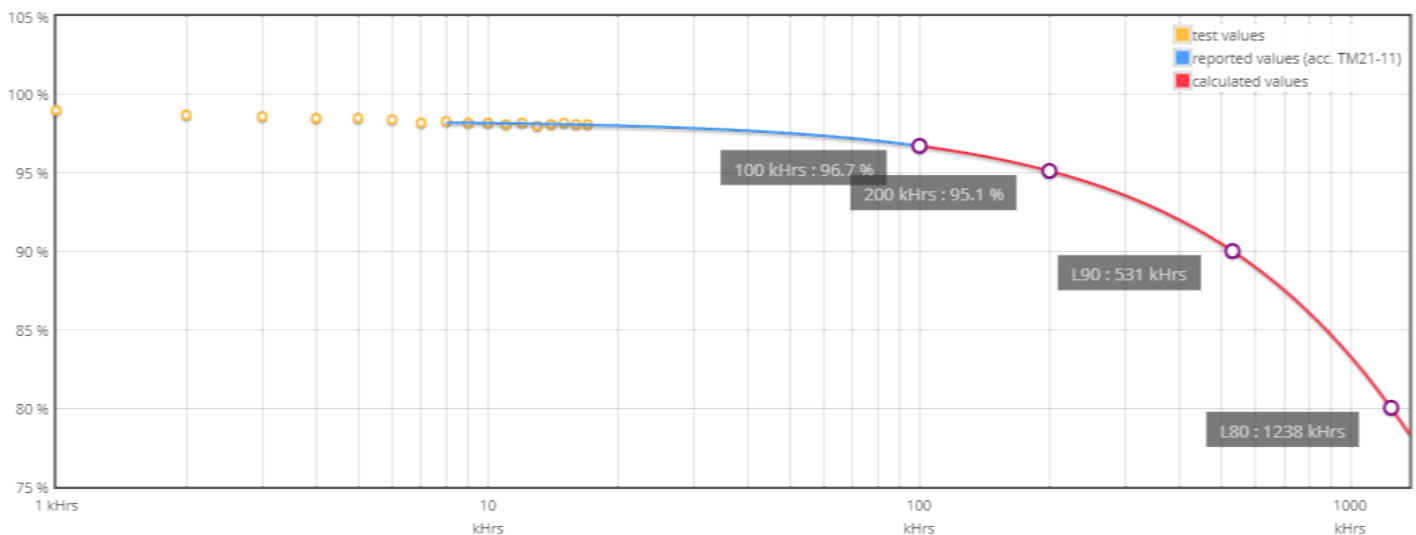
LED type LH351C
LED current 1000 mA
Ts 55°C
Description SLED-19-031-R02

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.

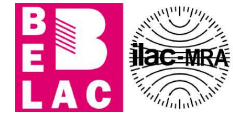
LxBy results derived from LxB50 according to IEC 62717 Annex C.

LED Flux measurement

FORM-L-41 ED1 REV 2

Date : **16-01-19**

Operator : **FCE**



Filename : **2019_52.xml**

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LEDs

NBN EN ISO/IEC 17025 : 2005

Trademark : **Samsung**

Entry number : **39R004-2**

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 : **6**

Lenses

Trademark : **None**

Type : **None**

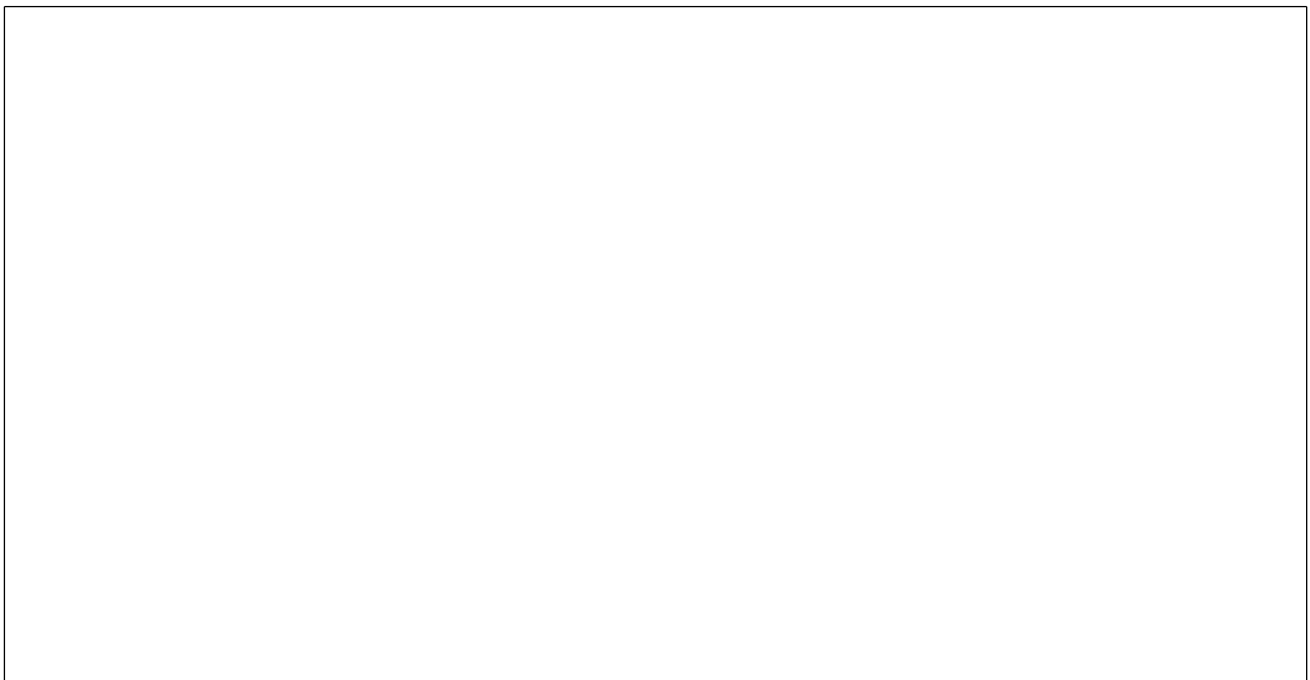
Power & Print

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

Print description : **00-71-626 A - Voltana 0**

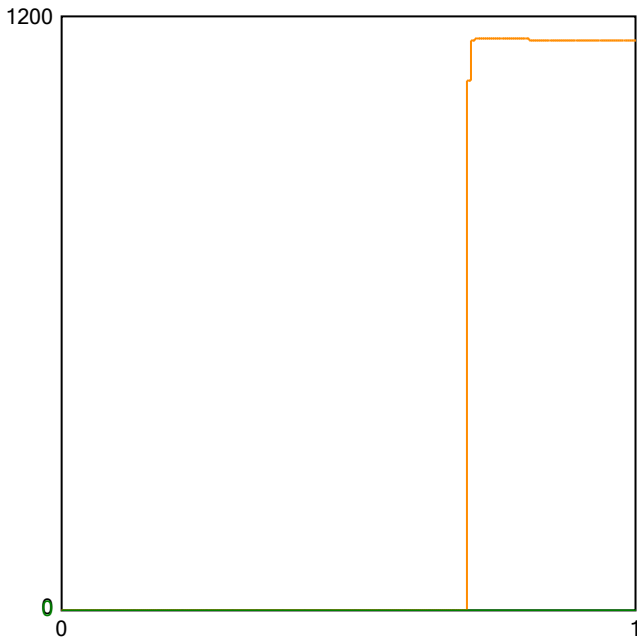
Active

Picture



Sphere photometric measurement

Maximum flux : **1157** lumens



Operating condition

Position in sphere :



Ambient sphere T ° : **24,6**

Electrical measurement

● Secondary electrical measurement

Voltage : **16,93** V

Current : **0,350** A

Power : **5,92** Watt

→ LEDs light efficiency at 25° :

195,4 lm/W

192,9 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 0 - 6 Samsung LH351C - pcb N°2

Comment :

FORM-L-41 ED1 REV 2



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Approved by :

LED 2019/52 2/3



Colorimetry

File Preset Options Extra Calibration Info

Preset: CRI

Auto: ref: illuminant - Planckian radiator, CCT= 3859 K

Auto: ref: illuminant - Planckian radiator, CCT= 3859 K

Chromaticity difference DC= 6.2E-4

JIS color sample

Auto: ref: illuminant - Planckian radiator, CCT= 3859 K

Transfer data to table auto

Luminance L_v 1.898E+2 $\frac{cd}{m^2}$

Radiance L_e 5.383E-1 $\frac{W}{m^2 \cdot sr}$ (380-780nm)

Corr. Color Temp CCT 3859 K

Chromaticity x 0.3864 y 0.3793

Chromaticity u' 0.2280 v' 0.5036

Target

Calibration File: #1 no accessory

Measurement Mode: Radiance

Weighting Function: None

Average 1

Measurement

Cont. 10

Hold Integration Time

Quick mode

QUIT


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.

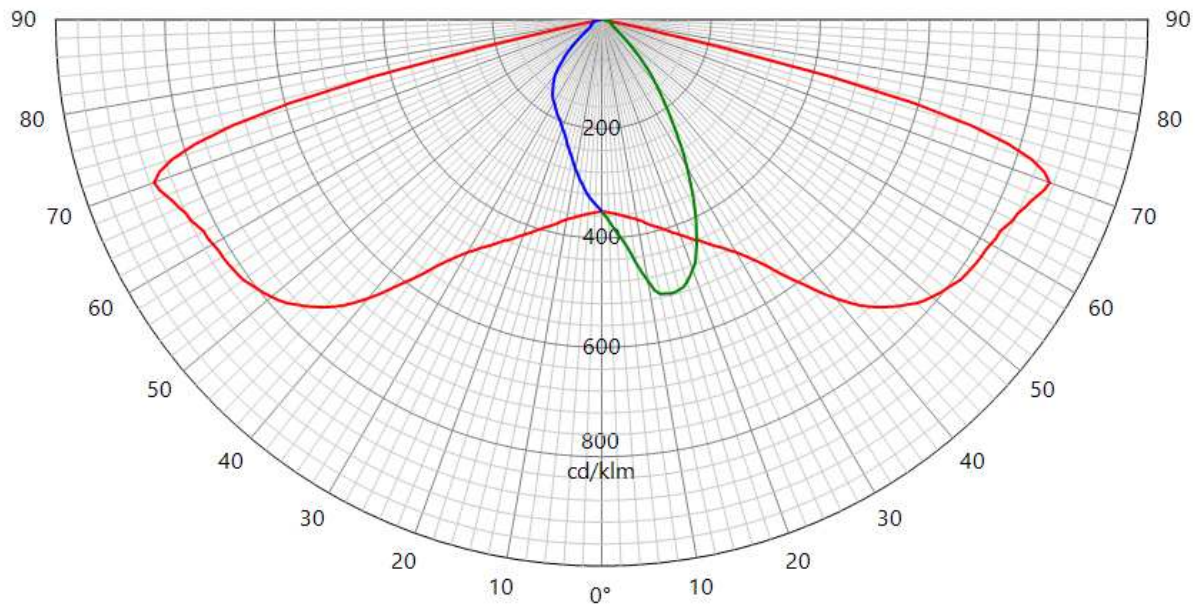
LED

Origin TUNGSRAM-Schröder Zrt. Hungary	Production TUNGSRAM-Schröder Zrt. Hungary	Luminaire VOLTANA 0	Inclination 0°	Request # FD39022
Source				
Type LED	BIN 40-70M-4-TB-RB	Trademark Samsung	Reference LH351C	# LEDs 6
Reflector 5205	Master -			Reflector No 5205
DKI Led assembly Road lighting Injected 0.0°				
Protector Refractor Lens				
Protector integrated lenses				
Lens DKI 5205 PC				
Laboratory observation				
VOLTANA 0 with 6 Samsung LH 351C Used flux for efficiency matrix calculation = 1157lm - CCT = 3859K - CRI = 72,26 (see sphere test report 2019/52 on appendix).				
Purpose DOC	Sample date 08-01-2019		Sample # 39R004	
Observation				
DOC Voltana 0 with lenses 5205				
Flux coefficient multiplicator (only for efficiency matrix): From 350 to 500 mA : 1,379 From 350 to 700 mA : 1,846 From 350 to 1000mA: 2,450				
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	42571
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LUMINOUS INTENSITY DIAGRAM

Origin TUNGSRAM-Schröder Zrt. Hungary		Production TUNGSRAM-Schröder Zrt. Hungary		Luminaire VOLTANA 0		Inclination 0°		Request # FD39022	
Source	Type LED	BIN 40-70M-4-TB-RB	Trademark Samsung	Reference LH351C	# LEDs 6	Reflector 5205			
Reflector	DKI Led assembly Road lighting Injected 0.0°				No	5205			
Matrices	425711		Φ 0-90° = 1036lm - 90-180° = 0lm			Absolute measurement			
Protector Refractor Lens	Protector integrated lenses Lens 6 x DKI 5205 PC								
Observation	<p>Matrix in total flux @350 mA</p> <p>Light losses due to thermal stabilisation : 1%</p> <p>Electrical measurement on LED (#1) : Voltage = 16.83 V Current = 0.350 A Power = 5.88 W</p> <p>Electrical measurement on driver (#1) : Voltage = 230.00 V Current = 0.037 A Power = 7.98 W PF = 0.936</p> <p>Total luminaire power = 7.98 W : Lm/Watt = 129.80 lm/W</p> <p>Driver #1 : Philips Xitanium FP 22W 0.3-1.0A SNLDAE 230V S175 sXt S175 sxt PCB 00-71-626 A</p>								
Plane	I Peak	Peak position	Index	I zero	Laboratory ambient t°	Measurement date		↕	
5 - 175	872	70	S	351	24.9°	07-02-2019			
90	517	14	D						
270	351	0	G						

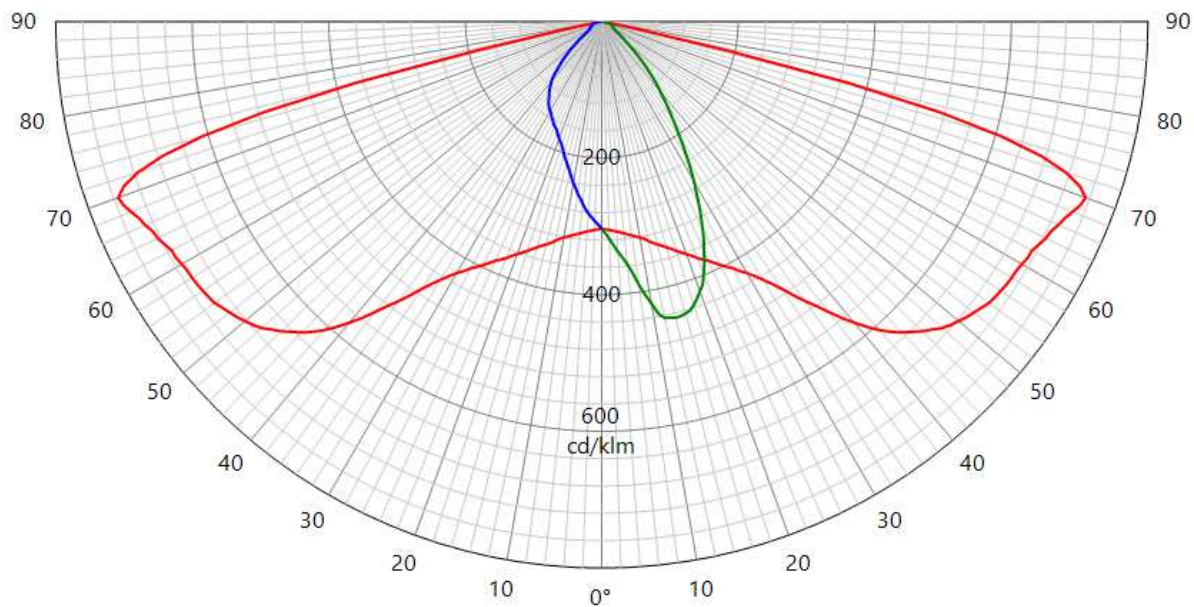


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LUMINOUS INTENSITY DIAGRAM

Origin TUNGSRAM-Schröder Zrt. Hungary		Production TUNGSRAM-Schröder Zrt. Hungary		Luminaire VOLTANA 0		Inclination 0°		Request # FD39022	
Source	Type LED	BIN 40-70M-4-TB-RB	Trademark Samsung	Reference LH351C	# LEDs 6	Reflector 5205			
Reflector	DKI Led assembly Road lighting Injected 0.0°				No		5205		
Matrices	425712		η 0-90° = 89.5% - 90-180° = 0.0%			Relative measurement			
Protector Refractor Lens	Protector integrated lenses Lens 6 x DKI 5205 PC								
Observation	<p>Matrix in efficiency @350 mA</p> <p>Light losses due to thermal stabilisation : 1%</p> <p>Electrical measurement on LED (#1) : Voltage = 16.83 V Current = 0.350 A Power = 5.88 W</p> <p>Electrical measurement on driver (#1) : Voltage = 230.00 V Current = 0.037 A Power = 7.98 W PF = 0.936</p> <p>Total luminaire power = 7.98 W</p> <p>Driver #1 : Philips Xitanium FP 22W 0.3-1.0A SNLDAE 230V S175 sXt S175 sxt PCB 00-71-626 A</p>								

Plane	I Peak	Peak position	Index	I zero	Laboratory ambient t°	Measurement date	↕
5 - 175	754	70	S	303	24.9°	07-02-2019	
90	447	14	D				
270	303	0	G				

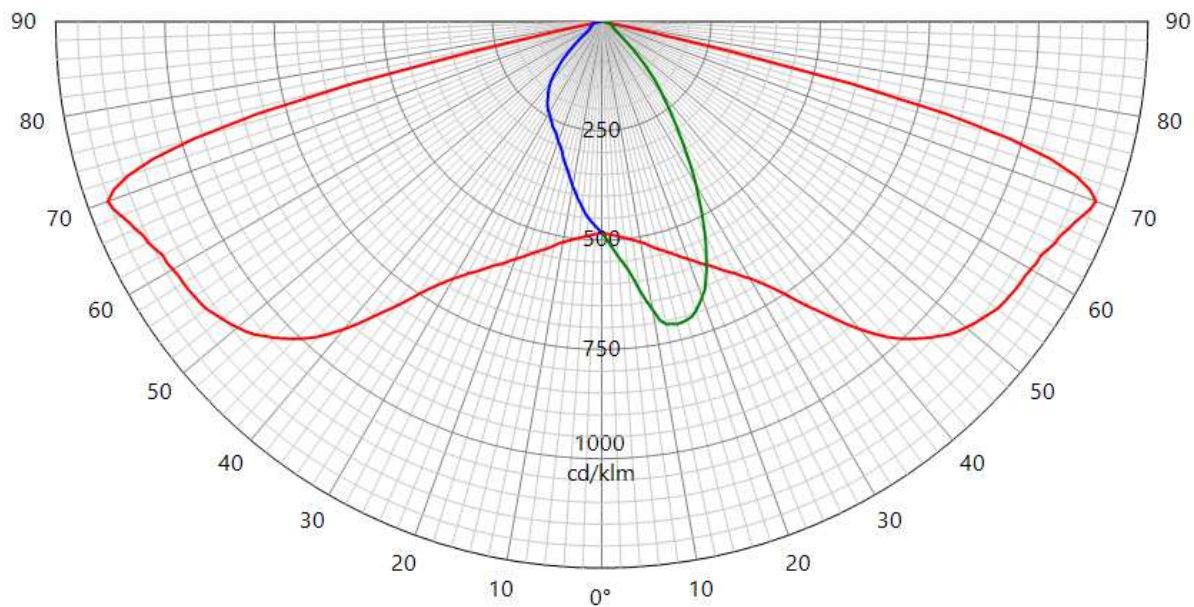


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LUMINOUS INTENSITY DIAGRAM

Origin TUNGSRAM-Schröder Zrt. Hungary		Production TUNGSRAM-Schröder Zrt. Hungary		Luminaire VOLTANA 0		Inclination 0°		Request # FD39022	
Source	Type LED	BIN 40-70M-4-TB-RB	Trademark Samsung	Reference LH351C	# LEDs 6	Reflector 5205			
Reflector	DKI Led assembly Road lighting Injected 0.0°				No	5205			
Matrices	425713		Φ 0-90° = 1428lm - 90-180° = 0lm			Absolute measurement			
Protector Refractor Lens	Protector integrated lenses Lens 6 x DKI 5205 PC								
Observation	<p>Matrix in total flux @500 mA</p> <p>Light losses due to thermal stabilisation : 1.7%</p> <p>Electrical measurement on LED (#1) : Voltage = 17.15 V Current = 0.500 A Power = 8.58 W</p> <p>Electrical measurement on driver (#1) : Voltage = 230.00 V Current = 0.050 A Power = 10.97 W PF = 0.962</p> <p>Total luminaire power = 10.97 W : Lm/Watt = 130.21 lm/W</p> <p>Driver #1 : Philips Xitanium FP 22W 0.3-1.0A SNLDAE 230V S175 sXt S175 sxt PCB 00-71-626 A</p>								

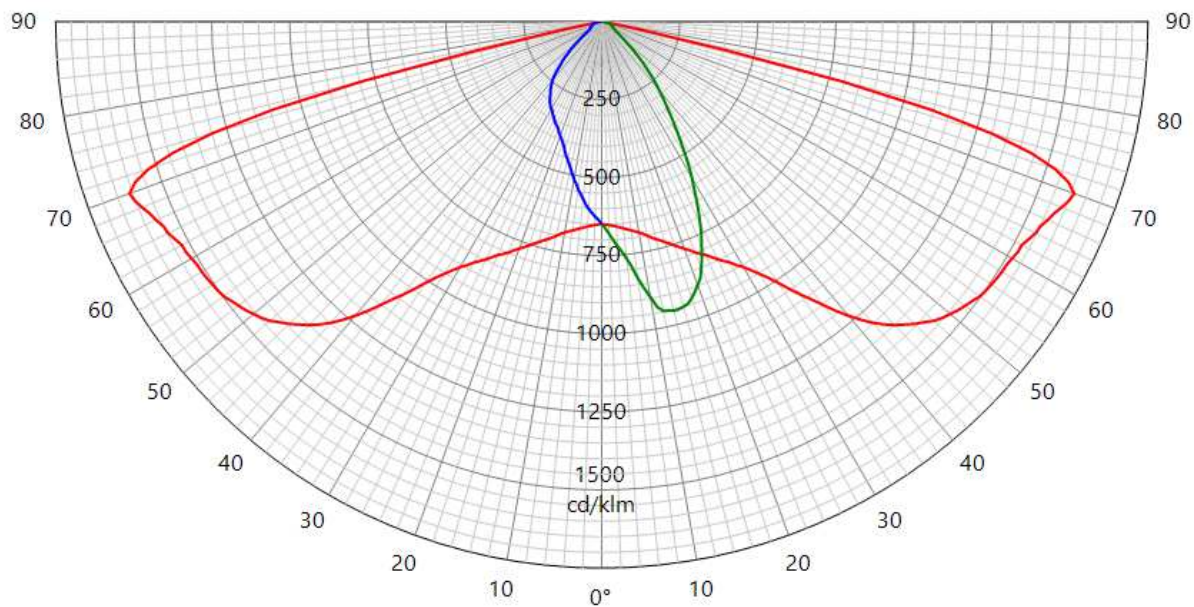
Plane	I Peak	Peak position	Index	I zero	Laboratory ambient t°	Measurement date	↕
5 - 175	1203	70	S	484	24.9°	11-02-2019	
90	713	14	D				
270	484	0	G				



LUMINOUS INTENSITY DIAGRAM

Origin TUNGSRAM-Schröder Zrt. Hungary		Production TUNGSRAM-Schröder Zrt. Hungary		Luminaire VOLTANA 0		Inclination 0°		Request # FD39022	
Source	Type LED	BIN 40-70M-4-TB-RB	Trademark Samsung	Reference LH351C	# LEDs 6	Reflector 5205			
Reflector	DKI Led assembly Road lighting Injected 0.0°				No	5205			
Matrices	425714		Φ 0-90° = 1912lm - 90-180° = 0lm			Absolute measurement			
Protector Refractor Lens	Protector integrated lenses Lens 6 x DKI 5205 PC								
Observation	<p>Matrix in total flux @700 mA</p> <p>Light losses due to thermal stabilisation : 2,6 %</p> <p>Electrical measurement on LED (#1) : Voltage = 17.51 V Current = 0.700 A Power = 12.27 W</p> <p>Electrical measurement on driver (#1) : Voltage = 230.00 V Current = 0.067 A Power = 15.15 W PF = 0.977</p> <p>Total luminaire power = 15.15 W : Lm/Watt = 126.21 lm/W</p> <p>Driver #1 : Philips Xitanium FP 22W 0.3-1.0A SNLDAE 230V S175 sXt S175 sxt PCB 00-71-626 A</p>								

Plane	I Peak	Peak position	Index	I zero	Laboratory ambient t°	Measurement date	↕
5 - 175	1610	70	S	648	24.9°	11-02-2019	
90	954	14	D				
270	648	0	G				

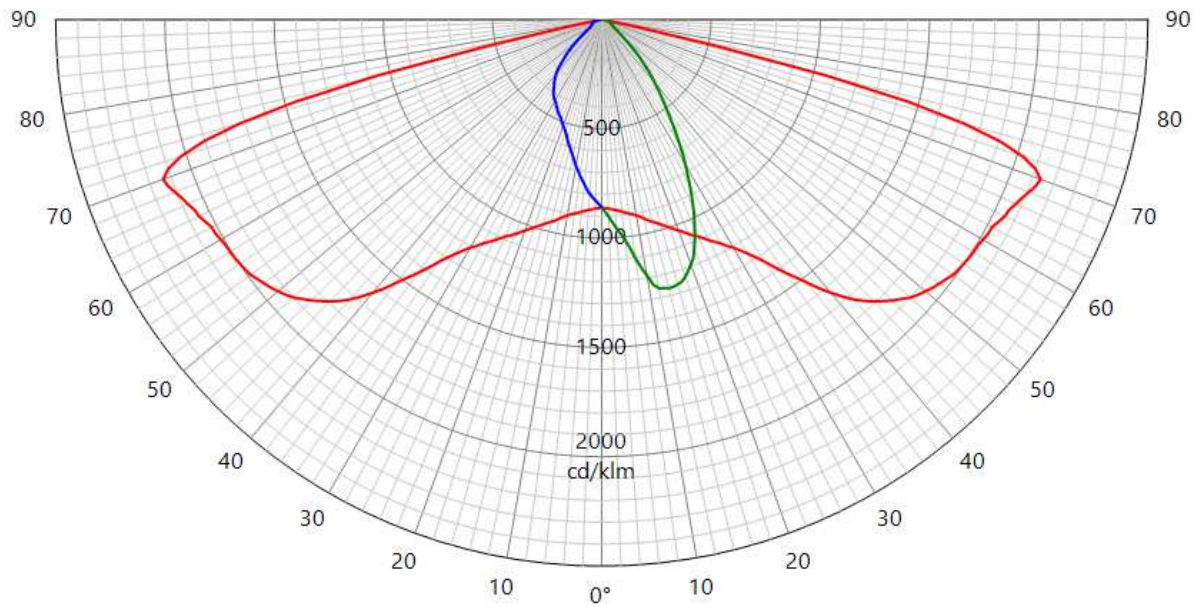


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LUMINOUS INTENSITY DIAGRAM

Origin TUNGSRAM-Schröder Zrt. Hungary		Production TUNGSRAM-Schröder Zrt. Hungary		Luminaire VOLTANA 0		Inclination 0°		Request # FD39022	
Source	Type LED	BIN 40-70M-4-TB-RB	Trademark Samsung	Reference LH351C	# LEDs 6	Reflector 5205			
Reflector	DKI Led assembly Road lighting Injected 0.0°				No	5205			
Matrices	425715		Φ 0-90° = 2538lm - 90-180° = 0lm			Absolute measurement			
Protector Refractor Lens	Protector integrated lenses Lens 6 x DKI 5205 PC								
Observation	<p>Matrix in total flux @1000 mA</p> <p>Light losses due to thermal stabilisation : 3,7 %</p> <p>Electrical measurement on LED (#1) : Voltage = 17.96 V Current = 1.000 A Power = 17.96 W</p> <p>Electrical measurement on driver (#1) : Voltage = 230.00 V Current = 0.096 A Power = 21.80 W PF = 0.987</p> <p>Total luminaire power = 21.80 W : Lm/Watt = 116.41 lm/W</p> <p>Driver #1 : Philips Xitanium FP 22W 0.3-1.0A SNLDAE 230V S175 sXt S175 sxt PCB 00-71-626 A</p>								

Plane	I Peak	Peak position	Index	I zero	Laboratory ambient t°	Measurement date	↕
5 - 175	2137	70	S	860	24.9°	11-02-2019	
90	1267	14	D				
270	860	0	G				



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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)

LED Flux measurement

FORM-L-41 ED1 REV 2

Date : **16-01-19**

Operator : **FCE**



Filename : **2019_58.xml**

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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**

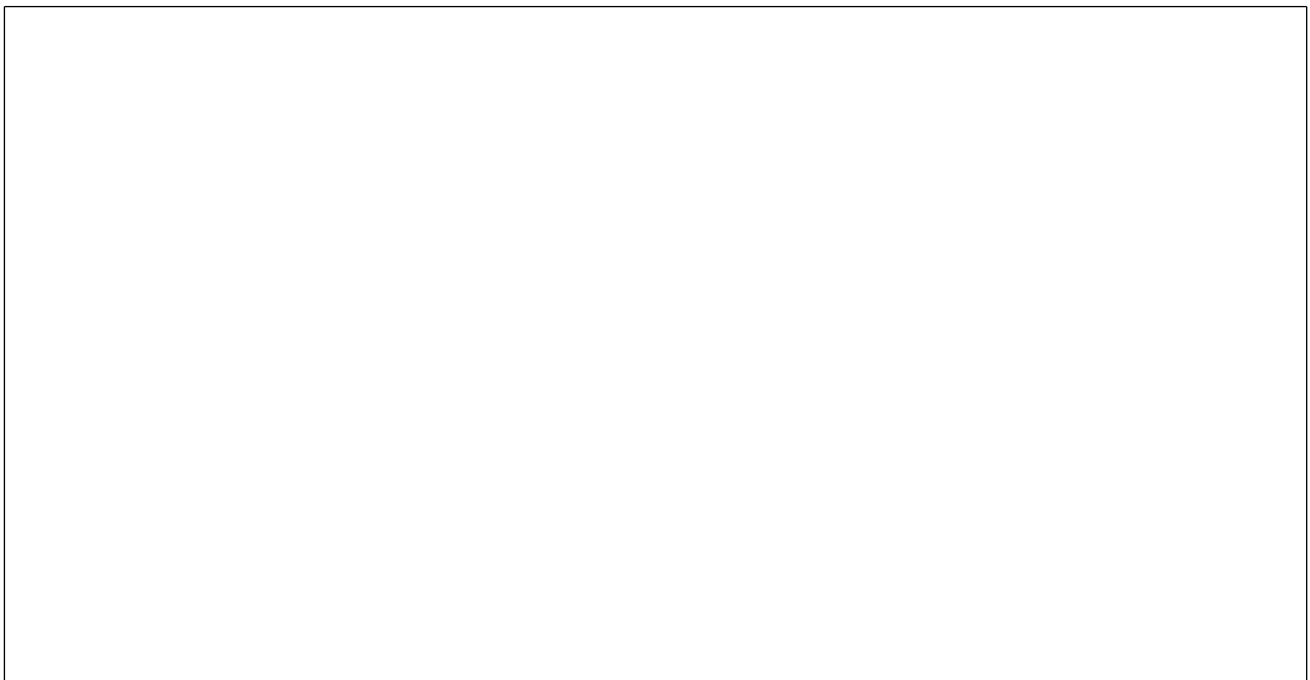
Power & Print

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

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

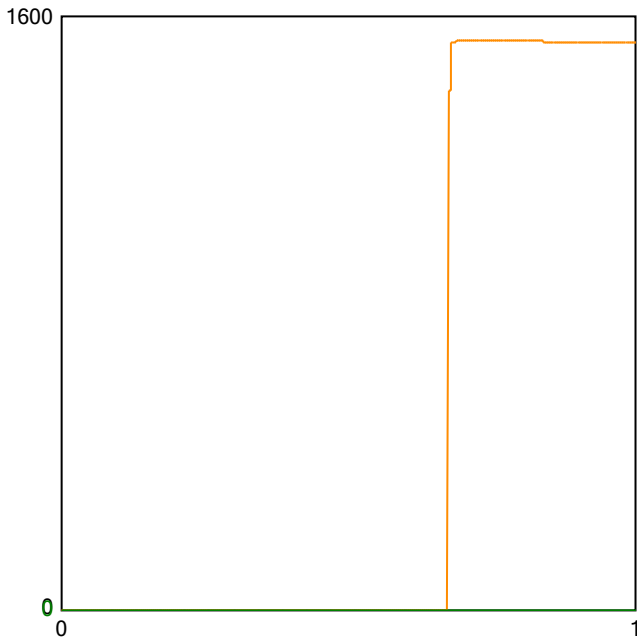
Active

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

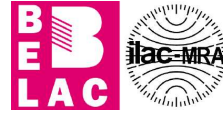
Comment :

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

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	
		R15=59.9

RA= 72.07
(mean value of R1 - R8)

RE= 62.15
(mean value of R1 - R15)

Target

Calibration File: #1 no accessory

Measurement Mode: Radiance

Weighting Function: None

Average: 1

Cont: 10

Hold Integration Time: 5

Quick mode

Measurement

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

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 0	Inclination 0°	Request # FD39019
Source				
Type LED	BIN 40-70M-4-TB-RB	Trademark Samsung	Reference LH351C	# LEDs 8
Reflector 5136	Master -			Reflector No 5136
Schreder Led assembly Narrow Assembled 0.0°				
Protector Refractor Lens				
Protector Glass Extra Clear Flat Smooth	Lens Gaggione 5136 PMMA			
Laboratory observation				
VOLTANA 0 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 0 with lenses 5136				
Flux coefficient multiplicator (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	42550
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LUMINOUS INTENSITY DIAGRAM

Origin TUNGSRAM-Schröder Zrt. Hungary		Production TUNGSRAM-Schröder Zrt. Hungary		Luminaire VOLTANA 0		Inclination 0°		Request # FD39019		
Source		Type LED	BIN 40-70M-4-TB-RB	Trademark Samsung	Reference LH351C	# LEDs 8	Reflector 5136			
Reflector		Schreder Led assembly Narrow Assembled 0.0°					No No	5136		
Matrices		425501 Φ 0-90° = 1331lm - 90-180° = 0lm					Absolute measurement			
Protector Refractor Lens		Protector Glass Extra Clear Flat Smooth - VOLTANA 1 Lens 8 x Gaggione 5136 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 = 130.60 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		↕		
5 - 175	852	69	S	499	25.4°	06-02-2019				
90	595	15	D							
270	499	0	G							
									42550	

LUMINOUS INTENSITY DIAGRAM

Origin TUNGSRAM-Schröder Zrt. Hungary		Production TUNGSRAM-Schröder Zrt. Hungary		Luminaire VOLTANA 0		Inclination 0°		Request # FD39019	
Source	Type LED	BIN 40-70M-4-TB-RB	Trademark Samsung	Reference LH351C	# LEDs 8	Reflector 5136			
Reflector	Schreder Led assembly Narrow Assembled 0.0°				No		5136		
Matrices	425502		η 0-90° = 86.5% - 90-180° = 0.0%			Relative measurement			
Protector Refractor Lens	Protector Glass Extra Clear Flat Smooth - VOLTANA 1 Lens 8 x Gaggione 5136 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		↕	
5 - 175	554	69	S	324	25.4°	06-02-2019			
90	387	15	D						
270	324	0	G						
									42550

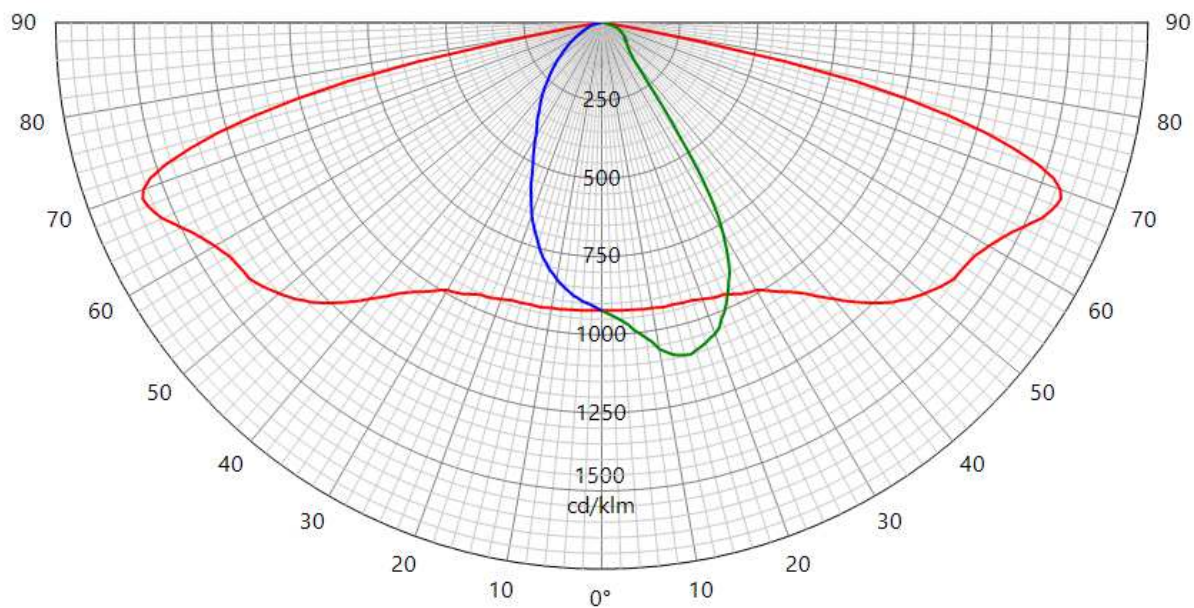
LUMINOUS INTENSITY DIAGRAM

Origin TUNGSRAM-Schröder Zrt. Hungary		Production TUNGSRAM-Schröder Zrt. Hungary		Luminaire VOLTANA 0		Inclination 0°		Request # FD39019	
Source	Type LED	BIN 40-70M-4-TB-RB	Trademark Samsung	Reference LH351C	# LEDs 8	Reflector 5136			
Reflector	Schreder Led assembly Narrow Assembled 0.0°				No	5136			
Matrices	425503		Φ 0-90° = 1835lm - 90-180° = 0lm			Absolute measurement			
Protector Refractor Lens	Protector Glass Extra Clear Flat Smooth - VOLTANA 1 Lens 8 x Gaggione 5136 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 = 129.60 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		↕	
5 - 175	1175	69	S	688	25.4°	06-02-2019			
90	820	15	D						
270	688	0	G						
									42550

LUMINOUS INTENSITY DIAGRAM

Origin TUNGSRAM-Schröder Zrt. Hungary		Production TUNGSRAM-Schröder Zrt. Hungary		Luminaire VOLTANA 0		Inclination 0°		Request # FD39019	
Source	Type LED	BIN 40-70M-4-TB-RB	Trademark Samsung	Reference LH351C	# LEDs 8	Reflector 5136			
Reflector	Schreder Led assembly Narrow Assembled 0.0°				No	5136			
Matrices	425504		Φ 0-90° = 2461lm - 90-180° = 0lm			Absolute measurement			
Protector Refractor Lens	Protector Glass Extra Clear Flat Smooth - VOLTANA 1 Lens 8 x Gaggione 5136 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 = 124.34 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	↕
5 - 175	1576	69	S	922	25.4°	06-02-2019	
90	1100	15	D				
270	922	0	G				

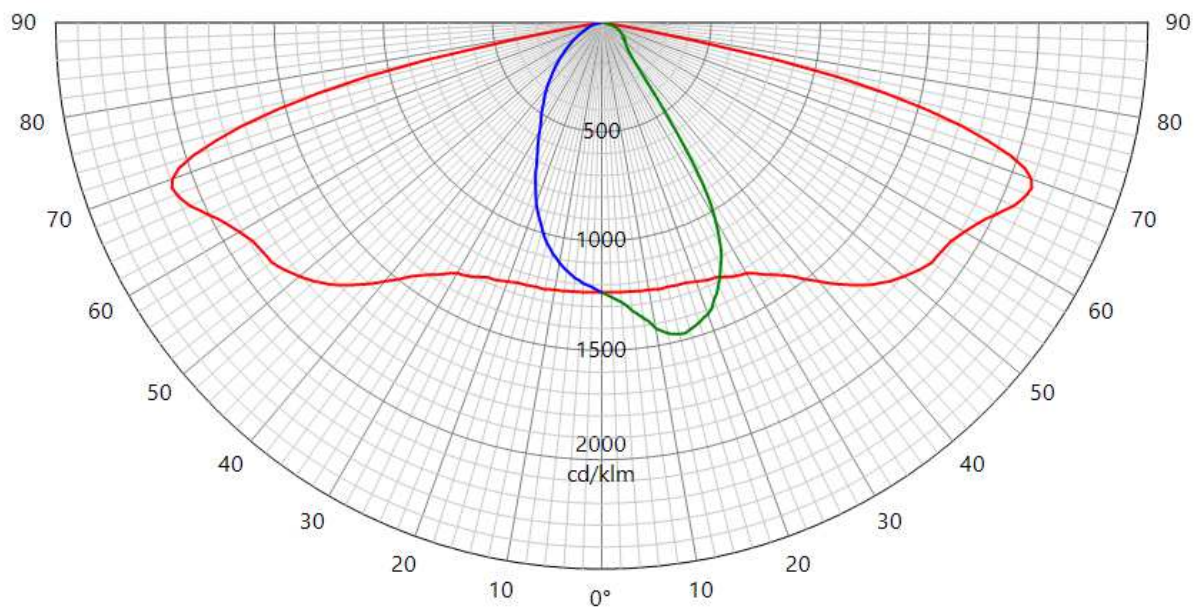


42550

LUMINOUS INTENSITY DIAGRAM

Origin TUNGSRAM-Schröder Zrt. Hungary		Production TUNGSRAM-Schröder Zrt. Hungary		Luminaire VOLTANA 0		Inclination 0°		Request # FD39019	
Source	Type LED	BIN 40-70M-4-TB-RB	Trademark Samsung	Reference LH351C	# LEDs 8	Reflector 5136			
Reflector	Schreder Led assembly Narrow Assembled 0.0°				No	5136			
Matrices	425505		Φ 0-90° = 3292lm - 90-180° = 0lm			Absolute measurement			
Protector Refractor Lens	Protector Glass Extra Clear Flat Smooth - VOLTANA 1 Lens 8 x Gaggione 5136 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 = 114.56 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	↕
5 - 175	2108	69	S	1234	25.4°	06-02-2019	
90	1472	15	D				
270	1234	0	G				



42550

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

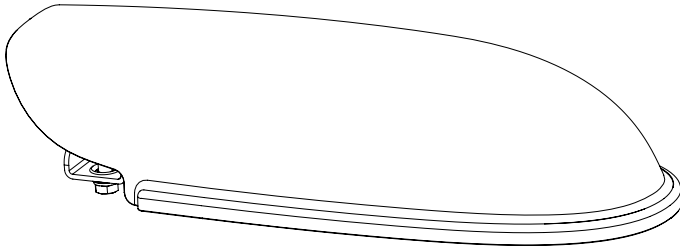
Type: Liquid in glass N63833

Calibration: traceable to LBT (Laboratoire Belge de Thermométrie)

Schröder

VOLTANA 0

Installation instructions



IEC
EN60598



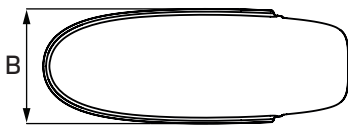
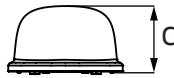
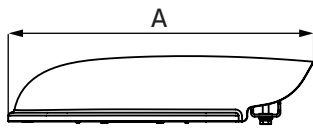
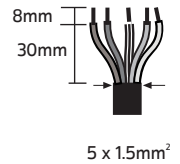
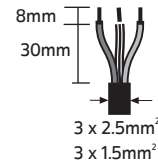
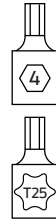
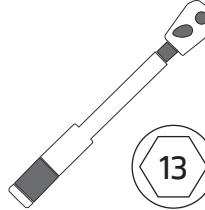
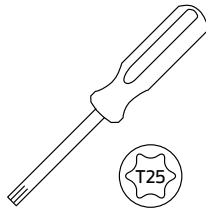
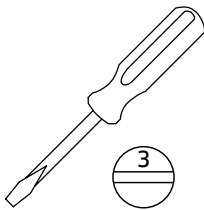
4-8m

350-1250mA
8-38W

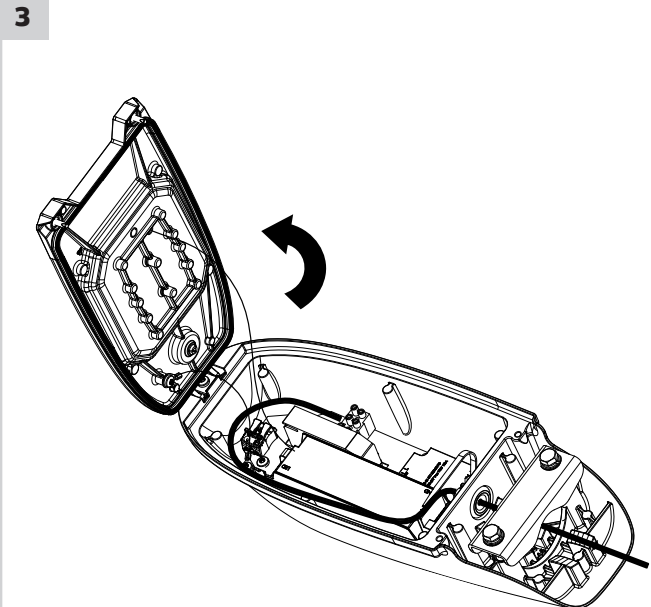
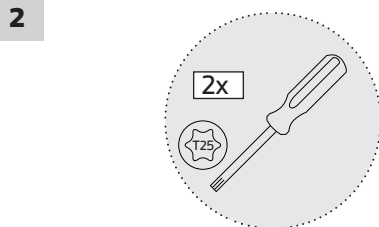
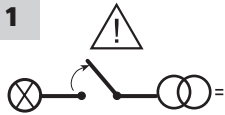
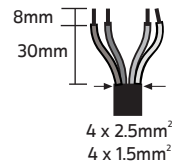
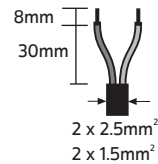
220-240V
50/60Hz

IP
66

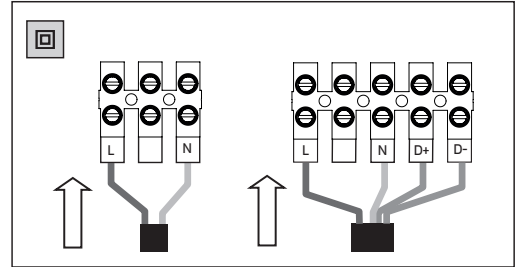
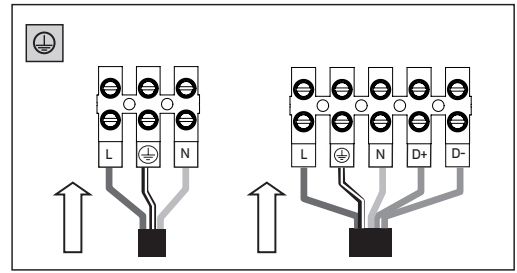
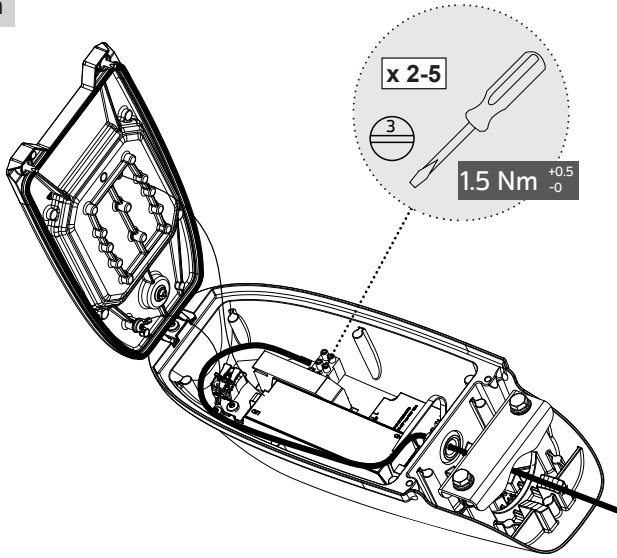
IK
08



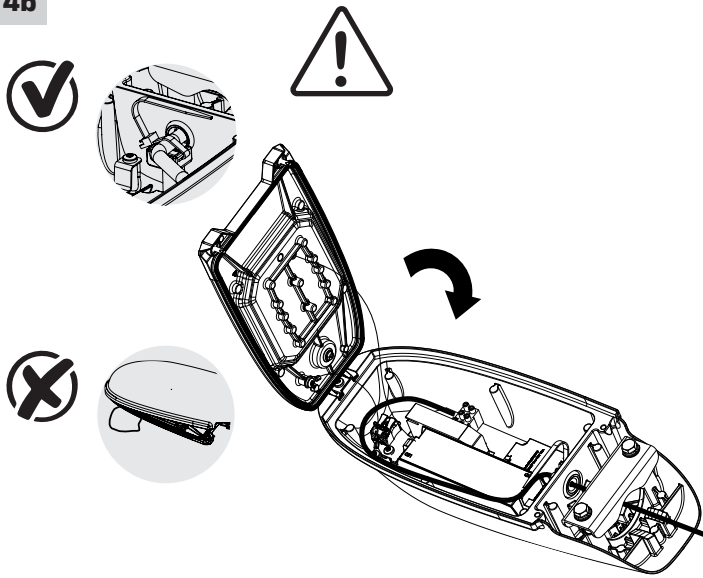
Voltana0	
A	416mm
B	156mm
C	91mm
	2.6kg
CxS	0.012m ²



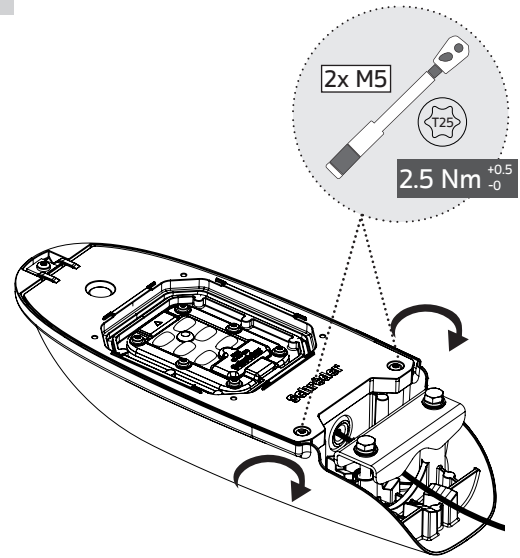
4a



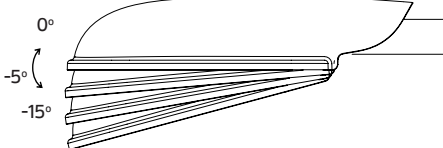
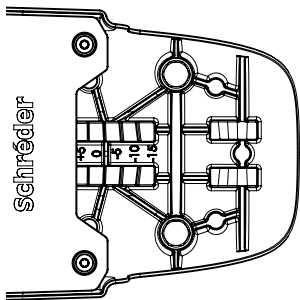
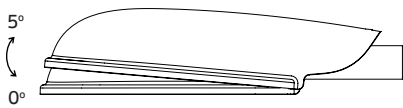
4b



4c

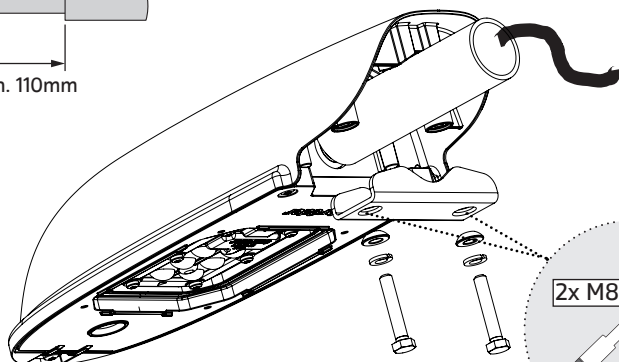
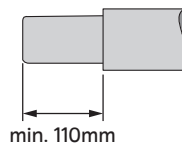


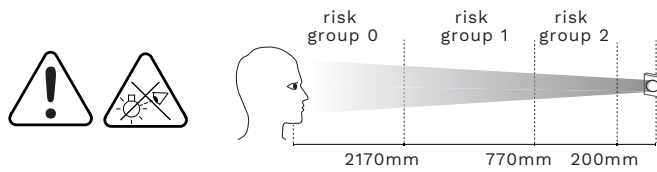
5



- 2x M8 x 70
- 2x M8 x 45

	Ø42	Ø48	Ø60
-10°			
-5°	M8 x 45		M8 x 70
0°			
+5°			





<p>SAFETY INSTRUCTIONS 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>RISK GROUP 2 - CAUTION! 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>Y-connection: 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>ISTRUZIONI DI SICUREZZA 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 qualifiche similari.</p> <p>Staccare sempre il filo della corrente prima di iniziare operazioni di installazione, manutenzione o riparazione.</p> <p>GRUPPO DI RISCHIO 2 - ATTENZIONE! 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>Collegamento Y: in caso di danneggiamento, il cavo deve essere sostituito esclusivamente dal costruttore, dal distributore o da un tecnico esperto per evitare rischi.</p>	<p>VEILIGHEIDSIJNSTRUCTIES 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>RISICOGROEP 2 - LET OP! 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>Y-verbinding: 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>SIKKERHEDSIJNSTRUKTIONER 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>Risikogrupper 2 - ADVARSEL! 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, undgåes.</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>Type Y montering: 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>SICHERHEITSHINWEISE 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>Risikogruppe 2 - VORSICHT! 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>Y-Verbindung: Falls die Leitung beschädigt ist, darf diese nur vom Hersteller, dem Händler oder einem Experten ersetzt werden, um Risiken zu vermeiden.</p>	<p>INSTRUKCJA BEZPIECZEŃSTWA 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>GRUPA RYZYKA 2 - OSTRZEŻENIE Produkt może emitować niebezpieczne promieniowanie optyczne szkodliwe 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>Połączenie Y: ze względów bezpieczeństwa uszkodzony przewód powinien zostać wymieniony wyłącznie przez producenta, dystrybutora lub wykwalifikowanego elektryka.</p>	<p>инструкция безопасности замену источника света для этого светильника должен выполнять только проив.водитель, сервисный агент производителя или специалист с аналогичной квалификацией.</p> <p>Перед проведением установки, сервисного обслуживания или ремонта всегда отключайте питание устройства.</p> <p>ГРУППА РИСКА 2 - ВНИМАНИЕ! Возможно опасное оптическое излучение от этого изделия. Не смотрите на источник света. Монтаж должен быть выполнен так, 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>Подключение Y: в случае повреждения кабеля его замена производится только производителем, дистрибутором или экспертом.</p>	<p>INSTRUCȚIUNI DE EXPLOATARE 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>GRUP DE RISC 2 - ATENȚIE! Este posibil ca acest produs să emită radiații optice periculoase. Nu priviți direct înspre lampa afată 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>Conexiune Y: În caz de deteriorare a firului, acesta trebuie înlocuit numai de către producător, distribuitor sau un expert, pentru evitarea riscurilor.</p>
<p>INSTRUCTIONS DE SECURITE 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>RISQUE GROUPE 2 - ATTENTION ! 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>Connexion Y: 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>INSTRUCCIONES DE SEGURIDAD 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>GRUPO DE RIESGO 2 - ¡PRECAUCIÓN! 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>Conexión en Y: si el cable se daña, solo debe reemplazarlo el fabricante, un distribuidor o un experto para evitar riesgos.</p>	<p>INSTRUÇÕES DE SEGURANÇA 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>GRUPO DE RISCO 2 - ATENÇÃO! 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>Ligação Y: 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>SÄKERHETSINSTRUKTIONER Ljuskällan som 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>Risikgrupp 2 - VARNING! 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>Typ Y-anslutning: 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>BIZTONSÁGI ÚTMUTATÓ A lámpatestben található fényforrást kizárólag a gyártó, szervizképviseelő vagy hivatalos szakszerviz szakembere cserélheti ki.</p> <p>A szerelés, karbantartás és javítás előtt minden esetben végezzen áramtalanítást.</p> <p>KOCKÁZATI CSOPORT 2 - VIGYÁZATI! A berendezés veszélyes optikai sugárzást bocsáthat ki! Ne nézzék 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>Y-csatlakozó: A sérült vezetékét kizárólag a gyártó, forgalmazó vagy szakember cserélheti ki a kockázatok elkerülése végett.</p>	<p>安全守则 该灯具内的光源仅可由维修人员、指定代理商或具备类似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。 风险群体 2 - 注意! 有害的光学射线有可能从产品中发出。不要直视正在工作的光源。有可能对眼睛产生危害。灯具应始终选择合理位置安装。尽可能避免长时间在0.77米以内凝视。 如果选择PVC主电缆，必须确保整个电缆有很好的保护以抵御恶劣气候状况，尤其是紫外线和雨水。而且要确保电缆被灯具和灯杆完全覆盖。 Y类附件： 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>інструкція безпеки Джерело світла, що міститься у цьому світільнику, повинен замінити лише виробник, його сервісний агент або кваліфікована особа. Завжди вимикайте живлення перед встановленням, доглядом або ремонтом. ГРУПА РИЗИКУ 2 - УВАГА! Можливість небезпечного 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 світільника та опори</p>	<p>UPUTSTVA 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>GRUPA RIZIKA 2 - PAŽNJA! Proizvod može emitovati štetno optičko zračenje. Izbegavati vizuelni kontakt sa svetlosnim izvorom dok je u radu. Moguće oštećenje vida. Svetiljku 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>Y-vezza: U slučaju oštećenja žice zamenu mora da obavi isključivo proizvođač, distributor ili stručnjak kako bi se izbegao rizik.</p>
<p>AR</p> <p>تعليمات السلامة: في حالة الحاجة لتغير مصدر الضوء، يتم ذلك من خلال الشركة المصنعة او الوكيل الممثل لعامل ذلك او شخص موهل لذلك. دائماً افضل الدائرة الكهربائية قبل تركيب او صيانة الجهاز. تحذير: هذا المنتج مصنف ضمن مجموعه الخطر 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 متوقعه. يجب على الشخص الذي يوصل الجهاز بالدائرة الكهربائيه التأكد من ان محمي من التيارات المناخيه و خاصه الاشعه فوق البنفسجيه و لمطر من خلال التأكد ان الكابل محوي بدائل العود و الجهاز في حالة الحاجة لتغير الملائك الداخليه، يتم ذلك من خلال الشركة المصنعة او الوكيل الممثل لعامل ذلك او شخص موهل لذلك. دائماً افضل الدائرة الكهربائيه قبل تركيب او صيانة الجهاز.</p>			

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VOLTANA 0

5136

Optic	5136
Protector	Flat glass
Source	8 Samsung LH351C
Matrix	425502




Characteristics

							
416	156	91	2.6	IP 66	IK 10	I EU	0.012
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 (%)	86.5	G Class (EN 13201-2)	G3	I 70-80-90-95 (cd)	550 - 98 - X - X
DLOR (%)	86.5	G* (EN 13201 2015)	G*2	CIE flux code N 1→5 (%)	50.4 - 79.8 - 97.6 - 100.0 - 86.5
ULOR (%)	0.0	Imax (cd)	554	Gradient 90°	34cd
ULR (%)	0.0	Aperture 0-180°	77 - 77	Gradient 270°	10cd
Incl ULR 4%	-45/45°	Aperture 90-270°	30 - 13		

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	1315	132	842	B1 U0 G0	230
8	NW 740	500	14	2096	1814	130	1161	B1 U0 G1	230
8	NW 740	700	19	2810	2432	128	1557	B1 U0 G1	230
8	NW 740	1000	29	3760	3254	112	2084	B1 U0 G1	230
8	NW 740	1050	29	3861	3341	115	2139	B1 U0 G1	230
8	NW 740	1250	37	4362	3775	102	2417	B1 U0 G1	230
8	WW 730	350	10	1440	1246	125	798	B1 U0 G0	230
8	WW 730	500	14	1986	1718	123	1100	B1 U0 G1	230
8	WW 730	700	19	2663	2304	121	1475	B1 U0 G1	230
8	WW 730	1000	29	3563	3083	106	1974	B1 U0 G1	230
8	WW 730	1050	29	3658	3165	109	2027	B1 U0 G1	230
8	WW 730	1250	37	4133	3576	97	2290	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

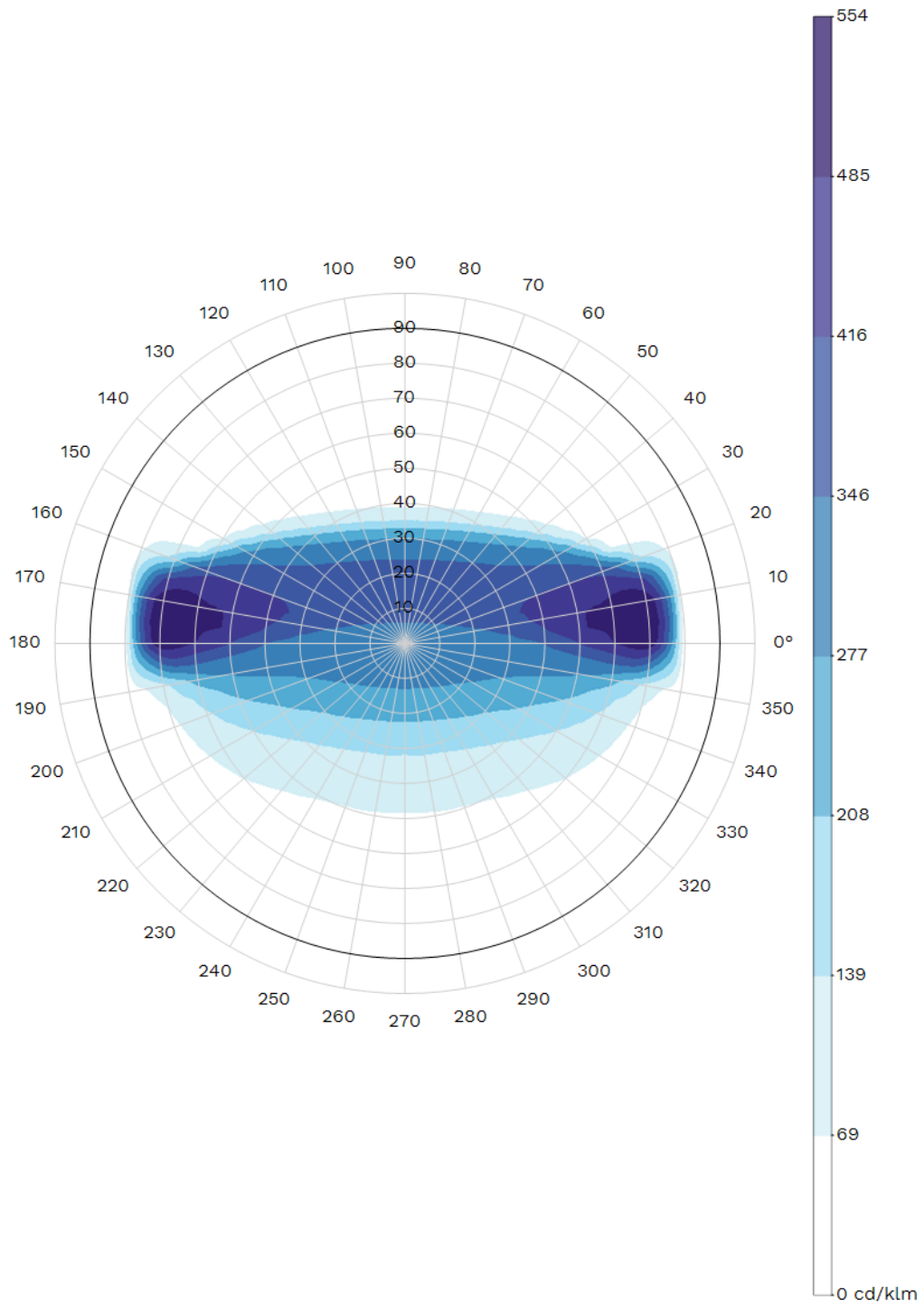
OPTIONS

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

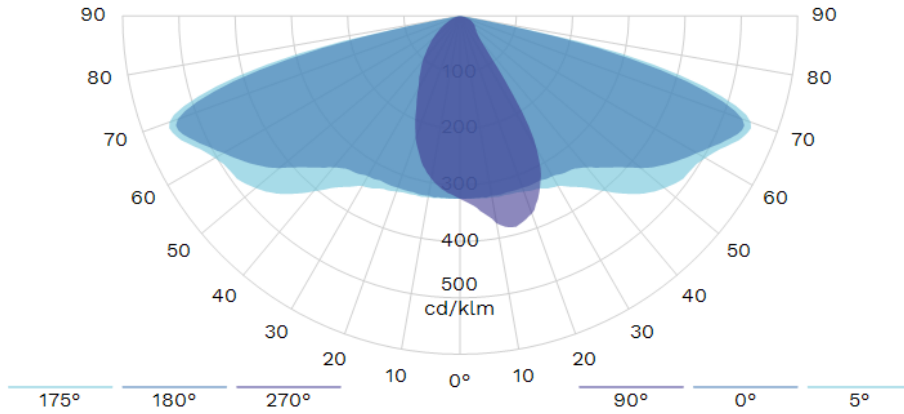
VOLTANA 0 - 5136 - 8 Samsung LH351C - Flat glass - 425502

10/06/2021

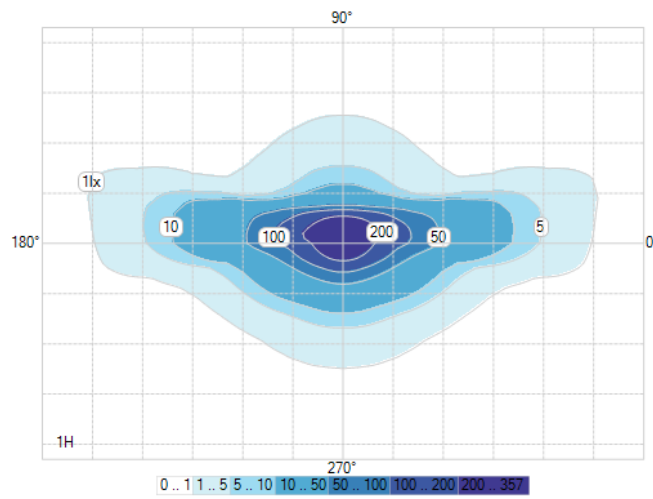
- Photocell



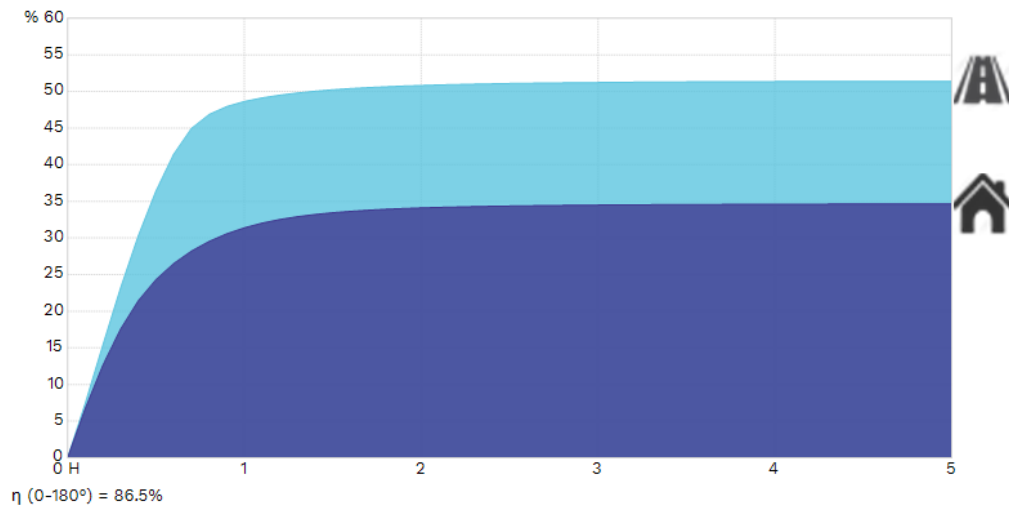
Polar/Cartesian diagram



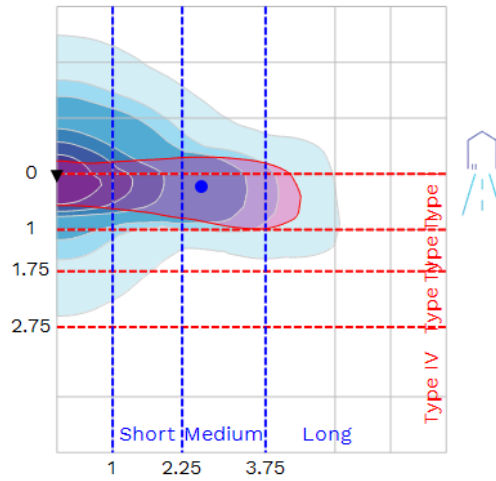
Isolux



K-Curve

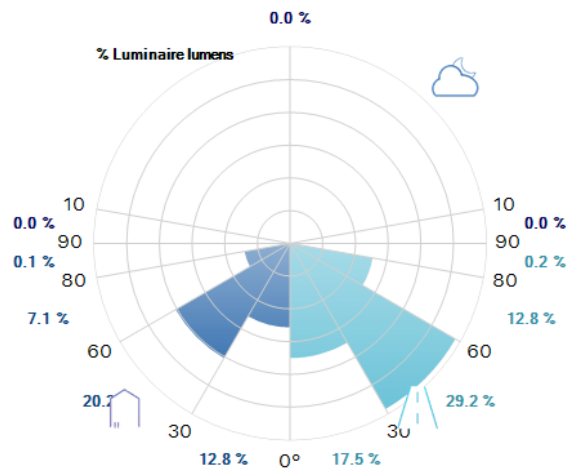


IES Roadway Classification / Nema Classification

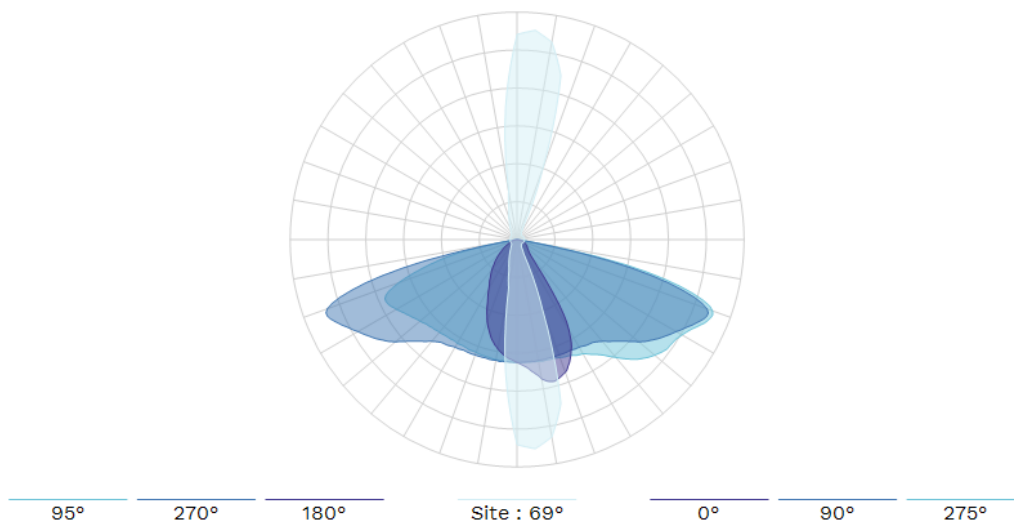


I - Medium

Luminaire classification system (LCS)



Intensity diagram in max Cone and in CPlane



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<http://www.schreder.com>

VOLTANA 0

5205

Optic	5205
Protector	Integrated lenses
Source	6 Samsung LH351C
Matrix	425712



Characteristics

416	156	91	2.6	IP 66	IK 09	I EU	0.012
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 (%)	89.5	G Class (EN 13201-2)	G3	I 70-80-90-95 (cd)	754 - 9 - X - X
DLOR (%)	89.5	G* (EN 13201 2015)	G*3	CIE flux code N 1→5 (%)	52.2 - 82.9 - 98.7 - 100.0 - 89.5
ULOR (%)	0.0	Imax (cd)	754	Gradient 90°	18cd
ULR (%)	0.0	Aperture 0-180°	27 - 27	Gradient 270°	8cd
Incl ULR 4%	-45/45°	Aperture 90-270°	7 - X		

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°									
6	NW 740	350	8	1140	1021	128	860	B1 U0 G0	230
6	NW 740	500	11	1572	1407	128	1185	B1 U0 G0	230
6	NW 740	700	15	2104	1884	126	1587	B1 U0 G0	230
6	NW 740	1000	22	2793	2500	114	2106	B1 U0 G1	230
6	NW 740	1050	23	2896	2592	113	2183	B1 U0 G1	230
6	WW 730	350	8	1080	967	121	814	B1 U0 G0	230
6	WW 730	500	11	1489	1333	121	1123	B1 U0 G0	230
6	WW 730	700	15	1994	1785	119	1503	B1 U0 G0	230
6	WW 730	1000	22	2646	2369	108	1995	B1 U0 G1	230
6	WW 730	1050	23	2743	2456	107	2068	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

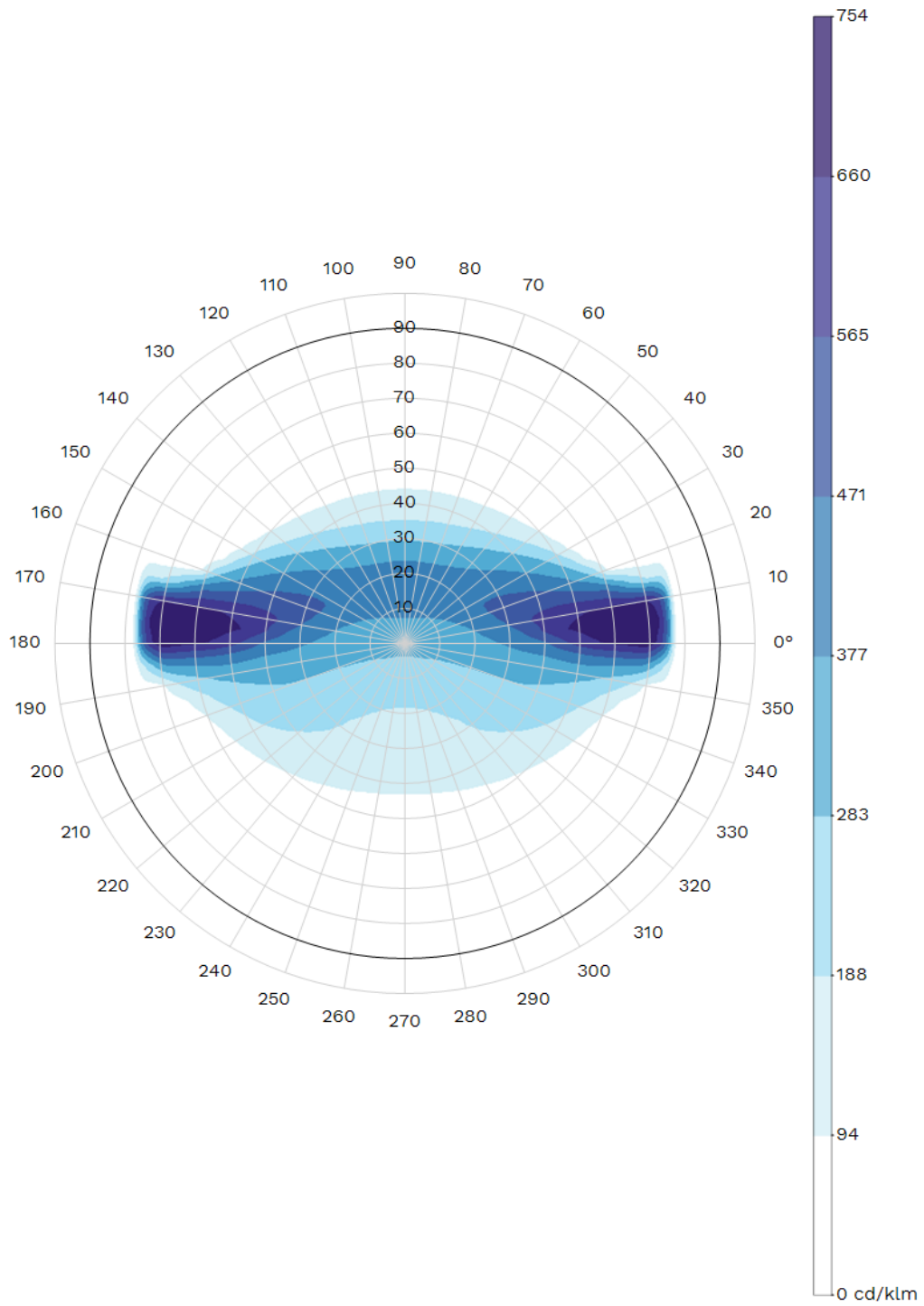
- CE
- ENEC
- LM79-80
- ROHS
- Certified for 3G vibration
- All measurements in ISO17025 accredited laboratory

OPTIONS

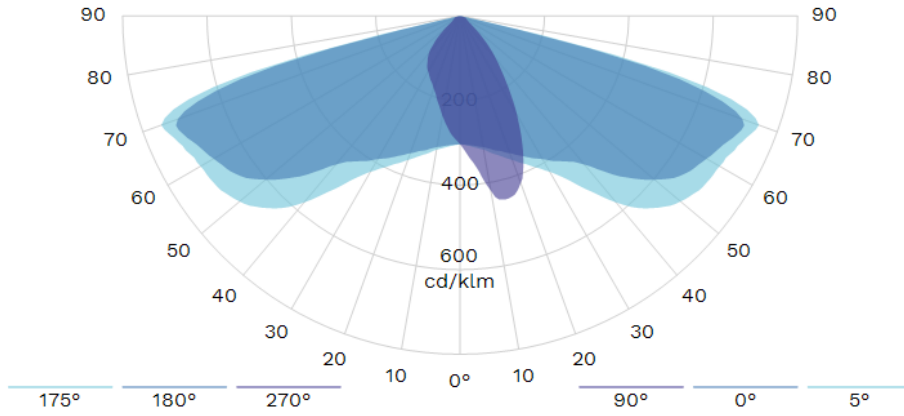
- Other RAL or AKZO colours
- Back Light control system
- OWLET remote management
- Custom dimming profile

VOLTANA 0 - 5205 - 6 Samsung LH351C - Integrated lenses - 425712

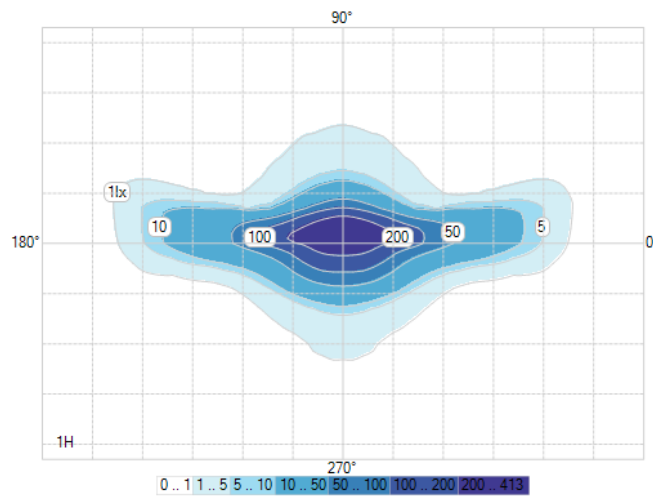
- Photocell



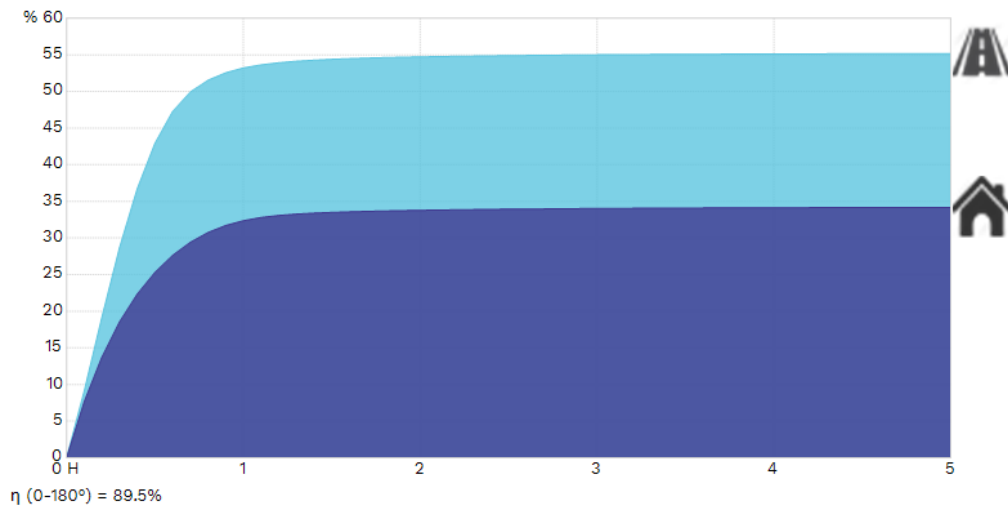
Polar/Cartesian diagram



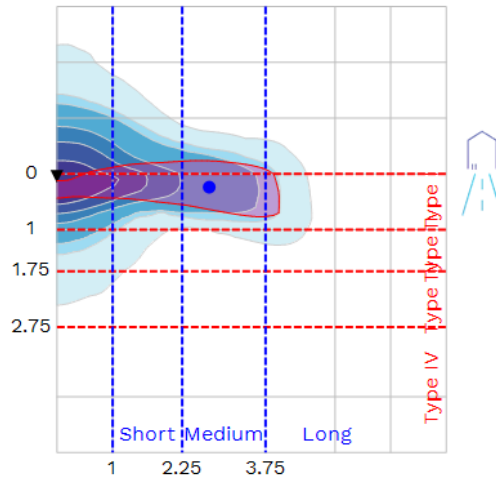
Isolux



K-Curve

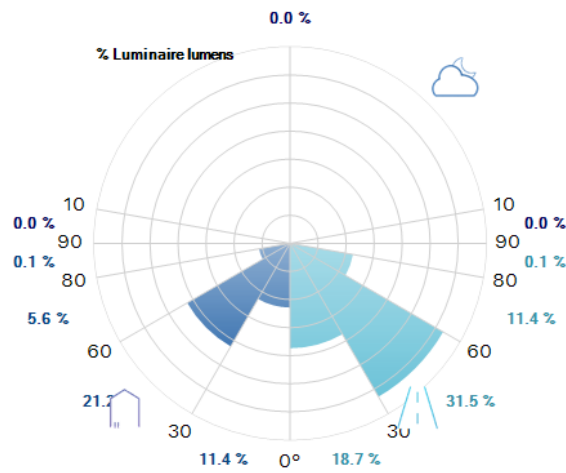


IES Roadway Classification / Nema Classification

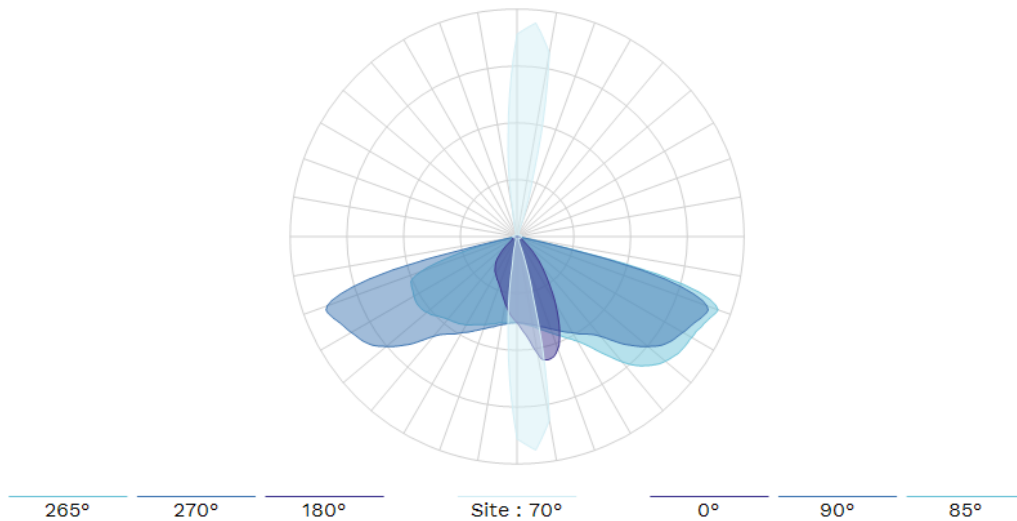


I - Medium

Luminaire classification system (LCS)



Intensity diagram in max Cone and in CPlane



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<http://www.schreder.com>

Voltana



Designer : Thomas Coulbeaut



Cea mai nouă, rentabilă și performantă gama de aparate de iluminat, care își acoperă investiția în timp

Voltana furnizează soluții de iluminare sustenabile, care scad semnificativ consumul de energie și îmbunătățesc nivelul de luminozitate. Gama Voltana poate oferi multiple intensități luminoase, mulțumită dimensiunilor sale diferite și celor 4 curenți conducători cu numeroase distribuții fotometrice, adaptate de la distribuții foarte înguste până la cele foarte late, potrivite pentru drumuri și spații deschise. Acest aparat de iluminat este proiectat așa încât să se fixeze în vârful stâlpului sau lateral, pentru întâmpinarea oricărui nevoi. Voltana poate fi asociat cu diferite opțiuni de control și poate opera într-o rețea independentă sau într-o rețea urbană globală, prin comunicații fără fir.

IP 66	IK 08	
	PLUS 02	005 certification
CE		



CĂI DE
CIRCULAȚIE
URBANĂ ȘI
STRĂZI



PODURI



PISTE DE
BICICLETE ȘI
PIETONALE



STAȚII DE TREN
ȘI METROU



PARCĂRI



ZONE EXTINSE



PIEȚE ȘI ZONE
PIETONALE



CĂI DE
CIRCULAȚIE ȘI
AUTOSTRĂZI

Descriere

Voltana este alcătuită dintr-un corp din aluminiu turnat sub presiune înaltă și o piesă de fixare din oțel cu una sau două cleme de fixare. Voltana este echipat cu motoare fotometrice LensoFlex®2, oferind performanțe fotometrice optimizate, cu un cost total minim.

Acest aparat de iluminat de înaltă eficiență este disponibil în cinci dimensiuni, pentru a oferi orașelor și un instrument ideal pentru a îmbunătăți nivelurile de iluminare, a genera economii de energie electrică, a reduce amprenta ecologică și a aduce coerență estetică.

În funcție de mărimea modelului, Voltana încorporează un număr diferit de LED-uri, de la 6 la 32, oferind o gamă largă de intensități luminoase.

Această gamă de aparate de iluminat poate fi montată cu ajutorul unei cleme de fixare universală, pe braț de Ø42-60mm. Datorită unui sistem de înclinare încorporat, unghiul poate fi ajustat la fața locului. Opțional, piesele de fixare universale sunt disponibile pentru brațe de la Ø42 până la Ø76mm pentru montaj lateral sau fixare în vârf de stâlp.



Adaptare precisă la fața locului datorită unui sistem de înclinare încorporat.



Voltana oferă acces ușor pentru mentenanță.



Voltana este disponibilă cu o gamă largă de fotometrii LensoFlex®2.



Voltana este disponibil cu piese universale de fixare pentru brațe de la Ø42 la Ø76mm (opțional).

TIPURI DE APLICAȚII

- CĂI DE CIRCULAȚIE URBANĂ ȘI STRĂZI
- PODURI
- PISTE DE BICICLETE ȘI PIETONALE
- STAȚII DE TREN ȘI METROU
- PARCĂRI
- ZONE EXTINSE
- PIEȚE ȘI ZONE PIETONALE
- CĂI DE CIRCULAȚIE ȘI AUTOSTRĂZI

AVANTAJE CHEIE

- Soluție de iluminat rentabilă și eficientă, pentru o recuperare rapidă a investiției
- Performanță ridicată, siguranță și confort
- 5 dimensiuni, pentru flexibilitate
- Grad de etanșeitate IP 66
- ThermiX®: rezistă la temperaturi ridicate
- Proiectat să încorporeze soluții de control din gama Owllet



LensoFlex^{®2}

LensoFlex^{®2} se bazează pe principiul adăugării distribuției fotometrice. Fiecărui LED îi este asociată o anumită lentilă, ceea ce generează distribuția completă a aparatului de iluminat. Numărul de LED-uri alături de curentul conductor, determină nivelul de intensitate al distribuției luminii.



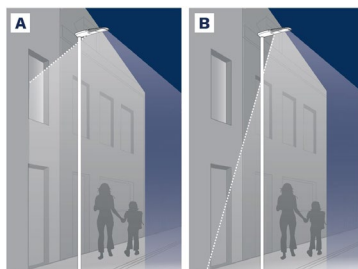
ProFlex[™]

Sistemul de distribuție luminoasă ProFlex integrează lentilele într-un difuzor de policarbonat. Această integrare crește fluxul luminos emis de aparatul de iluminat și reduce reflexiile în unitatea optică. Policarbonatul utilizat pentru ProFlex oferă următoarele caracteristici esențiale, claritate optică ridicată pentru transmiterea luminii, rezistență la impact ridicată, mai bună decât în cazul sticlei și o durată de viață mai mare cu tratamentul de stabilizare la UV. Conceptul ProFlex permite un design compact cu un compartiment optic mai subțire. Permite distribuții luminoase largi astfel încât distanța dintre stâlpi poate fi crescută.



Controlul luminii reziduale

Opțional, modulele LensoFlex^{®2} pot fi echipate cu un sistem de control Back Light. Această caracteristică suplimentară minimizează poluarea luminoasă din vecinătate în special asupra clădirilor.



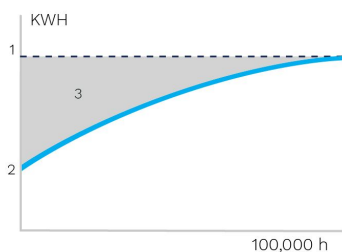
A. Fără controlul luminii reziduale | B. Cu controlul luminii reziduale



Flux luminos constant (CLO)

Acest sistem ajută la compensarea deprecierei fluxului luminos și la evitarea iluminării excesive la începutul vieții sistemului de iluminat. Deprecierea luminii în timp trebuie luată în considerare pentru a asigura un nivel de iluminare predefinit pe perioada duratei de viață economică a aparatului de iluminat.

Fără funcția CLO, înseamnă pur și simplu creșterea puterii inițiale pentru a compensa deprecierea fluxului luminos. Prin controlul precis al fluxului luminos, energia necesară pentru atingerea nivelului necesar poate fi menținută pe toată durata vieții corpului de iluminat.



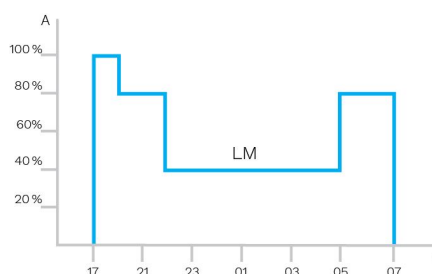
1. Nivel de iluminare standard | 2. Consum de energie electrică cu CLO | 3. Eficiență energetică



Profil personalizat de reducere a fluxului luminos

Driverile inteligente pot fi programate cu profile complexe de reducere a fluxului luminos. Sunt posibile până la cinci combinații de intervale de timp și niveluri de lumină. Această caracteristică nu necesită cablare suplimentară.

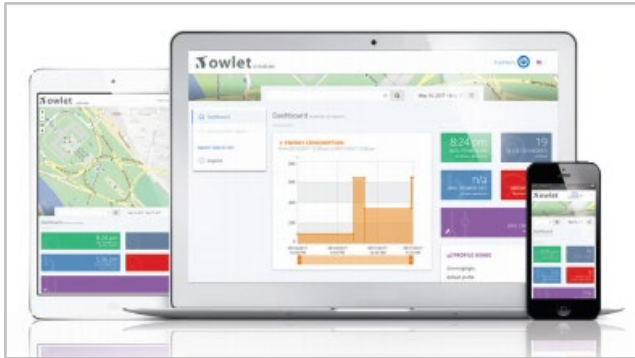
Perioada dintre pornire și oprire este utilizată pentru a activa profilul de reducere a fluxului luminos presetat. Sistemul personalizat de reducere a fluxului luminos generează economii mari de energie electrică, asigurând în același timp nivelul de luminanță optim și uniformitatea pe timpul nopții.



A. Nivel de reducere a fluxului luminos | B. Timp

Owlet IoT

Owlet IoT controlează de la distanță aparatele de iluminat dintr-o rețea de iluminat, creând oportunități pentru o eficiență îmbunătățită, date precise în timp real și economii de energie de până la 85%.



APARAT DE ILUMINAT COMPLET

Controlerul LUCO P7 CM include cele mai avansate caracteristici pentru gestionarea optimă a aparatelor de iluminat. De asemenea, oferă o fotocelă integrată și funcționează cu un ceas astronomic pentru adaptarea sezonieră a profilului de funcționare.

UȘOR DE INSTALAT

Datorită comunicării wireless, nu este nevoie de cablare. Rețeaua nu este supusă unor constrângeri sau limitări fizice.

Vă puteți extinde sistemul de iluminat în orice moment, de la o singură unitate de control la o rețea nelimitată.

Cu geolocalizare în timp real și detectare automată a aparatului de iluminat, punerea în funcțiune este rapidă și ușoară.

INTERFAȚĂ PRIETENOASA

Odată instalat controler-ul pe un aparat de iluminat, acestuia îi apar automat coordonatele GPS pe o hartă web.

Un tablou de bord ușor de utilizat permite fiecărui utilizator să organizeze și să personalizeze ecrane, statistici și rapoarte. Utilizatorii pot obține informații relevante, în timp real.

Aplicația web Owlet IoT poate fi accesată în orice moment din orice parte a lumii cu un dispozitiv conectat la Internet. Aplicația se adaptează dispozitivului pentru a oferi o experiență intuitivă și ușor de utilizat.

Notificările în timp real pot fi pre-programate pentru a monitoriza cele mai importante elemente ale sistemului de iluminat.



SIGUR

Sistemul Owlet IoT folosește o rețea locală wireless pentru a controla aparatele de iluminat la fața locului combinate cu un sistem de control de la distanță care utilizează serverul cloud pentru a asigura transferuri de date către și dinspre sistemul de gestionare centrală.

Sistemul folosește comunicarea criptată IP V6 pentru a proteja transmiterea datelor în ambele direcții. Folosind un APN sigur, Owlet IoT asigură un nivel ridicat de protecție.

În cazul excepțional al unei defecțiuni de comunicare, ceasul și fotocelulele astronomice încorporate vor prelua pentru a porni și opri aparatele de iluminat, evitând astfel o oprire completă pe timp de noapte.

EFICIENT

Datorită senzorilor și / sau setărilor preprogramate, scenariile de iluminare pot fi ușor adaptate pentru a face față evenimentelor în timp real, oferind niveluri potrivite de iluminare la momentul potrivit și la locul potrivit.

Controlerul de energie electrică integrat oferă cea mai înaltă precizie disponibilă pe piață astăzi, permițând decizii bazate pe cifre reale.

Feedback-ul precis în timp real și raportarea clară asigură că rețeaua funcționează eficient și că mentenanța este optimizată.

Când aparatele de iluminat cu LED sunt pornite, curentul de pornire poate crea probleme pentru rețeaua de electricitate. Owlet IoT include un algoritm pentru a proteja rețeaua în orice moment.

DESCHIS

Controlerul LUCO P7 CM poate fi conectat la priza standard NEMA cu 7 pini și funcționează fie printr-o interfață DALI sau 1-10V pentru a controla aparatul de iluminat.

Owlet IoT se bazează pe protocolul IPv6. Această metodă de adresare a dispozitivelor poate genera un număr aproape nelimitat de combinații unice pentru a conecta componente netradiționale la Internet sau rețeaua de calculatoare.

Prin API-urile deschise, Owlet IoT poate fi integrat în sistemele de gestionare globale existente sau viitoare.

INFORMAȚII GENERALE

Înălțimea de instalare recomandată	4m to 12m 13' to 39'
FutureProof	Înlocuire ușoară a modului fotometric și a compartimentului cu accesorii electrice la fața locului
Driver inclus	Da
Marca CE	Da
Certificat ENEC	Da
Certificat ENEC+	Da
Conform ROHS	Da
Legea franceză din 27 decembrie 2018 - Conform cu tipul aplicației	a, b, c, d, e, f, g
Certificat BE 005	Da
Standard de testare	LM 79-08 (toate măsurătorile efectuate în laborator acreditat ISO17025)

· Voltana 0 și Voltana 1 nu sunt certificate BE 005.

CARCASĂ AND FINISAJ

Carcasă	Aluminiu
Distribuție luminoasă	PMMA Policarbonat
Difuzor	Sticlă securizată Policarbonat
Carcasă finisaj	Vopsire în câmp electrostatic
Culoare	RAL 7038
Nivel de etanșeitate	IP 66
Rezistență la impact	IK 08
Test de vibrație	Conform standardului ANSI C 136-31, sarcina 3G Conform cu IEC modificat 68-2-6 (0,5G)
Acces pentru mentenanță	Prin slăbirea șuruburilor de pe capacul inferior

· La cerere, orice altă culoare RAL sau AKZO

· Difuzor din policarbonat (Proflex™) numai pentru versiunea cu 6 LED-uri a Voltana 0

CONDIȚII DE FUNCȚIONARE

Temperatura de funcționare (Ta)	- 30 ° C până la +50 ° C / -22 ° F până la 122 ° F luând în considerare efectul vântului
---------------------------------	--

· În funcție de configurația aparatului de iluminat. Pentru mai multe detalii, vă rugăm să ne contactați.

INFORMAȚII ELECTRICE

Clasa electrică	Class I EU, Class II EU
Tensiune nominală	220-240V – 50-60Hz
Factorul de putere (la sarcină maximă)	0.9
Protecție la supratensiuni (kV)	10
Compatibilitate electromagnetică (EMC)	EN 61547 / EN 61000-4-2, -3, -4, -5, -6, -8, -11
Protocol de control	1-10V, DALI
Opțiuni de control	Bi-power, Profil personalizat de reducere a fluxului luminos, Telegestiune
Priză	Optional priză NEMA 7 pini
Sistem(e) de control asociate	Owlet Nightshift Owlet IoT

· Priză Nema 7 pini, disponibilă doar pentru Voltana 2-3-4

INFORMAȚII FOTOMETRICE

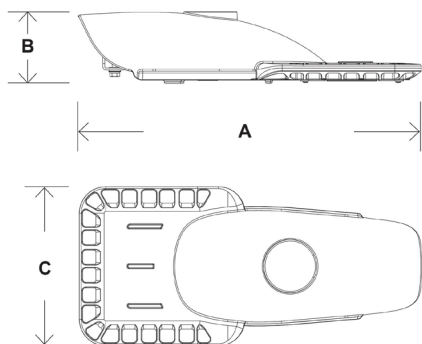
Temperatura de culoare LED	3000K (Alb cald 730) 3000K (Alb cald 830) 4000K (Alb neutru 740)
Indicele de redare a culorilor (CRI)	>70 (Alb cald 730) >80 (Alb cald 830) >70 (Alb neutru 740)
Procent flux luminos in emisfera superioară (ULOR)	0%

DURATA DE VIAȚA A LED-urilor @ TQ 25 ° C

Toate configurațiile	100,000h - L95
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DIMENSIUNI ȘI MONTAJ

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
Greutate (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
Rezistență aerodinamică (CxS)	VOLTANA 0 - 0.01 VOLTANA 1 - 0.02 VOLTANA 2 - 0.02 VOLTANA 3 - 0.02 VOLTANA 4 - 0.03
Posibilități de montaj	Montaj lateral - Ø42mm Montaj lateral - Ø48mm Montaj lateral - Ø60mm În vârf de stâlp prin alunecare - Ø42mm În vârf de stâlp prin alunecare - Ø48mm În vârf de stâlp prin alunecare - Ø60mm În vârf de stâlp prin alunecare - Ø76mm





Aparat de iluminat	Număr de LED-uri	Curent (mA)	Flux luminos al aparatului de iluminat (lm) Alb cald 730		Flux luminos al aparatului de iluminat (lm) Alb neutru 740		Putere electrică (W) *	Eficacitate aparat de iluminat (lm/W)	Distribuții luminoase
			Min	Max	Min	Max			
VOLTANA 0	6	350	900	900	1000	1000	7.6	132	
	6	500	1300	1300	1400	1400	10.7	131	
	6	700	1700	1800	1800	1900	15.1	126	
	6	1000	2300	2400	2500	2500	21.6	116	
	6	1050	2400	2400	2500	2600	22.6	115	
	8	350	1000	1200	1000	1300	9.8	133	
	8	500	1400	1700	1500	1800	13.7	131	
	8	700	1900	2300	2000	2400	18.9	127	
	8	1000	2500	3100	2700	3200	28.3	113	
	8	1050	2600	3200	2700	3300	29.3	113	
	8	1250	2900	3600	3100	3800	37.4	102	






Toleranță flux luminos ± 7%, toleranță putere totală aparat de iluminat ± 5 %



Aparat de iluminat	Număr de LED-uri	Curent (mA)	Flux luminos al aparatului de iluminat (lm) Alb cald 730		Flux luminos al aparatului de iluminat (lm) Alb neutru 740		Putere electrică (W) *	Eficacitate aparat de iluminat (lm/W)	Distribuții luminoase
			Min	Max	Min	Max			
VOLTANA 1	8	350	900	1200	900	1300	9.8	133	
	8	500	1200	1700	1300	1800	13.9	129	
	8	700	1700	2300	1800	2400	19.3	124	
	8	1000	2300	3000	2400	3200	28.3	113	
	8	1050	2400	3200	2500	3300	29.3	113	
	8	1250	2700	3600	2800	3800	37.4	102	
	8	1400	2900	3900	3100	4100	40.5	101	

Toleranță flux luminos ± 7%, toleranță putere totală aparat de iluminat ± 5 %



Aparat de iluminat	Număr de LED-uri	Curent (mA)	Flux luminos al aparatului de iluminat (lm) Alb cald 730		Flux luminos al aparatului de iluminat (lm) Alb neutru 740		Putere electrică (W) *	Eficacitate aparat de iluminat (lm/W)	Distribuții luminoase
			Min	Max	Min	Max			
VOLTANA 2	16	350	2000	2500	2100	2600	18.4	141	
	16	500	2700	3400	2900	3600	28.1	138	
	16	700	3700	4600	3900	4900	39.1	134	
	16	1000	4900	6200	5200	6500	53	123	
	16	1050	5100	6400	5400	6800	58	117	


Toleranță flux luminos $\pm 7\%$, toleranță putere totală aparat de iluminat $\pm 5\%$



Aparat de iluminat	Număr de LED-uri	Curent (mA)	Flux luminos al aparatului de iluminat (lm) Alb cald 730		Flux luminos al aparatului de iluminat (lm) Alb neutru 740		Putere electrică (W) *	Eficacitate aparat de iluminat (lm/W)	Distribuții luminoase
			Min	Max	Min	Max			
VOLTANA 3	24	350	3000	3700	3200	4000	26.4	152	
	24	500	4200	5200	4400	5500	38.1	144	
	24	700	5600	6900	5900	7300	54.5	134	
	24	1000	7400	9100	7800	9600	79	122	

Toleranță flux luminos ± 7%, toleranță putere totală aparat de iluminat ± 5 %



Aparat de iluminat	Număr de LED-uri	Curent (mA)	Flux luminos al aparatului de iluminat (lm) Alb cald 730		Flux luminos al aparatului de iluminat (lm) Alb neutru 740		Putere electrică (W) *	Eficacitate aparat de iluminat (lm/W)	Distribuții luminoase
			Min	Max	Min	Max			
VOLTANA 4	32	350	4000	5100	4300	5400	34.9	155	
	32	500	5500	7000	5900	7400	50.5	147	
	32	700	7400	9400	7800	9900	71	139	
	32	1000	9800	12400	10300	13100	101	130	

Toleranță flux luminos ± 7%, toleranță putere totală aparat de iluminat ± 5 %

