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_64.xml**

LEDs

Trademark : **Samsung**

Entry number : **39R006-4**

Type : **LH351C**

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

Flux : **0** lm/LED

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

Part number : **Unknown**

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

Number of LEDs : **16**

Lenses

Trademark : **None**

Type : **None**

Power & Print

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

Print description : **00-71-627 A - Voltana 2**

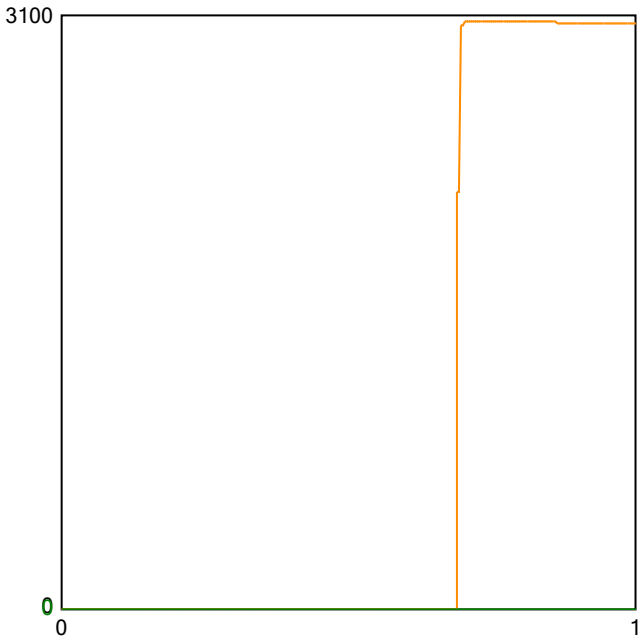
Active ☐

Picture

Digitally signed by Rotari Dmitrii
Date: 2021.04.13 15:21:18 EEST
Reason: MoldSign Signature
Location: Moldova

Sphere photometric measurement

Maximum flux : **3074** lumens



Operating condition

Position in sphere : 

Ambient sphere T ° : **24,3**

Electrical measurement

- Secondary electrical measurement

Voltage : **44,90** V

Current : **0,350** A

Power : **15,70** Watt

→ LEDs light efficiency at 25° :

195,9 lm/W

192,1 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 2 - 16 Samsung LH351C - pcb N°4

Comment :

FORM-L-41 ED1 REV 2

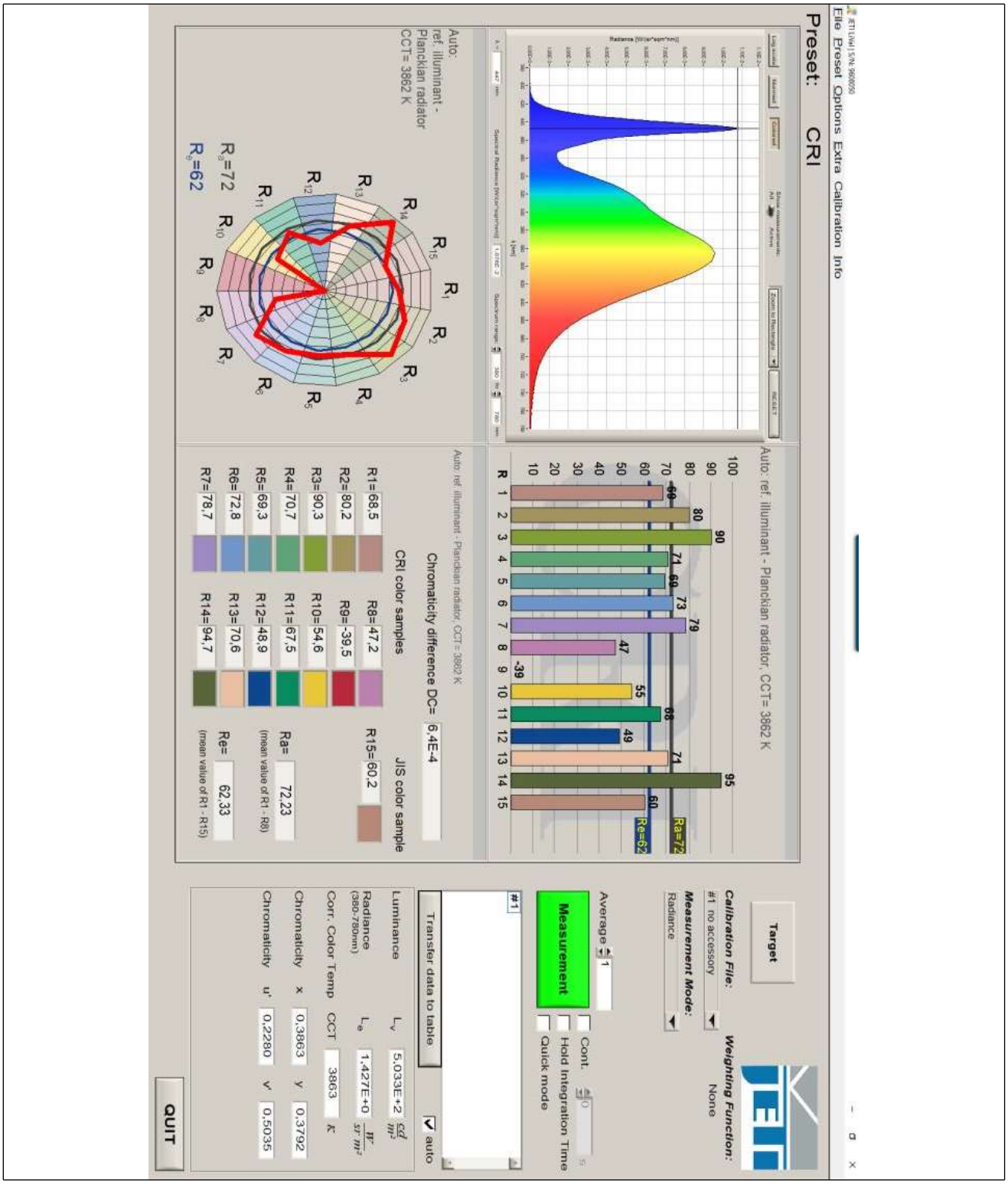
226 - TEST

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 2	0°	FD39014

Source

Type	BIN	Trademark	Reference	# LEDs	Reflector
LED	40-70M-4-TB-RB	Samsung	LH351C	16	5250

Master	Reflector	No
-	Schreder Led assembly Road lighting Assembled 0.0°	5250

Protector Refractor Lens

Protector Glass Extra Clear Flat Smooth

Lens Gaggione 5250 PMMA

Laboratory observation

VOLTANA 2 with 16 SAMSUNG LH351C
Used flux for efficiency matrix calculation = 3074 lm - CCT = 3863 K - CRI = 72,23 (see sphere test report 2019/64 on appendix).

Purpose	Sample date	Sample #
DOC	08-01-2019	39R006

Observation

DOC VOLTANA 2 with lenses 5250

Flux coefficient multiplicator (only for efficiency matrix):
From 350 to 500 mA : 1,380
From 350 to 700 mA : 1,840
From 350 to 1000 mA : 2,453

Fixture powered with driver Osram OT40/120-277/1A0 4DIM LT2E for matrix @350/500/700mA
Fixture powered with driver Philips Xitanium LP 75W 0,3 - 1,0A SNLDAE 230V C133 sXt 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	Measured by	Approved by	Appendix		
RCA	CLD	RLABO	1	226-TEST NBN EN ISO/IEC 17025 : 2005	42485

LUMINOUS INTENSITY DIAGRAM

Origin	Production	Luminaire	Inclination	Request #
TUNGSRAM-Schréder Zrt. Hungary	TUNGSRAM-Schréder Zrt. Hungary	VOLTANA 2	0°	FD39014

Source	Type	BIN	Trademark	Reference	# LEDs	Reflector
	LED	40-70M-4-TB-RB	Samsung	LH351C	16	5250

Reflector	Schreder Led assembly Road lighting Assembled 0.0°	No	5250
Matrices	**424851** Φ 0-90° = 2515lm - 90-180° = 0lm		Absolute measurement
Protector Refractor Lens	Protector Glass Extra Clear Flat Smooth - VOLTANA 2 Lens 16 x Gaggione 5250 PMMA		

Observation

Matrix in total flux @350 mA

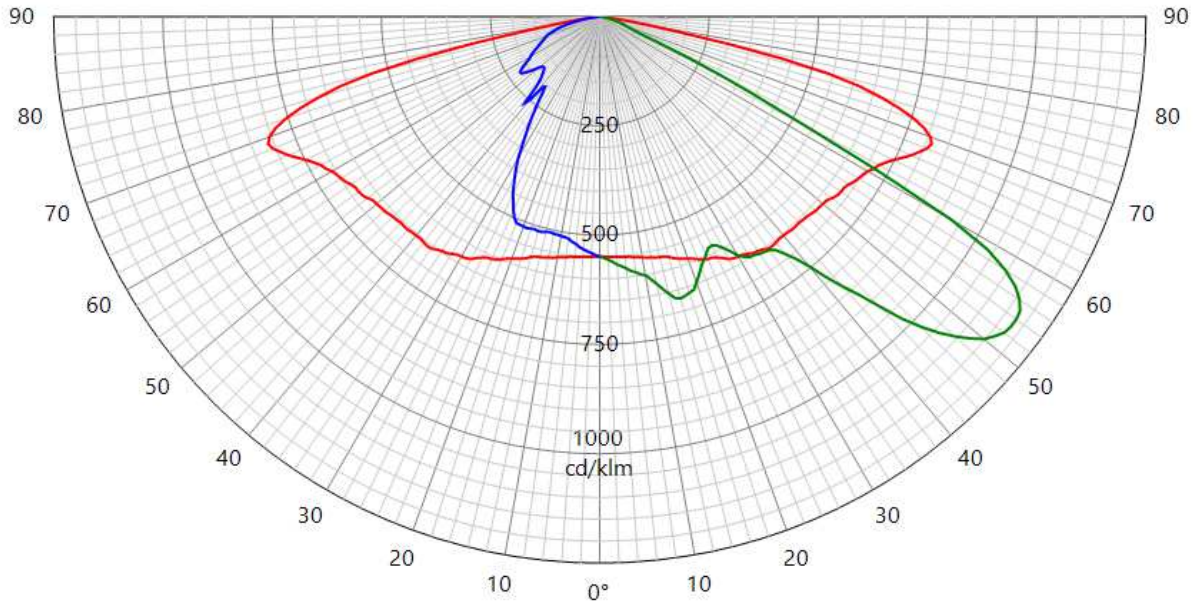
Light losses due to thermal stabilization: 1 %

Electrical measurement on LED (#1) :	Voltage = 44.68 V	Current = 0.350 A	Power = 15.61 W	
Electrical measurement on driver (#1) :	Voltage = 230.00 V	Current = 0.091 A	Power = 18.91 W	PF = 0.902

Total luminaire power = 18.91 W : Lm/Watt = 133.00 lm/W

Driver #1 : See observations for driver details - PCB 00-71-627 A

Plane	I Peak	Peak position	Index	I zero	Laboratory ambiant t°	Measurement date
0	813	69	S	549	25.4°	01-02-2019
90	1178	53	D			
270	549	0	G			



42485

LUMINOUS INTENSITY DIAGRAM

Origin	Production	Luminaire	Inclination	Request #
TUNGSRAM-Schréder Zrt. Hungary	TUNGSRAM-Schréder Zrt. Hungary	VOLTANA 2	0°	FD39014

Source	Type	BIN	Trademark	Reference	# LEDs	Reflector
	LED	40-70M-4-TB-RB	Samsung	LH351C	16	5250

Reflector	Schreder Led assembly Road lighting Assembled 0.0°	No	5250
Matrices	**424852** η 0-90° = 81.8% - 90-180° = 0.0%		Relative measurement
Protector Refractor Lens	Protector Glass Extra Clear Flat Smooth - VOLTANA 2 Lens 16 x Gaggione 5250 PMMA		

Observation

Matrix in efficiency @350 mA

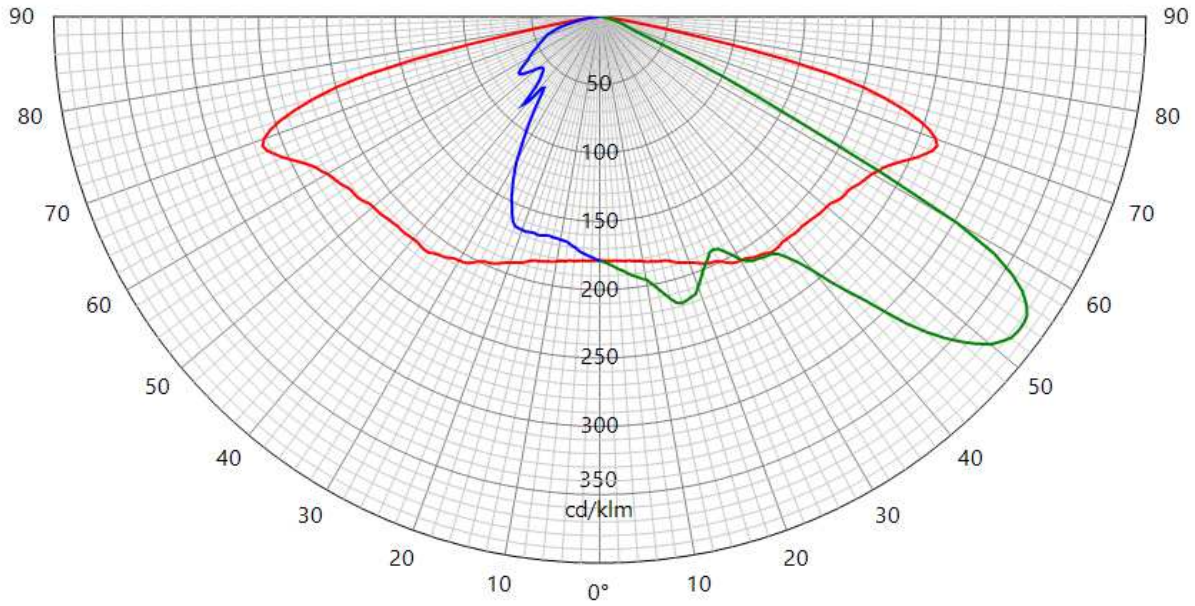
Light losses due to thermal stabilization: 1 %

Electrical measurement on LED (#1) :	Voltage = 44.68 V	Current = 0.350 A	Power = 15.61 W	
Electrical measurement on driver (#1) :	Voltage = 230.00 V	Current = 0.091 A	Power = 18.91 W	PF = 0.902

Total luminaire power = 18.91 W

Driver #1 : See observations for driver details - PCB 00-71-627 A

Plane	I Peak	Peak position	Index	I zero	Laboratory ambiant t°	Measurement date
0	265	69	S			
90	383	53	D	179	25.4°	01-02-2019
270	179	0	G			



42485

LUMINOUS INTENSITY DIAGRAM

Origin	Production	Luminaire	Inclination	Request #
TUNGSRAM-Schréder Zrt. Hungary	TUNGSRAM-Schréder Zrt. Hungary	VOLTANA 2	0°	FD39014

Source	Type	BIN	Trademark	Reference	# LEDs	Reflector
	LED	40-70M-4-TB-RB	Samsung	LH351C	16	5250

Reflector	Schreder Led assembly Road lighting Assembled 0.0°	No	5250
Matrices	**424853** Φ 0-90° = 3471lm - 90-180° = 0lm		Absolute measurement
Protector Refractor Lens	Protector Glass Extra Clear Flat Smooth - VOLTANA 2 Lens 16 x Gaggione 5250 PMMA		

Observation

Matrix in total flux @500 mA

Light losses due to thermal stabilization: 1,5 %

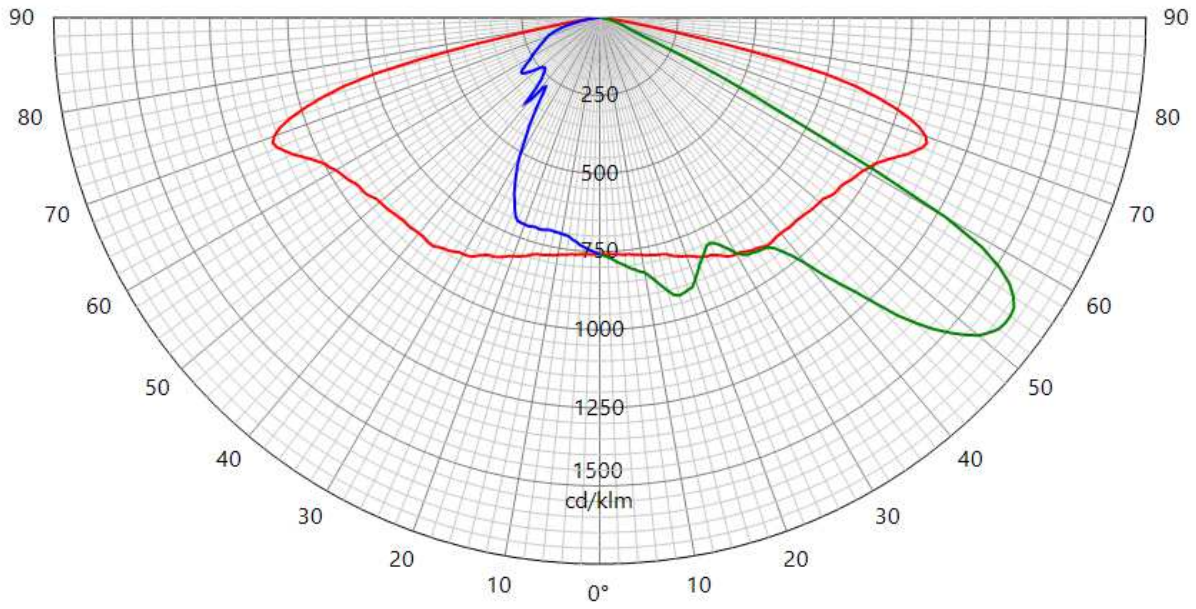
Electrical measurement on LED (#1) : Voltage = 45.54 V Current = 0.500 A Power = 22.74 W

Electrical measurement on driver (#1) : Voltage = 230.00 V Current = 0.120 A Power = 26.40 W PF = 0.954

Total luminaire power = 26.40 W : Lm/Watt = 131.47 lm/W

Driver #1 : See observations for driver details - PCB 00-71-627 A

Plane	I Peak	Peak position	Index	I zero	Laboratory ambiant t°	Measurement date
0	1123	69	S	758	25.4°	01-02-2019
90	1626	53	D			
270	758	0	G			



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LUMINOUS INTENSITY DIAGRAM

Origin	Production	Luminaire	Inclination	Request #
TUNGSRAM-Schréder Zrt. Hungary	TUNGSRAM-Schréder Zrt. Hungary	VOLTANA 2	0°	FD39014

Source	Type	BIN	Trademark	Reference	# LEDs	Reflector
	LED	40-70M-4-TB-RB	Samsung	LH351C	16	5250

Reflector	Schreder Led assembly Road lighting Assembled 0.0°	No	5250
Matrices	**424854** Φ 0-90° = 4628lm - 90-180° = 0lm		Absolute measurement
Protector Refractor Lens	Protector Glass Extra Clear Flat Smooth - VOLTANA 2 Lens 16 x Gaggione 5250 PMMA		

Observation

Matrix in total flux @700 mA

Light losses due to thermal stabilization: 2,6 %

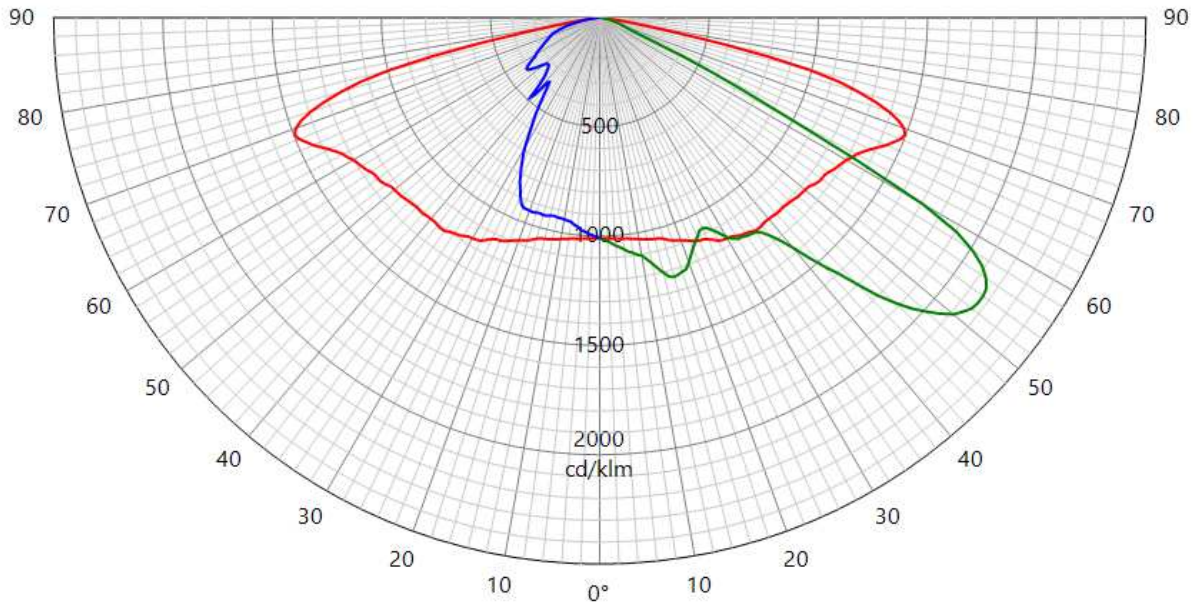
Electrical measurement on LED (#1) : Voltage = 46.53 V Current = 0.700 A Power = 32.52 W

Electrical measurement on driver (#1) : Voltage = 230.00 V Current = 0.165 A Power = 36.87 W PF = 0.973

Total luminaire power = 36.87 W : Lm/Watt = 125.52 lm/W

Driver #1 : See observations for driver details - PCB 00-71-627 A

Plane	I Peak	Peak position	Index	I zero	Laboratory ambiant t°	Measurement date
0	1497	69	S			
90	2168	53	D	1010	25.4°	01-02-2019
270	1010	0	G			



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LUMINOUS INTENSITY DIAGRAM

Origin	Production	Luminaire	Inclination	Request #
TUNGSRAM-Schréder Zrt. Hungary	TUNGSRAM-Schréder Zrt. Hungary	VOLTANA 2	0°	FD39014

Source	Type	BIN	Trademark	Reference	# LEDs	Reflector
	LED	40-70M-4-TB-RB	Samsung	LH351C	16	5250

Reflector	Schreder Led assembly Road lighting Assembled 0.0°	No	5250
Matrices	**424855** Φ 0-90° = 6170lm - 90-180° = 0lm		Absolute measurement
Protector Refractor Lens	Protector Glass Extra Clear Flat Smooth - VOLTANA 2 Lens 16 x Gaggione 5250 PMMA		

Observation

Matrix in total flux @1000 mA

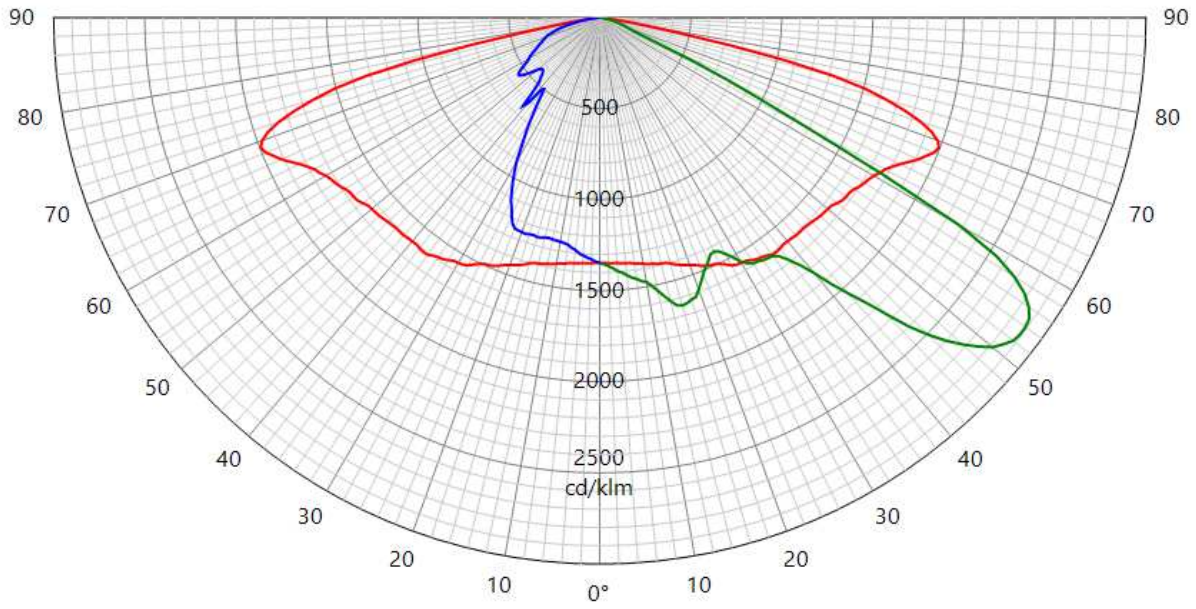
Light losses due to thermal stabilization: 3,6 %

Electrical measurement on LED (#1) :	Voltage = 47.84 V	Current = 1.000 A	Power = 47.84 W	
Electrical measurement on driver (#1) :	Voltage = 230.00 V	Current = 0.236 A	Power = 53.37 W	PF = 0.982

Total luminaire power = 53.37 W : Lm/Watt = 115.60 lm/W

Driver #1 : See observations for driver details - PCB 00-71-627 A

Plane	I Peak	Peak position	Index	I zero	Laboratory ambiant t°	Measurement date
0	1995	69	S			
90	2890	53	D	1347	25.4°	01-02-2019
270	1347	0	G			



42485

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 50Htz 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. 19525

Issued to:
Applicant:
Schreder S.A.
Rue de Lusambo, 67
1190 BRUXELLES
Belgium

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

Product	:	road, square and street lighting
Trade name(s)	:	SCHRÉDER
Type(s)/model(s)	:	VOLTANA 1, VOLTANA 2, VOLTANA 3, VOLTANA 4, VOLTANA 5

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: 22/06/2015

ir. C. Lana,
Certification Manager

CONFORM CU ORIGINALUL

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

C.S. ENERGOBIT SCHREDER LIGHTING S.R.L. CLUJ-NAPOCA 3

SPECIFICATION OF THE CERTIFIED PRODUCT

Product data

Product	:	road, square and street lighting
Trade name(s)	:	SCHRÉDER
Type(s)/Model(s)	:	VOLTANA 1, VOLTANA 2, VOLTANA 3, VOLTANA 4, VOLTANA 5
rated voltage (Un)	:	120-277 V, 220-240 V
nature of supply	:	ac
rated frequency	:	50/60 Hz
temperature limit (t max)	:	55°C
class	:	class I
degree of protection	:	IP66

Product data - type VOLTANA 1

rated power	:	10-29 W
rated secondary current (In SEC)	:	350, 500, 700, 1000 mA (LED)
lamp(s)	:	8 LED

Product data - type VOLTANA 2

rated power	:	20-56 W
rated secondary current (In SEC)	:	350, 500, 700, 1000 mA (LED)
lamp(s)	:	16 LED

Product data - type VOLTANA 3

rated power	:	28-80 W
rated secondary current (In SEC)	:	350, 500, 700, 1000 mA (LED)
lamp(s)	:	24 LED

Product data - type VOLTANA 4

rated power	:	37-110 W
rated secondary current (In SEC)	:	350, 500, 700, 1000 mA (LED)
lamp(s)	:	32 LED

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Business Riverside Park
Bld Internationalelaan 55 Build. D
B-1070 Brussels
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Product data - type VOLTANA 5

rated power	:	70-212 W
rated secondary current (In SEC)	:	350, 500, 700, 1000 mA (LED)
lamp(s)	:	64 LED

TESTS

Test requirements

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

Test results

The test results are laid down in certification file 618719/01.

Remarks

This certificate is based on test report No. TGM-VA EE 35754a SFT.

Conclusion

The examination proved that all test requirements were met.

Checked by, project leader	:	Christian Maes - 22/06/2015
Department Manager, Product Certification	:	
Certification Manager	:	2015-06-22

CONFORM CU ORIGINALUL

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 38

FACTORY LOCATION(S)

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

Tungsram-Schréder Világitási Berendezések Zrt
Tópart 2
2084 PILISSZENTIVAN
Hungary

LICENȚĂ

Nr. 19525

Eliberat pentru:
Aplicant:
Schrder S.A.
Rue de Lusambo,67
1190 BRUXELLES
Belgia

Posesor licență:
Schreder S.A.
Rue de Lusambo, 67
B-1190 BRUXELLES
Belgia

Produs	: aparate de iluminat căi de circulație largi, piețe, stradal
Nume de înregistrare	: SCHREDER
Tipul modelului	: Voltana1, Voltana 2, Voltana 3, Voltana 4 Voltana 5

Produsul şi orice versiune este menţionat în Anexa la această licenţă precum şi documentele la care se referă.

SGS CEBEC marcă de calitate înregistrată prin prezenta declară că produsul mai sus menţionat a fost certificat în baza:

- testelor tip conforme standardului specificat în anexă
- inspecţiei la locul de producţie
- documentului de certificare cu nr. 1173

SGS CEBEC, marcă de calitate înregistrată, garantează prin prezenta dreptul de a folosi marca de certificare CEBEC

Marca de certificare ENEC/CEBEC poate fi aplicată pe produsul specificat în această licenţă pe durata valabilităţii documentului de certificare ENEC/CEBEC, şi conform condiţiilor documentului de certificare ENEC/CEBEC.

Licenţa a fost eliberată la 22/06/2015
Semnătură indescifrabilă

ir. C. Lana,
Director Certificare

Este permisă numai publicarea integrală a acestei certificări, inclusiv anexa.
Acest certificat este valid doar impreuna cu cu publicarea adresie www.sgs.com/ee

CONFORM CU ORIGINALUL

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B-1070 Brussels
Tel.+32(0)2 556 00 20 Fax.+32(0)2 556 00 36

Traducator si interpret autorizat Germana si Engleza
TELIHOI CAMELIA
CIF: 25227725
Aut. M.J. 25136/2008

DATELE TEHNICE ALE PRODUSULUI CERTIFICAT

Date produs

Produs	: Căi de circulaţie largi, piețe, stradal
Nume de marcă	: SCHREDER
Tipul(uri)	: Voltana 1, Voltana 2, Voltana 3, Voltana 4 Voltana 5
Tensiune nominală	: 120-277V, 220-240 V
Tipul sursei	: a.c.
Frecvenţa nominală	: 50/60 Hz
Limita de temperatură (t max)	: 55^{0}C
Clasa	: clasa I
Grad de etanşeitate	: IP 66

Informatii produs- Voltana 1

Putere nominala	: 10-29 W
Curent secunda nominal (in SEC)	: 350, 500, 700, 1000 mA (LED)
Lampă(i)	: 8 LED-uri

Informatii produs- Voltana 2

Putere nominala	: 20-56 W
Curent secunda nominal (in SEC)	: 350, 500, 700, 1000 mA (LED)
Lampă(i)	: 16 LED-uri

Informatii produs- Voltana 3

Putere nominala	: 28-80 W
Curent secunda nominal (in SEC)	: 350, 500, 700, 1000 mA (LED)
Lampă(i)	: 24 LED-uri

Informatii produs- Voltana 4

Putere nominala	: 37-110 W
Curent secunda nominal (in SEC)	: 350, 500, 700, 1000 mA (LED)
Lampă(i)	: 32 LED-uri

CONFORM CU ORIGINALUL

618719/01

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S.C. ENERGOBIT SCHREDER LIGHTING S.R.L. 3 CLUJ-NAPOCA

Traducător și interpret autorizat Germană și Engleză TILIHOI CAMELIA CIF 25277725 Aut. MJ 25136/2009

Informatii produs- Voltana 5

Putere nominala	: 70-212 W
Curent secunda nominal (in SEC)	: 350, 500, 700, 1000 mA (LED)
Lampă(i)	: 64 LED-uri

TESTE

Teste solicitate

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

Rezultatele testelor

Rezultatele testelor sunt depuse in fișierul 618719/01

Observații

Acest certificat are la bază raportul testului Nr. TGM-VA EE 35754a SFT

Concluzie

Verificarea a demonstrat că toate cerințele au fost îndeplinite.

Verificat de către, coordonator proiect	: Christian Maes –22/06/2015
Director Departament, Certificare Produs	:
Director Certificare	: semnătură indescifrabilă, data

CONFORM CU ORIGINALUL

SGS Belgium NV-Division SGS CEBEC
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Bid internationaielaan 55 Bulid. D
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ANEXĂ LA LICENȚA ENEC/CEBEC Nr. 18051

S.C. ENERGOBIT SCHREDER LIGHTING S.R.L. CLUJ-NAPOCA 3

Traducător și interpret autorizat Germană și Engleză TIUHOI CAMELIA CIF 25377425 Aut. M.J. 25136/2008

SEDIUL (SEDIILE) FABRICII

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SUBSEMNATUL

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EXACTITATEA TRADUCERII
*CU TEXTUL DOCUMENTULUI **AUTENTIC**, REDACTAT ÎN LIMBA **ENGLEZĂ** ŞI VIZAT DE MINE.*

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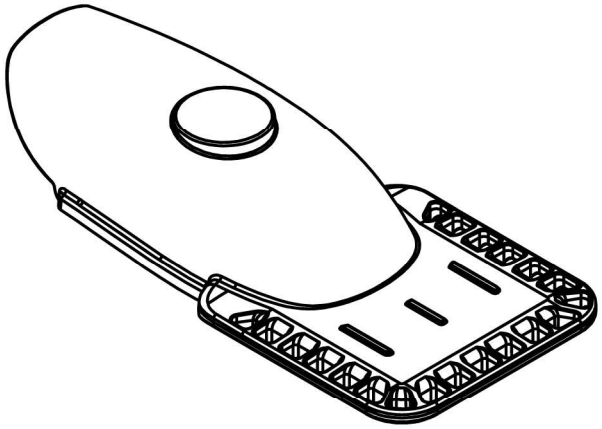
Traducător

Traducător și interpret autorizat Germană și Engleză
TILIHOI CAMELIA
CIF: 25277725
Aut. M.J. 25136/2014

CONFORM CU ORIGINALUL

S.C. ENERGOBIT SCHREDER LIGHTING S.R.L. CLUJ-NAPOCA

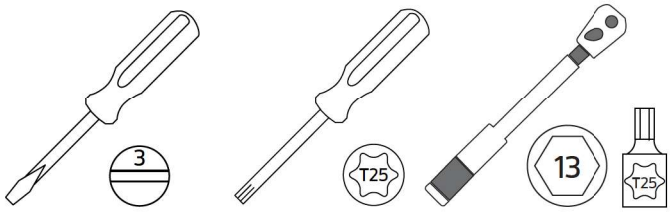
Schréder

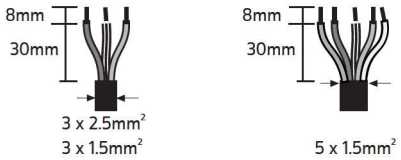


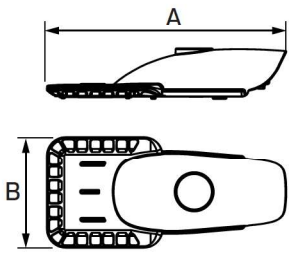
VOLTANA 2

Installation instructions

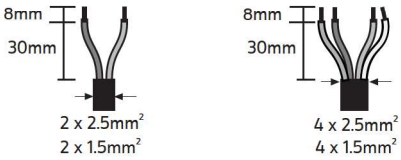
PLUS 02	CE			IEC EN60598				4-8m	350-1050mA 20-58W	220-240V 50/60Hz	IP 66





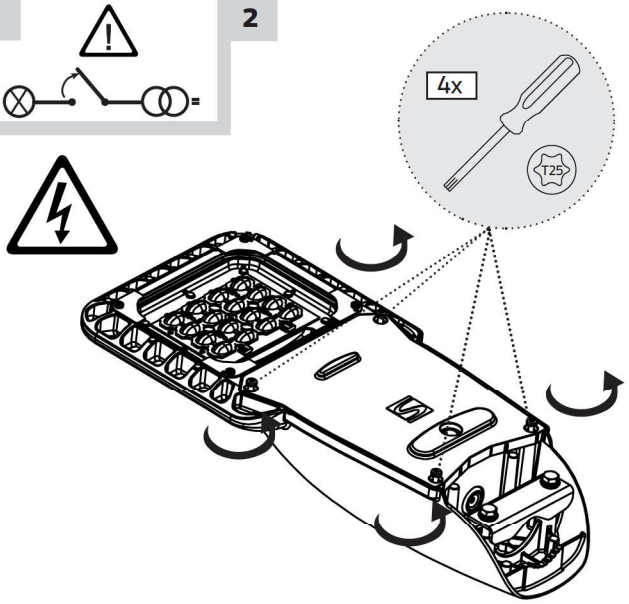


	Voltana2
A	518mm
B	240mm
C	109mm
	4.6kg
CxS	0.019m²



1

2



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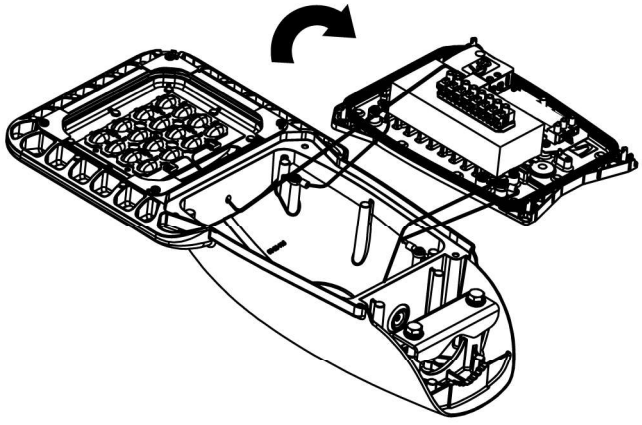
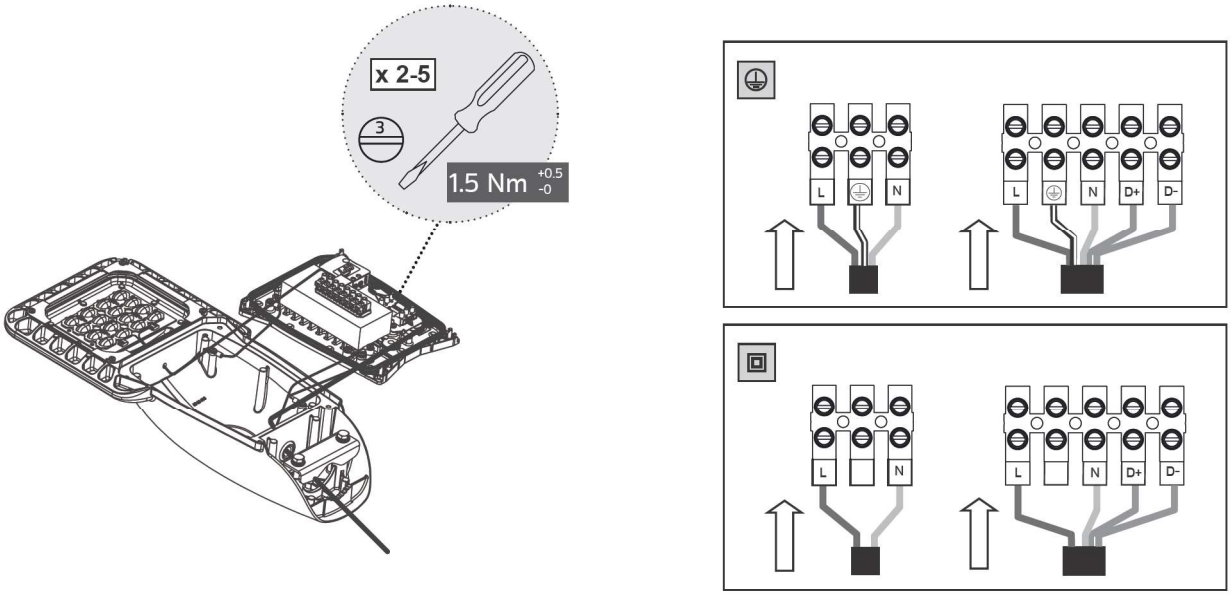
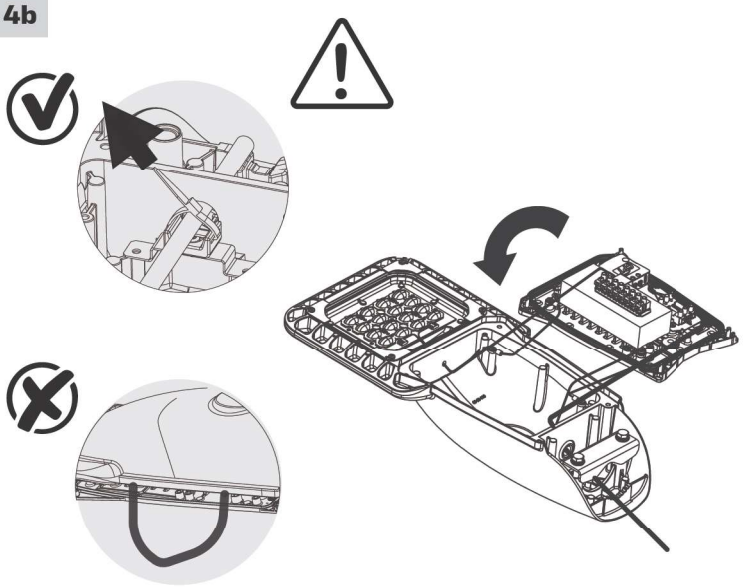


4a



4b



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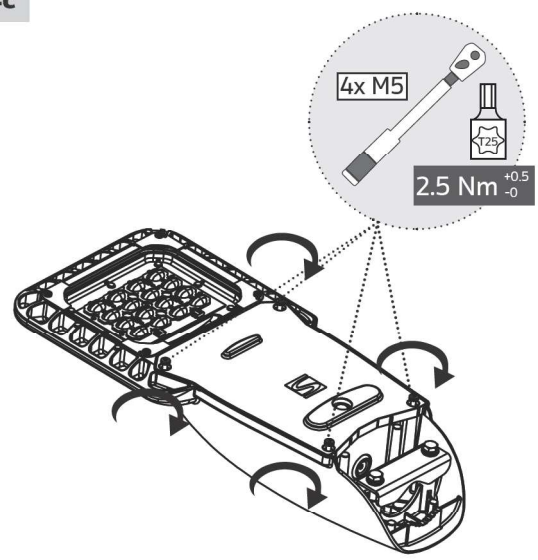

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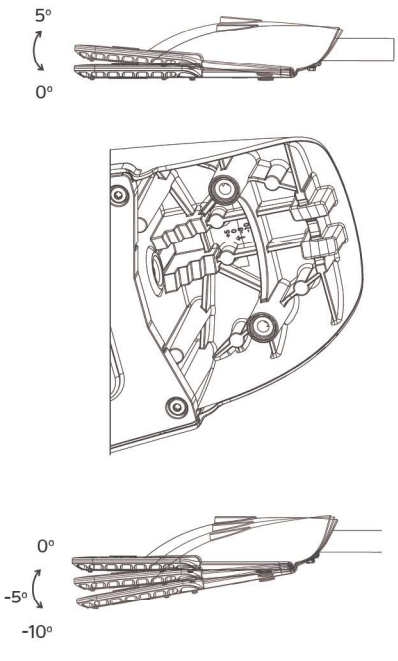
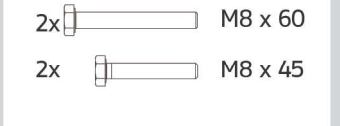
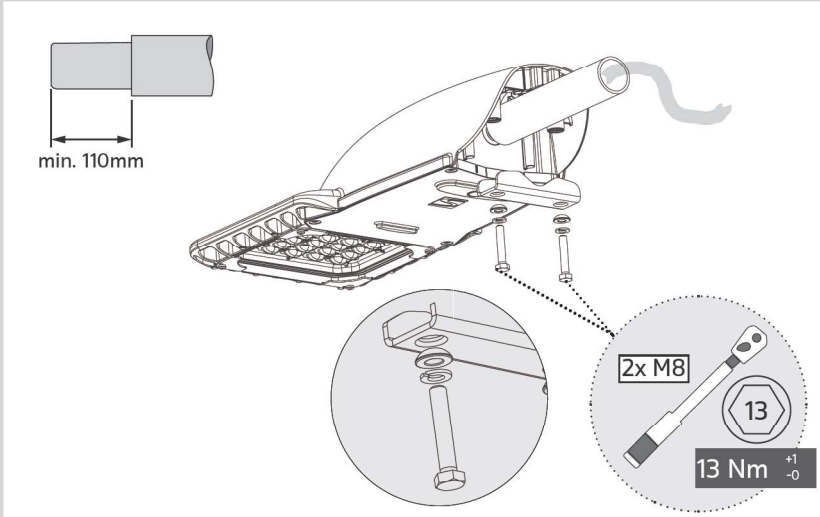
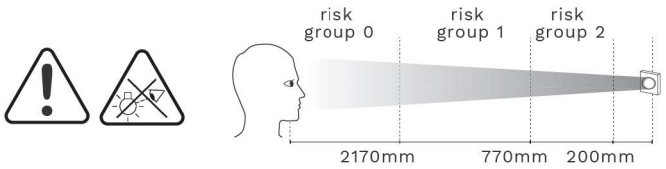




	Ø42	Ø48	Ø60
-10°	M8 x 45		M8 x 60
-5°			
0°			
+5°			





ENG

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.

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.

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

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.

ITA

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 qualifica similare.

Staccare sempre il filo della corrente prima di iniziare operazioni di installazione, manutenzione o riparazione.

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.

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

Collegamento Y: in caso di danneggiamento, il cavo deve essere sostituito esclusivamente dal costruttore, dal distributore o da un tecnico esperto per evitare rischi.

NLD

VEILIGHEIDSINSTRUCTIES
De lichtbron in deze armatuur dient uitsluitend door de fabrikant, diens onderhoudsvertegenwoordiger of een persoon met vergelijkbare kwalificaties te worden vervangen.

Schakel altijd de stroom uit voordat u aan installatie, onderhoud of reparaties begint.

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.

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

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.

DAN

SIKKERHEDSINSTRUKTIONER
Lyskilden i dette armatur må kun udskiftes af producenten, af en vedligeholdelsesvirksomhed udpeget af producenten eller af en tilsvarende kvalificeret virksomhed.

Sluk altid for strømmen inden påbegyndelse af installation, vedligeholdelse eller reparation.

Rislkogruppe 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, undgås.

I tilfælde af PVC-isoleret ledning SKAL elektrikeren sikre, at HELE kablet er beskyttet mod klimatiske forhold, dette gælder især UV-stråler og regn. Elektrikeren skal derfor sørge for, at kablet forbliver inde i armaturet og masten.

Type Y montering: Hvis det eksterne kabel eller ledning på dette armatur er beskadiget, må det kun udskiftes af producenten
eller af en servicepartner til producenten eller tilsvarende kvalificeret person, for at undgå skader.

DEU

SICHERHEITSHINWEISE
Die Lichtquelle in dieser Leuchte darf nur vom Hersteller bzw. von dessen
Kundendienst oder einer ähnlich qualifizierten Person ausgetauscht werden.

Schalten Sie die Stromversorgung vor Installations-, Wartungs- und
Reparaturarbeiten stets ab.

Rislkogruppe 2 - VORSICHT! Von diesem Produkt kann möglicherweise gefährliche optische Strahlung ausgehen. Es ist darauf zu achten, dass man im eingeschaltetem Zustand der Leuchte nicht innerhalb einer Distanz von 0.77m direkt in die Leuchte schaut. Dies könnte schädlich für Ihre Augen sein.

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

Y-Verbindung: Falls die Leitung beschädigt ist, darf diese nur vom Hersteller, dem Händler oder einem Experten ersetzt werden, um Risiken zu vermeiden.

POL

INSTRUKCJA BEZPIECZEŃSTWA
źródło światła zamontowane w tej oprawie może być wymieniane wyłącznie przez producenta, pracownika serwisu lub inną wykwalifikowaną osobę.

Przed rozpoczęciem instalacji, konserwacji lub naprawy należy bezwzględnie odłączyć zasilanie elektryczne.

GRUPA RYZYKA 2 - OSTRZEŻENIE Produkt może emitować niebezpieczne
promieniowanie optyczne szkodliwe dla oczu. Nie należy patrzeć bezpośrednio na pracujące źródło światła. Oprawa powinna być tak zamontowana, aby jej długotrwała obserwacja była możliwa z odległości nie mniejszej niż 0.77m.

W przypadku kabla sieciowego izolowanego PCV 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 słupa.

Połączenie Y: ze względów bezpieczeństwa uszkodzony przewód powinien zostać wymieniony wyłącznie przez producenta, dystrybutora lub wykwalifikowanego elektryka.

RUS

инструкция безопасности
замену источника света для этого светильника должен выполнять только произ водитель, сервисный агент производителя или специалист с аналогичной квалификацией.

Перед проведением установки, сервисного обслуживания или ремонта всегда отключайте питание устройства.

ГРУППА РИСКА 2 - ВНИМАНИЕ! Возможно опасное оптическое излучение от этого изделия. Не смотрите на источник света. Может быть вредно для глаз. Светильник должен быть расположен таким образом, чтобы было невозможно смотреть на него с расстояния менее 0.77м.

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.

Подключение Y: в случае повреждения кабеля его замена производится только производителем, дистрибьютором или экспертом.

RON

INSTRUCŢIUNI 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.

Opriți întotdeauna alimentarea electrică înainte de lucrările de instalare, întreținere sau reparații.

GRUP DE RISC 2 - ATENȚIE! Este posibil ca acest produs să emită radiații optice periculoase. Nu priviți direct înspre lampa aflată în stare de funcționare. Acest lucru poate fi dăunător ochilor. Aparatul de iluminat trebuie să fie poziționat astfel încât să nu fie posibil, în mod normal, privitul direct înspre lampă, la o distanță mai mică de 0.77m.

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 stâlpului

Conexiune Y: În caz de deteriorare a firului, acesta trebuie înlocuit numai de către producător, distribuitor sau un expert, pentru evitarea riscurilor.

FRA

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.

Mettez toujours l'appareil hors tension avant toute opération d'installation, d'entretien ou de réparation.

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.

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

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.

SPA

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.

Apague siempre el interruptor de alimentación antes de realizar tareas de instalación, mantenimiento o reparación.

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.

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

Conexión en Y: si el cable se daña, solo debe reemplazarlo el fabricante, un distribuidor o un experto para evitar riesgos.

POR

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.

Desligue sempre a alimentação antes de proceder a actividades de instalação, manutenção ou reparação.

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.

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.

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.

SWE

SÄKERHETSINSTRUKTIONER
Ljuskällan som monteras i denna armatur får endast ersättas av en Schréder-anställd eller annan kvalificerad person.

Stäng alltid av strömmen före installation, underhåll eller reparation.

Rlskgrupp 2 - VARNING! Eventuellt farlig 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.

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

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

HUN

BIZTONSÁGI ÚTMUTATÓ
A lámpatestben található fényforrást kizárólag a gyártó, szervizképviselője vagy hivatalos szakszerviz szakembere cserélheti ki.

A szerelés, karbantartás és javítás előtt minden esetben végezzen áramtalanítást.

KOCKÁZATI CSOPORT 2 - VIGYÁZAT! A berendezés veszélyes optikai sugárzást bocsáthat ki! Ne nézzen 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!

PVC szigetelésű tápkábel esetén a telepítőnek biztosítania KELL, hogy a TELJES kábel védett legyen az éghajlati viszonyoktól, különösen az UV sugárzástól és az esőtől, ügyelve arra, hogy a kábel a lámpatest és az oszlop belsejében legyen.

Y-csatlakozó: A sérült vezetéket kizárólag a gyártó, forgalmazó vagy szakember cserélheti ki a kockázatok elkerülése végett.

CHI

安全守则

该灯具内的光源仅可由施莱德员工、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。不要凝视正在工作的光源。有可能对眼睛产生危害。灯具应当选择合理位置安装，尽可能避免长时间在0.77米以内凝视。

如果选择PVC主电缆，必须确保整个电缆被很好的保护以抵御恶略气候状况，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，电缆必须被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。

UKR

інструкція безпеки
Джерело світла, що міститься у цьому світильнику, повинен замінятн 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 ввімкнене 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, переконавшись, що кабель знаходиться всередині світильника та опори

У-з'єднання: у разі пошкодження дроту його має замінити лише виробник, дистриб'ютор чи експерт, щоб запобігти ризикам.

SRP

UPUTSTVA
Izvor svetla u ovom rasvetnom telu može da zameni samo proizvođač, njegov servisni agent ili na sličan način kvalifikovana osoba.

Uvek isključite napajanje pre instalacije, održavanja ili popravke.

GRUPA RIZIKA 2 - PAŽNJA! Proizvod može emitovati štetno optičko zračenje.
Izbegavati vizuelni kontakt sa svetlosnim izvorom dok je u radu. Moguće oštećenje vida. Svetilju treba pozicionirati tako da se ne očekuje duži vizuelni kontakt sa izvorom sa razdaljine manje od 0.77m.

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 stuba.

Y-veza: U slučaju oštećenja žice zamenu mora da obavi isključivo proizvođač, distributer ili stručnjak kako bi se izbegao rizik.

AR

تعليمات السلامة:
في حاله الحاجه لتغير مصدر الضوء, يتم ذلك من خلال الشركه المصنعه او الوكيل المخول لعمل ذلك او شخص موهل لذلك.
دائما افصل الدائره الكهربائيه قبل تركيب او صيانه الجهاز.
تحذير: هذا المنتج مصنف ضمن مجموعه المخاطر 2
.خطر انبعاث اشعاع ضوئ , لا تنظر مباشره الى الجهاز و هو مضاء لان ذلك مؤذي للعين. الجهاز يجب ان يركب بشكل يضمن ان التحديق بمصدر الضوء من مسافه اقل من 0.77 م غير متوقعه.
يجب على الشخص الذي يوصل الجهاز بالدائره الكهربائيه التاكد من ان محمي من التاثيرات المناخيه و خاصه الاشعه فوق البنفسجيه و المطر من خلال التاكد ان الكابل محوي بداخل العمود و الجهاز
في حاله الحاجه لتغير الاسلاك الداخليه , يتم ذلك من خلال الشركه المصنعه او الوكيل المخول لعمل ذلك او شخص مخول لذلك.
دائما افصل الدائره الكهربائيه قبل تركيب او صيانه الجهاز.

12/04/2021

Lumen maintenance report

LED information

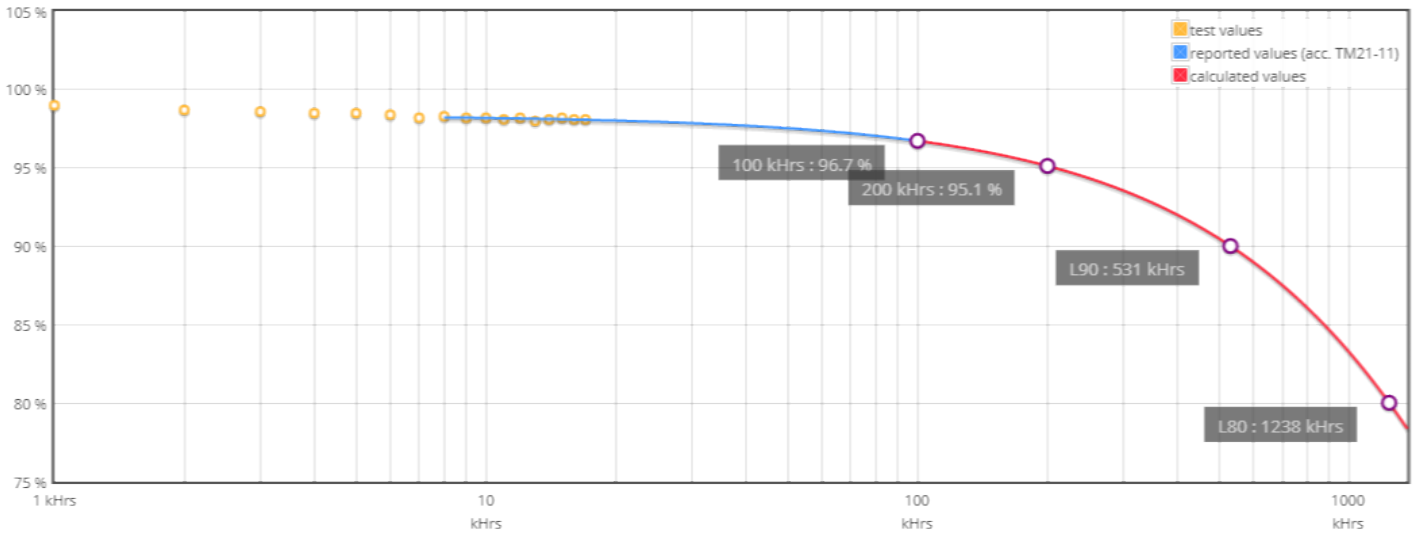
LED type	LH351C
LED current	1000 mA
Ts	55°C
Description	SLED-19-031-R02

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.

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-2**
Sample n°: P-E14363

Test purpose: **Aerodynamic wind test**

Remarks:
Test request n°: P-D14699
Folder n°: P-F14058

TEST CONDITIONS:

Operator: ULg – CAT Soufflerie

2 tests realized:

1) Aerodynamic Coefficient determination
2) Endurance test

1) Aerodynamic coefficient determination

	Value (m²)		
Wind Direction	**Cd.S (drag)**	**Cs.S (Side)**	**Cl.S (Lift)**
Front	0,004	-0,004	0,002
Side	0,019	0,019	0,019

2) Endurance test: wind qualification test

Wind direction: Side

Wind resistance: 10' at 180 km/h

Result: OK

CONCLUSIONS:

VOLTANA-2 satisfies the wind speed test 180 Km/h for 10 minutes.
See Aerodynamic coefficients here above.

Duplicate to: Mr M. Thijs
LAB 23/09/2014
J.P. Harchies

//P-14E699

Laborator teste
RAPORT DE TEST FIZIC

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

Subiect: **VOLTANA 2**
Eşantion nr.: P-E14363

Scopul testului: **Test rezistenţă aerodinamică la vânt**

Observaţii:
Test solicitat nr.: P-D14699
Dosar nr.: : P-F14058

CONDITII TESTARE: Operator: ULg – CAT Soufflerie

2 teste efectuate:

1) Determinarea coeficientului aerodinamic
2) Test de rezistenţă

1) Determinarea coeficientului aerodinamic

	Valoare (m^2)		
Direcţie vânt	**Cd.S (tras)**	**Cs.S (lateral)**	**CLS (ridicat)**
Frontal	0,004	0,004	0,002
Lateral	0,019	-0,019	0,019

1) Test de rezistenţă: calificare pentru rezistenţa la vânt

Direcţie vânt: Lateral
Rezistenţă la vânt: 10' la 180km/oră
Rezultat: OK

CONCLUZII:

VOLTANA 2 îndeplineşte cerinţele testării pentru o viteză a vântului de 180km/h, timp de 10 minute. Consultaţi coeficienţii aerodinamici menţionaţi anterior.

Duplicat pentru: M. Thijs
LAB 23/09/2014 **//P-14E699**
J.P. Harchies

[semnătură indescifrabilă]

ELECTRIC PRODUCTS CERTIFICATION INDEPENDENT BODY - OICPE
ORGANISM INDEPENDENT PENTRU CERTIFICAREA PRODUSELOR ELECTRICE
SOCIETATE CU RĂSPUNDERE LIMITATĂ
SPLAIUL UNIRII Nr. 313, CORP M-1, D3-14, 030138, BUCUREŞTI, ROMÂNIA,
J40/3946/2009; Tel. : +40 21 589 33 05 Tel/Fax : +40 21 346 49 35; http://www.oicpe.ro
LICPE

LABORATORUL DE ÎNCERCĂRI PENTRU CERTIFICAREA PRODUSELOR ELECTRICE
Testing Laboratory for Electrical Products Certification

RAPORT DE ÎNCERCĂRI

TEST REPORT

Nr. 98 / 20.03.2019
Pag. 1 / 6

Exemplar nr. 1 din 2

ÎNCERCAREA SOLICITATĂ Required Test	**Verificarea gradului de protecţie asigurat prin carcase împotriva impacturilor mecanice din exterior – IK10 conform SR EN 62262:2004, cap. 5, cap. 6 şi cap. 7**
PRODUSUL Equipment	**CORP DE ILUMINAT CU LED-uri tip VOLTANA2 16L – Cod VOLTA2-000037**
PRODUCĂTOR Manufacturer	**TUNGSRAM-Schréder Zrt., Ungaria**
CLIENT (nume, adresă, cerere) Customer (name, address, order)	**SCHRÉDER ROMANIA S.R.L** **Cluj-Napoca / 400228, Str. Corneliu Coposu, Nr. 167A** **Cerere nr. 76/08.03.2019**
MANAGER LABORATOR Laboratory Manager	**Ing. Niculae LICSANDRU**
DIRECTOR TEHNIC OICPE OICPE Technical Director	**Ing. Dragoş ROSMETENIUC**

ELECTRIC PRODUCTS CERTIFICATION INDEPENDENT BODY · ICPE · SOCIETATE CU RĂSPUNDERE LIMITATĂ

DATELE TEHNICE ALE PRODUSULUI:

CORP DE ILUMINAT CU LED-uri tip VOLTANA2 16L – Cod VOLTA2-000037

- Tensiune nominală	: 230 V~
- Frecvenţa nominală	: 50 Hz
- Putere consumată	: 56 W
- Sursa alimentare	: model
- Factor de putere	: > 0,97
- Sursă de lumină	: 1 modul LED cu 16 LED-uri : 2 module a câte 8 lentile tip 5136 – PMMA (producător Schréder)
- Grad protecție	: IP 66
- Rezistenţa la impact	: IK10
- Temperatura ambiantă maximă nominală (t_a)	: + 55 ^{0}C
- Clasa de protecţie	: I
- Dispersor carcasă	: sticlă securizată tratată termic cu grosimea de 5mm
- Carcasă	: Aluminiu turnat sub presiune
- Masă	: 4,56 kg
- Dimensiuni de gabarit	: [518 x 240 x 109] mm
- Înălțimea de montare	: 4 - 12 m
- Utilizare	: Iluminat public (zone pietonale, străzi rezidențiale, zone comune, străzi comerciale în zonele urbane)

Lot / Serie / An fabricație	: ..... / 2019
Felul produsului	: serie curentă
Data primirii produsului	: 28.03.2019
Perioada încercărilor	: 28.03.2018
Modul de prelevare:	: conform procedurii PG-11, OICPE
Număr de produse încercate	: 1 bucată

Responsabil de încercări	**Ing. Daniel DRAGNEA**	

OPINII ŞI INTERPRETĂRI:

Rezultatele încercării pentru verificarea rezistenței la impact mecanic exterior IK10, din prezentul Raport de Încercări, atestă conformitatea produsului „CORP DE ILUMINAT CU LED-uri tip VOLTANA2-16L – Cod VOLTA2-000037 " cu cerinţele cap. 5; 6 și 7 din SR EN 62262:2004.

Articol din DN	Cerinţă conform SR EN 62262:2004	Rezultate	Mod de îndeplinire a cerinţei
	GRAD DE PROTECŢIE ÎMPOTRIVA IMPACTURILOR MECANICE		
5	**PRESCRIPŢII GENERALE PENTRU ÎNCERCĂRI**		
5.1	**Condiţii atmosferice pentru încercări**		
	Dacă nu este specificat altfel în standardul particular de produs, încercările trebuie efectuate în condiţii atmosferice standard pentru încercările definite în CEI 60068-1: - domeniul de temperaturi: de la 15 °C până la 35 °C; - presiune atmosferică: de la 86 kPa până la 106 kPa (de la 860 mbar până la 1060 mbar)	 Măsurat : 16,5 °C Măsurat : 962 mbar	 P P
5.2	**Carcase supuse încercării**		
	Fiecare carcasă supusă încercării trebuie să fie curată şi în stare nouă, completă şi cu toate părţile la locul lor, dacă nu este prevăzut altfel în standardul particular de produs.	1 bucată CORP DE ILUMINAT CU LED-uri VOLTANA2 16L – Cod VOLTA2-000037, curat și în stare nouă complet și cu toate părţile la locul lor.	P
5.3	**Prevederi indicate în standardul particular de produs**		
	Standardul particular de produs trebuie să prevadă: - definţia pentru «carcasă» aşa cum se aplică la tipul particular de echipament; - mijlocul de încercare (de exemplu ciocanul pendular, ciocanul cu resort sau ciocanul vertical, a se vedea articolul 7); - numărul de eșantioane supuse la încercări; - condiţiile de montaj, asamblarea și poziționarea eșantioanelor, de exemplu prin utilizarea unei suprafeţe artificiale (tavan, podea sau perete) cu scopul de a simula condiţiile destinate de serviciu, atât cât este posibil; - precondiționarea care trebuie utilizată, dacă se aplică; - dacă încercarea se efectuează sub tensiune; - dacă încercarea se efectuează cu părţile mobile în mișcare; - numărul de impacturi și punctele lor de aplicare (a se vedea 6.4). În absenţa unor astfel de precizări în standardul particular de produs, trebuie aplicate condiţiile din acest standard.	Standardul particular de produs SR EN 60598-2-3:2004 + A1:2012 + AC:2015 prevede condiţiile în care trebuie să se realizeaze verificarea gradului de protecţie la impacturi mecanice. N = 1 (un) impact S-au aplicat condiţiile din standardul SR EN 60598-2-3:2004 + A1:2012 + AC:2015 art. 3.6.5.2.1 referitor la numărul de impacturi.	P P P
6	**ÎNCERCĂRI PENTRU VERIFICAREA PROTECŢIEI ÎMPOTRIVA IMPACTURILOR MECANICE**		
6.1	Încercarea specificată în acest standard este încercare de tip.	Încercare de tip IK 10	P
6.2	Verificarea protecţiei împotriva impacturilor mecanice se efectuează prin aplicarea de lovituri carcasei de încercat. Articolul 7 descrie dispozitivele care se utilizează pentru această încercare.	A se vedea articolul 7 din prezentul RI	P
6.3	În timpul încercării, carcasa trebuie montată pe un suport rigid și în conformitate cu instrucţiunile de utilizare ale fabricantului. Se consideră că un suport este suficient de rigid dacă deplasarea sa este mai mică sau cel mult egală cu 0,1 mm sub efectul unei lovituri aplicate direct și a cărei	Corp de iluminat cu LED-uri VOLTANA 2 – 16L – Cod VOLTA2-000037 montat pe suport rigid.	P

Articol din DN	Cerinţă conform SR EN 62262:2004	Rezultate	Mod de îndeplinire a cerinţei
	energie corespunde gradului de protecție. Pot fi specificate montaje și suporturi alternative în standardul particular de produs, adecvate produsului.		
6.4	Numărul de impacturi (lovituri) trebuie să fie de cinci pe fiecare față expusă, dacă nu este specificat altfel în standardul particular de produs. Loviturile trebuie distribuite normal pe fețele carcasei (sau carcaselor) de încercat. În niciun caz nu trebuie aplicate mai mult de trei lovituri în jurul aceluiași punct al carcasei. Standardul particular de produs trebuie să specifice punctele pentru aplicarea loviturilor.	Corpul de iluminat VOLTANA 2-16L – Cod VOLTA2-000037 a fost pregătit pentru încercarea la impact mecanic. Numărul de impacturi aplicate - 1 impact în zona centrală a dispersorului conform SR EN 60598-2-3:2004 + A1:2012 + AC:2015 art. 3.6.5.2.1 (Vezi Fig. 1 și Fig. 2 din Anexă).	P
6.5	**Evaluarea încercării**		
	Standardul particular de produs trebuie să specifice criteriile pe care se bazează acceptarea sau respingerea carcasei, și în particular: - deteriorările admise; - criteriul de verificare privind menținerea securității și siguranței echipamentului.	Dispersorul carcasei din sticlă securizată tratată termic a rezistat la impactul central aplicat - IK 10 (Vezi Fig. 3 - Anexă)	P
7	**APARATE DE ÎNCERCARE**		
	Încercările trebuie realizate prin utilizarea unia din aparatele de încercare descrise în CEI 60068-2-75. Standardele particulare de produs trebuie să specifice tipurile de aparate de încercare care sunt adecvate.	Produsul a fost încercat conform testului Ehc: Ciocan vertical, descris în SR EN 60068-2-75:2015 Pentru IK 10: - Dispozitivul corespunde cu figura A.3 din SR EN 60068-2-75:2015 - Greutate ciocan: 5 kg - Înălțime: 400 mm. - Energie de impact: 20 J	P

Mod de îndeplinire a cerinţei:

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

INCERTITUDINI DE MĂSURARE

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

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

Articol din DN	Cerinţă conform SR EN 62262:2004	Rezultate	Mod de îndeplinire a cerinţei

ANEXĂ

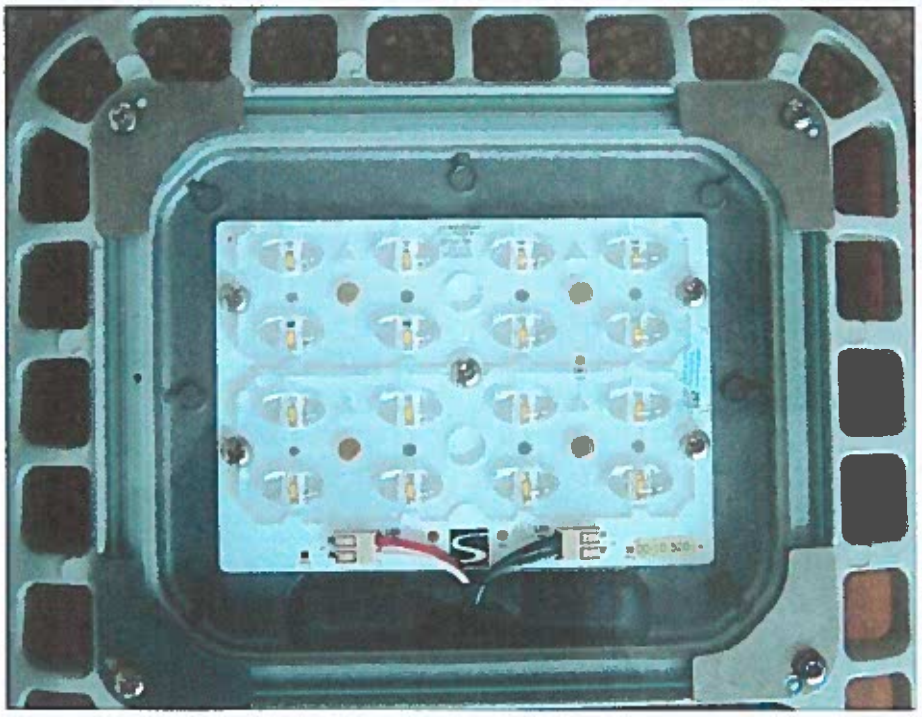


Fig. 1 – Corpul de iluminat VOLTANA2 16L – Cod VOLTA2-000037 înainte de verificarea la impact (IK 10)

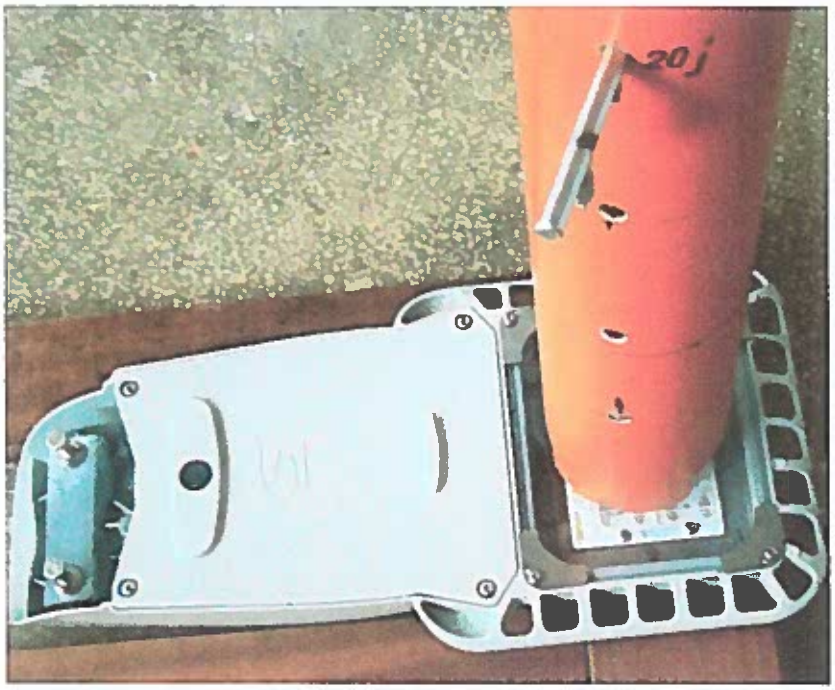


Fig. 2 – Corpul de iluminat VOLTANA2 16L – Cod VOLTA2-000037 pregătit pentru verificarea impact (IK 10)

Articol din DN	Cerinţă conform SR EN 62262:2004	Rezultate	Mod de îndeplinire a cerinţei

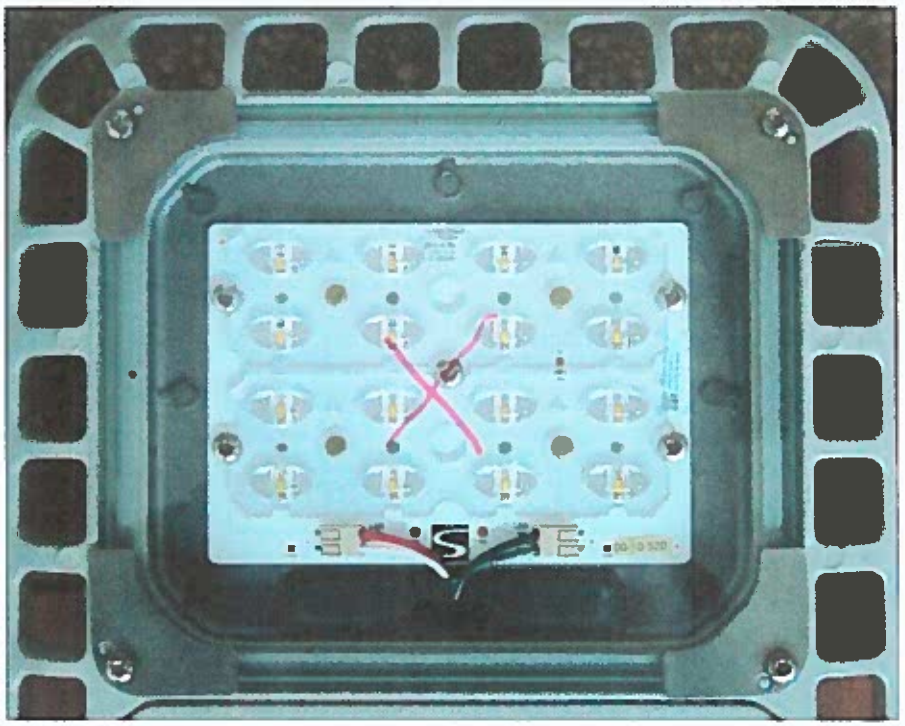


Fig. 3 – Corpul de iluminat VOLTANA2 16L – Cod VOLTA2-000037 după verificarea la impact (IK 10) – dispersorul din sticlă securizată tratată termic a rezistat la impactul mecanic

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-2 16 led's @ 1A**
Sample n°:

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

Remarks:
Test request n°: P-D14696
Folder n°: P-F14058

TEST CONDITIONS:

Operator: BOMBIL Patrick

Preconditioning: endurance test

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

CONCLUSIONS:

VOLTANA-2 16 led's @ 1A satisfies the IP66 test following IEC/EN 60598-1 Standard.

Duplicate to: Mr M. Thijs
LAB 23/09/2014
J.P. Harchies

//P-14E696

Traducere din limba engleză

Laborator teste
RAPORT DE TEST FIZIC

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

Subiect: **VOLTANA- 2 16 Led @ 1A**
Eşantion nr:

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

Observaţii:
Cerere de efectuare test nr.: P-D14696
Dosar nr.: P-F14058

CERINŢELE TESTULUI:

Operator: BOMBIL Patrick

Pregătire: test de rezistenţă

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

CONCLUZII:

VOLTANA-2 16 Led @ 1A a trecut testul IP66 conform Standard IEC/EN 60598-1.

Duplicat pentru: M. Thijs
LAB 23.09.2014
J.P. Harchies
(Semnătură indescifrabilă)

//P-14E696

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

Electrical measurements

General information

Subject : VOLTANA 2 - 16 LEDs Philips 75 W driver

Asked by : PELBÁRT Péter
Created on : 08/11/2018
Validated on : 13/12/2018
Test number : D180798
Sample(s) : E180607
Folder : P-F14058

Test conditions

Luminaire : VOLTANA 2

Number of LED : 16

LED : LG Innotek 3535 Gen4 TOP

Driver : Xitanium FP 75W 0.3-1.0A SNLDAE 230V C133 sXt / 00-49-490

Driver info : Tc (max) 80 °C

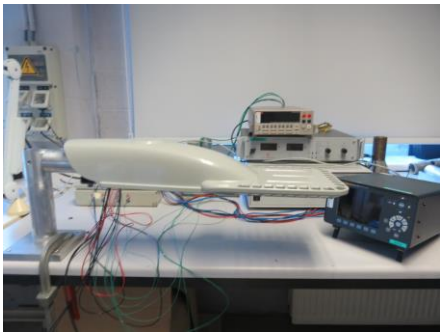
Driver current (mA) : 1000

SPD : Vossloh spc3/230/10K/i

Measurements devices :
Fluke Norma 4000 - HF Powermeter - (E110): Electrical measurements
Keithley 2701 (E081) – Ethernet Multimeter/Data Acquisition System : Thermal & VF led measurements

Power supply :
APT 300XAC AC power supply (E102)
Supply voltages: 230 V 50 Hz

Operator : KOY Fiston



IMG_0839

Conclusion

Informative

PF : 0,98
Efficiency : 90,0%
THD : 7,8%
OK according to IEC 61000-3-2, Class C, > 25 W

Validated by :

GHYSENS Gilles

Duplicate to : VERBEECK Philippe, PELBÁRT Péter, HORVÁTH Csaba, BEDŐ Péter, BOS Peter

LAB : 17/12/2018

Measurements

Test(s)

Name	Description	Result
Test @ 1000 mA		Success

Test @ 1000 mA

Annex(es)

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

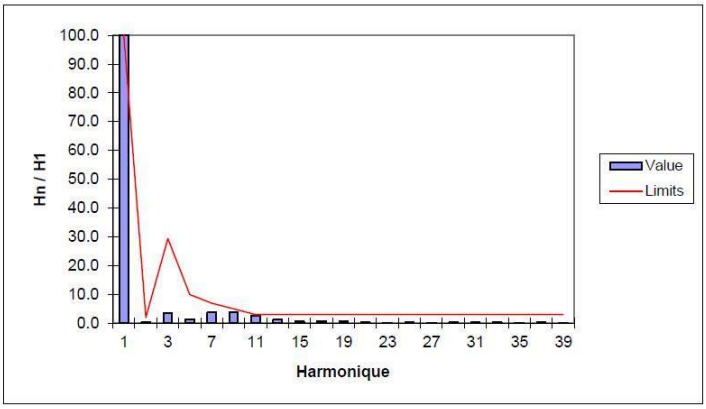
Driver :Xitanium FP 75W 0.3-1.0A SNLDAE 230V C133 sXt / 00-49-490 Tc (max) 80 °C
SPD :Vossloh spc3/230/10K/i

Date 13/11/2018

Operator FKY Norma AQ number E110

Power Factor 0.9826 Cos φ (H01) 0.9856

Harmonic	Taux (%)	Limite (% H1)
1	**100.0**	100.0
2	0.3	2.0
3	3.7	29.5
5	1.3	10.0
7	3.8	7.0
9	3.9	5.0
11	2.5	3.0
13	1.3	3.0
15	0.7	3.0
17	0.8	3.0
19	0.7	3.0
21	0.3	3.0
23	0.2	3.0
25	0.3	3.0
27	0.2	3.0
29	0.3	3.0
31	0.3	3.0
33	0.3	3.0
35	0.2	3.0
37	0.3	3.0
39	0.1	3.0



input		output 1	
Urms	229.9 V	Urms	48.5 V
Irms	0.237 A	Irms	0.995 A
Prms	53.7 W	Prms	48.3 W
S	54.6 VA		
Q	-10.1 VAR		
PF	0.9826		
$I_{(H01)}$	0.237 A	Uavg	48.5 V
Cos $\varphi_{(H01)}$	0.9856	Iavg	0.995 A
η rms	90.0%	Pavg	48.3 W
η avg	90.0%		
THD	7.8%		

voltana2_16led_phil_elec

Laborator teste
RAPORT DE TEST FIZIC

R-Tech
Rue de Mons 3 – B-4000 Liège – Belgium
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Member of Schréder Group

FORMULAR L-54 Editie 01 – Revizie 00 - Data: 14/06/2018

Măsurători electrice

Informații generale

Subiect : VOLTANA 2 - 16 LEDs Philips 75 W driver

Solicitat de: PELBÁRT Péter

Creat la: 08/11/2018

Validat la: 13/12/2018

Număr test: D180798

Esantion(e):: E180607

Dosar: P-F14058

Condiții test

Aparat : VOLTANA 2

Număr de LED-uri: 16

LED : LG Innotek 3535 Gen4 TOP

Balast : Xitanium FP 75W 0.3-1.0A SNLDAE 230V C133 sXt / 00-49-490

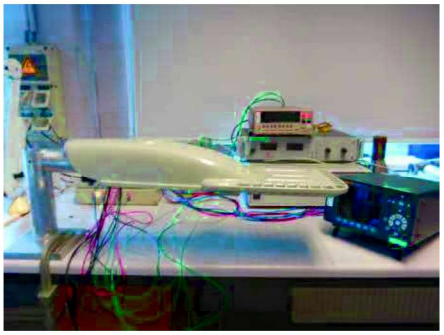
Informatii Balast : Tc (max) 80 °C

Curent Balast (mA) : 1000 *SPD* : Vossloh spc3/230/10K/i

Echipamente de măsură ::
Fluke Norma 4000 - HF Powermeter - (E110): Măsurători electrice
Keithley 2701 (E081) – Multimetru Ethernet/Sistem de achiziții date : Măsurători Termice & VF led

Alimentare:
APT 300XAC alimentare c.a. (E102)
Tensiune de alimentare: 230 V 50 Hz

Operator : KOY Fiston



IMG_0839

Concluzii

Informativ

PF : 0,98
Eficiență: 90,0%
THD : 7,8%
OK conform IEC 61000-3-2, Clasa C, > 25 W

Traducător și Interpret Autorizat
LI[illegible]
Am[illegible]
Engleză, Franceză

Validat de :

GHYSENS Gilles

Duplicat pentru : VERBEECK Philippe, PELBÁRT Péter, HORVÁTH Csaba, BEDŐ Péter, BOS Peter

LAB : 17/12/2018

D180798

Measurements

Test(s)

Nume	Descriere	Rezultat
Test @ 1000 mA		Succes

Test @ 1000 mA

Anexa(e)

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

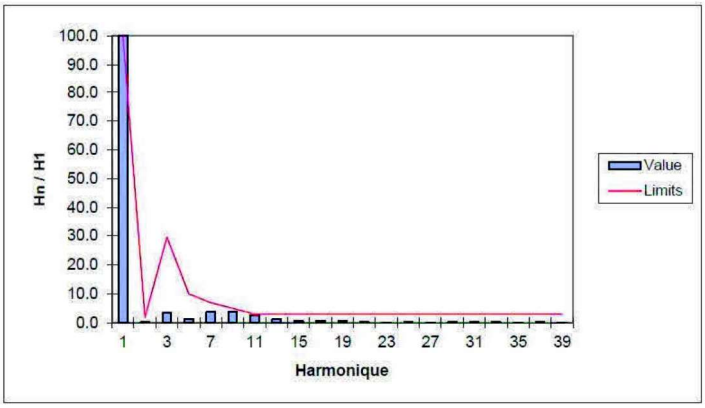
Driver :Xitanium FP 75W 0.3-1.0A SNLDAE 230V C133 sXt / 00-49-490 Tc (max) 80 °C
SPD :Vossloh spc3/230/10K/i

Date 13/11/2018

Operator FKY Norma AQ number E110

Power Factor 0.9826 Cos φ (H01) 0.9856

Harmonic	Taux (%)	Limite (% H1)
1	**100.0**	100.0
2	0.3	2.0
3	3.7	29.5
5	1.3	10.0
7	3.8	7.0
9	3.9	5.0
11	2.5	3.0
13	1.3	3.0
15	0.7	3.0
17	0.8	3.0
19	0.7	3.0
21	0.3	3.0
23	0.2	3.0
25	0.3	3.0
27	0.2	3.0
29	0.3	3.0
31	0.3	3.0
33	0.3	3.0
35	0.2	3.0
37	0.3	3.0
39	0.1	3.0



input		output 1	
Urms	229.9 V	Urms	48.5 V
Irms	0.237 A	Irms	0.995 A
Prms	53.7 W	Prms	48.3 W
S	54.6 VA		
Q	-10.1 VAR		
PF	0.9826		
$I_{(H01)}$	0.237 A	Uavg	48.5 V
Cos φ (H01)	0.9856	Iavg	0.995 A
η rms	90.0%	Pavg	48.3 W
η avg	90.0%		
THD	7.8%		

voltana2_16led_phil_elec

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

EMC test

General information

Subject : VOLTANA 2 - 16 led's Philips 75 W driver Class I

Asked by : PELBÁRT Péter

Created on : 07/02/2019

Test number : D190099

Reference norm : EN 55015 - EN 61547 Standards

Sample(s) : E180608

Folder : P-F14058

Test conditions

Luminaire : VOLTANA 2

Operator : External Lab

Description :
16 led's
Dimmable: DALI

Electrical class : Class I EU

Driver : Xitanium FP 75W 0.3-1.0A SNLDAE 230V C133 sXt / 00-49-490

Current setting (mA) : 1000

Auxiliaries : VS Lighting Solutions SPC3

Testing facility : External - EMC - Laborelec

External test report reference : LBE04134694 - 1.0

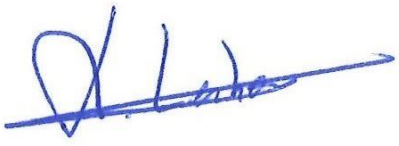
Conclusion

Success

VOLTANA 2 16 led's Class I with PHILIPS 75 W driver complies with EN 55015 & EN 61547 Standards.

Validated by :

LERHO Xavier



Duplicate to : PELBÁRT Péter, HORVÁTH Csaba, BEDŐ Péter, BOS Peter

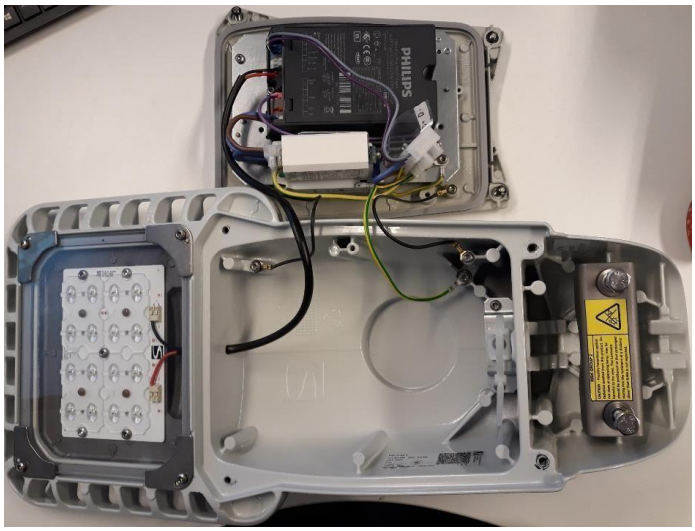
LAB : 07/02/2019

Summary of test

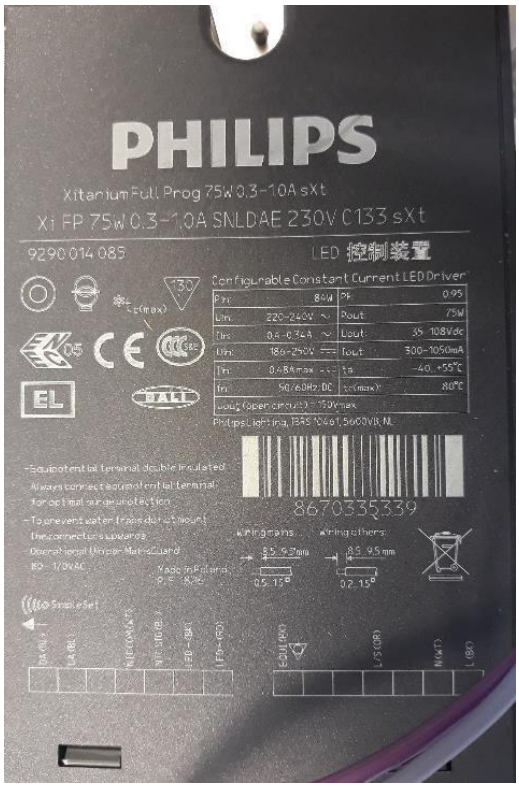
Test(s)

Name	Description	Result
Complete EMC test (10 Kv Surges)	Emission measurements (EN 55015): - Terminal disturbance - Radiated emissions - Conducted emissions Harmonics (IEC/EN 61000-3-2) Immunity measurements (IEC/EN 61547) - Electrostatic discharge (IEC/EN 61000-4-2) - Radiated, radio frequency electromagnetic field (IEC/EN 61000-4-3) - Fast transients (IEC/EN 61000-4-4) - Surges (IEC/EN 61000-4-5) - Injected currents (IEC/EN 61000-4-6) - Power frequency magnetic field immunity (IEC/EN 61000-4-8) - Voltage dips & interruptions (IEC/EN 61000-4-11)	Success

Complete EMC test (10 Kv Surges)



V1



V2

LABORELEC

002-Test
ISO/IEC 17025

CENTRAAL LABORATORIUM VOOR ELEKTRICITEIT (C.L.E.)
LABORATOIRE CENTRAL D'ELECTRICITE (L.C.E.)

Rodestraat, 125 – B-1630 Linkebeek

Electromagnetic Compatibility

TEST REPORT

Purpose of the test	Measurement of radio-disturbances and examination of compliance with EMC standards.
Trademark and type	R-Tech Voltana 2 (Philips) 75W Cl I ***Dimmable***
Delivered to	**R-TECH** M. Maghe Laurent Rue de Mons, 3 B – 4000 LIEGE
Performed on	30/01/2019 – 01/02/2019
Delivered on	04/02/2019
CLE task No.	18/18073
CLE report No.	LBE04134694 - 1.0
Contents	24 pages
Applicant reference No.	Order PO002817 of 09/11/2018

Author	*Verifier*	*Approver*
Fonck Yves *Technical Operator*	**Herbert Denis** *Technical Operator*	**Deswert Jean Michel** *Technology Manager*

This report concerns type tests on one or a series of specimens
The diffusion under any other form than the complete reproduction is not permitted except by written authorization from C.L.E.
If the version of this document is greater than 1.0 it automatically replaces all previous version.

A. Specifications of the Equipment Under Test

The accuracy of the description and identification of the equipment under test, it's operating conditions, modifications and monitoring of its behaviour during and or after the test performed by Laborelec are under the responsibility of the customer.

Product name:	Led's Luminaire
Type:	Voltana 2
Manufacturer:	R-Tech SA
Trademark:	Schréder

Number of samples:	1
CLE Number:	18/180608/1
Date of entrance:	09/11/2018

Specifications:

Driver: Philips Xitanium
Xi FP 75W 0.3-1.0A SNLDAE 230V C133 sXt
929001485

U_{in}:	220 – 240 V
I_{in}:	0,4 – 0,34 A
P_f:	0,95
U_{out}:	35 – 108 V
I_{out}:	300 – 1050 mA
P_{out}:	75 W
T_c:	80°C
T_a:	-40°… +55°C

Surge Protector Device: VS Lighting Solutions SPC3/230/10K/i

U_{in}:	100 - 277 V / 50 - 60 Hz
U_{oc}:	10 kV
U_c :	305 Vac
$U_{p\ L\text{-}N}$:	≤ 1,5 kV
$U_{p\ L\text{-}PE}$:	≤ 1,8 kV
I_L:	16 A

Dimming protocol: Dali

All tests have been practiced on sample 18/180608/1.
Pictures of the appliance are given in appendix 1.

B. Program of the tests

Program

Tests, or verification by other means, of compliance with the EMC standards CISPR 15 / EN 55015 (radio-interference), IEC 61000-3-2 / EN 61000-3-2 (harmonics), IEC 61000-3-3 / EN 61000-3-3 (voltage fluctuations) and IEC 61547 / EN 61547 (immunity of electrical lighting equipment).

All EMC tests against the above mentioned standards are covered by the quality system EN ISO 17025.

Reference documents:

EMC standards:	CISPR 15	(2013) + A1 (2015)
	IEC 61000-3-2	(2014)
	IEC 61000-3-3	(2013) + A1 (2017)
	IEC 61547	(2009)
	EN 55015	(2013) + A1 (2015)
	EN 61000-3-2	(2014)
	EN 61000-3-3	(2013)
	EN 61547	(2009)

Supplier:

None, all tests and measurements have been performed at Laborelec.

C. Methods

C.1. Radio-interference measurements according to CISPR 15 / EN 55015

Disturbance voltages are measured at the terminals of the 50 μH/50 Ω artificial mains network from 9 kHz to 30 MHz (between each conductor L or N and earth) with a CISPR radio-receiver.

Method of measurement following pt. 8.1.4.1 of CISPR 15 / EN 55015:

- For light regulating controls which regulate the light output via a ballast or convertor, then the disturbance voltage at the mains and control terminals, if any, shall be measured at the maximum and minimum light output levels.

From 9 kHz to 30 MHz, the radiated electromagnetic disturbances are measured by means of 2 m loop antennas and a CISPR radio-receiver.

Conducted RF emission is measured at the RF output of a coupling / decoupling network (CDN-M2 or CDN-M3, EN/IEC 61000-4-6 compliant) from 30 MHz to 300 MHz with a CISPR radio-receiver.

Method of measurement following pt. 9.1.4. of CISPR 15 / EN 55015:

If the lighting equipment incorporates a light-regulating control or is controlled by an external device, the radiated electromagnetic disturbance shall be determined in the following way:

- For light regulating controls which regulate the light output via a ballast or convertor, measurements shall be performed at maximum and minimum light output levels.

Those methods and the instrumentation used are in accordance with CISPR 15 / EN 55015 and CISPR 16 / EN 55016.

C.2. Harmonics according to IEC / EN 61000-3-2

Where needed, the harmonics of the mains supply input current are measured by means of a resistive shunt and a wave analyser.

Method of measurement following pt. C.5.3. of IEC 61000-3-2 / EN 61000-3-2:

If a luminaire has a built-in dimming device, the harmonic currents shall be measured at the maximum load of the lamps as specified by the manufacturer. The setting of the dimming device is varied in five equidistant steps between the minimum and the maximum power in order to obtain comprehensive results.

C.3. Voltage fluctuations according to IEC / EN 61000-3-3

Voltage fluctuations are assessed by direct measurement at the terminals of the equipment under test using a flicker-meter, which complies with the specifications given in IEC / EN 61000-4-15.

C.4. Immunity according to IEC 61547 / EN 61547

Tests are carried out on the accessible parts of the appliance or on the mains supply, during normal operation of the appliance.
Test methods and the instrumentation used are in accordance with the basic standards that are referred to in the tables of this standard.

Conditions during testing following pt. 8. of IEC 61547-1 / EN 61547-1:

An EUT including a light-regulating control should be tested at a light output level of 50 % ± 10 % from the maximum light output. If a light output level of 50 % is not available for the EUT including a light regulation function, the test shall be done at the level which is closest to 50 %. If two steps equally distant to 50 % are available, the lower level (<50 % shall be used for the test)

D. Results

D.1. Radio-interference measurements between 0,009 and 30 MHz

The table below gives the results of terminal voltages between each input conductor (L or N) and earth in dB with reference to 0 dB corresponding to 1 µV.
Unless otherwise specified, the test voltage is 230 V - 50 Hz.
It is checked that radio-interference does not exceed the limits in a frequency range between 0,15 and 30 MHz.

D.1.1. Complete scan at full light output:

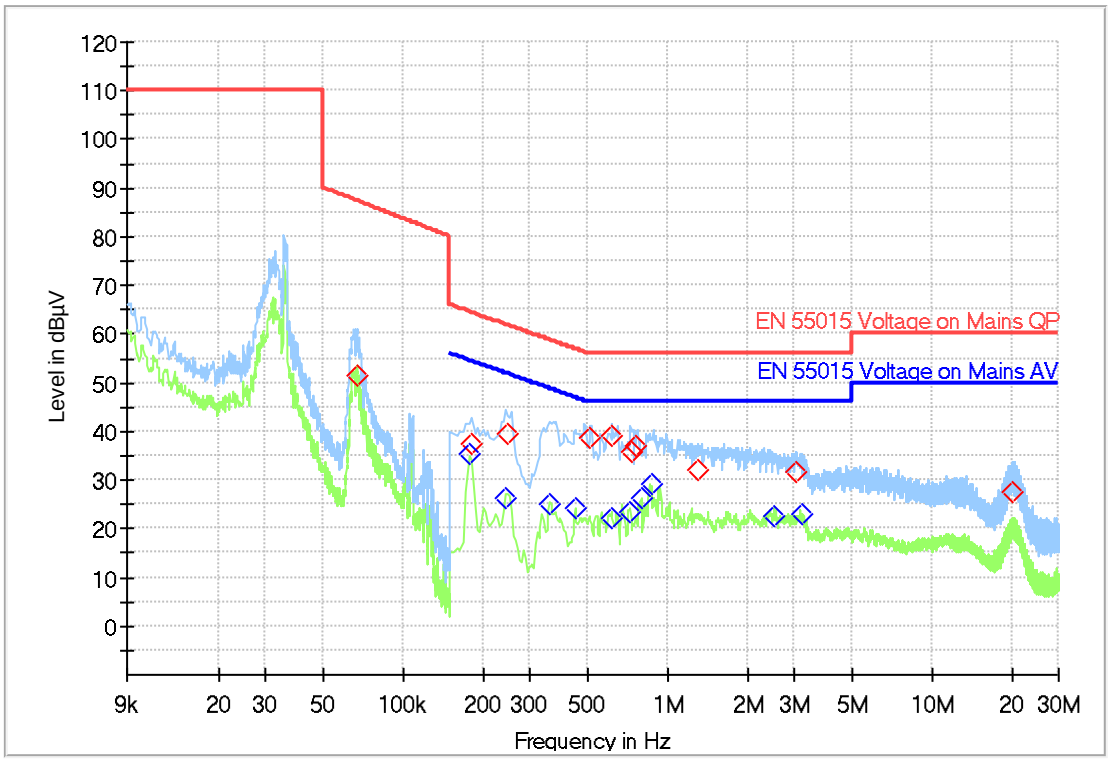
D.1.1.1. Measurements:

Results of the final analysis with quasi-peak and average detectors are given only at the most critical levels.

Quasi-Peak and Average Measurements

Frequency (MHz)	Quasi-Peak (dBµV)	Average (dBµV)	Limit (dBµV)	Exceed (Yes/No)	Meas. Time (s)	PE	Line
0.0667	51.38	---	87.38	No	1.00	GND	N
0.1770	---	35.24	54.63	No	1.00	GND	L1
0.1815	37.50	---	64.42	No	1.00	GND	N
0.2445	---	26.39	51.94	No	1.00	GND	N
0.2490	39.58	---	61.79	No	1.00	GND	L1
0.3570	---	25.19	48.80	No	1.00	GND	N
0.4470	---	24.17	46.93	No	1.00	GND	N
0.5100	38.80	---	56.00	No	1.00	GND	L1
0.6090	---	22.30	46.00	No	1.00	GND	L1
0.6135	38.91	---	56.00	No	1.00	GND	L1
0.7125	---	23.62	46.00	No	1.00	GND	L1
0.7350	35.89	---	56.00	No	1.00	GND	L1
0.7620	36.90	---	56.00	No	1.00	GND	L1
0.7935	---	26.42	46.00	No	1.00	GND	L1
0.8655	---	29.16	46.00	No	1.00	GND	N
1.3020	32.21	---	56.00	No	1.00	GND	N
2.5350	---	22.53	46.00	No	1.00	GND	L1
3.0570	31.54	---	56.00	No	1.00	GND	L1
3.1965	---	22.92	46.00	No	1.00	GND	L1
20.2290	27.35	---	60.00	No	1.00	GND	L1

D.1.1.2. Graphical representation of the test results



Preview Result 2-AVG
EN 55015 Voltage on Mains QP
Final_Result QPK
Preview Result 1-PK+
EN 55015 Voltage on Mains AV
Final_Result AVG

Ambient temperature: 20°C

D.1.2. Complete scan at minimum light output:

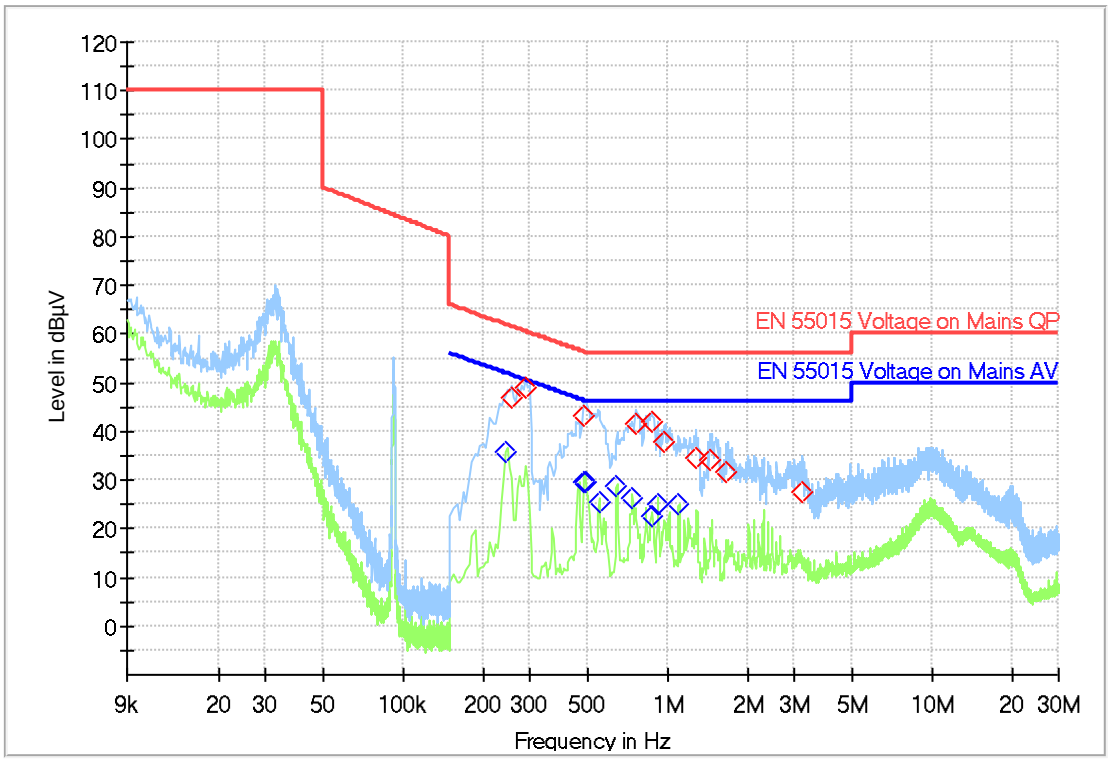
D.1.2.1. Measurements:

Results of the final analysis with quasi-peak and average detectors are given only at the most critical levels.

Quasi-Peak and Average Measurements

Frequency (MHz)	Quasi-Peak (dBµV)	Average (dBµV)	Limit (dBµV)	Exceed (Yes/No)	Meas. Time (s)	PE	Line
0.2445	---	35.73	51.94	No	1.00	GND	N
0.2580	47.03	---	61.50	No	1.00	GND	N
0.2895	48.84	---	60.54	No	1.00	GND	N
0.4785	43.16	---	56.37	No	1.00	GND	L1
0.4830	---	29.71	46.29	No	1.00	GND	N
0.4875	---	29.41	46.21	No	1.00	GND	N
0.5505	---	25.45	46.00	No	1.00	GND	L1
0.6405	---	28.96	46.00	No	1.00	GND	L1
0.7350	---	26.41	46.00	No	1.00	GND	N
0.7620	41.78	---	56.00	No	1.00	GND	N
0.8655	41.89	---	56.00	No	1.00	GND	L1
0.8700	---	22.66	46.00	No	1.00	GND	L1
0.9150	---	25.26	46.00	No	1.00	GND	N
0.9690	37.97	---	56.00	No	1.00	GND	N
1.0995	---	24.88	46.00	No	1.00	GND	L1
1.2795	34.51	---	56.00	No	1.00	GND	L1
1.4505	34.24	---	56.00	No	1.00	GND	N
1.6710	31.85	---	56.00	No	1.00	GND	N
3.2010	27.56	---	56.00	No	1.00	GND	L1

D.1.1.2. Graphical representation of the test results



Preview Result 2-AVG
EN 55015 Voltage on Mains QP
Final_Result QPK
Preview Result 1-PK+
EN 55015 Voltage on Mains AV
Final_Result AVG

Ambient temperature: 20°C

D.2. Radiated electromagnetic disturbance measurements from 9 kHz to 30 MHz

The table gives the radiated electromagnetic disturbance measurements of the appliance measured by 2 m loop antennas and a radio-receiver (with quasi-peak detector) according to CISPR 15 and CISPR 16.
It is checked that the radiated electromagnetic disturbance is well below the CISPR 15 / EN 55015 limits when a quasi-peak detector is used.
Unless otherwise specified the test voltage is 230 V - 50 Hz.

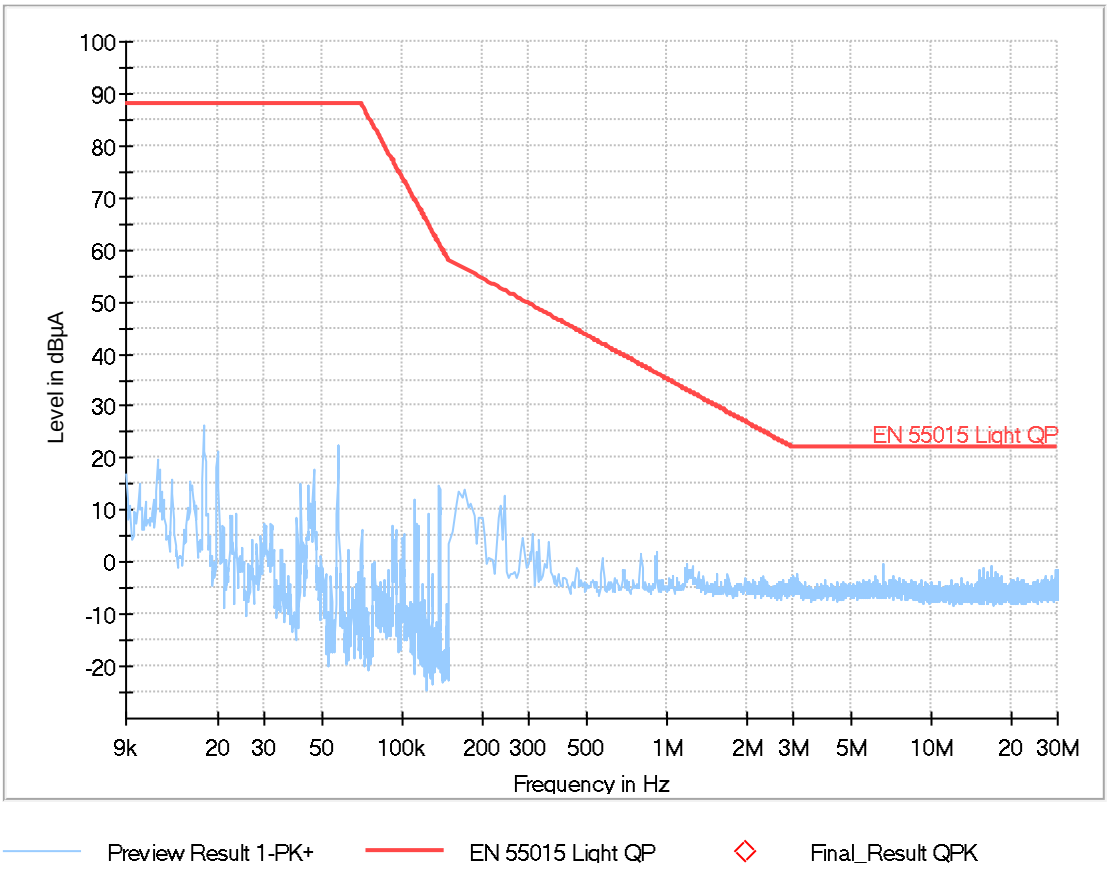
D.2.1. Measurements at maximum light output level

D.2.1.1. Measurements

Quasi-Peak Measurements

No final analysis with Quasi-Peak detector because the measured levels are 30 dBµV below the limits

D.2.1.2. Graphical representation of the test results



Ambient temperature: 22°C

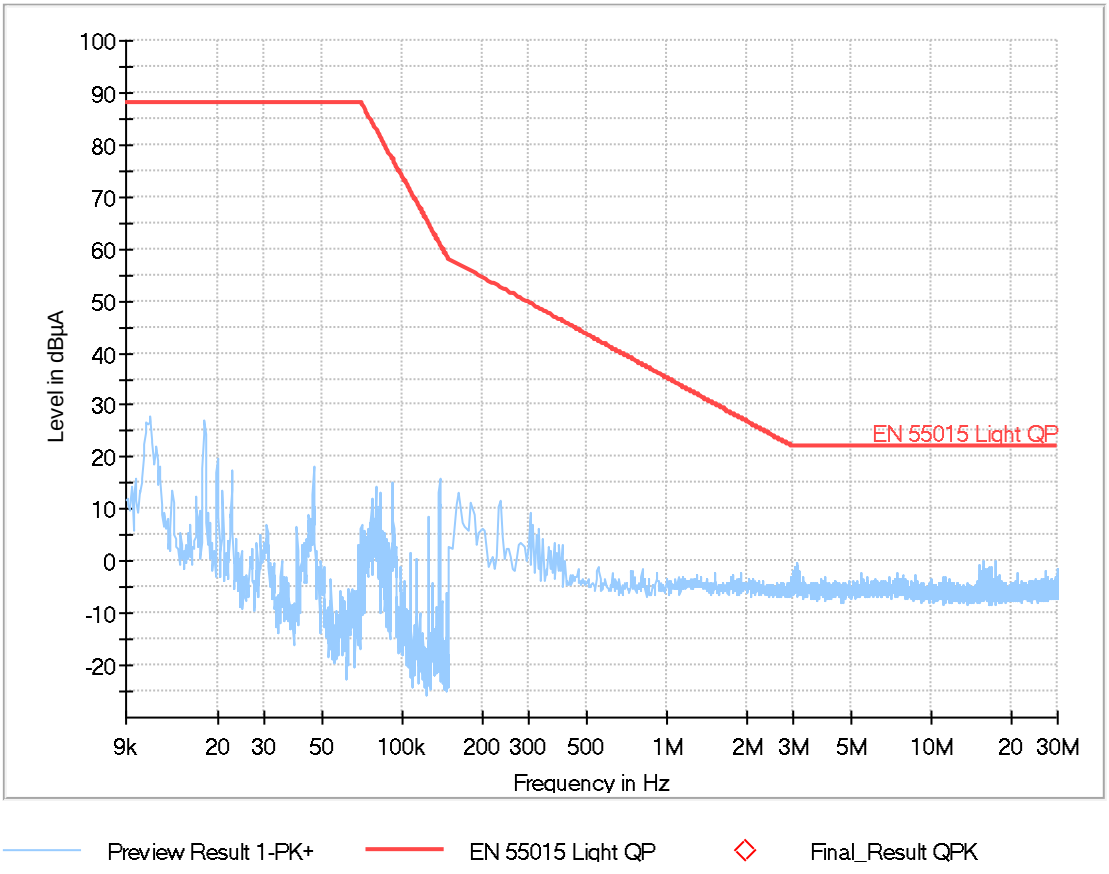
D.2.2. Measurements at minimum light output level

D.2.2.1. Measurements

Quasi-Peak Measurements

No final analysis with Quasi-Peak detector because the measured levels are 30 dBµV below the limits

D.2.2.2. Graphical representation of the test results



Ambient temperature: 21°C

D.3. Measurements of the Conducted RF emission

The table gives the conducted RF disturbance measurements of the appliance measured through a coupling / decoupling network (CDN-M2 or CDN-M3, EN/IEC 61000-4-6 compliant) from 30 MHz to 300 MHz with a CISPR radio-receiver (with quasi-peak detector) according to CISPR 15 and CISPR 16.
It is checked that the conducted RF disturbance is well below the EN 55015 limits when a quasi-peak detector is used.
Unless otherwise specified the test voltage is 230 V - 50 Hz.

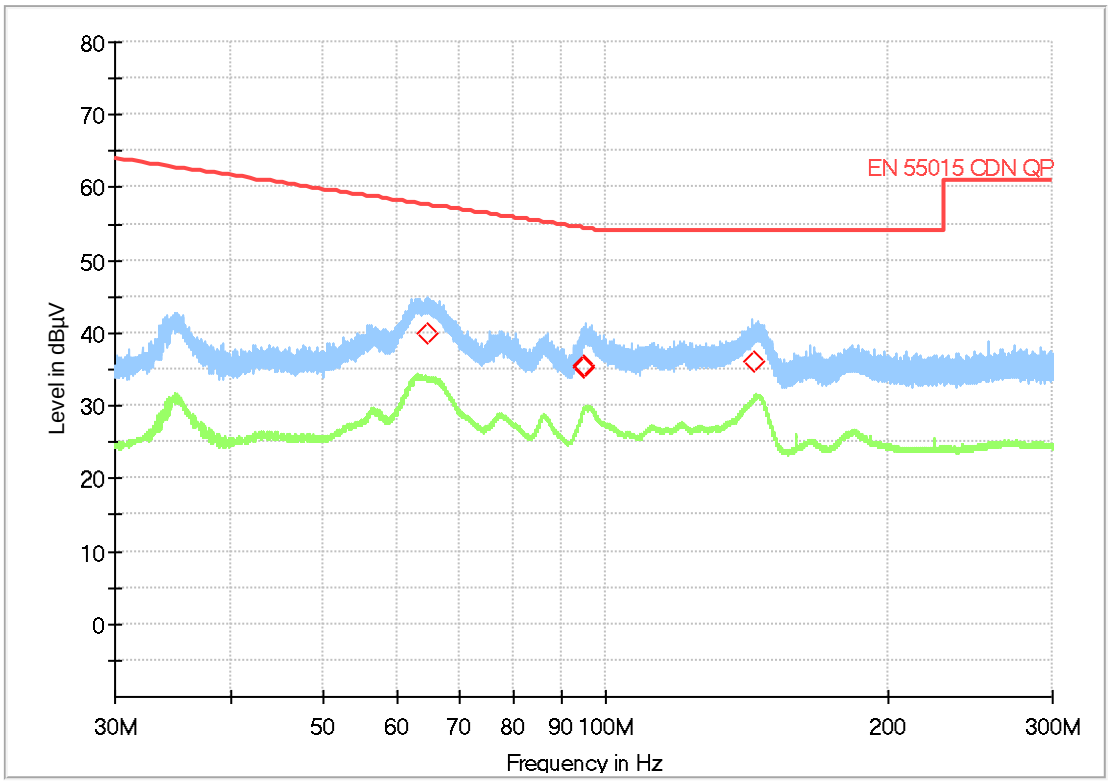
D.3.1. Measurements at maximum light output level

D.3.1.1. Measurements

Quasi-Peak Measurements

Frequency (MHz)	Quasi-Peak (dBµV)	Limit (dBµV)	Exceed (Yes/No)	Meas. Time (s)
64.7880	39.98	57.61	No	1.00
94.7715	35.29	54.45	No	1.00
95.0280	35.62	54.42	No	1.00
143.8215	36.17	54.00	No	1.00

D.3.1.2. Graphical representation of the test results



Ambient temperature: 20°C

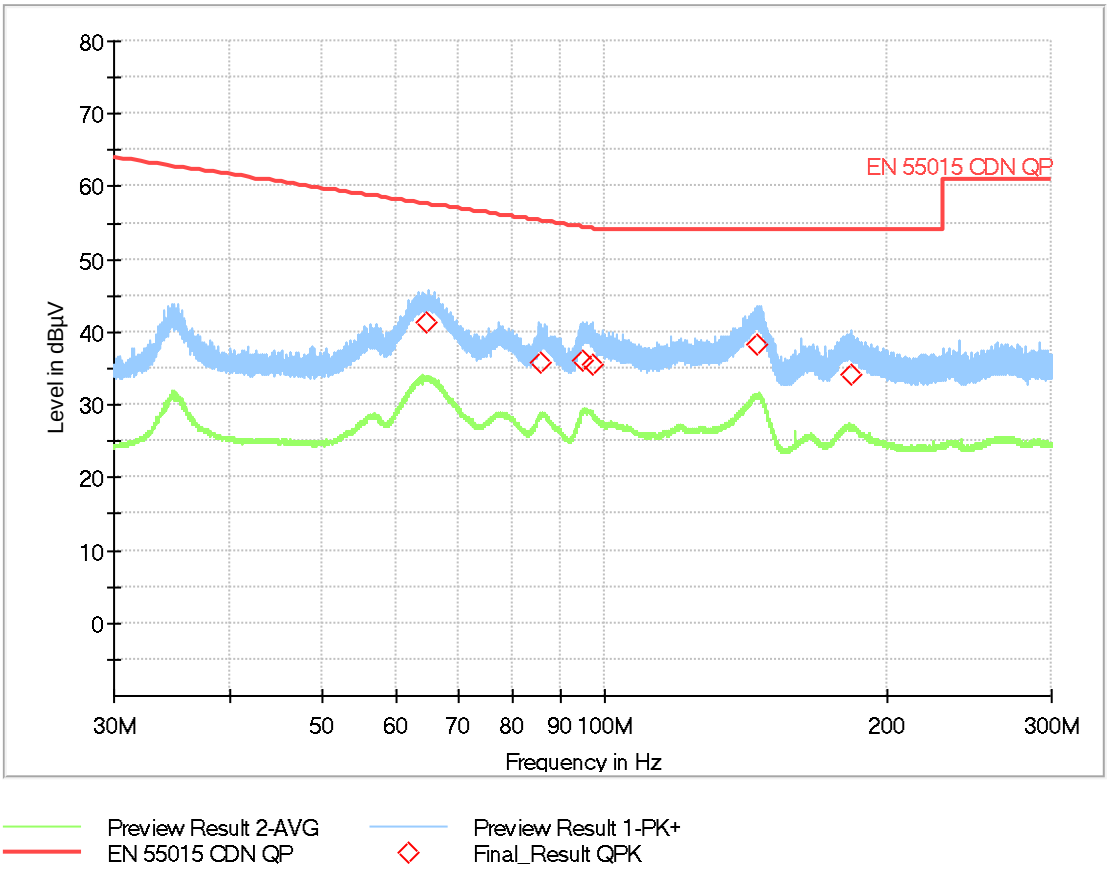
D.3.2. Measurements at minimum light output level

D.3.2.1. Measurements

Quasi-Peak Measurements

Frequency (MHz)	Quasi-Peak (dBµV)	Limit (dBµV)	Exceed (Yes/No)	Meas. Time (s)
64.5990	41.36	57.63	No	1.00
85.6275	35.70	55.29	No	1.00
94.9110	36.21	54.43	No	1.00
97.4085	35.54	54.22	No	1.00
145.4955	38.28	54.00	No	1.00
183.7590	34.11	54.00	No	1.00

D.3.2.2. Graphical representation of the test results



Ambient temperature: 20°C

D.4. Measurements of the harmonics of the input current in five equidistant steps between the minimum and the maximum power

Harmonic order	Meas. 1 Min (A)	Meas. 2 (A)	Meas. 3 (A)	Meas. 4 (A)	Meas. 5 Max (A)	Class C a) Limits (A)
1	0.0441	0.0706	0.1229	0.1804	0.2381	-.----
2	(*)	(*)	(*)	(*)	(*)	0.0048
3	0.0091	(*)	(*)	(*)	0.0102	0.0714
4	(*)	(*)	(*)	(*)	(*)	-.----
5	0.0062	0.0050	(*)	(*)	(*)	0.0238
6	(*)	(*)	(*)	(*)	(*)	-.----
7	(*)	(*)	0.0071	0.0079	0.0080	0.0167
8	(*)	(*)	(*)	(*)	(*)	-.----
9	(*)	(*)	0.0065	0.0083	0.0092	0.0119
10	(*)	(*)	(*)	(*)	(*)	-.----
11	(*)	(*)	(*)	0.0054	0.0065	0.0071
> 11	(*)	(*)	(*)	(*)	(*)	≤ 0.0071

(*) Harmonic currents less than 0,6 % of the input current measured under the test conditions, or less than 5 mA, whichever is greater, are disregarded.
(IEC / EN 61000-3-2: § 6.2.3.4)

Ambient temperature: 22°C

Measurement uncertainties:

The measurement uncertainties can be obtained on request.

D.5. Immunity according to IEC 61547 / EN 61547

Unless otherwise specified the test voltage is 230 V - 50 Hz.
The normal behaviour of the appliance has been monitored by checking the luminous intensity and the current consumption.

As requested by the standard, the light output level has been set at 50 % ±10 %

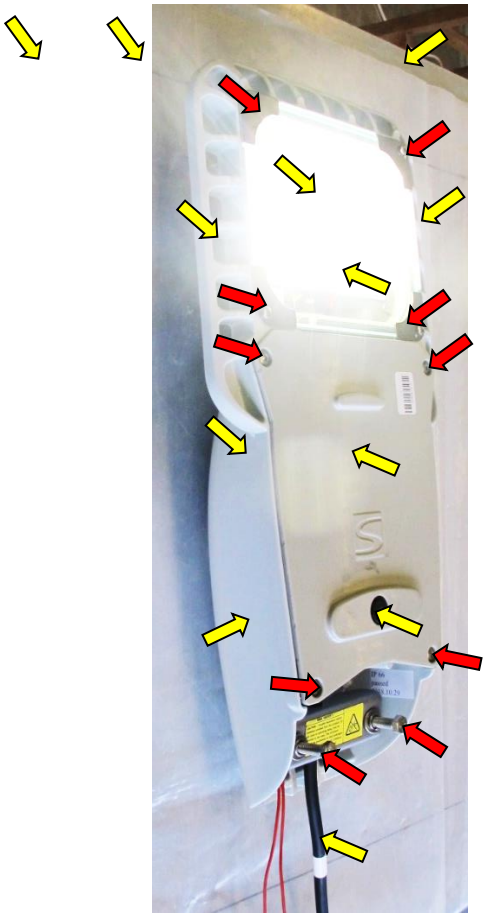
D.5.1. Electrostatic discharge (IEC / EN 61000-4-2)

Twenty 4 kV contact discharges (ten positive and ten negative polarity) have been applied on the metal parts of the appliance and on the coupling planes.
Twenty 8 kV air discharges (ten positive and ten negative polarity) have been applied on the accessible insulated parts.

No noticeable degradation has been recorded.

Ambient temperature: 21°C
Relative humidity: 38 %

Yellow arrow: air discharges
Red arrow: contact discharges



D.5.2. Radiated, radio frequency electromagnetic field (EN 61000-4-3)

The EUT has been placed in the full anechoic room on a wooden table, 0,8 m high above the floor.
The cable of the power supply connected to the EUT is falling on the floor.
The front side (luminous side) of the EUT has been illuminated in vertical and in horizontal polarisation with an electromagnetic field.

Frequencies:	80 MHz to 1000 MHz
Electromagnetic field level:	3 V/m
Amplitude modulation:	80%AM 1kHz
Frequency step:	1%
Dwell time:	1 s

No noticeable degradation has been recorded.

D.5.3. Fast transients (IEC / EN 61000-4-4)

During four minutes (two minutes positive and two minutes negative polarity) fast transients 1 kV 5/50 ns, 5 kHz rep. freq., have been applied on the mains supply in common mode.

Ambient temperature:	20°C
Relative humidity:	40 %

No noticeable degradation has been recorded.

D.5.4. Surges (IEC / EN 61000-4-5)

Ten surge pulses 0,5 kV 1,2/50 µs (five positive pulses at 90° and five negative pulses at 270°) have been applied between phase and phase (L – N).

No noticeable degradation has been recorded.

Ten surge pulses 0,5 kV 1,2/50 µs (five positive pulses at 90° and five negative pulses at 270°) have been applied between phase and protective earth (L – PE).

No noticeable degradation has been recorded.

Ten surge pulses 0,5 kV 1,2/50 µs (five positive pulses at 90° and five negative pulses at 270°) have been applied between phase and protective earth (N – PE).

No noticeable degradation has been recorded.

Ten surge pulses 1 kV 1,2/50 µs (five positive pulses at 90° and five negative pulses at 270°) have been applied between phase and phase (L – N).

No noticeable degradation has been recorded.

Ten surge pulses 1 kV 1,2/50 µs (five positive pulses at 90° and five negative pulses at 270°) have been applied between phase and protective earth (L – PE).

No noticeable degradation has been recorded.

Ten surge pulses 1 kV 1,2/50 µs (five positive pulses at 90° and five negative pulses at 270°) have been applied between phase and protective earth (N – PE).

No noticeable degradation has been recorded.

Ten surge pulses 2 kV 1,2/50 µs (five positive pulses at 90° and five negative pulses at 270°) have been applied between phase and protective earth (L – PE).

No noticeable degradation has been recorded.

Ten surge pulses 2 kV 1,2/50 µs (five positive pulses at 90° and five negative pulses at 270°) have been applied between phase and protective earth (N – PE).

No noticeable degradation has been recorded.

At the request of the customer:

Ten surge pulses 2 kV 1,2/50 µs (five positive pulses at 90° and five negative pulses at 270°) have been applied between phase and phase (L – N).

No noticeable degradation has been recorded.

Ten surge pulses 4 kV 1,2/50 µs (five positive pulses at 90° and five negative pulses at 270°) have been applied between phase and phase (L – N).

Blinking of the light has been observed when the pulses (positive and negative) were applied.

Ten surge pulses 4 kV 1,2/50 µs (five positive pulses at 90° and five negative pulses at 270°) have been applied between phase and protective earth (L – PE).

No noticeable degradation has been recorded.

Ten surge pulses 4 kV 1,2/50 µs (five positive pulses at 90° and five negative pulses at 270°) have been applied between phase and protective earth (N – PE).

No noticeable degradation has been recorded.

Ten surge pulses 8 kV 1,2/50 µs (five positive pulses at 90° and five negative pulses at 270°) have been applied between phase and phase (L – N).

Blinking of the light has been observed when the pulses (positive and negative) were applied.

Ten surge pulses 8 kV 1,2/50 µs (five positive pulses at 90° and five negative pulses at 270°) have been applied between phase and protective earth (L – PE).

Blinking of the light has been observed when the pulses (positive and negative) were applied.

Ten surge pulses 8 kV 1,2/50 µs (five positive pulses at 90° and five negative pulses at 270°) have been applied between phase and protective earth (N – PE).

No noticeable degradation has been recorded.

Ten surge pulses 10 kV 1,2/50 µs (five positive pulses at 90° and five negative pulses at 270°) have been applied between phase and phase (L – N).

Blinking of the light has been observed when the pulses (positive and negative) were applied.

Ten surge pulses 10 kV 1,2/50 µs (five positive pulses at 90° and five negative pulses at 270°) have been applied between phase and protective earth (L – PE).

Blinking of the light has been observed when the pulses (positive and negative) were applied.

Ten surge pulses 10 kV 1,2/50 µs (five positive pulses at 90° and five negative pulses at 270°) have been applied between phase and protective earth (N – PE).

No noticeable degradation has been recorded.

Ambient temperature:	20°C
Relative humidity:	39 %

D.5.5. Injected currents (IEC / EN 61000-4-6)

R.F. current from 0,15 MHz to 80 MHz, 80% AM 1 kHz modulation, 3 V_{RMS} amplitude, has been applied, through a coupling/decoupling network CDN-M3, on the mains supply in common mode.

Frequency step:	1 %
Dwell time:	1 s

No noticeable degradation has been recorded.

D.5.6. Voltage dips (IEC / EN 61000-4-11)

The test voltage is 230V - 50Hz.

A voltage dip of 30 % U_T (161 V) during 200 ms has been applied on the mains supply.

No noticeable degradation has been recorded.

D.5.7. Interruptions (IEC / EN 61000-4-11)

Interruptions of supply during 10 ms have been applied on the mains supply.

During the interruptions, a blinking of the light has been recorded.

E. Conclusions

For the tested appliance (see section A – Specifications of the EUT) the following results are obtained :

E.1. Emission measurements:

Measurement uncertainties

The measurement uncertainties can be obtained on request.

CISPR 15 / EN 55015 - see test results in parts D.1., D.2. & D.3.	Complies
- Terminal disturbance voltages	Complies
- Radiated emissions	Complies
- Conducted RF emissions	Complies

IEC / EN 61000-3-2 Complies

The appliance complies with EN 61000-3-2 on the basis of the measurements in D.4.

IEC / EN 61000-3-3 Complies

The appliance complies with the requirements of IEC / EN 61000-3-3 as it does not produce voltage fluctuations by its principle of operation.

E.2. Immunity tests results:

IEC 61547 / EN 61547 - see test results in parts D.5. Complies

Performance criteria following IEC 61547 / EN 61547

Performance criterion A:
During the test, no change of the luminous intensity shall be observed and the regulating control, if any, shall operate during the test as intended.

Performance criterion B:
During the test, the luminous intensity may change to any value. After the test, the luminous intensity shall restore to its initial value within 1 min. Regulating controls need not function during the test, but after the test, the mode of the control shall be the same as before the test provided that during the test no mode changing commands were given.

Performance criterion C:
During and after the test, any change of the luminous intensity is allowed and the lamp(s) may be extinguished. After the test, within 30 min, all functions shall return to normal, if necessary by temporary interruption of the power supply and/or operating the regulating control.

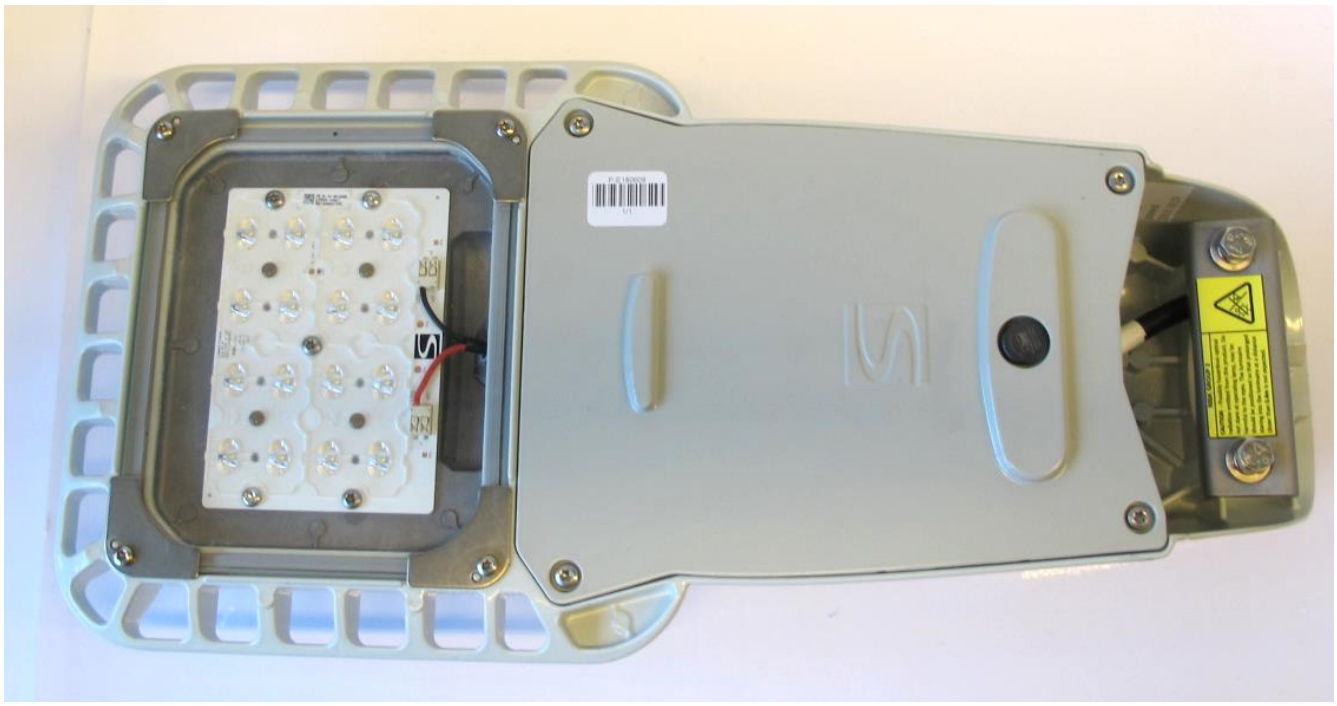
Additional requirement for lighting equipment incorporating a starting device:
After the test, the lighting equipment is switched off. After half an hour, it is switched on again. The lighting equipment shall start and operate as intended.

Tests	Standards	Requested performance criteria	Obtained criteria
Electrostatic discharges	**IEC / EN 61000-4-2**	B	A
Radiated, RF electromagnetic field	**IEC / EN 61000-4-3**	A	A
Fast transients	**IEC / EN 61000-4-4**	B	A
Surges	**IEC / EN 61000-4-5**	C	A *
Injected currents	**IEC / EN 61000-4-6**	A	A
Voltage dips	**IEC / EN 61000-4-11**	C	A
Voltage Interruptions	**IEC / EN 61000-4-11**	B	B

*: for the surges with the special requirements of the customers, a B criteria has been obtained.

APPENDIX 1

Pictures of the EUT



Open view of the EUT

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

Laborator teste
RAPORT DE TEST FIZIC

FORMULAR L-54 Editie 01 – Revizie 00 - Data: 14/06/2018

Test EMC

Informații generale

Subiect : VOLTANA 2 - 16 led's Philips 75 W driver Class I

Solicitat de: PELBÁRT Péter

Creat la: 07/02/2019

Număr test: D190099

Normă de referință : EN 55015 - EN 61547 Standards

Esantion(e): E180608

Dosar: P-F14058

Condiții test

Aparat : VOLTANA 2

Operator : External Lab

*Descriere :*16 led's

Dimabil: DALI

Clasa electrica: Class I EU

balast : Xitanium FP 75W 0.3-1.0A SNLDAE 230V C133 sXt / 00-49-490

Setări curent (mA) : 1000

Auxiliare : VS Lighting Solutions SPC3

Facilitate testare : Extern - EMC - Laborelec

Referință raport de testare externa: LBE04134694 - 1.0

Concluzii

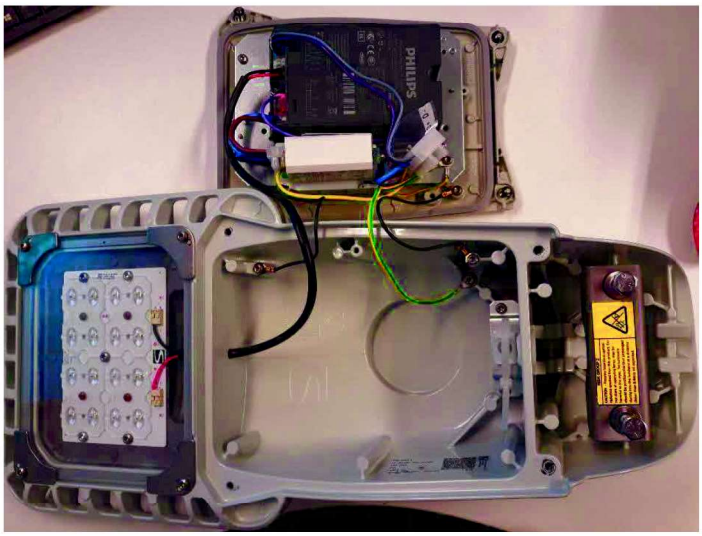
Succes

VOLTANA 2 16 led-uri Clasa I cu balast PHILIPS 75 W este conform cu standardele EN 55015 & EN 61547.

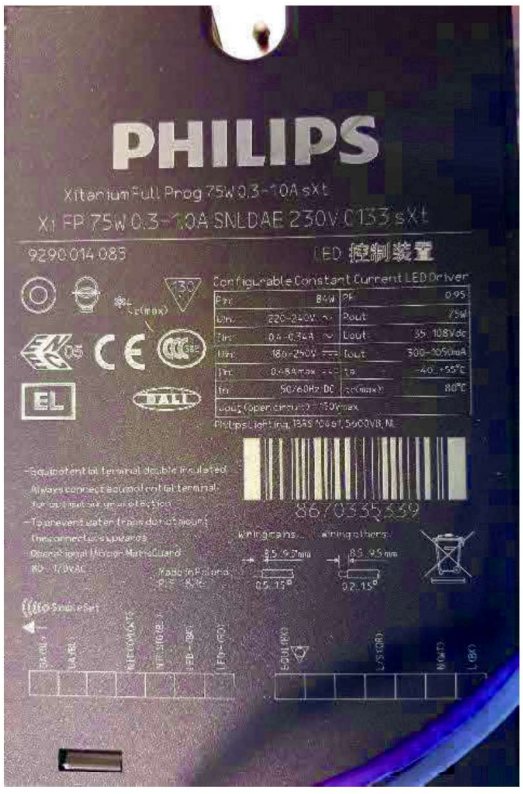
Traducător și Interpret Autorizat
Limba Engleză, Franceză

Nume	Descriere	Rezultat
Test EMC complet (protectie 10 kV)	Măsurători de emisii (EN 55015): - Perturbarea terminalului - Emisiile radiate - Emisii conduse - Armonici (IEC/EN 61000-3-2) - Măsurători ale imunității (IEC/EN 61547) - Descărcare electrostatică (IEC/EN 61000-4-2) - Câmp electromagnetic cu frecvență radio radiantă (IEC/EN 61000-4-3) - Tranzitorii rapide (IEC/EN 61000-4-4) - Protecții (IEC/EN 61000-4-5) - Curenți injectați (IEC/EN 61000-4-6) - Imunitate la câmpul magnetic cu frecvență de putere (IEC/EN 61000-4-8) - Întreruperi și întreruperi de tensiune (IEC/EN 61000-4-11)	Succes

Test EMC complet (protecție 10kV)



V1



V2

Traducător și Interpret Autorizat
Limba Engleză, Franceză

12/04/2021

Schréder
Experts in lightability™

VOLTANA 2

5248

Optic	5248
Protector	Flat glass
Source	16 Samsung LH351C
Matrix	424812

Characteristics

518	240	109	4.6	IP 66	IK 08	I EU, II EU	0.019
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 (%)	81.7
DLOR (%)	81.7
ULOR (%)	0.0
ULR (%)	0.0
Incl ULR 4%	-39/37°

G Class (EN 13201-2)	G2
G* (EN 13201 2015)	G*2
Imax (cd)	484
Aperture 0-180°	52 - 52
Aperture 90-270°	7 - X

I 70-80-90-95 (cd)	478 - 117 - X - X
CIE flux code N 1→5 (%)	40.7 - 74.9 - 96.6 - 100.0 - 81.7
Gradient 90°	36cd
Gradient 270°	8cd

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°						
16	NW 740	350	18	3040	2485	138	1471	B1 U0 G1	230
16	NW 740	500	26	4195	3429	132	2030	B1 U0 G1	230
16	NW 740	700	39	5594	4572	117	2707	B1 U0 G1	230
16	NW 740	1000	53	7457	6095	115	3609	B2 U0 G1	230
16	NW 740	1050	58	7737	6323	109	3744	B2 U0 G1	230
16	WW 730	350	18	2880	2354	131	1394	B1 U0 G1	230
16	WW 730	500	26	3974	3248	125	1923	B1 U0 G1	230
16	WW 730	700	39	5299	4331	111	2564	B1 U0 G1	230
16	WW 730	1000	53	7065	5774	109	3419	B2 U0 G1	230
16	WW 730	1050	58	7330	5990	103	3547	B2 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

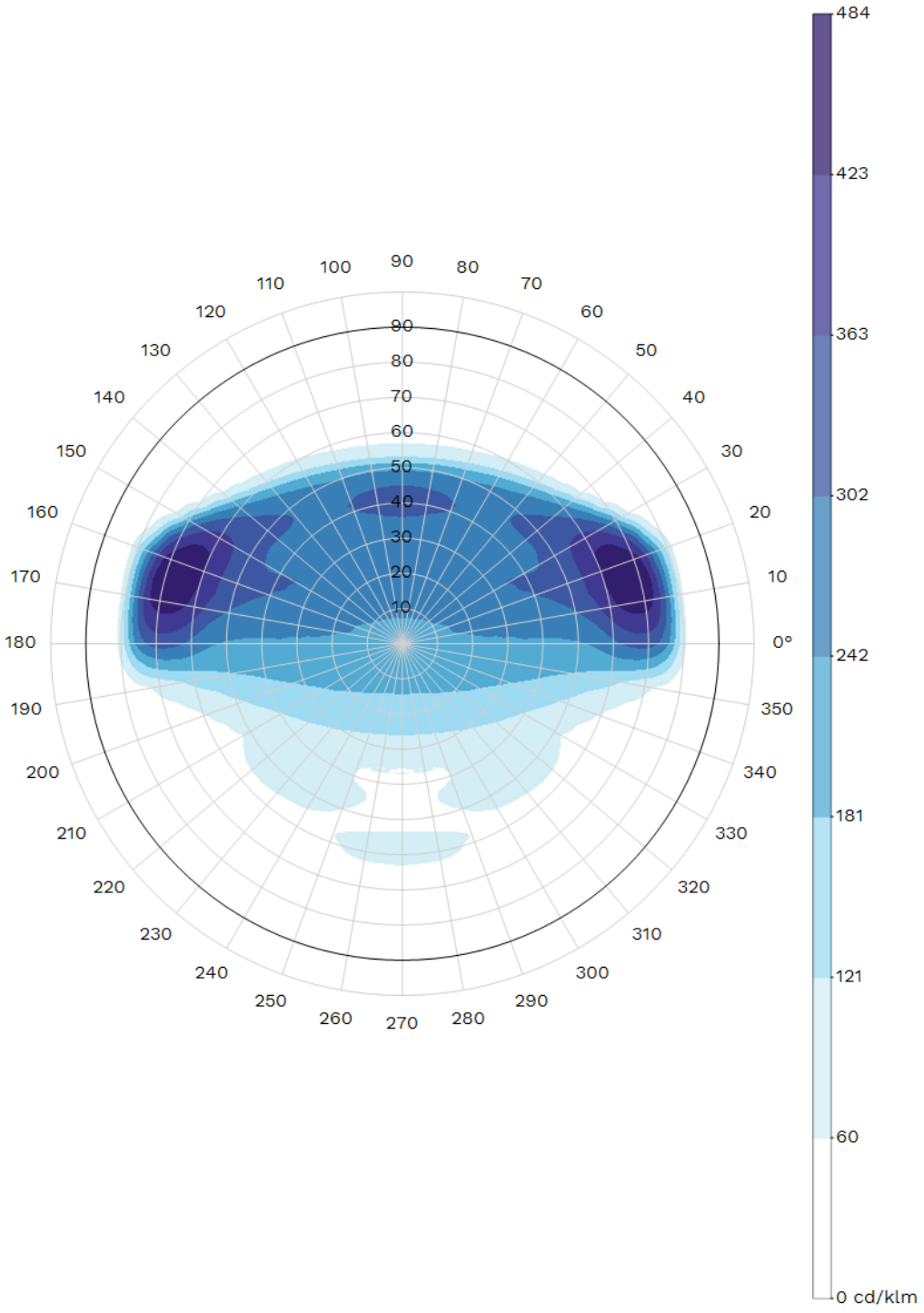
- CE
- ENEC
- LM79-80
- ROHS
- Certified for 3G vibration
- All measurements in ISO17025 accredited laboratory

OPTIONS

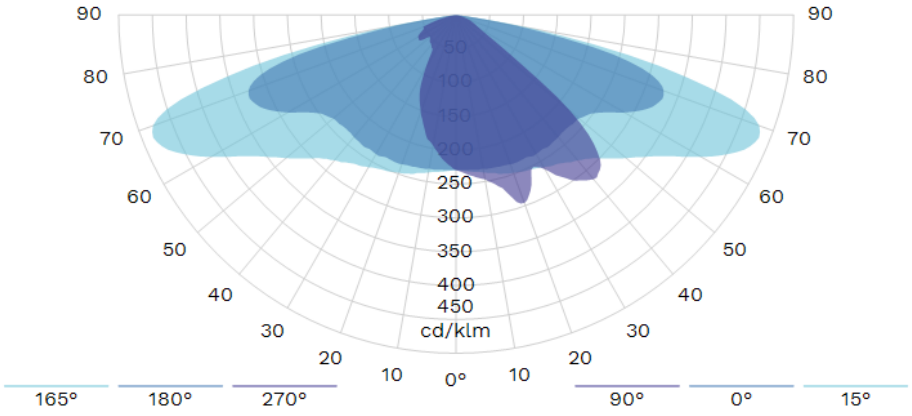
- Other RAL or AKZO colours
- Back Light control system
- OWLET remote management
- Custom dimming profile

- Photocell

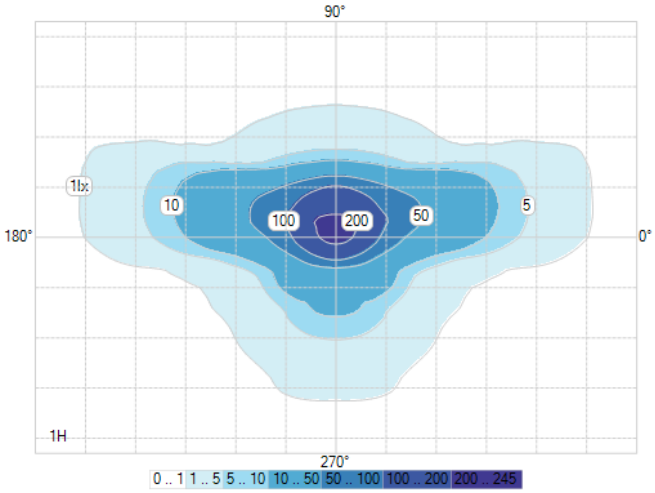
Hypergon view



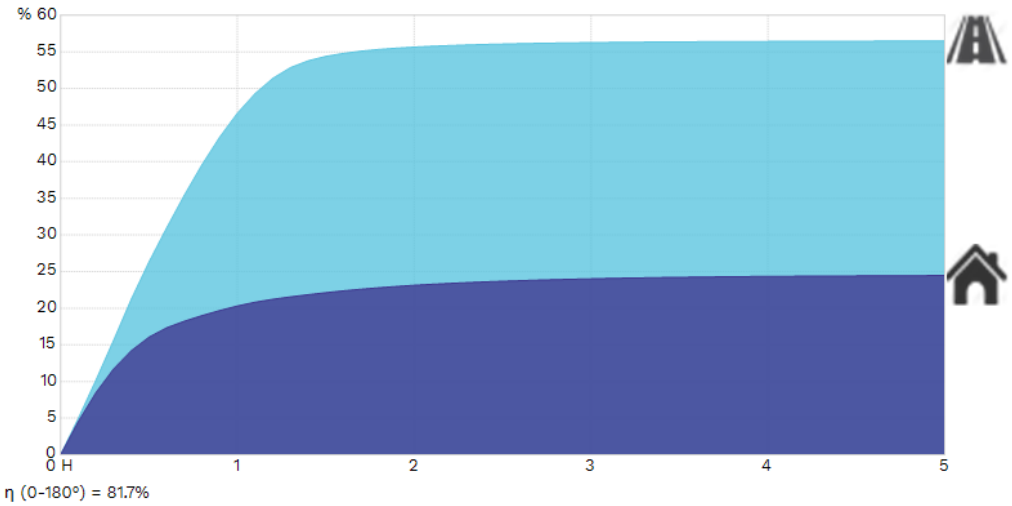
Polar/Cartesian diagram



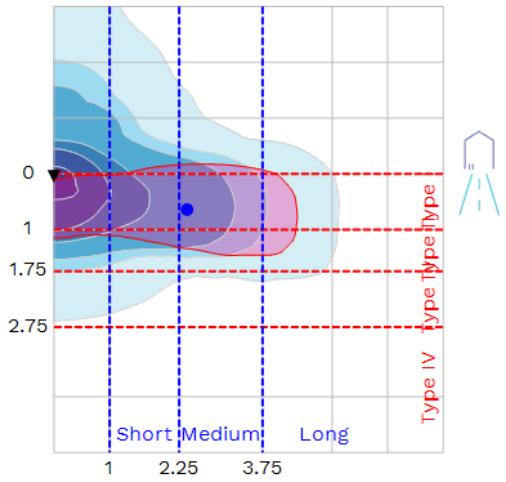
Isolux



K-Curve

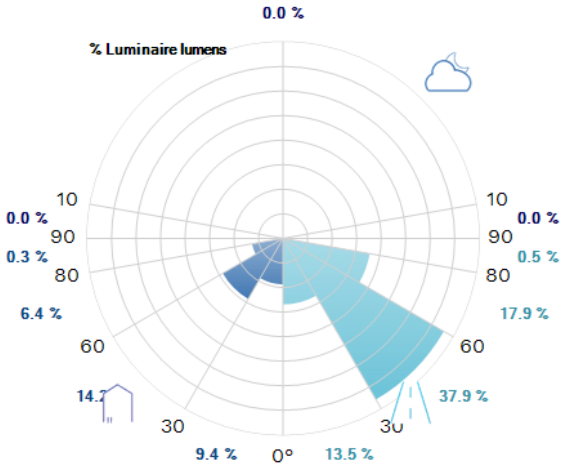


IES Roadway Classification / Nema Classification

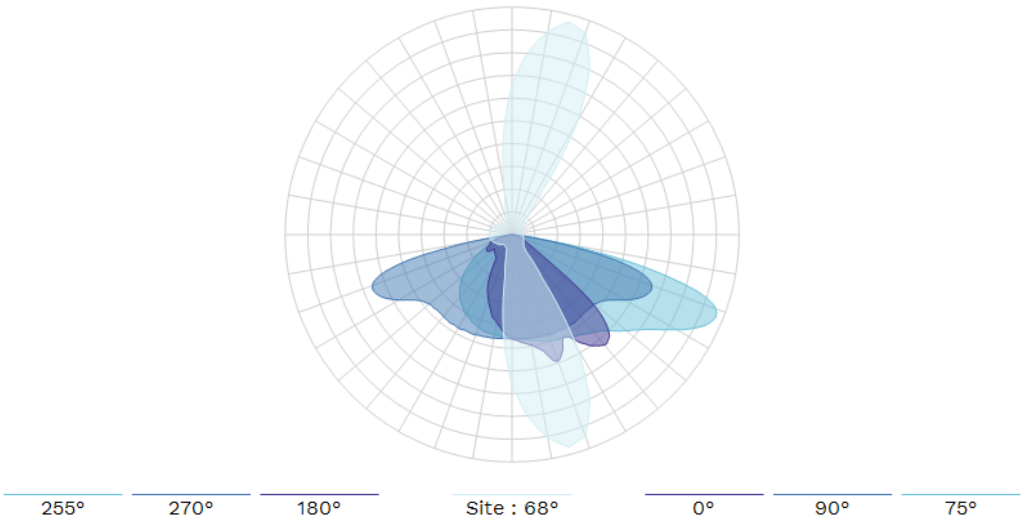


II - Medium

Luminaire classification system (LCS)



Intensity diagram in max Cone and in CPlane



http://www.schreder.com

12/04/2021

Schréder
Experts in lightability™

VOLTANA 2

5250

Optic	5250
Protector	Flat glass
Source	16 Samsung LH351C
Matrix	424852

Characteristics

518	240	109	4.6	IP 66	IK 08	I EU, II EU	0.019
Length (mm)	Width (mm)	Height (mm)	Weight (kg)	Tightness level*	Impact resistance*	Electrical class*	CxS (m²)

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Efficacy (%)	81.8
DLOR (%)	81.8
ULOR (%)	0.0
ULR (%)	0.0
Incl ULR 4%	-37/28°

G Class (EN 13201-2)	G2
G* (EN 13201 2015)	G*1
Imax (cd)	383
Aperture 0-180°	20 - 20
Aperture 90-270°	8 - X

I 70-80-90-95 (cd)	309 - 140 - X - X
CIE flux code N 1→5 (%)	35.6 - 71.0 - 95.8 - 100.0 - 81.8
Gradient 90°	66cd
Gradient 270°	14cd

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)
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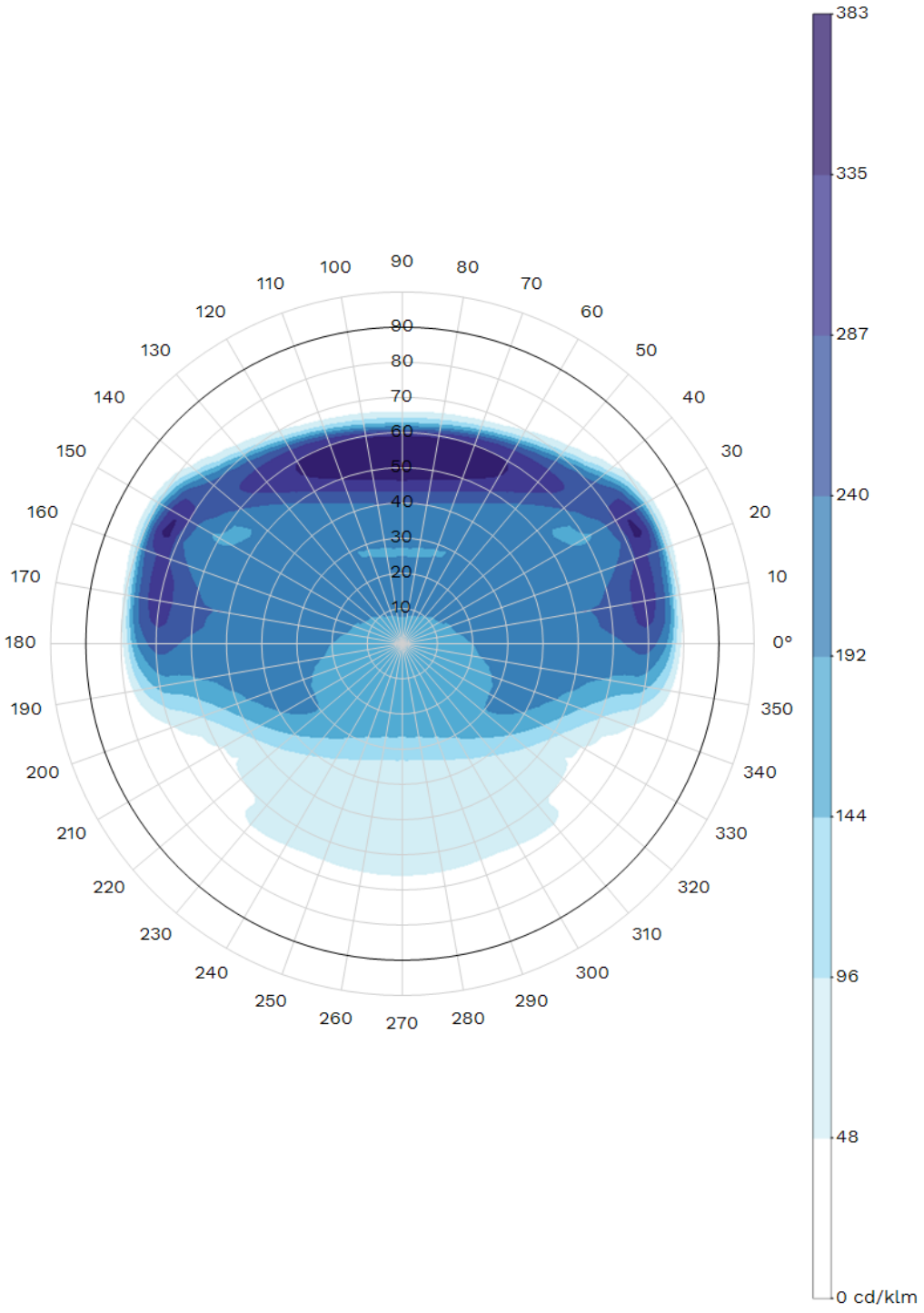
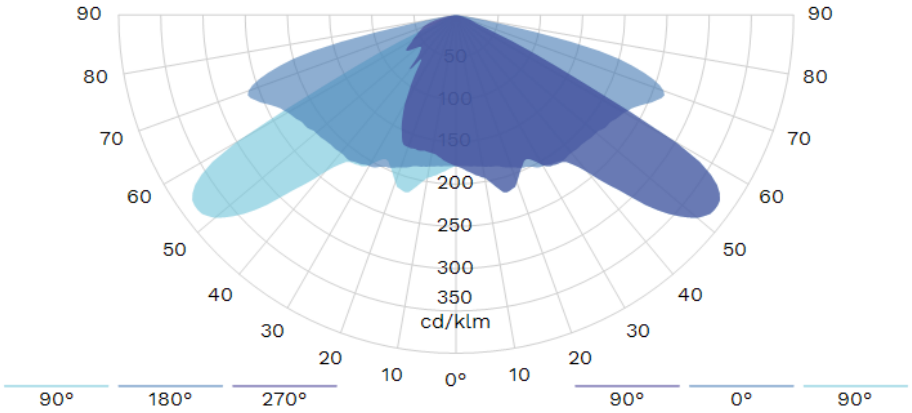
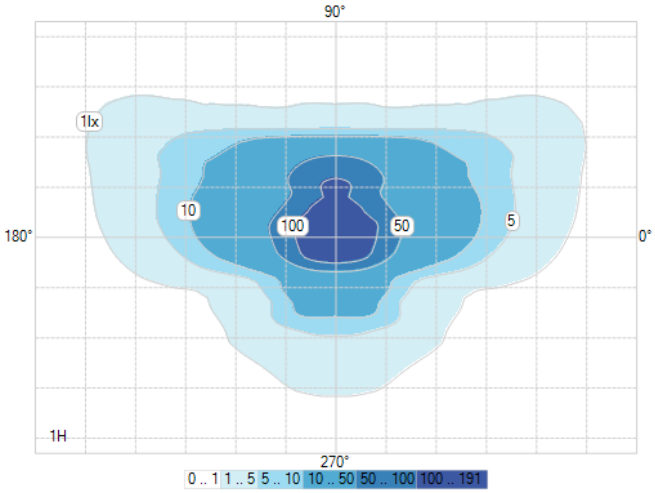


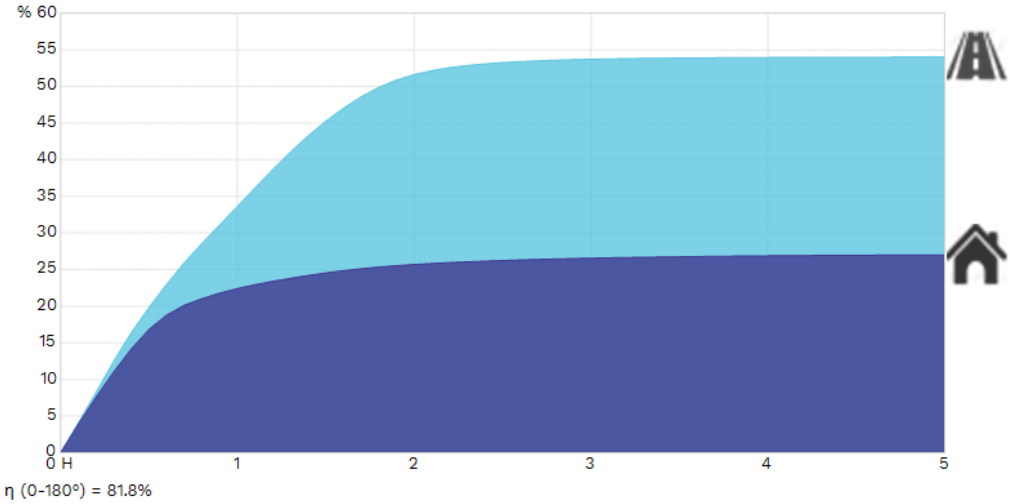
Polar/Cartesian diagram



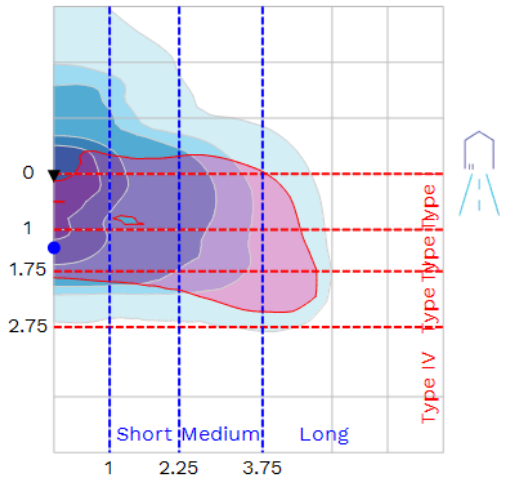
Isolux



K-Curve

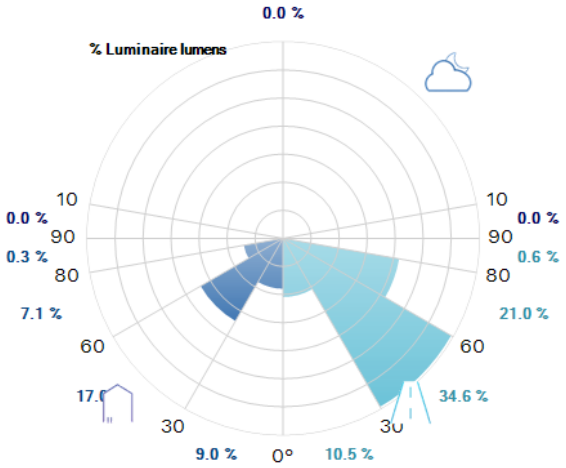


IES Roadway Classification / Nema Classification



III - VeryShort

Luminaire classification system (LCS)



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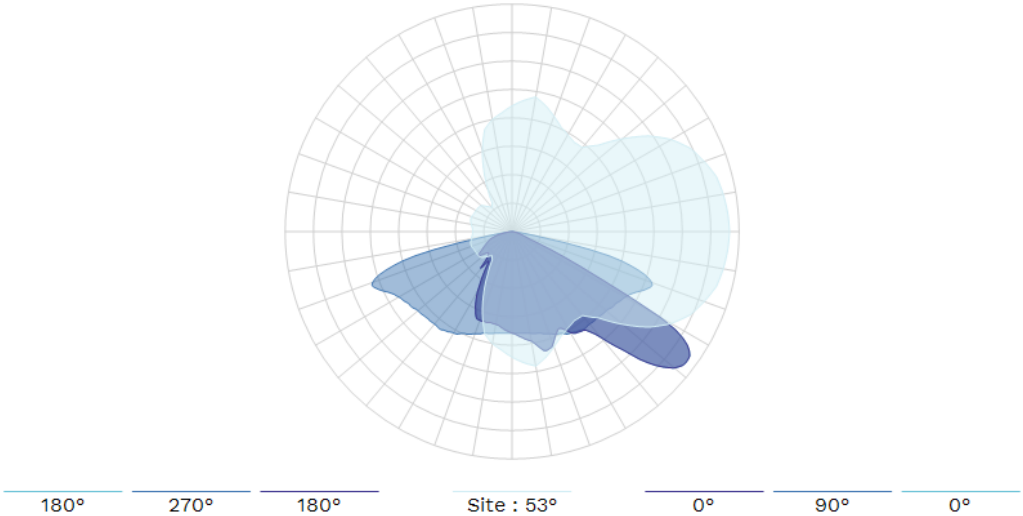


http://www.schreder.com

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 2 - 16 LEDs Philips 75 W driver
Created on : 08/11/2018
Validated on : 21/11/2018
Test number : D180797
Reference norm : IEC/EN 60598-1 Standard
Sample(s) : E180607
Folder : P-F14058

Test conditions

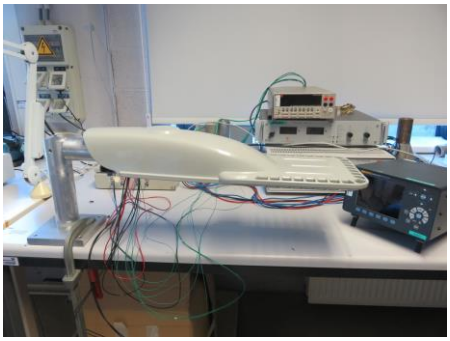
Luminaire : VOLTANA 2
Number of LED : 16
Driver : Xitanium FP 75W 0.3-1.0A SNLDAE 230V C133 sXt / 00-49-490
Driver info : Tc (max) 80 °C
Driver current (mA) : 1000
SPD : vossloh spc3/230/10K/i

Measurements devices :
Fluke Norma 4000 - HF Powermeter - (E110): Electrical measurements
Keithley 2701 (E081) – Ethernet Multimeter/Data Acquisition System : Thermal & VF led measurements

Power Supply :
APT 300XAC AC power supply (E102)
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 : KOY Fiston



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Conclusion

Informative

Ta: 50°C limited by lenses; according IEC 60598-2-3 and IEC 60598-2-5 (outdoor use only)
Ta: 40°C limited by lenses; indoor use and UL standard
Tq: 25°C limited by lenses; according IEC 62722-2-1

Tq given for 100 khrs of lifetime

Validated by : GHYSENS Gilles

Duplicate to : BOS Peter

LAB : 22/11/2018

//CR180797

Traducere din limba engleză în limba română

Laborator teste
RAPORT DE TEST FIZIC
FORMULAR L-54 Ediția 01 – Revizia 00 - Data: 14/06/2018

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

Test Termic LED

Informații generale

Subiect : VOLTANA 2 - 16 LEDs Philips 75 W driver
Creat la : 08/11/2018
Validat la : 21/11/2018
Nr. Test : D180797
Normă de referință : IEC/EN 60598-1 Standard
Eșantion(e) : E180607
Dosar : P-F14058

Condiții test

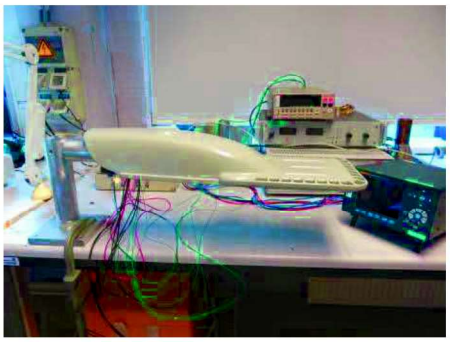
Aparat : VOLTANA 2
Număr de LED-uri : 16
Ballast : Xitanium FP 75W 0.3-1.0A SNLDAE 230V C133 sXt / 00-49-490
Info. balast : Tc (max) 80 °C
Curent balast (mA) : 1000
SPD : vossloh spc3/230/10K/i

Echipament de măsurare::
Fluke Norma 4000 - HF Wattmetru - (E110): Măsurători eletrice Keithley 2701 (E081) – Multimetru Ethernet/Sistem de achiziție date : măsurători termice & VF LED

Alimentare :
APT 300XAC alimentare a.c. (E102)
Tensiune de alimentare: 230 V 50 Hz

Metoda de măsurare a temperaturii de joncțiune: Junction
Măsurarea temperaturii racordului prin măsurarea temperaturii bazei și măsurătoare electrică T°j =T°b + Rjb x Pled

Operator : KOY Fiston



IMG_0838

Concluzii

Informativ

Ta: 50°C limitat de lentile; conform IEC 60598-2-3 și IEC 60598-2-5 (doar pentru uz exterior)
Ta: 40°C limitat de lentile; uz interior și standard UL
Tq: 25°C limitat de lentile; conform IEC 62722-2-1

Tq dat pentru 100 khrs durată de viață

Validat de :	Duplicat pentru: BOS	**//CR180797**
GHYSENS Gilles	Peter LAB : 22/11/2018	1/1
(semnătură indescifrabilă)		

Traducător și Interpret Autorizat
Limba Engleză, Madeza

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-2 – Side entry Configuration**
Sample n°: P-E14365

Test purpose: **Vibrations test: "Street Lighting Luminaires" testing protocol**

Remarks:
Test request n°: P-D14801
Folder n°: P-F14058

TEST CONDITIONS:

Operator: V2i

Testing protocol

	"Street Lighting Luminaires" testing protocol
Test Item	Post-top and Side-entry Luminaire
Excitation Direction	3 directions
Search for frequencies and quality factor Q	Excitation: sine sweep Frequency band: 5 - 55 Hz Sweep speed: 1 octave/min. Acceleration: 0.5g
Test	Q < 2 (no natural frequency)
	Excitation: **RANDOM (*)** Frequency band: 5 - 55 Hz Acceleration: 0.84g_{RMS} Duration: 1h
	Q > 2
	Excitation : sine dwell Frequency : f0 (Qmax) Acceleration : 0.5g Duration : 30 minutes
Search for frequencies and quality factor Q	Excitation: sine sweep Frequency band: 5 - 55 Hz Sweep speed: 1 octave/min. Acceleration: 0.5g

(*) The RANDOM equivalent test consist in an accelerated ageing process of one hour which presents, on a reference one-degree-of-freedom system, an equivalent fatigue damage spectrum than 20 years of mean wind and 90 hours of storms.

CONCLUSIONS:

VOLTANA-2 side entry configuration satisfies the Vibration tests following "Street Lighting Luminaires" testing protocol.

Duplicate to: Mr M. Thijs
LAB 21/10/2014
J.P. Harchies

//P-14E801