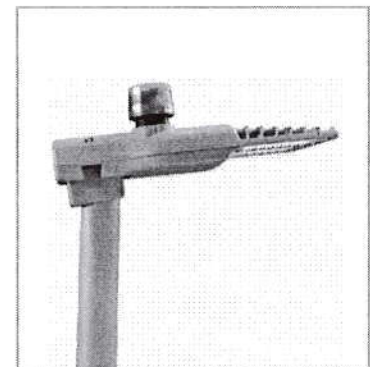
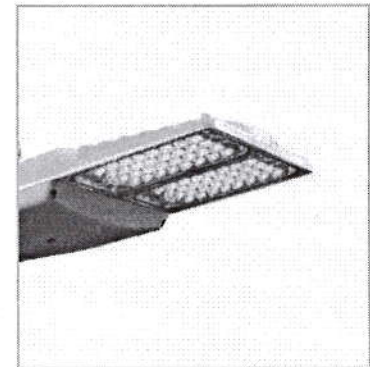
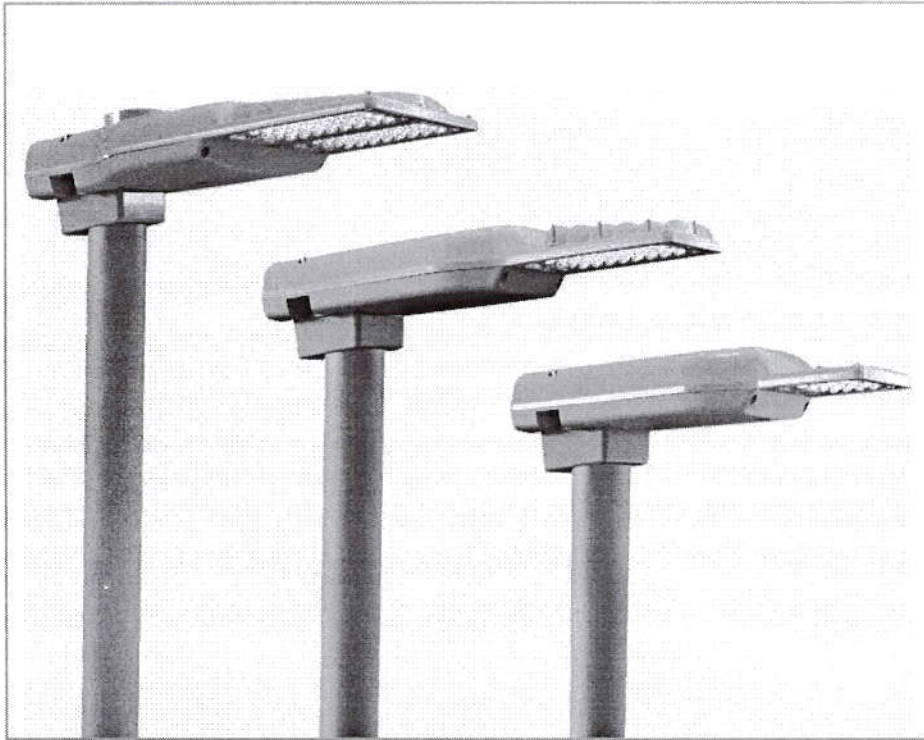


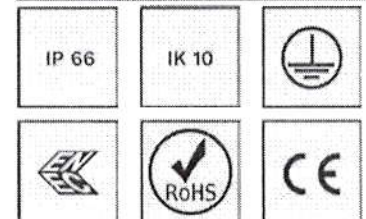
Axia 3



Proiectat pentru performanță,
conceput pentru experiența clientului

În designul conceptului nostru inovator, feedback-ul clientului a jucat un rol esențial în dezvoltarea Axia 3. Acesta reprezintă mai mult decât un aparat de iluminat, este o platformă care oferă durabilitate, cost-eficiență și experiență pentru clienți, în timp ce sprijină platforme de orașe inteligente. Bazându-se pe experiența a sute de mii de aparate de iluminat Axia instalate în întreaga lume, acest caparat de iluminat din a treia generație împinge granițele cu inovații fotometrice, ușurință și viteză în instalare și conectivitate FutureProof.

Disponibil în trei dimensiuni, Axia 3 permite orașelor să maximizeze eficiența atunci când iluminează numeroase tipuri de aplicații, de la trasee de biciclete, piețe și parcuri la străzi rezidențiale, autostrăzi, drumuri urbane și bulevarde mari. Această gamă de aparate de iluminat ușoare și compacte combină iluminatul de calitate cu o amprentă minimă de carbon. Permite o instalare ușoară și întreținere fără griji, reducând costurile de operare.



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Concept

Axia 3 este un aparat de iluminat robust și compact, proiectat cu accent pe miniaturizare și eficiență superioară. Compus din aluminiu turnat sub presiune, precum și materiale composite, Axia 3 este disponibil în trei dimensiuni. Datorită greutății reduse, acest aparat de iluminat este ușor de manevrat în timpul instalării.

Axia 3.1, poate fi echipat cu până la 16 LED-uri, se potrivește perfect aplicațiilor cu înălțime redusă, în timp ce Axia 3.2 și Axia 3.3, cu până la 32 sau 64 de LED-uri, sunt ideale pentru iluminarea drumurilor largi, a autostrăzilor și a bulevardelor.

Gama Axia 3 este echipată cu motoare fotometrice ProFlex™, oferind cea mai mare eficiență datorită capacității lor de a maximiza fluxul luminos emis și de a furniza distribuții luminoase foarte extinse.

Axia 3 este livrat cu cablu de alimentare, deci nu este nevoie să fie deschis pentru montaj. Gama completă este disponibilă cu o piesă de fixare universală integrată, adaptată pentru montaj în vârf de stâlp și montaj pe braț pentru diferite diametre (Ø32mm cu adaptor, Ø42-48mm, Ø60mm și Ø76mm). Unghiul de înclinare poate fi ajustat la fața locului atât pentru configurațiile de montaj în vârf de stâlp (-5 ° / +15 °) cât și pentru montaj pe braț lateral (-10 ° / +10 °), ceea ce permite optimizarea distribuțiilor luminoase, reducerea consumului de energie și controlul poluării luminoase.

Acest aparat de iluminat extrem de eficient, pregătit pentru interconectare, oferă comunităților locale soluția ideală pentru a îmbunătăți nivelurile de iluminare, pentru a genera economii de energie, a spori siguranța și a reduce amprenta ecologică. Axia 3 este instrumentul ideal pentru a oferi încă 25 de ani de eficiență, sustenabilitate și siguranță.

Tipuri de aplicații

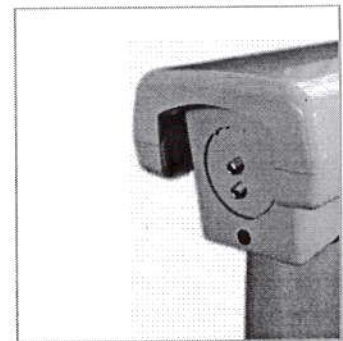
- DRUMURI ȘI AUTOSTRĂZI
- STRĂZI URBANE ȘI REZIDENȚIALE
- PISTE DE BICICLETE ȘI PIETONALE
- PIEȚE ȘI ZONE PIETONALE
- PARCĂRI AUTO
- PODURI
- ZONE EXTINSE
- STAȚII DE TRAMVAI ȘI METROURI

Avantaje Cheie

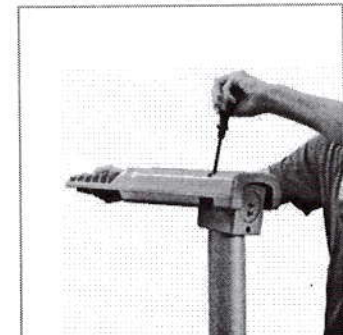
- Maximizează economiile de energie și de costuri de întreținere
- Motoare fotometrice ProFlex™, care oferă un iluminat de calitate, confort și siguranță ridicate
- 3 dimensiuni pentru a oferi soluția necesară pentru numeroase aplicații rutiere și urbane
- Instalare ușoară: pre-cablat și echipat cu piesă de fixare universală, adaptată pentru montare laterală și în vârf de stâlp
- Înclinare reglabilă, pentru distribuții luminoase și uniformități optime
- Pregătit pentru interconectare



Motorul fotometric ProFlex™ oferă eficiență maximă.



Gama Axia 3 are o piesă de fixare universală pentru ștuturi de la Ø32 la Ø76mm.



Înclinarea este reglabilă la fața locului, pentru a optimiza distribuția fotometrică și pentru a obține economii suplimentare de energie.



Axia 3 este pregătit pentru interconectare și poate funcționa cu diferiți senzori și sisteme de control.

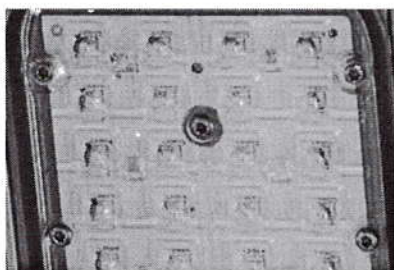


Chisinau



ProFlex™

Motorul fotometric ProFlex™ integrează lentilele într-un protector din policarbonat. Această integrare maximizează fluxul luminos emis de aparatul de iluminat și reduce reflexia din interiorul unității optice. Policarbonatul utilizat pentru motorul fotometric ProFlex™ oferă caracteristici esențiale, cum ar fi o claritate optică ridicată pentru o transmisie superioară a luminii, o rezistență mai bună la impact în comparație cu sticla și o durată lungă de viață, datorită tratamentului de stabilizare UV. Conceptul ProFlex™ permite un design compact, cu un compartiment optic subțire. Oferă astfel distribuții luminoase extinse, astfel încât distanța dintre aparatele de iluminat poate fi mărită.

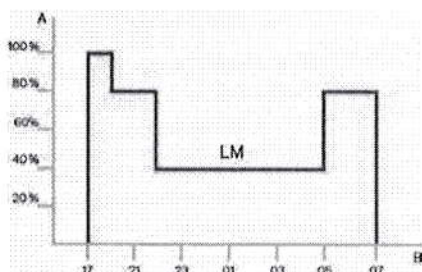




Profil personalizat pentru reducerea fluxului luminos

Balasturile electronice inteligente pot fi programate din fabrică, cu profiluri complexe de reducere a fluxului luminos. Sunt posibile până la 5 combinații între perioadele de timp și nivelurile de intensitate luminoasă dorite. Această funcționalitate nu necesită legături electrice suplimentare.

Intervalul de timp dintre momentul de pornire și cel de oprire este folosit pentru activarea profilului prestat. Sistemul personalizat de reducere a fluxului generează economii de energie suplimentare, respectând nivelurile de iluminat și uniformitatea iluminatului, pentru toată perioada nopții.



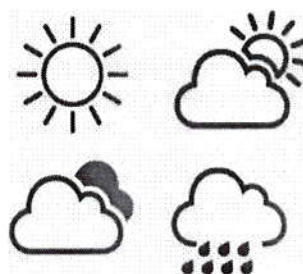
A. Performanță | B. Timp



Fotocelula / senzor de lumină naturală

Fotocelula (sau senzorul de lumină naturală) pornește aparatul de iluminat, de îndată ce iluminatul natural scade sub un anumit nivel.

Aceasta poate fi programată să pornească pe timpul unei furtuni, în zilele înnorate (în zone de importanță ridicată) sau doar pe timpul nopții, astfel încât iluminatul să ofere siguranță și confort în spațiile publice.



Senzor PIR: detecția mișcării

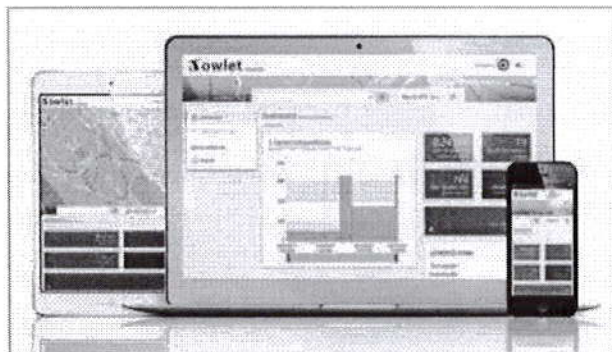
În zonele cu activitate nocturnă scăzută, fluxul luminos poate fi redus la minimum, în cea mai mare parte a nopții. Prin utilizarea unui senzor PIR, nivelul de iluminare poate fi crescut de îndată ce în zonă se detectează un pieton sau un vehicul lent. Cantitatea de flux luminos emis de fiecare aparat de iluminat poate fi configurată individual, în funcție de mai mulți parametri, precum: flux luminos minim sau maxim, interval de reacție, durată de timp de menținere pentru stările minim, maxim pornit sau oprit. Senzorii PIR pot fi folosiți într-o rețea autonomă sau interoperabilă.



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Owlet IoT

Owlet IoT controlează de la distanță aparatele de iluminat din rețea, facilitând sporirea eficienței, obținerea de date în timp real și economii de energie de până la 85%.



TOTUL ÎNTR-UN SINGUR DISPOZITIV

Dispozitivul de control LUCO P7 CM dispune de cele mai avansate funcțiuni pentru administrarea rețelei. De asemenea, include o fotocelulă și funcționează cu ajutorul unui ceas astronomic, pentru adaptarea sezonieră a profilului de reducere a fluxului luminos.

UȘOR DE INSTALAT

Datorită comunicației fără fir (wireless), nu sunt necesare legături electrice suplimentare. Deasemenea, nu există constrângeri sau limitări în legătură cu rețeaua de alimentare. Astfel, sistemul de iluminat interconectat poate fi extins oricând, fără restricții, de la o singură unitate de control și până la o rețea extrem de complexă.

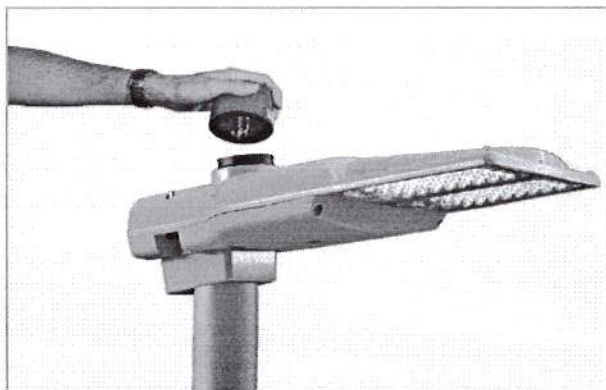
Pentru că dispune de funcții de geolocalizare în timp real și de detectare automată a tipului și funcțiilor aparatului de iluminat pe care se montează, autoconfigurarea modulului de control se face rapid și ușor.

INTERFAȚĂ PRIETENOASĂ

De îndată ce un dispozitiv de control este instalat pe aparatul de iluminat, coordonatele GPS ale aparatului apar în interfața utilizator a aplicației, pe o hartă online, în mod automat. Un panou de bord ușor de utilizat permite fiecărui utilizator să-și organizeze și să-și personalizeze ferestrele de lucru, statisticile și rapoartele. Utilizatorii pot accesa informații relevante, în timp real.

Aplicația online Owlet IoT poate fi accesată în orice moment, din orice locație de pe mapamond, printr-un dispozitiv care permite navigarea web, conectat la Internet. Aplicația se adaptează la acesta, oferind o experiență intuitivă și prietenoasă pentru utilizatori.

Notificările în timp real pot fi pre-programate, astfel încât să monitorizeze cele mai importante elemente ale sistemului de iluminat.



SIGUR

Sistemul Owlet IoT utilizează la nivel local o rețea de comunicații fără fir de tip plasă (meshnet), pentru a obține o reacție instantanee a aparatelor de iluminat, in-situ, la senzorii integrați în sistem. Acest nivel de comunicație este combinat cu un sistem de control de la distanță, care se folosește de cloud, pentru a asigura transferul de date spre și dinspre sistemul central de management.

Sistemul utilizează comunicații criptate IPV6 pentru a proteja transmisia de date în ambele direcții. Folosind un APN securizat, Owlet IoT asigură un nivel ridicat de protecție.

În cazul excepțional al unei erori de comunicație, ceasul astronomic integrat și fotocelula vor controla pornirea și de oprirea aparatelor de iluminat, iar profilul de funcționare stocat la nivel local va fi urmat, evitându-se, astfel, funcționarea defectuoasă, pe timpul nopții.

EFICIENT

Datorită senzorilor și/ sau a programărilor efectuate în avans, scenariile de iluminat pot fi adaptate cu ușurință, în funcție de evenimentele desfășurate în zonă, oferind, astfel, nivelurile de iluminat necesare, în momentul potrivit și în locul potrivit.

Contorul de energie integrat oferă cel mai înalt grad de acuratețe disponibil pe piață în acest moment, ajutând la luarea de decizii bazate pe cifre reale.

Răspunsul precis, în timp real, precum și rapoartele clare, asigură funcționarea eficientă a rețelei și optimizarea operațiunilor de întreținere.

La pornirea aparatelor de iluminat cu LED-uri, curentul de pornire absorbit de acestea poate cauza evenimente în rețeaua electrică. Owlet IoT încorporează o tehnologie care protejează rețeaua de acești curenți de pornire.

DESCHIS

Dispozitivul de control LUCO P7 CM poate fi montat prin intermediul unui conector standard tip NEMA 7 pini și controlează aparatul de iluminat prin protocol DALI sau prin protocol 1-10V.

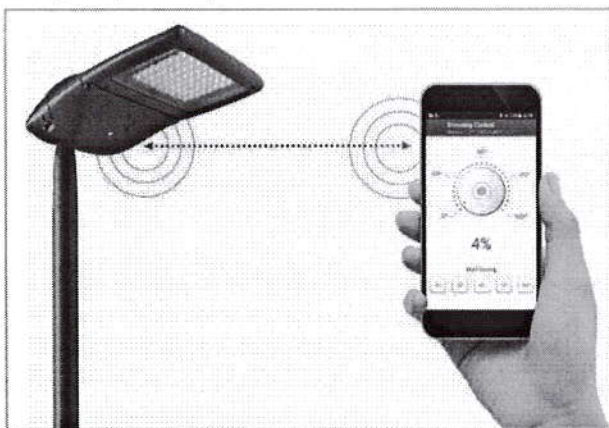
Owlet IoT are la bază protocolul IPV6. Această metodă de adresare a dispozitivelor poate genera un număr impresionant de combinații unice, pentru a conecta la internet sau la o rețea de calculatoare diverse echipamente.

Folosindu-se de API-uri deschise, Owlet IoT poate fi integrat într-o manieră simplă, în sisteme de management globale, existente sau viitoare.

Soluția Schröder Bluetooth este compusă din 3 componente principale:

Un emițător Bluetooth conectat la driverul modular al aparatului de iluminat (transmițător BLE)

- O antenă Bluetooth montată pe aparatul de iluminat
- O aplicație smartphone numită Sirius BLE



Ușor de folosit

Soluția Bluetooth de la Schröder este ideală pentru configurarea individuală, in situ, a aparatelor de iluminat care utilizează Bluetooth. De la sol, utilizatorul poate să pornească sau să oprească aparatul de iluminat, să adapteze curba de reducerea fluxului luminos, să citească datele de diagnoză și multe altele. O aplicație ușor de utilizat, numită Sirius BLE, oferă un acces facil și sigur la funcțiile de control și configurare.

Indiferent dacă trebuie gestionată o rețea de iluminat într-o zonă urbană sau într-o zonă rezidențială, această soluție permite controlul facil al aparatelor de iluminat, din vecinătatea stâlpilor pe care sunt montate, fără a urca la acestea.

Împerechere rapidă și ușoară

Descărcați aplicația Sirius de la Schröder. Accesați meniul. Apăsăți butonul "SCAN DEVICE (START)" pentru a căuta modulele BLE din jur. Ele vor fi afișate cu un grafic de bare (intensitatea semnalului) pentru a indica cel mai apropiat și cel mai îndepărtat modul la care vă puteți conecta din locația respectivă.

Apăsăți pe pictograma aferentă dispozitivului la care doriți să vă conectați și introduceți cheia de acces personal pentru a controla aparatul de iluminat.



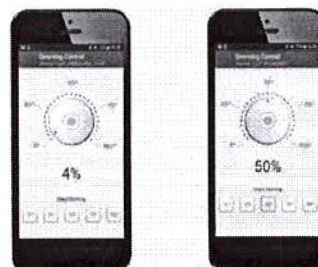
Definirea setărilor

Odată ce sunteți conectat la un aparat de iluminat, puteți ajusta diferiți parametri, cum ar fi curentul maxim de ieșire, nivelul minim de reducerea fluxului luminos și profilul personalizat pentru reducerea fluxului luminos pentru anumite intervale de timp.



Control manual de reducere a fluxului luminos

Aplicația vă permite să efectuați o suprascriere manuală pentru a adapta instantaneu nivelurile de reducere al fluxului luminos. Este suficient să atingeți butonul "Dimming" din meniul principal și să reglați nivelul dorit folosind discul de control și butonul aferent. Pot fi utilizate imediat și niveluri deja predefinite. Valoarea corespunzătoare este afișată pe discul de control. Acest lucru vă permite să testați funcționalitățile de pornire/oprire și de reducere a fluxului luminos ale aparatului de iluminat împreună cu telefonul.



Diagnostic la fața locului

Atunci când un aparat de iluminat este împerecheat cu telefonul mobil, puteți accesa diverse informații de diagnoză: numărul total de porniri, timpul de funcționare al modulului LED și al balastului, consumul de energie total al driverului... etc. Puteți, de asemenea, să vizualizați evenimentele apărute în timpul funcționării (scurtcircuit, acționare protecție termică, supratensiuni, etc). Valorile afișate se pot referi la starea curentă sau pot fi valori cumulate până la momentul interogării.



INFORMAȚII GENERALE

Înălțime de instalare recomandată	4m până la 12m
Balast electronic inclus	Da
Marcă CE	Da
Certificat ENEC	Da
Conformitate ROHS	Da
Standard de testare	LM 79-08 (toate măsurările s-au efectuat în laborator acreditat ISO17025)

CARCASA SI FINISAJE

Carcasa	Aluminiu
Optic	Policarbonat stabilizat UV
Difuzor	Policarbonat (cu lentile integrate)
Finisaje carcasă	Vopsit în câmp electrostatic
Culori Standard	RAL 9005 Jet black RAL 7040 light grey
Grad de etanșeitate	IP 66
Rezistență la impact	IK 10
Test vibratii	Conform cu standardul modificat IEC 68-2-6 (0.5G)

CONDIȚII DE FUNCȚIONARE

Temperaturi de funcționare (Ta)	-35 °C pana la +45 °C
---------------------------------	-----------------------

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

INFORMAȚII ELECTRICE

Clasa Electrică	Clasa I EU
Tensiune nominală	220-240V – 50-60Hz
Factor de putere (la putere maximă)	0.9
Protecție la supratensiuni (kV)	10
Compatibilitate electromagnetica (EMC)	EN 55015 / EN 61000-3-2 / EN 61000-4-5 / EN 61547
Protocol de control	Bluetooth, DALI
Opțiuni control	Reducere personalizată a fluxului luminos, fotocelulă sau control de la distanță
Opțiuni priza(e)	Conector de joasă tensiune (opțional) NEMA 3-pin (opțional) NEMA 6-pin (opțional) NEMA 7-pin (opțional)
Sisteme de control asociate	Sirius BLE Owlet IoT
Senzor	PIR (opțional)

UNITATE OPTICĂ

Temperatură de culoare LED-uri	3000K (Alb cald) 4000K (Alb neutru)
Indice de redare a culorilor (CRI)	>70 (Alb cald) >70 (Alb neutru)
Indice de emisie luminoasă în emisfera superioară (ULOR)	0%

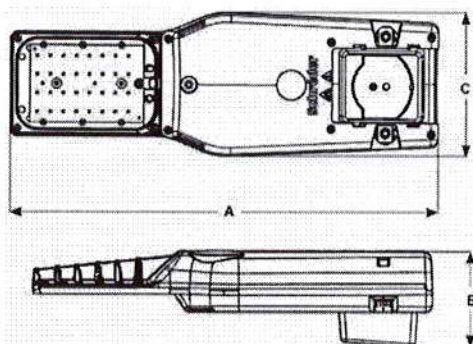
DURATA DE VIAȚĂ A LEDURILOR @ TQ25°C

Toate configuratiile 100,000h - L90



DIMENSIUNI ȘI MONTAJ

AxBxC (mm)	AXIA 3.1 - 513x130x191 AXIA 3.2 - 585x130x191 AXIA 3.3 - 550x130x277
Greutate (kg)	AXIA 3.1 - 3.6 AXIA 3.2 - 4.8 AXIA 3.3 - 6
Rezistență aerodinamică (CxS)	AXIA 3.1 - 0.03 AXIA 3.2 - 0.03 AXIA 3.3 - 0.09
Posibilități de montaj	Intrare laterala - Ø32mm Intrare laterala - Ø42mm Intrare laterala - Ø48mm Intrare laterala - Ø60mm Vârf de stâlp - Ø60mm Vârf de stâlp - Ø76mm



<p>PRO FLEX™ 5266</p>	<p>PRO FLEX™ 5267</p>	<p>PRO FLEX™ 5270</p>
<p>PRO FLEX™ 5273</p>	<p>PRO FLEX™ 5279</p>	<p>PRO FLEX™ 5280</p>
<p>PRO FLEX™ 5281</p>		

SGS

LICENCE

No. 21235 replaces No.21213

Issued to:
Applicant:
R-Tech
Rue de Mons, 3
4000 LIEGE
Belgium

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



Product : road, square and street lighting
Trade name(s) : SCHREDER
Type(s)/model(s) : AXIA GEN 3.1 (AXG3S1), AXIA GEN 3.2 (AXG3S2), AXIA GEN 3.3 (AXG3S3)

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: 25/04/2019

ir. C. Lana,
Certification Manager

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SPECIFICATION OF THE CERTIFIED PRODUCT

Product data

Product	:	road, square and street lighting
Trade name(s)	:	SCHREDER
Type(s)/Model(s)	:	AXIA GEN 3.1 (AXG3S1), AXIA GEN 3.2 (AXG3S2), AXIA GEN 3.3 (AXG3S3)
description	:	Street lighting luminaire
rated voltage (Un)	:	220-240 V
nature of supply	:	ac
rated frequency	:	50-60 Hz
class	:	class I
degree of protection	:	IP66
resistance to impact (IK)	:	IK09

Product data - type AXIA GEN 3.1 (AXG3S1)

rated ambient temperature (ta)	:	35°C (indoor), 45°C (outdoor use)
rated current (In)	:	max. 870 mA
rated power	:	max. 44 W
lamp(s)	:	8-16 Leds OSLO

Product data - type AXIA GEN 3.2 (AXG3S2)

rated ambient temperature (ta)	:	35°C (indoor), 45°C (outdoor use)
rated current (In)	:	max. 1000 mA
rated power	:	max. 78 W
lamp(s)	:	24-32 Leds OSLO

Product data - type AXIA GEN 3.3 (AXG3S3)

rated ambient temperature (ta)	:	30°C (indoor), 40°C (outdoor use)
rated current (In)	:	max. 880 mA
rated power	:	max. 172 W
lamp(s)	:	48-64 Leds OSLO



630159/05

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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 ref. 630159/05.

Remarks

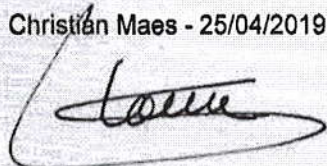
This certificate is based on test report No. P1573-77-lb.

Conclusion

The examination proved that all certification requirements were met.

Reviewed by, project leader : Christian Maes - 25/04/2019

Certification Manager :

 2019-04-25



FACTORY LOCATION(S)

Schreder TOV
Vul. Mykulynetska 46B
46000 TERNOPIIL
Ukraine

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

Socelec S.A.
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Hungary



clor



Test Report issued under the responsibility of:

TEST REPORT
IEC 60598-2-3
Luminaires

Part 2: Particular requirements
Section 3: Luminaires for road and street lighting

Report Number : P1573-77-1b
Date of issue : 2019-04-25
Total number of pages : 45+2

Name of Testing Laboratory preparing the Report : SGS Belgium division SGS CEBC

Applicant's name : R-Tech sa
Address : Rue de Mons, n°3
4000 Liège.

Test specification:
Standard : IEC 60598-2-3:2002, AMD1:2011 used in conjunction with IEC 60598-1:2014, AMD1:2017
Test procedure : CB Scheme
Non-standard test method : N/A

Test Report Form No. : IEC60598_2_3L
Test Report Form(s) Originator : Intertek Semko AB
Master TRF : Dated 2018-03-09

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Test item description	Street lighting Luminaire
Trade Mark	SCHREDER
Manufacturer	SCHREDER
Model/Type reference	AXIA GEN 3.1; AXIA GEN 3.2; AXIA GEN 3.3
Ratings	220-240V, 50-60Hz, Cl I, IP66, IK09, IK10, IK10 LED. Version with 8, 16, 24, 32, 48, 64 Leds, Max 172W Lcd: Max 1000mA
Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):	
<input type="checkbox"/> CB Testing Laboratory:	
Testing location/ address.....	
Tested by (name, function, signature)	
Approved by (name, function, signature)...	
<input type="checkbox"/> Testing procedure: CTF Stage 1:	
Testing location/ address.....	
Tested by (name, function, signature)	
Approved by (name, function, signature)...	
<input type="checkbox"/> Testing procedure: CTF Stage 2:	
Testing location/ address.....	
Tested by (name + signature)	
Witnessed by (name, function, signature) . . .	
Approved by (name, function, signature)...	
<input type="checkbox"/> Testing procedure: CTF Stage 3:	
Testing location/ address.....	R-Tech
Tested by (name, function, signature)	Ghysens Gilles
Witnessed by (name, function, signature) . . .	Christian Maes
Approved by (name, function, signature)...	Cheuvart Geoffrey
Supervised by (name, function, signature) :	

<p>List of Attachments (including a total number of pages in each attachment):</p> <p>EU deviations</p> <p>Pictures</p> <p>Instructions</p>	
<p>Summary of testing:</p>	
<p>Tests performed (name of test and test clause):</p> <p>IEC 60598-2-3:2002, AMD1:2011 used in conjunction with IEC 60598-1:2014, AMD1:2017</p>	<p>Testing location:</p> <p>R-tech sa Rue de Mons, 3 B-4000 LIEGE Belgium.</p>
<p>Summary of compliance with National Differences:</p> <p>List of countries addressed</p>	
<p><input checked="" type="checkbox"/> The product fulfils the requirements of IEC 60598-2-3:2002, AMD1:2011 used in conjunction with IEC 60598-1:2014, AMD1:2017 EN 60598-2-3:2003 + A1:2011 used in conjunction with EN 60598-1:2015</p>	

Copy of marking plate:
The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBS that own these marks.



AXG3S1
TULIOWY PRZEMISL
ZAKLAD PRZEMISL
18 2017
CE

Official Name :
AXIA GEN 3.1 -> AXG3S1
AXIA GEN 3.2 -> AXG3S2
AXIA GEN 3.3 -> AXG3S3



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Test item particulars.....:

Classification of installation and use.....: Class I

Supply Connection.....: Connector

Possible test case verdicts:

- test case does not apply to the test object.....: N/A
- test object does meet the requirement.....: P (Pass)
- test object does not meet the requirement.....: F (Fail)

Testing.....:

Date of receipt of test item.....: August 2018

Date (s) of performance of tests.....: August 2018– April 2019

General remarks:

"(See Enclosure #)" refers to additional information appended to the report.

"(See appended table)" refers to a table appended to the report.

Throughout this report a comma / point is used as the decimal separator.

Clause numbers between brackets refer to clauses in IEC 60598-1

Manufacturer's Declaration per sub-clause 4.2.5 of IEC60598-1

The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided.....:

Yes
 Not applicable

When differences exist, they shall be identified in the General product information section.

Name and address of factory (ies) :

Comatelec S.A. Z.I., F-18400 SAINT FLORENT S/CHER, France	Schröder Hungary Plc. Tópart 2., 2084 PILISSZENTIVAN, Hungary
Schröder Iluminação S.A. Apartado, 132 2790-076 CARNAXIDE, Portugal	Socolec S.A. Av. de Roanne, 66 Polígono Industrial "EL HENARES" 19180 MARCHAMALO (GUADALAJARA), Spain
Schröder TOV DO Kyiv, Mykulynetska 46B 49600 Ternopil, Ukraine	Schröder (China) Lighting Industrial Co., Ltd No.40 Xinye 2 Street, Tianjin Economic Technological Development Zone West Zone, 300462 Tianjin City, P. R. China, China



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General product information:

Rating:

MODEL	LED Count	Current (mA)	Max Power (W)	INDOOR		OUTDOOR	
				ta (°C)	ta (°C)	ta (°C)	ta (°C)
AXIA 3.1	8	0 < I ≤ 870	23	35	35	45	45
AXIA 3.2	16	0 < I ≤ 870	44	35	35	45	45
	24	0 < I ≤ 1000	76	35	35	45	45
AXIA 3.3	32	0 < I ≤ 800	78	35	35	45	45
	48	0 < I ≤ 800	115	30	30	40	40
	64	0 < I ≤ 880	172	30	30	40	40

Color Temperature can be :
 NW neutral white
 WW warm white

Clause	Requirement + Test	Result - Remark	Verdict
IEC 60598-2-3			
3.2 (0)	GENERAL TEST REQUIREMENTS		
3.2 (0.3)	More sections applicable	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Section/s: (see Annex 1)	—
3.2 (0.5)	Components		—
3.2 (0.7)	Information for luminaire design in light sources standards		—
3.2 (0.7.2)	Light source safety standard		—
	Luminaire design in the light source safety standard		N/A
3.4 (2)	CLASSIFICATION OF LUMINAIRES		
3.4 (2.2)	Type of protection	Class I	—
3.4 (2.3)	Degree of protection	IP66	—
3.4 (2.4)	Luminaire suitable for direct mounting on normally flammable surfaces	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	—
3.4 (2.5)	Luminaire for normal use	Yes <input type="checkbox"/> No <input type="checkbox"/>	—
	Luminaire for rough service	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	—
3.4 (-)	Modes of installation of road or street lighting		—
	a) on a pipe	Yes <input type="checkbox"/> No <input type="checkbox"/>	—
	b) on a mast arm	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	—
	c) on a post top	Yes <input type="checkbox"/> No <input type="checkbox"/>	—
	d) on span or suspension wires	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	—
	e) on a wall	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	—
3.5 (3)	MARKING		
3.5 (3.2)	Mandatory markings		P
	Position of the marking		P
	Format of symbols/text		P
3.5 (3.3)	Additional information		P
	Language of instructions		P
3.5 (3.3.1)	Combination luminaires		N/A
3.5 (3.3.2)	Nominal frequency in Hz		P
3.5 (3.3.3)	Operating temperature		P
3.5 (3.3.5)	Wiring diagram		N/A
3.5 (3.3.6)	Special conditions		P
3.5 (3.3.7)	Marking of lamp luminaire - warning		N/A



Clause	Requirement + Test	Result - Remark	Verdict
IEC 60598-2-3			
3.5 (3.3.8)	Limitation for semi-luminaires		N/A
3.5 (3.3.9)	Power factor and supply current		P
3.5 (3.3.10)	Suitability for use indoors		N/A
3.5 (3.3.11)	Luminaires with remote control		P
3.5 (3.3.12)	Clip-mounted luminaire - warning		N/A
3.5 (3.3.13)	Specifications of protective shields		N/A
3.5 (3.3.14)	Symbol for nature of supply		N/A
3.5 (3.3.15)	Rated current of socket outlet		N/A
3.5 (3.3.16)	Rough service luminaire		N/A
3.5 (3.3.17)	Mounting instruction for type Y, type Z and some type X attachments		N/A
3.5 (3.3.18)	Non-ordinary luminaires with PVC cable		N/A
3.5 (3.3.19)	Protective conductor current in instruction if applicable		N/A
3.5 (3.3.20)	Provided with information if not intended to be mounted within arm's reach		N/A
3.5 (3.3.21)	Non-replaceable and non-user replaceable light sources information provided		P
3.5 (3.3.22)	Controllable luminaires, classification of insulation provided		P
3.5 (3.3.23)	Luminaire without controlgear provided with necessary information for selection of appropriate component		N/A
3.5 (3.3.24)	If not supplied with terminal block, information on the packaging		N/A
3.5 (3.4)	Test with water		P
	Test with hexane		P
	Legible after test		P
	Label attached		P
3.5 (-)	Additional information in instruction leaflet		P
	a) Design attitude		P
	b) Weight		P
	c) Overall dimensions		P
	d) Maximum projected area if applicable		N/A
	e) Cross-sectional area of wires if applicable		N/A
	f) Suitability for indoors use		N/A
	g) Dimensions of the compartment		P

Clause	Requirement + Test	Result - Remark	Verdict
IEC 60598-2-3			
	h) Torque setting to be applied to bolts or screws		P
	i) Maximum mounting height		N/A
3.6 (4)	CONSTRUCTION		P
3.6 (4.2)	Components replaceable without difficulty		P
3.6 (4.3)	Wireways smooth and free from sharp edges		P
3.6 (4.4)	Lampholders	LED-MODULE	N/A
3.6 (4.4.1)	Integral lampholder		N/A
3.6 (4.4.2)	Wiring connection		P
3.6 (4.4.3)	Lampholder for end-to-end mounting		N/A
3.6 (4.4.4)	Positioning		N/A
	- pressure test (N)		—
	After test the lampholder comply with relevant standard sheets and show no damage		N/A
	After test on single-capped lampholder the lampholder have not moved from its position and show no permanent deformation		N/A
	- bending test (N)		—
	After test the lampholder have not moved from its position and show no permanent deformation		N/A
3.6 (4.4.5)	Peak pulse voltage		N/A
3.6 (4.4.6)	Centre contact		N/A
3.6 (4.4.7)	Parts in rough service luminaires resistant to tracking		N/A
3.6 (4.4.8)	Lamp connectors		N/A
3.6 (4.4.9)	Caps and bases correctly used		N/A
3.6 (4.4.10)	Light source for lampholder or connection according IEC 60061 not connected another way		N/A
3.6 (4.5)	Starter holders		N/A
	Starter holder in luminaires other than class II		N/A
	Starter holder class II construction		N/A
3.6 (4.6)	Terminal blocks		N/A
	Tails		N/A
	Unsecured blocks		N/A
3.6 (4.7)	Terminals and supply connections		P
3.6 (4.7.1)	Conductor to metal parts		P
3.6 (4.7.2)	Test: 8 mm live conductor		P



Clause	Requirement + Test	Result - Remark	Verdict
IEC 60598-2-3			
	Test 8 mm earth conductor		P
3.6 (4.7.3)	Terminals for supply conductors		P
3.6 (4.7.3.1)	Welded method and material		N/A
	- stranded or solid conductor		N/A
	- spot welding		N/A
	- welding between wires		N/A
	- Type Z attachment		N/A
	- mechanical test according to 15.6.2		N/A
	- electrical test according to 15.6.3		N/A
	- heat test according to 15.6.3.2.3 and 15.6.3.2.4		N/A
3.6 (4.7.4)	Terminals other than supply connection		N/A
3.6 (4.7.5)	Heat-resistant wiring/sleeves		N/A
3.6 (4.7.6)	Multi-pole plug		N/A
	- test at 30 N		N/A
3.6 (4.8)	Switches		N/A
	- adequate rating		N/A
	- adequate fixing		N/A
	- polarized supply		N/A
	- compliance with IEC 61058-1 for electronic switches		N/A
3.6 (4.9)	Insulating lining and sleeves		N/A
3.6 (4.9.1)	Retention		N/A
	Method of fixing		N/A
3.6 (4.9.2)	Insulated linings and sleeves:		N/A
	Resistant to a temperature > 20 °C to the wire temperature or		N/A
	a) & c) Insulation resistance and electric strength		N/A
	b) Ageing test, Temperature (°C)		N/A
3.6 (4.10)	Double or reinforced insulation		N/A
3.6 (4.10.1)	No contact, mounting surface – accessible metal parts – wiring of basic insulation		N/A
	Safe installation fixed luminaires		N/A
	Capacitors and switches		N/A
	Interference suppression capacitors according to IEC 60384-14		N/A

Clause	Requirement + Test	Result - Remark	Verdict
IEC 60598-2-3			
3.6 (4.10.2)	Assembly gaps: - not coincidental - no straight access with test probe		N/A N/A N/A
3.6 (4.10.3)	Retainment of insulation: - fixed - unable to be replaced; luminaire inoperative - sleeves retained in position - lining in lampholder		N/A N/A N/A N/A
3.6 (4.10.4)	Protective impedance device Double or reinforced insulation bridged by appropriate and at least two resistors or two Y2 capacitors or one Y1 capacitor Y1 or Y2 capacitors comply with IEC 60384-14 Resistors comply with test (a) in 14.1 of IEC 60065		N/A N/A N/A
3.6 (4.11)	Electrical connections and current-carrying parts		P
3.6 (4.11.1)	Contact pressure		P
3.6 (4.11.2)	Screws: - self-tapping screws - thread-cutting screws		N/A P N/A
3.6 (4.11.3)	Screw locking: - spring washer - rivets		N/A N/A N/A
3.6 (4.11.4)	Material of current-carrying parts		P
3.6 (4.11.5)	No contact to wood or mounting surface		N/A
3.6 (4.11.6)	Electro-mechanical contact systems		N/A
3.6 (4.12)	Screws and connections (mechanical) and glands		P
3.6 (4.12.1)	Screws not made of soft metal Screws of insulating material Torque-test: torque (Nm); part..... Torque test: torque (Nm); part..... Torque test: torque (Nm); part.....		N/A N/A N/A N/A
3.6 (4.12.2)	Screws with diameter < 3 mm screwed into metal Locked connections		N/A P
3.6 (4.12.4)	Fixed lams; torque (Nm) Stress in conductors (N/mm ²) : 2.5Nm	P P

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Clause	Requirement + Test	Result - Remark	Verdict
IEC 60598-2-3			
	- lampholder; torque (Nm)		N/A
	- push-button switches; torque 0.8 Nm		N/A
3.6 (4.12.5)	Screwed glands; force (Nm).....		N/A
3.6 (4.13)	Mechanical strength		P
3.6 (4.13.1)	Impact tests: - fragile parts; energy (Nm) : 0.5	P
	- other parts; energy (Nm) : 0.7	P
	1) live parts		P
	2) linings		P
	3) protection		P
	4) covers		P
3.6 (4.13.2)	Metal parts have adequate mechanical strength		N/A
3.6 (4.13.3)	Straight test finger		P
3.6 (4.13.4)	Rough service luminaires - IP54 or higher a) fixed b) hand-held c) delivered with a stand d) for temporary installations and suitable for mounting on a stand		N/A N/A N/A N/A N/A N/A N/A
3.6 (4.13.6)	Tumbling barrel		N/A
3.6 (4.14)	Suspensions, fixings and means of adjusting		N/A
3.6 (4.14.1)	Mechanical load: A) four times the weight B) torque 2.5 Nm C) bracket arm; bending moment (Nm)..... D) load track-mounted luminaires E) clip-mounted luminaires, glass-shelve. Thickness (mm)		N/A N/A N/A N/A N/A
	Metal rod diameter (mm)		N/A
	Fixed luminaire or independent control gear without fixing devices		N/A
3.6 (4.14.2)	Load to flexible cables Mass (kg)		N/A
	Stress in conductors (N/mm ²)		—
			N/A

Clause	Requirement + Test	Result - Remark	Verdict
IEC 60598-2-3			
	Mass (kg) of semi-luminaire		N/A
	Bending moment (Nm) of semi-luminaire		N/A
3.6 (4.14.3)	Adjusting devices: - flexing test; number of cycles..... - strands broken		N/A
	- electric strength test afterwards		N/A
3.6 (4.14.4)	Telescopic tubes: cords not fixed to tube; no strain on conductors		N/A
3.6 (4.14.5)	Guide pulleys		N/A
3.6 (4.14.6)	Strain on socket-outlets		N/A
3.6 (4.15)	Flammable materials - glow-wire test 650°C	See Test Table 3.15 (13.3.2)	P
	- spacing ≥30 mm		P
	- screen withstanding test of 13.3.1		N/A
	- screen dimensions		N/A
	- no fiercely burning material		N/A
	- thermal protection		N/A
	- electronic circuits exempted		N/A
3.6 (4.15.2)	Luminaires made of thermoplastic material with lamp control gear a) construction b) temperature sensing control c) surface temperature		N/A
3.6 (4.16)	Luminaires for mounting on normally flammable surfaces No lamp control gear	(compliance with Section 12)	N/A
	Provided with adaptor for a track meet the requirements for direct mounting on normally flammable surfaces		N/A
3.6 (4.16.1)	Lamp control gear spacing: - spacing 35 mm - spacing 10 mm		N/A
3.6 (4.16.2)	Thermal protection: - in lamp control gear - external fixed position - temperature marked lamp control gear		N/A



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Clause	Requirement + Test	Result - Remark	Verdict
IEC 60598-2-3			
3.6 (4.16.3)	Design to satisfy the test of 12.6	(see clause 12.6)	N/A
3.6 (4.17)	Drain holes Clearance at least 5 mm		N/A
3.6 (4.18)	Resistance to corrosion - rust-resistance		P
3.6 (4.18.1)	- season cracking in copper		P
3.6 (4.18.2)	- corrosion of aluminium		P
3.6 (4.18.3)	- corrosion of aluminium		P
3.6 (4.19)	Igniters compatible with ballast		N/A
3.6 (4.20)	Rough service vibration		N/A
3.6 (4.21)	Protective shield		
3.6 (4.21.1)	Shield fitted if tungsten halogen lamps or metal halide lamps		N/A
	Shield of glass if tungsten halogen lamps		N/A
3.6 (4.21.2)	Particles from a shattering lamp not impair safety		N/A
3.6 (4.21.3)	No direct path		N/A
3.6 (4.21.4)	Impact test on shield		N/A
	Glow-wire test on lamp compartment.....	See Test Table 3.15 (13.3.2)	N/A
3.6 (4.22)	Attachments to lamps not cause overheating or damage		N/A
3.6 (4.23)	Semi-luminaires comply Class II		N/A
3.6 (4.24)	Photobiological hazards		P
3.6 (4.24.1)	No excessive UV radiation if tungsten halogen lamps and metal halide lamps (Annex P)		N/A
3.6 (4.24.2)	Retinal blue light hazard		P
	Class of risk group assessed according to IEC/TR 62778		—
	Luminaires with E_{hv}		P
	a) Fixed luminaires		P
	- distance x m; borderline between RG1 and RG2 ..	RG01@44cm (OSLON)	P
	- marking and instruction according 3.2.23		P
	b) Portable and handheld luminaires		N/A
	- marking according 3.2.23 if RG1 exceeded at 200 mm according to IEC/TR 62778		N/A
	Portable luminaires for children IEC 60598-2-10 and Mains socket outlet nightlights IEC 60598-2-12 not exceed RG1 at 200 mm according to IEC/62778		N/A
3.6 (4.25)	Mechanical hazard		P

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Clause	Requirement + Test	Result - Remark	Verdict
IEC 60598-2-3			
	No sharp point or edges		P
3.6 (4.26)	Short-circuit protection		N/A
3.6 (4.26.1)	Adequate means of uninsulated accessible SELV parts		N/A
3.6 (4.26.2)	Short-circuit test with test chain according 4.26.3		N/A
	Test chain not melt through		N/A
	Test sample not exceed values of Table 12.1 and 12.2		N/A
3.6 (4.27)	Terminal blocks with integrated screwless earthing contacts		N/A
	Test according Annex V		N/A
	Pull test of terminal fixing (20 N)		N/A
	After test, resistance < 0.05 Ω		N/A
	Pull test of mechanical connection (50 N)		N/A
	After test, resistance < 0.05 Ω		N/A
	Voltage drop test, resistance < 0.05 Ω		N/A
3.6 (4.28)	Fixing of thermal sensing control		N/A
	Not plug-in or easily replaceable type		N/A
	Reliably kept in position		N/A
	No adhesive fixing if UV radiations from a lamp can degrade the fixing		N/A
	Not outside the luminaire enclosure		N/A
	Test of adhesive fixing:		N/A
	Max. temperature on adhesive material (°C)		N/A
	100 cycles between t min and t max		N/A
	Temperature sensing control still in position		N/A
3.6 (4.29)	Luminaires with non-replaceable light source		N/A
	Not possible to replace light source		N/A
	Live part not accessible after parts have been opened by hand or tools		N/A
3.6 (4.30)	Luminaires with non-user replaceable light source		P
	If protective cover provide protection against electric shock and marked with "caution, electric shock risk" symbol:		P
	Minimum two fixing means		P
3.6 (4.31)	Insulation between circuits		P
	Circuits insulated from LV supply fulfil requirements according 4.31.1 - 4.31.3	IEC 61347-2-13	P

TRF No. IEC60598_2_3L

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Clause	Requirement + Test	Result - Remark	Verdict
IEC 60598-2-3			
	Controllable luminaires requiring same level of insulation for all components, the insulation between control terminals and LV supply fulfil requirements according 4.31.1 - 4.31.3		N/A
3.6 (4.31.1)	SELV circuits		N/A
	Used SELV source		N/A
	Voltage ≤ ELV		N/A
	Insulating of SELV circuits from LV supply		N/A
	Insulating of SELV circuits from other non SELV circuits		N/A
	Insulating of SELV circuits from FELV		N/A
	Insulating of SELV circuits from other SELV circuits		N/A
	SELV circuits insulated from accessible parts according Table X.1		N/A
	Plugs not able to enter socket-outlets of other voltage systems		N/A
	Socket outlets does not admit plugs of other voltage systems		N/A
	Plugs and socket-outlets does not have protective conductor contact		N/A
3.6 (4.31.2)	FELV circuits		N/A
	Used FELV source		N/A
	Voltage ≤ ELV		N/A
	Insulating of FELV circuits from LV supply		N/A
	FELV circuits insulated from accessible parts according Table X.1		N/A
	Plugs not able to enter socket-outlets of other voltage systems		N/A
	Socket outlets does not admit plugs of other voltage systems		N/A
	Socket-outlets does not have protective conductor contact		N/A
3.6 (4.31.3)	Other circuits		P
	Other circuits insulated from accessible parts according Table X.1		P
	Class II construction with equipotential bonding for protection against indirect contacts with live parts:		N/A
	- conductive parts are connected together		N/A
	- test according 7.2.3		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
IEC 60598-2-3			
	- conductive part not cause an electric shock in case of an insulation fault		N/A
	- equipotential bonding in master/slave applications		N/A
	- master luminaire provided with terminal for accessible conductive parts of slave luminaires		N/A
	- slave luminaire constructed as class I		N/A
3.6 (4.32)	Overvoltage protective devices		
	Comply with IEC 61643-11	CB	P
	External to controlgear and connected to earth:		N/A
	- only in fixed luminaires		N/A
	- only connected to protective earth		N/A
3.6.1 (-)	At least IP X3 or X5 respectively, IP	IP66	P
	Column-integrated luminaires:		N/A
	- parts below 2,5 m: IP		N/A
	- parts above 2,5 m: IP		N/A
3.6.2 (+)	Suspension on span wires		N/A
3.6.3 (-)	Means for attaching the luminaire or external parts to its support appropriate to the weight		P
3.6.3.1 (+)	Static load test		P
	- drag coefficient	0.5	P
	- loaded area (m ²)	0.76	P
	- used load (N)	62.9	P
	- measured deformation (cm/m)	0	P
	- no rotation		P
3.6.4 (+)	Adjustable lampholders		N/A
3.6.5 (-)	Luminaires installed above 5 m, glass covers shall be:		P
	a) glass that fractures into small pieces (test according to 3.6.5.1), or		N/A
	b) glass having a high impact shock resistance (test according to 3.6.5.2), or	IK09, IK10, IK10	P
	c) protected by any means to retain glass fragments		N/A
	For tunnel luminaires 3.6.5.1 apply		N/A
	Method of protection declared by the manufacturer		N/A
3.6.5.1 (-)	Protection by the use of glass that fractures into small pieces		N/A
	- number of particles is more than 40		N/A
3.6.5.2 (-)	Protection by the use of high impact resistant glass		N/A
	- number of particles is more than 40		P



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Clause	Requirement + Test	Result - Remark	Verdict
IEC 60598-2-3			
3.6.5.2.1 (+)	Glass covers have high mechanical strength		P
	Test according IEC 62262 with test apparatus according IEC 60068-2-75 with impact energy of 5J on preconditioned sample		P
3.6.5.2.2 (-)	Glass covers not break into large pieces	PC	N/A
	- test according 3.6.5.1, number of particles is more than 20		N/A
3.6.6 (-)	Connection compartment of column-integrated luminaire		N/A
	- provides adequate space		N/A
	- means for attachment		N/A
	- means for attachment of metal corrosion-resistant		N/A
3.6.7 (-)	Compliance with ISO standard or other		N/A
3.6.8 (-)	Doors of column-integrated luminaires:		N/A
	- corrosion-resistant		N/A
	- opening only possible for an authorized person		N/A
	- impact test 5 Nm		N/A
	- sample show no damage		N/A
3.6.9 (-)	Column-integrated luminaire:		N/A
	- dimension of the cable entry slot (mm)		N/A
	- cable path from the slot to the connection compartment (mm)		N/A
	- cable path free from obstruction that might cause abrasion of the cable		N/A
3.7 (11)	CREEPAGE DISTANCES AND CLEARANCES		P
3.7 (11.2.1)	Impulse withstand category (Normal category II)	Category II <input checked="" type="checkbox"/> Category III <input type="checkbox"/>	—
	Category III according Annex U		N/A
	Protected against pollution, reduced creepage and clearance according Annex P of IEC 61347-1		N/A
3.7 (11.2.2)	Creepage distances for frequency up to 30 kHz	See Test Table 3.7 (11.2) I	P
	Creepage distances for frequency over 30 kHz:		N/A
	- Controlgear marked with U_{dur} and f_{dur} according IEC 61347-1, clause 7.1, item w	See Test Table 3.7 (11.2) II	N/A
	- Requirements according IEC 60664-4 for controlgear not covered by IEC 61347	See Test Table 3.7 (11.2) II	N/A
3.7 (11.2.3)	Clearances for frequency up to 30 kHz	See Test Table 3.7 (11.2) I	P
	Clearances distances for frequency over 30 kHz:		N/A

Clause	Requirement + Test	Result - Remark	Verdict
IEC 60598-2-3			
	- Controlgear marked with U_p	See Test Table 3.7 (11.2) II	N/A
	- Requirements according IEC 60864-4 for controlgear not covered by IEC 61347	See Test Table 3.7 (11.2) II	N/A
3.8 (7)	PROVISION FOR EARTHING		P
3.8 (7.2.1 + 7.2.3)	Accessible metal parts		P
	Metal parts in contact with supporting surface		P
	Resistance < 0.5 Ω		P
	Self-tapping screws used		P
	Thread-forming screws		N/A
	Thread-forming screw used in a groove		N/A
	Earth makes contact first		P
	Terminal blocks with integrated screwless earthing contacts tested according Annex V		NA
	Protective earthing of the luminaire not via built-in control gear		P
3.8 (7.2.2 + 7.2.3)	Earth continuity in joints, etc.		N/A
3.8 (7.2.4)	Locking of clamping means		P
	Compliance with 4.7.3		P
	Terminal blocks with integrated screwless earthing contacts tested according Annex V		NA
3.8 (7.2.5)	Earth terminal integral part of connector socket		P
3.8 (7.2.6)	Earth terminal adjacent to mains terminals		N/A
3.8 (7.2.7)	Electrolytic corrosion of the earth terminal		P
3.8 (7.2.8)	Material of earth terminal		P
	Contact surface bare metal		P
3.8 (7.2.10)	Class II luminaire for looping-in		N/A
	Double or reinforced insulation to functional earth		N/A
3.8 (7.2.11)	Earthing core coloured green-yellow		P
	Length of earth conductor		P
3.8 (7.2.12)	Attachment prevented from rotation		N/A
3.9 (14)	SCREW TERMINALS		P
	Separately approved; component list	(see Annex 1)	P



Clause	Requirement + Test	Result - Remark	Verdict
IEC 60598-2-3			
	Part of the luminaire	(see Annex 3)	N/A
3.9 (15)	SCREWLESS TERMINALS AND ELECTRICAL CONNECTIONS		P
	Separately approved; component list	(see Annex 1)	P
	Part of the luminaire	(see Annex 4)	N/A
3.10 (5)	EXTERNAL AND INTERNAL WIRING		P
3.10 (5.2)	Supply connection and external wiring		P
3.10 (5.2.1)	Means of connection	Connector	P
	Outdoor luminaire has not PVC insulated external wiring if not class III or SELV ≤ 25 V a.c./60 V d.c. or protected from outdoor environment		P
3.10 (5.2.2)	Type of cable	H07RN-F (provided)	P
	Nominal cross-sectional area (mm ²)	1.5mm ²	P
	Cables equal to IEC 60227 or IEC 60245		P
3.10 (5.2.3)	Type of attachment, X, Y or Z		N/A
3.10 (5.2.5)	Type Z not connected to screws		N/A
3.10 (5.2.6)	Cable entries:		
	- suitable for introduction		P
	- adequate degree of protection		P
3.10 (5.2.7)	Cable entries through rigid material have rounded edges		P
3.10 (5.2.8)	Insulating bushings:		N/A
	- suitably fixed		N/A
	- material in bushings		N/A
	- material not likely to deteriorate		N/A
	- tubes or guards made of insulating material		N/A
3.10 (5.2.9)	Locking of screwed bushings		N/A
3.10 (5.2.10)	Cord anchorage:		P
	- covering protected from abrasion		P
	- clear how to be effective		P
	- no mechanical or thermal stress		P
	- no tying of cables into knots etc.		N/A
	- insulating material or lining		N/A

Clause	Requirement + Test	Result - Remark	Verdict
IEC 60598-2-3			
3.10 (5.2.10.1)	Cord anchorage for type X attachment:		N/A
	a) at least one part fixed		N/A
	b) types of cable		N/A
	c) no damaging of the cable		N/A
	d) whole cable can be mounted		N/A
	e) no touching of clamping screws		N/A
	f) metal screw not directly on cable		N/A
	g) replacement without special tool		N/A
	Glands not used as anchorage		N/A
	Labyrinth type anchorages		N/A
3.10 (5.2.10.2)	Adequate cord anchorage for type Y and type Z attachment		N/A
3.10 (5.2.10.3)	Tests:		N/A
	- impossible to push cable: unsafe		N/A
	- pull test: 25 times; pull (N)		N/A
	- torque test: torque (Nm)		N/A
	- displacement ≤ 2 mm		N/A
	- no movement of conductors		N/A
	- no damage of cable or cord		N/A
	- function independent of electrical connection		N/A
3.10 (5.2.11)	External wiring passing into luminaire		N/A
3.10 (5.2.12)	Looping-in terminals		N/A
3.10 (5.2.13)	Wire ends not tinned		P
	Wire ends tinned: no cold flow		P
3.10 (5.2.14)	Mains plug same protection		P
	Class III luminaire plug		N/A
	No unsafe compatibility		N/A
	Appliance inlets (IEC 60320)		N/A
	Insulation couplers (IEC 61535)		N/A



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Clause	Requirement + Test	Result - Remark	Verdict
IEC 60598-2-3			
	Other appliance inlet or connector according relevant IEC standard		N/A
3.10 (5.2.17)	No standardized interconnecting cables properly assembled		N/A
3.10 (5.2.18)	Used plug in accordance with		N/A
	- IEC 60083		N/A
	- other standard		N/A
3.10 (5.3)	Internal wiring		P
3.10 (5.3.1)	Internal wiring of suitable size and type		P
	Through wiring		P
	- not delivered/ mounting instruction		P
	- factory assembled		P
	- socket outlet loaded (A)		N/A
	- temperatures	(see Annex 2)	P
	Green-yellow for earth only		P
3.10 (5.3.1.1)	Internal wiring connected directly to fixed wiring		
	Cross-sectional area (mm ²)	1.5mm ²	P
	Insulation thickness (mm)	0.6mm	P
	Extra insulation added where necessary		N/A
3.10 (5.3.1.2)	Internal wiring connected to fixed wiring via internal current-limiting device		N/A
	Cross-sectional area (mm ²)		N/A
3.10 (5.3.1.3)	Double or reinforced insulation for class II		N/A
3.10 (5.3.1.4)	Conductors without insulation		N/A
3.10 (5.3.1.5)	SELV current-carrying parts		N/A
3.10 (5.3.1.6)	Insulation thickness other than PVC or rubber		N/A
3.10 (5.3.2)	Sharp edges etc.		P
	No moving parts of switches etc.		N/A
	Joints, raising/lowering devices		N/A
	Telescopic tubes etc.		N/A
	No twisting over 360°		N/A

Clause	Requirement + Test	Result - Remark	Verdict
3.10 (5.3.3)	Insulating bushings:		N/A
	- suitable fixed		N/A
	- material in bushings		N/A
	- material not likely to deteriorate		N/A
3.10 (5.3.4)	- cables with protective sheath		N/A
	Joints and junctions effectively insulated		N/A
3.10 (5.3.5)	Strain on internal wiring		N/A
3.10 (5.3.6)	Wire carriers		N/A
3.10 (5.3.7)	Wire ends not tinned		P
	Wire ends tinned: no cold flow		P
3.10 (5.4)	Test to determine suitability of conductors having a reduced cross-sectional area		N/A
	Under test the temperature of the luminaire wiring insulation not exceed the limits stated in Table 12.2 (see Annex 2)		N/A
3.10.1 (-)	No damage to luminaire wiring after test		N/A
	Cord anchorage if applicable		P
	- pull test: 25 times; pull (N): 60N		P
	- torque test: torque (Nm): 0.25Nm		P

Clause	Requirement + Test	Result - Remark	Verdict
3.11 (8)	PROTECTION AGAINST ELECTRIC SHOCK		P
	Live parts not accessible		P
	Basic insulated parts not used on the outer surface without appropriate protection		N/A
	Basic insulated parts not accessible with standard test finger on portable, settable and adjustable luminaires		N/A
	Basic insulated parts not accessible with \varnothing 50 mm probe from outside, other types of luminaires		N/A
	Lamp and starterholders in portable and adjustable luminaires comply with double or reinforced insulation requirements		N/A
	Basic insulation only accessible under lamp or starter replacement		N/A
	Protection in any position		P
	Double-ended tungsten filament lamp		N/A
	Insulation lacquer not reliable		N/A
	Double-ended high-pressure discharge lamp		N/A



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Clause	Requirement + Test	Result - Remark	Verdict
IEC 60598-2-3			
3.11 (8.2.2)	Relevant warning according to 3.2.18 fitted to the luminaire		N/A
	Portable luminaire adjusted in most unfavourable position		N/A
3.11 (8.2.3.a)	Class II luminaire:		N/A
	- basic insulated metal parts not accessible during starter or lamp replacement		N/A
	- basic insulation not accessible other than during starter or lamp replacement		N/A
	- glass protective shields not used as supplementary insulation		N/A
3.11 (8.2.3.b)	BC lampholder of metal in class I luminaires shall be earthed		N/A
	SELV circuits with exposed current carrying parts:		N/A
3.11 (8.2.3.c)	Ordinary luminaire:		N/A
	- voltage under load (V):		N/A
	- no-load voltage (V):		N/A
	- touch current if applicable (mA):		N/A
	One conductive part insulated if required		N/A
	Other than ordinary luminaire:		N/A
	- nominal voltage (V):		N/A
	Class III luminaire only for connection to SELV		N/A
	Class III luminaire not provided with means for protective earthing		N/A
3.11 (8.2.4)	Portable luminaire has protection independent of supporting surface		N/A
3.11 (8.2.5)	Compliance with the standard test finger or relevant probe		P
3.11 (8.2.6)	Covers reliably secured		P
3.11 (8.2.7)	Luminaire other than below with capacitor > 0.5 μ F not exceed 50 V 1 min after disconnection		N/A
	Portable luminaire with capacitor > 0.1 μ F (0.25) not exceed 34 V 1 s after disconnection		N/A
	Other luminaires with capacitor > 0.1 μ F (0.25) with plug and track adaptors not exceed 60 V 5 s after disconnection		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
IEC 60598-2-3			
3.12 (12)	ENDURANCE TEST AND THERMAL TEST		P
3.12.2 (-)	If IP > IP 20 relevant test of (12.4), (12.5) and (12.6) after (9.2) before (9.3) specified in 3.13		—
3.12 (12.2)	Selection of lamps and ballasts		—
	Lamp used according Annex B	(Lamp used see Annex 2)	—
	Controlgear if separate and not supplied	(Controlgear used see Annex 2)	—
3.12 (12.3)	Endurance test		P
	a) mounting-position	Side-Entry	—
	b) test temperature (°C)	45°C	—
	c) total duration (h)	240H	—
	d) supply voltage (V)	240V	—
	d) if not equipped with controlgear, constant voltage/current (V) or (A)	N/A	—
	e) luminaire ceases to operate	N/A	—
3.12 (12.3.2)	After endurance test:		P
	- no part unserviceable		P
	- luminaire not unsafe		P
	- no damage to track system		N/A
	- marking legible		N/A
	- no cracks, deformation etc.		N/A
3.12 (12.4)	Thermal test (normal operation)	(see Annex 2)	P
3.12 (12.5)	Thermal test (abnormal operation)	(see Annex 2)	N/A
3.12 (12.6)	Thermal test (failed lamp control gear condition):		N/A
3.12 (12.6.1)	Through wiring or looping-in wiring loaded by a current of (A)		—
	- case of abnormal conditions		—
	- electronic lamp control gear		N/A
	- measured winding temperature (°C): at 1, 1 Un		—
	- measured mounting surface temperature (°C) at 1, 1 Un		N/A
	- calculated temperature of fixing point/exposed part (°C)		—
	- track-mounted luminaires		N/A
	- track-mounted luminaires		N/A
3.12 (12.6.2)	Temperature sensing control		N/A
	- case of abnormal conditions		—



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Clause	Requirement + Test	Result - Remark	Verdict
IEC 60598-2-3			
	- thermal link		N/A
	- manual reset cut-out		N/A
	- auto reset cut-out		N/A
	- measured mounting surface temperature (°C)		N/A
	- track-mounted luminaires		N/A
3.12 (12.7)	Thermal test (failed lamp control gear in plastic luminaires):		N/A
3.12 (12.7.1)	Luminaire without temperature sensing control		N/A
3.12 (12.7.1.1)	Luminaire with fluorescent lamp ≤ 70W		N/A
	Test method 12.7.1.1 or Annex W		—
	Test according to 12.7.1.1:		N/A
	- case of abnormal conditions		—
	- Ballast failure at supply voltage (V)		—
	- Components retained in place after the test		N/A
	- Test with standard test finger after the test		N/A
	Test according to Annex W:		N/A
	- case of abnormal conditions		—
	- measured winding temperature (°C): at 1, 1 Un		—
	- measured temperature of fixing point/exposed part (°C): at 1, 1 Un		—
	- calculated temperature of fixing point/exposed part (°C)		—
	Ball-pressure test	See Test Table 3.15 (13.2.1)	N/A
3.12 (12.7.1.2)	Luminaire with discharge lamp, fluorescent lamp > 70W, transformer > 10 VA		N/A
	- case of abnormal conditions		—
	- measured winding temperature (°C): at 1, 1 Un		—
	- measured temperature of fixing point/exposed part (°C): at 1, 1 Un		—
	- calculated temperature of fixing point/exposed part (°C)		—
	Ball-pressure test	See Test Table 3.15 (13.2.1)	N/A
3.12 (12.7.1.3)	Luminaire with short circuit proof transformers ≤ 10 VA		N/A
	- case of abnormal conditions		—

Clause	Requirement + Test	Result - Remark	Verdict
IEC 60598-2-3			
3.12 (12.7.2)	- Components retained in place after the test		N/A
	- Test with standard test finger after the test.		N/A
	Luminaire with temperature sensing control		N/A
	- thermal link	Yes <input type="checkbox"/> No <input type="checkbox"/>	—
	- manual reset cut-out	Yes <input type="checkbox"/> No <input type="checkbox"/>	—
	- auto reset cut-out	Yes <input type="checkbox"/> No <input type="checkbox"/>	—
	- case of abnormal conditions		—
	- highest measured temperature of fixing point/ exposed part (°C):		—
	Bail-pressure test:	See Test Table 3.15 (13.2.1)	N/A
3.12.1 (-)	Temperature reduction if for outdoor use only		N/A
3.12.2 (-)	(See above)		—
3.12.3 (-)	Glass covers used within the thermal limits declared by the glass manufacturer		N/A

3.13 (9)	RESISTANCE TO DUST AND MOISTURE		P
3.13.1 (+)	If IP > IP 20 the order of tests as specified in clause 3.12		P
3.13 (9.2)	Tests for ingress of dust, solid objects and moisture:		P
	- classification according to IP	IP66	—
	- mounting position during test	Side-Entry	—
	- fixing screws tightened; torque (Nm)	Installation Notice	—
	- tests according to clauses	9.2.2 & 9.2.7	—
	- electric strength test afterwards		P
	a) no deposit in dust-proof luminaire		N/A
	b) no talcum in dust-tight luminaire		P
	c) no trace of water on current-carrying parts or on insulation where it could become a hazard		N/A
	c.1) For luminaires without drain holes – no water entry		P
	c.2) For luminaires with drain holes – no hazardous water entry		N/A
	d) no water in watertight or pressure watertight luminaire		P
	e) no contact with live parts (IP 2X)		N/A
	e) no entry into enclosure (IP 3X and IP 4X)		N/A

Clause	Requirement + Test	Result - Remark	Verdict
IEC 60598-2-3			
3.13 (9.3)	e) no contact with live parts through drain holes and ventilation slots (IP3X and IP4X)		N/A
	f) no trace of water on part of lamp requiring protection from splashing water		N/A
	g) no damage of protective shield or glass envelope		N/A
	Humidity test 48 h		P
3.14 (10)	INSULATION RESISTANCE AND ELECTRIC STRENGTH		P
3.14 (10.2.1)	Insulation resistance test		P
	Cable or cord covered by metal foil or replaced by a metal rod of mm Ø		—
	Insulation resistance (M Ω)		—
	SELV		N/A
	- between current-carrying parts of different polarity		N/A
	- between current-carrying parts and mounting surface		N/A
	- between current-carrying parts and metal parts of the luminaire		N/A
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts		N/A
	- Insulation bushings as described in Section 5		N/A
	Other than SELV		P
	- between live parts of different polarity	>2,6 M Ω	P
	- between live parts and mounting surface		N/A
	- between live parts and metal parts	>2,6 M Ω	P
	- between live parts of different polarity through action of a switch		N/A
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts	>2,6 M Ω	P
	- Insulation bushings as described in Section 5		N/A
3.14 (10.2.2)	Electric strength test		P
	Dummy lamp		N/A
	Luminaires with ignitors after 24 h test.		N/A
	Luminaires with manual ignitors		N/A



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Clause	Requirement + Test	Result - Remark	Verdict
IEC 60598-2-3			
	Test voltage (V)		P
	SELV		N/A
	- between current-carrying parts of different polarity		N/A
	- between current-carrying parts and mounting surface		N/A
	- between current-carrying parts and metal parts of the luminaire		N/A
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts		N/A
	- Insulation bushings as described in Section 5		N/A
	Other than SELV		P
	- between live parts of different polarity	1480V	P
	- between live parts and mounting surface		N/A
	- between live parts and metal parts	1480V	P
	- between live parts of different polarity through action of a switch		N/A
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts	1480V	P
	- Insulation bushings as described in Section 5		N/A
3.14 (10.3)	Touch current or protective conductor current (mA)	<0.5	P

3.15 (13)	RESISTANCE TO HEAT, FIRE AND TRACKING		P
3.15 (13.2.1)	Ball-pressure test	See Test Table 3.15 (13.2.1)	N/A
3.15 (13.3.1)	Needle-flame test (10 s)	See Test Table 3.15 (13.3.1)	N/A
3.15 (13.3.2)	Glow-wire test (650°C)	See Test Table 3.15 (13.3.2)	P
3.15 (13.4)	Proof tracking test (IEC 60112)	See Test Table 3.15 (13.4)	N/A

3.7 (11.2)	TABLE I: Creepage distances and clearances		P
Minimum distances (mm) for a.c. up to 30 kHz sinusoidal voltages			
Applicable part of IEC 60598-1 Table 11.1.A*, 11.1.B* and 11.2*			
Distance 1:	Insulation type**	Required clearance	Required creepage
	B	1.5	2.5
	11.1.B	>3.3	11.1.A



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Clause	Requirement + Test	Result - Remark	Verdict
IEC 60598-2-3			
	Working voltage (V)	250	—
	PTI	< 600 <input checked="" type="checkbox"/> ≥ 600 <input type="checkbox"/>	—
	Pulse voltage or U_p if applicable (kV)	N/A	—
Supplementary information: Primary circuit			
Distance 2:	B >2	1.5	11.1.B
	11.1.B	>3.3	2.5
	11.1.A		11.1.A
	Working voltage (V)	250	—
	PTI	< 600 <input checked="" type="checkbox"/> ≥ 600 <input type="checkbox"/>	—
	Pulse voltage or U_p if applicable (kV)	N/A	—
Supplementary information: Secondary circuit			
Distance 3:	N/A	N/A	N/A
	N/A	N/A	N/A
	Working voltage (V)	N/A	—
	PTI	< 600 <input type="checkbox"/> ≥ 600 <input type="checkbox"/>	—
	Pulse voltage or U_p if applicable (kV)	N/A	—
Supplementary information: N/A			

** Insulation type: B – Basic; S – Supplementary; R – Reinforced. See also IEC 60598-1 Annex M.

3.7 (11.2)	TABLE II: Creepage distances and clearances		N/A
Minimum distances (mm) for a.c. higher than 30 kHz sinusoidal voltages			
Applicable part of IEC 61347-1 Table 7 and 8* or IEC 60664-4 Table 1 and 2			
Distances	Insulation type**	Required clearance	Required creepage
Distance 1:	B		
	11.1.B		
	Working voltage (V)	250	—
	Frequency if applicable (kHz)		—
	PTI	< 600 <input type="checkbox"/> ≥ 600 <input type="checkbox"/>	—
	Peak value of the working voltage \hat{U}_{out} if applicable (kV)		—
Supplementary information:			
Distance 2:			
	Working voltage (V)		—
	Frequency if applicable (kHz)		—
	PTI	< 600 <input type="checkbox"/> ≥ 600 <input type="checkbox"/>	—
	Peak value of the working voltage \hat{U}_{out} if applicable (kV)		—
Supplementary information:			

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IEC 60598-2-3		Requirement + Test	Result - Remark	Verdict
Distance 3:				
Working voltage (V)				—
Frequency if applicable (kHz)				—
PTI		< 600 <input type="checkbox"/> ≥ 600 <input type="checkbox"/>		—
Peak value of the working voltage \hat{U}_{out} if applicable (kV)				—
Supplementary information:				

** insulation type: B – Basic; S – Supplementary; R – Reinforced.

3.15 (13.2.1)		TABLE: Ball Pressure Test of Thermoplastics		N/A
Allowed impression diameter (mm)	2			—
Object/ Part No./ Material	Manufacturer/ trademark	Test temperature (°C)	Impression diameter (mm)	
Supplementary information:				

3.15 (13.3.1)		TABLE: Needle-flame test (IEC 60695-11-5)			N/A
Object/ Part No./ Material	Manufacturer/ trademark	Duration of application of test flame (ta) (s)	Ignition of specified layer Yes/No	Duration of burning (tb) (s)	Verdict
Supplementary information:					

3.15 (13.3.2)		TABLE: Glow-wire test (IEC 60695-2-11)			P
Glow wire temperature	650°C				—
Object/ Part No./ Material	Manufacturer/ trademark	Ignition of specified layer Yes/No	Duration of burning (tb) (s)		Verdict



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IEC 60598-2-3		Requirement + Test	Result - Remark	Verdict
Cover PC		Gabrimat	No	Os
Supplementary information:				

3.15 (13.4)		TABLE: Proof tracking test (IEC 60112)		N/A
Test voltage PTI	175 V			—
Object/ Part No./ Material	Manufacturer/ trademark	Withstand 50 drops without failure on three places or on three specimens		Verdict
Supplementary information:				

Clause	Requirement + Test	Result - Remark	Verdict		
IEC 60598-2-3					
ANNEX 1 TABLE: Critical components information					
Object / part No.	Manufacturer/ Code trademark	Type / model	Technical data	Standard	Mark(s) of conformity ¹⁾
Description:					
Drivers	A	LG	PHILIPS PISE-A040X 40W 0.2-0.6A 220-240V 50-60Hz Tc=80°C Ta = -40 to 55°C	IEC 61347-2-13	CB
Drivers	A	LG	PHILIPS PISE-A040Y 40W 0.3-1.0A 220-240V 50-60Hz Tc=80°C Ta = -40 to 55°C	IEC 61347-2-13	CB
Drivers	A	LG	PHILIPS PISE-A075X 75W 0.2-0.6A 220-240V 50-60Hz Tc=80°C Ta = -40 to 55°C	IEC 61347-2-13	CB
Drivers	A	LG	PHILIPS PISE-A075Y 75W 0.3-1.0A 220-240V 50-60Hz Tc=80°C Ta = -40 to 55°C	IEC 61347-2-13	CB
Drivers	A	LG	PHILIPS PISE-A110X 110W 0.2-0.7A 220-240V 50/60Hz Tc=80°C	IEC 61347-2-13	CB
Drivers	A	LG	PHILIPS PISE-A110Y 110W 0.3-1A 220-240V 50/60Hz Tc=80°C	IEC 61347-2-13	CB
Driver	A	LG	PHILIPS PISE-A165X 165W 0.2-0.7A 220-240V 50/60Hz Tc=80°C Ta=-40 to 55°C	IEC 61347-2-13	ENEC
Driver	A	LG	PHILIPS PISE-A165Y 165W 0.3-1.0A 220-240V 50/60Hz Tc=80°C	IEC 61347-2-13	ENEC
Drivers	A	PHILIPS	XI SR 22W 0.3-1.0A SNEMP 230V C133 sXt 22W 50-60Hz 0.3-1.0A 220-240V Tc=85°C Ta = -40 to 55°C	IEC 61347-2-13	CB
Drivers	A	PHILIPS	XI SR 40W 0.2-0.7A SNEMP 230V C133 sXt 40W 50-60Hz 0.2-0.7A 220-240V Tc=85°C Ta = -40 to 55°C	IEC 61347-2-13	CB
Drivers	A	PHILIPS	XI SR 40W 0.3-1.0A SNEMP 230V C133 sXt 40W 50-60Hz 0.2-1.0A 220-240V Tc=85°C Ta = -40 to 55°C	IEC 61347-2-13	CB
Drivers	A	PHILIPS	XI FP 40W 0.2-0.7A SNLDAE 230V C123 sXt 40W 50-60Hz 0.2-0.7A 220-240V Tc=85°C Ta = -40 to 55°C	IEC 61347-2-13	CB
Drivers	A	PHILIPS	XI FP 22W 0.2-0.7A SNLDAE 230V C123 sXt 22W 50-60Hz 0.3-1.0A 198-264V Tc=85°C	IEC 61347-2-13	CB
Drivers	A	PHILIPS	XI FP 75W 0.3-1.0A SNLDAE 230V C133 sXt 75W 50-60Hz 0.3-1.0A 220-240V Tc=85°C Ta = -40 to 55°C	IEC 61347-2-13	CB
Drivers	A	PHILIPS	XI FP 75W 0.2-0.7A SNLDAE 230V C133 sXt 75W 50-60Hz 0.2-0.7A 220-240V Tc=85°C	IEC 61347-2-13	CB
Drivers	A	PHILIPS	XI SR 150W 0.2-0.7A SNEMP 230V S240 sXt 150W 50-60Hz 0.2-0.7A 220-240V Tc=90°C	IEC 61347-2-13	ENEC



TRF No. IEC60598-2_3L

Clause	Requirement + Test	Result - Remark	Verdict
IEC 60598-2-3			
Drivers	A	PHILIPS XII SR 150W 0.3-1.0A SNEMP 230V S240 sXt 150W 50-60Hz 0.3-1.0A 220-240V Tc=90°C	IEC 61347-2-13 ENEC
Drivers	A	PHILIPS XII FP 165W 0.3-1.0A SNLDAE 230V C170 sXt 165W 50-60Hz 0.3-1.0A 220-240V Tc=90°C	IEC 61347-2-13 CB
Drivers	A	PHILIPS XII FP 165W 0.2-0.7A SNLDAE 230V C170 sXt 165W 50-60Hz 0.2-0.7A 220-240V Tc=90°C	IEC 61347-2-13 CB
Driver	A	OSRAM OT 20W170-240/1A0 1D1MLT2 G2 CE 20W 220-240Vac 0.2-1.05A 50/60Hz Tc=75°C	IEC 61347-2-13 CB
Driver	A	OSRAM OT 40W170-240/1A0 1D1MLT2 G2 CE 40W -0.2-1.05A 220-240 V 50/60 Hz, T=80°C	IEC 61347-2-13 CB
Driver	A	OSRAM OT 75W170-240/1A0 4D1MLT2 G2 CE 75 W-0.2-1.05A 220-240 V 50/60 Hz, T=85°C	IEC 61347-2-13 CB
Drivers	A	OSRAM OT 165W170-240/1A0 4D1MLT2 G2 E 165W 50-60Hz 170-240V 0.35-1.05A Tc=85°C	IEC 61347-2-13 CB
Driver	A	OSRAM OT 110W170-240/1A0 4D1MLT2 G2 CE 110 W - 0.2-1.05A 220-240 V 50/60 Hz, Tc=85°C	IEC 61347-2-13 CB
Description: Protective devices			
Surge protection Device	A	Vassioh SP3230/10K/I Uc 305Vac Usc 10kV Up L-N < 1.5kV, L-PE < 1.8 kV, N-PE < 1.8 kV IL 16A Iscort 1kA T 80°C	IEC 61643-11 DEKRA
Description: Control Device			
Dongle	A	LG TWBU-C302D LuCo P7/P7 CM	EN 60950-1 CoC / UL
Control Device	A	Owmet Shorting Cap TE NEMA Socket 7-pin	110-277V 50/60 Hz Tmax = 75°C IEC/EN 61347 COC
Control Device	A	Owmet Power contacts: 5A 110-277V Dimming contacts: 0.10A 10V	IEC/EN 61347-1 IEC 61347-2-11 COC
Connection Device	A	COLOSIO/Schneider M400C	EN 60598-1 & 2-3 COC
Control Device	A	Philippis City Touch LLC725X LLC7240	120-240V 50/60Hz Dimming contacts: 0.10A 10V IEC/EN 61347 CB
Description: Terminals			
Terminal	A	ADELS 900 Series	0.5-4mm² 450V T85°C EN 60998-1&2-2 VDE / UL
Description: LED Modules			
Leds Module	A	Schneider AXIA G3: Led = OSLO N 8, 16, 24, 32 leds @ 1000mA	Is = 110°C IEC 60598 / IEC 62031 Tested in appliance

TRF No. IEC60598_2_3L



Clause	Requirement + Test	Result - Remark	Verdict		
IEC 60598-2-3					
ANNEX 2	TABLE: Thermal tests of Section 12				
	Type reference	AXIA GEN 3.1	—		
	Lamp used	16 leds @870mA	—		
	Lamp control gear used	LG 40W	—		
	Mounting position of luminaire	Horizontal	—		
	Supply wattage (W)	44.8	—		
	Supply current (A)	0.197A	—		
	Temperatures in test 1 - 4 below are corrected for ta (°C)	45	—		
	- abnormal operating mode		—		
1.12 (12.4)	- test 1: rated voltage	230V	—		
	- test 2: 1.06 times rated voltage or 1.05 times rated wattage or 1.1 times constant voltage/current		—		
	- test 3: Load on wiring to socket-outlet, 1.06 times voltage or 1.05 times wattage		—		
	Through wiring or looping-in wiring loaded by a current of A during the test		—		
1.12 (12.5)	- test 4: 1.1 times rated voltage or 1.05 times rated wattage or 1.1 times constant voltage/current		—		
Temperature measurements (°C)					
Part	Ambient	Ci. 12.4 – normal		Ci. 12.5 – abnormal	
		test 1	test 2		test 3
Converter Tc	45	87		limit	80+10
Supply wiring	45	55		limit	90+10
Led Module (ts)	45	90		limit	110+10
Terminal	45	55		limit	110+10
SPD	45	57		limit	80+10
Supplementary information: Temperature correction of 10°C as suitable for outdoor installation					

Clause	Requirement + Test	Result - Remark	Verdict
IEC 60598-2-3			
	Supplementary information: 1) Provided evidence ensures the agreed level of compliance. See OD-CB2039. The codes above have the following meaning: A - The component is replaceable with another one, also certified, with equivalent characteristics B - The component is replaceable if authorised by the test house C - Integrated component tested together with the appliance D - Alternative component		



Clause	Requirement + Test	Result - Remark	Verdict
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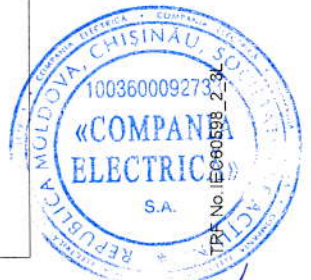
IEC 60598-2-3

ANNEX 2		TABLE: Thermal tests of Section 12	
Type reference	AXIA GEN 3.2		—
Lamp used	32 leds @800mA		—
Lamp control gear used	LG 75W		—
Mounting position of luminaire	Horizontal		—
Supply wattage (W)	79.4		—
Supply current (A)	0.348A		—
Temperatures in test 1 - 4 below are corrected for ta (°C)	45		—
- abnormal operating mode			—
1.12 (12.4)	- test 1: rated voltage	230V	—
	- test 2: 1.06 times rated voltage or 1.05 times rated wattage or 1.1 times constant voltage/current		—
	- test 3: Load on wiring to socket-outlet, 1.06 times voltage or 1.05 times wattage		—
	Through wiring or looping-in wiring loaded by a current of A during the test		—
1.12 (12.5)	- test 4: 1.1 times rated voltage or 1.05 times rated wattage or 1.1 times constant voltage/current		—

Temperature measurements (°C)

Part	Ambient	Cl. 12.4 – normal			Cl. 12.5 – abnormal	
		test 1	test 2	test 3	test 4	limit
Converter Tc	45	89			80+10	
Supply wiring	45	55			90+10	
Led Module (ts)	45	93			110+10	
Terminal	45	55			110+10	
SPD	45	66			80+10	

Supplementary information: Temperature correction of 10°C as suitable for outdoor installation



TRF No. IEC60598_2_3L

Clause	Requirement + Test	Result - Remark	Verdict
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IEC 60598-2-3

ANNEX 2		TABLE: Thermal tests of Section 12	
Type reference	AXIA GEN 3.3		—
Lamp used	64 leds @880mA		—
Lamp control gear used	OT 165W		—
Mounting position of luminaire	Horizontal		—
Supply wattage (W)	171.1W		—
Supply current (A)	0.750A		—
Temperatures in test 1 - 4 below are corrected for ta (°C)	40		—
- abnormal operating mode			—
1.12 (12.4)	- test 1: rated voltage	230V	—
	- test 2: 1.06 times rated voltage or 1.05 times rated wattage or 1.1 times constant voltage/current		—
	- test 3: Load on wiring to socket-outlet, 1.06 times voltage or 1.05 times wattage		—
	Through wiring or looping-in wiring loaded by a current of A during the test		—
1.12 (12.5)	- test 4: 1.1 times rated voltage or 1.05 times rated wattage or 1.1 times constant voltage/current		—

Temperature measurements (°C)

Part	Ambient	Cl. 12.4 – normal			Cl. 12.5 – abnormal	
		test 1	test 2	test 3	test 4	limit
Converter Tc	40	91			85+10	
Supply wiring	40	55			90+10	
Led Module (ts)	40	103			110+10	
Terminal	40	55			110+10	
SPD	40	60			80+10	

Supplementary information: Temperature correction of 10°C as suitable for outdoor installation

TRF No. IEC60598_2_3L

Clause	Requirement + Test	Result - Remark	Verdict
IEC 60598-2-3			
ANNEX 3	Screw terminals (part of the luminaire)		NA
(14)	SCREW TERMINALS		NA
(14.2)	Type of terminal.....		—
	Rated current (A).....		—
(14.3.2.1)	One or more conductors		NA
(14.3.2.2)	Special preparation		NA
(14.3.2.3)	Terminal size		NA
	Cross-sectional area (mm ²).....		—
(14.3.3)	Conductor space (mm).....		NA
(14.4)	Mechanical tests		NA
(14.4.1)	Minimum distance		NA
(14.4.2)	Cannot slip out		NA
(14.4.3)	Special preparation		NA
(14.4.4)	Nominal diameter of thread (metric ISO thread)..... : M		NA
	External wiring		NA
	No soft metal		NA
(14.4.5)	Corrosion		NA
(14.4.6)	Nominal diameter of thread (mm).....		NA
	Torque (Nm).....		NA
(14.4.7)	Between metal surfaces		NA
	Lug terminal		NA
	Mantle terminal		NA
	Pull test: pull (N).....		NA
(14.4.8)	Without undue damage		NA

Clause	Requirement + Test	Result - Remark	Verdict
IEC 60598-2-3			
ANNEX 4	Screwless terminals (part of the luminaire)		NA
(15)	SCREWLESS TERMINALS		NA
(15.2)	Type of terminal.....		—
	Rated current (A).....		—
(15.3.1)	Material		NA
(15.3.2)	Clamping		NA
(15.3.3)	Stop		NA
(15.3.4)	Unprepared conductors		NA
(15.3.5)	Pressure on insulating material		NA
(15.3.6)	Clear connection method		NA
(15.3.7)	Clamping independently		NA
(15.3.8)	Fixed in position		NA
(15.3.10)	Conductor size		NA
	Type of conductor		NA
(15.5)	Terminals and connections for internal wiring		NA
(15.5.1)	Mechanical tests		NA
(15.5.1.1.1)	Pull test spring-type terminals (4 N, 4 samples).....		NA
(15.5.1.1.2)	Pull test pin or tab terminals (4 N, 4 samples).....		NA
	Insertion force not exceeding 50 N		NA
(15.5.1.2)	Permanent connections: pull-off test (20 N)		NA
(15.5.2)	Electrical tests		NA
	Voltage drop (mV) after 1 h (4 samples).....		NA
	Voltage drop of two inseparable joints		NA
	Number of cycles:		—
	Voltage drop (mV) after 10th alt. 25th cycle (4 samples).....		NA
	Voltage drop (mV) after 50th alt. 100th cycle (4 samples).....		NA
	After ageing, voltage drop (mV) after 10th alt. 25th cycle (4 samples).....		NA
	After ageing, voltage drop (mV) after 50th alt. 100th cycle (4 samples).....		NA
(15.6)	Terminals and connections for external wiring		NA
(15.6.1)	Conductors		NA



Clause	Requirement + Test	Result - Remark	Verdict
IEC 60598-2-3			
	Terminal size and rating		NA
15.6.2	Mechanical tests		NA
(15.6.2.1)	Pull test spring-type terminals or welded connections (4 samples); pull (N)		NA
(15.6.2.2)	Pull test pin or tab terminals (4 samples); pull (N)		NA
(15.6.3)	Electrical tests		NA
	Tests according 15.6.3.1 + 15.6.3.2 in IEC 60598-1		NA

TABLE: Contact resistance test / Heating tests										
Voltage drop (mV) after 1 h										
terminal voltage drop (mV)	1	2	3	4	5	6	7	8	9	10
Voltage drop of two inseparable joints										
Voltage drop after 10th alt. 25th cycle										
Max. allowed voltage drop (mV)										
terminal voltage drop (mV)	1	2	3	4	5	6	7	8	9	10
Voltage drop after 50th alt. 100th cycle										
Max. allowed voltage drop (mV)										
terminal voltage drop (mV)	1	2	3	4	5	6	7	8	9	10
Continued ageing: voltage drop after 10th alt. 25th cycle										
Max. allowed voltage drop (mV)										
terminal voltage drop (mV)	1	2	3	4	5	6	7	8	9	10
Continued ageing: voltage drop after 50th alt. 100th cycle										
Max. allowed voltage drop (mV)										
terminal voltage drop (mV)	1	2	3	4	5	6	7	8	9	10

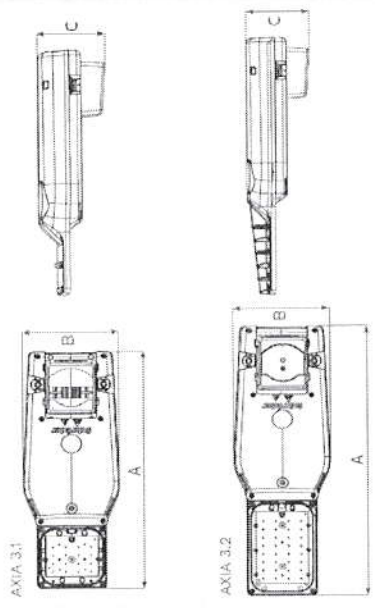


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Clause	Requirement + Test	Result - Remark	Verdict
IEC 60598-2-3			

Installation Notice

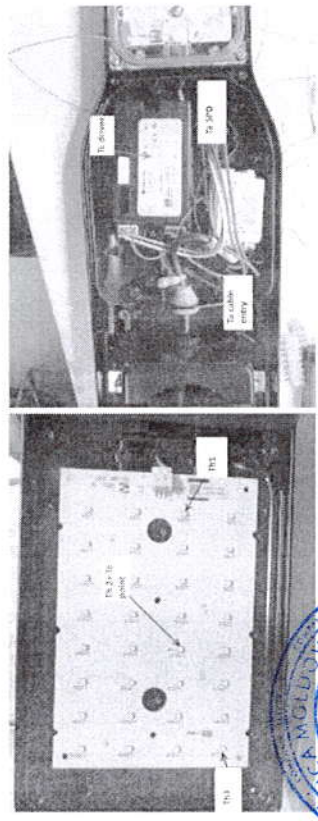
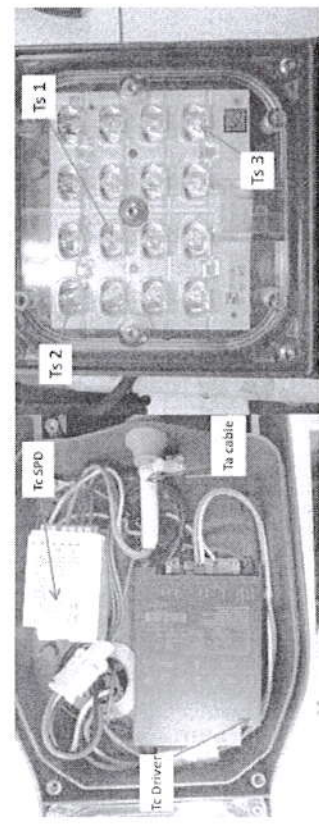
	AXIA 3.1	AXIA 3.2	AXIA 3.3
A (mm)	513	505	550
B (mm)	191	191	277
C (mm)	130	130	170
Weight (kg)	3.342	2.80	2.820
Gas (m³)	0.80	0.80	0.80



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TRF No. IEC60598_2_3L

Clause	Requirement + Test	Result - Remark	Verdict
	IEC 60598-2-3		



Clause	Requirement - Test	Result - Remark	Verdict
	IEC60598_2_3K - ATTACHMENT		

**ATTACHMENT TO TEST REPORT IEC 60598-2-3
EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES
LUMINAIRES**

PART 2: PARTICULAR REQUIREMENTS
SECTION 3: LUMINAIRES FOR ROAD AND STREET LIGHTING

Differences according to : EN 60598-2-3:2003 + A1:2011 used in conjunction with EN 60598-1:2015

Annex Form No. : EU_GD_IEC60598_2_3K
Annex Form Originator : IMQ S.p.A.
Master Annex Form : 2016-12

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GENELEC COMMON MODIFICATIONS (EN)		P

3.5 (3)	MARKING	
3.5 (3.3.10.1)	For luminaires not supplied with terminal block: Adequate warning on the package	N/A

3.6 (4)	CONSTRUCTION	
3.6 (4.11.6)	Electro-mechanical contact systems	N/A

3.10 (5)	EXTERNAL AND INTERNAL WIRING	
3.10 (5.2.1)	Connecting leads - without a means for connection to the supply - terminal block specified - relevant information provided	N/A N/A N/A N/A
3.10 (5.2.2)	- compliance with 4.6, 4.7.1, 4.7.2, 4, 10.1, 11.2, 12 and 13.2 of Part 1 Cables equal to EN 50525 Replace table 5.1 – Supply cord	N/A N/A N/A

3.12 (12)	ENDURANCE TESTS AND THERMAL TESTS	
3.12 (12.4.2.c)	Thermal test (normal operation) see footnote c to table 12.2 relating to unsleeved fixed wiring	N/A

ZB	ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)	
(3.3)	DK: power supply cords of class I luminaires with label	N/A
(4.5.1)	DK: socket-outlets	N/A

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Laboratory Test report



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Member of Schröder Group

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

Electrical measurements

General information

Subject : AXIA 3.3 - 64 LEDs Osram 165W driver

Asked by : THIJS Marcel

Created on : 11/12/2018

Validated on : 15/01/2019

Test number : D180888

Sample(s) : E180688

Folder : P-F18067

Test conditions

Luminaire : AXIA 3.3

Number of LED : 64

LED : Osram OSLOM SQUARE GIANT

Driver : Optotronic OT165/170-240/1A0 4DIM LT2 E / 00-14-563

Driver current (mA) : 880

SPD : Vossloh Lighting Solutions SPC3 230/10 K

Measurements devices :

Fluke Norma 4000 - HF Powermeter - (E110) : Electrical measurements

Power supply :

APT 300XAC AC power supply (E113)

Supply voltages: 230 V 50 Hz

Operator : MESPOUILLE Loic



Conclusion



Informative

PF : 0,99

Efficiency : 93,0%

THD : 6,3%

OK according to IEC 61000-3-2, Class C, > 25 W

Validated by :

GHYSENS Gilles

Duplicate to : THIJS Marcel, GALLOPPA Sandro, DETAILLE
Ludovic, MULS Sophie, BOS Peter

LAB : 15/01/2019

D180888



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.

Measurements

Test(s)

Name	Description	Result
Test @ 880mA		Informative

Test @ 880mA

Annex(es)

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

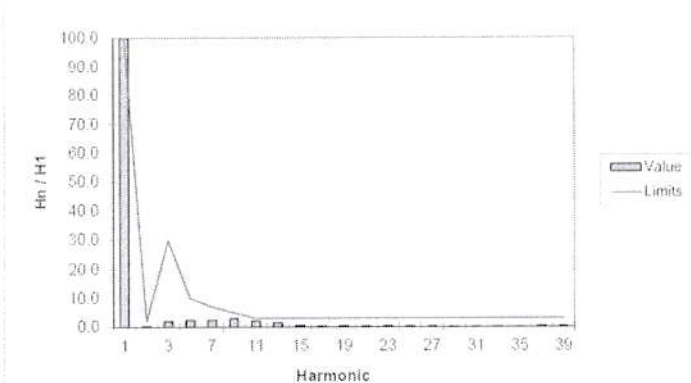
Driver: OSRAM OT 165/170-240/1A0 4DIMLT2 E

Date: 18-12-18

Operator: LCM Normă AQ number: E110

Harmonic	Taux (%)	Limite (% H1)
1	100.0	100.0
2	0.2	2.0
3	2.0	29.8
5	2.4	10.0
7	2.3	7.0
9	3.0	5.0
11	2.1	3.0
13	1.5	3.0
15	0.7	3.0
17	0.4	3.0
19	0.5	3.0
21	0.3	3.0
23	0.5	3.0
25	0.4	3.0
27	0.2	3.0
29	0.1	3.0
31	0.1	3.0
33	0.1	3.0
35	0.2	3.0
37	0.4	3.0
39	0.2	3.0

Power Factor: 0.9923 Cos φ_{0.95}: 0.9943



input		output 1	
Urms	229.9 V	Urms	181.2 V
Irms	0.750 A	Irms	0.878 A
Prms	171.1 W	Prms	159.1 W
S	172.4 VA		
Q	-21.3 VAR		
PF	0.9923		
I _{avg}	0.748 A	U _{avg}	181.2 V
Cos φ _{0.95}	0.9943	I _{avg}	0.878 A
η _{rms}	93.0%	P _{avg}	159.1 W
η _{avg}	93.0%		
THD	6.3%		



Laboratory Test report



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Member of Schröder Group

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

Thermal Test LED

General information

Subject : AXIA 3.3 - 64 LEDs Osram 165W driver

Asked by : THIJS Marcel

Created on : 11/12/2018

Validated on : 14/01/2019

Test number : D180887

Reference norm : IEC/EN 60598-1; 60598-2-3; 60598-2-5 Standards

Sample(s) : E180688

Folder : P-F18067

Test conditions

Luminaire : AXIA 3.3

Number of LED : 64

LED : Osram OSLOM SQUARE GIANT

Driver : Optotronic OT165/170-240/1A0 4DIM LT2 E / 00-14-563

Driver info : Tc max : 85°C

Driver current (mA) : 880

SPD : Vossloh Lighting Solutions SPC3 230/10 K

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 (E113)

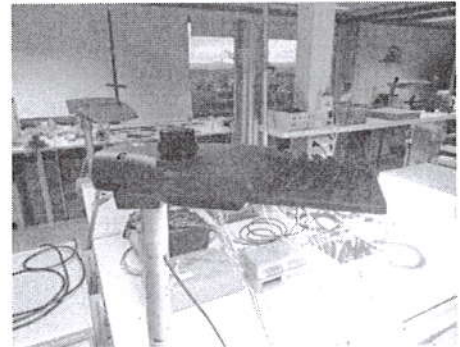
Supply voltages: 230 V 50 Hz

Junction Temperature measurement method : Junction temperature

measurement by base temperature measurement and electrical

measurement. $T^{\circ}j = T^{\circ}b + R_{jb} \times P_{led}$

Operator : MESPOUILLE Loic



Conclusion



Informative

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

Ta: 40°C limited by driver; according IEC 60598-2-3 and IEC 60598-2-5 (outdoor use only)

Ta: 30°C limited by driver; indoor use and UL standard

Tq: 15°C limited by lenses; according IEC 62722-2-1

Tq given for 100 khrs of lifetime

Validated by :

GHYSENS Gilles

Duplicate to : THIJS Marcel, GALLOPPA Sandro, DETAILLE

Ludovic, MULS Sophie, BOS Peter

LAB : 15/01/2019

D180887



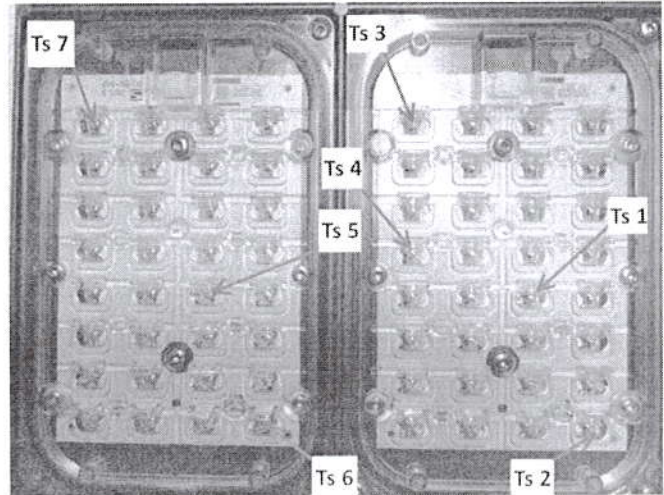
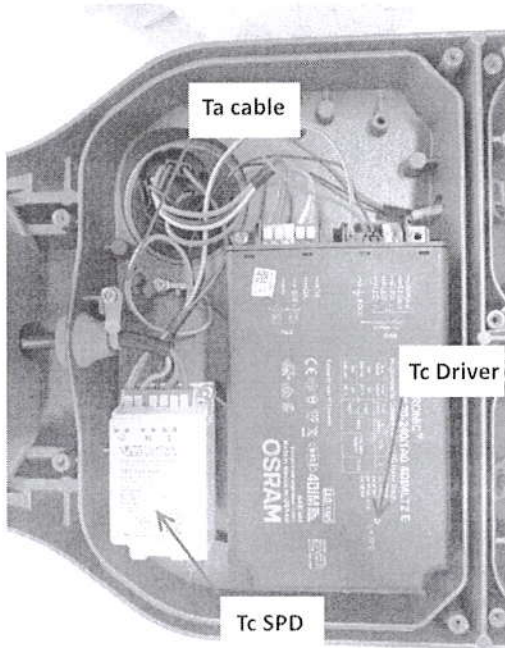
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Test details

Test(s)

Name	Description	Result
Test @ 880mA		Informative

Thermal sensors disposition



Test @ 880mA

Result(s)

	Ts 1	Ts 2	Ts 3	Ts 4	Ts 5	Ts 6	Ts 7	Tc driver	Tc SPD	Ta cable
Limite T°								85 °C	80 °C	90 °C
Junction T°	95.9 °C	96.7 °C	90.7 °C	93.7 °C	96.0 °C	94.5 °C	92.1 °C			
Thermocouple T°	85.4 °C	86.2 °C	80.3 °C	83.2 °C	85.6 °C	84.1 °C	81.6 °C	74.4 °C	42.7 °C	47.5 °C
Room	23.0 °C	23.0 °C	23.0 °C	23.0 °C	23.0 °C	23.0 °C	23.0 °C	23.0 °C	23.0 °C	23.0 °C
E led	2.83V	2.83V	2.83V	2.83V	2.83V	2.83V	2.83V			
I led	0.878A	0.878A	0.878A	0.878A	0.878A	0.878A	0.878A			
P led	2.49W	2.49W	2.49W	2.49W	2.49W	2.49W	2.49W			
Rth junction-base	4.2 °C	4.2 °C	4.2 °C	4.2 °C	4.2 °C	4.2 °C	4.2 °C			
Heating								51.4 K	19.7 K	24.5 K
Δ Ts	62.4 K	63.2 K	57.3 K	60.2 K	62.6 K	61.1 K	58.6 K			

ME primaire		ME secondaire	
U	229,9V	U	181,2V
I	0,750A	I	0,878A
P	171,1 W	P	159,1 W
PF	0,992		
Efficiency	93%		

D180887



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 Schröder Group

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

EMC test

General information

Subject : AXIA 3.3 - 64 led's Xi FP 165 W driver class I

Asked by : THIJS Marcel

Created on : 14/05/2019

Test number : D190382

Reference norm : EN 55015 - EN 61547 + IEC 61000-3-2
Standards

Sample(s) : E180686

Folder : P-F18067

Test conditions

Luminaire : AXIA 3.3

Operator : External Lab

Description :
64 led's

Electrical class : Class I EU

Driver : Xitanium FP 165W 0.3-1.0A SNLDAE 230V C170 sXt / 00-25-842

Current setting (mA) : 880

Dimming protocol : DALI

Overvoltage protection : VS Lighting Solutions SPC3

Testing facility : External - EMC-ULg

External test report reference : 190507/1455/AAAN0500A

Conclusion



Success

AXIA 3.3 - 64 led's class I with Philips 165 W driver complies with EN 55015 & EN 61547 Standards.

Validated by :
LERHO Xavier

Duplicate to : THIJS Marcel, GALLOPPA Sandro, DETAILLE
Ludovic, MULS Sophie, BOS Peter
LAB : 14/05/2019

D190382



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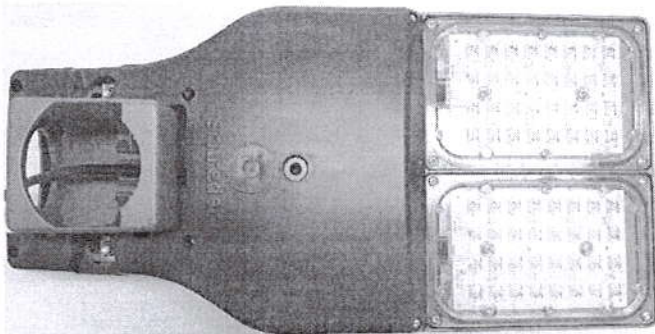
Summary of test

Test(s)

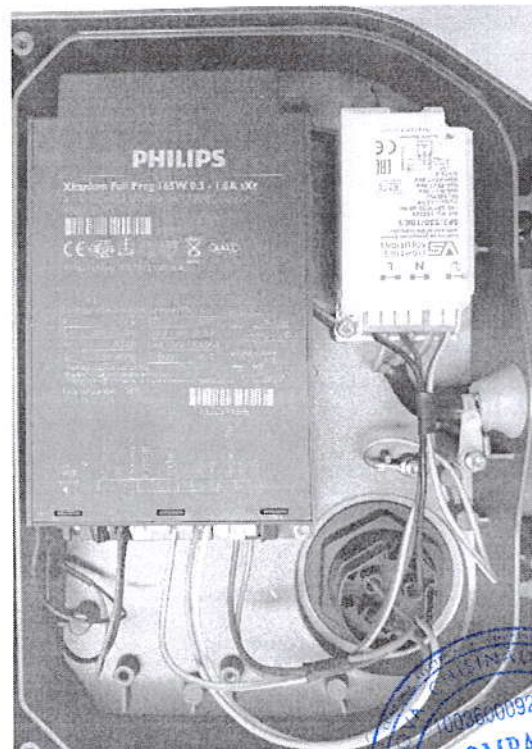
Name	Description	Result
Complete EMC test (10 Kv Surges)	<p>Emission measurements (EN 55015):</p> <ul style="list-style-type: none"> - Terminal disturbance - Radiated emissions - Conducted emissions <p>Harmonics (IEC/EN 61000-3-2)</p> <p>Voltage fluctuations (IEC 61000-3-3)</p> <p>Immunity measurements (IEC/EN 61547)</p> <ul style="list-style-type: none"> - 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)

Annex(es)



Ax1



Laboratory Test report



R-Tech
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Member of Schröder Group

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

Mechanical impact resistance test

General information

Subject : AXIA 3.3

Asked by : THUIS Marcel

Created on : 16/04/2019

Validated on : 23/04/2019

Test number : D190333

Reference norm : IEC/EN 60598-1 & 62696 Standards

Sample(s) : E190133, E190134

Folder : P-F18067

Test conditions

Luminaire : AXIA 3.3

Quantity of sample under test : 5

Protector Material : PC

Protector supplier : External - Gaggione

Remark :

Star washer replaced by spring washer.

Torque applied on the luminary fixation: 17 Nm.

Method of test :

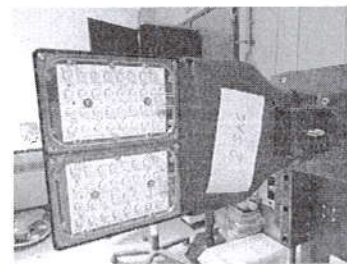
At pendulum hammer

5 impact points distributed on protector surface

One impact on each point

2 supplementary impacts on the most fragile point

Operator : WINA BOMBIL Patrick



Conclusion

 Success

Conclusion :

IK10 granted

Validated by :
GHYSENS Gilles

Duplicate to : THUIS Marcel, GALLOPPA Sandro, DETAILLE
Ludovic, MULS Sophie, BOS Peter

LAB : 23/04/2019



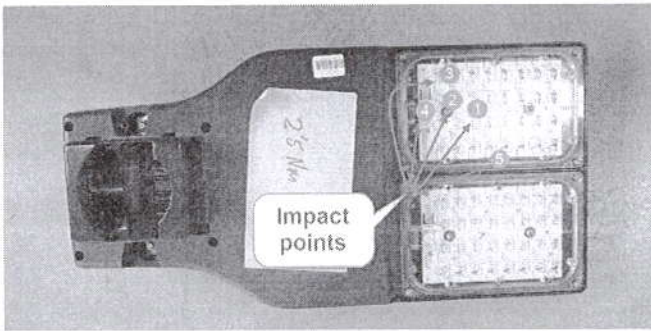
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IK10

Test(s)

Name	Description	Result
Impact points distribution		Informative
IK10	Impact Energy: 20 joules Hammer Weight: 5 Kg Height of fall: 40 cm	Success

Impact points distribution



0202 054 9

IK10

Result(s)

Tested
No tested

IK10	Impact	1			2			3			4			5		
Sample	Shot	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
1		✓			✓			✓			✓			✓	✓	✓
2		✓			✓			✓			✓			✓	✓	✓
3		✓			✓			✓			✓			✓	✓	✓
4		✓			✓			✓			✓			✓	✓	✓
5		✓			✓			✓			✓			✓	✓	✓



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Laboratory Test report



R-Tech
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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

Tightness test

General information

Subject : Axia 3.3 - 64 LEDs Lumawise socket

Asked by : DETAILLE Ludovic

Created on : 16/01/2019

Validated on : 25/01/2019

Test number : D190025

Reference norm : IEC/EN 60598-1 Standard

Sample(s) : E190022

Folder : P-F18067

Test conditions

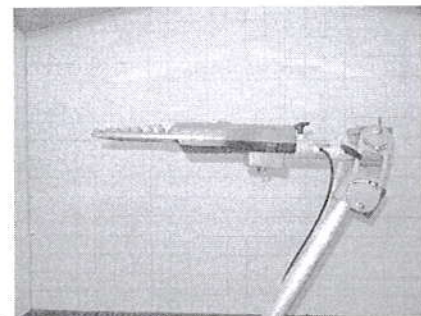
Luminaire : AXIA 3.3

Number of LED : 64

LED : Osram OSOLON SQUARE GIANT

Driver current (mA) : 880

Operator : Philippe Léonard



Conclusion

 Success

Conclusion :

IPx6 granted on gear compartment.

Validated by :
GHYSENS Gilles

Duplicate to : THIJS Marcel, GALLOPPA Sandro, DETAILLE
Ludovic, MULS Sophie, BOS Peter

LAB : 28/01/2019

D190025



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IPX6

Test(s)

Name	Description	Result
Ateq test		Success
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 pressure: 1 kg/cm²- Spraying distance: 3 m- Duration of test: 3 minutes	Success

IPx6

Result(s)

No water in the gears part



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AXIA 3.3

5267

Optic	5267
Protector	Integrated lenses
Source	64 Osram OSOLON SQUARE GIANT
Matrix	429224

**PRO
FLEX™**


Characteristics

550	277	130	6.2	IP 66	IK 10	I EU	0.092
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

Engineered for performance, designed for the customer experience

- Maximised savings in energy and maintenance costs
- ProFlex™ photometric engines offering high efficiency lighting, comfort and safety
- 3 sizes to provide the most accurate solutions for numerous road and urban applications
- Easy installation: pre-cabled and equipped with universal fixation adapted for side-entry and post-top mounting
- Adjustable inclination for optimised photometry and uniformity
- Connected-ready

Types of application

- Square and park
- Bridge
- Park
- Large area
- Roundabout
- Car park
- Road and highway
- Residential road
- Bike path
- Urban road

Information for 1000 lm matrix

Efficacy (%)	88.4	G Class (EN 13201-2)	G2	Aperture 90-270°	X - X
DLOR (%)	88.4	G* (EN 13201 2015)	G*1	I 70-80-90-95 (cd)	867 - 138 - 8 - X
ULOR (%)	0.0	Imax (cd)	867	CIE flux code N 1→5 (%)	23.2 - 53.8 - 94.1 - 100.0 - 88.4
ULR (%)	0.0	Aperture 0-180°	66 - 66		



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°									
64	NW 740	200	38	6907	6108	161	5986	B1 U1 G2	230
64	NW 740	300	57	10122	8951	160	8772	B2 U1 G2	230
64	NW 740	420	79	13686	12103	153	11861	B2 U1 G2	230
64	NW 740	500	94	15888	14049	149	13768	B2 U1 G3	230
64	NW 740	600	113	18439	16305	144	15979	B2 U1 G3	230
64	NW 740	700	137	20780	18375	134	18008	B3 U1 G3	230
64	NW 740	880	172	24426	21599	126	21167	B3 U1 G4	230
64	WW 730	200	38	6452	5705	150	5591	B1 U1 G2	230
64	WW 730	300	57	9455	8361	149	8193	B1 U1 G2	230
64	WW 730	420	79	12784	11305	143	11079	B2 U1 G2	230
64	WW 730	500	94	14840	13123	140	12861	B2 U1 G3	230
64	WW 730	600	113	17223	15230	135	14925	B2 U1 G3	230
64	WW 730	700	137	19410	17164	125	16821	B3 U1 G3	230
64	WW 730	880	172	22815	20175	117	19772	B3 U1 G4	230

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



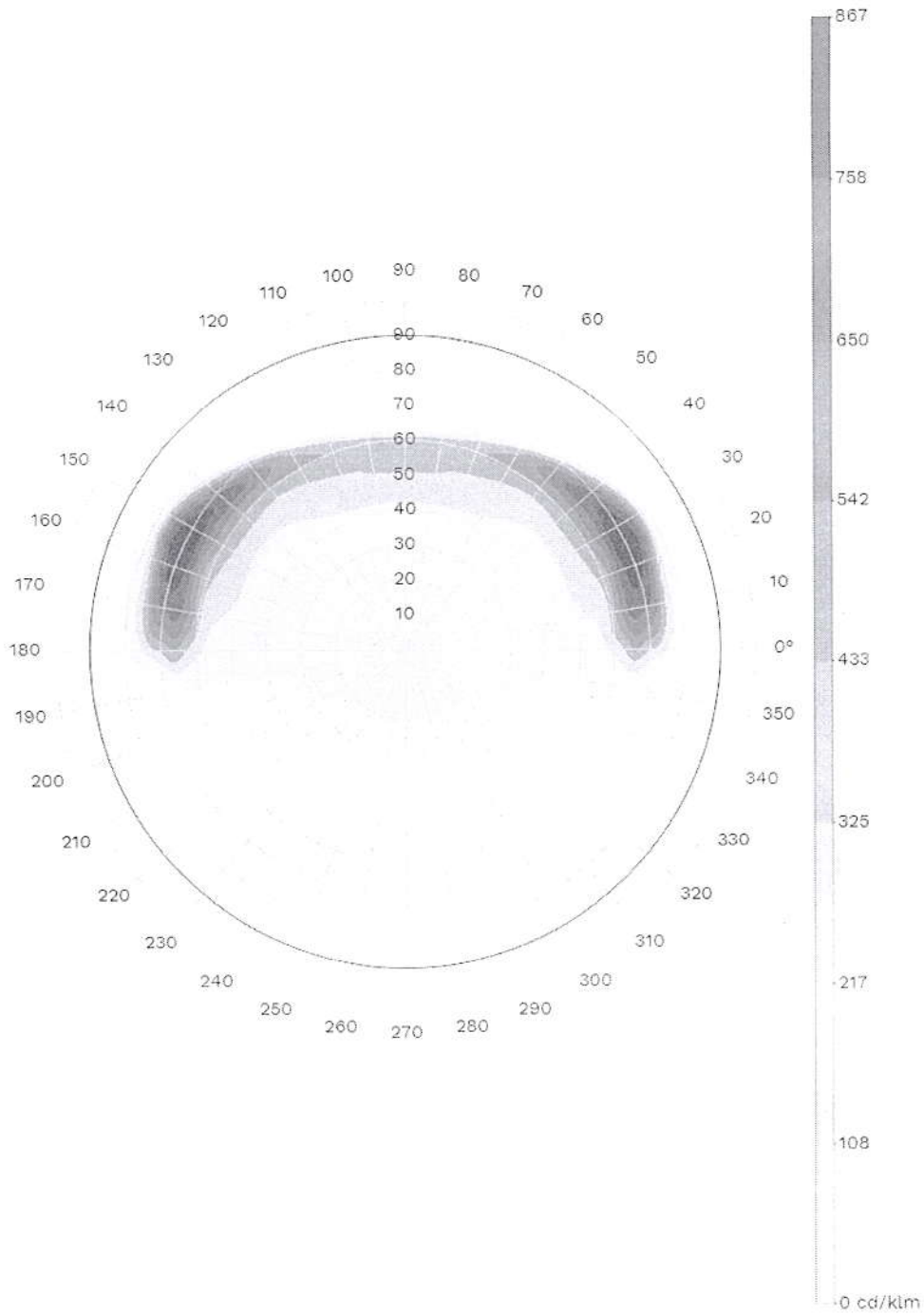
Summary

Axia 3 is a robust yet compact luminaire, designed with a focus on miniaturisation and superior efficiency. Composed of high-pressure die-cast aluminium, as well as composite materials, Axia 3 is available in three sizes. Thanks to its reduced weight, this road luminaire is easy to handle during installation. The Axia 3.1, which can be fitted with up to 16 LEDs, is perfectly suited to low-height applications, whereas Axia 3.2 and 3.3, with up to 32 or 64 LEDs, are ideal for lighting urban and large roads, carriageways and avenues. The Axia 3 range is equipped with ProFlex™ photometric engines, providing the highest efficiency thanks to their ability to maximise the lumen output and to provide very extensive light distributions.

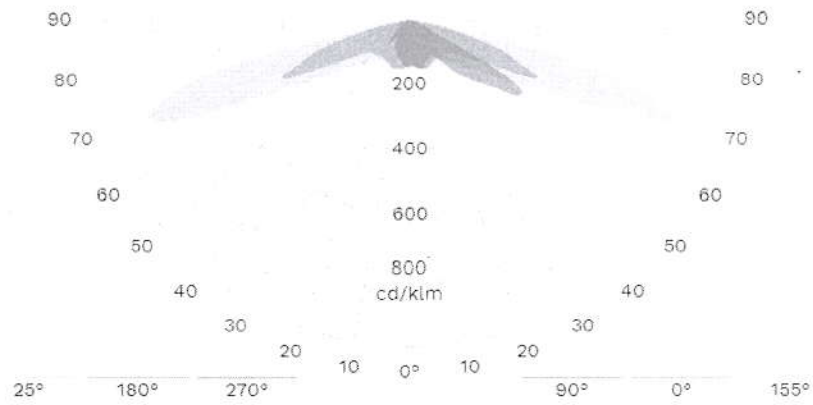
Axia 3 comes pre-cabled, hence there is no need to open the luminaire. The complete range is available with an integrated universal fixation part adapted for post-top and side-entry mounting on various spigots (Ø32mm with adapter, Ø42-48mm, Ø60mm and Ø76mm). The inclination angle can be adjusted on-site for both post-top (-5°/+15°) and side-entry (-10°/+10°) configurations to optimise lighting, reduce power consumption and control light pollution.

This highly efficient, cost-effective and connected-ready luminaire, offers towns and cities the ideal solution to improve lighting levels, increase safety, generate energy savings and reduce their ecological footprint. Axia 3 is the ideal tool to provide another 25 years of efficiency, sustainability and safety.

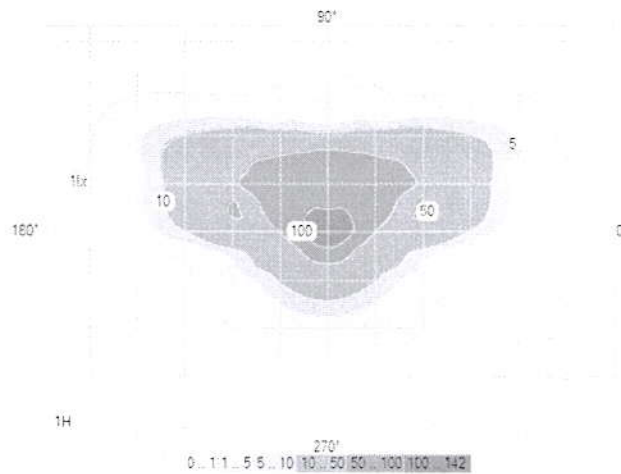




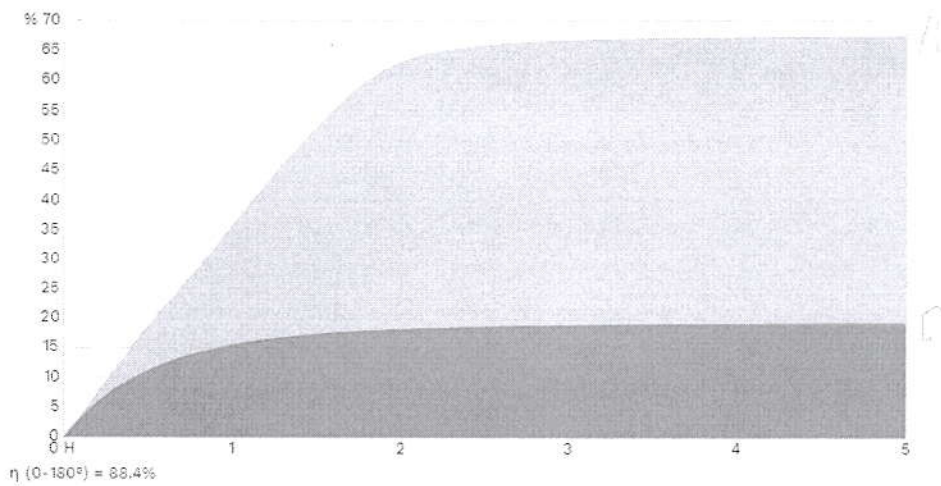
Polar/Cartesian diagram



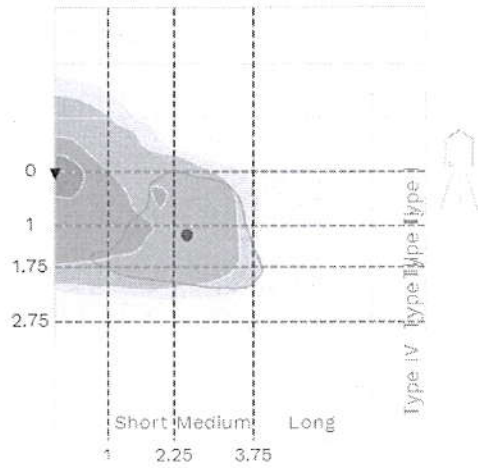
Isolux



K-Curve

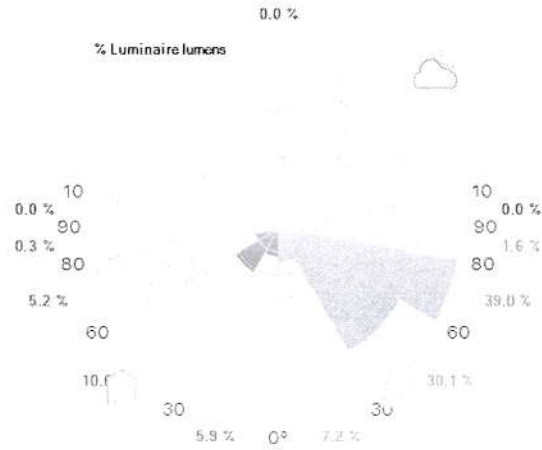


IES Roadway Classification / Nema Classification



III - Medium

Luminaire classification system (LCS)



Intensity diagram in max Cone and in CPlane



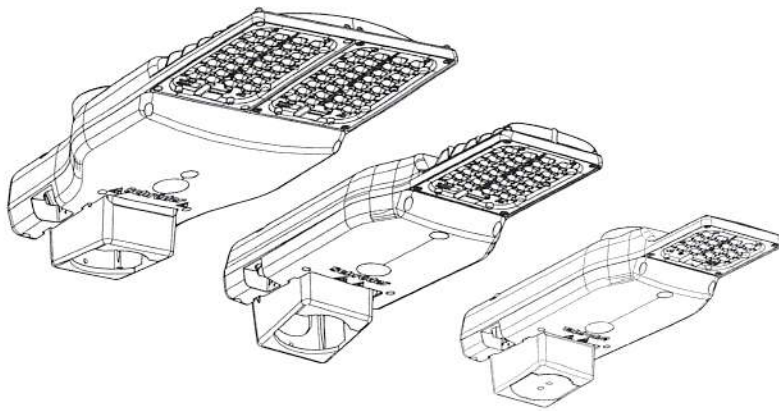
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<http://www.schreder.com>

AXIA 3.3 - 5267 - 64 Osram OSLOM SQUARE GIANT - Integrated lenses - 429224



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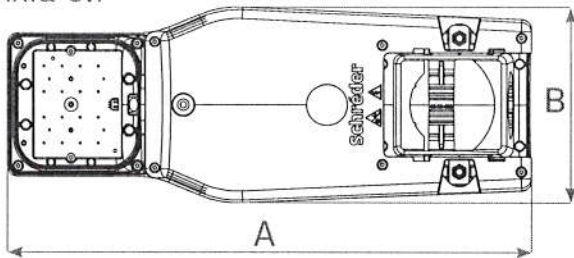
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Axia 3 3.1 - 3.2 - 3.3 Installation instructions

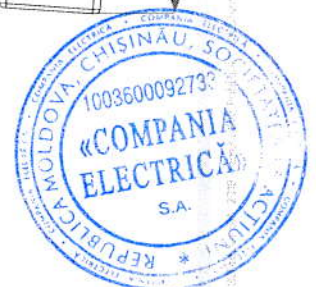
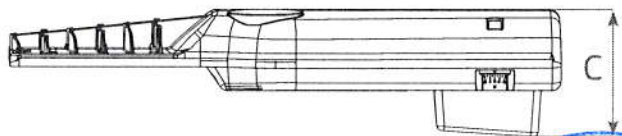
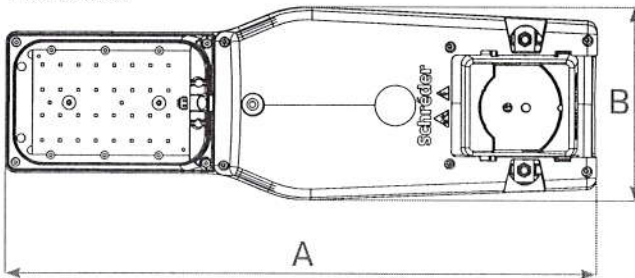


	Axia 3.1	Axia 3.2	Axia 3.3
A	513 mm	585 mm	550 mm
B	191 mm	191 mm	277 mm
C	130 mm	130 mm	130 mm
C _s	0,032m ²	0,030m ²	0,042m ²
kg	3,6 Kg	4,8 kg	6 kg

Axia 3.1

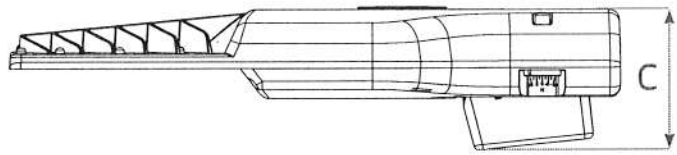
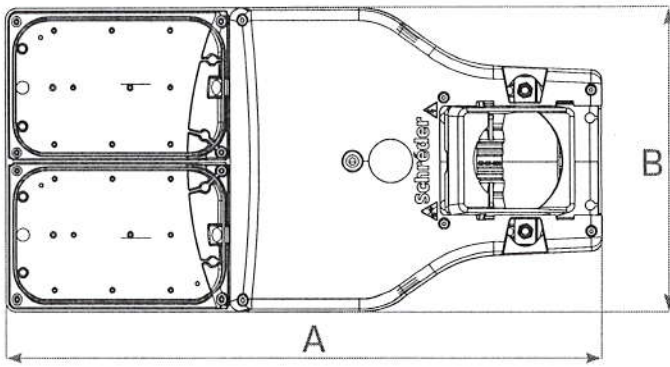


Axia 3.2

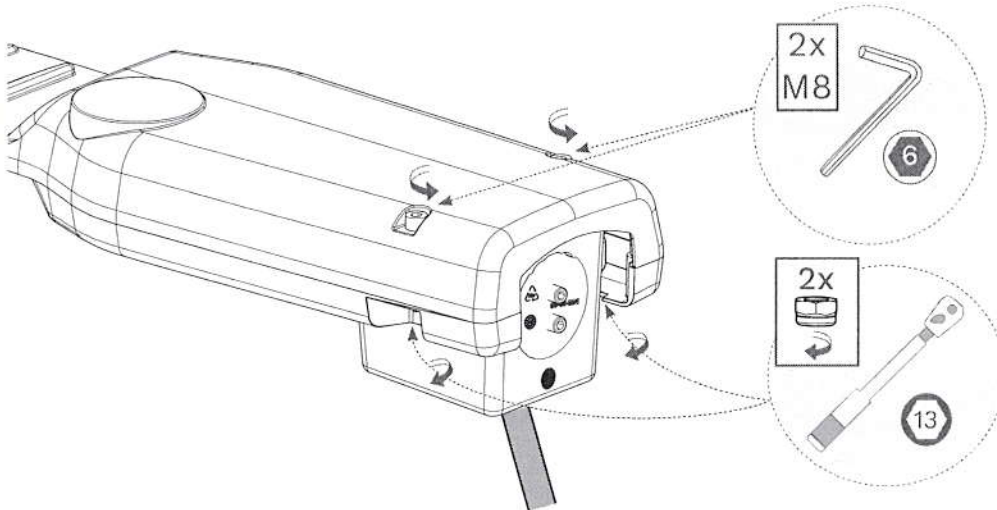


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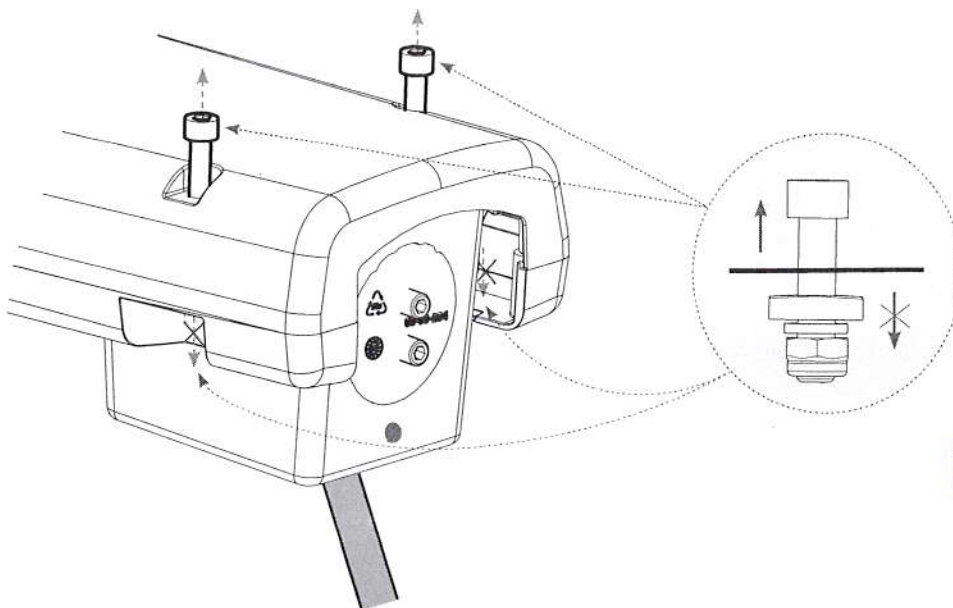
Axia 3.3



A 1

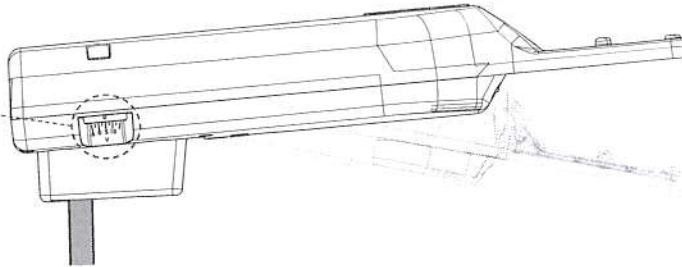
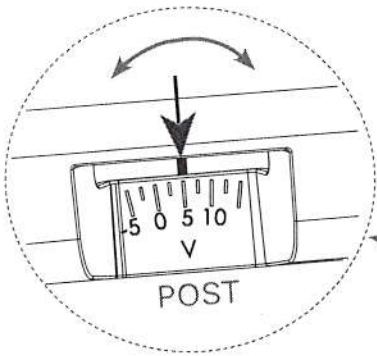
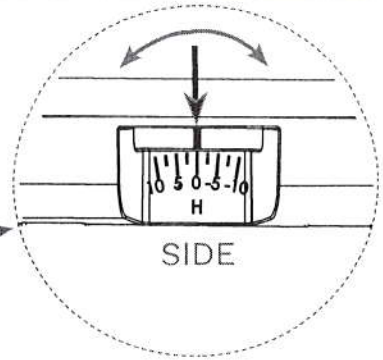
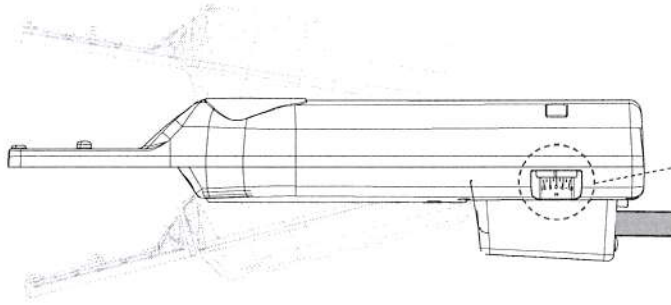


2



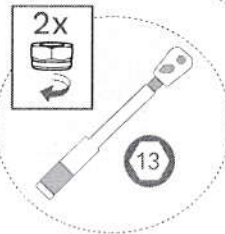
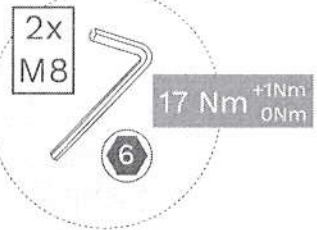
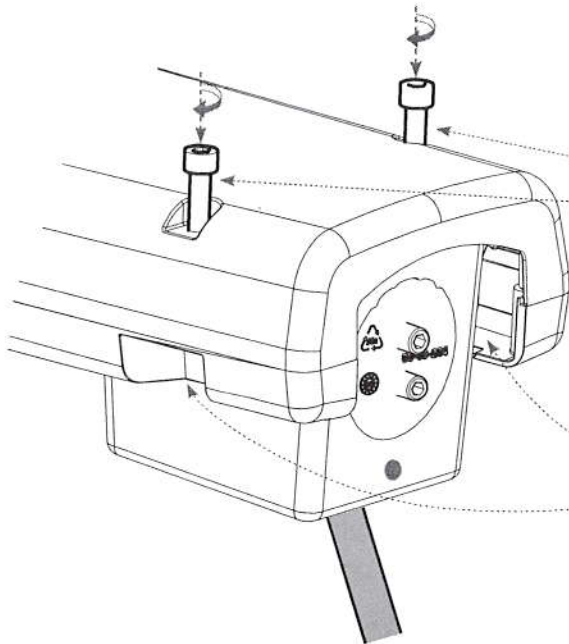
3

H
10°
7.5°
5°
2.5°
0°
-2.5°
-5°
-7.5°
-10°



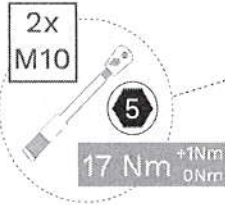
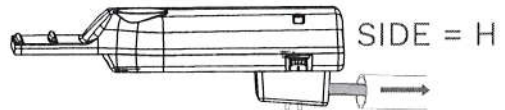
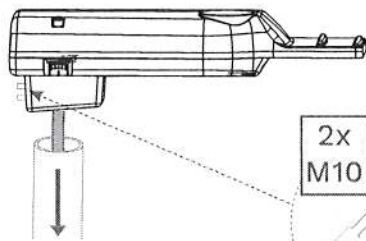
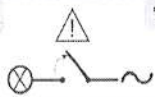
V
15°
12.5°
10°
7.5°
5°
2.5°
0°
-2.5°
-5°

4

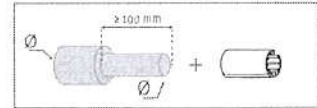


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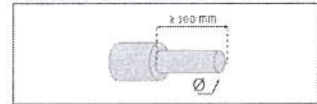
B 1 2



Ø 32mm



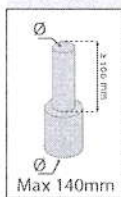
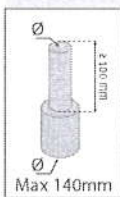
Ø 42->60mm



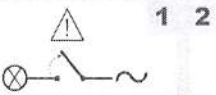
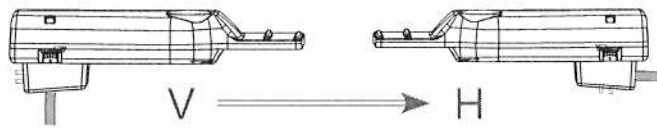
POST = V

Ø 60mm

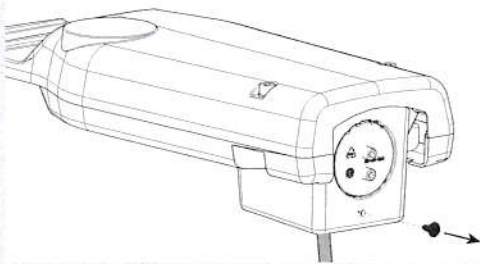
Ø 76mm



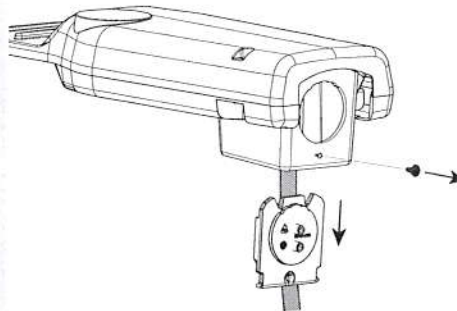
C



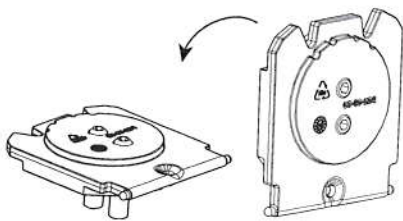
1 2



3

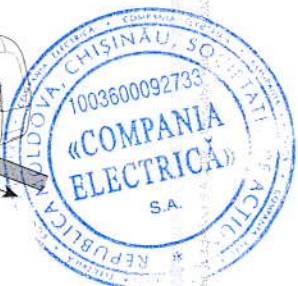
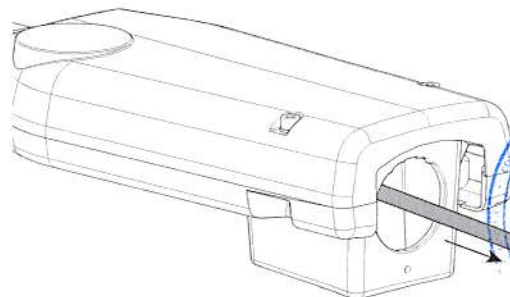
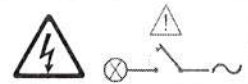


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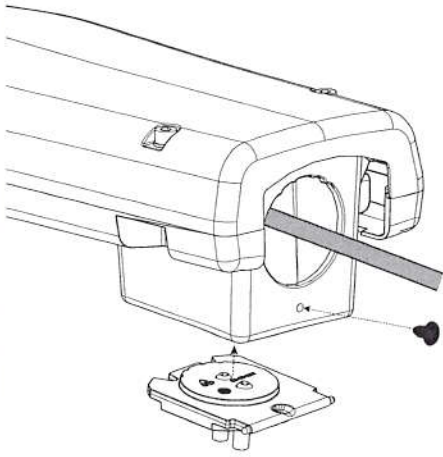


H ← V

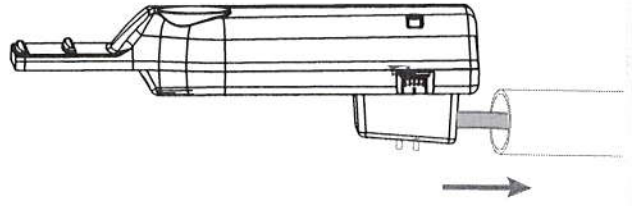
5



6

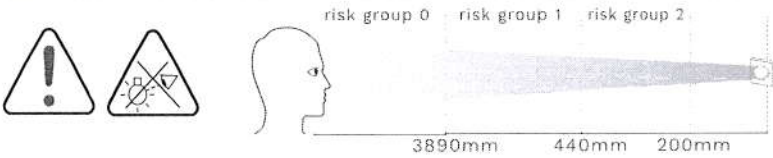


7



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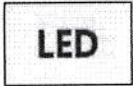
ENG	ITA	NLD	HUN
<p>SAFETY INSTRUCTIONS The light source contained in this luminaire shall only be replaced by the manufacturer or his service agent or a similar qualified person.</p> <p>Always switch off the power prior to installation, maintenance or repair activities.</p> <p>RISK GROUP 2 - CAUTION! 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 0.44m is not expected.</p> <p>In case of PVC insulated mains cable, the installer MUST ensure that the WHOLE cable is protected against climatic conditions, especially UV rays and rain, by making sure that the cable is contained inside the luminaire and pole.</p> <p>Y-connection: In case of damage to the wire, it has to be replaced only by the manufacturer, distributor or by an expert, to avoid risks.</p>	<p>ISTRUZIONI DI SICUREZZA La sorgente di luce contenuta in questo sistema di illuminazione dovrà essere sostituita solo dal produttore, dal suo agente di servizio o da una persona con qualifiche similari.</p> <p>Staccare sempre il filo della corrente prima di iniziare operazioni di installazione, manutenzione o riparazione.</p> <p>GRUPPO DI RISCHIO 2 - ATTENZIONE! Questo prodotto può emettere radiazioni ottiche potenzialmente pericolose. Non fissare la sorgente accesa. Potrebbe essere dannoso per gli occhi. L'apparecchio dovrebbe essere posizionato in modo da non permettere di fissare a lungo l'apparecchio a una distanza inferiore di 0.44m.</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>VEILIGHEIDSINSTRUCTIES De lichtbron in deze armatuur dient uitsluitend door de fabrikant, diens onderhoudsvertegenwoordiger of een persoon met vergelijkbare kwalificaties te worden vervangen.</p> <p>Schakel altijd de stroom uit voordat u aan installatie, onderhoud of reparaties begint.</p> <p>RISICOGROEP 2 - LET OPI! Dit product kan eventueel gevaarlijke optische straling vorkomen. 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 0.44meter niet verwacht wordt.</p> <p>In het geval van PVC-geïsoleerde voedingskabels MOET de installateur ervoor zorgen dat de GEHELE kabel wordt beschermd tegen klimaatomstandigheden, met name UV-stralen en regen, door ervoor te zorgen dat de kabel zich in het armatuur en de paal bevindt.</p> <p>Y-verbinding: in geval van schade aan de draad dient deze te worden vervangen door de fabrikant, de distributeur of door een expert, om risico's te vermijden.</p>	<p>BIZTONSÁGI ÚTMUTATÓ A lámpatestetben található fényforrást kizárólag a gyártó, szervizképviseelője vagy hivatalos szakszervező szakembere cserélheti ki.</p> <p>A szerelés, karbantartás és javítás előtt minden esetben végezzen áramtalanítást.</p> <p>KOCKÁZATI CSOPORT 2 - VIGYÁZATI A berendezés veszélyes optikai sugárzást bocsáthat ki. Ne nézzen bele a bekapcsolott lámpatestbe! Szemet károsító hatás léphet fel. A lámpatestet úgy ajánlott pozícionálni, hogy rálátás esetén a lámpatest ne legyen 0.44m-nél közelebb!</p> <p>UV szigetelésű tápkábel esetén a telepítőknek biztosítani KELL, hogy a T.E.L.I.E.S 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-csatlakozó: A sérült vezetőket kizárólag a gyártó, forgalmazó vagy szakember cserélheti ki a kockázatok elkerülése végett.</p>
<p>SICHERHEITSHINWEISE Die Leuchte darf nur vom Hersteller bzw. von dessen Kundendienst oder einer ähnlich qualifizierten Person ausgetauscht werden.</p> <p>Schalten Sie die Stromversorgung vor Installations-, Wartungs- und Reparaturarbeiten stets ab.</p> <p>Risikogruppe 2 - VORSICHT! Von diesem Produkt kann möglicherweise gefährliche optische Strahlung ausgehen. Es ist darauf zu achten, dass man nie eingeschaltetem Zustand der Leuchte nicht innerhalb einer Distanz von 0.44m direkt in die Leuchte schaut. Dies könnte schädlich für Ihre Augen sein.</p> <p>Bei Verwendung eines PVC-isolierten Netzkabels MUSS der Installateur sicherstellen, dass das GESAMTE Kabel vor klimatischen Bedingungen -insbesondere vor UV-Strahlen und Regen- geschützt ist, indem sichergestellt wird, dass das Kabel in der Leuchte und dem Mast verschlossen ist.</p> <p>Y-Verbindung: Falls die Leitung beschädigt ist, darf diese nur vom Hersteller, dem Händler oder einem Experten ersetzt werden, um Risiken zu vermeiden.</p>	<p>ISTRUKCJA BEZPIECZENSTWA Zróżdo światła zamieniane w tej sprawie może być wymieniane wyłącznie przez producenta, pracownika serwisu lub inną wykwalifikowaną osobę.</p> <p>Przed rozpoczęciem instalacji, konserwacji lub naprawy należy bezwzględnie odłączyć zasilanie elektryczne.</p> <p>GRUPA RYZYKA 2 - OSTRZEŻENIE - Produkt może emitować niebezpieczne promieniowanie optyczne szkodliwe dla oczu. Nie należy patrzeć bezpośrednio na pracującą źródło światła. Oprawy powinna być tak zamontowana, aby jej długostrzałowa obserwacja była możliwa z odległości nie mniejszej niż 0.44m.</p> <p>W przypadku kabla sieciowego izolowanego PVC instalator MUSI upewnić się, że kabel CAŁY jest chroniony przed warunkami klimatycznymi. W szczególności przed promieniowaniem UV i deszczem, upewniając się, że kabel znajduje się wewnątrz oprawy i stupa.</p> <p>Połączenie Y - ze względów bezpieczeństwa uszkodzony przewód powinien zostać wymieniony wyłącznie przez producenta, dystrybutora lub wykwalifikowanego elektryka.</p>	<p>инструкция безопасности Замену источника света для этого светильника должно выполнять только призыв, сервисный или представитель или специалист с аналогичной квалификацией.</p> <p>Перед проведением установки, сервисного обслуживания или ремонта всегда отключайте питание устройства.</p> <p>ГРУППА РИСКА 2 - ВНИМАНИЕ! Возможно опасное оптическое излучение от этого изделия. Не смотрите на источник света. Может быть вредно для глаз. Светильник должен быть расположен таким образом, чтобы было невозможно смотреть на него с расстояния менее 0.44м.</p> <p>В случае кабеля питания с ПВХ изоляцией, монтажник ДОЛЖЕН обеспечить защиту ВСЕГО кабеля от воздействия климатических условий, особенно от ультрафиолетовых лучей и дождя, убедившись, что кабель находится внутри светильника и опоры.</p> <p>Подключение Y: в случае повреждения кабеля его замена производится только производителем, дистрибьютором или специалистом.</p>	<p>інструкція безпеки Змінювати світло, що міститься у цьому світильнику, повинні зводити лише виробник, його сервісний агент або кваліфікована особа.</p> <p>Перед виконанням монтажу, сервісного обслуговування чи ремонту завжди відключайте живлення пристрою.</p> <p>ГРУПА РИЗИКУ 2 - УВАГА! Можливо небезпечно оптичне випромінювання від цього продукту. Уникайте прямого погляду на вмищені джерело світла. Може бути шкідливо для очей. Светильник має бути розташований так, щоб уникнути прямого споглядання з відстані ближче, ніж 0.44м.</p> <p>У випадку кабелю з ізоляцією з ПВХ, монтажник ДОЛЖЕН забезпечити захист ВСЬОГО кабелю від впливу кліматичних умов, особливо від ультрафіолетових променів та дощу, переконуючись, що кабель знаходиться всередині світильника та опори.</p> <p>У'єднання Y: у разі пошкодження дроту його має замінити лише виробник, дистриб'ютор чи експерт, щоб уникнути ризиків.</p>
<p>INSTRUCIÓNS DE SEGURIDADE La source lumineuse contenue dans ce luminaire doit être uniquement remplacée par le fabricant, son agent de maintenance ou une autre personne disposant des qualifications appropriées.</p> <p>Mettez toujours l'appareil hors tension avant toute opération d'installation, d'entretien ou de réparation.</p> <p>RISQUE GROUPE 2 - ATTENTION! Ce produit émet potentiellement des rayons dangereux pour la vue. Regardez 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 0.44m.</p> <p>Dans le cas d'un câble secteur isolé en PVC, l'installateur DOIT s'assurer que le câble ENTIER est protégé contre les conditions climatiques, en particulier les rayons UV et la pluie, en s'assurant que le câble est contenu à l'intérieur du luminaire et du poteau.</p> <p>Connexion Y: si le câble est endommagé, il ne peut être remplacé que par le fabricant, par le distributeur ou par un expert, afin d'éviter tout risque.</p>	<p>INSTRUCCIONES DE SEGURIDAD Solo el fabricante, un agente del servicio técnico o persona con cualificación similar puede sustituir la fuente de luz de este sistema de iluminación.</p> <p>Apague siempre el interruptor de alimentación antes de realizar tareas de instalación, mantenimiento o reparación.</p> <p>GRUPO DE RIESGO 2 - PRECAUCIÓN! radiación óptica posiblemente peligrosa emitida por este producto. No mire a la lámpara en funcionamiento. Puede ser dañino para los ojos. El sistema de iluminación debe instalarse de modo que la mirada fija prolongada a la luminaria, a una distancia menor de 0.44m no se espere.</p> <p>En el caso de un cable aislado de PVC, el instalador DEBE asegurarse de que todo el cable esté protegido contra las condiciones climáticas, especialmente los rayos UV y la lluvia, asegurándose de que el cable esté dentro de la luminaria y el poste.</p> <p>Conexión en Y: si el cable se daña, solo debe reemplazarlo el fabricante, un distribuidor o un experto para evitar riesgos.</p>	<p>INSTRUCIÓES DE SEGURANÇA A fonte de luz no interior deste candeeiro deve ser substituída apenas pelo fabricante, pelo seu técnico de assistência ou por uma pessoa com qualificação equivalente.</p> <p>Desligue sempre a alimentação antes de proceder a actividades de instalação, manutenção ou reparação.</p> <p>GRUPO DE RISCO 2 - ATENÇÃO! Possível risco ótico por radiação emitida a partir deste produto. Não olhe para a luz em funcionamento. Pode ser prejudicial para os olhos. A luminária deve ser posicionada de modo que não seja expectável um olhar prolongado para a luminária em funcionamento a uma distância inferior a 0.44m.</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>UPUTSTVA Izvor svetla u ovom rasvetnom telu može da zameni samo proizvođač, njegov servisni agent ili na sličan način kvalifikovana osoba.</p> <p>Uvek isključite napajanje pre instalacije, održavanja ili popravka.</p> <p>GRUPA RIZIKA 2 - PAŽNJA! Proizvod može emitovati štetno optičko zračenje. Izbegavati vizuelni kontakt sa svetlosnim izvorom dok je u radu. Možeće oštećenje vida. Svetiljku treba pozicionirati tak da se ne očekuje duži vizuelni kontakt sa izvorom sa razdaljinije manje od 0.44m.</p> <p>U slučaju napajnog kabla sa PVC izolacijom, izvođač MORA obezbediti zaštitu CELOG kabla od klimatskih uslova, posebno UV zračenja i kiše, tako što će osigurati da se kabla nalazi unutar svetiljke i stupa.</p> <p>Y-vezica: u slučaju oštećenja žice zamenu mora da obaví isključivo proizvođač, distributer ili stručnjak kako bi se izbegao rizik.</p>
<p>ISTRUCIUNEA DE EXPLOATARE ÎN SIGURANŢĂ ALE PRODUCĂTORULUI Sursa de lumină din acest corp de iluminat trebuie înlocuită numai de producător sau de reprezentantul său de service sau o persoană ce deține calificări similare.</p> <p>Opriți întotdeauna alimentarea electrică înainte de lucrările de instalare, întreținere sau reparații.</p> <p>GRUP DE RISC 2 - ATENŢIE! Este posibil ca acest produs să emită radiații optice periculoase. Nu priviți direct însoțire lămpa înfăștată 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 însoțire lămpa, la o distanță mai mică de 0.44m.</p> <p>În cazul cablului de alimentare cu izolație din PVC, instalatorul TREBUIE să se asigure că TOT cablul este protejat împotriva condițiilor climatice, mai ales împotriva razelor UV și a ploii, asigurându-se că acest cablu este plasat în interiorul aparatului de iluminat și al stălpului.</p> <p>Conexiune Y: în caz de deteriorare a frunziului, acesta trebuie înlocuit numai de către producător, distribuitor sau un expert, pentru evitarea riscurilor.</p>	<p>安全守則 及び製品内の光源は必ずメーカーまたはその代理店または同等資格を持った人によってのみ交換してください。</p> <p>設置・保守・修理作業を行う前に必ず電源を遮断してください。</p> <p>危険レベル 2 - 注意! 本製品の発光部からは有害な光線が放射される可能性があります。発光部を直接見ると、目に有害な影響を及ぼす可能性があります。照明器具の設置は、通常、0.44m以下から直接発光部を見ることがないようにしてください。</p> <p>もしPVC製のケーブルを使用する場合は、ケーブル全体が気象条件（特に紫外線と雨）から保護されることを確認してください。</p> <p>Y接続：ケーブルが損傷した場合、必ずメーカー、ディストリビューター、または専門家にのみ交換してください。</p>	<p>SIKKERHEDSINSTRUKTIONER Udsigten i dette armatur må kun udskiftes af producenten, af en vedligeholdelses/sikkerhedsudbedt udpeg af producenten eller af en tilsvarende kvalificeret virksomhed.</p> <p>Sluk altid for strømmen inden påbegyndelse af installation, vedligeholdelse eller reparation.</p> <p>Risikogruppe 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 0.44m, undgås.</p> <p>I tilfælde af PVC-isoleret ledning SKAL elektrikeren sikre, at HELE kablet er beskyttet mod klimatiske forhold, end gælder især UV-stråler og regn. Elektrikeren skal derfor sørge for, at kablet forbliver inde i armaturet og masten.</p> <p>Type Y montering: Hvis det ekstern kabell 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>SAKERHETSINSTRUKTIONER Utsikten mot monteres i denna armatur får endast ersättas av en skrädder-anställd eller annan kvalificerad person.</p> <p>Stäng alltid av strömmen före installation, underhåll eller reparation.</p> <p>Risikgrupp 2 - VARNING! Eventuellt farlig optisk strålning från denna produkt. Stirra ej på driftlampor. Kan vara skadligt för ögonen. Armaturen bör placeras så att långvarigt stirrande in i armaturen på ett avstånd som är närmare än 0.44m ej är möjligt.</p> <p>Vid PVC-isolerad kabel måste elektrikererna se till att HELE kablet är skyddat mot klimatiska påverkan, särskilt UV-strålning och regn. Detta gäller även om kabin monterats i armaturen och stölp.</p> <p>Om den externa kabell eller ledning på denna armatur är skadad, får den inte bytas ut av en servicepartner till producenten eller motsvarande kvalificerad person, för att undvika skador.</p>



RTECH-PHOTOMETRY LABORATORY

Testreport : Measurement of luminous intensity distribution related to the standard
 NBN-EN 13032-1; NBN-EN 13032-4; CIE 121-1996; CIE S 025/E; IES LM-79-08 and procedures PT-P-01
 and PT-P-02

rue de Mons, 3 B-4000 LIEGE - Tel : 04/224.71.40 - Fax : 04/224.25.90
 Measurement for Schröder group.



Origin Schröder Socelec S.A.	Production Schröder Socelec S.A.	Luminaire AXIA 3.3	Inclination 0°	Request # FD39060
Source				
Type LED	BIN 40-70M-5-N6	Trademark Osram	Reference OSLON SQUARE GIANT	# LEDs 64
Reflector Schreder Led assembly Road lighting Assembled 0,0°				No 5267
Protector Refractor Lens				
Protector Lens	integrated lenses Gaggione 5267 PC			
Laboratory observation				
AXIA 3.3 with 64 Osram Oslon square giant bin 40-70M-5-N6 Used flux for efficiency matrix calculation = 11487 lm - CCT = 3862 K - CRI = 70,79 (see sphere test report 2019/188 and 2019/189).				
Purpose CTR	Sample date 21-03-2019		Sample # 39R099	
Observation				
DOC AXIA 3.3 with lenses 5267 Rev. H / reglage D Matrix /3 and /4 with inclination of 1°				
Notes				
The publication of this report in another form than the original one is not allowed without agreement of the laboratory. This report concerns type tests on one or a series of specimens.				



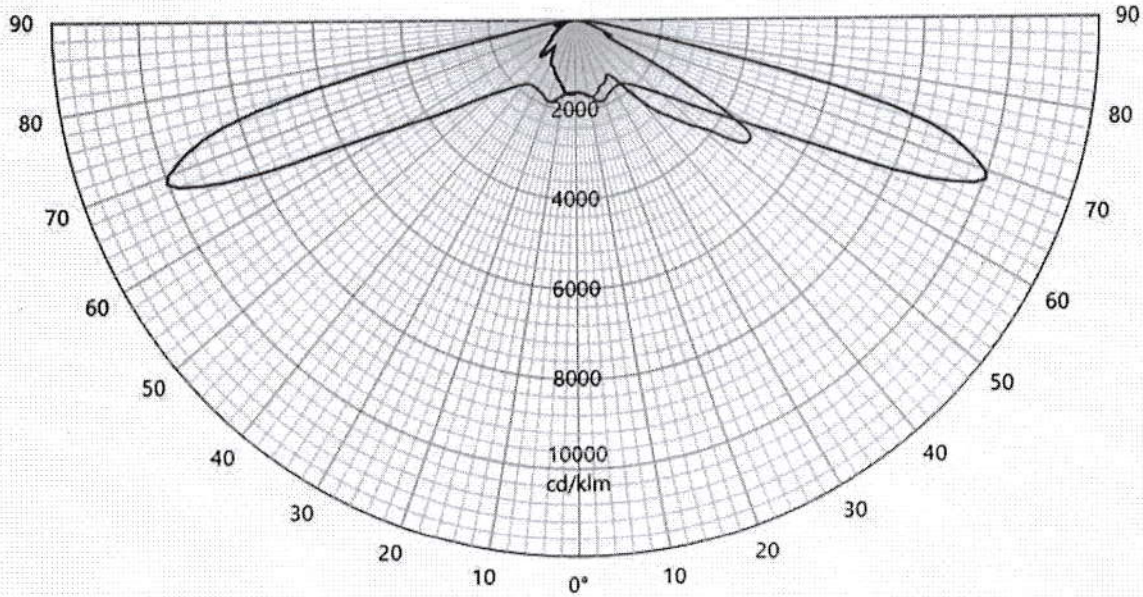
Asked by RCA	Measured by CLD	Approved by RLABO	Appendix 0	226-TEST NBN EN ISO/IEC 17025 : 2005	42922
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LUMINOUS INTENSITY DIAGRAM

Origin Schröder Socelec S.A.		Production Schröder Socelec S.A.		Luminaire AXIA 3.3	Inclination 0°	Request # FD39060
Source	Type LED	BIN 40-70M-5-N6	Trademark Osram	Reference OSLON SQUARE GIANT	# LEDs 64	Reflector 5267
Reflector	Schröder Led assembly Road lighting Assembled 0,0°				No	5267
Matrices	429221		Φ 0-90° = 10159lm - 90-180° = 0lm		Absolute measurement	
Protector Refractor Lens	Protector integrated lenses Lens 64 x Gaggione 5267 PC					
Observation	Matrix in total flux @350mA Electrical measurement on LED (#1): Voltage = 176.23 V Current = 0,350 A Power = 61,71 W Driver #1 : Delta Elektronika DELTA SM400-AR-B dc Power Supply 0-400V ; 0-8A ; pcb: 00-57-144 C					

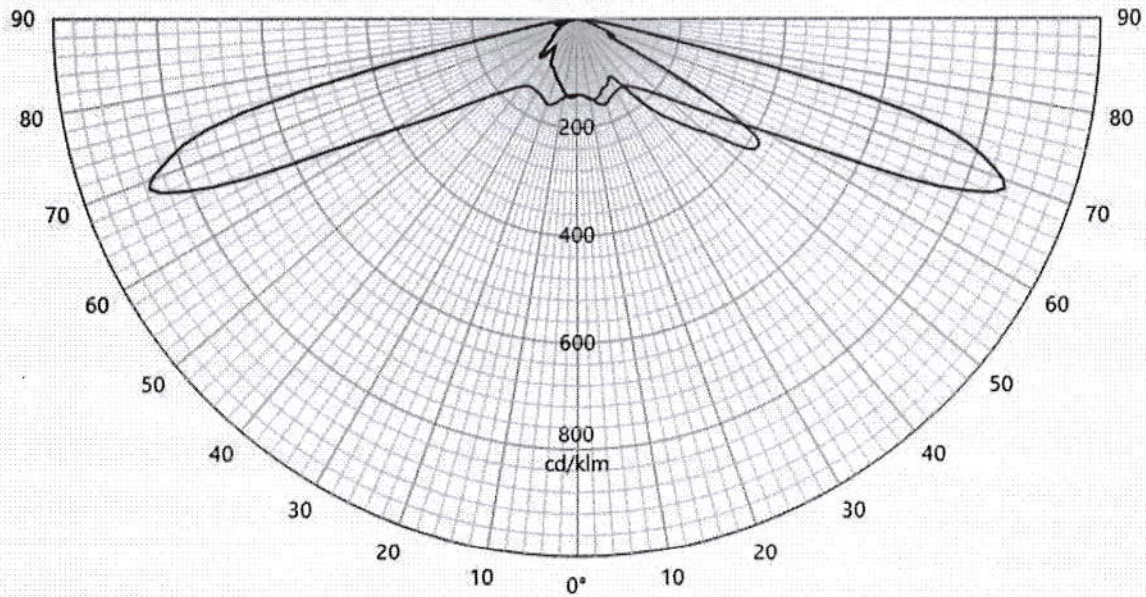
Plane	I Peak	Peak position	Index	I zero	Laboratory ambient t°	Measurement date	↕
25 - 155	10034	69	S	1602	24,9°	22-03-2019	
90	4810	56	D				
270	1646	5	G				



LUMINOUS INTENSITY DIAGRAM

Origin Schröder Socelec S.A.		Production Schröder Socelec S.A.		Luminaire AXIA 3.3		Inclination 0°		Request # FD39060	
Source	Type LED	BIN 40-70M-5-N6	Trademark Osram		Reference OSLON SQUARE GIANT	# LEDs 64	Reflector 5267		
Reflector	Schröder Led assembly Road lighting Assembled 0,0°					No	5267		
Matrices	429222		η 0-90° = 88,4% - 90-180° = 0,0%				Relative measurement		
Protector Refractor Lens	Protector integrated lenses Lens 64 x Gaggione 5267 PC								
Observation	Matrix in efficiency @350mA Electrical measurement on LED (#1): Voltage = 176,23 V Current = 0,350 A Power = 61,71 W Driver #1 : Delta Elektronika DELTA SM400-AR-B dc Power Supply 0-400V : 0-8A : pcb: 00-57-144 C								

Plane	I Peak	Peak position	Index	I zero	Laboratory ambient t°	Measurement date	↕
25 - 155	873	69	S	139	24,9°	22-03-2019	
90	419	56	D				
270	143	5	G				



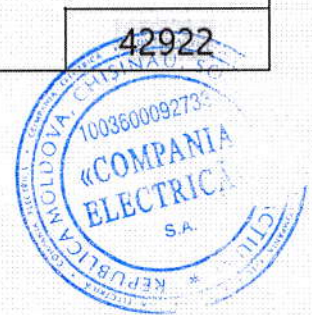
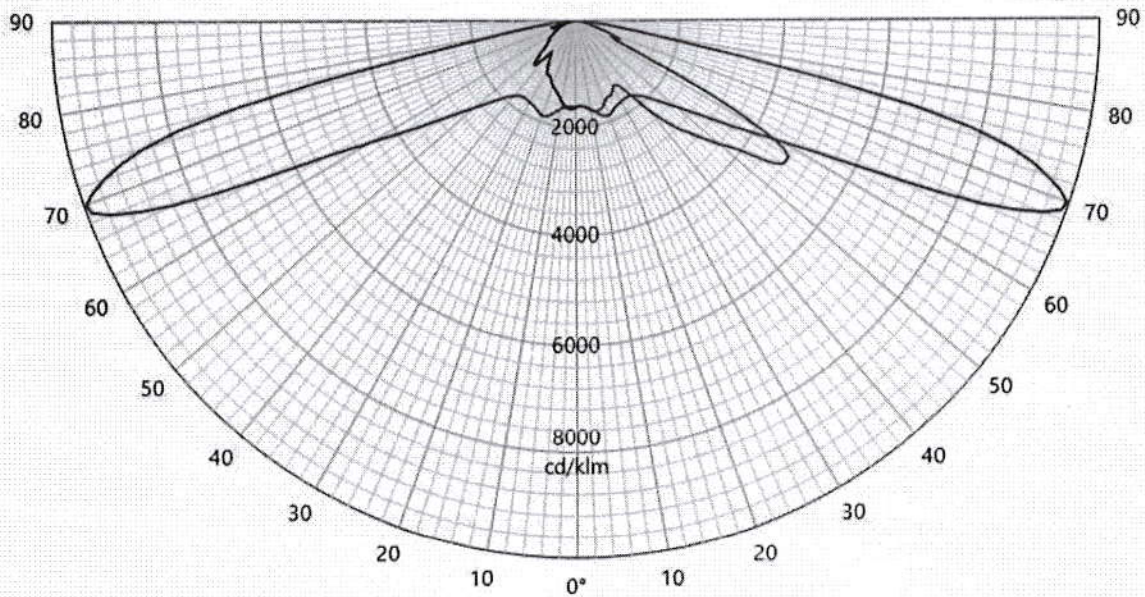
42922



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LUMINOUS INTENSITY DIAGRAM

Origin Schröder Socelec S.A.		Production Schröder Socelec S.A.		Luminaire AXIA 3.3		Inclination 0°		Request # FD39060	
Source	Type LED	BIN 40-70M-5-N6	Trademark Osram	Reference OSLON SQUARE GIANT	# LEDs 64	Reflector 5267			
Reflector	Schröder Led assembly Road lighting Assembled 0,0°				No	5267			
Matrices	429223		Φ 0-90° = 10158lm - 90-180° = 1lm			Absolute measurement			
Protector Refractor Lens	Protector integrated lenses Lens 64 x Gaggione 5267 PC								
Observation	Matrix in total flux @350mA with inclination of 1° Electrical measurement on LED (#1): Voltage = 176,23 V Current = 0,350 A Power = 61,71 W Driver #1 : Delta Elektronika DELTA SM400-AR-8 dc Power Supply 0-400V ; 0-8A ; pcb: 00-57-144 C								
Plane	I Peak	Peak position	Index	I zero	Laboratory ambient t°	Measurement date		⊕	
155	9955	70	S	1617	24,9°	01-04-2019			
90	4810	57	D						
270	1646	4	G						

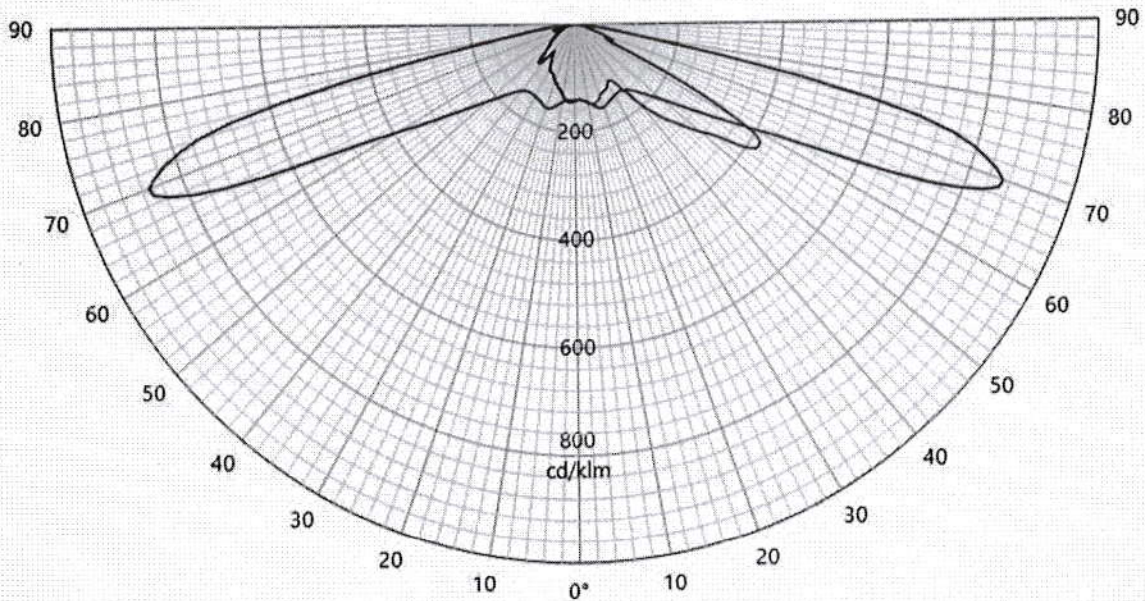


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LUMINOUS INTENSITY DIAGRAM

Origin Schröder Socelec S.A.		Production Schröder Socelec S.A.		Luminaire AXIA 3.3		Inclination 0°		Request # FD39060	
Source		Type LED	BIN 40-70M-5-N6	Trademark Osram		Reference OSLON SQUARE GIANT		# LEDs 64	Reflector 5267
Reflector		Schröder Led assembly Road lighting Assembled 0,0°						No	5267
Matrices		429224 η 0-90° = 88,4% - 90-180° = 0,0%						Relative measurement	
Protector Refractor Lens		Protector integrated lenses Lens 64 x Gaggione 5267 PC							
Observation		Matrix in efficiency @350mA with inclination of 1° Electrical measurement on LED (#1): Voltage = 176.23 V Current = 0,350 A Power = 61,71 W Driver #1 : Delta Elektronika DELTA SM400-AR-8 dc Power Supply 0-400V ; 0-8A ; pcb: 00-57-144 C							

Plane	I Peak	Peak position	Index	I zero	Laboratory ambient t°	Measurement date	⊕
155	867	70	S	141	24,9°	01-04-2019	
90	419	57	D				
270	143	4	G				



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CONFORMITY STATEMENT

Measurement fulfil Standards:

NBN-EN 13032-1
 NBN-EN 13032-4
 NBN-EN 17025:2005
 CIE 121-1996
 LM79-08
 CIE S 025

Measurement quantities measured:

Light distribution in relative or absolute photometry
 Led alone cold lumen package
 Led CCT and CRI
 Power consumption of the fitting
 Lm/watt

Electrical measurement, if not specified:

Primary values are AC with 50Hz frequency
 Secondary values on SSL are DC

CCT, CRI and chromaticity coordinates: are measured in Ulbricht sphere.
 If specified Main test report refer to sphere extra test report.

Light distribution are measured on gonio. If not otherwise specified, measurement is done at 50 Hz

Number of hours operated prior to measurement: if not otherwise specified, 0 hours (no aging).

Stabilization time: If not otherwise specified, a minimal stabilization time of 0.5 hour is applied; and measurement will start when it exists no more variation above 0.5% in 15 minutes

Total operating time of the product including stabilization:
 45 minutes have to be added by measurement.
 Minimal operating time is 75 minutes

Luminous intensity distribution: available on electronic file with
 .mat format (internal Schröder format)
 .ldt format (European standard)
 .IES format (American standard)

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

Intensity measurement: +/- 3%
 Angle: +/- 0.5°
 Flux: +/- 2.5%
 Electrical DC
 Power: +/- 0.25%
 Voltage: +/- 0.15%
 Current: +/- 0.15%
 Electrical AC
 Power: +/- 0.15%
 Voltage: +/- 0.3%
 Current: +/- 0.3%
 Temperature: +/- 0.65%



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

lm/Watt: +/-3.5%

Measuring instruments in use:

Gonio 1

Type C with Moving mirror

Manufacturer: LMT Lichtmesstechnik GmbH Berlin, Helmholtzstrasse 9 10587 Berlin, Germany

Type: GO-DS 2000

Calibration: traceable to PTB (Physikalisch-Technische Bundesanstalt D-Braunschweig) and METAS (Federal Institute of Metrology, CH-Bern)

Photometric test distance: By default 10 meter, on request 30 meter.

Gonio 2

Type C

Manufacturer: Technoteam Bildverarbeitung, Werner-von-Siemens-Strasse 5 98693 Ilmenau, Germany

Calibration: traceable to BIPM (Bureau International des Poids et Mesures F-Sèvres)

Photometric test distance: Near Field

Sphere n°1

4p geometry

Manufacturer: LMT Lichtmesstechnik GmbH, Helmholtzstrasse 9 10587 Berlin, Germany

Type: UL2000 + U1000 V-Lambda photometer

Calibration: traceable to BIPM (Bureau International des Poids et Mesures F-Sèvres)

Sphere n°2

4p geometry

Manufacturer: Instrument Systems GmbH, Neumarkter Str. 83, 81673 Muenchen, Germany

Type: ISP2000 + Spectroradiometer CAS120 and CAS140

Calibration: traceable to NIST

Colorimetric portable spectroradiometer

Manufacturer: JETI Technische Instrumente GmbH, Tatzendpromenade 2 07745 Jena

Type: SPECBOS 1201

Calibration: traceable to NIST

Multimeters

Manufacturer: Agilent

Type: 34401A

Calibration: traceable to BIPM (Bureau International des Poids et Mesures F-Sèvres)

Wattmeters

Manufacturer: Yokogawa

Type: WT210 and WT310

Calibration: traceable to BIPM (Bureau International des Poids et Mesures F-Sèvres)

Thermometers

Amarell Precision

Type: Liquid in glass N63833

Calibration: traceable to LBT (Laboratoire Belge de Thermométrie)

