ETICS-CoA-002-2018

ETICS *European Testing Inspection and Certification System*

CERTIFICATE OF ACCEPTANCE

SGS Belgium N.V. - Division SGS CEBEC

Bld. Internationalelaan, 55/D, Brussels Belgium

has been assessed and determined to fully comply with the requirements of EN-ISO/IEC 17065, PD ECS 050 and the Rules of Procedure relevant to the European Schemes for which the responsible CB is member.

SGS Belgium N.V. – Division SGS CEBEC

is therefore entitled to operate as Certification Body within the European Schemes ENEC, ENEC+, CCA, CCA EMC, HAR and KMK for the Scope (Product Category(ies) and Standard(s)) as listed in the relevant part of the ETICS Web Site at www.etics.org.

This certificate remains valid until 15th January 2021, at which time it will be reissued by the ETICS Secretary General upon successful completion of the normally scheduled 3-year Reassessment Programme administered by the ETICS.

Brussels, 15 January 2018

Giancarlo Zappa, Secretary General

Signatory to EA, ILAC and IAF Multilateral Agreements

Organisme belge d'Accréditation
Belgische Accreditatie-instelling
Belgian Accreditation Body

Annexe au certificat d'accréditation
Bijlage bij accreditatie-certificaat
Annex to the accreditation certificate
Beilage zur Akkreditatierungszertifikat

226-TEST

NBN EN ISO/IEC 17025:2005

Version/Versie/Version/Fassung	7
Date d'émission / Uitgiftedatum / Issue date / Ausgabedatum:	2016-05-19
Date limite de validité / Geldigheidsdatum / Validity date / Gültigkeitsdatum:	2021-05-27

Nicole Meurée-Vanlaethem
La Présidente du Bureau d'Accréditation
Voorzitster van het Accreditatiebureau
Chair of the Accreditation Board
Vorsitzende des Akkreditierungsbüro

L'accréditation est délivrée à/ De accreditatie werd uitgereikt aan/
The accreditation is granted to/ Die akkreditierung wurde erteilt für:

LABORATOIRE DE PHOTOMETRIE DE R-TECH
Rue de Mons, 3
4000 LIEGE

BELAC BELAC BELAC

Secrétariat :
Service public fédéral Economie, P.M.E., Classes moyennes et Energie
Direction générale de la Qualité et de la Sécurité
Division Qualité et Innovation
Bd du Roi Albert II 16
1000 Bruxelles
Website : http://economie.fgov.be
Numéro d'entreprise : 0314.595.348

Accréditation B E L A C Accreditatie

Tel.: +32 2 277 54 34
Fax: +32 2 277 54 41

Internet: http://belac.fgov.be
E-mail: Belac@economie.fgov.be

Secretariaat:
Federale Overheidsdienst Economie, K.M.O., Middenstand en Energie
Algemene Directie Kwaliteit en Veiligheid
Afdeling Kwaliteit en Innovatie
Koning Albert II-laan 16
1000 Brussel
Website: http://economie.fgov.be
Ondernemingsnummer: 0314.595.348

.be

E6-0030

Code essai ***Test Code***	**Echantillons** ***Samples***	**Caractéristique mesurée** **Gamme de mesure** ***Measurement*** ***Measurement range***	**Description méthode d'essai** **Equipement** ***Testing Methodology Description*** ***Equipment***
PTP-01	Lampes à incandescence ou à décharge pour luminaires. *Incandescent or high intensity discharge lamp for luminaires.*	Flux lumineux exprimé en lumen (lm) *Luminous flux in lumen (lm)*	Mesure du flux lumineux en sphère d'Ulbricht selon la norme de référence EN 13032-1§ 6.1.2. Pour toutes lampes sauf les LED (Solid State Lighting) *Luminous flux measurement with Ulbright's sphere according to EN 13032 § 6.1.2 Standard for all light sources exept LED (Solid State Lighting)*
PTP-01	Sources lumineuses de type LED pour luminaires. *Led light source for luminaires.*	Flux lumineux exprimé en lumen (lm) *Luminous flux in lumen (lm)*	Mesure du flux lumineux en sphère d'Ulbricht selon la norme de référence EN 13032-1§ 6.1.2 et IES LM79-08. Pour LEDS (Solid State Lighting) *Luminous flux measurement with Ulbright's sphere according to EN 13032 § 6.1.2 and IES LM79-08 Standard. For LED (Solid State Lighting)*
PTP-02	Luminaires pour lampes à incandescence ou à décharge *Luminaires for incandescent, HID lamp*	Distribution des intensités lumineuses exprimées en candela (cd) *Light distribution in candela (cd)*	Relevé photométrique au goniophotomètre selon la norme de référence EN 13032-1 et CIE 121-1996 Pour toutes lampes sauf les LED (Solid State Lighting) *Light distribution measurement with gonio according to EN 13032-1 and CIE 121-1996 Standard for all light sources exept LED (Solid State Lighting)*
PTP-02	Luminaires à sources lumineuses de type LED pour luminaires. *Luminaires for LED light sources.*	Distribution des intensités lumineuses exprimées en candela (cd) *Light distribution in candela (cd)*	Relevé photométrique au goniophotomètre selon la norme de référence EN 13032-1, CIE 121-1996 et IES LM79-08 Pour les LED (Solid State Lighting) *Light distribution measurement with gonio according to EN 13032-1, CIE 121-1996 and IES LM79-08 Standard. For LED (Solid State Lighting)*

Code essai ***Test Code***	**Echantillons** ***Samples***	**Caractéristique mesurée** **Gamme de mesure** ***Measurement*** ***Measurement range***	**Description méthode d'essai** **Equipement** ***Testing Methodology Description*** ***Equipment***
PTP-09	Lampes à incandescence ou à décharge pour luminaires ou luminaires associés. *Incandescent or high intensity discharge lamp for luminaires or associated luminaires.*	Données colorimétriques : IRC, T° de couleur, coordonées trichromatiques, données spéctrales (domaine du visible) *Colorimetric values, CRI, CCT, tristimulus values, spectrum (visible range)*	Relevé colorimétrique en sphère via spectromètre selon la norme de référence EN 13032-1 et CIE 13.3, 15, 63, 121-1996 S014 (1,2 et 3) Pour équipements lumineux sauf ceux incluant des LED (Solid State Lighting) *Colorimetric measurement with spectrometric sphere to EN 13032-1 and CIE 13.3, 15, 63, 121-1996 S014 (1,2 et 3) Standard for all light equipement exept LED (Solid State Lighting)*
PTP-09	Sources lumineuses de type LED pour luminaires ou luminaires associés. *Led light source for luminaires or associated luminaires.*	Données colorimétriques : IRC, T° de couleur, coordonées trichromatiques, données spéctrales (domaine du visible) *Colorimetric values, CRI, CCT, tristimulus values, spectrum (visible range)*	Relevé colorimétrique en sphère et spectromètre selon la norme de référence EN 13032-1 et CIE 13.3, 15, 63, 121-1996 S014 (1,2 et 3) et IES LM79-08 pour équipements lumineux à LED (Solid State Lighting) *Colorimetric measurement with spectrometric sphere according to EN 13032-1 et CIE 13.3, 15, 63, 121-1996 S014 (1,2 et 3) and IES LM79-08 Standard. For LED light equipement (Solid State Lighting)*

Organisme belge d'Accréditation
Belgische Accreditatieinstelling
Belgische Akkreditierungsstelle
Belgian Accreditation Body

Signatory to EA, ILAC and IAF
Multilateral Agreements

Accreditation Certificate No. 226-TEST

In compliance with the provisions of the Royal Decree of 31 January 2006 setting up BELAC, the Accreditation Board hereby declares, that the test laboratory

LABORATOIRE DE PHOTOMETRIE DE R-TECH
Rue de Mons, 3
4000 LIEGE - Belgium

has the competence to perform the tests as described in the annex which is an integral part of the present certificate, in accordance with the requirements of the standard NBN EN ISO/IEC 17025:2005. The present accreditation is the subject of regular surveillance in order to confirm the compliance with the accreditation conditions.

The Chair of the Accreditation Board BELAC,

Issue date : **2016-05-19**

Validity date : **2021-05-27**

Nicole MEURÉE-VANLAETHEM

Original version of this certificate is in French.

.be

16-8040

SGS

TESTARE SUPERVIZATĂ DE PRODUCĂTOR

Raport nr. CEBEC-002B

SGS Belgia NV

Divizia SGS CEBEC

Business Riverside Park
Bld Internationalelaan, 55 Build. D
B-1070 Brussels - Belgium

Activând ca și Organism National de Certificare participare la Sistemul de Organisme de Certificare (CB Scheme) si Sistemul de certificare European (ECS), se recunoaşte următorul laborator ca

SMT laboratory nr.CEBEC-002

operând în conformitate cu prescripţiile de certificare IECEE CB și sistemul de certificare ECS (CCA și ENEC).

Laborator aprobat, nume si adresă:

Service laboratoire
R-TECH S.A.
Rue de Mons, 3
B-4000 LIEGE

Fabricile producătorului:

Fabrici Europene
aparţinând
Schreder Group G.I.E.

Produse menţionate în contract:

Categorie	Standarde	Produse
LITE	IEC/EN 60598-1	Aparate de iluminat
	IEC/EN 60598-2-1	Aparate de iluminat de uz general
	IEC/EN 60598-2-3	Aparate de iluminat stradal
	IEC/EN 60598-2-5	Proiectoare
	IEC/EN 60598-2-5	Aparate de iluminat încastrate în sol

Brussels, 2013-02-01

ir. C. Lana,
Director de Certificare

SGS Belgium NV
CEBEC

SUPERVISED MANUFACTURER'S TESTING

Report nr. CEBEC-002B

SGS Belgium NV

Division SGS CEBEC

Business Riverside Park
Bld Internationalelaan, 55 Build. D
B-1070 Brussels - Belgium

Acting as national Certification Body participation in the Certification Bodies Scheme (CB Scheme) and the European Certification System (ECS) has recognized the following laboratory as

SMT laboratory nr. CEBEC-002

Operating in the framework of the IECEE CB-scheme and ECS certification system (CCA and ENEC).

Approved laboratory, name and address:

Service Laboratoire
R-TECH S.A.
Rue de Mons, 3
BE-4000 LIEGE

Manufacturing factories:

European Factories
Belonging to the
Schréder Group G.I.E.

Products covered by the contract:

Category	Standards	Products
LITE	IEC/EN 60598-1	Luminaires
	IEC/EN 60598-2-1	Fixed general purpose luminaires
	IEC/EN 60598-2-3	Luminaires for road and street lighting
	IEC/EN 60598-2-5	Floodlights
	IEC/EN 60598-2-13	Ground recessed luminaires

Brussels, 2013-02-01

ir. C. Lana,
Certification Manager

BUREAU VERITAS
Certification

TUNGSRAM-SCHRÉDER ZRT.

2084 Pilisszentiván, Tópart 2., Hungary

Bureau Veritas Certification Holding SAS – UK Branch certifies that the Management System of the above organisation has been audited and found to be in accordance with the requirements of the management system standards detailed below

ISO 9001:2015

Scope of certification

Design, manufacturing, sales of lighting fittings, their supporting structures and street furnitures

Original cycle start date:	**27 June 2015**
Expiry date of previous cycle:	**26 June 2018**
Certification / Recertification Audit date:	**9 June 2018**
Certification / Recertification cycle start date:	**27 June 2018**
Subject to the continued satisfactory operation of the organization's Management System, this certificate expires on:	**26 June 2021**

Certificate No. HU003979 Version: **1** Revision date: ***26 June 2018***

Certification body address: 5th Floor, 66 Prescot Street, London E1 8HG, United Kingdom
Local office: Budafoki út 56., H-1117 Budapest, Hungary

Further clarifications regarding the scope of this certificate and the applicability of the management system requirements may be obtained by consulting the organization. To check this certificate validity please call: +36 1 802 6900

UKAS MANAGEMENT SYSTEMS
0008

REPUBLICA MOLDOVA, CHIŞINĂU, SOCIETATEA PE ACTIUNI
1003600092733
«COMPANIA ELECTRICĂ» S.A.

BUREAU VERITAS
Certification

Schreder TOV

46B, Mykulynetska Str., Ternopil, 46005, Ukraine

Bureau Veritas Certification Holding SAS – UK Branch certifies that the Management System of the above organisation has been audited and found to be in accordance with the requirements of the management system standards detailed below

ISO 9001:2015

Scope of certification

Manufacturing and sales of lighting equipment.

Original cycle start date:	**05 November 2010**
Expiry date of previous cycle:	**04 November 2019**
Certification / Recertification Audit date:	**20 September 2019**
Certification / Recertification cycle start date:	**05 November 2019**

Subject to the continued satisfactory operation of the organization's Management System, this certificate expires on: **04 November 2022**

Certificate No. **UA229416** Version: **0** Revision date: **30 September 2019**

Olena Svyrydenko
Signed on behalf of BVCH SAS UK Branch

BUREAU VERITAS Certification
UKAS MANAGEMENT SYSTEMS
0008

*Certification body address: **5th Floor, 66 Prescot Street, London E1 8HG, United Kingdom***
*Local office: **5th floor, 28, Simon Petlyura St., Kyiv, 01032, UKRAINE***

Further clarifications regarding the scope of this certificate and the applicability of the management system requirements may be obtained by consulting the organisation.
To check this certificate validity please call: **+380 44 354 16 00**

BUREAU VERITAS
Certification

TUNGSRAM-SCHRÉDER ZRT.

2084 Pilisszentiván, Tópart 2., Magyarország

A Bureau Veritas Certification Holding SAS – UK Branch tanúsítja, hogy a fenti szervezet irányítási rendszerét értékelte és az alább feltüntetett irányítási rendszer szabvány követelményeinek megfelelőnek találta

ISO 14001:2015

A tanúsított rendszer alkalmazási területe

Lámpatestek, tartószerkezetek és utcabútorok tervezése, gyártása és értékesítése

Eredeti regisztráció dátuma:	**2015. június 27.**
Előző ciklus lejárati ideje:	**2018. június 26.**
Tanúsító / Újratanúsító audit időpontja:	**2018. június 9.**
Tanúsítási ciklus kezdete:	**2018. június 27.**
Az irányítási rendszer folyamatos megfelelő működése mellett ez a tanúsítvány érvényes:	**2021. június 26.**

Tanúsítvány száma: ***HU003981*** Verzió: **1** dátum: ***2018. június 26***

Tanúsító szervezet címe: ***5th Floor, 66 Prescot Street, London E1 8HG, United Kingdom***
Kiállító iroda: ***Bureau Veritas Magyarország Kft., Budafoki út 56., Budapest H-1117, Magyarország***

UKAS MANAGEMENT SYSTEMS
0008

*Amennyiben további információra lenne szüksége a tanúsítvány alkalmazási területét, illetve érvényességét illetően a tanúsító szervezetnél további információhoz juthat. A tanúsítvány érvényességét a következő telefonszámon ellenőrizheti: **+36 1 802 6900.***

1003600092733 «COMPANIA ELECTRICĂ» S.A.

BUREAU VERITAS
Certification

Certification

Awarded to

TUNGSRAM-Schréder Zrt.

H-2048 Pilisszentiván, Tópart 2.
Hungary

Bureau Veritas certifies that the Management System of the above organisation has been audited and found to be in accordance with the requirements of the management system standard detailed below:

Standard

OHSAS 18001:2007

Scope of supply

Design, manufacturing, sales of lighting fittings, their supporting structures and street furnitures

Original Approval Date: 22nd July 2015 Certification cycle start Date: 22nd July 2018
Subject to the continued satisfactory operation of the organisation's Management System, this certificate is valid until: 21st July 2021

To check this certificate validity please call: + 36 1 802 6900

Further clarifications regarding the scope of this certificate and the applicability of the management system requirements may be obtained by consulting the organisation.

Version 1, Revision Date: 12th July 2018

Certificate Number: CZE-180109

S 3100

MANAGING OFFICE: BUREAU VERITAS CZECH REPUBLIC, spol. s r.o., Olbrachtova 5, 140 02 Praha 4, Czech Republic
REGIONAL OFFICE ADDRESS: BUREAU VERITAS CZECH REPUBLIC, spol. s r.o., Olbrachtova 5, 140 02 Praha 4, Czech Republic

Certificate of Registration

This certificate has been awarded to

TOV SCHREDER

46005, Ukraine, Ternopil, Mykulynetska str., 46b

in recognition of the organization's Environmental Management System which complies with

ISO 14001:2015

The scope of activities covered by this certificate is defined below

Manufacture and Sale of Luminaires

Certificate Number:	Date of Issue: (Original)	Date of Issue:
203368/B/0001/UK/En	06 September 2019	06 September 2019
Issue No:	**Expiry Date:**	
1	05 September 2022	

Issued by: *On behalf of the Schemes Manager*

UKAS MANAGEMENT SYSTEMS 0043

Certificate of Registration

This certificate has been awarded to

TOV SCHREDER

46005, Ukraine, Ternopil, Mykulynetska str., 46b

in recognition of the organization's Health and Safety Management System which complies with

OHSAS 18001:2007

The scope of activities covered by this certificate is defined below

Manufacture and Sale of Luminaires

Certificate Number:	Date of Issue: (Original)	Date of Issue:
203368/B/0001/UK/En	06 September 2019	06 September 2019
Issue No:	**Expiry Date:**	
1	12 March 2021	

Issued by: *On behalf of the Schemes Manager*

0043

Data 20.06.2020

Reconstructia sistemului de iluminat public, din r-nul Orhei, com. Mirzesti

Proiectul cuprinde satele Mirzesti si Mirzaci

Obiect
3537, MOLDOVA, Orhei, s.Mîrzeşti, s. Mîrzești r. Orhei

Date tehnice privind produsul

Descriere

Pentru iluminatul rutier si pietonal, calculele luminotehnice trebuie sa asigure următoarelor obiective:
Drum central nivel de iluminat E mediu -6 lx, E minim -1 lx;
Drum secundar nivel de iluminat E mediu -2 lx, E minim -0.6 lx

Date pentru calcul: Drum central

Montaj: unilateral
Distanta intre piloni: 30...40 m
Lăţime carosabil: 6 m
Inaltimea pilonului: 7,6...8,1m
Retragere stâlp: 2 m
înălţimea de montare: 6,2...6,8m
Lungime consola: 1 m
Unghi înclinare PL: 0° - maxim 15°
Factor de menţinere: 0.85

Date pentru calcul: Drum secundar:

Montaj: unilateral
Distanta intre piloni: 35 m
Lăţime carosabil: 3.5-4 m
Inaltimea pilonului: 7,6...8,1m
Retragere stâlp: 0,5...1 m
înălţimea de nmontare: 6,2...6,8m

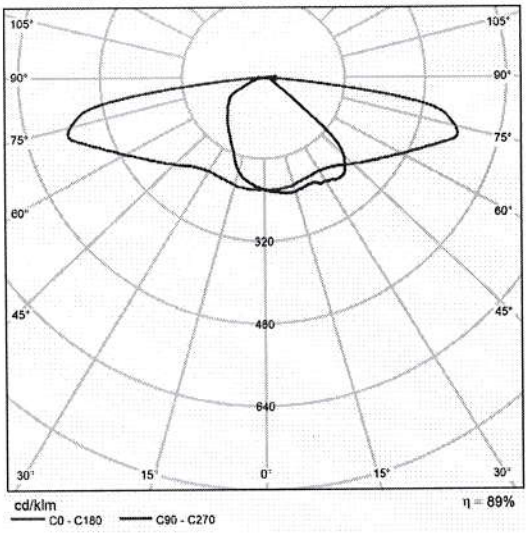
Lungime consola: 0,5 m
Unghi înclinare PL: 0° - maxim 15°
Factor de menţinere: 0.85

Fişa de date privind produsul

SCHREDER SKIDO 5122 Integrated lenses - 6 LH351C@700mA NW 740 230V 00-21-247 429352

Schréder

P	14.9 W
$\Phi_{Lampă}$	2099 lm
$\Phi_{Corp\ de\ iluminat}$	1870 lm
η	89.11 %
Eficienţa luminoasă	125.5 lm/W
CCT	4000 K
CRI	70



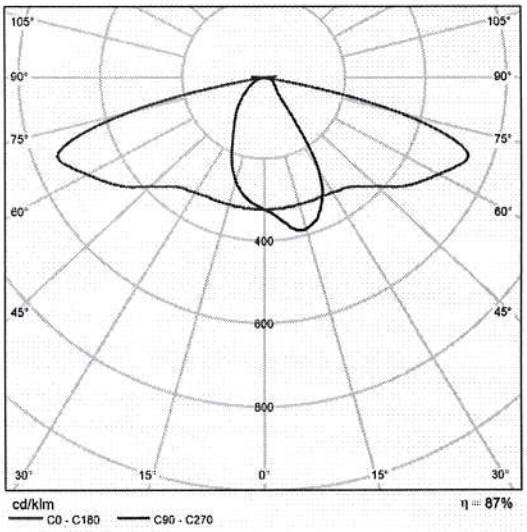
CDIL polar

Fişa de date privind produsul

SCHREDER VOLTANA 0 / 5136 / 8 LEDs 1000mA NW 740 / 425502

Schréder

P	28.0 W
$\Phi_{Lampă}$	3760 lm
$\Phi_{Corp\ de\ iluminat}$	3253 lm
η	86.52 %
Eficienţa luminoasă	116.2 lm/W
CCT	3000 K
CRI	100



CDIL polar

CONCEPT
Family of 6 road LED luminaires

Recommended installlation height: between 4m and 12mm
For optimal heat dissipation, the driver and LED engine are in separate compartments and juxtaposed in a horizontal section

HOUSING & FINISH
•Housing in high-pressure, die-cast aluminium, polyester powder coated
•Colour: RAL 7038

INSTALLATION
•Luminaire can be fixed by side-entry with a clamp, suitable for 42-60mm diameter
•Built-in inclination steps: -10°, -5°, 0°, 5°
•Post-top adapter diameter 48-60mm or 76mm, tightened with 2 stainless steel screws
•Direct access to the driver compartment with screws for easy maintenance on-site

OPTICAL UNIT
•Protected against lens degradation by 5mm thick extra-clear

Fişa de date privind produsul

SCHREDER VOLTANA 0 / 5136 / 8 LEDs 1000mA NW 740 / 425502

hardened glass
•Flatbed PCB with acrylic lens overlay principle
•Various photometric distributions: from narrow road to motorway, medium and large area
•CRI > 70
•ULOR: 0%

LED lumen depreciation
•Lifetime residual flux @ Tq=25°C @ 100.000 hrs: 350mA & 500mA; 90%; 700mA: 80%; 1A: 70%

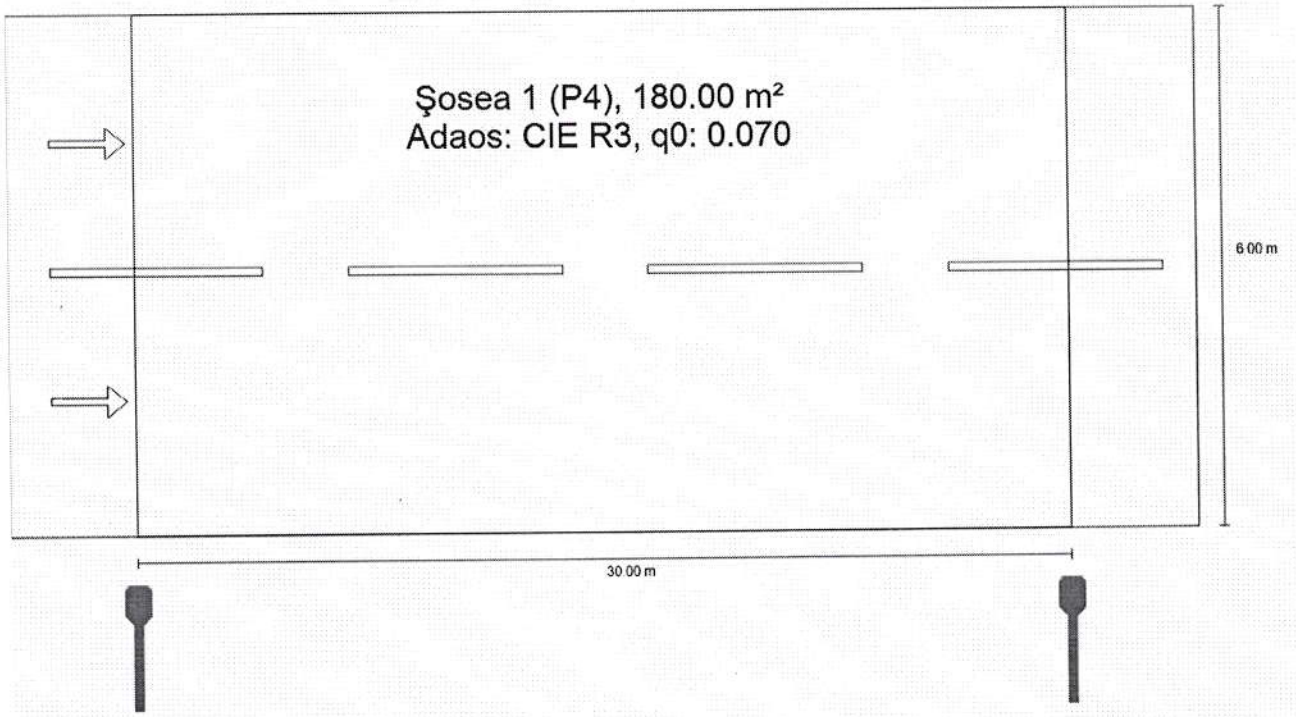
ELECTRICAL
•Class I or Class II
•Input voltage: 120-277V - 50-60Hz
•Power factor > 90% at full load
•Surge protection: 4kV minimum (10kV + 10kA optional)
•Thermal protection on LED PCBA (see Thermix concept)

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

OPTIONS
•Other RAL or AKZO colours
•Back Light control system
•OWLET remote management
•Custom dimming profile
•Photocell

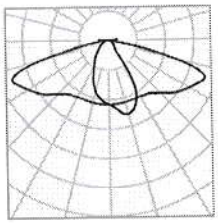
Stradă 1 · Alternativă 1

Rezumat (până la EN 13201:2015)



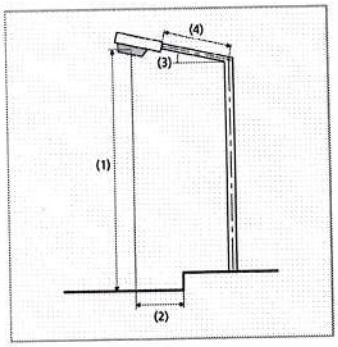
Stradă 1 · Alternativă 1

Rezumat (până la EN 13201:2015)



Producător	SCHREDER	P	28.0 W
Nr.articol		$\Phi_{Lampă}$	3760 lm
Nume articol	VOLTANA 0 / 5136 / 8 LEDs 1000mA NW 740 / 425502	$\Phi_{Corp\ de\ iluminat}$	3253 lm
		η	86.52 %
Dotare	1x 8 LEDs 1000mA NW 740		

VOLTANA 0 / 5136 / 8 LEDs 1000mA NW 740 / 425502 (Pe o parte Jos)



Distanţă stâlp	30.000 m
(1) Înălţimea punctului de lumină	6.500 m
(2) Ieşirea în consolă a punctului de lumină	-0.813 m
(3) Înclinare consolă	10.0°
(4) Lungime consolă	1.000 m
Număr anual de ore de funcţionare	4000 h: 100.0 %, 28.0 W
Consum	924.0 W/km
ULR / ULOR	0.00 / 0.00
Intensităţi luminoase max. Orice direcţie ce formează unghiul dat cu verticala în jos a corpurilor de iluminat instalate pentru utilizare.	≥ 70°: 638 cd/klm ≥ 80°: 256 cd/klm ≥ 90°: 6.14 cd/klm
Clasă intensitate luminoasă Valorile intensităţii luminoase în [cd/klm] pentru calculul clasei intensităţii luminoase se referă la fluxul luminos al corpului de iluminat, conform EN 13201:2015.	-

Stradă 1 · Alternativă 1

Rezumat (până la EN 13201:2015)

Clasă index ornamente	D.0

Rezultate pentru câmpurile de evaluare

	Mărime	Calculat	Nominal	Conform
Şosea 1 (P4)	TI	16 %	≤ 30 %	✓
	E_m (2)	8.77 lx	[6.00 - 9.00] lx	✓
	E_{min}	2.84 lx	≥ 1.00 lx	✓

(2) Valoare nominală modificată de proiectant, abatere de la standard

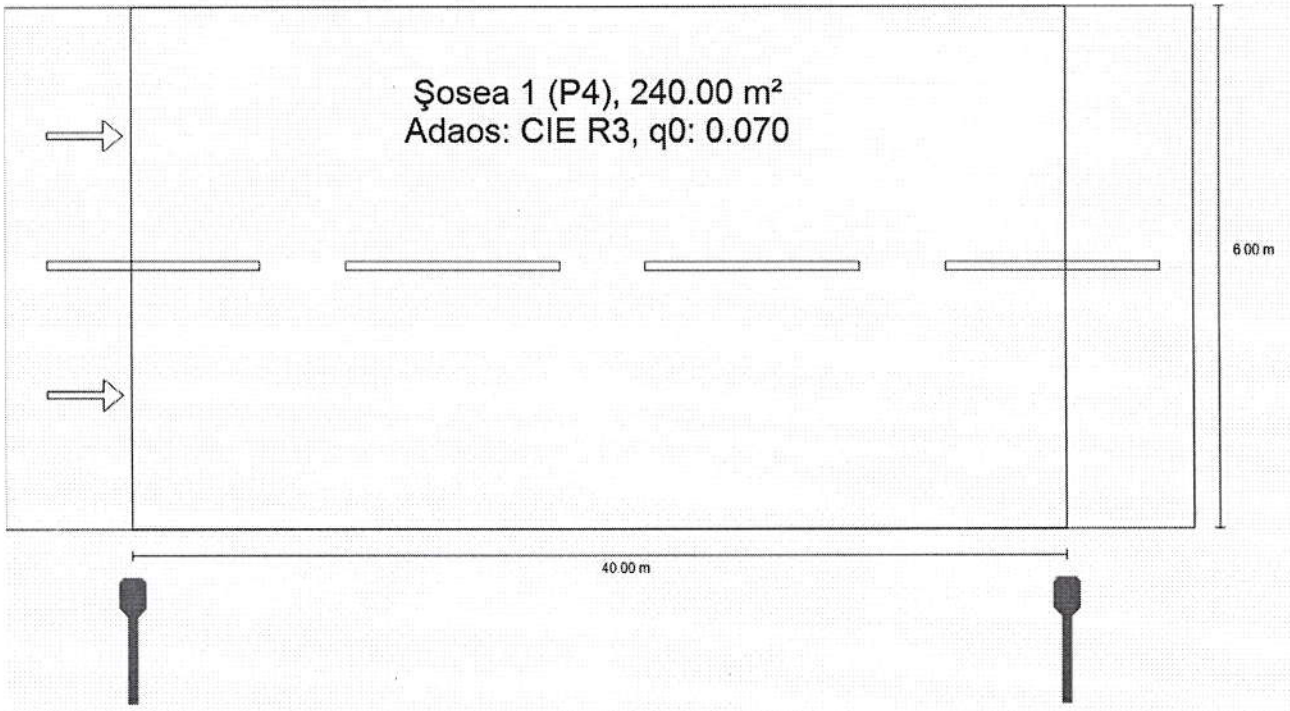
Pentru instalare s-a luat în calcul un factor de întreţinere de 0.85.

Rezultate pentru indicatorii de eficienţă energetică

	Mărime	Calculat	Consum
Stradă 1	D_p	0.018 W/lx*m²	-
VOLTANA 0 / 5136 / 8 LEDs 1000mA NW 740 / 425502 (Pe o parte Jos)	D_e	0.6 kWh/m² an	112.0 kWh/an

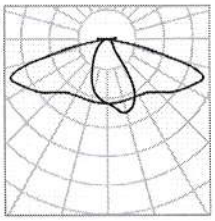
Drum secundar · Alternativă 2

Rezumat (până la EN 13201:2015)



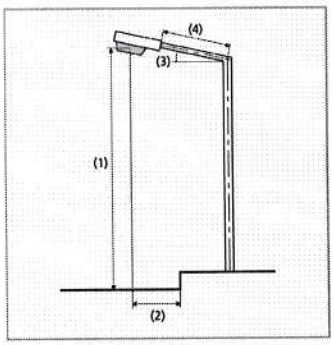
Drum secundar · Alternativă 2

Rezumat (până la EN 13201:2015)



Producător	SCHREDER	P	28.0 W
Nr.articol		$\Phi_{Lampă}$	3760 lm
Nume articol	VOLTANA 0 / 5136 / 8 LEDs 1000mA NW 740 / 425502	$\Phi_{Corp\ de\ iluminat}$	3253 lm
		η	86.52 %
Dotare	1x 8 LEDs 1000mA NW 740		

VOLTANA 0 / 5136 / 8 LEDs 1000mA NW 740 / 425502 (Pe o parte Jos)



Distanţă stâlp	40.000 m
(1) Înălţimea punctului de lumină	6.500 m
(2) Ieşirea în consolă a punctului de lumină	-0.813 m
(3) Înclinare consolă	10.0°
(4) Lungime consolă	1.000 m
Număr anual de ore de funcţionare	4000 h: 100.0 %, 28.0 W
Consum	700.0 W/km
ULR / ULOR	0.00 / 0.00
Intensităţi luminoase max. Orice direcţie ce formează unghiul dat cu verticala în jos a corpurilor de iluminat instalate pentru utilizare.	≥ 70°: 638 cd/klm ≥ 80°: 256 cd/klm ≥ 90°: 6.14 cd/klm
Clasă intensitate luminoasă Valorile intensităţii luminoase în [cd/klm] pentru calculul clasei intensităţii luminoase se referă la fluxul luminos al corpului de iluminat, conform EN 13201:2015.	-

Drum secundar · Alternativă 2

Rezumat (până la EN 13201:2015)

Clasă index ornamente	D.0

Rezultate pentru câmpurile de evaluare

	Mărime	Calculat	Nominal	Conform
Şosea 1 (P4)	E_m (2)	6.58 lx	[6.00 - 9.00] lx	✓
	E_{min}	1.76 lx	≥ 1.00 lx	✓
	TI (1)	19 %	-	-

(1) informativ, nu este parte a evaluării
(2) Valoare nominală modificată de proiectant, abatere de la standard

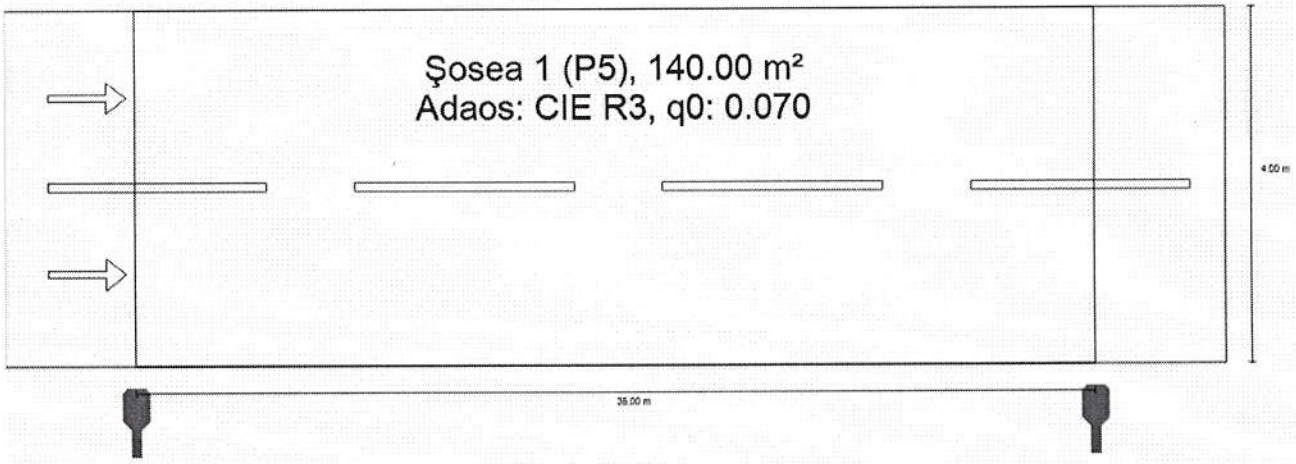
Pentru instalare s-a luat în calcul un factor de întreţinere de 0.85.

Rezultate pentru indicatorii de eficienţă energetică

	Mărime	Calculat	Consum
Drum secundar	D_p	0.018 W/lx*m²	-
VOLTANA 0 / 5136 / 8 LEDs 1000mA NW 740 / 425502 (Pe o parte Jos)	D_e	0.5 kWh/m² an	112.0 kWh/an

Drum secundar · Alternativă 3

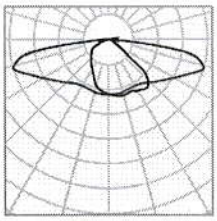
Rezumat (până la EN 13201:2015)



Drum secundar · Alternativă 3

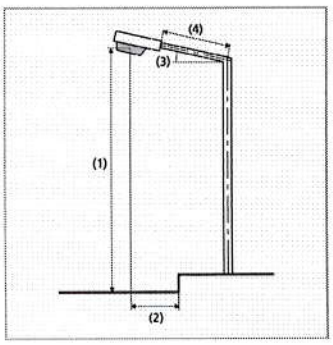
Rezumat (până la EN 13201:2015)

Schréder



Producător	SCHREDER	P	14.9 W
Nr.articol	429352	$\Phi_{Lampă}$	2099 lm
Nume articol	SKIDO 5122 Integrated lenses - 6 LH351C@700mA NW 740 230V 00-21-247 429352	$\Phi_{Corp\ de\ iluminat}$	1870 lm
		η	89.11 %
Dotare	1x 6 LH351C@700mA NW 740 230V 00-21-247		

SKIDO 5122 Integrated lenses - 6 LH351C@700mA NW 740 230V 00-21-247 429352 (Pe o parte Jos)



Distanţă stâlp	35.000 m
(1) Înălţimea punctului de lumină	6.500 m
(2) Ieşirea în consolă a punctului de lumină	-0.500 m
(3) Înclinare consolă	0.0°
(4) Lungime consolă	0.500 m
Număr anual de ore de funcţionare	4000 h: 100.0 %, 14.9 W
Consum	432.1 W/km
ULR / ULOR	0.00 / 0.00
Intensităţi luminoase max. Orice direcţie ce formează unghiul dat cu verticala în jos a corpurilor de iluminat instalate pentru utilizare.	≥ 70°: 593 cd/klm ≥ 80°: 431 cd/klm ≥ 90°: 7.68 cd/klm
Clasă intensitate luminoasă ii luminoase în [cd/klm] pentru	-

Drum secundar · Alternativă 3

Rezumat (până la EN 13201:2015)

calculul clasei intensităţii luminoase se referă la fluxul luminos al corpului de iluminat, conform EN 13201:2015.

Clasă index ornamente	D.2

Rezultate pentru câmpurile de evaluare

	Mărime	Calculat	Nominal	Conform
Şosea 1 (P5)	TI	18 %	≤ 30 %	✓
	E_m(2)	3.91 lx	[3.00 - 4.50] lx	✓
	E_{min}	1.52 lx	≥ 0.60 lx	✓

(2) Valoare nominală modificată de proiectant, abatere de la standard

Pentru instalare s-a luat în calcul un factor de întreţinere de 0.85.

Rezultate pentru indicatorii de eficienţă energetică

	Mărime	Calculat	Consum
Drum secundar	D_p	0.027 W/lx*m²	-
SKIDO 5122 Integrated lenses - 6 LH351C@700mA NW 740 230V 00-21-247 429352 (Pe o parte Jos)	D_e	0.4 kWh/m² an	59.6 kWh/an