

SGS

LICENCE

No. 20254 replaces No.20142

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) : VOLTANA0 6 LED xx, VOLTANA0 8 LED xx

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: 15/03/2017

ir. C. Lana,
Certification Manager



© Only integral publication of this certificate, including the annex, is allowed

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



SGS Belgium NV-Division SGS CEBEC
Business Riverside Park
Bld Internationalelaan 55 Build. D
B-1070 Brussels
Tel.+32(0)2 556 00 20 Fax.+32(0)2 556 00 36

This certificate is issued by the company under its General Conditions for Certification Services accessible at http://www.sgs.com/terms_and_conditions.htm. Attention is drawn to the limitations of liability defined therein and in the Test Report herein mentioned which findings are reflected in this Certificate. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

SPECIFICATION OF THE CERTIFIED PRODUCT

Product data

Product	:	road, square, street, flood lighting
Trade name(s)	:	SCHREDER
Type(s)/Model(s)	:	VOLTANA0 6 LED xx, VOLTANA0 8 LED xx
description	:	Street lighting
rated voltage (Un)	:	200-240 V
rated frequency	:	50-60 Hz
class	:	class I
degree of protection	:	IP66
additional information	:	IK08
rated output current (In out)	:	max. 1050 mA

Additional information

xx = Color Temperature can be :
 NW neutral white
 CW cool white
 WW warm white

Product data - type VOLTANA0 6 LED xx

rated power	:	8-10-15-23 W
lamp(s)	:	6 LED
temperature class	:	Ta max. 50°C

Product data - type VOLTANA0 8 LED xx

rated power	:	11-14-20-31 W
lamp(s)	:	8 LED
temperature class	:	Ta max. 40°C

TESTS

Test requirements

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



Test results

The test results are laid down in test report(s) ref. P-1560-la

Remarks

This certificate is based on test reports Nos. P1560-la

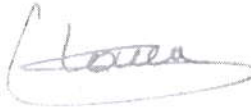
Conclusion

The examination proved that all test requirements were met.

Checked by, project leader : Christian Maes - 15/03/2017

Department Manager,
Product Certification :

Certification Manager :

 2017-03-15



FACTORY LOCATION(S)

Schröder do Brasil Iluminação Ltda.
Rua Iracema Lucas, 415
Distrito Industrial Vinhedo
13280-000 SAO PAULO
Brazil

Schreder TOV
Vul. Mykulynetska 46B
46000 TERNOPIL
Ukraine

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

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

Schröder Iluminação S.A.
Rua da Fraternidade Operária, nº 3
2795-491 CARNAXIDE, OEIRAS
Portugal

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

Tungsram-Schröder Világítási Berendezések Zrt
Tópart 2
2084 PILISSZENTIVAN
Hungary



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-0 / 6 led's / Moons PU025H105AQ 0-10V driver

Sample n°: P-E16371, P-E16375

Test purpose: Electrical measurements @ 1.05A

Remarks:

Test request n°: P-D16542

Folder n°: P-F16041

TEST CONDITIONS:

Operator: CLOSSET Frédéric

Load: 6 Led's
Typical Vf: 3,1 V

Driver: Moon's PU025H105AQ_0-10V Series

Power supply: Elgar ET3500 230V 50Hz

Measurement device: Fluke Norma 4000 HF power meter

CONCLUSIONS:



PF: 0.97

Efficiency: 82.1 %

THD: 9.1 %

Harmonics we are under the 25W => no measurements

Duplicate to: Mr M. Thijs
LAB 05/10/2016
L. Maghe

//P-16CR542



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-0 8 led's class II PHILIPS driver 40 W

Sample n°: P-E17149

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

Remarks:

Test request n°: P-D17187

Folder n°: P-F16041

TEST CONDITIONS:

Operator: EMC - ULg

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	
EN 61000-3-2	Class C a)	X	

Immunity

Standard	Limit / Level	Result	
		PASS	FAIL
EN 61000-4-2	4 kV at contact 2, 4 & 8 kV in the air Criteria B required	X	
EN 61000-4-3	3 V/m 80 MHz – 1 GHz AM 80 % 1 kHz Criteria A required	X	
EN 61000-4-4	1 kV 5 kHz Criteria B required	X	
EN 61000-4-5	0.5 & 1 kV MD Criteria C required	X	
EN 61000-4-5	Complementary levels 2, 4, 8 & 10 in MD Criteria C required	X	
EN 61000-4-6	3 V 150 kHz – 80 MHz AM 80 % 1 kHz Criteria A required	X	
EN 61000-4-11	0% U 0.5 period 70% U 10 periods Criteria B/C required	X	



VOLTANA-0 8 led's class II PHILIPS driver 40 W

Driver: Philips FP 40W 0.3-1A

EMC Auxiliaries: Varistors

CONCLUSIONS:



VOLTANA 0 8 led's driven by PHILIPS FP 40 W driver complies with the CISPR/EN 55015 and EN 61547 Standards.

Remark: Surge protection tested OK up to 10 KV for Differential mode for the equipment with eventual Fuse replacement.

Duplicate to: Mr Ph. Verbeeck
LAB 24/04/2014
G. Cheuvart

//P-17CR187



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 0 – 8 led's – Flat glass protector

Sample n°: P-E16377, P-E16394

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

Remarks:

Test request n°: P-D16575

Folder n°: P-F16041

TEST CONDITIONS:

Operator: BOMBIL Patrick

VOLTANA-0 8 led's with flat glass protector

Pre-conditioning: endurance test

Test	Result
IP6X : -Luminaire switched ON until stable T° -Talcum in suspension (blowing ON) -After 1', luminaire OFF -Talcum for 3 hours	OK
IPX6 : - Luminaire switched ON until stable T° - Luminaire switched OFF and immediately sprayed with water jet - Hose Ø 12,5 mm - Water pressure: 1 kg/cm2 - Spraying distance: 3 m - Duration of test: 3 minutes	OK

CONCLUSIONS:



VOLTANA-0 8 led's with flat glass protector complies with IP66 test following IEC/EN 60598-1 Standard.

Duplicate to: Mr M. Thijs
LAB 21/11/2016
L. Maghe

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//P-16CR575

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-0 equipped with 5205 & 5206 lenses

Sample n°: P-E16393, P-E16460

Test purpose: Mechanical impact resistance test following IEC/EN 62262 Standard

Remarks:

Test request n°: P-D16655

Folder n°: P-F16041

TEST CONDITIONS:

Operator: BOMBIL Patrick

VOLTANA-0 equipped with 6 led's

At pendulum hammer

5+2 impact points distributed on lens protector surface

One impact on each point

Test on 5 samples

Test

Result

IK08 : Impact energy: 5 joules
Hammer weight: 1,7 kg
Height of fall: 29,4 cm

OK for all tested samples

CONCLUSIONS:

VOLTANA 0 equipped with 5205 & 5206 lenses complies with IK08 test following IEC/EN 62262 Standard.

Duplicate to: Mr M. Thijs
LAB 23/11/2016
L. Maghe



//P-16CR655

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 0 – 6 led's NW @ 1050 mA

Sample n°: P-E16418

Test purpose: Photobiological safety tests following IEC-EN 62471 Standard

Remarks:

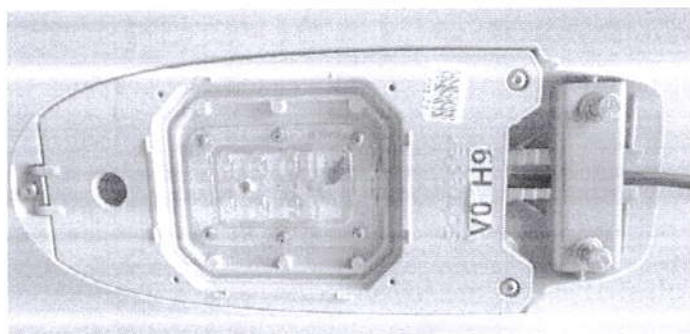
Test request n°: P-D17045

Folder n°: P-F16041

TEST CONDITIONS:

Operator: Laborelec

VOLTANA 0 – 6 led's NW @ 1050 mA



Test program:

Spectral radiance and irradiance measurements of the device under test in the following wavelength ranges:

- 200 to 400 nm : « Actinic UV skin & eye » irradiance
- 315 to 400 nm : « Eye UV-A » irradiance
- 300 to 700 nm : « Blue Light » radiance
- 380 to 1400 nm : « Thermal Retinal » radiance
- 780 to 1400 nm : « Thermal Retinal » radiance (weak visual stimulus)

Determination of the Risk Group classification for each hazard and recommendation about the marking of the product.

CONCLUSIONS:

RG2 @ 20 cm

RG1 @ 30 cm

Duplicate to: Mr Ph. Verbeeck

LAB 08/06/2017

G. Cheuvart

//P-17CR045



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-0 with Glass protector

Sample n°: P-E16420

Test purpose: Mechanical impact resistance test following IEC/EN 62262 Standard

Remarks:

Test request n°: P-D16604

Folder n°: P-F16041

TEST CONDITIONS:

Operator: BOMBIL Patrick

Glass thickness: 5 mm

At pendulum hammer

5 impact points distributed on protector surface

1 impact on clamp

One impact on each point

Test on 5 samples

Test

Result

IK08 : Impact energy: 5 joules
Hammer weight: 1,7 kg
Height of fall: 29,4 cm

OK for the 5 samples for all tested points

CONCLUSIONS:



VOLTANA 0 equipped with glass protector complies with IK08 test following IEC/EN 62262 Standard.

Duplicate to: Mr M. Thijs
LAB 07/11/2016
L. Maghe

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//P-16CR604

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-0 / 6 led's / Moons PU025H105AQ 0-10V driver

Sample n°: P-E16371, P-E16375

Test purpose: Thermal test @ 1050 mA following IEC/EN 60598-1 Standard

Remarks:

Test request n°: P-D16541

Folder n°: P-F16041

TEST CONDITIONS:

Operator: CLOSSET Frédéric



Load: 6 Led's

Driver: Moon's PU025H105AQ_0-10V Series

Tc: 90°C

Working temperature: -40 ~ +60°C according
To datasheet.

Measurement device:

Yokogawa TX10: thermal measurement

Yokogawa WT 210: primary EM

Fluke 87: Led's EM

Junction Temperature measurement method

Junction temperature measurement by base temperature measurement and electrical measurement.

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

CONCLUSIONS:

Ta (IEC): 55 °C limited by Driver

Tq (IEC): 35 °C limited by Driver

Tq given for 100 khrs of lifetime

T° given without wind effect to comply with IEC 62722-2-1

Duplicate to: Mr M. Thijs

LAB 06/10/2016

L. Maghe

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//P-16CR541



07/07/2020

VOLTANA 0

5206

Optic	5206
Protector	Integrated lenses
Source	6 Samsung LH351C
Matrix	425722



CHARACTERISTICS

416	156	91	2.6	IP 66	IK 08	I EU	0.012
Length (mm)	Width (mm)	Height (mm)	Weight (kg)	Tightness level*	Impact resistance*	Electrical class*	CxS (m²)

* According to IEC-EN60598 and IEC-EN62262

Key figures

5206 PRO FLEX is a 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 (%)	89.9	G Class (EN 13201-2)	G3	I 70-80-90-95 (cd)	503 - 28 - X - X
DLOR (%)	89.9	G* (EN 13201 2015)	G*3	CIE flux code N 1→5 (%)	47.4 - 81.3 - 98.6 - 100.0 - 89.9
ULOR (%)	0.0	Imax (cd)	625	Gradient 90°	15cd
ULR (%)	0.0	Aperture 0-180°	74 - 74	Gradient 270°	10cd
Incl ULR 4%	-45/45°	Aperture 90-270°	22 - 2		



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	1025	128	712	B0 U0 G0	230
6	NW 740	500	11	1572	1413	128	982	B1 U0 G0	230
6	NW 740	700	15	2104	1891	126	1315	B1 U0 G0	230
6	NW 740	1000	22	2793	2510	114	1745	B1 U0 G1	230
6	NW 740	1050	23	2896	2602	113	1809	B1 U0 G1	230
6	WW 730	350	8	1080	971	121	675	B0 U0 G0	230
6	WW 730	500	11	1489	1338	122	930	B1 U0 G0	230
6	WW 730	700	15	1994	1792	119	1245	B1 U0 G0	230
6	WW 730	1000	22	2646	2378	108	1653	B1 U0 G1	230
6	WW 730	1050	23	2743	2465	107	1714	B1 U0 G1	230

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



Summary

CONCEPT

Family of G 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 7035

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
- ULR: 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
- ENFC
- 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
- VOL TANA 0 - 5206 - 6 Samsung LH351C - Integrated lenses - 425722



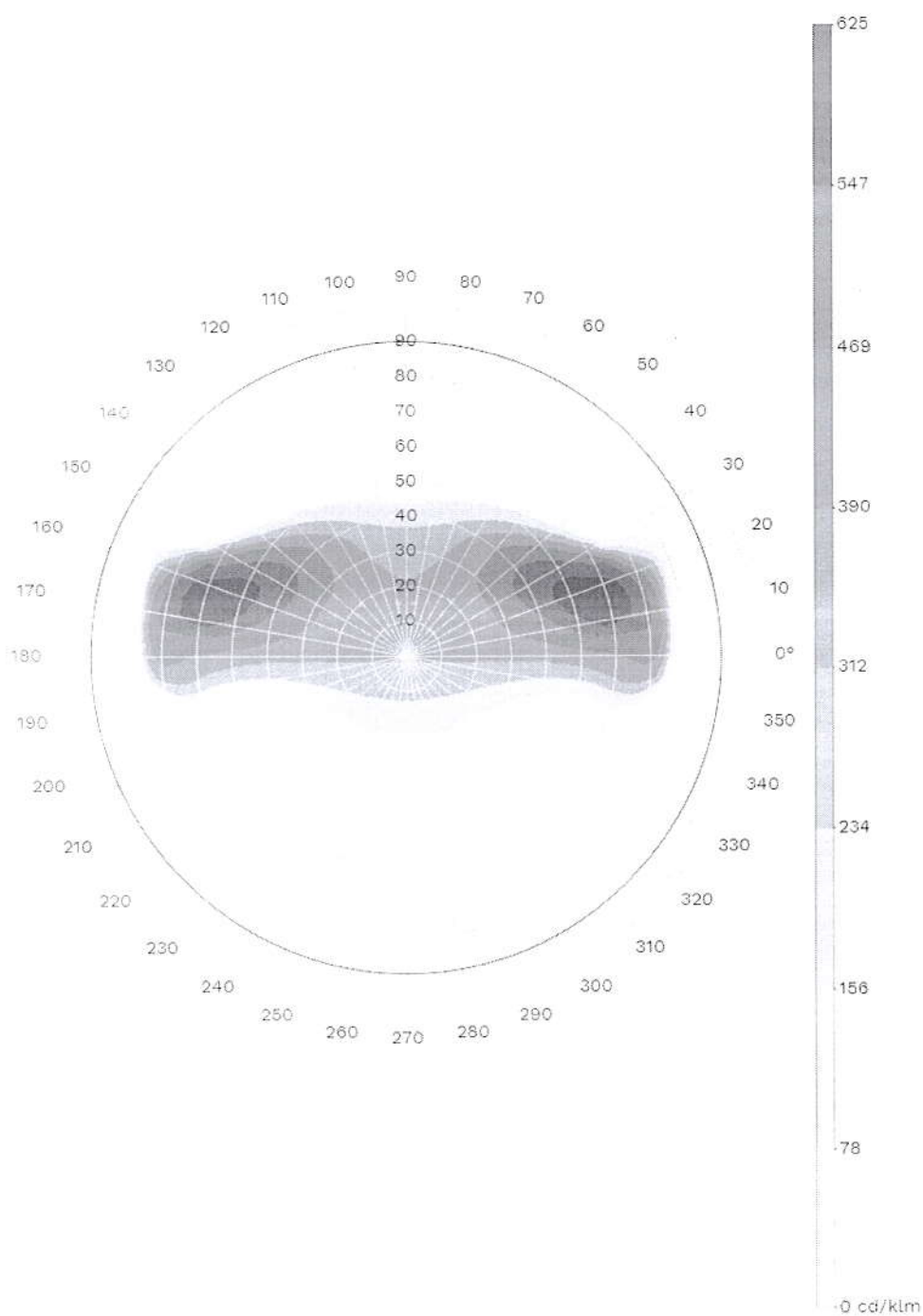
07/07/2020

Photocell

Schröder

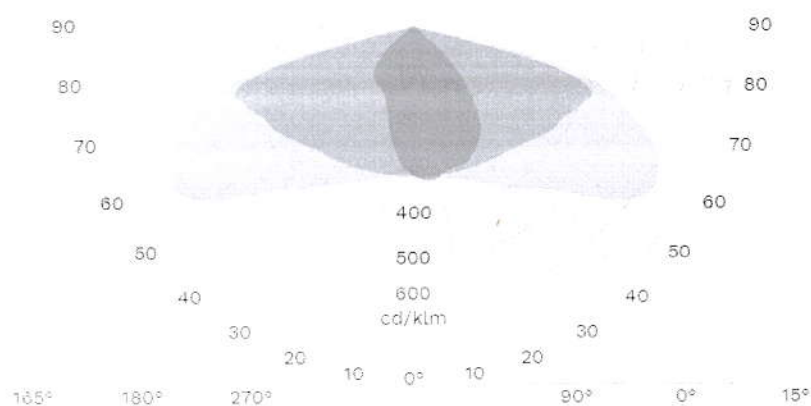
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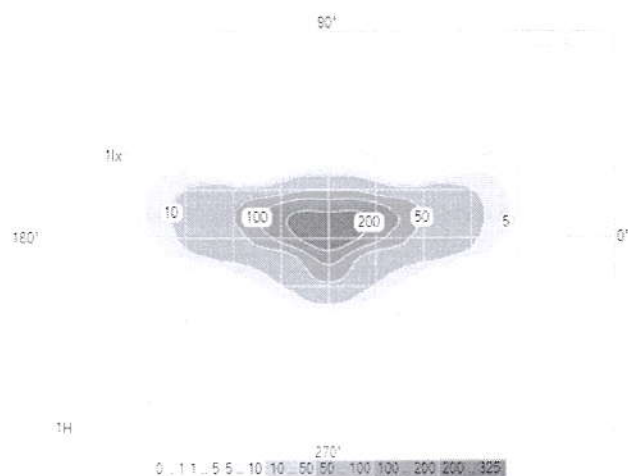


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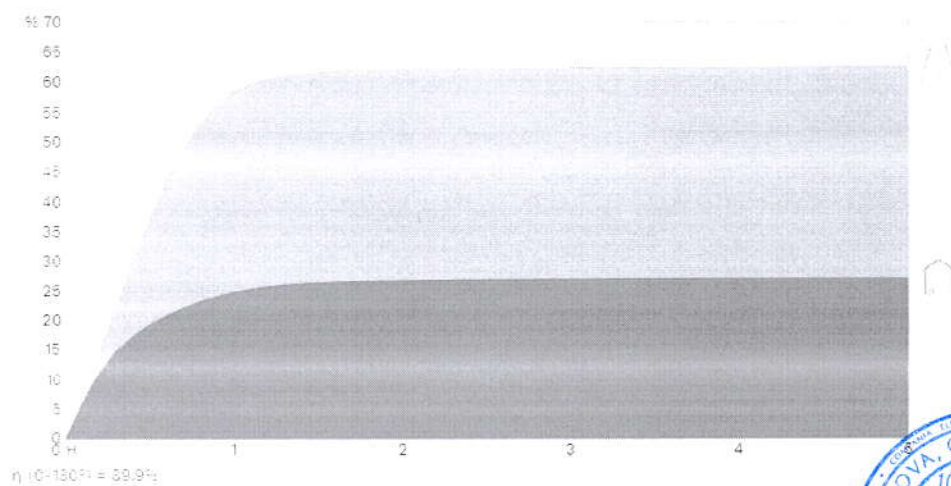
Polar/Cartesian diagram



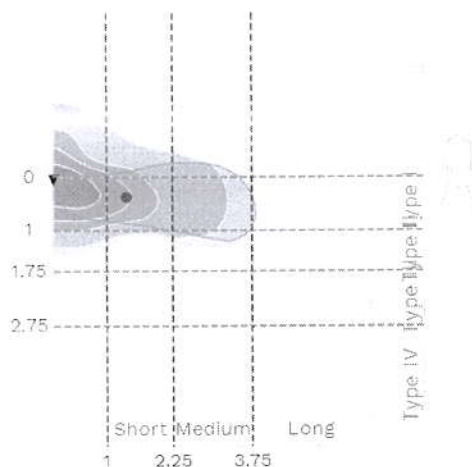
Isolux



K-Curve

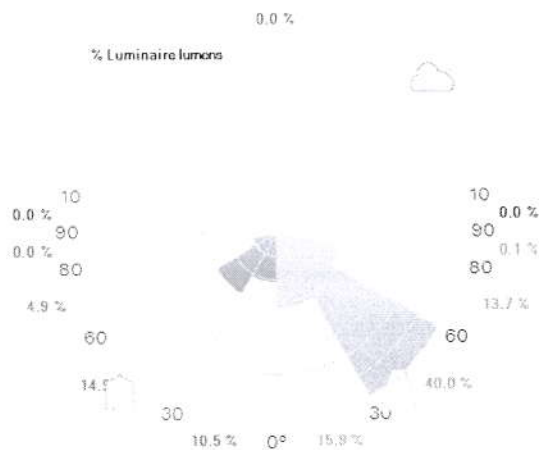


IES Roadway Classification / Nema Classification

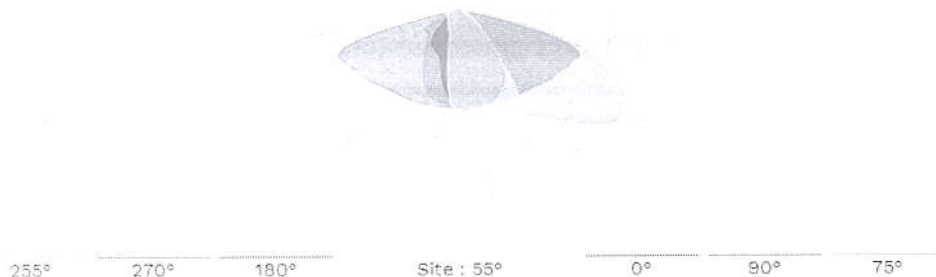


II - Short

Luminaire classification system (LCS)



Intensity diagram in max Cone and in CPlane



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<http://www.schröder.com>

VOLTANA 0 - 5206 - 6 Samsung LH351C - Integrated lenses - 425722



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 0**

Versiune: max. 8 LED-uri

Clasă electrică: I sau II

Balast: electronic

Tensiune nominală: 230V / 50Hz

Caracteristici: Max. 1000mA

Etanșeitate compartiment optic: IP 66

Etanșeitate compartiment aparataj: IP 66

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)
- EN 60598-2-1 (1979)
- EN 60598-2-3 (2003 + A1 2011)
- EN 61547 (2009)
- EN 61347 (2015)
- EN 55015 (2013)
- EN 61000-3-2 (2014) & 3-3 (2013)
- EN 62471 (2008)
- EN 62493 (2010)
- 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,
Martie 2019, Cluj-Napoca



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

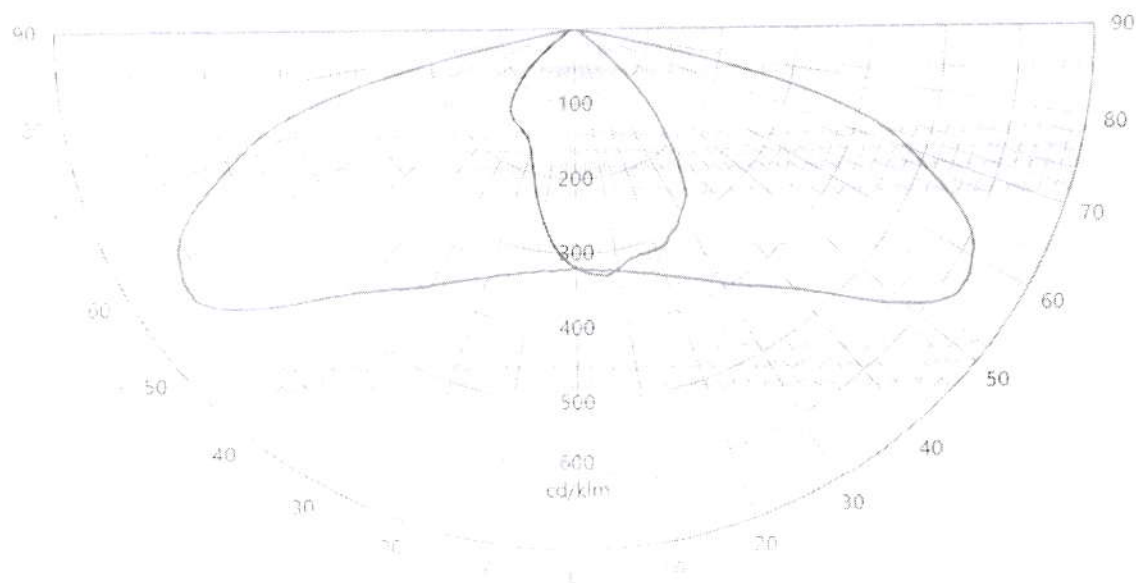
Origin TUNGSRAM-Schröder Zrt. Hungary	Production TUNGSRAM-Schröder Zrt. Hungary	Luminaire VOLTANA 0	Inclination 0°	Request # FD39022
Type LED	BIN 40-70M-4-TB-RB	Source Trademark Samsung	Reference LH351C	# LEDs 6
Master	Reflector DKI Led assembly Road lighting Injected 0.0°	Reflector No		5206
Protector Refractor Lens				
Protector integrated lenses Lens: DKI 5206 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 5206 Flux coefficient multiplier (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	42572
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LUMINOUS INTENSITY DIAGRAM

Origin TUNGSRAM-Schreder Zrt. Hungary		Production TUNGSRAM-Schreder Zrt. Hungary		Luminaire VOLTANA 0		Inclination 0°		Request # FD39022	
Source	Type	BIN	Trademark	Reference	# LEDs	Reflector			
LED	4400K	4400M4-4B-BB	Samsung	LH551C	6	5206			
Reflector						No	5206		
Matrices	425722	$\eta(0-90) = 89.9\% - 90.180 = 0.0\%$				Relative measurement			
Protector Refractor Lens	Protector integrated lenses Lens 6 x D91 5206 PC								
Observation	Light losses due to thermal stabilisation: 1% Electrical measurement on LED (#1): Voltage = 16.83 V Current = 0.350 A Power = 5.88 W Electrical measurement on driver (#1): Voltage = 230.00 V Current = 0.037 A Power = 7.98 W PF = 0.936 Total luminaire power = 7.98 W Driver #1: Philips Titanium EP 22W 0.3-1.0A SNLDAE 230V S175 x1 S175 x1 PCB 00-71-626 A								
Plane	I Peak	Peak position	Index	I zero	Laboratory ambient t°	Measurement date			
0°	100%	55	5	216	24.0°	07-02-2019			

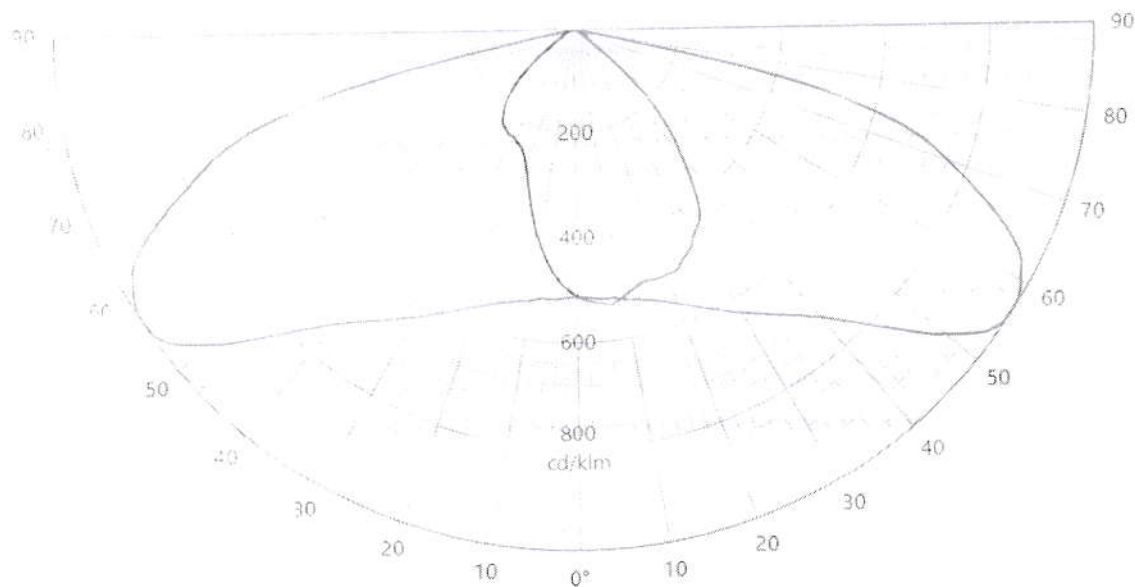


42572

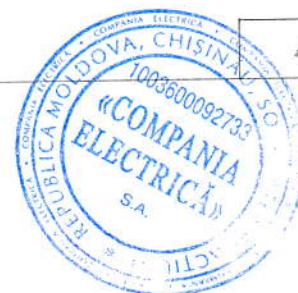


LUMINOUS INTENSITY DIAGRAM

Origin TUNGSRAM-Schreder Zrt. Hungary		Production TUNGSRAM-Schreder Zrt. Hungary		Luminaire VOLTANA 0		Inclination 0°		Request # FD39022	
Type LED		BIN 40-20M-4-1B-R8		Trademark Samsung		Reference LH351C		# LEDs 6	
Reflector		DKI Led assembly Road lighting Injected 0.0°		No		5206			
Matrices		425723		$\Phi 0-90^\circ = 143.4 \text{ lm}$		$90-180^\circ = 0 \text{ lm}$		Absolute measurement	
Protector Refractor Lens		Protector integrated lenses							
Observation		Measurement at 25°C @ 500 mA Light losses due to thermal stabilisation: 1.75% $I_{\text{peak}} = 1000 \text{ cd}$ $I_{\text{avg}} = 1000 \text{ cd}$ $I_{\text{max}} = 1000 \text{ A}$ $I_{\text{avg}} = 1000 \text{ W}$ $I_{\text{peak}} = 1000 \text{ cd}$ $I_{\text{avg}} = 1000 \text{ cd}$ $I_{\text{max}} = 1000 \text{ A}$ $I_{\text{avg}} = 1000 \text{ W}$ Total luminaire power = 10.97 W : Lm/Watt = 130.70 lm/W Driver #1 - Philips Titanium FP 22W 0.3-1.0A 5NLD AE 230V S175 sXt S175 sXt PCB 00-71-626 A							
Plane	I Peak	Peak position	Index	I zero	Laboratory ambient t°	Measurement date			
0°	1000	0°	3	511	24.9°	07-02-2019			
270	511	0	G						



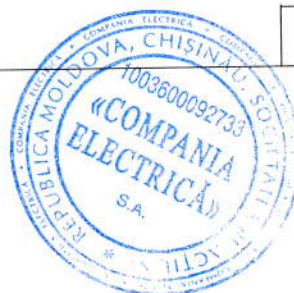
42572



LUMINOUS INTENSITY DIAGRAM

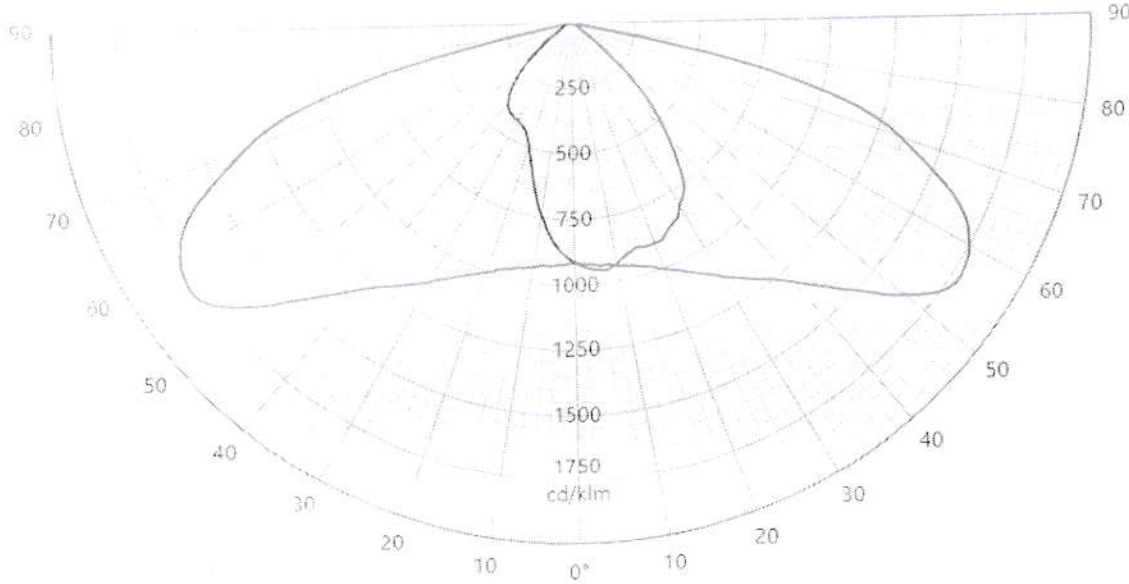
Origin TUNGSRAM-Schröder Zrt. Hungary		Production TUNGSRAM-Schröder Zrt. Hungary		Luminaire VOLTANA 0		Inclination 0°		Request # FD39022	
Source	Type LED	BIN 40-70M-4-TB-RB	Trademark Samsung		Reference LH351C	# LEDs 6	Reflector 5206		
Reflector	DKI Led assembly Road lighting Injected 0.0°					No	5206		
Matrices	425724 Φ 0-90° = 1919lm - 90-180° = 0lm					Absolute measurement			
Protector Refractor Lens	Protector integrated lenses Lens 6 x DKI 5206 PC								
Observation	Matrix in total flux @700 mA Light losses due to thermal stabilisation : 2.6 % Electrical measurement on LED (#1): Voltage = 17.51 V Current = 0.700 A Power = 12.27 W Electrical measurement on driver (#1): Voltage = 230.00 V Current = 0.067 A Power = 15.15 W PF = 0.977 Total luminaire power = 15.15 W : Lm/Watt = 126.68 lm/W Driver #1: Philips Xitanium FP 22W 0.3-1.0A SNLDAE 230V S175 sXt S175 sXt PCB 00-71-626 A								
Plane	I Peak	Peak position	Index	I zero	Laboratory ambient t°	Measurement date			
15 - 165	1342	57	S	686	24.9°	07-02-2019			
90	713	6	D						
270	686	0	G						

42572



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 5206		
Reflector	DKI Led assembly Road lighting Injected 0.0°					No	5206		
Matrices	425725 Φ 0-90° = 2548lm - 90-180° = 0lm					Absolute measurement			
Protector Refractor Lens	Protector integrated lenses Lens 6 x DKI 5206 PC								
Observation	Matrix in total flux @1000 mA Light losses due to thermal stabilisation: 3,7 % Electrical measurement on LED (#1): Voltage = 17,96 V Current = 1,000 A Power = 17,96 W Electrical measurement on driver (#1): Voltage = 230,00 V Current = 0,096 A Power = 21,80 W PF = 0,987 Total luminaire power = 21,80 W : Lm/Watt = 116,87 lm/W Driver #1 : Philips Xitanium FP 22W 0,3-1,0A SNLDAE 230V S175 sXt S175 sxt PCB 00-71-626 A								
Plane	I Peak	Peak position	Index	I zero	Laboratory ambient t°	Measurement date			
15 - 165	1783	56	S	914	24,9°	07-02-2019			
90	952	7	D						
270	914	0	G						



42572



CONFORMITY STATEMENT

Measurement fulfil Standards:

NEN EN 13032-1
 NEN-EN 13032-4
 NEN-EN 17035-2005
 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
 .dnt format (international schreder format)
 .edf format (European standard)
 .IES format (American standard)

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

Intensity measurement: $\pm 3\%$
 Angle: $\pm 0.5^\circ$
 Flux: $\pm 2.5\%$
 Electrical DC
 Power: $\pm 0.25\%$
 Voltage: $\pm 0.15\%$
 Current: $\pm 0.15\%$
 Electrical AC
 Power: $\pm 0.15\%$
 Voltage: $\pm 0.3\%$
 Current: $\pm 0.3\%$
 Temperature: $\pm 0.55\%$



ISP2000	JET1	
CCT	$\pm 5\%$	$\pm 7.5\%$
CRI	$\pm 2\%$	$\pm 2.75\%$
R/S	$\pm 2\%$	$\pm 4.8\%$

Imp/Watt $\pm 3.5\%$

Imp/Watt against current (0.1-100)

Type "F" 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)
 Radiometric test distance: By default 10 meter, on request 30 meter.

Forming of

Type "F"
 Manufacturer: Technoteam Bildverarbeitung, Werner-von-Siemens-Strasse 5 98693 Ilmenau, Germany
 Calibration: traceable to BIPM (Bureau International des Poids et Mesures F-Sèvres)
 Radiometric test distance: Near Field

Sphere n°1

4p geometry
 Manufacturer: LMT Lichtmesstechnik GmbH, Helmholtzstrasse 9 10587 Berlin, Germany
 Type: SP2000 + 1000 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

Hand-held portable spectroradiometer

Hand-held portable spectroradiometer
 Manufacturer: Brüel-Kjær, Høje Taastrup, Denmark
 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)

Thermocouples

Manufacturer: Cision
 Type: Liquid in glass N62813
 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_52.xml



226 - TEST

NBN EN ISO/IEC 17025 : 2005

LEDs

Trademark : Samsung

Type : LH351C

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

Part number : Unknown

Color or CCT (Theoretical) : NW

Number of LEDs : 6

Entry number : 39R004-2

Power (Catalogue) : 0,00 W

Flux : 0 lm/LED

Lenses

Trademark : None

Type : None

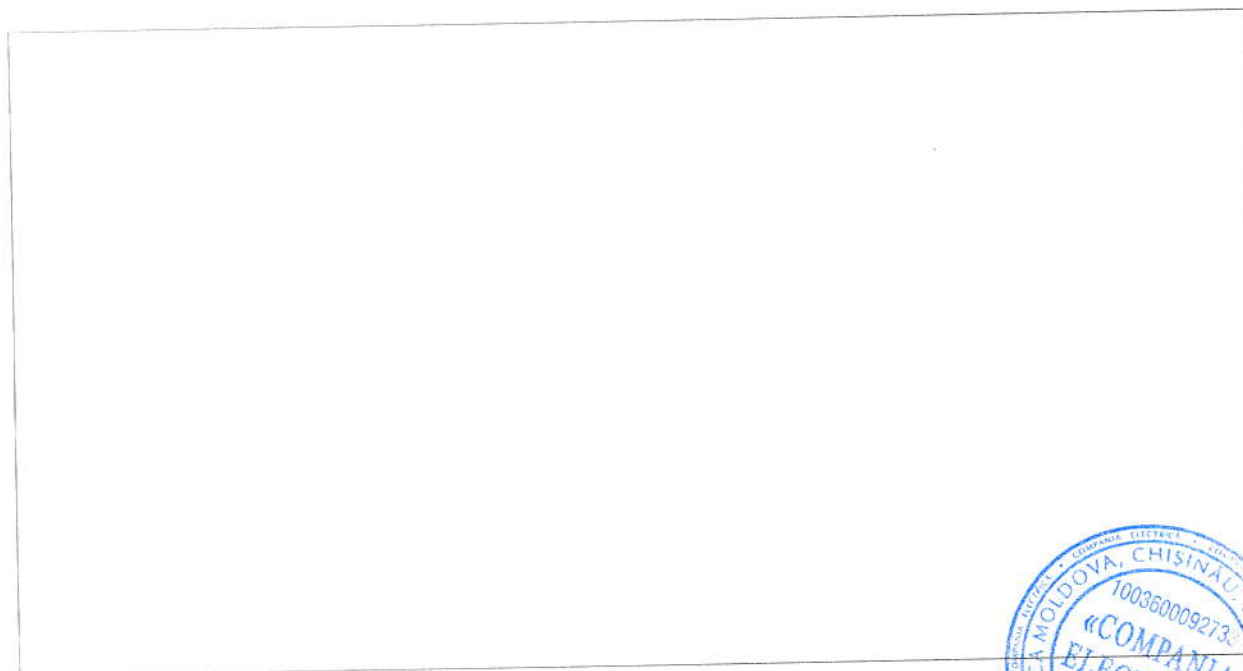
Power & Print

Type : DELTA SM400-AR-4

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

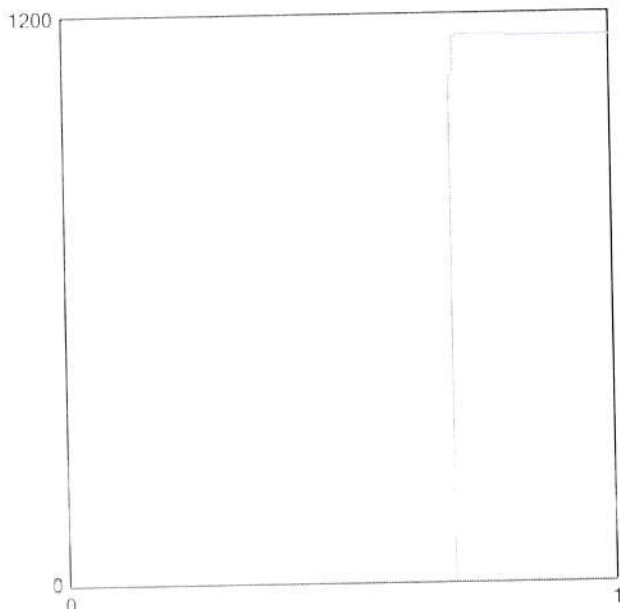
Active ☐

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



226 - TEST

Approved by :

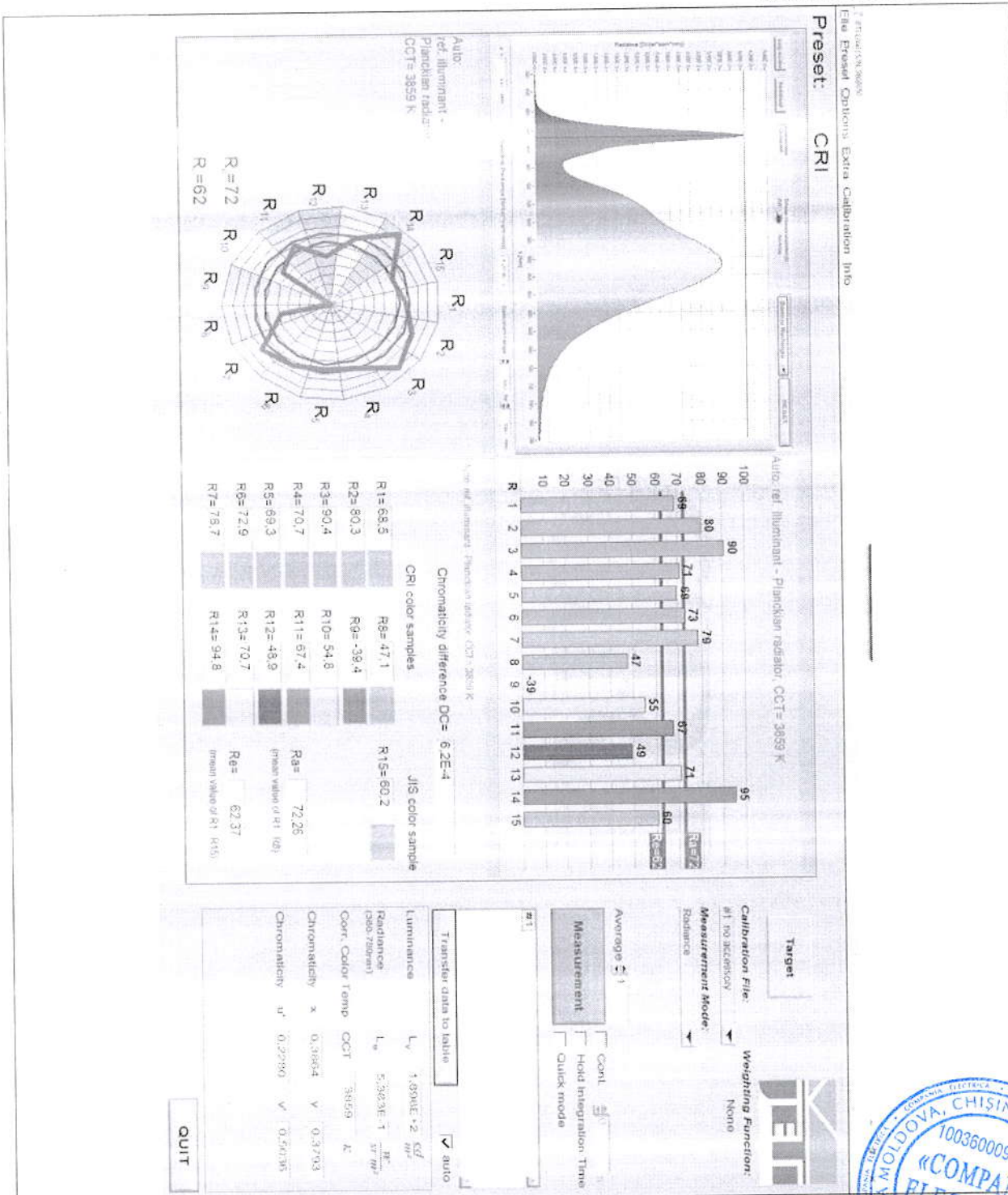
LED 2019/52 2/3

Colorimetry



226 - TEST

NBN EN ISO/IEC 17025 : 2005



Lumen maintenance report

LED information

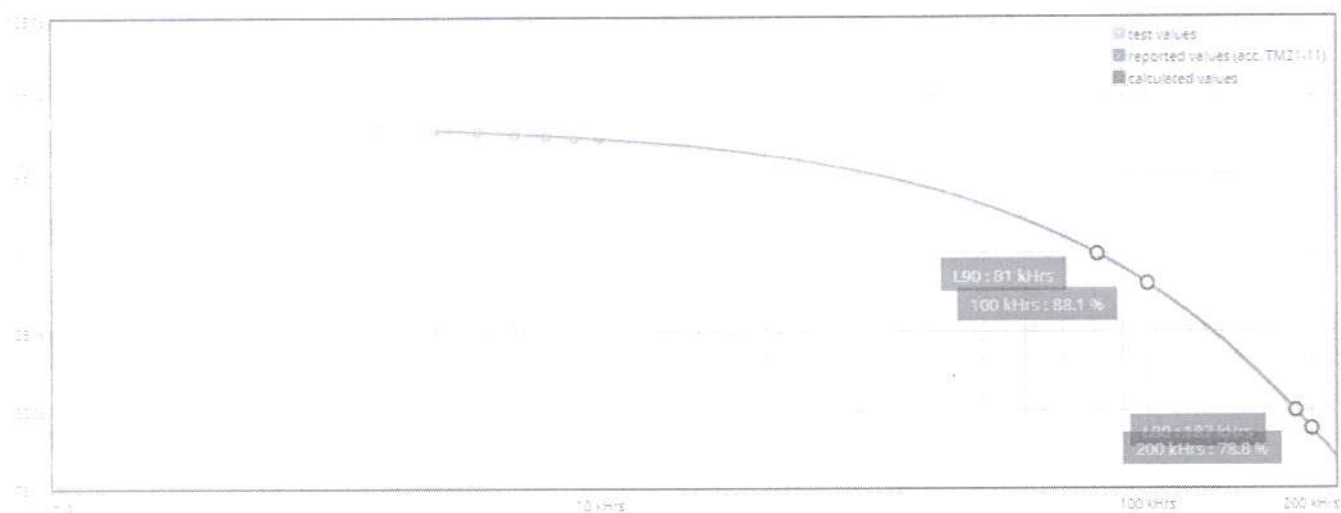
LED type	LH351C
LED current	1000 mA
Ts	55°C
Description	SLED-17-017 ISSUE Revision 1

Projection data

Test duration	10000 hrs	α	1.112E-006
Time used for projection	5000 to 10000hrs	β	0.984

L (%)	Time (kHrs)
78.8	200
80.0	186
88.1	100
90.0	80

Projection graphic

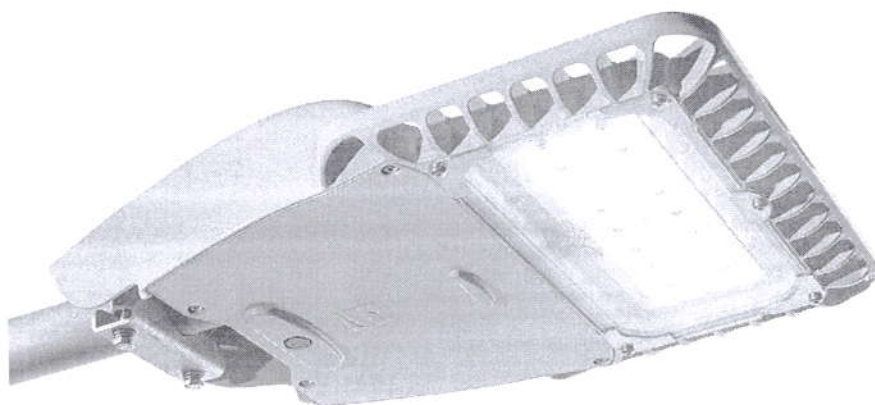


LxB50 results according to LM-80 and TM-21-11 procedures and norms.

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



Voltana

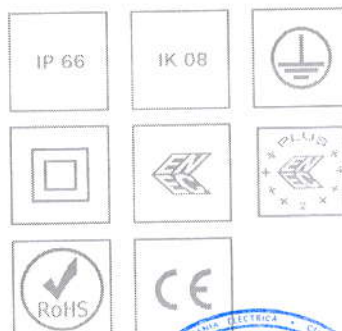


Designer : Thomas Coulbeaut



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.



URBAN & RESIDENTIAL STREETS

BRIDGES

BIKE & PEDESTRIAN PATHS

RAILWAY STATIONS & METROS

CAR PARKS

LARGE AREAS

SQUARES & PEDESTRIAN AREAS

ROADS & MOTORWAYS

Concept

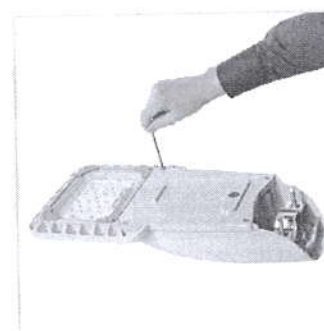
Voltana is composed of a high-pressure die-cast aluminium body and a fixation piece in steel with one or two fixation clamps. Voltana is equipped with LensoFlex®2 photometric engines, offering optimised photometrical performance with a minimum total cost of ownership. This highly efficient luminaire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



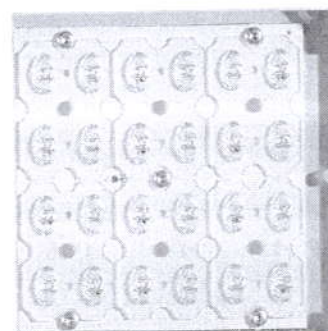
Voltana provides easy access for maintenance

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



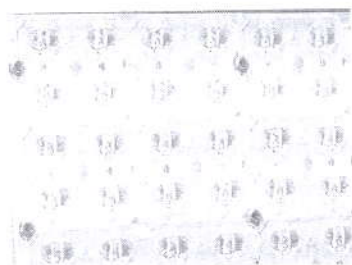
Voltana is available with universal fixation pieces for spigots ranging from Ø42 to Ø76mm (optional)





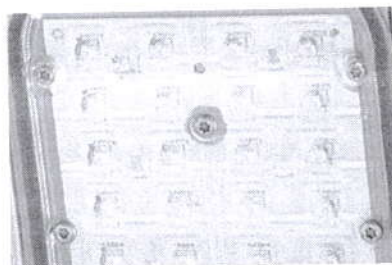
LensoFlex®2

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.



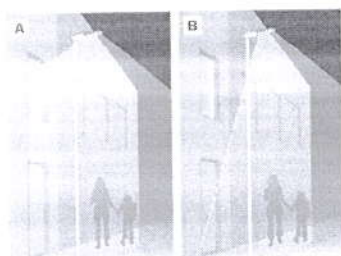
ProFlex™

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.

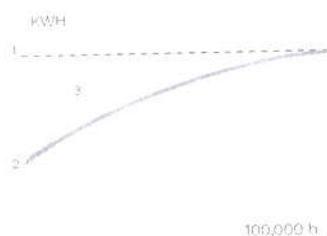
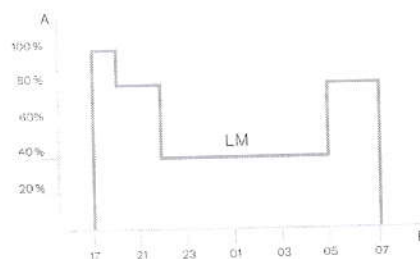


Fig. 2002.4 Energy level (1-2) up lighting consumption with CLO | 3 Energy savings

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.

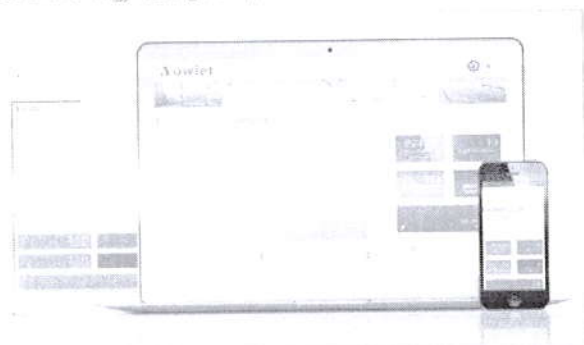


A: Performance | B: Time



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 dimming profile generator with an astronomical clock for seasonal adaptations.

EASY TO DEPLOY

Thanks to a 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'
retrofit	Easy replacement of the photometric engine and electronic assembly on-site
Driver included	Yes
CE Mark	Yes
ENEC certified	Yes
ENEC X certified	Yes
RoHS compliant	Yes
Testing standard	LM 79-08 (all measurements in ISO17025 accredited laboratory)

HOUSING AND FINISH

Housing	Aluminium
lens	PMMA Polycarbonate
Protector	Tempered glass Polycarbonate
Housing finish	Polyester powder coating
Standard colour(s)	RAL 7038
Brightness 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 option(s)	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	3000K (Warm White)
temperature	4000K (Neutral White)
Colour rendering index (CRI)	>70 (Warm White) >80 (Warm White) >70 (Neutral White)
Upward Light Output Ratio (ULOR)	0%

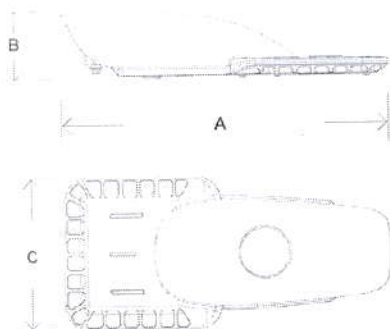
LIFETIME OF THE LEDS @ TQ 25°C

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 VOLTANA 5 - 705x109x480 27.8x4.3x18.9
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 VOLTANA 5 - 12.2 26.8
Aerodynamic resistance (CxS)	VOLTANA 0 - 0.01 VOLTANA 1 - 0.02 VOLTANA 2 - 0.02 VOLTANA 3 - 0.02 VOLTANA 4 - 0.03 VOLTANA 5 - 0.04
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) Neutral White 740		Luminaire output flux (lm) Warm White 830		Power consumption (W)		Luminaire efficacy (lm/W)	
			Min	Max	Min	Max	Min	Max	Up to	Photometry
VOLTANA 0	6	350	800	800	700	700	7.8	8	103	PRO FLEX
	6	500	1100	1100	1000	1000	10.7	11	103	PRO FLEX
	6	700	1400	1400	1300	1300	15	15.6	93	PRO FLEX
	6	1000	1900	1900	1700	1700	21.9	22.5	87	PRO FLEX
	8	350	800	1000	800	900	10	10.1	100	LENSO FLEX 2
	8	500	1100	1400	1000	1300	13.9	14.1	101	LENSO FLEX 2
	8	700	1500	1900	1400	1700	19.5	20.1	97	LENSO FLEX 2
	8	1000	2000	2400	1800	2200	29.4	30.6	82	LENSO FLEX 2

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





Luminaire	Number of LEDs	Current (mA)	Luminaire output flux (lm) Neutral White 740		Luminaire output flux (lm) Warm White 830		Power consumption (W)		Luminaire efficacy (lm/W)	
			Min	Max	Min	Max	Min	Max	Up to	Photometry
VOLTANA 1	8	350	900	1100	800	1000	10.1	10.6	109	
	8	500	1200	1500	1100	1300	14.1	14.5	106	
	8	700	1600	1900	1400	1800	20.1	20.2	95	
	8	1000	2100	2500	1900	2300	29.4	30.6	85	

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





Luminaire	Number of LEDs	Current (mA)	Luminaire output flux (lm) Neutral White 740		Luminaire output flux (lm) Warm White 830		Power consumption (W)		Luminaire efficacy (lm/W)	
			Min	Max	Min	Max	Min	Max	Up to	Photometry
VOLTANA 2	16	350	2300	2400	2000	2100	18.9	21.7	127	LENSO FLEX 3
	16	350	1800	2200	1600	2000	18.9	19.4	116	LENSO FLEX 2
	16	500	3200	3300	2800	2900	26.7	28.8	124	LENSO FLEX 3
	16	500	2400	3000	2200	2700	27.1	28.8	111	LENSO FLEX 2
	16	700	4400	4500	3800	4000	37.4	40	120	LENSO FLEX 3
	16	700	3200	3900	2900	3500	38.3	40.5	102	LENSO FLEX 2
	16	1000	5900	6100	5200	5400	52	54	117	LENSO FLEX 3
	16	1000	4200	5100	3500	4700	56	58	88	LENSO FLEX 2

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





Luminaire	Number of LEDs	Current (mA)	Luminaire output flux (lm) Neutral White 740		Luminaire output flux (lm) Warm White 830		Power consumption (W)		Luminaire efficacy (lm/W)	
			Min	Max	Min	Max	Min	Max	Up to	Photometry
VOLTANA 3	24	350	3500	3800	3100	3200	27.5	27.5	131	LED50 FLEX 3
	24	350	2700	3300	2500	3000	27.1	27.4	122	LED50 FLEX 2
	24	500	4900	5000	4300	4400	39.3	39.3	127	LED50 FLEX 3
	24	500	3600	4500	3300	4100	39.1	39.4	115	LED50 FLEX 2
	24	700	6600	6800	5800	6000	55.5	55.5	123	LED50 FLEX 3
	24	700	4800	5900	4300	5300	56	56.5	105	LED50 FLEX 2
	24	1000	9000	9200	7900	8100	79	79	116	LED50 FLEX 3
	24	1000	6100	7500	5600	6800	82	85	91	LED50 FLEX 2

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





Luminaire	Number of LEDs	Current (mA)	Luminaire output flux (lm) Neutral White 740		Luminaire output flux (lm) Warm White 830		Power consumption (W)		Luminaire efficacy (lm/W)	
			Min	Max	Min	Max	Min	Max	Up to	Photometry
VOLTANA 4	32	350	4800	5000	4200	4300	35.7	36.6	140	LENSO FLEX 3
	32	350	3700	4500	3400	4100	35.7	36.5	126	LENSO FLEX 2
	32	500	6800	6900	5900	6100	51.5	52	134	LENSO FLEX 3
	32	500	5100	6100	4600	5500	51.5	52	118	LENSO FLEX 2
	32	700	9100	9300	8000	8200	73	73	127	LENSO FLEX 3
	32	700	6600	7900	6000	7200	74	74	107	LENSO FLEX 2
	32	1000	12400	12700	10900	11100	99	103	128	LENSO FLEX 3
	32	1000	8600	10300	7800	9400	106	111	97	LENSO FLEX 2

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





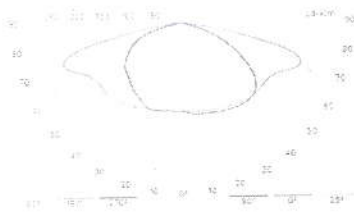
Luminaire	Number of LEDs	Current (mA)	Luminaire output flux (lm) Neutral White 740		Luminaire output flux (lm) Warm White 830		Power consumption (W)		Luminaire efficacy (lm/W)	
			Min	Max	Min	Max	Min	Max	Up to	Photometry
VOLTANA 3	64	350	9700	9900	8500	8700	70	70	141	LM80 FLEX 3
	64	350	7500	9000	6800	8300	70	70	129	LM80 FLEX 2
	64	500	13500	13800	11800	12100	101	101	137	LM80 FLEX 3
	64	500	10100	12200	9200	11200	101	101	121	LM80 FLEX 2
	64	700	18100	18600	15900	16300	143	143	130	LM80 FLEX 3
	64	700	12100	15900	12000	14500	145	145	110	LM80 FLEX 2
	64	1000	24500	25200	21500	22100	206	206	122	LM80 FLEX 3
	24	1500	16900	20300	15400	18700	222	222	92	LM80 FLEX 2

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

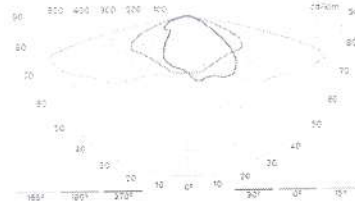




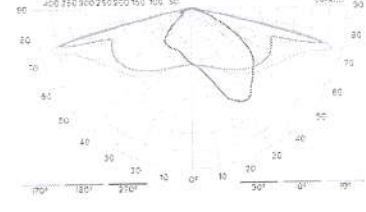
5069



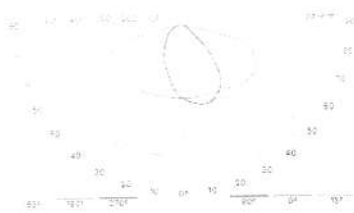
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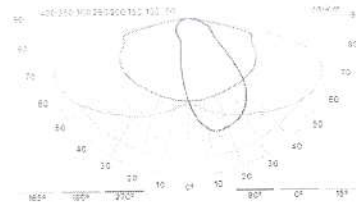
5098



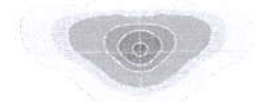
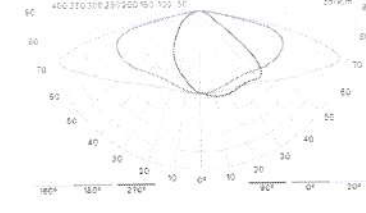
5102



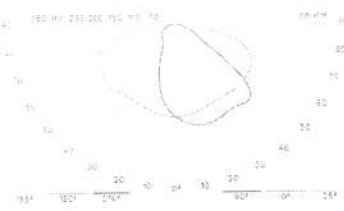
5102 - BL



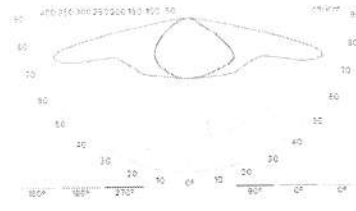
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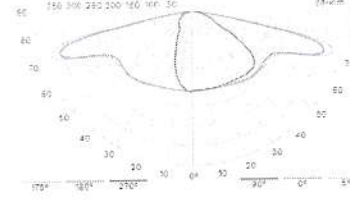
5103 - BL



5112

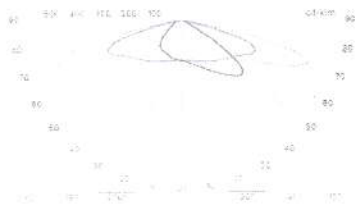


5112 - BL



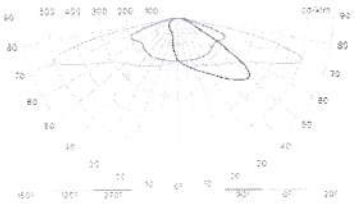
LENSO
FLEX²

5117



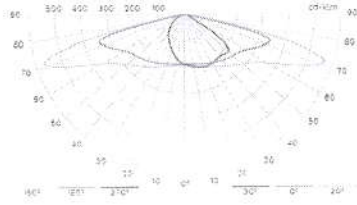
LENSO
FLEX²

5117 - BL



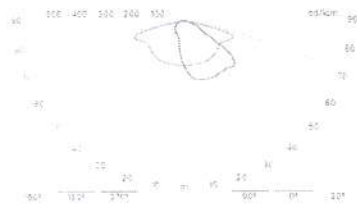
LENSO
FLEX²

5118



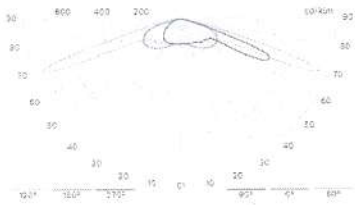
LENSO
FLEX²

5118 - BL



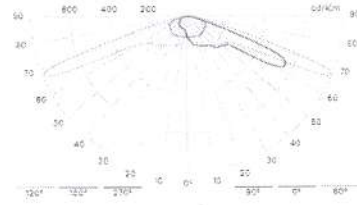
LENSO
FLEX²

5119



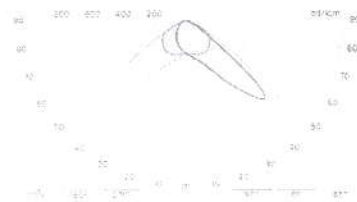
LENSO
FLEX²

5119 - BL



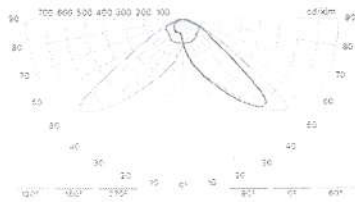
LENSO
FLEX²

5120



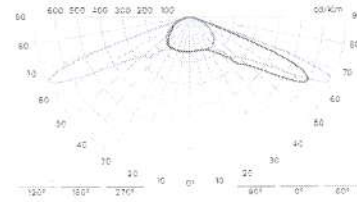
LENSO
FLEX²

5120 - BL



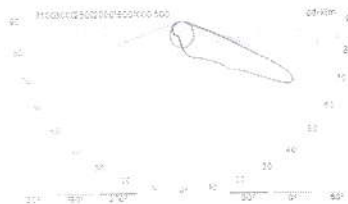
LENSO
FLEX²

5121



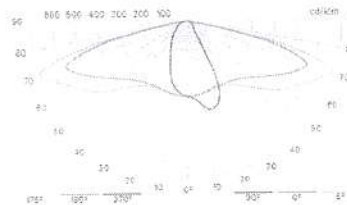
LENSO
FLEX²

5121 - BI



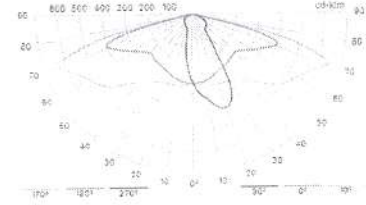
LENSO
FLEX²

5136



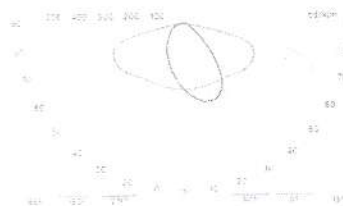
LENSO
FLEX²

5136 - BL



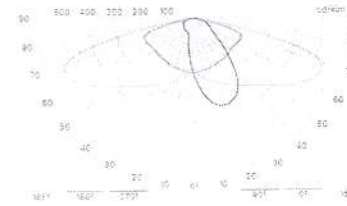
LENSO
FLEX²

5137



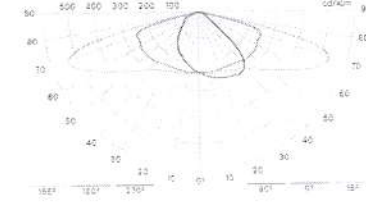
LENSO
FLEX²

5137 - BL



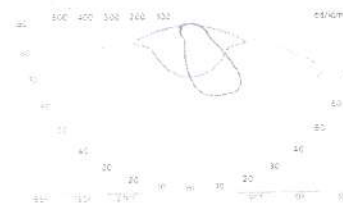
LENSO
FLEX²

5138



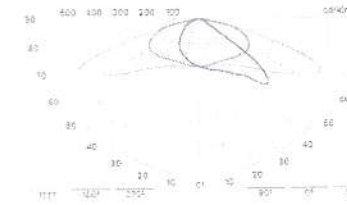
LENSO
FLEX²

5138 - BL



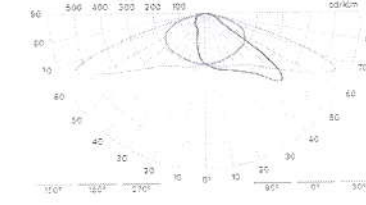
LENSO
FLEX²

5139



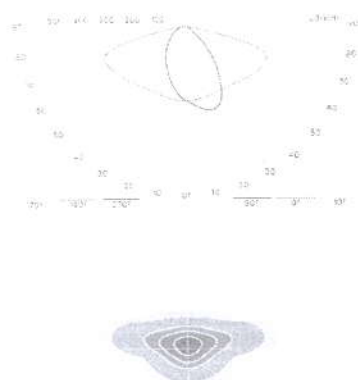
LENSO
FLEX²

5139 - BL



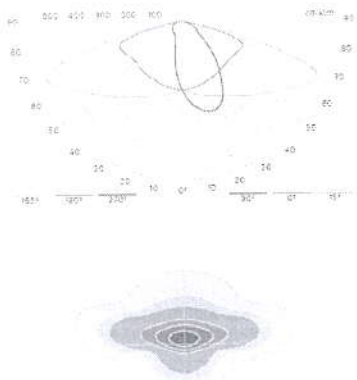
LENSO
FLEX²

5140



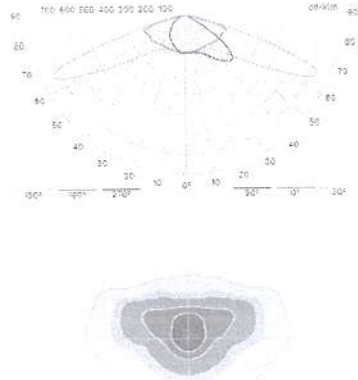
LENSO
FLEX²

5140 - BL



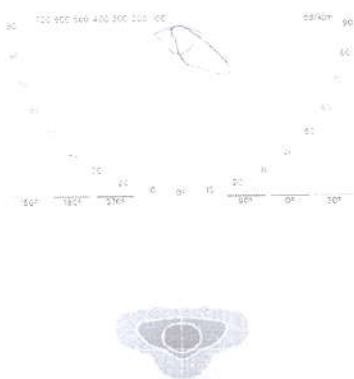
LENSO
FLEX²

5141



LENSO
FLEX²

5141 - BL



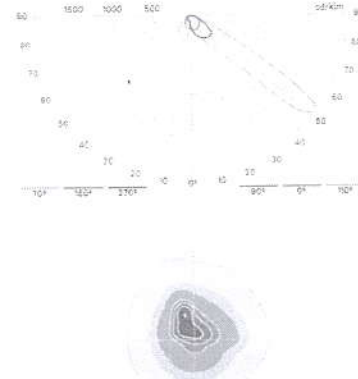
LENSO
FLEX²

5144 Zebra left



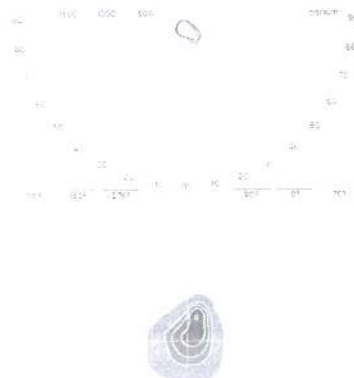
LENSO
FLEX²

5144 Zebra left BL



LENSO
FLEX²

5145 Zebra right



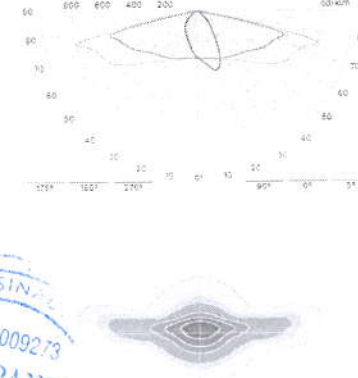
LENSO
FLEX²

5145 Zebra right BL



PRO
FLEX²

5205





5206

