

Traducere din limba engleză, Limbășan Daniela, traducător autorizat MJ nr.14531/
BELAC[logo]

Anexa la certificatul de acreditare :

226-TEST

EN ISO/IEC 17025:2017

Versiune	12
Valabilitate	2021-05-28 - 2026-05-27

[semnatura indescifrabila]

Maureen Logghe

Presedintele Comitetului de acreditare

Acreditarea este acordată către :

**Recherche et Technologie - Research for Technology sa
R-Tech sa
Rue de Mons 3
4000 Liège**

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

Cod testare	Exantioane	Măsurare Gama de măsurare	Metodologie de testare Echipament	Descriere
PTP-01	Lămpi cu incandescență sau cu descărcari pentru aparate de iluminat.	Flux luminos exprimat în lumen (lm)	Măsurarea fluxului luminos al sferei Ulbricht conform standardului de referință EN 13032-1§ 6.1.2. Pentru toate sursele, cu excepția LED-urilor (iluminare solidă)	Măsurarea fluxului luminos al sferei Ulbricht conform standardului de referință EN 13032-1§ 6.1.2, EN 13032-4, CIE S 025 / E și IES LM79-08. Pentru LED-uri (iluminare solidă)
PTP-01	Surse de lumină tip LED pentru aparate de iluminat.	Fluxul luminos exprimat în lumeni (lm)		
PTP-02	Aparate de iluminat pentru lămpi cu incandescență sau cu descărcari de gaz	Distribuția intensității luminii exprimate în candela (cd)		Citire fotometrică cu un goniofotometru conform standardului de referință EN 13032-1 și CIE 121-1996 Pentru toate lămpile cu excepția LED-urilor (iluminare solidă)

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PTP-02	Aparate de iluminat cu surse de lumină de tip LED pentru corpuri de iluminat.	Distribuția luminoasă exprimată în candela (cd)	Citire fotometrică cu goniofotometru conform standardului de referință EN 13032-1, EN 13032-4, CIE S 025 / E, CIE 121-1996 și IES LM79-08 Pentru LED-uri (iluminare solidă)
PTP-09	Lămpi cu incandescență sau cu descărcare pentru aparate de iluminat sau aparate de iluminat asociate.	Date colorimetrice: CRI, temperatura culorii, coordonate tricromatice, date spectrale (domeniu vizibil)	Citirea colorimetrică într-o sferă prin spectrometru conform standardului de referință EN 13032-1 și CIE 13.3, 15, 63, 121-1996 S014 (1.2 și 3) Pentru echipamente de iluminat, cu excepția celor care includ LED-uri (iluminare în stare solidă)
PTP-09	Surse de lumină de tip LED pentru corpuri de iluminat sau corpuri de iluminat asociate.	Date colorimetrice: CRI, temperatura culorii, coordonate tricromatice, date spectrale (domeniu vizibil)	Citirea colorimetrică în sferă și spectrometru conform standardului de referință EN 13032-1, EN 13032-4, CIE S 025 / E și CIE 13.3, 15, 63, 121-1996 S014 (1.2 și 3) și IES LM79-08 pentru echipamente de iluminat cu LED (iluminare în stare solidă)

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PT-S-01	Aparate de iluminat	Teste de protecție împotriva pătrunderii umezelii (IPX3, IPX4)	Evaluarea protecției împotriva umidității conform standardului IEC 60598-1
PT-S-02	Probă de sticlă de protecție pentru aparate de iluminat	Test de fragmentare	Evaluarea fragmentării unui pahar conform standardelor IEC 60598-2-3 și IEC 60598-2-5 & GDE-GUI-003
PT-S-04	Aparate de iluminat	Test de durabilitate	Test de durabilitate pe corpuri de iluminat conform standardului IEC 60598-1
PT-S-05	Aparate de iluminat	Rezistență mecanică (IK07 la IK10)	Test de rezistență mecanică la impact (cod IK) - metoda ciocanului cu pendul conform standardului IEC / TR 62696 și IEC 60598 și GDE-GUI-003
PT-S-06	Aparate de iluminat	Teste de protecție împotriva pătrunderii prafului (IP5X, IP6X)	Evaluarea protecției împotriva prafului conform standardului IEC 60598-1 și PT-S-06
PT-S-07	Aparate de iluminat	Test de creștere a temperaturii în funcționare normală	Evaluarea creșterii temperaturii componentelor conform standardului IEC 60598-1 și PT-S-07 și GDE-POL-001

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PT-S-08	Aparate de iluminat	Teste de protecție împotriva pătrunderii umezelii (IPX5, IPX6)	Evaluarea protecției împotriva umidității conform standardului IEC 60598-1
PT-S-09	Aparate de iluminat	Teste de protecție împotriva pătrunderii umezelii (IPX7, IPX8)	Evaluarea protecției împotriva umidității conform standardului IEC 60598-1 și PT-S-09
PT-S-11	Aparate de iluminat	Test de sarcină statică (Test A)	Evaluarea rezistenței mijloacelor de fixare la o sarcină statică conform standardului IEC 60598-1 și PT-S-11
PT-S-12	Aparate de iluminat <i>Luminaires</i>	Test de rezistență la vânt (sarcină statică) <i>Wind force test (static load)</i>	Evaluarea rezistenței la vânt conform standardului IEC 60598-2-3 <i>Evaluation of wind resistance according to IEC 60598-2-3 Standard</i>
PT-S-13	Aparate de iluminat	Rezistență mecanică (IK04 la IK06)	Test de rezistență mecanică la impact (cod IK) - metoda ciocanului cu arc conform standardului IEC / TR 62696 și IEC 60598-1 și GDE-GUI-003
PT-S-14	Aparate de iluminat	Teste de protecție împotriva pătrunderii prafului (IP2X)	Evaluarea protecției împotriva pătrunderii solidelor conform standardului IEC 60598-1 și PT-S-14

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PT-S-15	Aparate de iluminat	Teste de protecție împotriva pătrunderii prafului (IP3X, 4X)	Evaluarea protecției împotriva pătrunderii solidelor conform standardului IEC 60598-1 și PT-S-15
PT-S-16	Module led	Teste de rezistență pentru durata de viață a modulului led	Evaluarea deprecierii fluxului după ciclul termic conform standardului IEC 62717 și PT-S-16
PT-S-17	Module led	Evaluarea încălzirii în stare suprasolicitate	Evaluarea creșterii temperaturii în condiții de putere în conformitate cu IEC 62031 și PT-S-17
PT-S-18	Aparate de iluminat	Testele de conductivitate a Pământului	Măsurarea rezistenței circuitului de împământare conform IEC 60598-1 și PT-S-18
PT-S-19	Aparate de iluminat	Test de rezistență la izolație	Măsurarea rezistenței electrice a materialelor izolante conform IEC 60598-1 și PT-S-19
PT-S-20	Aparate de iluminat	Test de rezistență dielectrică	Evaluarea rezistenței la defectare conform IEC 60598-1 și PT-S-20
PT-S-21	Aparate de iluminat	Test de sarcină statică (Test A)	Evaluarea rezistenței mijloacelor de fixare la a sarcină statică conform standardului IEC 60598-1 și PT-S-11

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Organism belgian de acreditare
EA MLA Signatory

DECLARAȚIE DE CONFORMITATE

Certificat de acreditare nr. 226-TEST

În conformitate cu prevederile Decretului regal din 31 ianuarie 2006 de înființare a BELAC, Comitetul de acreditare declară că a acordat acreditarea conform cerințelor standardului EN ISO / IEC 17025: 2017 la:

**Recherche et Technologie - Research for Technology sa
R-Tech sa
Rue de Mons 3
4000 Liège**

Organismul a demonstrat competența de a desfășura activitățile în locurile de activitate, așa cum este descris în domeniul de aplicare al acreditării 226-TEST, care face parte integrantă din prezentul certificat.

Versiunea actuală a domeniului acreditării este disponibilă pe www.belac.be.

Acest certificat rămâne valabil atât timp cât organismul continuă să îndeplinească condițiile de acreditare.

Președintele Comitetului de acreditare BELAC,

[semnatura indescifrabilă]

Maureen LOGGHE

Versiune :5

Perioada de valabilitate :2021-05-28 - 2026-05-27

Versiunea originală a acestui certificat este în franceză.

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

DECLARAȚIE DE CONFORMITATE



SCHRÉDER ROMANIA S.R.L., cu sediul în Cluj - Napoca, str. Corneliu Coposu, nr. 167A, Jud. Cluj, România, înregistrată la Registrul Comerțului cu nr. J12/1759/1998, membră a SCHRÉDER GROUP, în calitate de furnizori de aparate de iluminat marca SCHRÉDER

Declarăm pe propria răspundere că aparatul de iluminat: **VITALUM**

Echipare: VITALUM 1 (max. 36 LED-uri)
Clasa electrică: I & II
Caracteristici: max. 1050mA
Etanșeitate compartiment optic: IP 66
Etanșeitate compartiment aparataj: IP 66
Tensiune nominală: 230 V – 50 Hz

Cu condiția ca acesta să fie instalat, întreținut și utilizat în conformitate cu standardele de instalare și instrucțiunile producătorului, este în conformitate cu următoarele directive sau standarde:

- EN 60598-1: 2015 + A1: 2018
- EN 60598-2-3: 2003 + A1: 2011
- EN 62471: 2008
- EN 62493: 2010
- EN 55015: 2019 + A11:2020
- EN 61000-3-2: 2014
- EN 61000-3-3: 2013
- EN 61547: 2009
- EN 62722-1: 2016
- EN 62722-2-1: 2016
- EN 62696: 2018
- Directiva 2014/30/EU
- Directiva 2014/35/EU
- Directiva 2009/125/EC
- Directiva 2012/19/EU
- Directiva RoHS 2011/65/EU

SCHRÉDER ROMANIA S.R.L.
Director General,
Alexandru SIRICA



Eliberat,
Iunie 2024, Cluj-Napoca

SPECIFICATION OF THE CERTIFIED PRODUCT

Product data

Product	: road, square and street lighting
Trade name(s)	: SCHREDER
Type(s)/Model(s)	: VITALUM
description	: Street lighting
rated voltage (Un)	: 220-240 V
rated frequency	: 50-60 Hz
rated power	: max. 63 W
rated current (In)	: max. 350 mA/LED
class	: class I
degree of protection	: IP66
resistance to impact (IK)	: IK08
lamp(s)	: max. 36 LED HF1 + HF2 (Seoul 5050)
rated ambient temperature (ta)	: max. 45°C

TESTS

Test requirements

EN 60598-2-3:2003 + A1:2011
EN IEC 60598-1:2021 + A11:2022

Test results

The test results are laid down in certification file 634191/01.

Remarks

This certificate is based on test report No. P1626-I.

SGS

LICENCE

No. 23055

Issued to:
Applicant:
Schröder S.A.
Rue de Mons, 3
4000 Liège
Belgium

Licensee:
Schröder SA
Rue de Lusambo, 67
1190 BRUXELLES
Belgium



Product : road, square and street lighting
Trade name(s) : SCHREDER
Type(s)/model(s) : VITALUM

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 : 16-04-2024

ir. C. Lana,
Certification Manager

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



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

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

Conclusion

The examination proved that all certification requirements were met.

Reviewed by, project leader : Christian Maes - 16/04/2024

Certification Manager :

2024-04-16

FACTORY LOCATION(S)

Schreder TOV
Vul. Mykulynetska 46B
46000 TERNOPIL
Ukraine

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

Comatelec Schröder
ZAC de l'échangeur 11 rue Louis BECHEREAU
18000 Bourges
France

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

Schröder Iluminação S.A.
Rua da Fraternidade Operária, n° 3
2794-089 CARNAXIDE, OEIRAS
Portugal

Schröder Hungary Plc.
Tópart 2
2084 PILISSZENTIVAN
Hungary

VITALUM 1

5424

Optic	5424
Photometry Type	Narrow
Protector	Flat glass
Source	24 Seoul 5050
Matrix	575382



Characteristics

307	207	80	2.9	IP 66	IK 08	I EU, II EU	0.036
Length (mm)	Width (mm)	Height (mm)	Weight (kg)	Tightness level*	Impact resistance*	Electrical class*	CxS (m ²)

* According to IEC-EN60598 and IEC-EN62262

Features

Highly energy-efficient luminaire with the best total cost of ownership

- HiFlex™ photometric engine designed for optimised energy efficiency
- Easy installation
- High efficiency with low operating costs
- Supplied pre-wired to facilitate installation (optional quick-on connectors)
- Connected-ready for your future Smart city requirements

Types of application

- Square and park
- Bridge
- Car park
- Road and highway
- Train station
- Bike path

Information for 1000 lm matrix

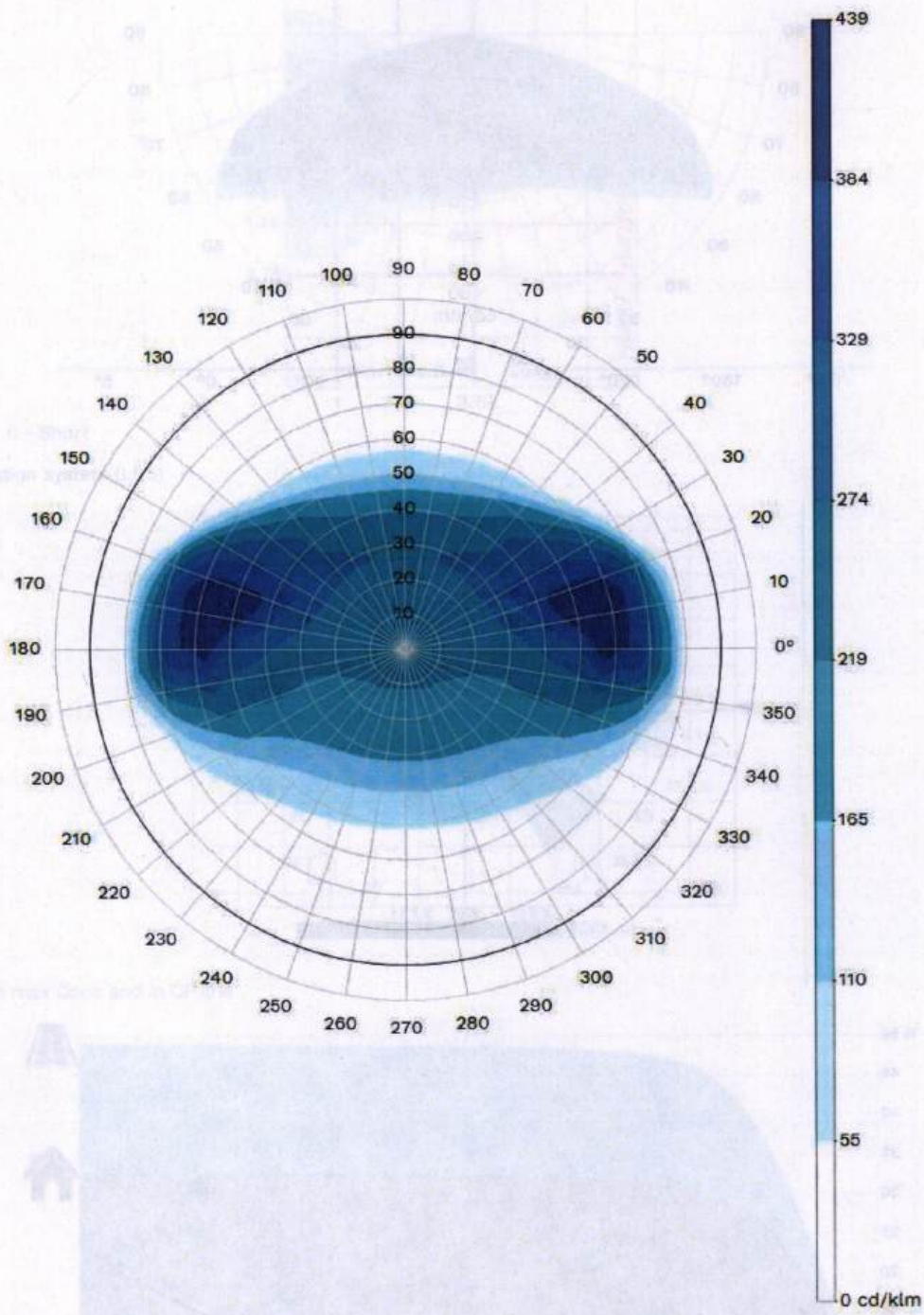
Efficacy (%)	81.9	G Class (EN 13201-2)	G6	I 70-80-90-95 (cd)	314 - 38 - X - X
DLOR (%)	81.9	G* (EN 13201 2015)	G*4	CIE flux code N 1→5 (%)	45.0 - 80.8 - 98.5 - 100.0 - 81.9
ULOR (%)	0.0	Imax (cd)	439	Gradient 90°	18cd
ULR (%)	0.0	Aperture 0-180°	74 - 74	Gradient 270°	7cd
Incl ULR 4%	-45/42°	Aperture 90-270°	39 - 11		

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°									
24	NW 740	67	11	1885	1543	140	827	B1 U0 G1	230
24	NW 740	117	18	3251	2661	148	1427	B1 U0 G1	230
24	NW 740	133	20	3699	3028	151	1624	B1 U0 G1	230
24	NW 740	167	25	4563	3735	156	2003	B1 U0 G1	230
24	NW 740	200	30	5400	4420	147	2370	B1 U0 G1	230
24	NW 740	233	35	6210	5083	145	2726	B2 U0 G1	230
24	NW 740	267	41	6993	5724	143	3070	B2 U0 G1	230
24	NW 740	300	46	7744	6339	138	3399	B2 U0 G1	230
24	NW 740	350	53	8829	7227	139	3876	B2 U0 G2	230
24	WW 722	67	11	1491	1220	111	654	B1 U0 G0	230
24	WW 722	117	18	2572	2105	117	1129	B1 U0 G1	230
24	WW 722	133	20	2926	2395	120	1285	B1 U0 G1	230
24	WW 722	167	25	3610	2955	123	1585	B1 U0 G1	230
24	WW 722	200	30	4272	3497	117	1875	B1 U0 G1	230
24	WW 722	233	35	4913	4021	115	2157	B1 U0 G1	230
24	WW 722	267	41	5532	4529	113	2428	B2 U0 G1	230
24	WW 722	300	46	6126	5015	109	2689	B2 U0 G1	230
24	WW 722	350	53	6985	5717	110	3066	B2 U0 G1	230
24	WW 727	67	11	1684	1378	125	739	B1 U0 G0	230
24	WW 727	117	18	2904	2377	132	1275	B1 U0 G1	230
24	WW 727	133	20	3304	2705	135	1451	B1 U0 G1	230
24	WW 727	167	25	4076	3337	139	1789	B1 U0 G1	230
24	WW 727	200	30	4824	3949	132	2118	B1 U0 G1	230
24	WW 727	233	35	5548	4541	130	2435	B2 U0 G1	230
24	WW 727	267	41	6247	5114	128	2742	B2 U0 G1	230
24	WW 727	300	46	6918	5663	123	3037	B2 U0 G1	230
24	WW 727	350	53	7887	6456	124	3462	B2 U0 G1	230
24	WW 730	67	11	1751	1433	130	768	B1 U0 G1	230
24	WW 730	117	18	3020	2472	137	1326	B1 U0 G1	230
24	WW 730	133	20	3436	2813	141	1508	B1 U0 G1	230
24	WW 730	167	25	4239	3470	145	1861	B1 U0 G1	230
24	WW 730	200	30	5016	4106	137	2202	B1 U0 G1	230
24	WW 730	233	35	5768	4722	135	2532	B2 U0 G1	230
24	WW 730	267	41	6496	5317	133	2851	B2 U0 G1	230
24	WW 730	300	46	7193	5888	128	3157	B2 U0 G1	230
24	WW 730	350	53	8201	6713	129	3600	B2 U0 G2	230

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

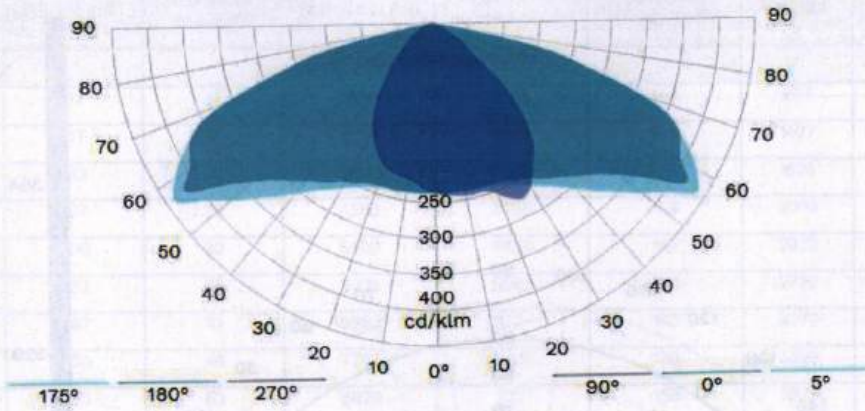
Hypergon view



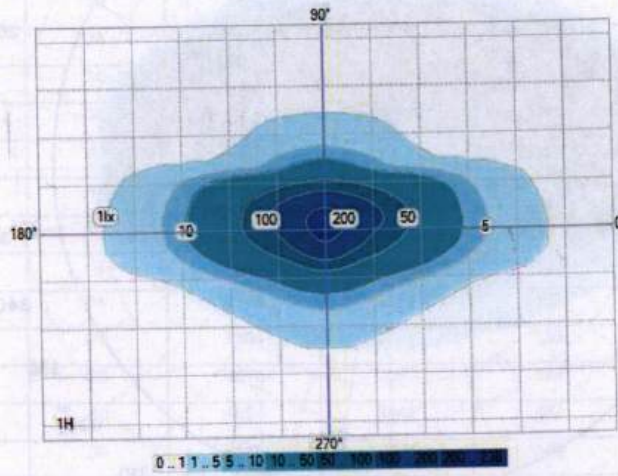
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10/10/2024

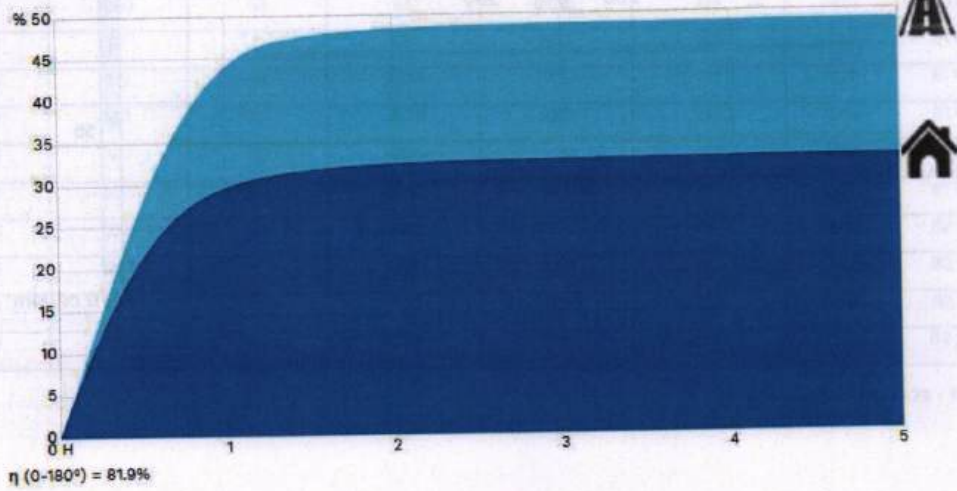
Polar/Cartesian diagram

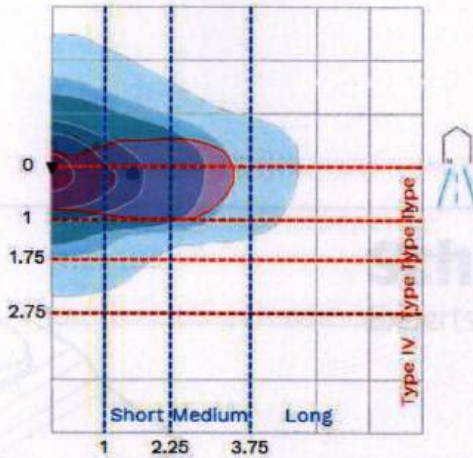


Isolux



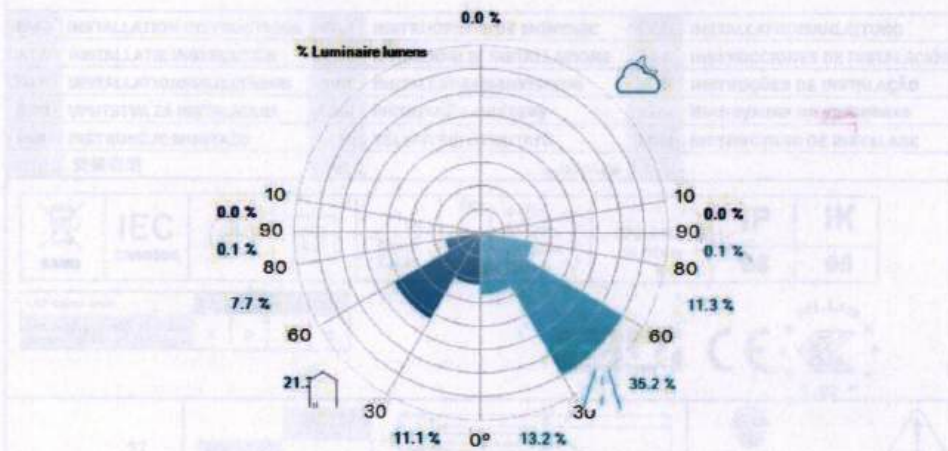
K-Curve



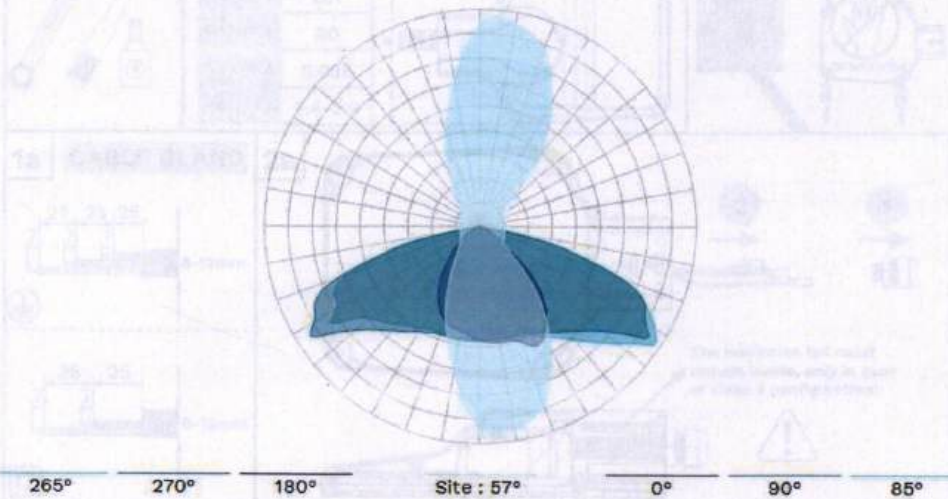


II - Short

Luminaire classification system (LCS)

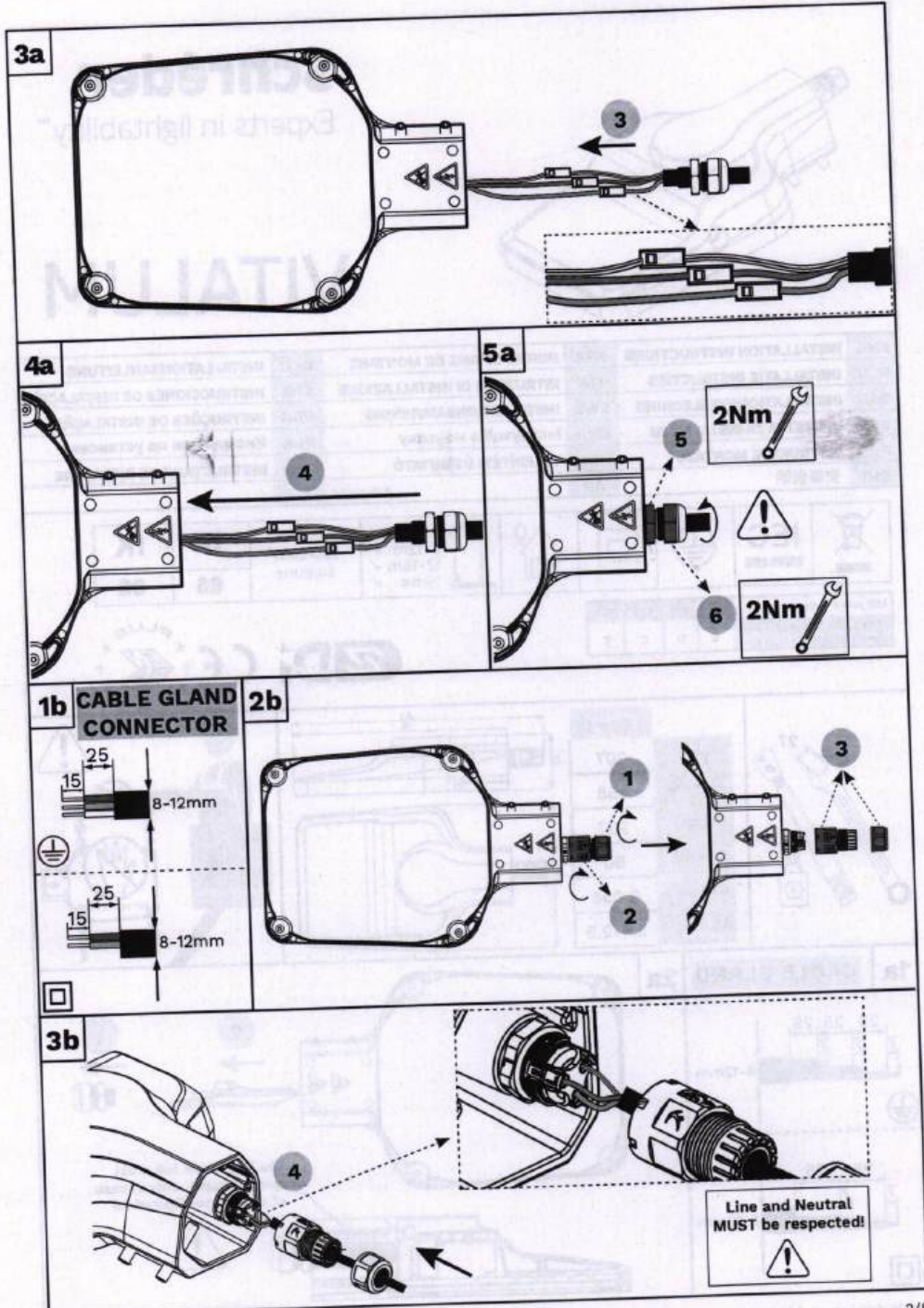


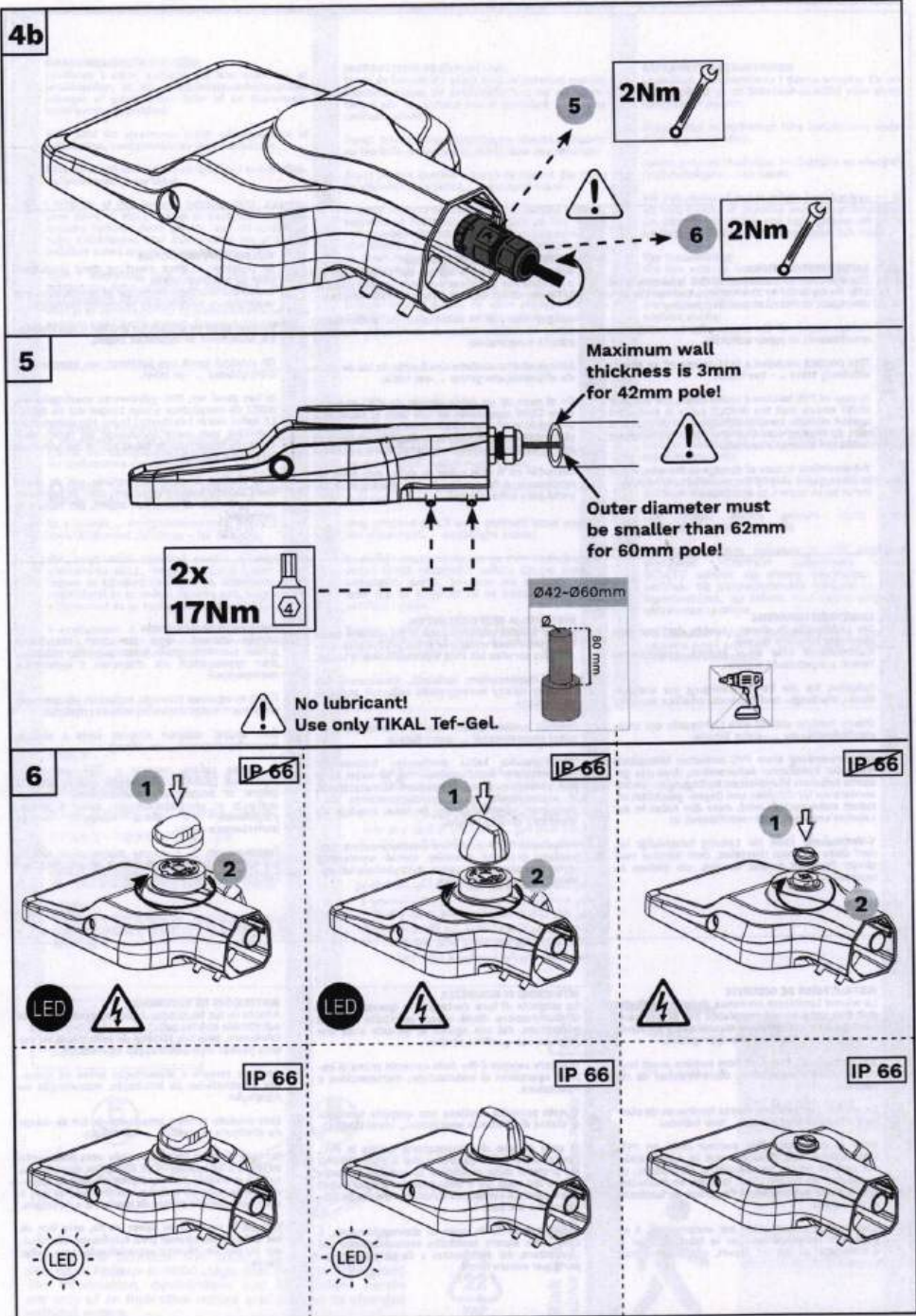
Intensity diagram in max Cone and in CPlane



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<http://www.schreder.com>





<p>ENG</p> <p>SAFETY INSTRUCTIONS The light source contained in this luminaire shall only be replaced by the manufacturer or his service agent or a similar qualified person.</p> <p>Always switch off the power prior to installation, maintenance or repair activities.</p> <p>This product contains a light source of an energy efficiency class ... - see table.</p> <p>In case of PVC insulated mains cable, the installer MUST ensure that the WHOLE cable is protected against climatic conditions, especially UV rays and rain, by making sure that the cable is contained inside the luminaire and pole</p> <p>Y-connection: in case of damage to the wire, it has to be replaced only by the manufacturer, distributor or by an expert, to avoid risks.</p>	<p>SPA</p> <p>INSTRUCCIONES DE SEGURIDAD Solo el fabricante, un agente del servicio técnico o persona con cualificación similar puede sustituir la fuente de luz de este sistema de iluminación.</p> <p>Apague siempre el interruptor de alimentación antes de realizar tareas de instalación, mantenimiento o reparación.</p> <p>Este producto contiene una fuente de luz de clase de eficiencia energética ... -ver tabla.</p> <p>En el caso de un cable aislado de PVC, el instalador DEBE asegurarse de que todo el cable esté protegido contra las condiciones climáticas, especialmente los rayos UV y la lluvia, asegurándose de que el cable esté dentro de la luminaria y el poste</p> <p>Conexión en Y: si el cable se daña, solo debe reemplazarlo el fabricante, un distribuidor o un experto para evitar riesgos.</p>	<p>NLD</p> <p>VEILIGHEIDSWAARSCHUWINGEN De lichtbron in deze armatuur dient uitsluitend door de fabrikant, diens onderhoudsvertegenwoordiger of een persoon met vergelijkbare kwalificaties te worden vervangen.</p> <p>Schakel altijd de stroom uit voordat u aan installatie, onderhoud of reparaties begint.</p> <p>Dit product bevat een lichtbron van energie-efficiëntieklasse ... -zie tabel.</p> <p>In het geval van PVC-geïsoleerde voedingskabels MOET de installateur ervoor zorgen dat de GEHELE kabel wordt beschermd tegen klimaatomstandigheden, met name UV-stralen en regen, door ervoor te zorgen dat de kabel zich in het armatuur en de paal bevindt</p> <p>Y-verbinding: in geval van schade aan de draad dient deze te worden vervangen door de fabrikant, de distributeur of door een expert, om risico's te vermijden.</p>
<p>DEU</p> <p>SICHERHEITSHINWEISE Die Lichtquelle in dieser Leuchte darf nur vom Hersteller bzw. von dessen Kundendienst oder einer ähnlich qualifizierten Person ausgetauscht werden.</p> <p>Schalten Sie die Stromversorgung vor Installationen-, Wartungs- und Reparaturarbeiten stets ab.</p> <p>Dieses Produkt enthält eine Lichtquelle der Energieeffizienzklasse ... -siehe Tabelle.</p> <p>Bei Verwendung eines PVC-isolierten Netzkabels muss der Installateur sicherstellen, dass das gesamte Kabel vor klimatischen Bedingungen -insbesondere vor UV-Strahlen und Regen- geschützt ist, indem sichergestellt wird, dass das Kabel in der Leuchte und dem Mast verschlossen ist</p> <p>Y-Verbindung: Falls die Leitung beschädigt ist, darf diese nur vom Hersteller, dem Händler oder einem Experten ersetzt werden, um Risiken zu vermeiden.</p>	<p>POL</p> <p>INSTRUKCJA BEZPIECZEŃSTWA Źródło światła zamontowane w tej oprawie może być wymieniane wyłącznie przez producenta, pracownika serwisu lub inną wykwalifikowaną osobę.</p> <p>Przed rozpoczęciem instalacji, konserwacji lub naprawy należy bezwzględnie odłączyć zasilanie elektryczne.</p> <p>Produkt zawiera źródło światła o klasie efektywności energetycznej ... -patrz tabela.</p> <p>W przypadku kabla sieciowego izolowanego PVC instalator MUSI upewnić się, że kabel CAŁY jest chroniony przed warunkami klimatycznymi, w szczególności przed promieniowaniem UV i deszczem, upewniając się, że kabel znajduje się wewnątrz oprawy i stupa.</p> <p>Połączenie Y: ze względów bezpieczeństwa uszkodzony przewód powinien zostać wymieniony wyłącznie przez producenta, dystrybutora lub wykwalifikowanego elektryka.</p>	<p>RUS</p> <p>инструкция безопасности Источники света для этого светильника должны выполнять только производитель, сервисный агент, продавец или специалист с аналогичной квалификацией.</p> <p>Перед проведением установки, сервисного обслуживания или ремонта всегда отключайте питание устройства.</p> <p>Этот продукт содержит источник света с классом энергоэффективности ... -см. таблицу.</p> <p>В случае кабеля питания с ПВХ изоляцией монтажники ДОЛЖНЫ обеспечить защиту ВСЕГО кабеля от воздействия климатических условий, особенно от ультрафиолетовых лучей и дождя, убедившись, что кабель находится внутри светильника и опоры.</p> <p>Подключение Y: в случае повреждения кабеля его замена производится только производителем, дистрибьютором или экспертом.</p>
<p>FRA</p> <p>INSTRUCTIONS DE SECURITE La source lumineuse contenue dans ce luminaire doit être uniquement remplacée par le fabricant, son agent de maintenance ou une autre personne disposant des qualifications appropriées.</p> <p>Mettez toujours l'appareil hors tension avant toute opération d'installation, d'entretien ou de réparation.</p> <p>Ce produit contient une source lumineuse de classe d'efficacité énergétique... -voir tableaux.</p> <p>Dans le cas d'un câble secteur isolé en PVC, l'installateur doit s'assurer que le câble entier est protégé contre les conditions climatiques, en particulier les rayons UV et la pluie, en s'assurant que le câble est contenu à l'intérieur du luminaire et du poteau</p> <p>Connexion Y : si le câble est endommagé, il ne peut être remplacé que par le fabricant, par le distributeur ou par un expert, afin d'éviter tout risque.</p>	<p>ITA</p> <p>ISTRUZIONI DI SICUREZZA La sorgente di luce contenuta in questo sistema di illuminazione dovrà essere sostituita solo dal produttore, dal suo agente di servizio o da una persona con qualifica simile.</p> <p>Staccare sempre il filo della corrente prima di iniziare operazioni di installazione, manutenzione o riparazione.</p> <p>Questo prodotto contiene una sorgente luminosa di classe di efficienza energetica ... -vedi tabella.</p> <p>In caso di cavo di alimentazione isolato in PVC, l'installatore DEVE garantire che il cavo INTERO sia protetto dalle condizioni climatiche, in particolare dai raggi UV e dalla pioggia, assicurandosi che il cavo sia contenuto all'interno del corpo illuminante e del palo</p> <p>Collegamento Y: in caso di danneggiamento, il cavo deve essere sostituito esclusivamente dal costruttore, dal distributore o da un tecnico esperto per evitare rischi.</p>	<p>POR</p> <p>INSTRUÇÕES DE SEGURANÇA A fonte de luz no interior deste candeeiro deve ser substituída apenas pelo fabricante, pelo seu técnico de assistência ou por uma pessoa com qualificação equivalente.</p> <p>Desligue sempre a alimentação antes de proceder a actividades de instalação, manutenção ou reparação.</p> <p>Este produto contém uma fonte de luz da classe de eficiência energética ... -ver tabela.</p> <p>No caso de cabo de alimentação com isolamento em PVC, o instalador DEVE assegurar que TODO o cabo é protegido das condições climáticas, especialmente raios UV e chuva, certificando-se que o cabo está contido dentro da luminária e da coluna.</p> <p>Ligação Y: em caso de danos no fio, este tem de ser substituído apenas pelo fabricante, distribuidor ou por um técnico especializado, para evitar riscos.</p>

<p>DAN</p> <p>SIKKERHEDSINSTRUKTIONER Lyskilden i dette armatur må kun udskiftes af producenten, af en vedligeholdelsesvirksomhed udpeget af producenten eller af en tilsvarende kvalificeret virksomhed.</p> <p>Sluk altid for strømmen inden påbegyndelse af installation, vedligeholdelse eller reparation.</p> <p>Dette produkt indeholder en lyskilde i energieffektivitetsklasse ... -se tabel.</p> <p>I tilfælde af PVC-isoleret ledning SKAL elektrikerne sikre, at HELE kablet er beskyttet mod klimatiske forhold, dette gælder især UV-stråler og regn. Elektrikerne skal derfor sørge for, at kablet forbliver inde i armaturet og masten.</p> <p>Type Y monterig: 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.</p>	<p>RON</p> <p>INSTRUCȚIUNI DE EXPLOATARE Sursa de lumină din acest corp de iluminat trebuie înlocuită numai de producător sau de reprezentantul său de service sau o persoană ce deține calificări similare.</p> <p>Opriți întotdeauna alimentarea electrică înainte de lucrările de instalare, întreținere sau reparații.</p> <p>Acest produs conține o sursă de lumină din clasa de eficiență energetică.....conform tabel</p> <p>În cazul cablului de alimentare cu izolație din PVC, instalatorul TREBUIE să se asigure că TOT cablul este protejat împotriva condițiilor climatice, mai ales împotriva razelor UV și a ploii, asigurându-se că acest cablu este plasat în interiorul aparatului de iluminat și al stâlpului!</p> <p>Conexiunea Y: În caz de deteriorare a firului, acesta trebuie înlocuit numai de către producător, distribuitor sau un expert, pentru evitarea riscurilor.</p>	<p>SWE</p> <p>SÄKERHETSINSTRUKTIONER Ljuskällan som monteras i denna armatur får endast ersättas av en Schröder-anställd eller annan kvalificerad person.</p> <p>Stäng alltid av strömmen före installation, underhåll eller reparation.</p> <p>Denna produkt innehåller en ljuskälla av energieffektivitetsklass ... -se tabell.</p> <p>Vid PVC-isolerad kabel måste installatören se till att hela kablens är skyddad mot klimatförhållanden, särskilt UV-strålar och regn, genom att se till att kablens monteras inuti armaturen och stolpen</p> <p>Typ Y-anslutning: Om den externa kabeln eller ledningen på denna armatur är skadad, får den endast bytas ut av tillverkaren eller av en servicepartner till tillverkaren eller motsvarande kvalificerad person, för att undvika skador</p>
<p>HUN</p> <p>BIZTONSÁGI ÚTMUTATÓ A lámpatestben található fényforrást kizárólag a gyártó, szervizkiszolgálója vagy hivatalos szakszerviz szakembere cserélheti ki.</p> <p>A szerelés, karbantartás és javítás előtt minden esetben vágjon le az áramtalanítást!</p> <p>Ez a termék ... energiahatékonyság osztályba tartozó fényforrást tartalmaz - lásd táblázat.</p> <p>PVC szigetelésű tápkábel esetén a telepítőknek 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.</p> <p>Y-csatlakozás: A sérült vezetékét kizárólag a gyártó, forgalmazó vagy szakember cserélheti ki a kockázatok elkerülése végett.</p>	<p>SRP</p> <p>UPUTSTVA Izvor svetla u ovom rasvetljom telu može da zameni samo proizvođač, njegov servisni agent ili na sličan način kvalifikovana osoba.</p> <p>Uvek isključite napajanje pre instalacije, održavanja ili popravke.</p> <p>Ovaj proizvod sadrži izvor svetlosti klase energetske efikasnosti ... -pogledajte tabelu.</p> <p>U slučaju napojnog kabla sa PVC izolacijom, izvođač MORA obezbediti zaštitu CELOG kabla od klimatskih uslova, posebno UV zračenja i kiše, tako što se osigurati da se kabal nalazi unutar svetiljke i stuba.</p> <p>Y-veza: U slučaju oštećenja žice zamenu mora da obavi isključivo proizvođač, distributer ili stručnjak kako bi se izbegao rizik.</p>	<p>UKR</p> <p>Інструкція безпеки Джерело світла, що міститься у цьому світильнику, повинен замінити лише виробник, його сервісний агент або кваліфікована особа.</p> <p>Замикді живлення перед встановленням, доглядом або ремонтом.</p> <p>Цей продукт містить джерело світла класу енергоефективності ... -див. таблицю.</p> <p>У випадку кабелю живлення із ПВХ ізоляцією, монтажники ПОВІННІ забезпечити захист ВСЬОГО кабелю від впливу кліматичних умов, особливо від ультрафіолетових променів та дощу, переконатися, що кабель знаходиться всередині світильника та опори</p> <p>У-з'єднання: у разі пошкодження дроту його має замінити лише виробник, дистрибутор чи експерт, щоб уникнути ризиків.</p>
<p>CHI</p> <p>安全守则 该灯具内的光源仅可由制造商员工、指定代理商或具备类似资质的人员进行更换。</p> <p>在安装、维护和维修灯具之前必须首先切断电源。</p> <p>本产品包含一个能效等级的光源.....见表。</p> <p>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劣气候状况，尤其是紫外线和水，而且要确保电缆被灯具和灯杆完全覆盖。</p> <p>Y类附件： 如果灯具外部电缆被破坏，电缆必须被制造商或经授权代理商或有资质的人员及时更换从而避免伤害。</p>	<p>AR</p> <p>تعليمات السلامة: في حالة الحاجة لتغير مصدر الضوء، يتم ذلك من خلال الشركة المصنعة أو الوكيل الممثل لعمل ذلك أو شخص موهل لذلك. دائما الفصل الدائرة الكهربائية قبل تركيب أو صيانه الجهاز. تطهير هذا المنتج مصنف ضمن مجموعه المخاطر 2 خطر السمات المتاع ضوئي، لا تنظر مباشرة إلى الجهاز وهو مشاء لأن ذلك مؤذي للعين. الجهاز يجب أن يركب بشكل يضمن أن التحديق يمسد.</p> <p>يجب على الشخص الذي يوصل الجهاز بالدائرة الكهربائية التأكد من أن دحمي من التأثيرات المشابهة وخاصة الأشعة فوق البنفسجية و المطر من خلال التأكد أن الكابيل محوي بداخل العمود والجهاز في حالة الحاجة لتغير الإضاءة الداخلية، يتم ذلك من خلال الشركة المصنعة أو الوكيل الممثل لعمل ذلك أو شخص مهوول لذلك. دائما الفصل الدائرة الكهربائية قبل تركيب أو صيانه الجهاز.</p>	

Risk Group
IEC/EN 62471 Photobiological Safety
Assessment based on IEC/TR 62778, C_{max}

0.2m*..f.	RG 1 - Low risk				
1.4m*..f.	RG 0 - Exempt No risk				
<table border="1"> <tr> <td>IECEN 62471</td> <td>Exempt</td> </tr> <tr> <td>IECTR 62778, RG1-RG0, C_{max} 1.4m</td> <td></td> </tr> </table>		IECEN 62471	Exempt	IECTR 62778, RG1-RG0, C _{max} 1.4m	
IECEN 62471	Exempt				
IECTR 62778, RG1-RG0, C _{max} 1.4m					

*worst case scenario

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SGS



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

For the product:

Street lighting luminaire

Trade name(s):

SCHREDER

Type(s)/Model(s):

VITALUM

Complying with the following EPRS for performance:

EPRS 003:2018, IEC 62722-1:2014, IEC 62722-2-1:2014

EN 62722-1:2016, EN 62722-2-1:2016

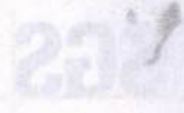
Based on test report No. P1626_62722-2-1_001

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Date: 01/07/2024

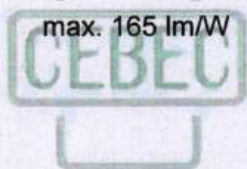
Signature:

Name: Calogero LANA
Position: Certification Manager



Characteristics :

Description	:	Street lighting luminaire
Rated voltage (Un)	:	220-240 V
Rated frequency	:	50-60 Hz
Rated power	:	max. 63 W
Rated current	:	max. 350 mA/LED
Class	:	class I
Lamps	:	max. 36 LEDs (SEOUL 5050)
Colour temperature (CCT)	:	2200K, 2700K, 3000K, 4000K
Colour rendering index (CRI)	:	70
Luminous flux	:	max. 8004 lm
Efficacy	:	max. 165 lm/W



Name: Calopio LANA
Position: Certification Manager

Date: 01/03/2024

EMC test

General information

Subject : VITALUM 1 - 36 Seoul 5050 - 850mA - OSRAM 4DIM G3 75W 150-1,050mA 220-240V DALI C123 . - Nema - Cl I

Asked by : SZÜGYI János Péter

Created on : 02/02/2024

Started on : 13/02/2024

Test number : D240116

Reference norm : EN IEC 61547 (2023); IEC 61000-3-2 Ed5 (2018) +A1 (2020); EN IEC 61000-3-2 (2019) + A1 (2021); EN IEC 55015 (2019) +A11 (2020); IEC 61547 Ed3 (2020)

Sample(s) : E240055

Test conditions

Luminaire : VITALUM 1

Electrical class : Class I EU

Number of LEDs : 36

LED Type : Seoul 5050

Lens : LENS PLATE 36 LENSES 5439 PMMA / 03-50-371

PCBA : PCBA HF2 36 SSC5050 4000K 4stp 70 Min. W4 12P3 1CH HT / 03-52-280

Driver : DRIVER_OSRAM_4DIM G3_75W_150-1,050mA_220-240V_DALI_C123_ / 03-55-719

Number of driver(s) : 1

Current setting (mA) : 850

Dimming minimum value : 20

Dimming protocol : DALI

Control system : Nema

Overvoltage protection : NA

Testing facility : External - EMC-ULg

External test report reference : 240207/0936/AAAN0587A

Operator : External Lab

Conclusion



Success

Conclusion :

VITALUM 1 Cl. I with OSRAM 4DIM G3 75W driver complies with CISPR 15, EN IEC 55015, EN IEC 61547 and IEC61547 standards in accredited lab.

Remark: This report covers the extra surge test @6kV L-N and @10kV L/N-PE.

Validated by :

LERHO Xavier

Duplicate to : PELSŐCZI Zoltán, SZÜGYI János Péter,

NAGY Ádám, LÁMFALUSI Ferenc

LAB : 21/02/2024

D240116

1/3

Test(s) details

Test(s)

Name	Description	Verdict
Complete EMC test (10 Kv Surges)	<p>Emission measurements (EN IEC 55015):</p> <ul style="list-style-type: none"> - Terminal disturbance - Radiated emissions - Conducted emissions <p>Harmonics (IEC 61000-3-2 & EN IEC 61000-3-2)</p> <p>Flicker (IEC 61000-3-3 & EN IEC 61000-3-3)</p> <p>Immunity measurements (IEC 61547 & EN IEC 61547)</p> <ul style="list-style-type: none"> - Electrostatic discharge (IEC 61000-4-2 & EN 61000-4-2) - Radiated, radio frequency electromagnetic field (IEC 61000-4-3 & EN IEC 61000-4-3) - Fast transients (IEC 61000-4-4 & EN 61000-4-4) - Surges (IEC 61000-4-5 & EN 61000-4-5) - Injected currents (IEC 61000-4-6 & EN IEC 61000-4-6) - Power frequency magnetic field immunity (IEC 61000-4-8 & EN 61000-4-8) - Voltage dips & interruptions (IEC 61000-4-11 & EN IEC 61000-4-11) 	Success

Complete EMC test (10 Kv Surges)

Detail(s)



IMG_8566

Number of appendix pages : 51

End of test report :

Laboratory Test report



713-TEST
NBN EN ISO/IEC 17025 :2017

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FORM L-54 V2

Mechanical impact resistance test

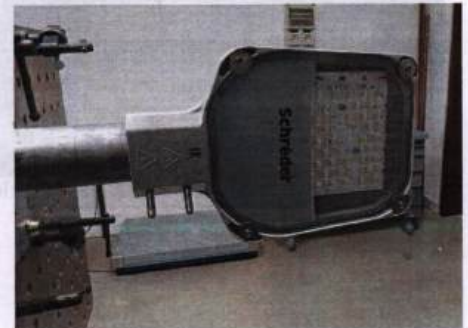
General information

Subject : VITALUM 1 - GLASS - Side-Entry - IK08
Asked by : SZÜGYI János Péter
Created on : 27/09/2023
Started on : 27/09/2023
Test number : D231174
Reference norm : IEC 62696 Ed1 (2011); IEC/EN 60598-1 Ed9 (2021) + A11 (2022)
Sample(s) : E230699

Test conditions

Luminaire : VITALUM 1
Quantity of sample under test : 5
Protector Material : Glass Extra Clear wide serigraphy
Protector Shape : Flat
Serigraphy : ceramic
Protector Thickness (mm) : 5
Protector supplier : External - SzliffGlass
Testing facility : BER – SCHREDER

Operator : Philippe Léonard



IMG_6537

Conclusion

Success

Conclusion :

Statement of conformity according to TR 62696 Ed1 (2011) and section 4.13 of IEC/EN 60598-1 Ed9 (2021) +A11 (2022):
IK08 passed.

Validated by :
LERHO Xavier

Duplicate to : SZÜGYI János Péter
LAB : 17/10/2023

D231174
1/3

Test(s) details

Test(s)

Name	Description	Verdict
Impact points	At pendulum hammer 5 impact points distributed on protector surface One impact on each point 2 supplementary impacts on the most fragile point	Informative
IK08	Impact energy : 5 joules Hammer weight : 1.7 Kg Height of fall : 30 Cm	Success

Impact points

Detail(s)



IMG_6537(a)

IK08

Verdict(s)

- NOT TESTED																	
IK 08	Impact	1			2			3			4			5			
Sample	Shot	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	
1		Pass	-	-	Pass	-	-	Pass	-	-	Pass	-	-	Pass	Pass	Pass	
2		Pass	-	-	Pass	-	-	Pass	-	-	Pass	-	-	Pass	Pass	Pass	
3		Pass	-	-	Pass	-	-	Pass	-	-	Pass	-	-	Pass	Pass	Pass	
4		Pass	-	-	Pass	-	-	Pass	-	-	Pass	-	-	Pass	Pass	Pass	
5		Pass	-	-	Pass	-	-	Pass	-	-	Pass	-	-	Pass	Pass	Pass	

Test room temperature (°C) :

23.8

Measurement equipment :

Pendulum hammer with chariot (M062)
Thermometer (A056)

Quantities measured :

For IK 04/05/06: Verification of the mechanical strength of a luminaire according to PT-S-13
For IK07/08/09/10/10+: Verification of the mechanical strength of a luminaire according to PT-S-05

Uncertainties :

Temperature: 0,6 °K

Mass: 0,25 %

Dynamometric key :

From 0.5 to 2.5 Nm : 0,15 Nm

From 2.5 to 5 Nm : 0,22 Nm

From 5 to 25 Nm : 0,83 Nm

From 25 to 60 Nm : 2,73 Nm

From 60 to 100 Nm : 3,55 Nm

For IK 04/05/06, Impact energy: ± 10%

For IK07/08/09/10/10+, Impact energy: ± 1%

Decision rules :

Pass/fail criteria for individual test statement of conformity (Verdict) according to GDE-GUI-003:

By visual inspection (or other means if necessary):

Luminaire shows dangerous behavior: fail

Luminaire shows no dangerous behavior: success

When several luminaires are tested, 4 out of 5 samples need to show positive result for compliance of the batch

Pass/fail criteria for the test report statement of conformity (Conclusion):

At least one of the individual test statements of conformity (Verdict) is successful: success, the highest achieved IK is reported

Otherwise: fail

End of accredited report :

Conclusion



Information

Conclusion:

ΔT_s < 80°C no risk of solder crack

T_a (@930mA): 55°C limited by driver according IEC 60598-2-3 & EN 60598-2-3 and IEC 60598-2-5 & EN 60598-2-5 (indoor use only)

T_a (@930mA): 45°C limited by driver indoor use and UL standard

T_q (@930mA): 35°C limited by driver according IEC 62722-2-1 & EN IEC 62722-2-1

T_a (@1050mA): 50°C limited by driver according IEC 60598-2-3 & EN 60598-2-3 and IEC 60598-2-5 & EN 60598-2-5 (indoor use only)

T_a (@1050mA): 40°C limited by driver indoor use and UL standard

T_a (@1050mA): 30°C limited by driver according IEC 62722-2-1 & EN IEC 62722-2-1

T_a given for 100 hrs of lifetime

Validated by:

LERMOT/river

Duplicate to: PÉLISÓCZI Zoltán, SZÜGYI János, Péter,

NAGY Ádám, Várnai László Ferenc

LMA: 2022/2024

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D231174

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Laboratory Test report



713-TEST
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FORM L-54 V2

Thermal Test LED

General information

Subject : VITALUM 1 - 24 Seoul 5050 - 1050-930mA - SIGNIFY FP 75W 300-1,050mA 220-240V DALI C133

Asked by : SZÜGYI János Péter

Created on : 01/02/2024

Started on : 07/02/2024

Test number : D240101

Reference norm : EN IEC 60598-1 (2021) + A11 (2022); EN 60598-2-3 (2003) + A1 (2011); EN 60598-2-5 (2015); IEC 60598-2-5 Ed3 (2015); IEC 60598-2-3 Ed3 (2002) +Amd 1 (2011); IEC 60598-1 Ed9 (2020)

Sample(s) : E240056

Test conditions

Luminaire : VITALUM 1

Number of LED : 24

LED : Seoul 5050

Lens : LENS PLATE 25 LENSES 5425 PMMA / 03-48-040

PCBA : PCBA HF1 24 SC5050 740 4 stp Min. W4 8S3P HT / 03-52-266

Driver : DRIVER_SIGNIFY_FP_75W_300-1,050mA_220-240V_DALI_C133_ / 02-58-000

Number of driver(s) : 1

Control system : NEMA

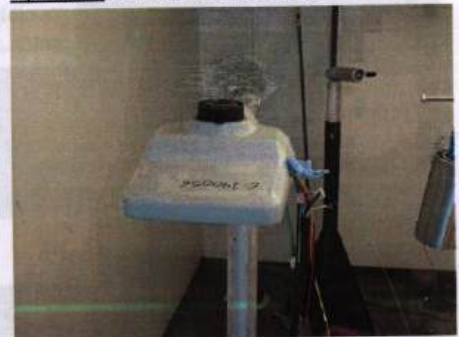
SPD : None

Additional load info :

New foundry

Testing facility : BER - SCHREDER

Operator : CLOSSET Frédéric



lum

Conclusion

i Informative

Conclusion :

$\Delta T_s < 80^\circ\text{C}$ no risk of solder crack

Ta (@930mA): 55°C limited by driver according IEC 60598-2-3 & EN 60598-2-3 and IEC 60598-2-5 & EN 60598-2-5 (outdoor use only)

Ta (@930mA): 45°C limited by driver indoor use and UL standard

Tq (@930mA): 35°C limited by driver according IEC 62722-2-1 & EN IEC 62722-2-1

Ta (@1050mA): 50°C limited by driver according IEC 60598-2-3 & EN 60598-2-3 and IEC 60598-2-5 & EN 60598-2-5 (outdoor use only)

Ta (@1050mA): 40°C limited by driver indoor use and UL standard

Tq (@1050mA): 30°C limited by driver according IEC 62722-2-1 & EN IEC 62722-2-1

Tq given for 100 khrs of lifetime

Validated by :

LERHO Xavier

Duplicate to : PELSŐCZI Zoltán, SZÜGYI János Péter,
NAGY Ádám, LÁMFALUSI Ferenc

LAB : 13/02/2024

D240101

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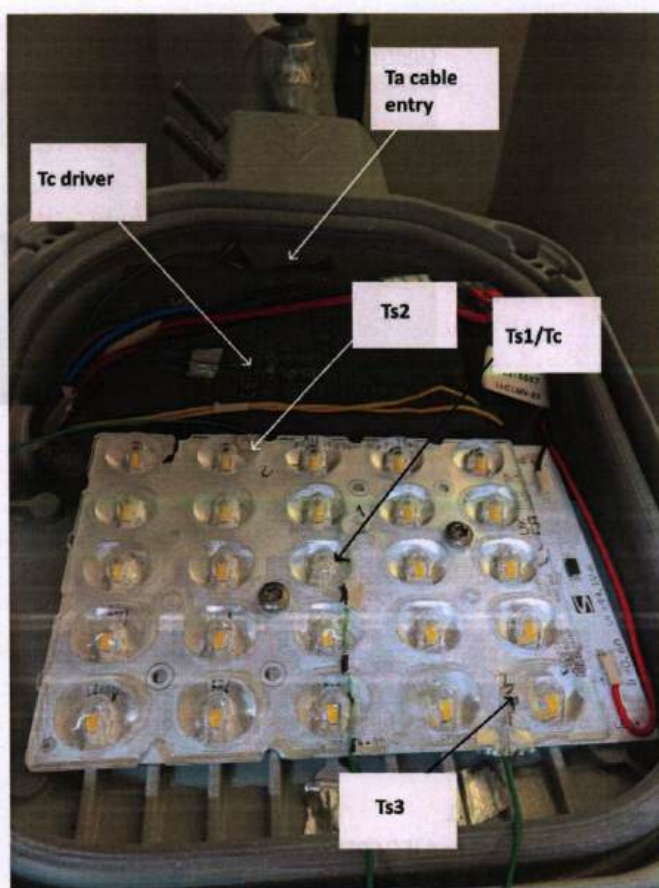
Test(s) details

Test(s)

Name	Description	Verdict
Sensors positions	Disposition of the thermocouples on the DUT.	Informative
Test @ 930mA	Test according section 12.4 of IEC 60598-1 & EN IEC 60598-1.	Success
Test @ 1050mA	The DUT is driven until all thermocouples reach thermal stabilization (i.e. variation = 1K/h). Evaluation of the harmonics behaviour according IEC 61000-3-2 & EN IEC 61000-3-2 - Not covered by the laboratory's accreditation.	Success

Sensors positions

Detail(s)



pos_thermo

Test @ 930mA

Verdict(s)

	Ts1	Ts2	Ts3	Driver	Ta Cable entry
Limit Ta	99.0 °C	99.0 °C	99.0 °C	80.0 °C	90.0 °C
Limit Tq	85.0 °C	85.0 °C	85.0 °C	70.0 °C	90.0 °C
Thermocouple T*	62.8 °C	65.6 °C	62.9 °C	61.0 °C	38.1 °C
Room	26.0 °C	26.0 °C	26.0 °C	26.0 °C	26.0 °C
E Led	5.7 V	5.7 V	5.7 V		
I Led	0.309 A	0.309 A	0.309 A		
P Led	1.8 W	1.8 W	1.8 W		
Heating	36.8 °C	39.6 °C	36.9 °C	35.0 °C	12.1 °C
Ta Indoor	62.2 °C	59.4 °C	62.1 °C	45.0 °C	77.9 °C
Tq	48.2 °C	45.4 °C	48.1 °C	35.0 °C	77.9 °C
Solder point temperature used as the image of the lens temperature					
Primary EM			Secondary Em Dr1		
U	229.9 V	U	45.8 V		
I	0.215 A	I	0.926 A		
P	47.7 W	P	42.4 W		
PF	0.967				
Efficiency	88.9%				
THD	10.0%				
Harmonics - 100%	PASS				

Test @ 1050mA

Verdict(s)

	Ts1	Ts2	Ts3	Driver	Ta Cable entry
Limit Ta	99.0 °C	99.0 °C	99.0 °C	80.0 °C	90.0 °C
Limit Tq	85.0 °C	85.0 °C	85.0 °C	70.0 °C	90.0 °C
Thermocouple T*	68.4 °C	71.7 °C	68.6 °C	65.4 °C	39.9 °C
Room	26.1 °C	26.1 °C	26.1 °C	26.1 °C	26.1 °C
E Led	5.8 V	5.8 V	5.8 V		
I Led	0.349 A	0.349 A	0.349 A		
P Led	2.0 W	2.0 W	2.0 W		
Heating	42.3 °C	45.6 °C	42.5 °C	39.3 °C	13.8 °C
Ta Indoor	56.7 °C	53.4 °C	56.5 °C	40.7 °C	76.2 °C
Tq	42.7 °C	39.4 °C	42.5 °C	30.7 °C	76.2 °C
Solder point temperature used as the image of the lens temperature					
Primary EM			Secondary Em Dr1		
U	229.9 V	U	46.3 V		
I	0.243 A	I	1.046 A		
P	54.4 W	P	48.4 W		
PF	0.973				
Efficiency	89.0%				
THD	8.9%				
Harmonics - 100%	PASS				

Test room temperature (°C) :

@930mA : 26°C

@1050mA : 26.1°C

Measurement equipment :

Keithley with thermocouples type K (E127)

Norma 4000 (E068)

BK (E198)

Thermal test chamber 25 °C (A002)

Quantities measured :

Qualification of the thermal limits and measurement of the electrical behavior of a luminaire according to PT-S-07

Uncertainties :

Statement of uncertainties (K=2, 95% of confidence level):

Temperature: 1,26 K

Voltage (AC): 0,33%

Current (AC): 0,33 %

Power (AC): 0,27%

Voltage (DC): 0,3 %

Current (DC): 0,3%

Power (DC): 0,23%

Anemometer: ± 0,27 m/s

Decision rules :

Pass/fail criteria for individual test statement of conformity (Verdict):

No pass/fail criteria applied on electrical measurements, except on harmonics where the criteria of IEC 61000-3-2 are applied (the harmonics are not covered by the laboratory's accreditation).

No pass/fail criteria applied on thermal measurements when performed at 25°C (+/- 5°C), the Ta/Tq values are calculated according GDE-POL-001.

Pass/fail criteria on thermal qualification (test performed at announced Ta or Tq)

At the announced Ta, no component is above its maximum limit of operation : success

At the announced Ta, at least 1 component is above its maximum limit of operation : fail

According to IEC 60598-2-3 & EN 60598-2-3 and IEC 60598-2-5 & EN 60598-2-5 Standards, the maximum limit of every component can be augmented by 10 K provided that the luminaire is intended for outdoor use only.

At the announced Tq, no component is above its selected performance limit of operation: success

At the announced Tq, at least 1 component is above its selected performance limit of operation : fail

According to IEC 62722-2-1 & EN IEC 62722-2-1, the selected performance limit cannot be augmented by 10 K even if the luminaire is intended for outdoor use.

Any Ta/Tq defined value will be rounded down to the nearest multiple of 5.

In any case, test at 25°C or test at Ta or Tq, if delta Ts is above the recommended value of the GDE-POL-001, the test is failed.

Pass/fail criteria for the test report statement of conformity (Conclusion):

At least one of the individual test statements of conformity (Verdict) is successful: success, the highest achieved Ta/Tq is reported

Otherwise: fail

End of accredited report :

Laboratory Test report



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FORM L-54 V2

Thermal Test LED

General information

Subject : VITALUM 1 - 24 Seoul 5050 - 930mA - OSRAM P5 46W 930-930mA 220-240V NONE - Nema socket

Asked by : SZÜGYI János Péter

Created on : 01/02/2024

Started on : 13/02/2024

Test number : D240102

Reference norm : EN IEC 60598-1 (2021) + A11 (2022); EN 60598-2-3 (2003) + A1 (2011); EN 60598-2-5 (2015); IEC 60598-2-5 Ed3 (2015); IEC 60598-2-3 Ed3 (2002) +Amd 1 (2011); IEC 60598-1 Ed9 (2020)

Sample(s) : E240056

Test conditions

Luminaire : VITALUM 1

Number of LED : 24

LED : Seoul 5050

Lens : LENS PLATE 25 LENSES 5425 PMMA / 03-48-040

PCBA : PCBA HF1 24 SC5050 740 4 stp Min. W4 8S3P HT / 03-52-266

Driver : DRIVER_OSRAM_P5_46W_930-930mA_220-240V_NONE_... / 03-63-349

Number of driver(s) : 1

Driver current (mA) : 930

Control system : Nema

SPD : none

Additional load info :

Driver: engineering sample.

Testing facility : BER - SCHREDER

Operator : CLOSSET Frédéric



lum

Conclusion



Informative

Conclusion :

$\Delta T_s < 80^\circ\text{C}$ no risk of solder crack

T_a (@930mA) : 55°C limited by driver according IEC 60598-2-3 & EN 60598-2-3 and IEC 60598-2-5 & EN 60598-2-5 (outdoor use only)

T_a (@930mA) : 50°C limited by driver indoor use and UL standard

T_q (@930mA) : 35°C according IEC 62722-2-1 & EN IEC 62722-2-1

T_q given for 100 khrs of lifetime

Validated by :

LERHO Xavier

Duplicate to : PELSŐCZI Zoltán, SZÜGYI János Péter,

NAGY Ádám, LÁMFALUSI Ferenc

LAB : 26/02/2024

D240102

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Test(s) details

Test(s)

Name	Description	Verdict
Driver detail		Informative
Sensors positions	Disposition of the thermocouples on the DUT.	Informative
Test @ 930mA	<p>Test according section 12.4 of IEC 60598-1 & EN IEC 60598-1.</p> <p>The DUT is driven until all thermocouples reach thermal stabilization (i.e. variation = 1K/h).</p> <p>Evaluation of the harmonics behaviour according IEC 61000-3-2 & E IEC 61000-3-2 - Not covered by the laboratory's accreditation.</p>	Informative

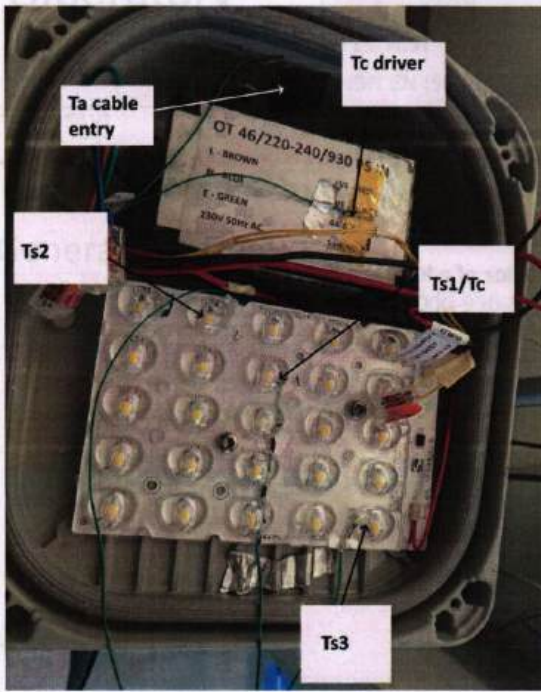
Driver detail

Detail(s)



dr_03-63-349

Sensors positions



pos_thermo

Test @ 930mA

Verdict(s)

	Ts1	Ts2	Ts3	Driver	Ta Cable entry
Limit Ta	99.0 °C	99.0 °C	99.0 °C	80.0 °C	90.0 °C
Limit Tq	85.0 °C	85.0 °C	85.0 °C	70.0 °C	90.0 °C
Thermocouple T°	61.7 °C	64.4 °C	62.0 °C	52.5 °C	37.2 °C
Room	26.0 °C	26.0 °C	26.0 °C	26.0 °C	26.0 °C
E Led	5.7 V	5.7 V	5.7 V		
I Led	0.307 A	0.307 A	0.307 A		
P Led	1.8 W	1.8 W	1.8 W		
Heating	35.7 °C	38.4 °C	36.0 °C	26.5 °C	11.2 °C
Ta Indoor	63.3 °C	60.6 °C	63.0 °C	53.5 °C	78.8 °C
Tq	49.3 °C	46.6 °C	49.0 °C	43.5 °C	78.8 °C
Solder point temperature used as the image of the lens temperature					
Primary EM		Secondary Em Dr1			
U	229.9 V	U	45.8 V		
I	0.207 A	I	0.920 A		
P	46.3 W	P	42.1 W		
PF	0.972				
Efficiency	90.9%				
THD	7.2%				
Harmonics - 100%	PASS				

Test room temperature (°C) :

26

Measurement equipment :

Keithley with thermocouples type K (E068)

Norma 4000 (E165)

BK (E198)

Thermal test chamber 25 °C (A002)

Quantities measured :

Qualification of the thermal limits and measurement of the electrical behavior of a luminaire according to PT-S-07

Uncertainties :

Statement of uncertainties (K=2, 95% of confidence level):

Temperature: 1,26 K

Voltage (AC): 0,33%

Current (AC): 0,33 %

Power (AC): 0,27%

Voltage (DC): 0,3 %

Current (DC): 0,3%

Power (DC): 0,23%

Anemometer: ± 0,27 m/s

Decision rules :

Pass/fail criteria for individual test statement of conformity (Verdict):

No pass/fail criteria applied on electrical measurements, except on harmonics where the criteria of IEC 61000-3-2 are applied (the harmonics are not covered by the laboratory's accreditation).

No pass/fail criteria applied on thermal measurements when performed at 25°C (+/- 5°C), the Ta/Tq values are calculated according GDE-POL-001.

Pass/fail criteria on thermal qualification (test performed at announced Ta or Tq)

At the announced Ta, no component is above its maximum limit of operation : success

At the announced Ta, at least 1 component is above its maximum limit of operation : fail

According to IEC 60598-2-3 & EN 60598-2-3 and IEC 60598-2-5 & EN 60598-2-5 Standards, the maximum limit of every component can be augmented by 10 K provided that the luminaire is intended for outdoor use only.

At the announced Tq, no component is above its selected performance limit of operation: success

At the announced Tq, at least 1 component is above its selected performance limit of operation : fail

According to IEC 62722-2-1 & EN IEC 62722-2-1, the selected performance limit cannot be augmented by 10 K even if the luminaire is intended for outdoor use.

Any Ta/Tq defined value will be rounded down to the nearest multiple of 5.

In any case, test at 25°C or test at Ta or Tq, if delta Ts is above the recommended value of the GDE-POL-001, the test is failed.

Pass/fail criteria for the test report statement of conformity (Conclusion):

At least one of the individual test statements of conformity (Verdict) is successful: success, the highest achieved Ta/Tq is reported

Otherwise: fail

End of accredited report :

Laboratory Test report



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FORM L-54 V2

Thermal Test LED

General information

Subject : VITALUM 1 - 24 Seoul 5050 - 1000-930-900-850mA - OSRAM DEXAL G2 40W 150-1,050mA 220-240V D4i C133 . - Zhaga socket

Asked by : SZÜGYI János Péter

Created on : 01/02/2024

Started on : 08/02/2024

Test number : D240103

Reference norm : EN IEC 60598-1 (2021) + A11 (2022); EN 60598-2-3 (2003) + A1 (2011); EN 60598-2-5 (2015); IEC 60598-2-5 Ed3 (2015); IEC 60598-2-3 Ed3 (2002) +Amd 1 (2011); IEC 60598-1 Ed9 (2020)

Sample(s) : E240056

Test conditions

Luminaire : VITALUM 1

Number of LED : 24

LED : Seoul 5050

Lens : LENS PLATE 25 LENSES 5425 PMMA / 03-48-040

PCBA : PCBA HF1 24 SC5050 740 4 stp Min. W4 8S3P HT / 03-52-266

Driver : DRIVER_OSRAM_DEXAL G2_40W_150-1,050mA_220-240V_D4i_C133 / 03-71-446

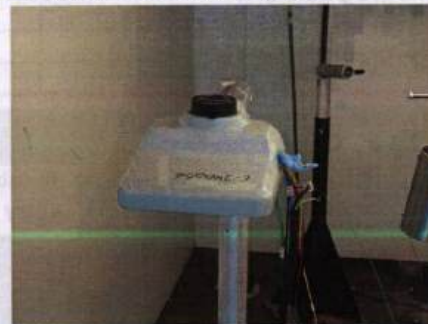
Number of driver(s) : 1

Control system : Nema

SPD : None

Testing facility : BER - SCHREDER

Operator : CLOSSET Frédérick



lum

Conclusion

i Informative

Conclusion :

$\Delta T_s < 80^\circ\text{C}$ no risk of solder crack

Ta (@850mA) : 55°C limited by driver according IEC 60598-2-3 & EN 60598-2-3 and IEC 60598-2-5 & EN 60598-2-5 (outdoor use only)

Ta (@850mA): 45°C limited by driver indoor use and UL standard

Tq (@850mA): 35°C limited by driver according IEC 62722-2-1 & EN IEC 62722-2-1

Tq given for 100 khrs of lifetime

Remark: @900mA Pout > Pout max driver don't use that config

Validated by :
LERHO Xavier

Duplicate to : PELSŐCZI Zoltán, SZÜGYI János Péter,
NAGY Ádám, LÁMFALUSI Ferenc
LAB : 26/02/2024

D240103
1/4

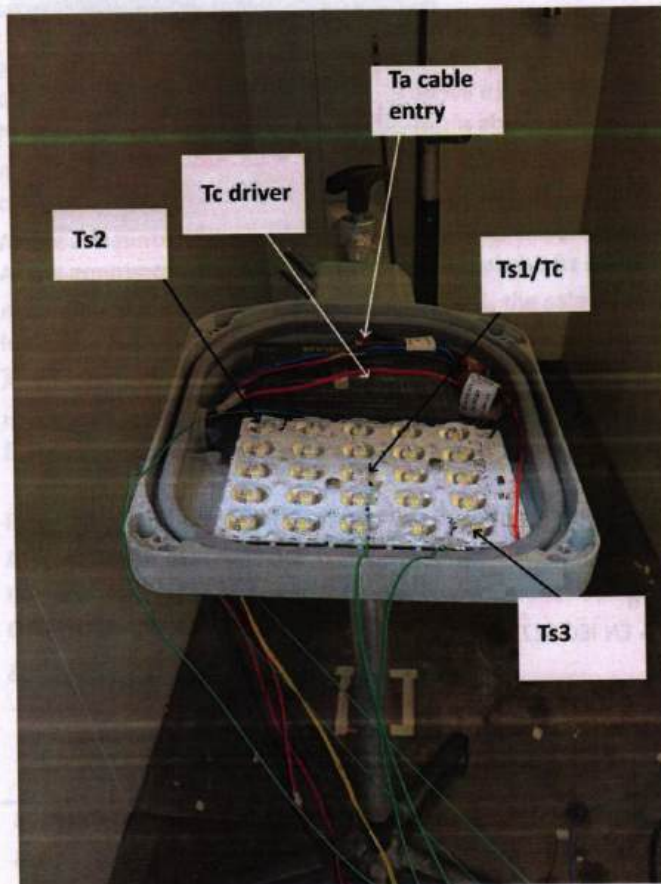
Test(s) details

Test(s)

Name	Description	Verdict
Sensors positions	Disposition of the thermocouples on the DUT.	Informative
Test @ 900mA	Test according section 12.4 of IEC 60598-1 & EN IEC 60598-1. The DUT is driven until all thermocouples reach thermal stabilization (i.e. variation = 1K/h). Evaluation of the harmonics behaviour according IEC 61000-3-2 & E IEC 61000-3-2 - Not covered by the laboratory's accreditation.	Informative
new test : Test @ 850mA in accordance with the driver matrix	Test according section 12.4 of IEC 60598-1 & EN IEC 60598-1. The DUT is driven until all thermocouples reach thermal stabilization (i.e. variation = 1K/h). Evaluation of the harmonics behaviour according IEC 61000-3-2 & E IEC 61000-3-2 - Not covered by the laboratory's accreditation.	Success
Test @ 930mA	Test not possible, bads parameters	Non realized
Test @ 1000mA	Test not possible, bads parameters	Non realized

Sensors positions

Detail(s)



pos_thermo

Test @ 900mA

Verdict(s)

Pout > Pout max driver

	Ts1	Ts2	Ts3	Driver	Ta Cable entry
Limit Ta	99.0 °C	99.0 °C	99.0 °C	75.0 °C	90.0 °C
Limit Tq	85.0 °C	85.0 °C	85.0 °C	65.0 °C	90.0 °C
Thermocouple T*	61.1 °C	63.8 °C	61.4 °C	54.9 °C	35.2 °C
Room	26.1 °C	26.1 °C	26.1 °C	26.1 °C	26.1 °C
E Led	5.7 V	5.7 V	5.7 V		
I Led	0.299 A	0.299 A	0.299 A		
P Led	1.7 W	1.7 W	1.7 W		
Heating	35.0 °C	37.7 °C	35.3 °C	28.8 °C	9.1 °C
Ta Indoor	64.0 °C	61.3 °C	63.7 °C	46.2 °C	80.9 °C
Tq	50.0 °C	47.3 °C	49.7 °C	36.2 °C	80.9 °C
Solder point temperature used as the image of the lens temperature					
Primary EM			Secondary Em Dr1		
U	229.9 V	U	45.7 V		
I	0.201 A	I	0.897 A		
P	45.8 W	P	41.0 W		
PF	0.992				
Efficiency	89.5%				
THD	5.5%				
Harmonics - 100%	PASS				

new test : Test @ 850mA in accordance with the driver matrix

Verdict(s)

	Ts1	Ts2	Ts3	Driver	Ta Cable entry
Limit Ta	99.0 °C	99.0 °C	99.0 °C	75.0 °C	90.0 °C
Limit Tq	85.0 °C	85.0 °C	85.0 °C	65.0 °C	90.0 °C
Thermocouple T*	58.9 °C	61.4 °C	59.2 °C	54.3 °C	34.8 °C
Room	26.1 °C	26.1 °C	26.1 °C	26.1 °C	26.1 °C
E Led	5.7 V	5.7 V	5.7 V		
I Led	0.283 A	0.283 A	0.283 A		
P Led	1.6 W	1.6 W	1.6 W		
Heating	32.8 °C	35.3 °C	33.1 °C	28.2 °C	8.7 °C
Ta Indoor	66.2 °C	63.7 °C	65.9 °C	46.8 °C	81.3 °C
Tq	52.2 °C	49.7 °C	51.9 °C	36.8 °C	81.3 °C
Solder point temperature used as the image of the lens temperature					
Primary EM			Secondary Em Dr1		
U	229.9 V	U	45.5 V		
I	0.189 A	I	0.849 A		
P	43.1 W	P	38.6 W		
PF	0.991				
Efficiency	89.6%				
THD	5.5%				
Harmonics - 100%	PASS				

Test room temperature (°C) :

@900mA : 26.1

@850mA : 26.1

Measurement equipment :

Keithley with thermocouples type K (E127)

Norma 4000 (E068)

BK (E198)

Thermal test chamber 25 °C (A002)

Quantities measured :

Qualification of the thermal limits and measurement of the electrical behavior of a luminaire according to PT-S-07

Uncertainties :

Statement of uncertainties (K=2, 95% of confidence level):

Temperature: 1,26 K

Voltage (AC): 0,33%

Current (AC): 0,33 %

Power (AC): 0,27%

Voltage (DC): 0,3 %

Current (DC): 0,3%

Power (DC): 0,23%

Anemometer: ± 0,27 m/s

Decision rules :

Pass/fail criteria for individual test statement of conformity (Verdict):

No pass/fail criteria applied on electrical measurements, except on harmonics where the criteria of IEC 61000-3-2 are applied (the harmonics are not covered by the laboratory's accreditation).

No pass/fail criteria applied on thermal measurements when performed at 25°C (+/- 5°C), the Ta/Tq values are calculated according GDE-POL-001.

Pass/fail criteria on thermal qualification (test performed at announced Ta or Tq)

At the announced Ta, no component is above its maximum limit of operation : success

At the announced Ta, at least 1 component is above its maximum limit of operation : fail

According to IEC 60598-2-3 & EN 60598-2-3 and IEC 60598-2-5 & EN 60598-2-5 Standards, the maximum limit of every component can be augmented by 10 K provided that the luminaire is intended for outdoor use only.

At the announced Tq, no component is above its selected performance limit of operation: success

At the announced Tq, at least 1 component is above its selected performance limit of operation : fail

According to IEC 62722-2-1 & EN IEC 62722-2-1, the selected performance limit cannot be augmented by 10 K even if the luminaire is intended for outdoor use.

Any Ta/Tq defined value will be rounded down to the nearest multiple of 5.

In any case, test at 25°C or test at Ta or Tq, if delta Ts is above the recommended value of the GDE-POL-001, the test is failed.

Pass/fail criteria for the test report statement of conformity (Conclusion):

At least one of the individual test statements of conformity (Verdict) is successful: success, the highest achieved Ta/Tq is reported

Otherwise: fail

End of accredited report :

Laboratory Test report



713-TEST
NBN EN ISO/IEC 17025 :2017

Schröder
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FORM L-54 V2

Tightness test

General information

Subject : VITALUM 1 - 36 Seoul 5050 - SIGNIFY FP 75W 300-1,050mA 220-240V DALI C133 . - 850mA - GLASS - Nema socket
>> IPX6 Before endurance

Asked by : SZÜGYI János Péter

Created on : 27/02/2024

Started on : 28/02/2024

Test number : D240214

Reference norm : EN IEC 60598-1 (2021) + A11 (2022); IEC 60598-1 Ed9 (2020)

Sample(s) : E240061

Test conditions

Luminaire : VITALUM 1

Number of LED : 36

LED : Seoul 5050

Lens : LENS PLATE 36 LENSES 5439 PMMA /03-50-371

PCBA : PCBA HF2 36 SSC5050 4000K 4stp 70 Min. W4 12P3 1CH HT /03-52-280

Driver current (mA) : 850

Protector Material : Glass Extra Clear wide serigraphy

Protector Shape : Flat

Additional info :

Test realized before endurance D240216.


Testing Facility : BER - SCHREDER

Operator : KOY Fiston



IMG_9275

Conclusion

 Success

Conclusion :

Statement of conformity according to section 9.2 of EN IEC 60598-1 (2021) + A11 (2022) & IEC 60598-1 Ed9 (2020):
IPx6 passed.

Note: based on the tests IPX5/IPX6 the product is considered to pass the rain test according to §17.5.2 of UL 1598:2021*
* not covered by BELAC accreditation

Validated by :
LERHO Xavier

Duplicate to : PELSŐCZI Zoltán, SZÜGYI János Péter,
NAGY Ádám, LÁMFALUSI Ferenc
LAB : 13/03/2024

D240214

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Test(s) details

Test(s)

Name	Description	Verdict
IPx6	<ul style="list-style-type: none">- Luminaire switched ON until stable T°- Luminaire switched OFF and immediately sprayed with water jet- Hose diam. 12,5 mm- Water flow: 100 l/min- Spraying distance: 3 m- Duration of test: 3 minutes	Success

IPx6

Verdict(s)

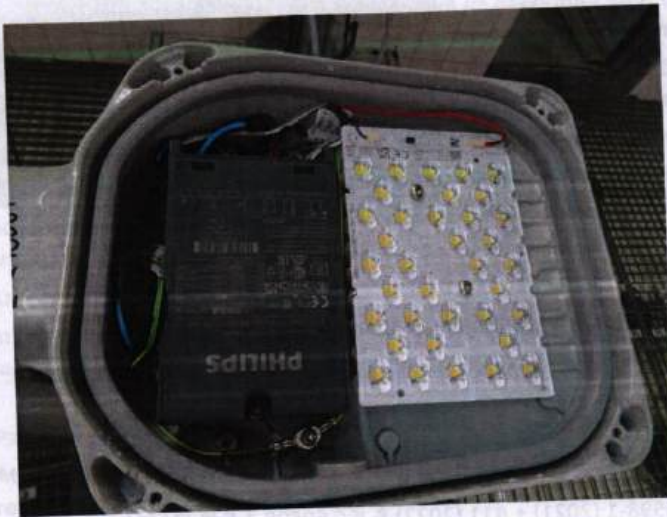
Pre-conditioning time :

- 79 minutes

Test result :

- Passed : No water entry in the enclosure of the luminaire

Detail(s)



IMG_9277

D240214

Test room temperature (°C) :

22.6

Measurement equipment :

Rotating table (A001/2)

Chronometer (A069)

Thermometer (A039)

Flowmeter (A001/10 + A001/16)

Lance (A001/12/1)

IPx6 nozzle (A001/12/5)

Dynamometric key (M058)

Quantities measured :

Verification of water/dust ingress within a luminaire enclosure according to

For IP2X: PT-S-14

For IP3X/4X: PT-S-15

For IP5X/6X: PT-S-06

For IPX3/X4: PT-S-01

For IPX5/X6: PT-S-08

For IPX7/X8: PT-S-09

For IPX9(15°C)/X9(80°C) : PT-S-10

Uncertainties :

Statement of uncertainties (K=2, 95% of confidence level):

Time: 0,35 seconds per 10 minutes

Temperature: 0,6 K

Calipers: 0,005 mm

Measuring tape: $\pm 1,13$ mm

Dynamometric key :

From 0.5 to 2.5 Nm : 0,15 Nm

From 2.5 to 5 Nm : 0,22 Nm

From 5 to 25 Nm : 0,83 Nm

From 25 to 60 Nm : 2,73 Nm

From 60 to 100 Nm : 3,55 Nm

For solid ingress test:

IP2X:

Probe dimensions: $\pm 0,6$ mm

Applied force: $\pm 0,4$ N

IP3X:

Probe dimensions: $\pm 0,3$ mm

Applied force: $\pm 0,13$ N

IP4X:

Probe dimensions: $\pm 0,1$ mm

Applied force: $\pm 0,11$ N

IP5X/6X

Test duration (talcum suspension time): ± 3 seconds

Talcum mass: 0,02 %

For liquid ingress test:

IPX3/X4

Table rotation: ± 6 sec/rotation

Arms Rotation angle: $\pm 3^\circ$

Water flow: $\pm 4,5$ %

IPX5/X6

Table rotation: ± 6 sec/rotation

Water flow: ± 4 %

Test Distance: +0 / -50 cm

IPX7/X8

Test depth: +10 cm / -0 cm

IPX9

Water temperature: 1.25 K

Test distance: 1.59 mm (for 175mm)

D240214

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Test duration: 2.49 s (for 3min)
Water pressure: 0.37 N

Decision rules :

Pass/fail criteria for individual test statement of conformity (Verdict):

For solid ingress test:

IP2X:

- If contact possible with live parts: fail
- Otherwise: success

IP3X/4X:

For luminaires without draining holes, nor ventilation slots for forced cooling, penetration of the test probe in the enclosure: fail

- For luminaires with draining holes, or ventilation slots for forced cooling, if contact possible with live part: fail
- Otherwise: success

IP5X/6X

By visual inspection:

- If possible hazard due to presence of conductive dust: fail
- For IP5X: If no possible hazard due to the presence of conductive dust: success
- For IP6X: No presence of talcum: success

For liquid ingress test:

IPX3/X4/X5/X6/IPX9(15°C)/X9(80°C):

By visual inspection:

- If possible hazard due to presence of water: fail
- If no possible hazard due to the presence of water and no efficient way to evacuate the water: fail
- If no possible hazard due to the presence of water and an efficient way to evacuate the water: success
- No presence of water: success

IPX7/X8:

By visual inspection:

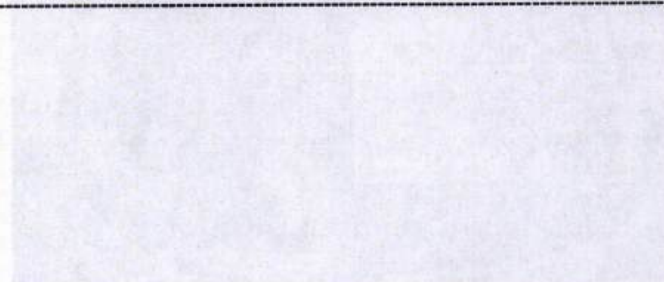
- Presence of water: fail
- No presence of water: success

Pass/fail criteria for the test report statement of conformity (Conclusion):

At least one of the individual test statements of conformity (Verdict) is failed: failed

Otherwise: success

End of accredited report :



Laboratory Test report



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Tél. : +32 4 224 71 40

FORM L-54 V2

Tightness test

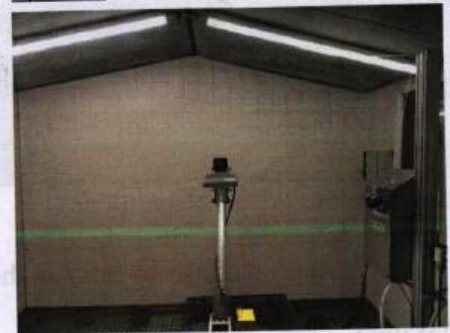
General information

Subject : VITALUM 1 - 36 Seoul 5050 - SIGNIFY FP 75W 300-1,050mA 220-240V DALI C133 . - 850mA - GLASS - Nema socket
Asked by : SZÜGYI János Péter
Created on : 14/03/2024
Started on : 14/03/2024
Test number : D240250
Reference norm : EN IEC 60598-1 (2021) + A11 (2022); IEC 60598-1 Ed9 (2020)
Sample(s) : E240061

Test conditions


Luminaire : VITALUM 1
Number of LED : 36
LED : Seoul 5050
Lens : LENS PLATE 36 LENSES 5439 PMMA /03-50-371
PCBA : PCBA HF2 36 SSC5050 4000K 4stp 70 Min. W4 12P3 1CH HT /03-52-280
Driver current (mA) : 850
Protector Material : Glass Extra Clear wide serigraphy
Protector Shape : Flat
Additional info :
Test realized after endurance D240216.
Testing Facility : BER - SCHREDER

Operator : KOY Fiston



IMG_0095

Conclusion

 Success

Conclusion :

Statement of conformity according to section 9.2 of EN IEC 60598-1 (2021) + A11 (2022) & IEC 60598-1 Ed9 (2020):
IP66 passed.

Note: based on the tests IPX5/IPX6 the product is considered to pass the rain test according to §17.5.2 of UL 1598:2021*
* not covered by BELAC accreditation

Validated by :
LERHO Xavier

Duplicate to : PELSŐCZI Zoltán, SZÜGYI János Péter,
NAGY Ádám, LÁMFALUSI Ferenc
LAB : 26/03/2024

D240250
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Test(s) details

Test(s)

Name	Description	Verdict
IP6x	- Luminaire switched ON until stable T° - Talcum in suspension (blowing ON) - After 1', luminaire OFF - Talcum for 3 hours	Success
IPx6	- Luminaire switched ON until stable T° - Luminaire switched OFF and immediately sprayed with water jet - Hose diam. 12,5 mm - Water flow: 100 l/min - Spraying distance: 3 m - Duration of test: 3 minutes	Success

IP6x

Verdict(s)

Pre-conditioning time :

- 98 minutes

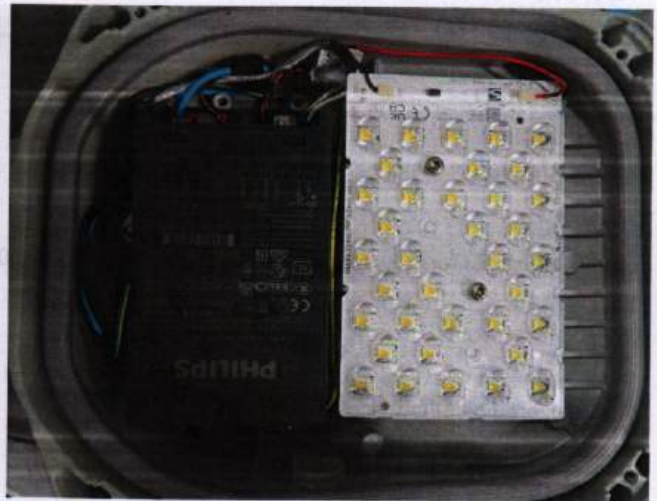
Test result :

- Passed : No talcum entry in the enclosure of the luminaire

Detail(s)



IMG_0140



IMG_0141

IPx6

Verdict(s)

Pre-conditioning time :

- 86 minutes

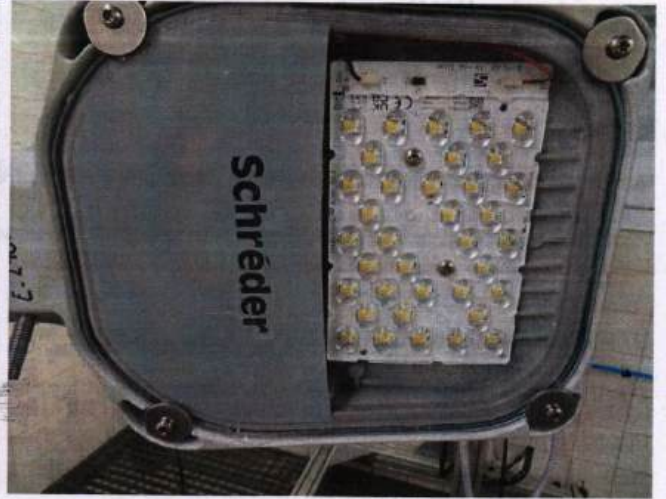
Test result :

- Passed : No water entry in the enclosure of the luminaire

Detail(s)



IMG_0096



IMG_0099



IMG_0102

Test room temperature (°C) :

IPx6 :22.5

IP6x :23.1

Measurement equipment :

IPx6 :

Rotating table (A001/2)

Chronometer (A069)

Thermometer (A039)

Flowmeter (A001/10 + A001/16)

Lance (A001/12/1)

IPx6 nozzle (A001/12/5)

IP6x :

Talcum chamber (A003)

Thermometer (A055)

Chronometer (A069)

Quantities measured :

Verification of water/dust ingress within a luminaire enclosure according to

For IP2X: PT-S-14

For IP3X/4X: PT-S-15

For IP5X/6X: PT-S-06

For IPX3/X4: PT-S-01

For IPX5/X6: PT-S-08

For IPX7/X8: PT-S-09

For IPX9(15°C)/X9(80°C) : PT-S-10

Uncertainties :

Statement of uncertainties (K=2, 95% of confidence level):

Time: 0,35 seconds per 10 minutes

Temperature: 0,6 K

Calipers: 0,005 mm

Measuring tape: $\pm 1,13$ mm

Dynamometric key :

From 0.5 to 2.5 Nm : 0,15 Nm

From 2.5 to 5 Nm : 0,22 Nm

From 5 to 25 Nm : 0,83 Nm

From 25 to 60 Nm : 2,73 Nm

From 60 to 100 Nm : 3,55 Nm

For solid ingress test:

IP2X:

Probe dimensions: $\pm 0,6$ mm

Applied force: $\pm 0,4$ N

IP3X:

Probe dimensions: $\pm 0,3$ mm

Applied force: $\pm 0,13$ N

IP4X:

Probe dimensions: $\pm 0,1$ mm

Applied force: $\pm 0,11$ N

IP5X/6X

Test duration (talcum suspension time): ± 3 seconds

Talcum mass: 0,02 %

For liquid ingress test:

IPX3/X4

Table rotation: ± 6 sec/rotation

Arms Rotation angle: $\pm 3^\circ$

Water flow: $\pm 4,5$ %

IPX5/X6

D240250

Table rotation: ± 6 sec/rotation
Water flow: ± 4 %
Test Distance: +0 / -50 cm
IPX7/X8
Test depth: +10 cm / -0 cm
IPX9
Water temperature: 1.25 K
Test distance: 1.59 mm (for 175mm)
Test duration: 2.49 s (for 3min)
Water pressure: 0.37 N

Decision rules :

Pass/fail criteria for individual test statement of conformity (Verdict):

For solid ingress test:

IP2X:

If contact possible with live parts: fail

Otherwise: success

IP3X/4X:

For luminaires without draining holes, nor ventilation slots for forced cooling, penetration of the test probe in the enclosure: fail

For luminaires with draining holes, or ventilation slots for forced cooling, if contact possible with live part: fail

Otherwise: success

IP5X/6X

By visual inspection:

If possible hazard due to presence of conductive dust: fail

For IP5X: If no possible hazard due to the presence of conductive dust: success

For IP6X: No presence of talcum: success

For liquid ingress test:

IPX3/X4/X5/X6/IPX9(15°C)/X9(80°C):

By visual inspection:

If possible hazard due to presence of water: fail

If no possible hazard due to the presence of water and no efficient way to evacuate the water: fail

If no possible hazard due to the presence of water and an efficient way to evacuate the water: success

No presence of water: success

IPX7/X8:

By visual inspection:

Presence of water: fail

No presence of water: success

Pass/fail criteria for the test report statement of conformity (Conclusion):

At least one of the individual test statements of conformity (Verdict) is failed: failed

Otherwise: success

End of accredited report :

Complying with the following EN standards for performance:

EN 60529:2014 IEC 60720-1:2014 IEC 60720-2:2014

EN 60722-1:2016 EN 60722-2:2016

Based on test report No. P1826-62720-2-1-001

This licence is conditional to the validity of the ENEC License No.: 23165

Date: 01/07/2024

Signature:

Name: Calogero LANA
Position: Certification Manager