Schréder
Experts in lightability™

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Location: Moldova

DECLARAȚIE DE CONFORMITATE

CE

SCHRÉDER ROMANIA S.R.L., cu sediul în Cluj - Napoca, str. Corneliu Coposu, nr. 167A, Jud. Cluj, România, înregistrată la Registrul Comerţului 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
Etanşeitate compartiment optic: IP 66
Etanşeitate compartiment aparataj: IP 66

Cu condiția ca acesta să fie instalat, întreținut și utilizat în conformtate cu standardele de instalare și instrucțiunile producătorului. Este în conformitate cu urmatoarele 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

REPUBLICA MOLDOVA, CHISINĂU, SC
1003600092733
«COMPANIA ELECTRICĂ» S.A.

12/05/2020

Schréder

Lumen maintenance report

LED information

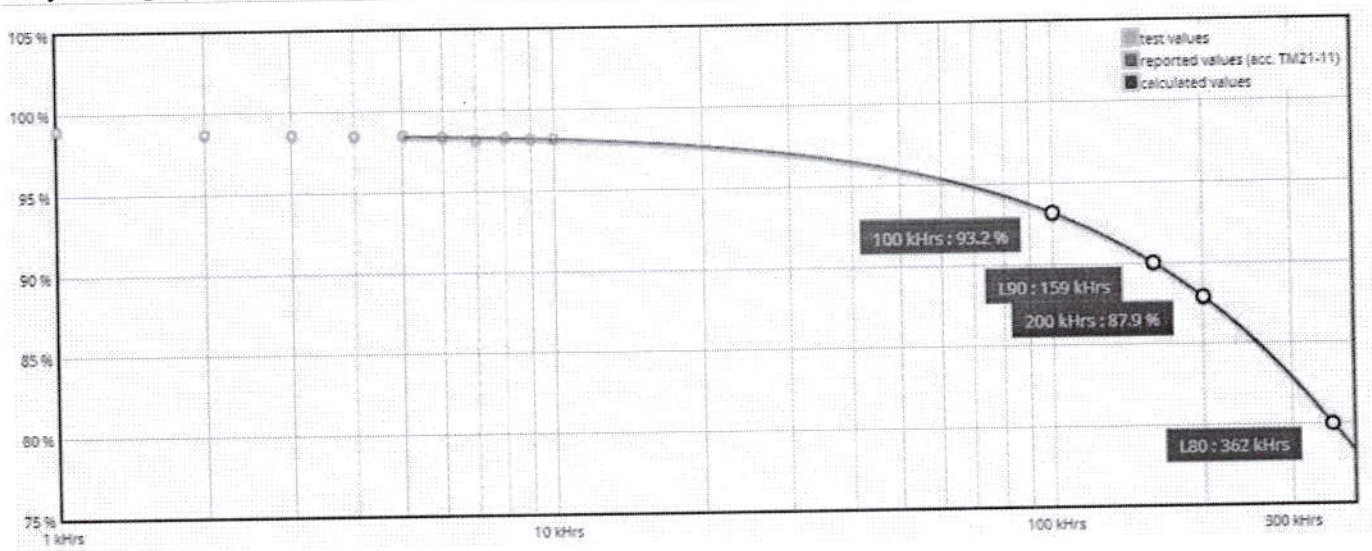
LED type	LH351C
LED current	1000 mA
Ts	55°C
Description	SLED-19-031

Projection data

Test duration	10000 hrs	**α**	5.811E-007
Time used for projection	5000 to 10000hrs	**β**	0.987

L (%)	Time (kHrs)
80.0	362
87.9	200
90.0	159
93.2	100

Projection graphic



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

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

LED Flux measurement

FORM-L-41 ED1 REV 2

226 - TEST

NBN EN ISO/IEC 17025 : 2005

Date : **16-01-19**

Operator : **FCE**

Filename : **2019_52.xml**

LEDs

Trademark : **Samsung**

Type : **LH351C**

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

Part number : **Unknown**

Color or CCT (Theorical) : **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**

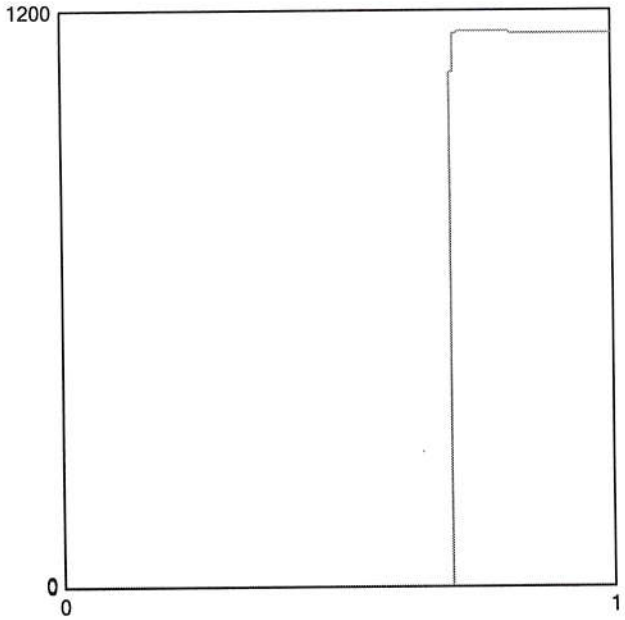
Print description : **00-71-626 A - Voltana 0**

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

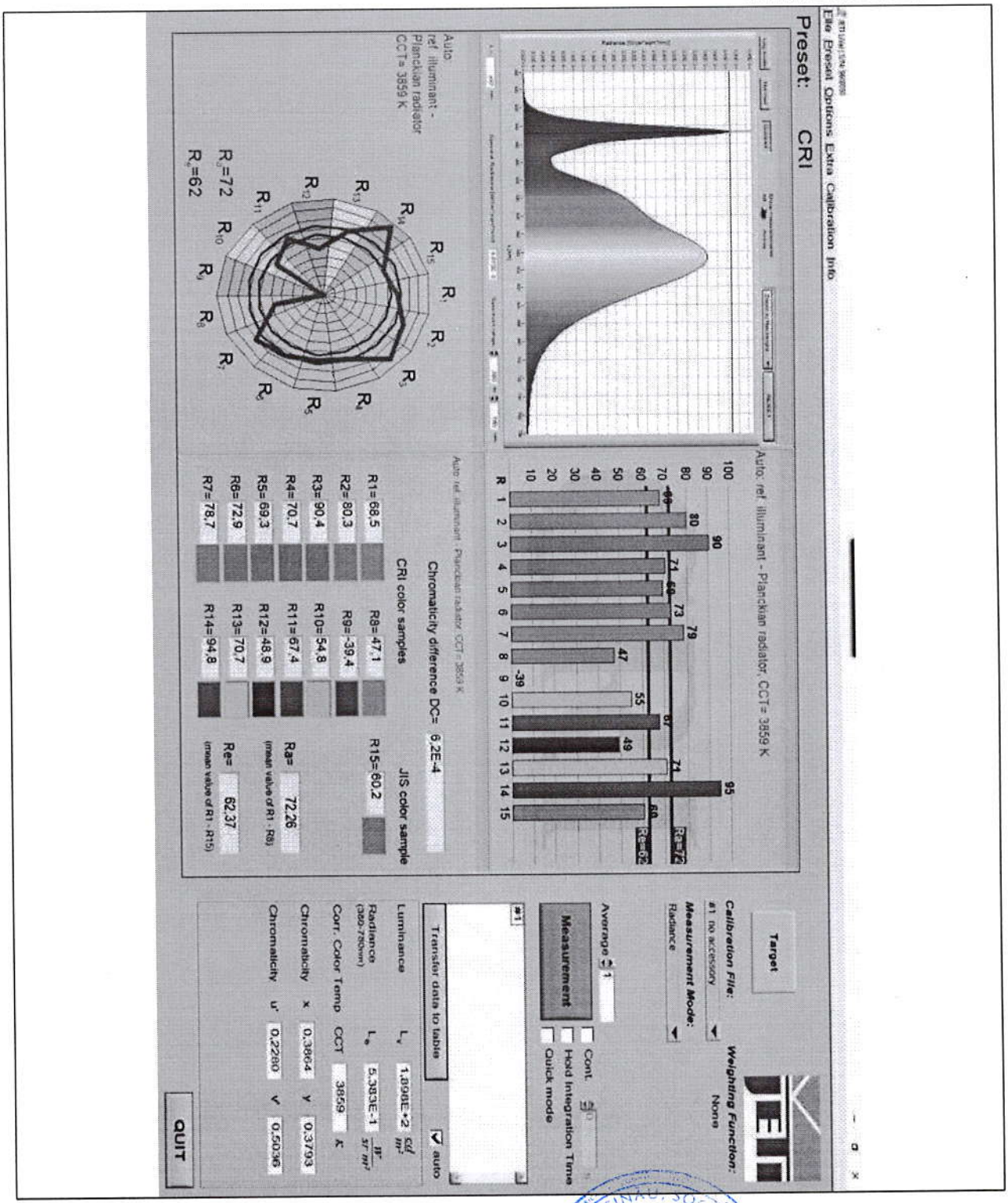
226 - TEST

Approved by :

Colorimetry

226 - TEST

NBN EN ISO/IEC 17025 : 2005



RTECH-PHOTOMETRY LABORATORY

LED

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 Schréder group.

Origin	Production	Luminaire	Inclination	Request #
TUNGSRAM-Schréder Zrt. Hungary	TUNGSRAM-Schréder Zrt. Hungary	VOLTANA 0	0°	FD39022

Source

Type	BIN	Trademark	Reference	# LEDs	Reflector
LED	40-70M-4-TB-RB	Samsung	LH351C	6	5206

Master	Reflector	No
-	DKI Led assembly Road lighting Injected 0.0°	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	Sample date	Sample #
DOC	08-01-2019	39R004

Observation

DOC Voltana 0 with lenses 5206

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	Measured by	Approved by	Appendix		
RCA	CLD	RLABO	1	226-TEST NBN EN ISO/IEC 17025 : 2005	42572

LUMINOUS INTENSITY DIAGRAM

Origin	Production	Luminaire	Inclination	Request #
TUNGSRAM-Schréder Zrt. Hungary	TUNGSRAM-Schréder Zrt. Hungary	VOLTANA 0	0°	FD39022

Source	Type	BIN	Trademark	Reference	# LEDs	Reflector
	LED	40-70M-4-TB-RB	Samsung	LH351C	6	5206
Reflector	DKI Led assembly Road lighting Injected 0.0°				No	5206
Matrices	425721	Φ 0-90° = 1040lm - 90-180° = 0lm				Absolute measurement
Protector Refractor Lens	Protector integrated lenses Lens 6 x DKI 5206 PC					

Observation

Matrix in total flux @350 mA

Light losses due to thermal stabilisation : 1%

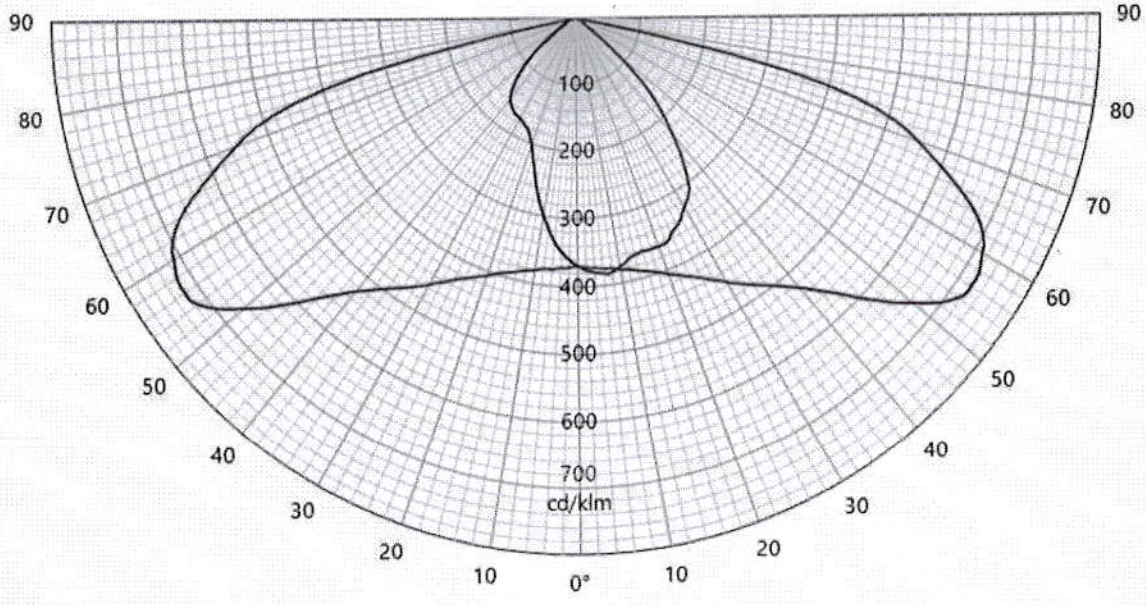
Electrical measurement on LED (#1) : Voltage = 16.83 V Current = 0.350 A Power = 5.88 W

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 : Lm/Watt = 130.30 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 ambiant t°	Measurement date
15 - 165	723	55	S	369	24.9°	07-02-2019
90	384	7	D			
270	369	0	G			



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Printed on 11-02-2019

LUMINOUS INTENSITY DIAGRAM

Origin	Production	Luminaire	Inclination	Request #
TUNGSRAM-Schréder Zrt. Hungary	TUNGSRAM-Schréder Zrt. Hungary	VOLTANA 0	0°	FD39022

	Type	BIN	Trademark	Reference	# LEDs	Reflector
Source	LED	40-70M-4-TB-RB	Samsung	LH351C	6	5206

Reflector	DKI Led assembly Road lighting Injected 0.0°	No	5206
Matrices	425722 η 0-90° = 89.9% - 90-180° = 0.0%	Relative measurement	
Protector Refractor Lens	Protector integrated lenses Lens 6 x DKI 5206 PC		

Observation

Matrix in efficiency @350 mA

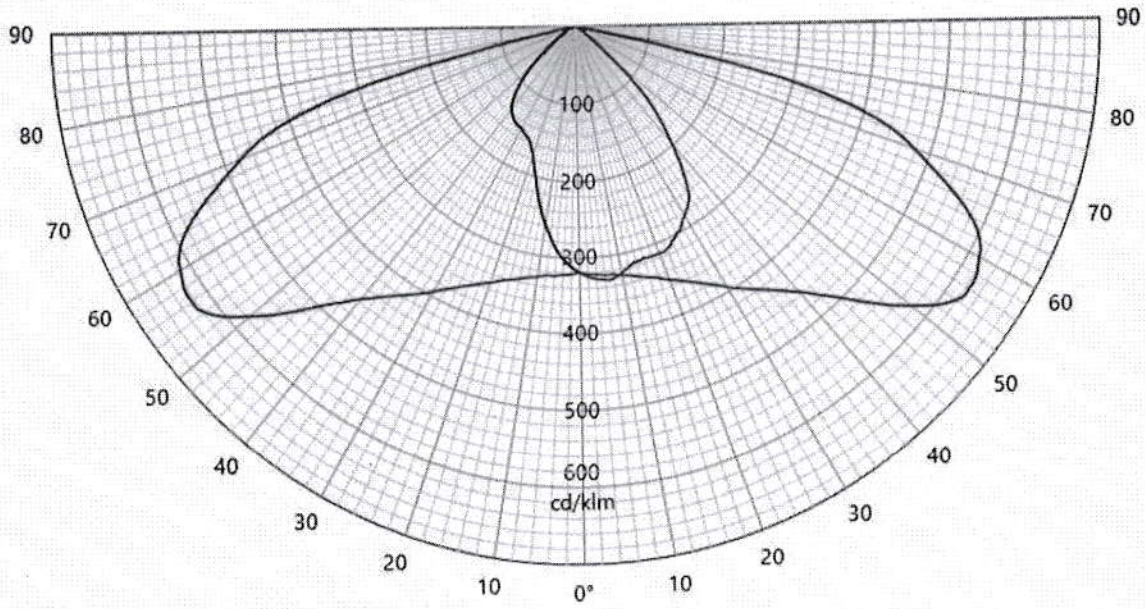
Light losses due to thermal stabilisation : 1%

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 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 ambiant t°	Measurement date
15 - 165	625	55	S	319	24.9°	07-02-2019
90	332	7	D			
270	319	0	G			



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LUMINOUS INTENSITY DIAGRAM

Origin	Production	Luminaire	Inclination	Request #
TUNGSRAM-Schréder Zrt. Hungary	TUNGSRAM-Schréder Zrt. Hungary	VOLTANA 0	0°	FD39022

	Type	BIN	Trademark	Reference	# LEDs	Reflector
Source	LED	40-70M-4-TB-RB	Samsung	LH351C	6	5206
Reflector	DKI Led assembly Road lighting Injected 0.0°				No	5206
Matrices	**425723**	Φ 0-90° = 1434lm - 90-180° = 0lm				Absolute measurement
Protector Refractor Lens	Protector integrated lenses Lens 6 x DKI 5206 PC					

Observation

Matrix in total flux @500 mA

Light losses due to thermal stabilisation : 1.7%

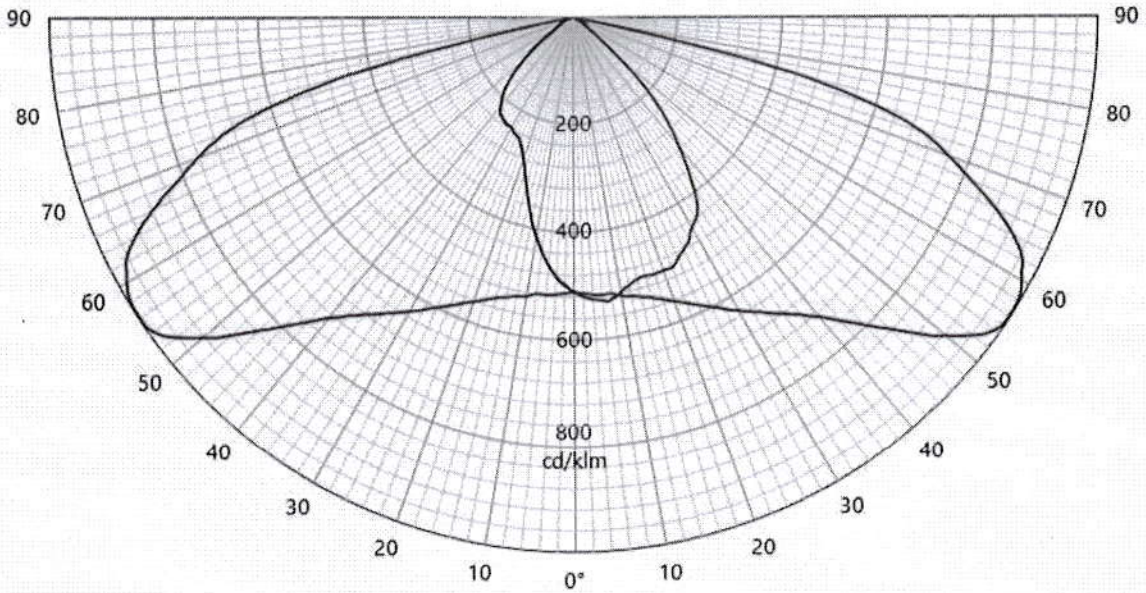
Electrical measurement on LED (#1) : Voltage = 17.15 V Current = 0.500 A Power = 8.58 W

Electrical measurement on driver (#1) : Voltage = 230.00 V Current = 0.050 A Power = 10.97 W PF = 0.962

Total luminaire power = 10.97 W : Lm/Watt = 130.70 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 ambiant t°	Measurement date
15 - 165	998	57	S	511	24.9°	07-02-2019
90	532	7	D			
270	511	0	G			



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Printed on 11-02-2019

LUMINOUS INTENSITY DIAGRAM

Origin	Production	Luminaire	Inclination	Request #
TUNGSRAM-Schréder Zrt. Hungary	TUNGSRAM-Schréder Zrt. Hungary	VOLTANA 0	0°	FD39022

Source	Type	BIN	Trademark	Reference	# LEDs	Reflector
	LED	40-70M-4-TB-RB	Samsung	LH351C	6	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

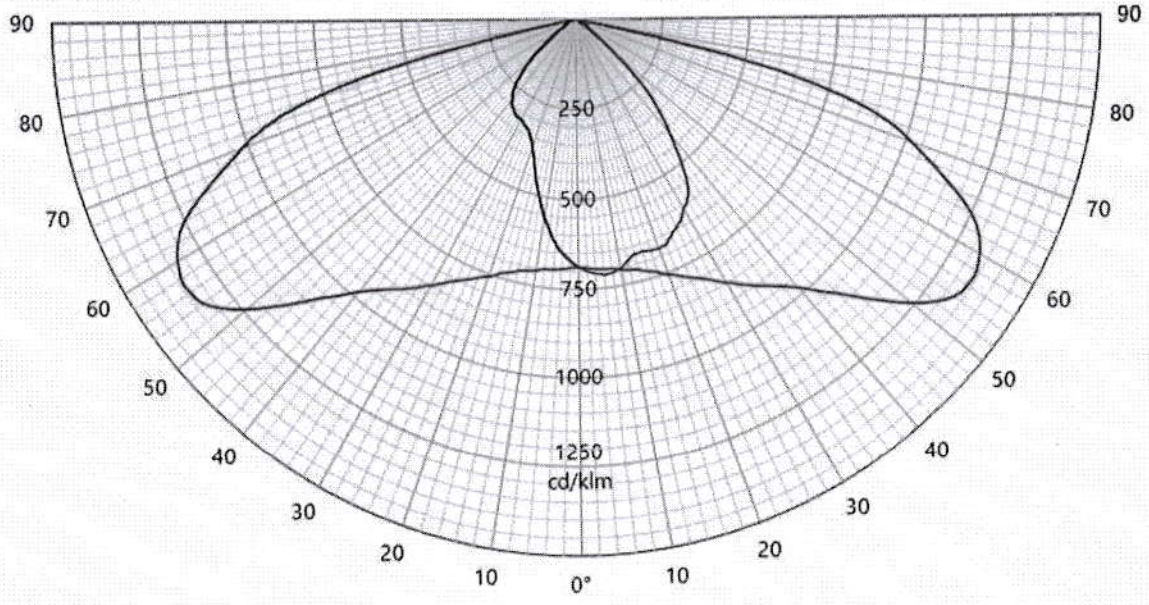
Light losses due to thermal stabilisation : 2,6 %

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 ambiant t°	Measurement date
15 - 165	1342	57	S	686	24.9°	07-02-2019
90	713	6	D			
270	686	0	G			



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LUMINOUS INTENSITY DIAGRAM

Origin	Production	Luminaire	Inclination	Request #
TUNGSRAM-Schréder Zrt. Hungary	TUNGSRAM-Schréder Zrt. Hungary	VOLTANA 0	0°	FD39022

	Type	BIN	Trademark	Reference	# LEDs	Reflector
Source	LED	40-70M-4-TB-RB	Samsung	LH351C	6	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 %

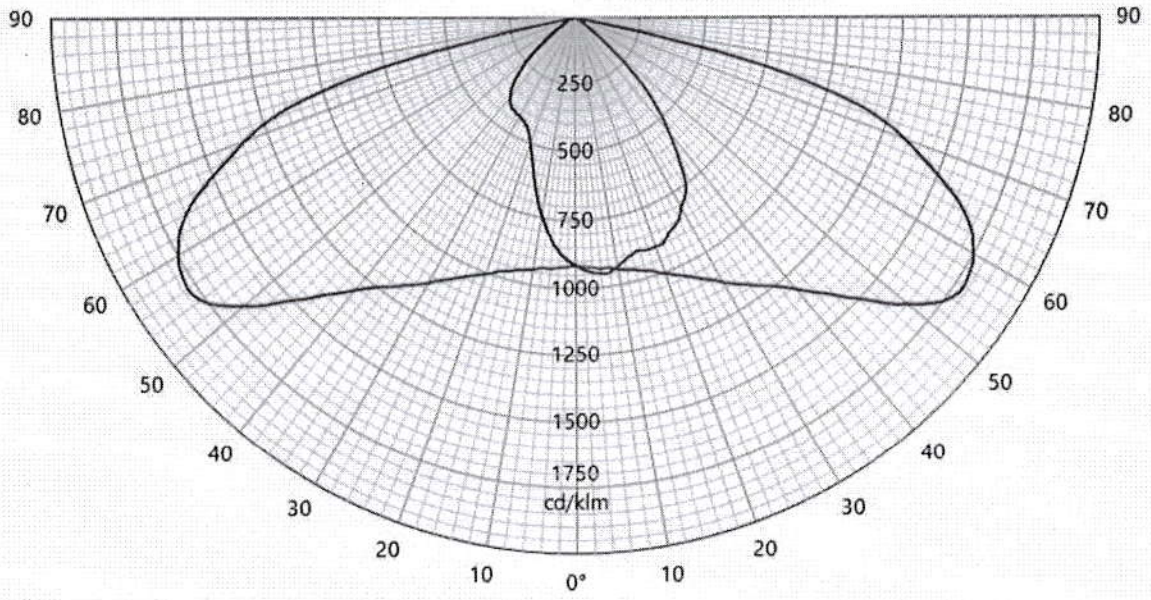
Electrical measurement on LED (#1) : Voltage = 17.96 V Current = 1.000 A Power = 17.96 W

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 ambiant t°	Measurement date
15 - 165	1783	56	S	914	24.9°	07-02-2019
90	952	7	D			
270	914	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 Schréder format)
.ldt 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: +/- 3%
Angle: +/- 0.5°
Flux: +/- 2.5%
Electrical DC
Power: +/- 0.25%
Voltage: +/- 0.15%
Current: +/- 0.15%
Electrical AC
Power: +/- 0.15%
Voltage: +/- 0.3%
Current: +/- 0.3%
Temperature: +/- 0.65%

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

lm/Watt: +/-3.5%

Measuring instruments in use:

Gonio 1
Type C with Moving mirror
Manufacturer: LMT Lichtmesstechnik GmbH Berlin, Helmholtzstrasse 9 10587 Berlin, Germany
Type: GO-DS 2000
Calibration: traceable to PTB (Physikalisch-Technische Bundesanstalt D-Braunschweig) and METAS (Federal Institute of Metrology, CH-Bern)
Photometric test distance: By default 10 meter, on request 30 meter.

Gonio 2
Type C
Manufacturer: Technoteam Bildverarbeitung, Werner-von-Siemens-Strasse 5 98693 Ilmenau, Germany
Calibration: traceable to BIPM (Bureau International des Poids et Mesures F-Sèvres)
Photometric test distance: Near Field

Sphere n°1
4p geometry
Manufacturer: LMT Lichtmesstechnik GmbH, Helmholtzstrasse 9 10587 Berlin, Germany
Type: UL2000 + U1000 V-Lambda photometer
Calibration: traceable to BIPM (Bureau International des Poids et Mesures F-Sèvres)

Sphere n°2
4p geometry
Manufacturer: Instrument Systems GmbH, Neumarkter Str. 83, 81673 Muenchen, Germany
Type ISP2000 + Spectroradiometer CAS120 and CAS140
Calibration: traceable to NIST

Colorimetric portable spectroradiometer
Manufacturer: JETI Technische Instrumente GmbH, Tatzendpromenade 2 07745 Jena
Type: SPECBOS 1201
Calibration: traceable to NIST

Multimeters
Manufacturer: Agilent
Type: 34401A
Calibration: traceable to BIPM (Bureau International des Poids et Mesures F-Sèvres)

Wattmeters
Manufacturer: Yokogawa
Type: WT210 and WT310
Calibration: traceable to BIPM (Bureau International des Poids et Mesures F-Sèvres)

Thermometers
Amarell Precision
Type: Liquid in glass N63833
Calibration: traceable to LBT (Laboratoire Belge de Thermométrie)

LICENCE

No. 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

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

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 ccol 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

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

Test results

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

Remarks

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

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

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

FACTORY LOCATION(S)

Schréder 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

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

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

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

Tungsram-Schréder Világitási 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 Schréder 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 Frédérick

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 Schréder 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

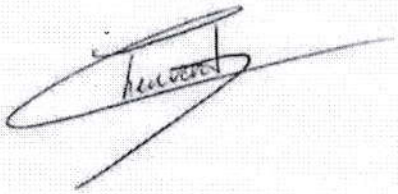
CONCLUSIONS:

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 Schréder 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

//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 Schréder 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 Schréder 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 Φ 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

//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 Schréder Group

Subject: **VOLTANA 0 – 6 led's NW @ 1050 mA**
Sample n°: P-E16418

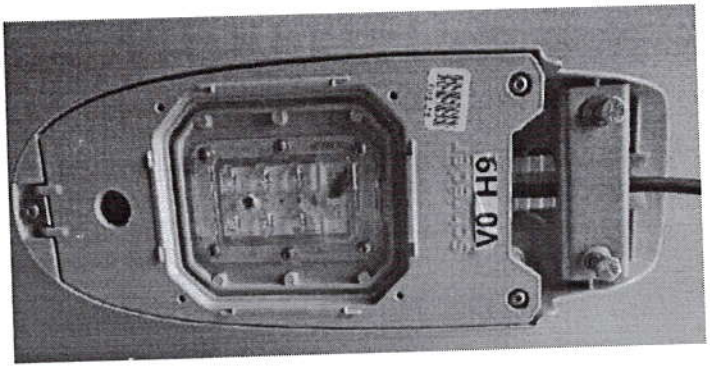
Test purpose: **Photobiological safety tests following IEC-EN 62471 Standard**

Remarks:
Test request n°: P-D17045
Folder n°: P-F16041

Operator: Laborelec

TEST CONDITIONS:

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
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 Schréder Group

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

Thermal Test LED

General information

Subject : VOLTANA 0 - 8 LEDs Oram 50 W driver
Created on : 08/11/2018
Validated on : 21/11/2018
Test number : D180791
Reference norm : IEC/EN 60598-1 Standard
Sample(s) : E180590
Folder : P-F16041

Test conditions

Luminaire : VOLTANA 0
Number of LED : 8

Driver : Optotronic OT50/120-277/1A2 2DIM LT2 P / 00-14-565
Driver info : Tc (max: 80°C)
Driver current (mA) : 1250
SPD : Vossloh Lighting Solutions SPC3 230/10 K

Measurements devices :
Fluke Norma 4000 - HF Powermeter - (E110) : Electrical measurements
Keithley 2701 (E097) – Ethernet Multimeter/Data Acquisition System : Thermal & VF led measurements

Power Supply :
APT 300XAC AC power supply (E096)
Supply voltages: 230 V 50 Hz

Junction Temperature measurement method : Junction temperature measurement by base temperature measurement and electrical measurement.T°j =T°b + Rjb x Pled

Operator : MESPOUILLE Loic

IMG_0885

Conclusion

Informative

Ta: 40°C limited by lenses and driver; according IEC 60598-2-3 and IEC 60598-2-5 (outdoor use only)
Ta: 30°C limited by lenses and driver; indoor use and UL standard
Tq: 15°C limited by lenses and driver; according IEC 62722-2-1

Tq given for 100 khrs of lifetime

Validated by :
GHYSENS Gilles

Duplicate to : BOS Peter
LAB : 22/11/2018

//CR180791

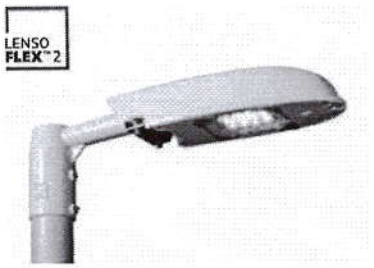
12/05/2020

Schréder
Experts in lightability™

VOLTANA 0

5136

Optic	5136
Protector	Flat glass
Source	8 Samsung LH351C
Matrix	425502



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*

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
DLOR (%)	86.5
ULOR (%)	0.0
ULR (%)	0.0
Incl ULR 4%	-45/45°

G Class (EN 13201-2)	G3
G* (EN 13201 2015)	G*2
Imax (cd)	554
Aperture 0-180°	77 - 77
Aperture 90-270°	30 - 13

I 70-80-90-95 (cd)	550 - 98 - X - X
CIE flux code N 1→5 (%)	50.4 - 79.8 - 97.5 - 100.0 - 86.5
Gradient 90°	34cd
Gradient 270°	10cd

Schréder

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	28	3760	3254	116	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	28	3563	3083	110	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 installlation 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

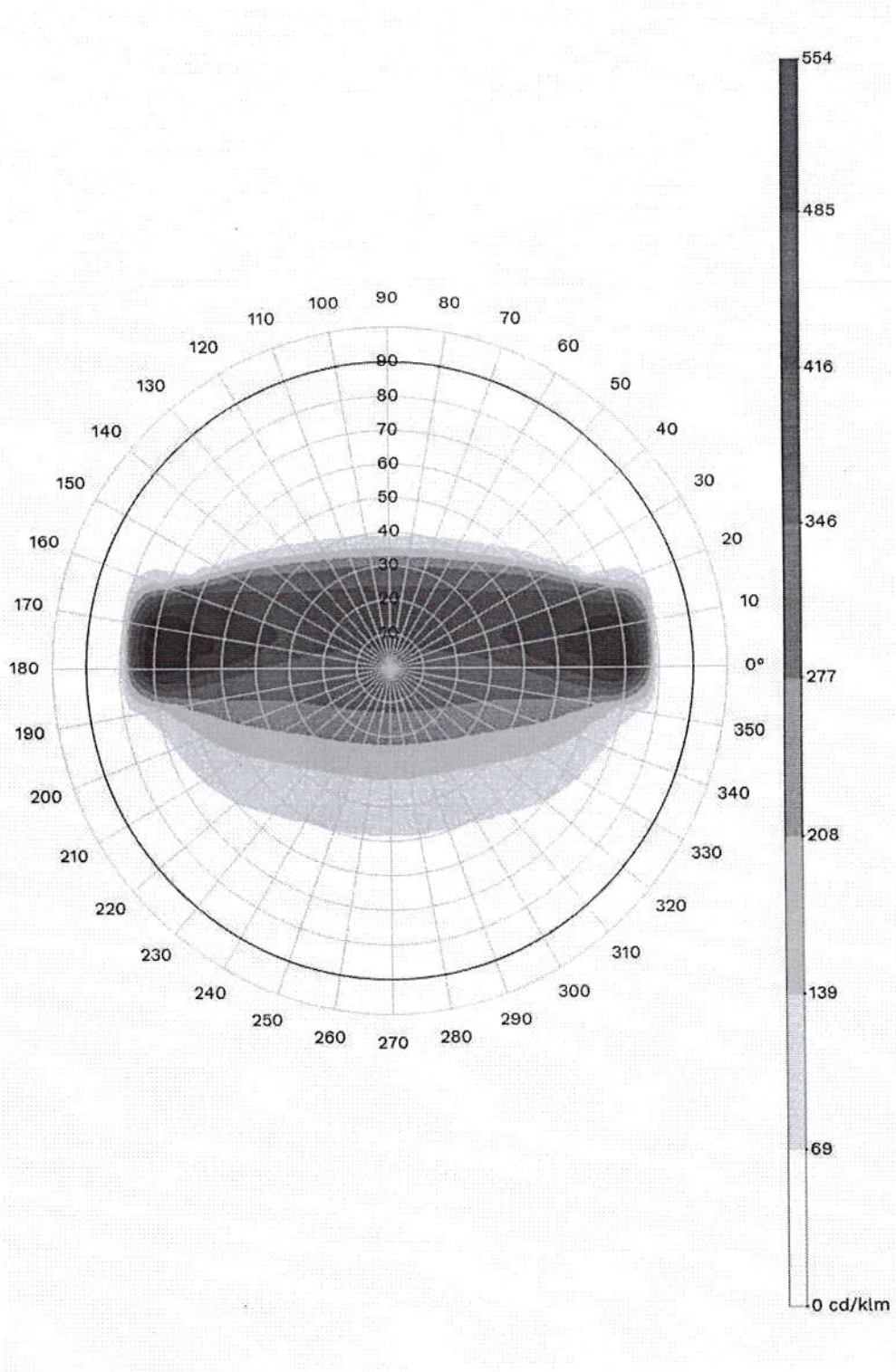
- CE
- ENEC
- LM79-80
- ROHS
- Certified for 3G vibration
- All measurements in ISO17025 accredited laboratory

OPTIONS

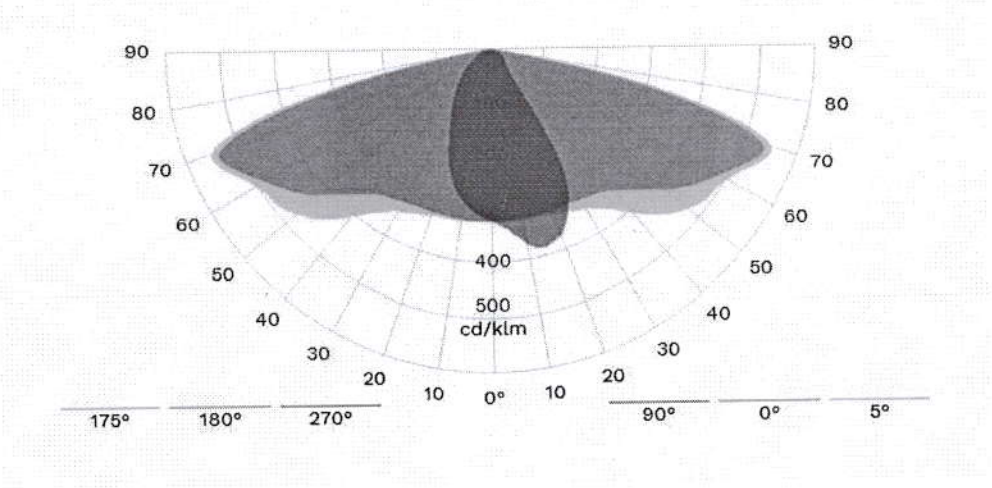
- Other RAL or AKZO colours
- Back Light control system
- OWLET remote management
- Custom dimming profile

- Photocell

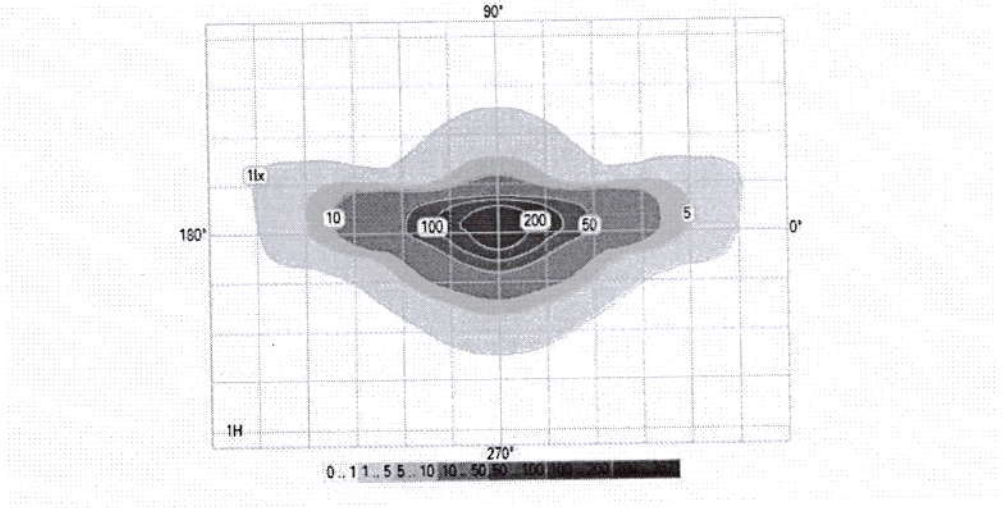
Hypergon view



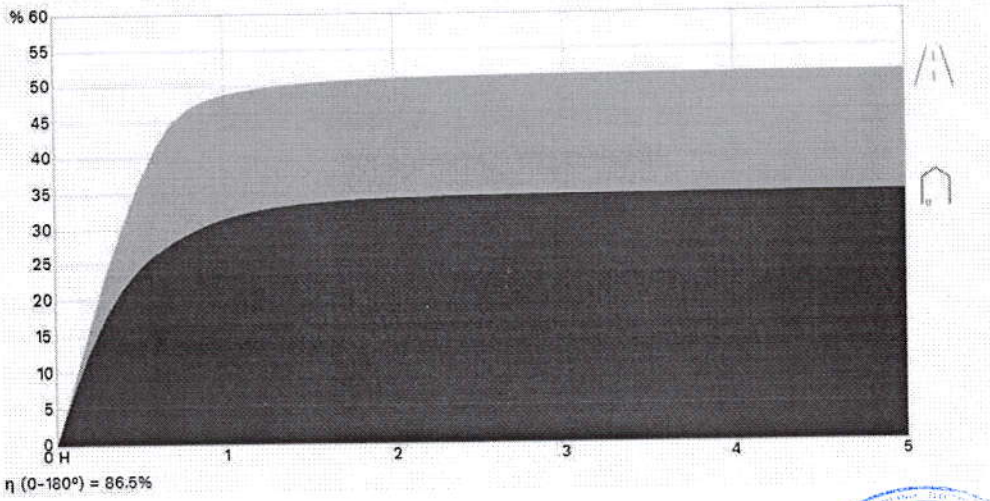
Polar/Cartesian diagram



Isolux

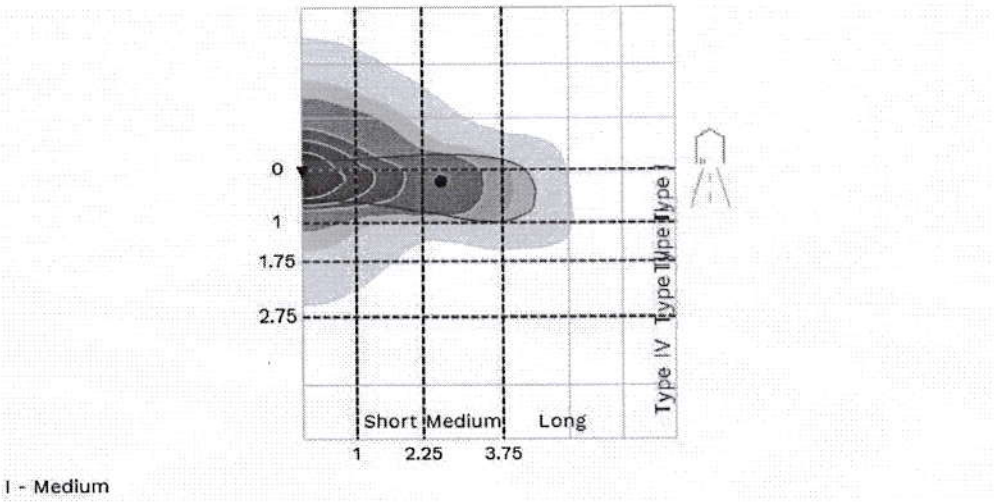


K-Curve



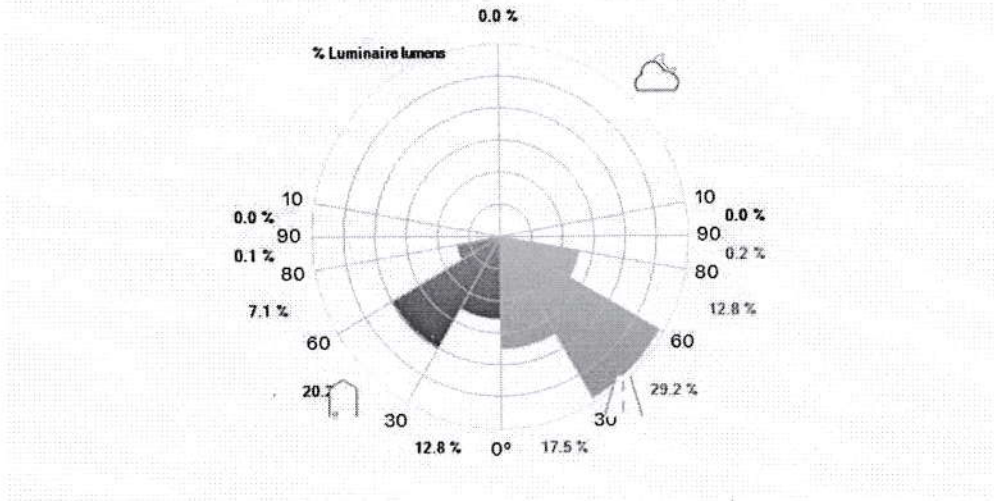
η (0-180°) = 86.5%

IES Roadway Classification / Nema Classification

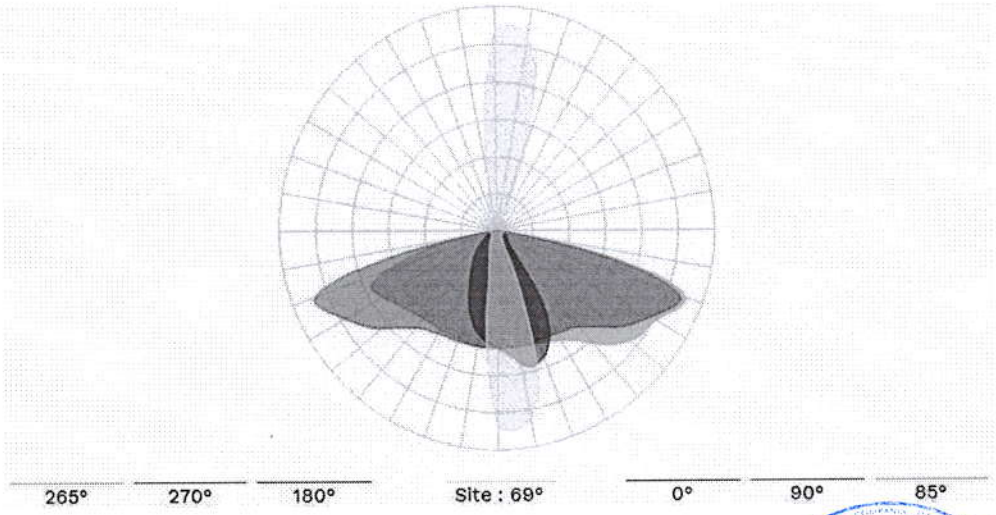


I - Medium

Luminaire classification system (LCS)



Intensity diagram in max Cone and in CPlane



http://www.schreder.com