

ELEKTROTECHNICKÝ ZKUŠEBNÍ ÚSTAV



ELECTROTECHNICAL TESTING INSTITUTE - CZECH REPUBLIC
ELEKTROTECHNISCHE PRUFANSTALT - TSCHIECHISCHE REPUBLIK
INSTITUT ELECTROTECHNIQUE D'ESSAIS - RÉPUBLIQUE TCHÈQUE
ЭЛЕКТРОТЕХНИЧЕСКИЙ ИСПЫТАТЕЛЬНЫЙ ИНСТИТУТ - ЧЕШСКАЯ РЕСПУБЛИКА

Pod Lisem 129, 171 02 Praha 8 - Troja

CERTIFIKÁT/CERTIFICATE

č./No.: 5170008

Objednatel/Ordering firm:

LUG Light Factory Sp. z o.o.
ul. Gorzowska 11, 65-127 Zielona Góra, Polsko/Poland

Výrobce/Držitel licence//Manufacturer/Licence holder:

LUG Light Factory Sp. z o.o.
ul. Gorzowska 11, 65-127 Zielona Góra, Polsko/Poland

Výrobní místo/Factory:

LUG Light Factory Sp. z o.o.
ul. Gorzowska 11, 65-127 Zielona Góra, Polsko/Poland

Výrobek/Name of product: Vestavná svítidla stropní pro všeobecné osvětlování/Fixed general purpose luminaires, recessed luminaires

Obchodní značka/Trade mark:

Typ/Type of product:

LUGCLASSIC LB LED PT
varianty/variants: 600X600, 625X625

Přesná specifikace výrobku je uvedena v příloze 1, která tvoří nedílnou součást tohoto certifikátu./Specification of the product is in the annex 1 that forms an integral part of this certificate.

Elektrotechnický zkušební ústav na základě splnění požadavků certifikačního schématu „ENEC“ uděluje licenci na užívání značky/Electrotechnical Testing Institute is granting according to the certification scheme „ENEC“ a licence for using the following mark



Touto značkou může být označován výrobek specifikovaný v tomto certifikátu po dobu platnosti níže uvedené smlouvy na užívání značky ENEC, při dodržení všech pravidel uvedených v této smlouvě./This mark may be used for the product specified in this certificate within validity of the Agreement on the use of the ENEC Mark by implementing all the rules stated in the Agreement.

Právo označovat výrobek výše uvedenou značkou je založeno na/The right to use the above mentioned mark for the product is based on:

- protokolu o zkouškách č./Test report No.: 700590-01/01 ze dne/of: 30.05.2017

Vzorek zkoušeného výrobku je ve shodě s požadavky/A sample of the product was tested and found to be in conformity with:
EN 60598-1:15, EN 60598-2-2:12

- provedení inspekce v místě výroby – viz inspekční zpráva č./inspection in the place of manufacture – see inspection report No.: 602766-01 ze dne/of 12.07.2016
- smlouvě na užívání značky ENEC mezi objednavatelem a Elektrotechnickým zkušebním ústavem č./the Agreement on the use of the ENEC Mark concluded between the ordering firm and the Electrotechnical Testing Institute No.: 700590

14.07.2017

V Praze dne/Prague

Mgr. Miroslav Sedláček
Vedoucí certifikačního orgánu/
Head of Certification Body



700590-01

Příloha licence č. 5170008 Annex to Licence No. 5170008	
Držitel licence Licensee	LUG LIGHT FACTORY SP. Z O. O 65-127 Zielona Góra ul. Gorzowska 11; Polska
Výrobce Manufacturer	LUG LIGHT FACTORY SP. Z O. O 65-127 Zielona Góra ul. Gorzowska 11; Polska
Druh svítidla Kind of luminaire	Vestavná svítidla Recessed luminaires
Typ svítidla Type reference	LUGCLASSIC LB LED p/t 600x600 LUGCLASSIC LB LED p/t 625x625
Obchodní značka Trade mark	
Protokol o zkoušce Test report	700590-01/01
Národní normy National standard(s)	ČSN EN 60598-2-2:2012 ČSN EN 60598-1:2015
Evropské normy European standard(s)	EN 60598-2-2:2011 EN 60598-1:2015
Jmenovité napětí Rated voltage	220 ÷ 240 V
Jmenovitý příkon a počet zdrojů Rated wattage and number of lamps	40W
Typ světelného zdroje Lamp identification	LED moduly LED modules
Stupeň krytí Degree of protection	IP 20
Připojení napájení Supply connection	Svorkovnice driveru Screwless terminal block in driver
Podkladová plocha Supporting surface	normálně hořlavý podklad normally flammable surface
Druh ochrany Protection against electric shock	tř. II. Cl.II.

Příloha licence č. 5170008 Annex to Licence No. 5170008			
EN 60 598-2-2			
Clause	Requirement – Test	Result – Remark	Verdict
	ANNEX ZB, SPECIAL NATIONAL CONDITIONS ENEC-301 – AMENDMENT B RESTRICTIONS		
(2.2)	Class 0 not accepted		OK
(3.3)	DK: power supply cord with label		---
	IT: warning label on Class 0 luminaire		---
(4.5.1)	DK, FR: socket-outlets		---
(5.2.1)	DK, FI, SE, GB: type of plug		---
ZC	ANNEX ZC, NATIONAL CONDITIONS ENEC-301 – AMENDMENT B RESTRICTIONS		
(13.3)	DK: needle-flame or glow-wire test		---
(13.3.2 + 13.3.3)	FR: glow-wire test		---
IEC 598-1	COMMON MODIFICATIONS		
3.2.12	NL - cable without mains plug		---
3.3.3.c	fixed wiring		---
4.11.6	Electro-mechanical contact systems		---
5.2.2	Type of cable		---
5.2.15	Colour code low voltage		---

Varianty:

Variants:

600 x 600 mm

625 x 625 mm



**300061.00065****LUGCLASSIC ECO LB LED n/t 37W 3700lm 4000K белый СТАНДАРТ**

Современный светильник поверхностного монтажа, предназначенный для работы с источниками LED.

**МЕХАНИЧЕСКИЕ
ХАРАКТЕРИСТИКИ**

монтаж: непосредственно на потолке
Корпус: порошковым покрытием листовая сталь
цвет: белый
Монтаж на легковоспламеняющихся поверхностях: да

**ЭЛЕКТРИЧЕСКИЕ
ХАРАКТЕРИСТИКИ**

Эффективность питания: >95%
мощность: 220-240V 50/60Hz
источник света: Да
выходной ток [mA]: 350
оборудование: СТАНДАРТ
Замена обычной технологии [W]: 4x14/18W (76W/96W)
тип источника: LED

**ОПТИЧЕСКИЕ
ХАРАКТЕРИСТИКИ**

распределение света: вращение симметричный
Способ свечения: прямой
Плафон: абажур с плекси (PLX)
CRI/Ra: ≥80
Световой поток LED [лм]: 4500
Световой поток [лм]: 4070
Цветовая температура [K]: 4000

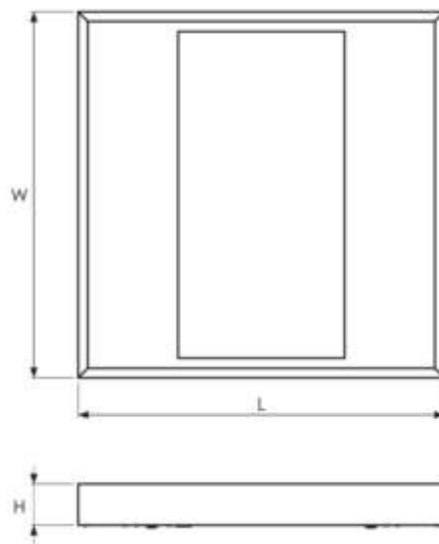
ОБЩИЕ ДАННЫЕ

продолжительность жизни (L70B50): 50 000 h
Диапазон рабочих температур: 0°С ... +40°С
гарантия: 3 года
Применение: пути, конференц-залы



Код	Замена обычной технологии [W]	Мощность LED [Вт]	Мощность системы [Вт]	Световой поток LED [лм]	Световой поток [лм]	эффективность [lm/W]	Цветовая температура [K]	CRI/Ra
300061.00065	4x14/18W (76W/96W)	33	37	4500	4070	110	4000	≥80

Код	Размеры [mm] L W H	Вырежьте размеры [mm] L W	Поддоны количество	Количество в упаковке	Вес нетто [кг]
300061.00065	626 626 70	375 435	50	1	5,7

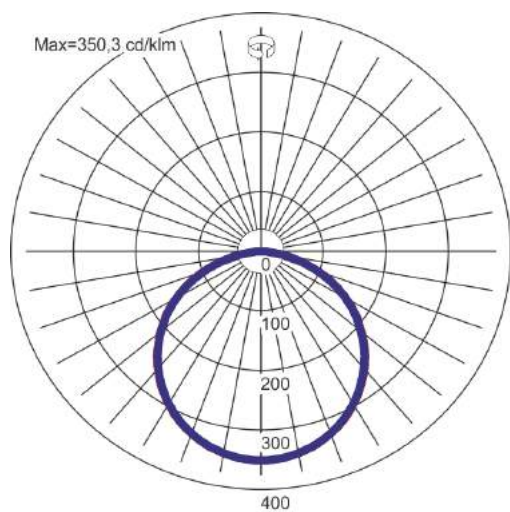


ACCESSORIES



150180.00700

Разборка присоске

КРИВЫЕ СВЕТОВОГО ПУЧКА



ДЕКЛАРАЦИЯ СООТВЕТСТВИЯ ТРЕБОВАНИЙ

LB/2016/02/010



Мы

LUG Light Factory Spółka z o.o.
ul. Gorzowska 11
65-127 Zielona Góra

заявляет под свою исключительную ответственность, что изделие

ИМЯ	LUGCLASSIC ECO LB LED n/t
группа	Светильники растровые и модульные
Заводская	ПРИКРЕПЛЕНИЕ

в соответствии с положениями следующих актов:

Directive 2014/30/EU of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to electromagnetic compatibility

Directive 2014/35/EU of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of electrical equipment designed for use within certain voltage limits

Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment

Directive 2009/125/EC of the European Parliament and of the Council of 21 October 2009 establishing a framework for the setting of ecodesign requirements for energy-related products

и следующие стандарты:

PN-EN 60598-1:2011
EN 60598-2-1:1989
PN-EN 55015:2013-10
PN-EN 61547:2009

PN-EN 61000-3-2:2014-10
PN-EN 61000-3-3:2013-10
PN-EN 50581:2013
PN-EN 62471:2010

LUG Light Factory Sp. z o.o.
Inżynier Laboratorium
Laboratory Engineer
mgr inż. Marcin Białas

Опубликовано

DYREKTOR
DS. TECHNICZNYCH

mgr inż. Mariusz Ejsmont

Уполномоченное лицо подписи



ДЕКЛАРАЦИЯ СООТВЕТСТВИЯ ТРЕБОВАНИЯМ ЕС

LB/2016/02/010



ПРИКРЕПЛЕНИЕ

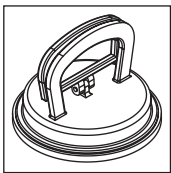
Заводская

300061.00062	300061.00065	300061.00073	300061.00076B
300061.00063	300061.00071	300061.00074	300061.00077B
300061.00064	300061.00072	300061.00075B	300061.00078B

Номера Производитель аксессуаров

150180.00700

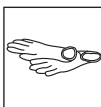
Данная декларация действительна для всех серийных номеров, произведенных по данному символу завода.



150180.00700

Przyssawka instalacyjna
Disassembly suction cup

WAŻNE INFORMACJE | IMPORTANT INFORMATIONEN | IMPORTANTES INFORMAÇÕES ÚTEIS | ВАЖНАЯ ИНФОРМАЦИЯ | WICHTIGE INFORMATIONEN



Podczas montażu oprawy oraz czynności konserwacyjnych zaleca się stosowanie rękawic ochronnych.
Use protective gloves during the montage.
Durant l'installation et l'entretien du luminaire il est recommandé de mettre les gants de protection.
Use luvas de proteção durante a montagem.
При монтаже и обслуживании светильника рекомендуется использовать защитные перчатки.
Bei der montage bitte die mitgelieferten schutzhandschuhe verwenden.



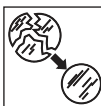
Kurz lub inne zabrudzenia należy usuwać za pomocą ściereczek z microfibry.
Remove the dirt & dust with microfiber wipes.
La poussiere et les autres saletés il faut enlever en utilisant un tissu en microfibre.
Remova a sujeira e poeira com microfibra limpa.
Пыль или другие загрязнения должны быть удалены салфеткой из микрофибры.
Staub und schmutz bitte mit einem microfasertuch entfernen.



Nie dotykać komponentów elektrycznych, wrażliwe na uszkodzenia ESD.
Do not touch electrical appliances. Electrostatic sensitive device (ESD).
Il est interdit de toucher les composants électriques, ils sont sensibles aux décharges électrostatiques.
Não toque os aparelhos elétricos. Dispositivo sensível eletrostático (DSE).
Не трогать электрических компонентов, чувствительные к esd.
Die elektronischen komponenten wegen einer möglichen elektrostatischen aufladung nicht anfassen.



Unikać bezpośredniego patrzenia na źródła led.
Avoid direct looking at led source light.
Il faut éviter un regard direct sur les sources led.
Evite olhar direto para a fonte de luz led.
Не следует смотреть непосредственно на светодиодные источники света.
Den direkten augenkontakt in die led vermeiden.



Wymienić stłuczoną szybę.
Replace broken glass.
Remplacement du vitre cassé.
Substituir o vidro quebrado.
Замена разбитого стекла.
Austausch zerbrochenes Glas.



Nie przykrywać materiałem izolacyjnym.
Do not cover by insulating material.
Ne pas couvrir avec du matériau isolant.
Não cubra o material de isolante.
Не закрывать изоляционным материалом.
Nicht mit dämmplatten abdecken.



LUG Light Factory Sp. z o.o.

65-127 Zielona Góra, ul. Gorzowska 11

e-mail: handlowy@lug.pl

tel. +48 68 411 72 68 | 69 | 70 | 71 | 79 |

fax +48 68 411 72 88 | 89

www.lug.com.pl

INFORMACJA KGO
W sprawie odbioru zużytych opraw prosimy kontaktować się
z Organizacją Odzysku Sprzętu Elektrycznego i Elektronicznego
BIOSYSTEM ELEKTRORECYCLING S.A.
30-556 Kraków ul. Wodna 4
tel. 012 29 666 25
KRS 0000256584
nr WEE E00006285
www.bioelektro.pl, www.biosystem.pl
Biuro@bioelektro.pl

zreza sobie prawo do wprowadzania zmian konstrukcyjnych 4/4



LUGCLASSIC ECO LB LED

INSTRUKCJA MONTAŻU | ИНСТРУКЦИЯ ПО МОНТАЖУ | MONTAGEANLEITUNG | INSTRUCTIONS DE MONTAGE | NÁVOD K MONTÁŽI | SZERELÉSI UTASÍTÁSOK
MONTERINGSVEJLEDNING | INSTRUÇÕES DE MONTAGEM | MONTERINGSVEJLEDNING | INSTRUCCIONES DE MONTAJE | KOKOONPANO - JA KIINNITYSOHJEET
MONTAGE INSTRUCTIE | INSTRUZIONI DI MONTAGGIO | ИНСТРУКЦИЯ З МОНТАЖУ | MONTAJ YÖNERGESİ

(PL) MONTAŻU POWINNA DOKONAĆ OSOBA
POSIADAJĄCA ODPOWIEDNIE UPRAWNIENIA.

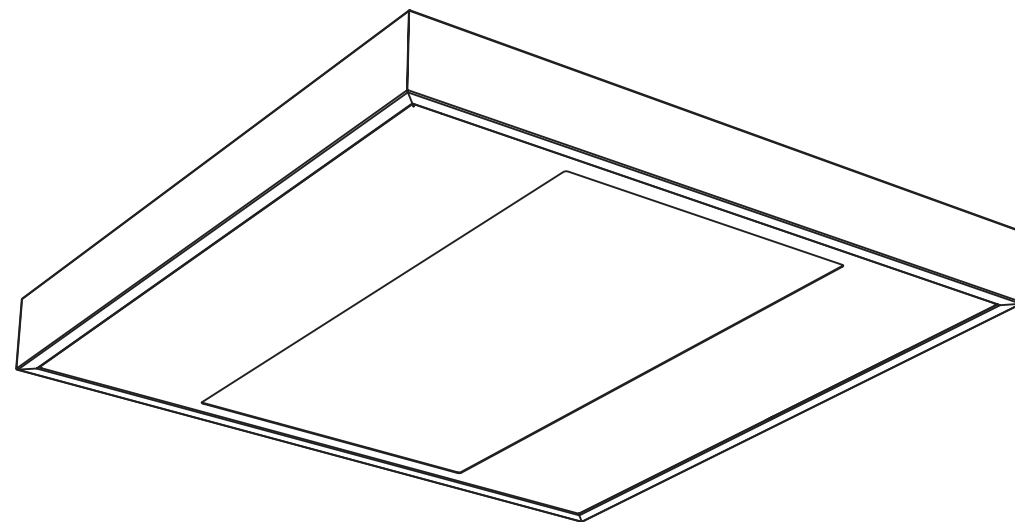
(GB) INSTALLATION MUST BE PERFORMED
BY AN AUTHORIZED TECHNICIAN.

(FR) LA MONTAGE DOIT FAIRE UNE PERSONNE QUI
POSSEDER LES EXPERIENCES COMPETENTES.

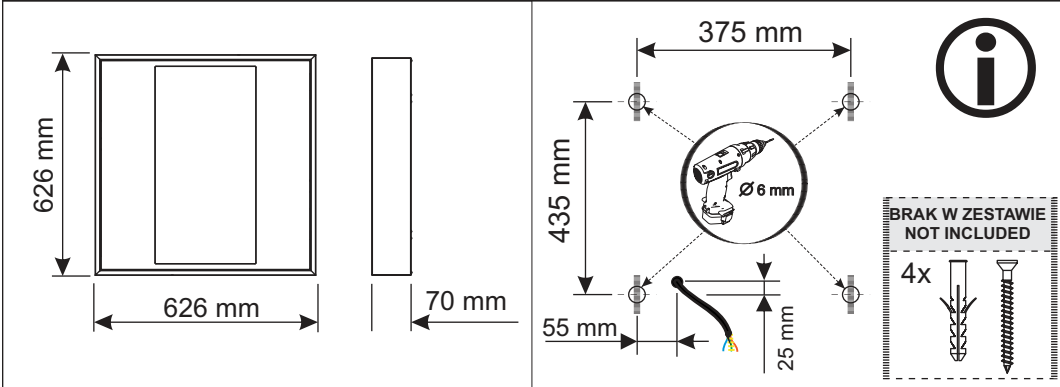
(BRPT) A INSTALAÇÃO TEM QUE SER FEITA POR
UM TÉCNICO AUTORIZADO.

(RU) МОНТАЖ НУЖЕН БЫТЬ СОВЕРШЕН ЧЕРЕЗ
ЛИЦО ИМЕЮЩЕ СООТВЕТСТВЕННЫЕ ПРАВА.

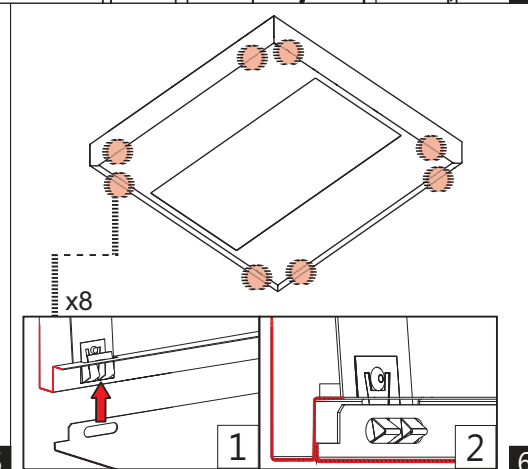
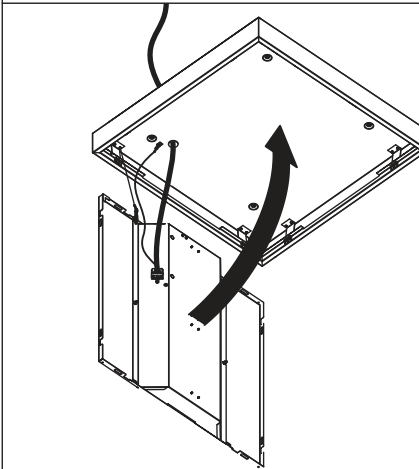
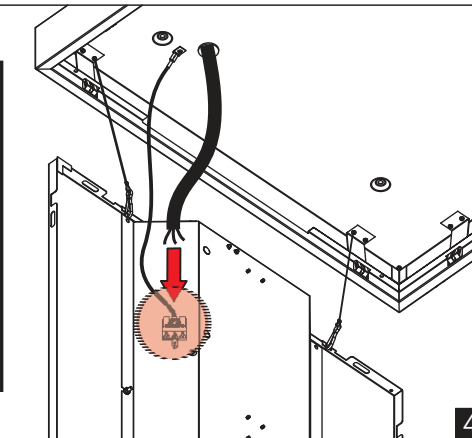
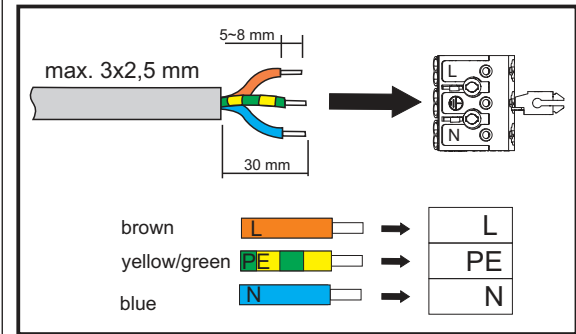
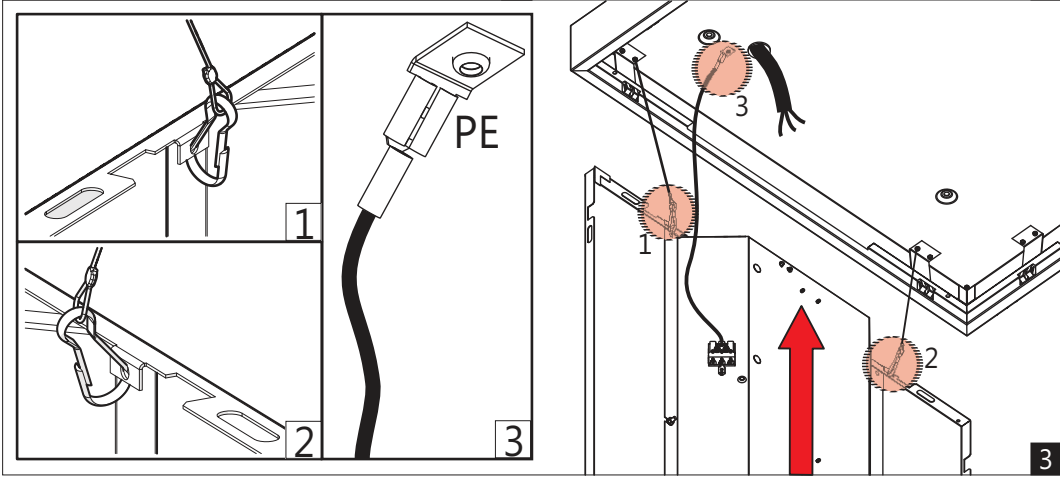
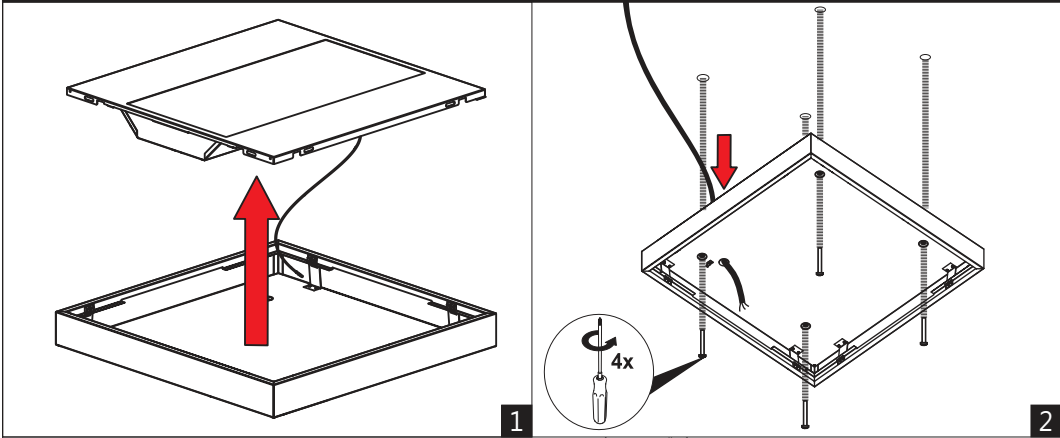
(DE) DIE MONTAGE MUSS VON EINER PERSON MIT ERFORDERLICHEN
KENNTNISSEN DURCHFÜHRT WERDEN.



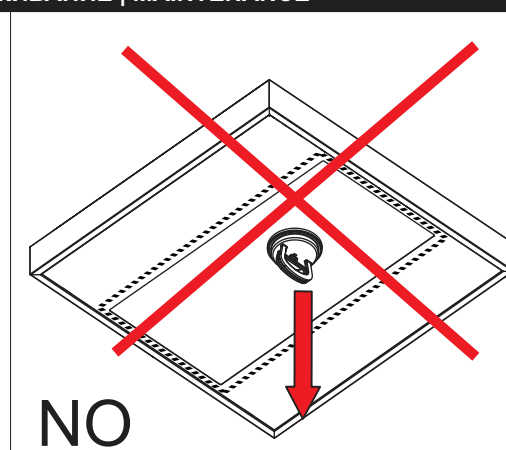
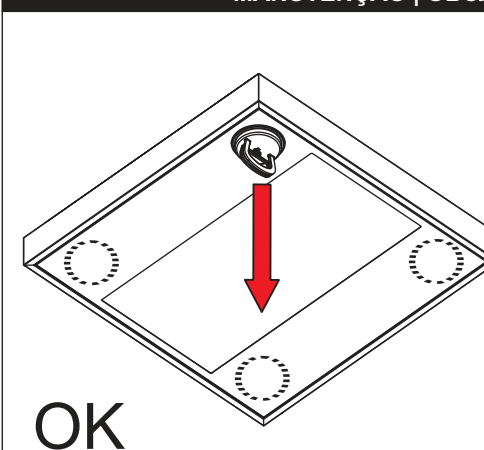
WYMIARY | DIMENSIONS | DIMENSIONS
DIMENSIONES | РАЗМЕРЫ | ABMESSUNGEN



MONTAŽ | MONTAGE | MONTAGE | MONTAGEM | MOHTAJ | MONTAGE



KONSERWACJA | MAINTENANCE | ENTRETIEN
MANUTENÇÃO | ОБСЛУЖИВАНИЕ | MAINTENANCE





ELECTROTECHNICAL TESTING INSTITUTE
Pod Lisem 129
171 02 Praha 8 - Troja

No. of pages:2
No. of annexes/No. of an. pages:0/0

No. of the Test Report: 401859-01/04

Issued: 25.03.2015



TEST REPORT

STRONG LED	Recessed luminaires – in ceiling
Type of product:	LUG CLASSIC ECO LED 600x600 p/t
Ratings:	220+240 V, 50+60 Hz, LED module IP20
Serial number:	---
Manufacturer:	LUG Light Factory Sp.z o.o. Ul. Grozowska 11, 65-127 Zilena Góra, Poland
Production site:	LUG Light Factory Sp.z o.o. Ul. Grozowska 11, 65-127 Zilena Góra, Poland
EZÚ product coding system:	02
Ordering firm:	LUG Light Factory Sp.z o.o. Ul. Grozowska 11, 65-127 Zilena Góra, Poland
Number of tested samples:	1
Samples submitted on:	04.04.2014
Location of testing:	EZÚ
Tested from	25.03.2015 through 25.03.2015
Other data:	---
The product was tested according to:	EN 62471:2008 With regard to the design of the luminaire shall be measured only to the area of blue

The test results contained in this report refer to the tested items only. The values presented in this report were measured with the accuracy specified in the testing regulations. All measuring instruments used are properly traceable.

This Report shall not be reproduced except as a whole

Compiled by: Pavel Vodrážka



Approved by: Lukáš Burda
Testing laboratory
technical manager

Measured values

Risk	Symbol	Measured value	Group
Blue light	L_B	$3,0 \text{ W}\cdot\text{m}^{-2}\cdot\text{sr}^{-1}$	exempt

Measured with supply voltage 230 V. Ambient temperature 25,2 °C. Measured at 500 lx distance.

Conclusion

Light source can be considered as exempt group light source.

Emission limits for risk groups of continuous wave lamps						
Risk	Action spectrum	Symbol	Units	Emission Measurement		
				Exempt	Low risk	Mod risk
				Limit	Limit	Limit
Blue light	$B(\lambda)$	L_B	$\text{W}\cdot\text{m}^{-2}\cdot\text{sr}^{-1}$	100	10000	4000000

Measured by:  Lukáš Burda

ELEKTROTECHNICKÝ ZKUŠEBNÍ ÚSTAV



ELECTROTECHNICAL TESTING INSTITUTE - CZECH REPUBLIC
ELEKTROTECHNISCHE PRÜFANSTALT - TSCHIECHISCHE REPUBLIK
INSTITUT ELECTROTECHNIQUE D'ESSAIS - RÉPUBLIQUE TCHÈQUE
ЭЛЕКТРОТЕХНИЧЕСКИЙ ИСПЫТАТЕЛЬНЫЙ ИНСТИТУТ - ЧЕШСКАЯ РЕСПУБЛИКА

Pod Lisem 129, 171 02 Praha 8 - Troja

CERTIFIKÁT/CERTIFICATE

Č./No.: 5150005

Objednavatel/Ordering firm: LUG Light Factory Sp. z o.o.
ul. Gorzowska 11, 65-127 Zielona Góra, Polsko/Poland

Výrobce/Držitel licence/Manufacturer/Licence holder: LUG Light Factory Sp. z o.o.
ul. Gorzowska 11, 65-127 Zielona Góra, Polsko/Poland

Výrobek/Name of product: Vestavná svítidla/Fixed general purpose luminaires-Recessed luminaires

Obchodní značka/Trade mark:

Typ/Type of product: LUGCLASSIC LED/ECO LED PT

Přesná specifikace výrobku je uvedena v příloze 1, která tvoří nedílnou součást tohoto certifikátu./Specification of the product is in the annex 1 that forms an integral part of this certificate.

Elektrotechnický zkušební ústav na základě splnění požadavků certifikačního schématu „ENEC“ uděluje licenci na užívání značky/Electrotechnical Testing Institute is granting according to the certification scheme „ENEC“ a licence for using the following mark



Touto značkou může být označován výrobek specifikovaný v tomto certifikátu po dobu platnosti níže uvedené smlouvy na užívání značky ENEC, při dodržení všech pravidel uvedených v této smlouvě./This mark may be used for the product specified in this certificate within validity of the Agreement on the use of the ENEC Mark by implementing all the rules stated in the Agreement.

Právo označovat výrobek výše uvedenou značkou je založeno na/The right to use the above mentioned mark for the product is based on:

- protokolu o zkouškách č./Test report No.: 401859-01/02 ze dne/of: 30.03.2015

Vzorek zkoušeného výrobku je ve shodě s požadavky/A sample of the product was tested and found to be in conformity with:
EN 60598-1:2008, EN 60598-2-2:2013

- provedení inspekce v místě výroby – viz inspekční zpráva č./inspection in the place of manufacture – see inspection report No.: 404360-01 ze dne/of 2.10.2014
- smlouvě na užívání značky ENEC mezi objednavatelem a Elektrotechnickým zkušebním ústavem č./the Agreement on the use of the ENEC Mark concluded between the ordering firm and the Electrotechnical Testing Institute No.: 401859

13.5.2015

V Praze dne/Prague

Mgr. Miroslav Sedláček
Vedoucí certifikačního orgánu/
Head of Certification Body



401859-01



Ref. Certif. No.

CZ-2602IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST
CERTIFICATES FOR ELECTRICAL EQUIPMENT
(IECEE) CB SCHEMESYSTEME CEI D'ACCEPTATION MUTUELLE DE
CERTIFICATS D'ESSAIS DES EQUIPEMENTS
ELECTRIQUES (IECEE) METHODE OC**CB TEST CERTIFICATE
CERTIFICAT D'ESSAI OC**Product
Produit

Fixed general purpose luminaires, Recessed luminaires

Name and address of the applicant
Nom et adresse du demandeurLUG Light Factory Sp. z o.o.
ul. Gorzowska 11, 65-127 Zielona Góra, PolandName and address of the manufacturer
Nom et adresse du fabricantLUG Light Factory Sp. z o.o.
ul. Gorzowska 11, 65-127 Zielona Góra, PolandName and address of the factory
Nom et adresse de l'usineLUG Light Factory Sp. z o.o.
ul. Gorzowska 11, 65-127 Zielona Góra, PolandRatings and principal characteristics
Valeurs nominales et caractéristiques principales

230 V, 50 Hz, 33 W, 37 W, 41 W

Trademark (if any)
Marque de fabrique (si elle existe)Model / Type Ref.
Ref. De type

LUGCLASSIC LED/ECO LED PT

Additional information (if necessary)
Information complémentaire (si nécessaire)A sample of the product was tested and found
to be in conformity with
Un échantillon de ce produit a été essayé et a été
considéré conforme à laAs shown in the Test Report Ref. No. which forms part
of this Certificate
Comme indiqué dans le Rapport d'essais numéro de
référence qui constitue partie de ce Certificat**PUBLICATION****EDITION**IEC 60598-1
IEC 60598-2-2
IEC 620312008
2013
2008401859-01/05 of: 30.03.2015,
401859-01/03 of: 16.03.2015This CB Test Certificate is issued by the National Certification Body
Ce Certificat d'essai OC est établi par l'Organisme National de CertificationElektrotechnický zkušební ústav, s.p.
Pod Lisem 129, 171 02 Praha 8 – Troja
Czech Republic

Date: 13.5.2015

Signature: Miroslav Sedláček
Certification and Inspection Manager

Příloha č.1 licence č. 5150005 Annex.No.1 to Licence No. 5150005	
Držitel licence Licensee	LUG Light Factory Sp. Z o.o. Ul. Gorzowska 11, 65-127 Zielona Góra, Poland
Výrobce Manufacturer	LUG Light Factory Sp. Z o.o. Ul. Gorzowska 11, 65-127 Zielona Góra, Poland
Druh svítidla Kind of luminaire	Recessed luminaires Vestavná svítidla
Typ svítidla Type reference	LUGCLASSIC ECO LED
Obchodní značka Trade mark	
Protokol o zkoušce Test report	401859-01/02
Národní normy National standard(s)	ČSN EN 60598-1:2009 ČSN EN 60598-2-2:1997
Evropské normy European standard(s)	EN 60598-1:2008 EN 60598-2-2:1996
Jmenovité napětí Rated voltage	230 V
Jmenovitý příkon a počet zdrojů Rated wattage and number of lamps	220 V+240 V, 50+60 Hz LED module IP20, (optical part IP40)
Typ světelného zdroje Lamp identification	LED moduly LED module
Stupeň krytí Degree of protection	IP 20
Připojení napájení Supply connection	Svorkovnice Terminal block
Podkladová plocha Supporting surface	normálně hořlavý podklad normally flammable surface
Druh ochrany Protection against electric shock	Cl. I

Příloha č.1 licence č. 5150005 Annex.No.1 to Licence No. 5150005			
EN 60 598-2-2			
Clause	Requirement – Test	Result – Remark	Verdict
	ANNEX ZB, SPECIAL NATIONAL CONDITIONS ENEC-301 – AMENDMENT B RESTRICTIONS		
(2.2)	Class 0 not accepted		OK
(3.3)	DK: power supply cord with label		---
	IT: warning label on Class 0 luminaire		---
(4.5.1)	DK, FR: socket-outlets		---
(5.2.1)	DK, FI, SE, GB: type of plug		---

ZC	ANNEX ZC, NATIONAL CONDITIONS ENEC-301 – AMENDMENT B RESTRICTIONS		
(13.3)	DK: needle-flame or glow-wire test		---
(13.3.2 + 13.3.3)	FR: glow-wire test		---

IEC 598-1	COMMON MODIFICATIONS		
3.2.12	NL - cable without mains plug		---
3.3.3.c	fixed wiring		---
4.11.6	Electro-mechanical contact systems		---
5.2.2	Type of cable		---
5.2.15	Colour code low voltage		---

Type:

Type	LED
number	W
060271.5L02.311	33
060271.5L01.311	33
060271.5L04.311	37
060271.5L03.311	37
060271.5L02.321	33
060271.5L01.321	33
060271.5L04.321	37
060271.5L03.321	37

Type	LED
number	W
060271.5L02.312	33
060271.5L01.312	33
060271.5L04.312	37
060271.5L03.312	37
060271.5L02.322	33
060271.5L01.322	33
060271.5L04.322	37
060271.5L03.322	37

Type	LED
number	W
060271.5L02.313	33
060271.5L01.313	33
060271.5L04.313	37
060271.5L03.313	37
060271.5L02.323	33
060271.5L01.323	33
060271.5L04.323	37
060271.5L03.323	37



Handwritten signature



ELECTROTECHNICAL TESTING INSTITUTE
Pod Lisem 129
171 02 Praha 8 - Troja

No. of pages: 1
No. of annexes/No. of an. pages: 1/27

No. of the Test Report: 401859-01/02

Issued: 30.03.2015



TEST REPORT

Name of product: Recessed luminaire
Type of product: LUG CLASSIC ECO LED p/t
Ratings: 230 ÷ 240 V, 50 ÷ 60 Hz, LED module IP20
(optical part IP40)
Serial number: ---
Manufacturer: LUG Light Factory Sp. z o.o.
Production site: Ul. Gorzowska 11, 65-127 Zielona Góra, Poland
Ordering firm: LUG Light Factory Sp. z o.o.
Ul. Gorzowska 11, 65-127 Zielona Góra, Poland
Number of tested samples: 1
Samples submitted on: 04.04.2014
Location of testing: EZÚ
Tested from 25.08.2014 **through** 30.03.2015
Other data: ---
The product was tested according to: EN 60598-2-2:2012
EN 60598-1:2008

Compiled by: Pavel Vodrážka



Approved by: Lukáš Burda
Testing laboratory
technical manager

Test results stated in the test report apply only to the tested subject and unless specified otherwise in the test report, the tests were performed using the method and under the conditions determined in the test regulations, technical norm, instructions for use and information provided by the manufacturer on the tested subject and using accessories required by the manufacturer.
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When referring to services of EZÚ, s. p., as an accredited laboratory, the customer specified in this report must use the following formulation:
"Tested by test laboratory no. 1056, accredited by CAI".



Test Report issued under the responsibility of:



TEST REPORT
IEC 60598-2-2
Luminaires
Part 2: Particular requirements:
Section Two – Recessed luminaires

Report Reference No.: 401859-01/02

Date of issue: 30.03.2015

Total number of pages: 27

CB Testing Laboratory: Elektrotechnický zkušební ústav s.p.

Address: Pod Lisem 129, 171 02 Praha 71 – Troja, Czech Republic

Applicant's name: LUG Light Factory Sp. z o.o.

Address: Ul. Grozowska 11, 65-127 Zielona Góra, Poland

Test specification:

Standard: ☐ IEC 60598-2-2:2011 used in conjunction with
IEC 60598-1:2008

☒ EN 60598-2-2:2012 used in conjunction with
EN 60598-1:2008

Test procedure: ENEC

Non-standard test method: N/A

Test Report Form No.: IEC60598_2_2A

Test Report Form(s) Originator: Intertek Semko AB

Master TRF: 2008-12

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This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

Test item description: Recessed luminaires - in ceiling

Trade Mark: 

Manufacturer: LUG Light Factory Sp. z o.o.
Ul. Gorzowska 11, 65-127 Zielona Góra, Poland

Model/Type reference: LUG CLASSIC ECO LED p/t see page 3

Ratings: 220+240 V 50+60 Hz LED module IP20 (optical part IP40)

Testing procedure and testing location:	
☐ CB Testing Laboratory:	
Testing location/ address	same as on page 1
☐	
Testing location/ address	
Tested by (name + signature)	Pavel Vodrážka 
Approved by (+ signature)	Lukáš Burda 
☐ Testing procedure: TMP	---
Tested by (name + signature)	
Approved by (+ signature)	
Testing location/ address	
☐ Testing procedure: WMT	---
Tested by (name + signature)	
Witnessed by (+ signature)	
Approved by (+ signature)	
Testing location/ address	
☐ Testing procedure: SMT	---
Tested by (name + signature)	
Approved by (+ signature)	
Supervised by (+ signature)	
Testing location/ address	
☐ Testing procedure: RMT	---
Tested by (name + signature)	
Approved by (+ signature)	
Supervised by (+ signature)	
Testing location/ address	

Summary of testing:**Tests performed (name of test and test clause):**

all required tests

Testing location:

same address as on page 1.

Summary of compliance with National Differences:**Copy of marking plate****Type:**

Type	LED
number	W
060271.5L02.311	33
060271.5L01.311	33
060271.5L04.311	37
060271.5L03.311	37
060271.5L02.321	33
060271.5L01.321	33
060271.5L04.321	37
060271.5L03.321	37

Type	LED
number	W
060271.5L02.312	33
060271.5L01.312	33
060271.5L04.312	37
060271.5L03.312	37
060271.5L02.322	33
060271.5L01.322	33
060271.5L04.322	37
060271.5L03.322	37

Type	LED
number	W
060271.5L02.313	33
060271.5L01.313	33
060271.5L04.313	37
060271.5L03.313	37
060271.5L02.323	33
060271.5L01.323	33
060271.5L04.323	37
060271.5L03.323	37

Test item particulars	
Classification of installation and use	Recessed luminaire - in ceiling
Supply Connection	Terminal block
.....	
.....	
Possible test case verdicts:	
- test case does not apply to the test object	-- (not applicable)
- test object does meet the requirement	P (Pass)
- test object does not meet the requirement	F (Fail)
Testing	
Date of receipt of test item	04.04.2014
Date (s) of performance of tests	25.08.2014 ÷ 30.03.2015

General remarks: The test results presented in this report relate only to the object tested . This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory. "(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
all-purpose product information: Recessed luminaire – in ceiling recessed Type of protection: class I Degree of protection: IP20 (optical part IP40) Luminaires suitable for normally flammable surfaces. Tested model: LUGCLASSIC ECO LED 600 x 600 p/t Light source: LED module LUG ML 1302100W830395 Warning - do not cover insulation: 

IEC 60598-2-2 or EN 60598-2-2			
Clause	Requirement + Test	Result - Remark	Verdict

2.2 (0)	GENERAL TEST REQUIREMENTS		
2.2 (0.1)	Information for luminaire design considered	Standard Yes ☒ No ☐	—
2.2 (0.3)	More sections applicable	Yes ☐ No ☒	—

2.4 (2)	CLASSIFICATION		
2.4 (2.2)	Type of protection (Class 0 excluded)	Class I.	—
2.4 (2.3)	Degree of protection (Requirement: Ordinary)	IP20, optical part IP40	—
2.4 (2.4)	Luminaire suitable for direct mounting on normally flammable surfaces.....	Yes ☒ No ☐	—
	Luminaire not suitable for direct mounting on normally flammable surfaces	Yes ☐ No ☒	—
	Luminaire suitable to be covered by insulating material	Yes ☐ No ☒	—
2.4 (2.5)	Luminaire for normal use	Yes ☒ No ☐	—
	Luminaire for rough service	Yes ☐ No ☒	—

2.5 (3)	MARKING		
2.5 (3.2)	Mandatory markings		P
	Position of the marking		P
	Format of symbols/text		P
2.5 (3.3)	Additional information		P
	Language of instructions		P
2.5 (3.3.1)	Combination luminaires		---
2.5 (3.3.2)	Nominal frequency in Hz		P
2.5 (3.3.3)	Operating temperature		---
2.5 (3.3.4)	Symbol or warning notice		---
2.5 (3.3.5)	Wiring diagram		---
2.5 (3.3.6)	Special conditions		---
2.5 (3.3.7)	Metal halide lamp luminaire – warning		---
2.5 (3.3.8)	Limitation for semi-luminaires		---
2.5 (3.3.9)	Power factor and supply current		---
2.5 (3.3.10)	Suitability for use indoors		---
2.5 (3.3.11)	Luminaires with remote control		---
2.5 (3.3.12)	Clip-mounted luminaire – warning		---

IEC 60598-2-2 or EN 60598-2-2			
Clause	Requirement + Test	Result - Remark	Verdict
2.5 (3.3.13)	Specifications of protective shields		---
2.5 (3.3.14)	Symbol for nature of supply		---
2.5 (3.3.15)	Rated current of socket outlet		---
2.5 (3.3.16)	Rough service luminaire		---
2.5 (3.3.17)	Mounting instruction for type Y, type Z and some type X attachments		---
2.5 (3.3.18)	Non-ordinary luminaires with PVC cable		---
2.5 (3.3.19)	Protective conductor current in instruction if applicable		---
2.5 (3.3.20)	Provided with information if not intended to be mounted within arms reach		---
2.5 (3.4)	Test with water		P
	Test with hexane		P
	Legible after test		P
	Label attached		P
2.5.1 (-)	Warning notice, if not suitable for insulating ceiling		P

2.6 (4)	CONSTRUCTION		
2.6 (4.2)	Components replaceable without difficulty		P
2.6 (4.3)	Wireways smooth and free from sharp edges		P
2.6 (4.4)	Lampholders		
2.6 (4.4.1)	Integral lampholder		---
2.6 (4.4.2)	Wiring connection		---
2.6 (4.4.3)	Lampholder for end-to-end mounting		---
2.6 (4.4.4)	Positioning		---
	- pressure test (N)		---
	After test the lampholder comply with relevant standard sheets and show no damage		---
	After test on single-capped lampholder the lampholder have not moved from its position and show no permanent deformation		---
	- bending test (N)		--
	After test the lampholder have not moved from its position and show no permanent deformation		---
2.6 (4.4.5)	Peak pulse voltage		---
2.6 (4.4.6)	Centre contact		---

IEC 60598-2-2 or EN 60598-2-2			
Clause	Requirement + Test	Result - Remark	Verdict
2.6 (4.4.7)	Parts in rough service luminaires resistant to tracking		---
2.6 (4.4.8)	Lamp connectors		---
2.6 (4.4.9)	Caps and bases correctly used		---
2.6 (4.5)	Starter holders		
	Starter holder in luminaires other than class II		---
	Starter holder class II construction		---
2.6 (4.6)	Terminal blocks		
	Tails		---
	Unsecured blocks		---
2.6 (4.7)	Terminals and supply connections		
2.6 (4.7.1)	Contact to metal parts		P
2.6 (4.7.2)	Test 8 mm live conductor		P
	Test 8 mm earth conductor		P
2.6 (4.7.3)	Terminals for supply conductors		P
2.6 (4.7.3.1)	Welded connections:		---
	- stranded or solid conductor		---
	- spot welding		---
	- welding between wires		---
	- Type Z attachment		---
	- mechanical test according to 15.8.2		---
	- electrical test according to 15.9		---
	- heat test according to 15.9.2.3 and 15.9.2.4		---
2.6 (4.7.4)	Terminals other than supply connection		---
2.6 (4.7.5)	Heat-resistant wiring/sleeves		---
2.6 (4.7.6)	Multi-pole plug		---
	- test at 30 N		---
2.6 (4.8)	Switches:		
	- adequate rating		---
	- adequate fixing		---
	- polarized supply		---
	- compliance with 61058-1 for electronic switches		---
2.6 (4.9)	Insulating lining and sleeves		
2.6 (4.9.1)	Retainment		P

IEC 60598-2-2 or EN 60598-2-2			
Clause	Requirement + Test	Result - Remark	Verdict
	Method of fixing		---
2.6 (4.9.2)	Insulated linings and sleeves		---
	Resistant to a temperature > 20 °C to the wire temperature or		---
	a) & c) Insulation resistance and electric strength		---
	b) Ageing test. Temperature (°C).....		---
2.6 (4.10)	Insulation of Class II luminaires		
2.6 (4.10.1)	No contact, mounting surface – accessible metal parts – wiring of basic insulation		---
	Safe installation fixed luminaires		---
	Capacitors and switches		---
	Interference suppression capacitors according to IEC 60384-14		---
2.6 (4.10.2)	Assembly gaps:		
	- not coincidental		---
	- no straight access with test probe		---
2.6 (4.10.3)	Retention of insulation:		
	- fixed		---
	- unable to be replaced; luminaire inoperative		---
	- sleeves retained in position		---
	- lining in lampholder		---
2.6 (4.11)	Electrical connections		
2.6 (4.11.1)	Contact pressure		P
2.6 (4.11.2)	Screws:		
	- self-tapping screws		P
	- thread-cutting screws		---
2.6 (4.11.3)	Screw locking:		
	- spring washer		P
	- rivets		---
2.6 (4.11.4)	Material of current-carrying parts		P
2.6 (4.11.5)	No contact to wood or mounting surface		---
2.6 (4.11.6)	Electro-mechanical contact systems		---
2.6 (4.12)	Mechanical connections and glands		---
2.6 (4.12.1)	Screws not made of soft metal		---
	Screws of insulating material		---

IEC 60598-2-2 or EN 60598-2-2			
Clause	Requirement + Test	Result - Remark	Verdict
	Torque test: torque (Nm); part	1,2	P
	Torque test: torque (Nm); part		---
	Torque test: torque (Nm); part		---
2.6 (4.12.2)	Screws with diameter < 3 mm screwed into metal		---
2.6 (4.12.4)	Locked connections:		
	- fixed arms; torque (Nm)		---
	- lampholder; torque (Nm)		---
	- push-button switches; torque 0,8 Nm		---
2.6 (4.12.5)	Screwed glands; force (Nm)		
2.6 (4.13)	Mechanical strength		---
2.6 (4.13.1)	Impact tests:		---
	- fragile parts; energy (Nm)		---
	- other parts; energy (Nm)	0,35	P
	1) live parts		P
	2) linings		---
	3) protection		P
	4) covers		P
2.6 (4.13.3)	Straight test finger		P
2.6 (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		---
2.6 (4.13.6)	Tumbling barrel		---
2.6 (4.14)	Suspensions and adjusting devices		
2.6 (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)		---

IEC 60598-2-2 or EN 60598-2-2			
Clause	Requirement + Test	Result - Remark	Verdict
	Metal rod. diameter (mm)		---
	Fixed luminaire or independent control gear without fixing devices		---
2.6 (4.14.2)	Load to flexible cables		
	Mass (kg)		---
	Stress in conductors (N/mm ²)		---
	Mass (kg) of semi-luminaire		---
	Bending moment (Nm) of semi-luminaire		---
2.6 (4.14.3)	Adjusting devices:		
	- flexing test; number of cycles		---
	- strands broken		---
	- electric strength test afterwards		---
2.6 (4.14.4)	Telescopic tubes: cords not fixed to tube; no strain on conductors		---
2.6 (4.14.5)	Guide pulleys		---
2.6 (4.14.6)	Strain on socket-outlets		---
2.6 (4.15)	Flammable materials:		
	- glow-wire test 650 °C		---
	- spacing $\geq$ 30 mm		---
	- screen withstanding test of 13.3.1		---
	- screen dimensions		---
	- no fiercely burning material		---
	- thermal protection		---
	- electronic circuits exempted		---
2.6 (4.15.2)	Luminaires made of thermoplastic material with lamp control gear		
	a) construction		---
	b) temperature sensing control		---
	c) surface temperature		---
2.6 (4.16)	Luminaires for mounting on normally flammable surfaces		
	No lamp control gear	(compliance with Section 12)	---
2.6 (4.16.1)	Lamp control gear spacing:		
	- spacing 35 mm		---
	- spacing 10 mm		---
2.6 (4.16.2)	Thermal protection:		

IEC 60598-2-2 or EN 60598-2-2			
Clause	Requirement + Test	Result - Remark	Verdict
	- in lamp control gear		P
	- external		---
	- fixed position		---
	- temperature marked lamp control gear	T110	P
2.6 (4.16.3)	Design to satisfy the test of 12.6	(see 12.6)	
2.6 (4.17)	Drain holes		---
	Clearance at least 5 mm		---
2.6 (4.18)	Resistance to corrosion:		
2.6 (4.18.1)	- rust-resistance		---
2.6 (4.18.2)	- season cracking in copper		---
2.6 (4.18.3)	- corrosion of aluminium		---
2.6 (4.19)	Igniters compatible with ballast		---
2.6 (4.20)	Rough service vibration		---
2.6 (4.21)	Protective shield:		
2.6 (4.21.1)	Shield fitted		---
	Shield of glass if tungsten halogen lamps		---
2.6 (4.21.2)	Particles from a shattering lamp not impair safety		---
2.6 (4.21.3)	No direct path		---
2.6 (4.21.4)	Impact test on shield		---
	Glow-wire test on lamp compartment		---
2.6 (4.22)	Attachments to lamps		---
2.6 (4.23)	Semi-luminaires comply Class II		---
2.6 (4.24)	UV radiation for tungsten halogen lamps and metal halide lamps (Annex P)		---
2.6 (4.25)	No sharp point or edges		P
2.6 (4.26)	Short-circuit protection:		
2.6 (4.26.1)	Uninsulated accessible SELV parts		---
2.6 (4.26.2)	Short-circuit test		---
2.6 (4.26.3)	Test chain according to Figure 29		---

2.7 (11)	CREEPAGE DISTANCES AND CLEARANCES		
	Working voltage (V).....:	230 V	---
	Voltage form	Sinusoidal ☒ Non-sinusoidal ☐	---

IEC 60598-2-2 or EN 60598-2-2			
Clause	Requirement + Test	Result - Remark	Verdict
	PTI	< 600 ☒ ≥ 600 ☐	—
	Impulse withstand category (Normal category II) (Category III Annex U)	Category II ☒ Category III ☐	—
	Rated pulse voltage (kV).....		—
	(1) Current-carrying parts of different polarity: cr (mm); cl (mm).....	>2,5/>1,5	P
	(2) Current-carrying parts and accessible parts: cr (mm); cl (mm).....	>2,5/>1,5	P
	(3) Parts becoming live due to breakdown of basic insulation and metal parts: cr (mm); cl (mm).....		---
	(4) Outer surface of cable where it is clamped and metal parts: cr (mm); cl (mm).....		---
	(5) Not used		—
	(6) Current-carrying parts and supporting surface: cr (mm); cl (mm).....	>2,5/>1,5	P

2.8 (7)	PROVISION FOR EARTHING		
2.8 (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		---
	Thread-forming screws		---
	Thread-forming screw used in a groove		---
	Earth makes contact first		---
2.8 (7.2.2 + 7.2.3)	Earth continuity in joints etc.		---
2.8 (7.2.4)	Locking of clamping means		---
	Compliance with 4.7.3		P
	Terminal blocks with integrated screwless earthing contacts tested according Annex V		---
2.8 (7.2.5)	Earth terminal integral part of connector socket		---
2.8 (7.2.6)	Earth terminal adjacent to mains terminals		P
2.8 (7.2.7)	Electrolytic corrosion of the earth terminal		---
2.8 (7.2.8)	Material of earth terminal		P
	Contact surface bare metal		---

IEC 60598-2-2 or EN 60598-2-2			
Clause	Requirement + Test	Result - Remark	Verdict
2.8 (7.2.10)	Class II luminaire for looping-in		---
	Double or reinforced insulation to functional earth		---
2.8 (7.2.11)	Earthing core coloured green-yellow		---
	Length of earth conductor		---

2.9 (14)	SCREW TERMINALS		
	Separately approved; component list	(see Annex 1)	---
	Part of the luminaire	(see Annex 3)	---

2.9 (15)	SCREWLESS TERMINALS AND ELECTRICAL CONNECTIONS		
	Separately approved; component list	(see Annex 1)	P
	Part of the luminaire	(see Annex 4)	---

2.10 (5)	EXTERNAL AND INTERNAL WIRING		
2.10 (5.2)	Supply connection and external wiring		
2.10 (5.2.1)	Means of connection.....	Terminal block	P
2.10 (5.2.2)	Type of cable.....		---
	Nominal cross-sectional area (mm ²).....		---
	Cables equal to IEC 60227 or IEC 60245		---
2.10 (5.2.3)	Type of attachment, X, Y or Z		---
2.10 (5.2.5)	Type Z not connected to screws		---
2.10 (5.2.6)	Cable entries:		
	- suitable for introduction		P
	- adequate degree of protection		P
2.10 (5.2.7)	Cable entries through rigid material have rounded edges		P
2.10 (5.2.8)	Insulating bushings:		
	- suitably fixed		---
	- material in bushings		---
	- material not likely to deteriorate		---
	- tubes or guards made of insulating material		---
2.10 (5.2.9)	Locking of screwed bushings		---
2.10 (5.2.10)	Cord anchorage:		
	- covering protected from abrasion		---

IEC 60598-2-2 or EN 60598-2-2			
Clause	Requirement + Test	Result - Remark	Verdict
	- clear how to be effective		---
	- no mechanical or thermal stress		---
	- no tying of cables into knots etc.		---
	- insulating material or lining		---
2.10 (5.2.10.1)	Cord anchorage for type X attachment:		
	a) at least one part fixed		---
	b) types of cable		---
	c) no damaging of the cable		---
	d) whole cable can be mounted		---
	e) no touching of clamping screws		---
	f) metal screw not directly on cable		---
	g) replacement without special tool		---
	Glands not used as anchorage		---
	Labyrinth type anchorages		---
2.10 (5.2.10.2)	Adequate cord anchorage for type Y and type Z attachment		---
2.10 (5.2.10.3)	Tests:		
	- impossible to push cable; unsafe		---
	- pull test: 25 times; pull (N)		---
	- torque test: torque (Nm).....		---
	- displacement ≤ 2 mm		---
	- no movement of conductors		---
	- no damage of cable or cord		---
2.10 (5.2.11)	External wiring passing into luminaire		P
2.10 (5.2.12)	Looping-in terminals		---
2.10 (5.2.13)	Wire ends not tinned		---
	Wire ends tinned: no cold flow		---
2.10 (5.2.14)	Mains plug same protection		---
	Class III luminaire plug		---
2.10 (5.2.16)	Appliance inlets (IEC 60320)		---
	Appliance couplers of class II type		---
2.10 (5.2.17)	No standardized interconnecting cables properly assembled		---

IEC 60598-2-2 or EN 60598-2-2			
Clause	Requirement + Test	Result - Remark	Verdict
2.10 (5.2.18)	Used plug in accordance with		
	- IEC 60083		---
	- other standard		---
2.10 (5.3)	Internal wiring		
2.10 (5.3.1)	Internal wiring of suitable size and type	H03V-U	P
	Through wiring		
	- not delivered/ mounting instruction		---
	- factory assembled		---
	- socket outlet loaded (A)		P
	- temperatures..... (see Annex 2)		---
	Green-yellow for earth only		P
2.10 (5.3.1.1)	Internal wiring connected directly to fixed wiring		
	Cross-sectional area (mm ²) 1x0,5		P
	Insulation thickness		P
	Extra insulation added where necessary		---
2.10 (5.3.1.2)	Internal wiring connected to fixed wiring via internal current-limiting device		---
	Adequate cross-sectional area and insulation thickness		---
2.10 (5.3.1.3)	Double or reinforced insulation for class II		---
2.10 (5.3.1.4)	Conductors without insulation		---
2.10 (5.3.1.5)	SELV current-carrying parts		---
2.10 (5.3.1.6)	Insulation thickness other than PVC or rubber		---
2.10 (5.3.2)	Sharp edges etc.		---
	No moving parts of switches etc.		---
	Joints, raising/lowering devices		---
	Telescopic tubes etc.		---
	No twisting over 360°		---
2.10 (5.3.3)	Insulating bushings:		
	- suitable fixed		---
	- material in bushings		---
	- material not likely to deteriorate		---
	- cables with protective sheath		---
2.10 (5.3.4)	Joints and junctions effectively insulated		---
2.10 (5.3.5)	Strain on internal wiring		---

IEC 60598-2-2 or EN 60598-2-2			
Clause	Requirement + Test	Result - Remark	Verdict
2.10 (5.3.6)	Wire carriers		P
2.10 (5.3.7)	Wire ends not tinned		---
	Wire ends tinned: no cold flow		---

2.11 (8)	PROTECTION AGAINST ELECTRIC SHOCK		
2.11 (8.2.1)	Live parts not accessible with standard test finger		P
	Basic insulated parts not used on the outer surface without appropriate protection		P
	Basic insulated parts not accessible with standard test finger on portable and adjustable luminaires		P
	Basic insulated parts not accessible with Ø 50 mm probe from outside, within arms reach, on wall-mounted luminaires		---
	Lamp and starterholders in portable and adjustable luminaires comply with double or reinforced insulation requirements		---
	Basic insulation only accessible under lamp or starter replacement		---
	Protection in any position		P
	Double-ended tungsten filament lamp		---
	Insulation lacquer not reliable		P
	Double-ended high pressure discharge lamp		---
	Relevant warning according to 3.2.18 fitted to the luminaire		---
2.11 (8.2.2)	Portable luminaire adjusted in most unfavourable position		---
2.11 (8.2.3.a)	Class II luminaire:		
	- basic insulated metal parts not accessible during starter or lamp replacement		---
	- basic insulation not accessible other than during starter or lamp replacement		---
	- glass protective shields not used as supplementary insulation		---
2.11 (8.2.3.b)	BC lampholder of metal in class I luminaires shall be earthed		---
2.11 (8.2.3.c)	Class III luminaires with exposed SELV parts:		
	Ordinary luminaire:		---
	- touch current		---

IEC 60598-2-2 or EN 60598-2-2			
Clause	Requirement + Test	Result - Remark	Verdict
	- no-load voltage		---
	Other than ordinary luminaire:		
	- nominal voltage		---
2.11 (8.2.4)	Portable luminaire:		
	- protection independent of supporting surface		---
	- terminal block completely covered		---
2.11 (8.2.5)	Compliance with the standard test finger or relevant probe		P
2.11 (8.2.6)	Covers reliably secured		P
2.11 (8.2.7)	Discharging of capacitors $\geq 0,5 \mu\text{F}$		---
	Portable plug connected luminaire with capacitor		---
	Other plug connected luminaire with capacitor		---
	Discharge device on or within capacitor		---
	Discharge device mounted separately		---

2.12 (12)	ENDURANCE TEST AND THERMAL TEST		
2.12 (12.3)	Endurance test:		
	- mounting-position.....	recessed in ceiling	—
	- test temperature (°C)	35	---
	- total duration (h).....	168	---
	- supply voltage: Un factor; calculated voltage (V):	253	---
	- lamp used	LED module 37 W	---
2.12 (12.3.2)	After endurance test:		
	- no part unserviceable		P
	- luminaire not unsafe		P
	- no damage to track system		---
	- marking legible		P
	- no cracks, deformation etc.		P
2.12 (12.4)	Thermal test (normal operation)	(see Annex 2)	P
2.12 (12.5)	Thermal test (abnormal operation)	(see Annex 2)	---
2.12 (12.6)	Thermal test (failed lamp control gear condition):		
2.12 (12.6.1)	Through wiring or looping-in wiring loaded by a current of (A)		—
	- case of abnormal conditions		—

IEC 60598-2-2 or EN 60598-2-2			
Clause	Requirement + Test	Result - Remark	Verdict
	- electronic lamp control gear		---
	- measured winding temperature (°C): at 1,1 Un ...:		---
	- measured mounting surface temperature (°C) at 1,1 Un.....:		---
	- calculated mounting surface temperature (°C) ...:		---
	- track-mounted luminaires		---
2.12 (12.6.2)	Temperature sensing control		
	- case of abnormal conditions		---
	- thermal link		---
	- manual reset cut-out		---
	- auto reset cut-out		---
	- measured mounting surface temperature (°C) ...:		---
	- track-mounted luminaires		---
2.12 (12.7)	Thermal test (failed lamp control gear in plastic luminaires):		---
2.12 (12.7.1)	Luminaire without temperature sensing control		---
2.12 (12.7.1.1)	Luminaire with fluorescent lamp ≤ 70W		
	Test method 12.7.1.1 or Annex V		---
	Test according to 12.7.1.1:		
	- case of abnormal conditions		---
	- Ballast failure at supply voltage (V)		---
	- Components retained in place after the test		---
	- Test with standard test finger after the test		---
	Test according to Annex V:		
	- 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:		
	- part tested; temperature (°C)		---
2.12 (12.7.1.2)	Luminaire with discharge lamp, fluorescent lamp > 70W, transformer > 10 VA		
	- case of abnormal conditions		---

IEC 60598-2-2 or EN 60598-2-2			
Clause	Requirement + Test	Result - Remark	Verdict
	- 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:		
	- part tested; temperature (°C).....:		---
2.12 (12.7.1.3)	Luminaire with short circuit proof transformers ≤ 10 VA		---
	- case of abnormal conditions		—
	- Components retained in place after the test		---
	- Test with standard test finger after the test		--
2.12 (12.7.2)	Luminaire with temperature sensing control		---
	- thermal link	Yes ☐ No ☐	—
	- manual reset cut-out	Yes ☐ No ☐	—
	- auto reset cut-out	Yes ☐ No ☐	—
	- case of abnormal conditions		—
	- highest measured temperature of fixing point/exposed part (°C):		—
	Ball-pressure test:		
	- part tested; temperature (°C).....:		--

2.13 (9)	RESISTANCE TO DUST, SOLID OBJECTS AND MOISTURE		
2.13 (9.2)	Tests for ingress of dust, solid objects and moisture:		
	- classification according to IP	IP20, optical part IP40	—
	- mounting position during test.....:	in ceiling - recessed	—
	- fixing screws tightened; torque (Nm)		—
	- tests according to clauses	9.2.0	—
	- electric strength test afterwards		P
	a) no deposit in dust-proof luminaire		---
	b) no talcum in dust-tight luminaire		---
	c) no trace of water on current-carrying parts or SELV parts or where it could become a hazard		---
	d) i) For luminaires without drain holes – no water entry		--

IEC 60598-2-2 or EN 60598-2-2			
Clause	Requirement + Test	Result - Remark	Verdict
	d) ii) For luminaires with drain holes – no hazardous water entry		---
	e) no water in watertight luminaire		---
	f) no contact with live parts (IP 2X)	recessed part IP20	P
	f) no entry into enclosure (IP 3X and IP 4X)	optical part IP40	P
	f) no contact with live parts (IP3X and IP4X)		---
	g) no trace of water on part of lamp requiring protection from splashing water		---
	h) no damage of protective shield or glass envelope		---
2.13 (9.3)	Humidity test 48 h		P

2.14 (10)	INSULATION RESISTANCE AND ELECTRIC STRENGTH		
2.14 (10.2.1)	Insulation resistance test		
	Cable or cord covered by metal foil or replaced by a metal rod of mm Ø		---
	Insulation resistance (MΩ)		---
	SELV:		
	- between current-carrying parts of different polarity.....		---
	- between current-carrying parts and mounting surface		---
	- between current-carrying parts and metal parts of the luminaire.....		---
	Other than SELV:		
	- between live parts of different polarity	>550 MΩ	P
	- between live parts and mounting surface	>550 MΩ	P
	- between live parts and metal parts	>550 MΩ	P
	- between live parts of different polarity through action of a switch.....		---
2.14 (10.2.2)	Electric strength test		
	Dummy lamp		---
	Luminaires with ignitors after 24 h test		---
	Luminaires with manual ignitors		---
	Test voltage (V):		---
	SELV:		

IEC 60598-2-2 or EN 60598-2-2			
Clause	Requirement + Test	Result - Remark	Verdict
	- between current-carrying parts of different polarity.....:		---
	- between current-carrying parts and mounting surface		---
	- between current-carrying parts and metal parts of the luminaire.....:		---
	Other than SELV:		
	- between live parts of different polarity	1460 V	P
	- between live parts and mounting surface	1460 V	P
	- between live parts and metal parts	1460 V	P
	- between live parts of different polarity through action of a switch.....:		---
2.14 (10.3)	Touch current (mA)	< 0,002 mA	P
	Leakage current (mA)	0,12 mA	P

2.15 (13)	RESISTANCE TO HEAT, FIRE AND TRACKING		
2.15 (13.2.1)	Ball-pressure test:		
	- part tested; temperature (°C)		---
2.15 (13.3.1)	Needle flame test (10 s):		
	- part tested		---
2.15 (13.3.2)	Glow-wire test (650°C):		
	- part tested		---
2.15 (13.4.1)	Tracking test: part tested		---

List of used test equipment

Device	Type	Inv. No.
Greisinger - thermometer	GHT 1200 A	20211
High voltage transformer	HT5053	00005866
Earth continuity test equipment	MPO-01A	550724
Voltmeter	EL20	14672
Power supply KIKUSUI	PCR500M	00110185
Multimeter FLUKE	1587	551734
Load gauge 10N	BRNO	21369
Caliper	MITUTOYO	551392
Test finger	BRNO	21364
Impact test aparature	F 22.50	4994
Touch and leakage current measurement		N 700054

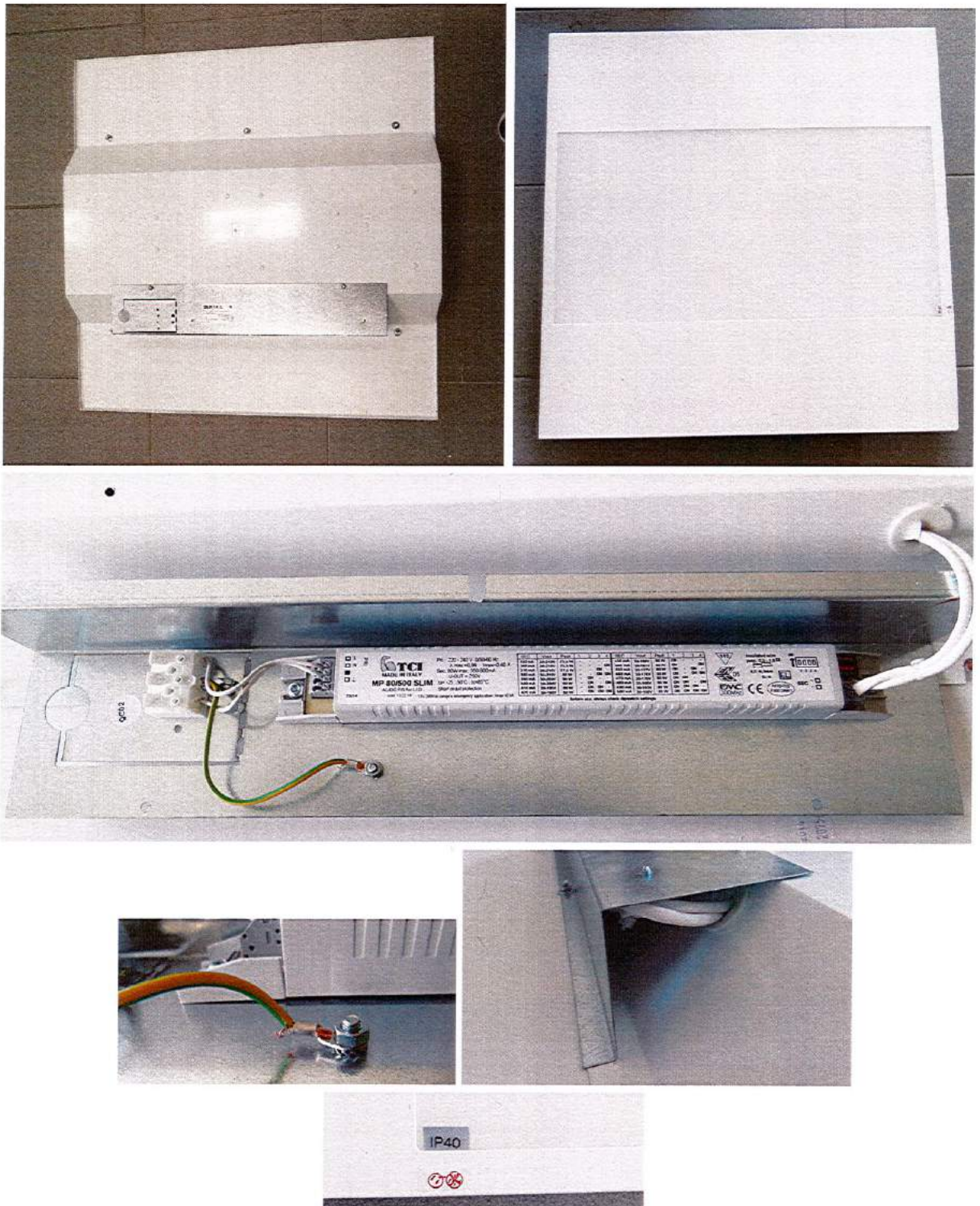
TRF No. IEC60598 2 2A

ANNEX 2: temperature measurements, thermal tests of Section 12						
Type reference	LUGCLASSIC ECO LED p/t 060271.5L04.311		—			
Lamp used	LED module 37W		—			
Lamp control gear used	TCI MP 80/500 SLIM 220-240V T110° tc85°		—			
Mounting position of luminaire	ceiling recessed		—			
Supply wattage (W)	LED module 37W		—			
Supply current (A)	---		—			
Calculated power factor	---		—			
Table: measured temperatures corrected for ta = 25 °C:						
- abnormal operating mode	temperature marked lamp control gear T110°		—			
- test 1: rated voltage	230V		—			
- test 2: 1,06 times rated voltage or 1,05 times rated wattage	243,8V		—			
- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage	---		—			
- test 4: 1,1 times rated voltage or 1,05 times rated wattage	---		—			
Through wiring or looping-in wiring loaded by a current of A during the test	---		—			
temperature (°C) of part	Clause 12.4 – normal				Clause 12.5 – abnormal	
	test 1	test 2	test 3	limit	test 4	limit
driver surface tc	59	---	---	85	---	
LED module tc	55	---	---	65	---	
surface – above the luminaire	---	35	---	90	---	
wiring in LED module	---	46	---	90	---	
terminal block	---	35	---	85	---	
internal wiring	---	35	---	90	---	

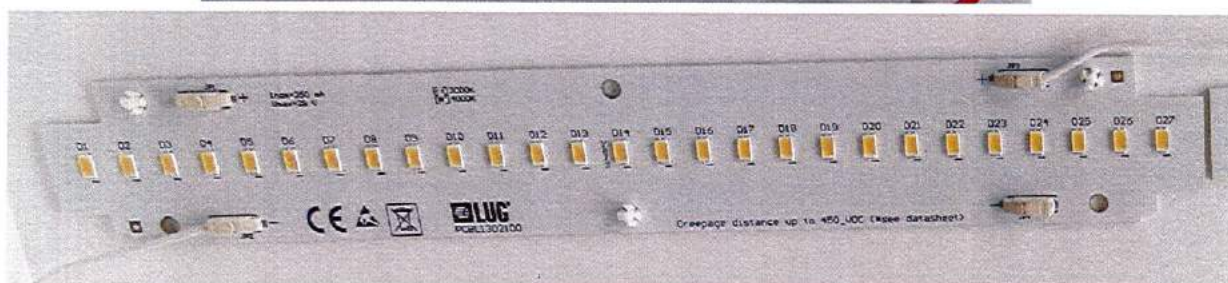
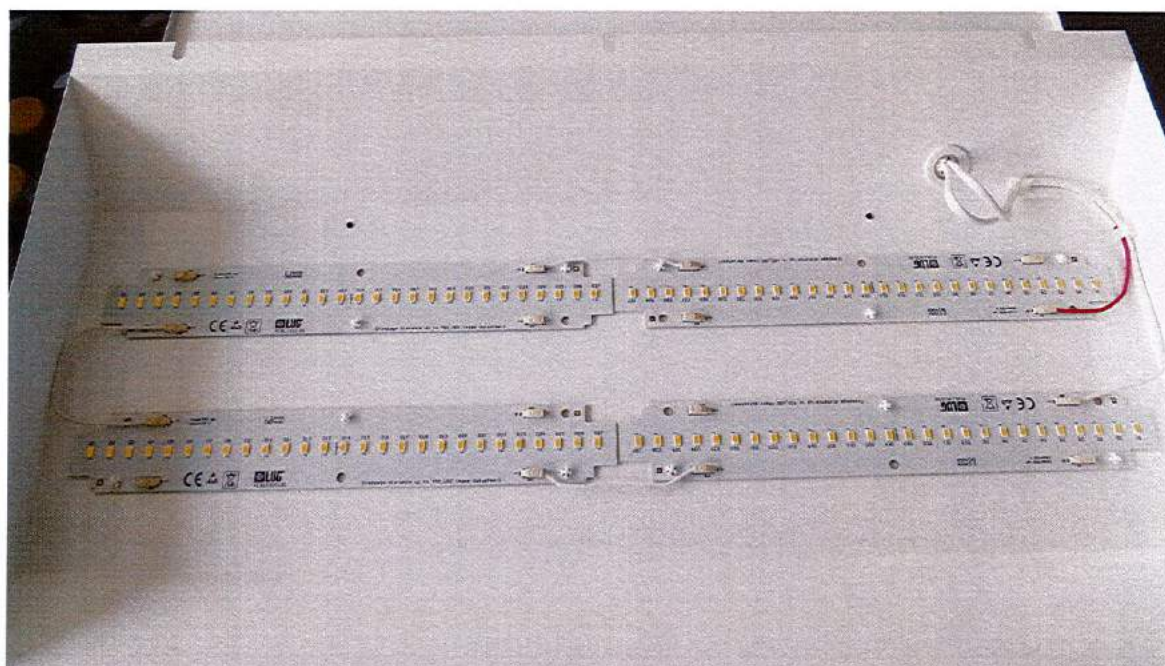
ANNEX 3: screw terminals (part of the luminaire)		
not applicable		—

ANNEX 4: screwless terminals (part of the luminaire)		
not applicable		—

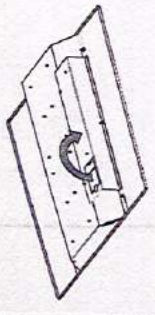
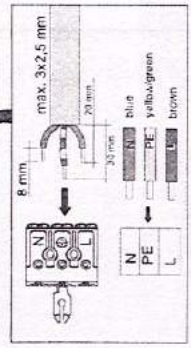
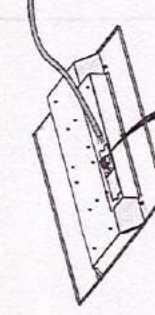
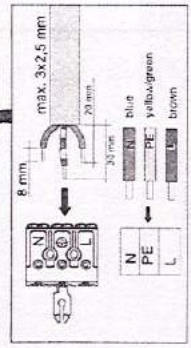
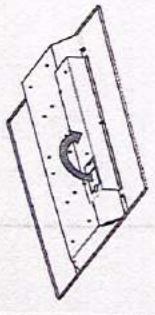
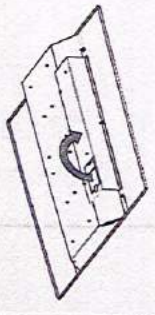
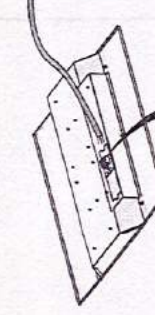
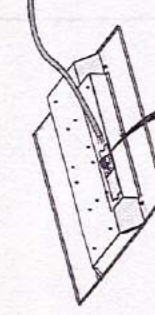
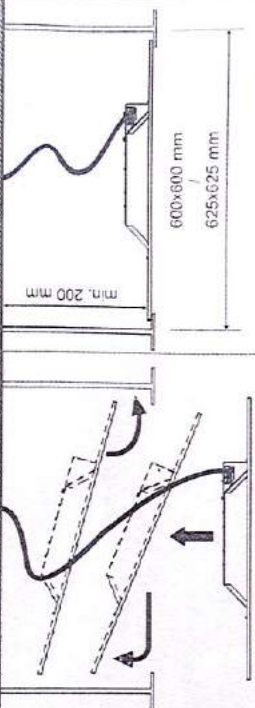
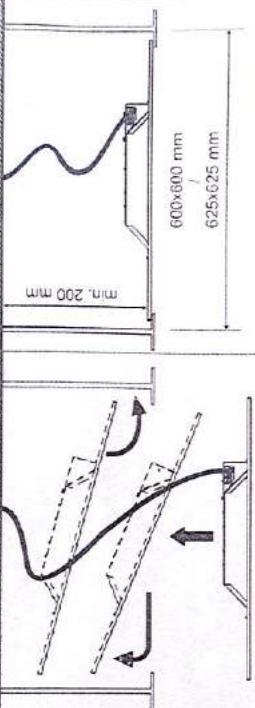
ANNEX 5: photo



ANNEX 5: photo



ANNEX 6: installation

LUGCLASSIC EGO LED – STANDARD		LUGCLASSIC EGO LED – EMERGENCY	
ПОДКЛЮЧЕНИЕ ЗАСИЛАНІА POWER CONNECTION BRANCHEMENT D'ALIMENTATION CONEXÃO DA ALIMENTAÇÃO ПОДКЛЮЧЕНИЕ ПИТАНІЯ STROMVERSORGUNG		ПОДКЛЮЧЕНИЕ ЗАСИЛАНІА POWER CONNECTION BRANCHEMENT D'ALIMENTATION CONEXÃO DA ALIMENTAÇÃO ПОДКЛЮЧЕНИЕ ПИТАНІЯ STROMVERSORGUNG	
 1	 2	 1	 2
 3	 4	 5	 6
MONTAJ MONTAGE MONTAG MONTAJ MONTAGE 		MONTAJ MONTAGE MONTAG MONTAJ MONTAGE 	
PL Do montażu w sułach gips-kartonowych (g/k) stosować dodatkowe akcesorium! PL Do montażu w sułach gips-kartonowych (g/k) stosować dodatkowe akcesorium! FR Permet la pose dans un faux plafond à découpe (g/k) et nécessite l'utilisation d'accessoires!		PT Permet la pose dans un faux plafond à découpe (g/k) et nécessite l'utilisation d'accessoires! RU Для монтажа в гипсокартонных потолках необходимо использовать дополнительные аксессуары! DE Für die Montage in der Gipskarton Decke bitte das zusätzliche Zubehör verwenden!	

ELEKTROTECHNICKÝ ZKUŠEBNÍ ÚSTAV



ELECTROTECHNICAL TESTING INSTITUTE - CZECH REPUBLIC
ELEKTROTECHNISCHE PRÜFANSTALT - TSCHIECHISCHE REPUBLIK
INSTITUT ELECTROTECHNIQUE D'ESSAIS - RÉPUBLIQUE TCHÈQUE
ЭЛЕКТРОТЕХНИЧЕСКИЙ ИСПЫТАТЕЛЬНЫЙ ИНСТИТУТ - ЧЕШСКАЯ РЕСПУБЛИКА

Pod Lisem 129, 171 02 Praha 8 - Troja

CERTIFIKÁT/CERTIFICATE

Č./No.: 5150008

Objednavatel/Ordering firm: LUG Light Factory Sp. z o.o.
ul. Gorzowska 11, 65-127 Zielona Góra, Polsko/Poland

Výrobce/Držitel licence//Manufacturer/Licence holder: LUG Light Factory Sp. z o.o.
ul. Gorzowska 11, 65-127 Zielona Góra, Polsko/Poland

Výrobek/Name of product: Vestavěné svítidlo/Recessed luminaires

Obchodní značka/Trade mark:

Typ/Type of product: LUGCLASSIC LB LED

Přesná specifikace výrobku je uvedena v příloze I, která tvoří nedílnou součást tohoto certifikátu./Specification of the product is in the annex I that forms an integral part of this certificate.

Elektrotechnický zkušební ústav na základě splnění požadavků certifikačního schématu „ENEC“ uděluje licenci na užívání značky/Electrotechnical Testing Institute is granting according to the certification scheme „ENEC“ a licence for using the following mark



Touto značkou může být označován výrobek specifikovaný v tomto certifikátu po dobu platnosti níže uvedené smlouvy na užívání značky ENEC, při dodržení všech pravidel uvedených v této smlouvě./This mark may be used for the product specified in this certificate within validity of the Agreement on the use of the ENEC Mark by implementing all the rules stated in the Agreement.

Právo označovat výrobek výše uvedenou značkou je založeno na/The right to use the above mentioned mark for the product is based on:

- protokolu o zkouškách č./Test report No.: 501265-01/02 ze dne/of: 28.05.2015,
- 501265-01/03 ze dne/of: 29.05.2015

Vzorek zkoušeného výrobku je ve shodě s požadavky/A sample of the product was tested and found to be in conformity with:
EN 60598-1:2008, EN 60598-2-2:2012, EN 62031:2008

- provedení inspekce v místě výroby – viz inspekční zpráva č./inspection in the place of manufacture – see inspection report No.: 404360-01 ze dne/of 2.10.2014
- smlouvě na užívání značky ENEC mezi objednavatelem a Elektrotechnickým zkušebním ústavem č./the Agreement on the use of the ENEC Mark concluded between the ordering firm and the Electrotechnical Testing Institute No.: 501265

5.6.2015

V Praze dne/Prague


Mgr. Miroslav Sedláček
Vedoucí certifikačního orgánu/
Head of Certification Body



501265-01

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CB
SCHEME

Ref. Certif. No.

CZ-2608IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST
CERTIFICATES FOR ELECTRICAL EQUIPMENT
(IECEE) CB SCHEMESYSTEME CEI D'ACCEPTATION MUTUELLE DE
CERTIFICATS D'ESSAIS DES EQUIPEMENTS
ELECTRIQUES (IECEE) METHODE OC**CB TEST CERTIFICATE**
CERTIFICAT D'ESSAI OCProduct
Produit

Recessed luminaires

Name and address of the applicant
Nom et adresse du demandeurLUG Light Factory Sp. z o.o.
ul. Gorzowska 11, 65-127 Zielona Góra, PolandName and address of the manufacturer
Nom et adresse du fabricantLUG Light Factory Sp. z o.o.
ul. Gorzowska 11, 65-127 Zielona Góra, PolandName and address of the factory
Nome et adresse de l'usineLUG Light Factory Sp. z o.o.
ul. Gorzowska 11, 65-127 Zielona Góra, PolandRatings and principal characteristics
Valeurs nominales et caractéristiques principales220-240 V, 50-60 Hz, LED module,
IP 20 (optical part IP 40)Trademark (if any)
Marque de fabrique (si elle existe)Model / Type Ref.
Ref. De type

LUGCLASSIC LB LED

Additional information (if necessary)
Information complémentaire (si nécessaire)**PUBLICATION****EDITION**A sample of the product was tested and found
to be in conformity with
Un échantillon de ce produit a été essayé et a été
considéré conforme à laIEC 60598-1
IEC 60598-2-2
IEC 620312008
2012
2008As shown in the Test Report Ref. No. which forms part
of this Certificate
Comme indiqué dans le Rapport d'essais numéro de
référence qui constitue partie de ce Certificat501265-01/01 of: 28.05.2015,
501265-01/03 of: 29.05.2015This CB Test Certificate is issued by the National Certification Body
Ce Certificat d'essai OC est établi par l'Organisme National de CertificationElektrotechnický zkušební ústav, s.p.
Pod Lisem 129, 171 02 Praha 8 – Troja
Czech Republic

Date: 5.6.2015

Signature Miroslav Sedláček
Certification and Inspection Manager

Příloha č. 1 licence č. 5150008 Annex No. 1 to Licence No. 5150008	
Držitel licence Licensee	LUG Light Factory Sp. Z o.o. Ul. Gorzowska 11, 65-127 Zielona Góra, Poland
Výrobce Manufacturer	LUG Light Factory Sp. Z o.o. Ul. Gorzowska 11, 65-127 Zielona Góra, Poland
Druh svítidla Kind of luminaire	Recessed luminaires Vestavná svítidla
Typ svítidla Type reference	LUGCLASSIC ECO LB LED 625x625 p/t
Obchodní značka Trade mark	
Protokol o zkoušce Test report	501265-01/02
Národní normy National standard(s)	ČSN EN 60598-1:2009 ČSN EN 60598-2-2:1997
Evropské normy European standard(s)	EN 60598-1:2008 EN 60598-2-2:1996
Jmenovité napětí Rated voltage	230 V
Jmenovitý příkon a počet zdrojů Rated wattage and number of lamps	220÷240 V 50÷60 Hz LED module IP20 (optical part IP40)
Typ světelného zdroje Lamp identification	LED moduly LED module
Stupeň krytí Degree of protection	IP 20
Připojení napájení Supply connection	Svorkovnice Terminal block
Podkladová plocha Supporting surface	normálně hořlavý podklad normally flammable surface
Druh ochrany Protection against electric shock	Cl. I

Příloha č. 1 licence č. 5150008 Annex No. 1 to Licence No. 5150008			
EN 60 598-2-2			
Clause	Requirement – Test	Result – Remark	Verdict
	ANNEX ZB, SPECIAL NATIONAL CONDITIONS ENEC-301 – AMENDMENT B RESTRICTIONS		
(2.2)	Class 0 not accepted		OK
(3.3)	DK: power supply cord with label		---
	IT: warning label on Class 0 luminaire		---
(4.5.1)	DK, FR: socket-outlets		---
(5.2.1)	DK, FI, SE, GB: type of plug		---
ZC	ANNEX ZC, NATIONAL CONDITIONS ENEC-301 – AMENDMENT B RESTRICTIONS		
(13.3)	DK: needle-flame or glow-wire test		---
(13.3.2 + 13.3.3)	FR: glow-wire test		---
IEC 598-1	COMMON MODIFICATIONS		
3.2.12	NL - cable without mains plug		---
3.3.3.c	fixed wiring		---
4.11.6	Electro-mechanical contact systems		---
5.2.2	Type of cable		---
5.2.15	Colour code low voltage		---

Type:

Type number	LED W
300061.00031	22
300061.00011	22
300061.00032	33
300061.00012	33
300061.00035	22
300061.00015	22
300061.00036	33
300061.00016	33

Type number	LED W
300061.00021	22
300061.00001	22
300061.00022	33
300061.00002	33
300061.00025	22
300061.00005	22
300061.00026	33
300061.00006	33



ELEKTROTECHNICKÝ ZKUŠEBNÍ ÚSTAV



ELECTROTECHNICAL TESTING INSTITUTE - CZECH REPUBLIC
ELEKTROTECHNISCHE PRÜFANSTALT - TSCHHECHISCHE REPUBLIK
INSTITUT ELECTROTECHNIQUE D'ESSAIS - RÉPUBLIQUE TCHÈQUE
ЭЛЕКТРОТЕХНИЧЕСКИЙ ИСПЫТАТЕЛЬНЫЙ ИНСТИТУТ - ЧЕШСКАЯ РЕСПУБЛИКА

Pod Lisem 129, 171 02 Praha 8 - Troja

CERTIFICATE

No.: 1150412

Product: Recessed luminaires

Type: LUGCLASSIC LB LED

Rating: 220-240 V, 50-60 Hz, LED module, IP 20 (optical part IP 40)

Ordering firm: LUG Light Factory Sp. z o.o.
ul. Gorzowska 11, 65-127 Zielona Góra, Poland

Manufacturer: LUG Light Factory Sp. z o.o.
ul. Gorzowska 11, 65-127 Zielona Góra, Poland

Trade mark:

The test results are stated in the test-report No.: 501265-01/01 of: 28.05.2015, 501265-01/03 of: 29.05.2015,
501265-01/02 of: 28.05.2015, 501265-01/04 ze dne: 26.05.2015

A sample of the product was found to be in conformity with:
EN 60598-1:2008, EN 60598-2-2:2012,
EN 62031:2008, EN 62471:2008 - measured to the area of blue

The validity of the certificate is limited to: 30.6.2018

5.6.2015

Prague


Miroslav Sedláček
Head of Certification Body



Stamp



501265-01



No. of the Test Report: 501265-01/04

Issued: 26.05.2015



TEST REPORT

Name of product: Recessed luminaire
Type of product: LUGCLASSIC ECO LB LED 625x625 p/t
Ratings: 220÷240 V, 50÷60 Hz, LED module, IP20 (optical part IP40)
Serial number: ---
Manufacturer: LUG Light Factory Sp.z o.o.
Ul. Grozowska 11, 65-127 Żilena Góra, Poland
Production site: LUG Light Factory Sp.z o.o.
Ul. Grozowska 11, 65-127 Żilena Góra, Poland
Ordering firm: LUG Light Factory Sp.z o.o.
Ul. Grozowska 11, 65-127 Żilena Góra, Poland
Number of tested samples: 1
Samples submitted on: 18.05.2015
Location of testing: EZÚ
Tested from 25.05.2015 **through** 26.05.2015
Other data: ---
The product was tested according to: EN 62471:2008
With regard to the design of the luminaire shall be measured only to the area of blue.

Compiled by: Pavel Vodrážka

Approved by: Lukáš Burda
Testing laboratory
technical manager



Test results stated in the test report apply only to the tested subject and unless specified otherwise in the test report, the tests were performed using the method and under the conditions determined in the test regulations, technical norm, instructions for use and information provided by the manufacturer on the tested subject and using accessories required by the manufacturer. Without written consent, this report must not be reproduced in any other way than as a whole.

Measured values

Risk	Symbol	Measured value	Group
Blue light	L_B	$1,3 \text{ W}\cdot\text{m}^{-2}\cdot\text{sr}^{-1}$	exempt

Measured with supply voltage 230 V. Ambient temperature 25 °C. Measured at 500 lx distance.

Conclusion

Light source can be considered as exempt group light source.

Emission limits for risk groups of continuous wave lamps						
Risk	Action spectrum	Symbol	Units	Emission Measurement		
				Exempt	Low risk	Mod risk
				Limit	Limit	Limit
Blue light	$B(\lambda)$	L_B	$\text{W}\cdot\text{m}^{-2}\cdot\text{sr}^{-1}$	100	10000	4000000

Measured by:  Lukáš Burda



Test Report issued under the responsibility of:



TEST REPORT
IEC 60598-2-2
Luminaires
Part 2: Particular requirements:
Section Two – Recessed luminaires

Report Reference No.: 501265-01/01

Date of issue.....: 28.05.2015

Total number of pages.....: 27

CB Testing Laboratory: Elektrotechnický zkušební ústav s.p.

Address.....: Pod Lisem 129, 171 02 Praha 71 – Troja, Czech Republic

Applicant's name: LUG Light Factory Sp. z o.o.

Address.....: Ul. Grozowska 11, 65-127 Zielona Góra, Poland

Test specification:

Standard: ☒ IEC 60598-2-2:2011 used in conjunction with
IEC 60598-1:2008

☐ EN 60598-2-2:2012 used in conjunction with
EN 60598-1:2008

Test procedure.....: CB

Non-standard test method.....: N/A

Test Report Form No.: IEC60598_2_2A

Test Report Form(s) Originator: Intertek Semko AB

Master TRF: 2008-12

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This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

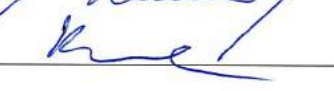
Test item description.....: Recessed luminaires - in ceiling

Trade Mark.....: 

Manufacturer.....: LUG Light Factory Sp. z o.o.
Ul. Gorzowska 11, 65-127 Zielona Góra, Poland

Model/Type reference.....: LUGCLASSIC ECO LB LED 625x625 p/t see page 3

Ratings.....: 220÷240 V 50÷60 Hz LED module IP20 (optical part IP40)

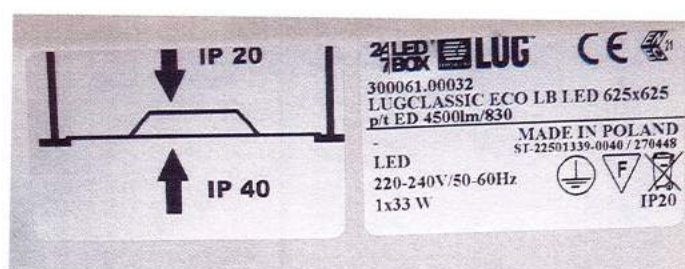
Testing procedure and testing location:	
☐ CB Testing Laboratory:	
Testing location/ address..... :	same as on page 1
☐	
Testing location/ address..... :	
Tested by (name + signature) :	Pavel Vodrážka 
Approved by (+ signature) :	Lukáš Burda 
☐ Testing procedure: TMP	---
Tested by (name + signature) :	
Approved by (+ signature) :	
Testing location/ address..... :	
☐ Testing procedure: WMT	---
Tested by (name + signature) :	
Witnessed by (+ signature)..... :	
Approved by (+ signature) :	
Testing location/ address..... :	
☐ Testing procedure: SMT	---
Tested by (name + signature) :	
Approved by (+ signature) :	
Supervised by (+ signature) :	
Testing location/ address..... :	
☐ Testing procedure: RMT	---
Tested by (name + signature) :	
Approved by (+ signature) :	
Supervised by (+ signature) :	
Testing location/ address..... :	

Summary of testing:**Tests performed (name of test and test clause):**

all required tests

Testing location:

same address as on page 1.

Summary of compliance with National Differences:**Copy of marking plate****Type:**

Type	LED
number	W
300061.00031	22
300061.00011	22
300061.00032	33
300061.00012	33
300061.00035	22
300061.00015	22
300061.00036	33
300061.00016	33

Type	LED
number	W
300061.00021	22
300061.00001	22
300061.00022	33
300061.00002	33
300061.00025	22
300061.00005	22
300061.00026	33
300061.00006	33

Test item particulars:	
Classification of installation and use.....:	Recessed luminaire - in ceiling
Supply Connection.....:	Terminal block
.....:	
.....:	
Possible test case verdicts:	
- test case does not apply to the test object.....:	— (not applicable)
- test object does meet the requirement.....:	P (Pass)
- test object does not meet the requirement.....:	F (Fail)
Testing	
Date of receipt of test item.....:	18.05.2015
Date (s) of performance of tests	18.05.2015 + 28.05.2015

General remarks:
The test results presented in this report relate only to the object tested . This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory. "(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
all-purpose product information:
Recessed luminaire – in ceiling recessed Type of protection: class I Degree of protection: IP20 (optical part IP40) Luminaires suitable for normally flammable surfaces. Tested model: LUGCLASSIC LB LED 600 x 600 p/t Light source: LED module LUG ML 1402500 Warning - do not cover insulation: 

IEC 60598-2-2 or EN 60598-2-2			
Clause	Requirement + Test	Result - Remark	Verdict

2.2 (0)	GENERAL TEST REQUIREMENTS		
2.2 (0.1)	Information for luminaire design considered	Standard Yes ☒ No ☐	—
2.2 (0.3)	More sections applicable	Yes ☐ No ☒	—

2.4 (2)	CLASSIFICATION		
2.4 (2.2)	Type of protection (Class 0 excluded)	Class I.	—
2.4 (2.3)	Degree of protection (Requirement: Ordinary)	IP20, optical part IP40	—
2.4 (2.4)	Luminaire suitable for direct mounting on normally flammable surfaces	Yes ☒ No ☐	—
	Luminaire not suitable for direct mounting on normally flammable surfaces	Yes ☐ No ☒	—
	Luminaire suitable to be covered by insulating material	Yes ☐ No ☒	—
2.4 (2.5)	Luminaire for normal use	Yes ☒ No ☐	—
	Luminaire for rough service	Yes ☐ No ☒	—

2.5 (3)	MARKING		
2.5 (3.2)	Mandatory markings		P
	Position of the marking		P
	Format of symbols/text		P
2.5 (3.3)	Additional information		P
	Language of instructions		P
2.5 (3.3.1)	Combination luminaires		---
2.5 (3.3.2)	Nominal frequency in Hz		P
2.5 (3.3.3)	Operating temperature		—
2.5 (3.3.4)	Symbol or warning notice		---
2.5 (3.3.5)	Wiring diagram		---
2.5 (3.3.6)	Special conditions		---
2.5 (3.3.7)	Metal halide lamp luminaire – warning		---
2.5 (3.3.8)	Limitation for semi-luminaires		---
2.5 (3.3.9)	Power factor and supply current		---
2.5 (3.3.10)	Suitability for use indoors		---
2.5 (3.3.11)	Luminaires with remote control		---
2.5 (3.3.12)	Clip-mounted luminaire – warning		---

IEC 60598-2-2 or EN 60598-2-2			
Clause	Requirement + Test	Result - Remark	Verdict
2.5 (3.3.13)	Specifications of protective shields		---
2.5 (3.3.14)	Symbol for nature of supply		---
2.5 (3.3.15)	Rated current of socket outlet		---
2.5 (3.3.16)	Rough service luminaire		---
2.5 (3.3.17)	Mounting instruction for type Y, type Z and some type X attachments		---
2.5 (3.3.18)	Non-ordinary luminaires with PVC cable		---
2.5 (3.3.19)	Protective conductor current in instruction if applicable		---
2.5 (3.3.20)	Provided with information if not intended to be mounted within arms reach		---
2.5 (3.4)	Test with water		P
	Test with hexane		P
	Legible after test		P
	Label attached		P
2.5.1 (-)	Warning notice, if not suitable for insulating ceiling		P

2.6 (4)	CONSTRUCTION		
2.6 (4.2)	Components replaceable without difficulty		P
2.6 (4.3)	Wireways smooth and free from sharp edges		P
2.6 (4.4)	Lampholders		
2.6 (4.4.1)	Integral lampholder		---
2.6 (4.4.2)	Wiring connection		---
2.6 (4.4.3)	Lampholder for end-to-end mounting		---
2.6 (4.4.4)	Positioning		---
	- pressure test (N)		---
	After test the lampholder comply with relevant standard sheets and show no damage		---
	After test on single-capped lampholder the lampholder have not moved from its position and show no permanent deformation		---
	- bending test (N)		---
	After test the lampholder have not moved from its position and show no permanent deformation		---
2.6 (4.4.5)	Peak pulse voltage		---
2.6 (4.4.6)	Centre contact		---

IEC 60598-2-2 or EN 60598-2-2			
Clause	Requirement + Test	Result - Remark	Verdict
2.6 (4.4.7)	Parts in rough service luminaires resistant to tracking		---
2.6 (4.4.8)	Lamp connectors		---
2.6 (4.4.9)	Caps and bases correctly used		---
2.6 (4.5)	Starter holders		
	Starter holder in luminaires other than class II		---
	Starter holder class II construction		---
2.6 (4.6)	Terminal blocks		
	Tails		---
	Unsecured blocks		---
2.6 (4.7)	Terminals and supply connections		
2.6 (4.7.1)	Contact to metal parts		P
2.6 (4.7.2)	Test 8 mm live conductor		P
	Test 8 mm earth conductor		P
2.6 (4.7.3)	Terminals for supply conductors		P
2.6 (4.7.3.1)	Welded connections:		---
	- stranded or solid conductor		---
	- spot welding		---
	- welding between wires		---
	- Type Z attachment		---
	- mechanical test according to 15.8.2		---
	- electrical test according to 15.9		---
	- heat test according to 15.9.2.3 and 15.9.2.4		---
2.6 (4.7.4)	Terminals other than supply connection		---
2.6 (4.7.5)	Heat-resistant wiring/sleeves		---
2.6 (4.7.6)	Multi-pole plug		---
	- test at 30 N		---
2.6 (4.8)	Switches:		
	- adequate rating		---
	- adequate fixing		---
	- polarized supply		---
	- compliance with 61058-1 for electronic switches		---
2.6 (4.9)	Insulating lining and sleeves		
2.6 (4.9.1)	Retainment		P

IEC 60598-2-2 or EN 60598-2-2			
Clause	Requirement + Test	Result - Remark	Verdict
	Method of fixing.....:		---
2.6 (4.9.2)	Insulated linings and sleeves		---
	Resistant to a temperature > 20 °C to the wire temperature or		---
	a) & c) Insulation resistance and electric strength		---
	b) Ageing test. Temperature (°C).....:		---
2.6 (4.10)	Insulation of Class II luminaires		
2.6 (4.10.1)	No contact, mounting surface – accessible metal parts – wiring of basic insulation		---
	Safe installation fixed luminaires		---
	Capacitors and switches		---
	Interference suppression capacitors according to IEC 60384-14		---
2.6 (4.10.2)	Assembly gaps:		
	- not coincidental		---
	- no straight access with test probe		---
2.6 (4.10.3)	Retention of insulation:		
	- fixed		---
	- unable to be replaced; luminaire inoperative		---
	- sleeves retained in position		---
	- lining in lampholder		---
2.6 (4.11)	Electrical connections		
2.6 (4.11.1)	Contact pressure		P
2.6 (4.11.2)	Screws:		
	- self-tapping screws		P
	- thread-cutting screws		---
2.6 (4.11.3)	Screw locking:		
	- spring washer		P
	- rivets		---
2.6 (4.11.4)	Material of current-carrying parts		P
2.6 (4.11.5)	No contact to wood or mounting surface		---
2.6 (4.11.6)	Electro-mechanical contact systems		---
2.6 (4.12)	Mechanical connections and glands		---
2.6 (4.12.1)	Screws not made of soft metal		---
	Screws of insulating material		---

IEC 60598-2-2 or EN 60598-2-2			
Clause	Requirement + Test	Result - Remark	Verdict
	Torque test: torque (Nm); part	1,2	P
	Torque test: torque (Nm); part		---
	Torque test: torque (Nm); part		---
2.6 (4.12.2)	Screws with diameter < 3 mm screwed into metal		---
2.6 (4.12.4)	Locked connections:		
	- fixed arms; torque (Nm)		---
	- lampholder; torque (Nm)		---
	- push-button switches; torque 0,8 Nm		---
2.6 (4.12.5)	Screwed glands; force (Nm)		
2.6 (4.13)	Mechanical strength		---
2.6 (4.13.1)	Impact tests:		---
	- fragile parts; energy (Nm)		---
	- other parts; energy (Nm)	0,35	P
	1) live parts		P
	2) linings		---
	3) protection		P
	4) covers		P
2.6 (4.13.3)	Straight test finger		P
2.6 (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		---
2.6 (4.13.6)	Tumbling barrel		---
2.6 (4.14)	Suspensions and adjusting devices		
2.6 (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)		---

IEC 60598-2-2 or EN 60598-2-2			
Clause	Requirement + Test	Result - Remark	Verdict
	Metal rod. diameter (mm)		---
	Fixed luminaire or independent control gear without fixing devices		---
2.6 (4.14.2)	Load to flexible cables		
	Mass (kg)		---
	Stress in conductors (N/mm ²)		---
	Mass (kg) of semi-luminaire		---
	Bending moment (Nm) of semi-luminaire		---
2.6 (4.14.3)	Adjusting devices:		
	- flexing test; number of cycles		---
	- strands broken		---
	- electric strength test afterwards		---
2.6 (4.14.4)	Telescopic tubes: cords not fixed to tube; no strain on conductors		---
2.6 (4.14.5)	Guide pulleys		---
2.6 (4.14.6)	Strain on socket-outlets		---
2.6 (4.15)	Flammable materials:		
	- glow-wire test 650 °C		---
	- spacing $\geq$ 30 mm		---
	- screen withstanding test of 13.3.1		---
	- screen dimensions		---
	- no fiercely burning material		---
	- thermal protection		---
	- electronic circuits exempted		---
2.6 (4.15.2)	Luminaires made of thermoplastic material with lamp control gear		
	a) construction		---
	b) temperature sensing control		---
	c) surface temperature		---
2.6 (4.16)	Luminaires for mounting on normally flammable surfaces		
	No lamp control gear	(compliance with Section 12)	---
2.6 (4.16.1)	Lamp control gear spacing:		
	- spacing 35 mm		---
	- spacing 10 mm		---
2.6 (4.16.2)	Thermal protection:		

IEC 60598-2-2 or EN 60598-2-2			
Clause	Requirement + Test	Result - Remark	Verdict
	- in lamp control gear		P
	- external		---
	- fixed position		---
	- temperature marked lamp control gear	T110	P
2.6 (4.16.3)	Design to satisfy the test of 12.6	(see 12.6)	
2.6 (4.17)	Drain holes		---
	Clearance at least 5 mm		---
2.6 (4.18)	Resistance to corrosion:		
2.6 (4.18.1)	- rust-resistance		---
2.6 (4.18.2)	- season cracking in copper		---
2.6 (4.18.3)	- corrosion of aluminium		---
2.6 (4.19)	Igniters compatible with ballast		---
2.6 (4.20)	Rough service vibration		---
2.6 (4.21)	Protective shield:		
2.6 (4.21.1)	Shield fitted		---
	Shield of glass if tungsten halogen lamps		---
2.6 (4.21.2)	Particles from a shattering lamp not impair safety		---
2.6 (4.21.3)	No direct path		---
2.6 (4.21.4)	Impact test on shield		---
	Glow-wire test on lamp compartment		---
2.6 (4.22)	Attachments to lamps		---
2.6 (4.23)	Semi-luminaires comply Class II		---
2.6 (4.24)	UV radiation for tungsten halogen lamps and metal halide lamps (Annex P)		---
2.6 (4.25)	No sharp point or edges		P
2.6 (4.26)	Short-circuit protection:		
2.6 (4.26.1)	Uninsulated accessible SELV parts		---
2.6 (4.26.2)	Short-circuit test		---
2.6 (4.26.3)	Test chain according to Figure 29		---

2.7 (11)	CREEPAGE DISTANCES AND CLEARANCES		
	Working voltage (V).....:	230 V	---
	Voltage form	Sinusoidal ☒ Non-sinusoidal ☐	---

IEC 60598-2-2 or EN 60598-2-2			
Clause	Requirement + Test	Result - Remark	Verdict
	PTI	< 600 ☒ ≥ 600 ☐	—
	Impulse withstand category (Normal category II) (Category III Annex U)	Category II ☒ Category III ☐	—
	Rated pulse voltage (kV).....		—
	(1) Current-carrying parts of different polarity: cr (mm); cl (mm).....	>2,5/>1,5	P
	(2) Current-carrying parts and accessible parts: cr (mm); cl (mm).....	>2,5/>1,5	P
	(3) Parts becoming live due to breakdown of basic insulation and metal parts: cr (mm); cl (mm).....		---
	(4) Outer surface of cable where it is clamped and metal parts: cr (mm); cl (mm).....		---
	(5) Not used		—
	(6) Current-carrying parts and supporting surface: cr (mm); cl (mm).....	>2,5/>1,5	P

2.8 (7)	PROVISION FOR EARTHING		
2.8 (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		---
	Thread-forming screws		---
	Thread-forming screw used in a groove		---
	Earth makes contact first		---
2.8 (7.2.2 + 7.2.3)	Earth continuity in joints etc.		---
2.8 (7.2.4)	Locking of clamping means		---
	Compliance with 4.7.3		P
	Terminal blocks with integrated screwless earthing contacts tested according Annex V		---
2.8 (7.2.5)	Earth terminal integral part of connector socket		---
2.8 (7.2.6)	Earth terminal adjacent to mains terminals		P
2.8 (7.2.7)	Electrolytic corrosion of the earth terminal		---
2.8 (7.2.8)	Material of earth terminal		P
	Contact surface bare metal		---

IEC 60598-2-2 or EN 60598-2-2			
Clause	Requirement + Test	Result - Remark	Verdict
2.8 (7.2.10)	Class II luminaire for looping-in		---
	Double or reinforced insulation to functional earth		---
2.8 (7.2.11)	Earthing core coloured green-yellow		---
	Length of earth conductor		---

2.9 (14)	SCREW TERMINALS		
	Separately approved; component list	(see Annex 1)	---
	Part of the luminaire	(see Annex 3)	---

2.9 (15)	SCREWLESS TERMINALS AND ELECTRICAL CONNECTIONS		
	Separately approved; component list	(see Annex 1)	P
	Part of the luminaire	(see Annex 4)	---

2.10 (5)	EXTERNAL AND INTERNAL WIRING		
2.10 (5.2)	Supply connection and external wiring		
2.10 (5.2.1)	Means of connection	Terminal block	P
2.10 (5.2.2)	Type of cable		---
	Nominal cross-sectional area (mm ²)		---
	Cables equal to IEC 60227 or IEC 60245		---
2.10 (5.2.3)	Type of attachment, X, Y or Z		---
2.10 (5.2.5)	Type Z not connected to screws		---
2.10 (5.2.6)	Cable entries:		
	- suitable for introduction		P
	- adequate degree of protection		P
2.10 (5.2.7)	Cable entries through rigid material have rounded edges		P
2.10 (5.2.8)	Insulating bushings:		
	- suitably fixed		---
	- material in bushings		---
	- material not likely to deteriorate		---
	- tubes or guards made of insulating material		---
2.10 (5.2.9)	Locking of screwed bushings		---
2.10 (5.2.10)	Cord anchorage:		
	- covering protected from abrasion		---

IEC 60598-2-2 or EN 60598-2-2			
Clause	Requirement + Test	Result - Remark	Verdict
	- clear how to be effective		---
	- no mechanical or thermal stress		---
	- no tying of cables into knots etc.		---
	- insulating material or lining		---
2.10 (5.2.10.1)	Cord anchorage for type X attachment:		
	a) at least one part fixed		---
	b) types of cable		---
	c) no damaging of the cable		---
	d) whole cable can be mounted		---
	e) no touching of clamping screws		---
	f) metal screw not directly on cable		---
	g) replacement without special tool		---
	Glands not used as anchorage		---
	Labyrinth type anchorages		---
2.10 (5.2.10.2)	Adequate cord anchorage for type Y and type Z attachment		---
2.10 (5.2.10.3)	Tests:		
	- impossible to push cable; unsafe		---
	- pull test: 25 times; pull (N)		---
	- torque test: torque (Nm).....		---
	- displacement ≤ 2 mm		---
	- no movement of conductors		---
	- no damage of cable or cord		---
2.10 (5.2.11)	External wiring passing into luminaire		P
2.10 (5.2.12)	Looping-in terminals		---
2.10 (5.2.13)	Wire ends not tinned		---
	Wire ends tinned: no cold flow		---
2.10 (5.2.14)	Mains plug same protection		---
	Class III luminaire plug		---
2.10 (5.2.16)	Appliance inlets (IEC 60320)		---
	Appliance couplers of class II type		---
2.10 (5.2.17)	No standardized interconnecting cables properly assembled		---

IEC 60598-2-2 or EN 60598-2-2			
Clause	Requirement + Test	Result - Remark	Verdict
2.10 (5.2.18)	Used plug in accordance with		
	- IEC 60083		---
	- other standard		---
2.10 (5.3)	Internal wiring		
2.10 (5.3.1)	Internal wiring of suitable size and type	H03V-U	P
	Through wiring		
	- not delivered/ mounting instruction		---
	- factory assembled		---
	- socket outlet loaded (A)		P
	- temperatures.....: (see Annex 2)		---
	Green-yellow for earth only		P
2.10 (5.3.1.1)	Internal wiring connected directly to fixed wiring		
	Cross-sectional area (mm ²): 1x0,5		P
	Insulation thickness		P
	Extra insulation added where necessary		---
2.10 (5.3.1.2)	Internal wiring connected to fixed wiring via internal current-limiting device		---
	Adequate cross-sectional area and insulation thickness		---
2.10 (5.3.1.3)	Double or reinforced insulation for class II		---
2.10 (5.3.1.4)	Conductors without insulation		---
2.10 (5.3.1.5)	SELV current-carrying parts		---
2.10 (5.3.1.6)	Insulation thickness other than PVC or rubber		---
2.10 (5.3.2)	Sharp edges etc.		---
	No moving parts of switches etc.		---
	Joints, raising/lowering devices		---
	Telescopic tubes etc.		---
	No twisting over 360°		---
2.10 (5.3.3)	Insulating bushings:		
	- suitable fixed		---
	- material in bushings		---
	- material not likely to deteriorate		---
	- cables with protective sheath		---
2.10 (5.3.4)	Joints and junctions effectively insulated		---
2.10 (5.3.5)	Strain on internal wiring		---

IEC 60598-2-2 or EN 60598-2-2			
Clause	Requirement + Test	Result - Remark	Verdict
2.10 (5.3.6)	Wire carriers		P
2.10 (5.3.7)	Wire ends not tinned		—
	Wire ends tinned; no cold flow		---

2.11 (8)	PROTECTION AGAINST ELECTRIC SHOCK		
2.11 (8.2.1)	Live parts not accessible with standard test finger		P
	Basic insulated parts not used on the outer surface without appropriate protection		P
	Basic insulated parts not accessible with standard test finger on portable and adjustable luminaires		P
	Basic insulated parts not accessible with Ø 50 mm probe from outside, within arms reach, on wall-mounted luminaires		---
	Lamp and starterholders in portable and adjustable luminaires comply with double or reinforced insulation requirements		---
	Basic insulation only accessible under lamp or starter replacement		---
	Protection in any position		P
	Double-ended tungsten filament lamp		---
	Insulation lacquer not reliable		P
	Double-ended high pressure discharge lamp		---
	Relevant warning according to 3.2.18 fitted to the luminaire		---
2.11 (8.2.2)	Portable luminaire adjusted in most unfavourable position		---
2.11 (8.2.3.a)	Class II luminaire:		
	- basic insulated metal parts not accessible during starter or lamp replacement		---
	- basic insulation not accessible other than during starter or lamp replacement		---
	- glass protective shields not used as supplementary insulation		---
2.11 (8.2.3.b)	BC lampholder of metal in class I luminaires shall be earthed		---
2.11 (8.2.3.c)	Class III luminaires with exposed SELV parts:		
	Ordinary luminaire:		---
	- touch current		---

IEC 60598-2-2 or EN 60598-2-2			
Clause	Requirement + Test	Result - Remark	Verdict
	- no-load voltage		---
	Other than ordinary luminaire:		
	- nominal voltage		---
2.11 (8.2.4)	Portable luminaire:		
	- protection independent of supporting surface		---
	- terminal block completely covered		---
2.11 (8.2.5)	Compliance with the standard test finger or relevant probe		P
2.11 (8.2.6)	Covers reliably secured		P
2.11 (8.2.7)	Discharging of capacitors $\geq 0,5 \mu\text{F}$		---
	Portable plug connected luminaire with capacitor		---
	Other plug connected luminaire with capacitor		---
	Discharge device on or within capacitor		---
	Discharge device mounted separately		---

2.12 (12)	ENDURANCE TEST AND THERMAL TEST		
2.12 (12.3)	Endurance test:		
	- mounting-position.....	recessed in ceiling	---
	- test temperature (°C)	35	---
	- total duration (h).....	168	---
	- supply voltage: Un factor; calculated voltage (V):	253	---
	- lamp used	2 x LED module ML 1402500	---
2.12 (12.3.2)	After endurance test:		
	- no part unserviceable		P
	- luminaire not unsafe		P
	- no damage to track system		---
	- marking legible		P
	- no cracks, deformation etc.		P
2.12 (12.4)	Thermal test (normal operation)	(see Annex 2)	P
2.12 (12.5)	Thermal test (abnormal operation)	(see Annex 2)	---
2.12 (12.6)	Thermal test (failed lamp control gear condition):		
2.12 (12.6.1)	Through wiring or looping-in wiring loaded by a current of (A)		---
	- case of abnormal conditions		---

IEC 60598-2-2 or EN 60598-2-2			
Clause	Requirement + Test	Result - Remark	Verdict
	- electronic lamp control gear		---
	- measured winding temperature (°C): at 1,1 Un ..		---
	- measured mounting surface temperature (°C) at 1,1 Un.....		---
	- calculated mounting surface temperature (°C) ...		---
	- track-mounted luminaires		---
2.12 (12.6.2)	Temperature sensing control		
	- case of abnormal conditions		---
	- thermal link		---
	- manual reset cut-out		---
	- auto reset cut-out		---
	- measured mounting surface temperature (°C)		---
	- track-mounted luminaires		---
2.12 (12.7)	Thermal test (failed lamp control gear in plastic luminaires):		---
2.12 (12.7.1)	Luminaire without temperature sensing control		---
2.12 (12.7.1.1)	Luminaire with fluorescent lamp ≤ 70W		
	Test method 12.7.1.1 or Annex V		---
	Test according to 12.7.1.1:		
	- case of abnormal conditions		---
	- Ballast failure at supply voltage (V)		---
	- Components retained in place after the test		---
	- Test with standard test finger after the test		---
	Test according to Annex V:		
	- 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:		
	- part tested; temperature (°C).....		---
2.12 (12.7.1.2)	Luminaire with discharge lamp, fluorescent lamp > 70W, transformer > 10 VA		
	- case of abnormal conditions		---

IEC 60598-2-2 or EN 60598-2-2			
Clause	Requirement + Test	Result - Remark	Verdict
	- 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:		
	- part tested; temperature (°C).....:		---
2.12 (12.7.1.3)	Luminaire with short circuit proof transformers ≤ 10 VA		---
	- case of abnormal conditions		—
	- Components retained in place after the test		---
	- Test with standard test finger after the test		---
2.12 (12.7.2)	Luminaire with temperature sensing control		---
	- thermal link	Yes ☐ No ☐	—
	- manual reset cut-out	Yes ☐ No ☐	—
	- auto reset cut-out	Yes ☐ No ☐	—
	- case of abnormal conditions		—
	- highest measured temperature of fixing point/exposed part (°C):		—
	Ball-pressure test:		
	- part tested; temperature (°C).....:		---

2.13 (9)	RESISTANCE TO DUST, SOLID OBJECTS AND MOISTURE		
2.13 (9.2)	Tests for ingress of dust, solid objects and moisture:		
	- classification according to IP	IP20, optical part IP40	—
	- mounting position during test.....:	in ceiling - recessed	—
	- fixing screws tightened; torque (Nm)		—
	- tests according to clauses	9.2.0	—
	- electric strength test afterwards		P
	a) no deposit in dust-proof luminaire		---
	b) no talcum in dust-tight luminaire		---
	c) no trace of water on current-carrying parts or SELV parts or where it could become a hazard		---
	d) i) For luminaires without drain holes – no water entry		---

IEC 60598-2-2 or EN 60598-2-2			
Clause	Requirement + Test	Result - Remark	Verdict
	d) ii) For luminaires with drain holes – no hazardous water entry		---
	e) no water in watertight luminaire		---
	f) no contact with live parts (IP 2X)	recessed part IP20	P
	f) no entry into enclosure (IP 3X and IP 4X)	optical part IP40	P
	f) no contact with live parts (IP3X and IP4X)		---
	g) no trace of water on part of lamp requiring protection from splashing water		---
	h) no damage of protective shield or glass envelope		---
2.13 (9.3)	Humidity test 48 h		P

2.14 (10)	INSULATION RESISTANCE AND ELECTRIC STRENGTH		
2.14 (10.2.1)	Insulation resistance test		
	Cable or cord covered by metal foil or replaced by a metal rod of mm Ø		---
	Insulation resistance (MΩ)		---
	SELV:		
	- between current-carrying parts of different polarity.....		---
	- between current-carrying parts and mounting surface		---
	- between current-carrying parts and metal parts of the luminaire.....		---
	Other than SELV:		
	- between live parts of different polarity	>550 MΩ	P
	- between live parts and mounting surface	>550 MΩ	P
	- between live parts and metal parts	>550 MΩ	P
	- between live parts of different polarity through action of a switch.....		---
2.14 (10.2.2)	Electric strength test		
	Dummy lamp		---
	Luminaires with ignitors after 24 h test		---
	Luminaires with manual ignitors		---
	Test voltage (V):		---
	SELV:		

IEC 60598-2-2 or EN 60598-2-2			
Clause	Requirement + Test	Result - Remark	Verdict
	- between current-carrying parts of different polarity.....		---
	- between current-carrying parts and mounting surface		---
	- between current-carrying parts and metal parts of the luminaire.....		---
	Other than SELV:		
	- between live parts of different polarity	1460 V	P
	- between live parts and mounting surface	1460 V	P
	- between live parts and metal parts	1460 V	P
	- between live parts of different polarity through action of a switch.....		---
2.14 (10.3)	Touch current (mA)	< 0,002 mA	P
	Leakage current (mA)	0,11 mA	P

2.15 (13)	RESISTANCE TO HEAT, FIRE AND TRACKING		
2.15 (13.2.1)	Ball-pressure test:		
	- part tested; temperature (°C)		---
2.15 (13.3.1)	Needle flame test (10 s):		
	- part tested		---
2.15 (13.3.2)	Glow-wire test (650°C):		
	- part tested		---
2.15 (13.4.1)	Tracking test: part tested		---

List of used test equipment

Device	Type	Inv. No.
High voltage transformer	HT5053	00005866
Greisinger - thermometer	GHT 1200 A	20211
Earth continuity test equipment	MPO-01A	550724
Voltmeter	EL20	14672
Power supply KIKUSUI	PCR500M	00110185
Multimeter FLUKE	1587	551734
Load gauge 10N	BRNO	21369
Impact test aparature	F 22.50	4994
Touch and leakage current measurement		N 700054
Caliper	MITUTOYO	551392
Test finger	BRNO	21364

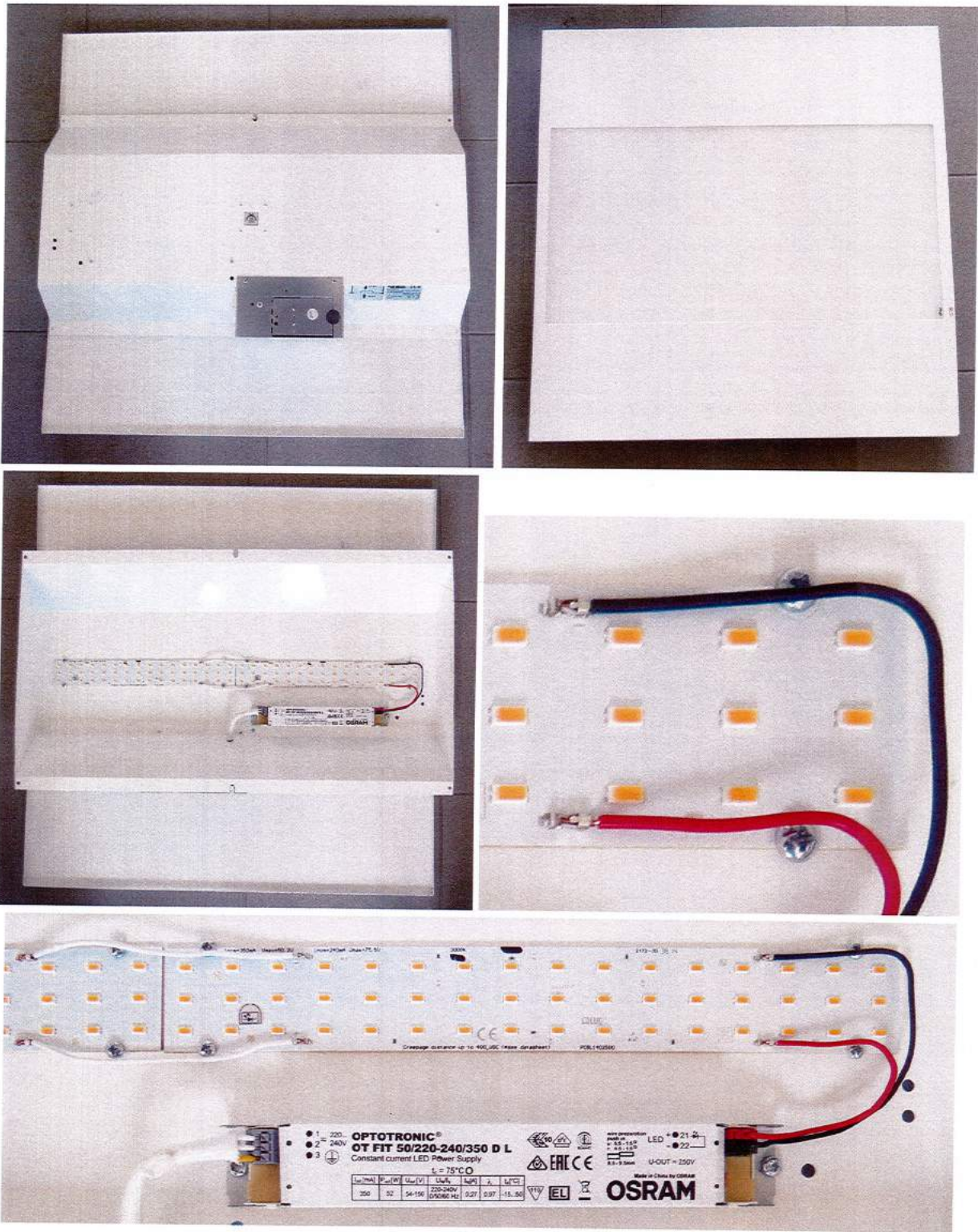
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ANNEX 2: temperature measurements, thermal tests of Section 12						
Type reference	LUGCLASSIC ECO LB LED 625x625 p/t 300061.00032			—		
Lamp used.....	2 x LED module			—		
Lamp control gear used.....	OSRAM OT FIT 50/220-240/350 D L 220-240 V T110° tc75°			—		
Mounting position of luminaire.....	ceiling recessed			—		
Supply wattage (W)	33W			—		
Supply current (A).....	----			—		
Calculated power factor.....	----			—		
Table: measured temperatures corrected for ta = 25 °C:						
- abnormal operating mode	temperature marked lamp control gear T110°			—		
- test 1: rated voltage.....	230 V			—		
- test 2: 1,06 times rated voltage or 1,05 times rated wattage	243,8 V			—		
- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage.....	----			—		
- test 4: 1,1 times rated voltage or 1,05 times rated wattage	----			—		
Through wiring or looping-in wiring loaded by a current of A during the test	----			—		
temperature (°C) of part	Clause 12.4 – normal				Clause 12.5 – abnormal	
	test 1	test 2	test 3	limit	test 4	limit
driver surface tc	41	----	----	75	----	
LED module tc	41	----	----	75	----	
surface – above the luminaire 20mm	----	30	----	90	----	
wiring in LED module	----	38	----	90	----	
terminal block	----	31	----	85	----	
internal wiring	----	31	----	90	----	

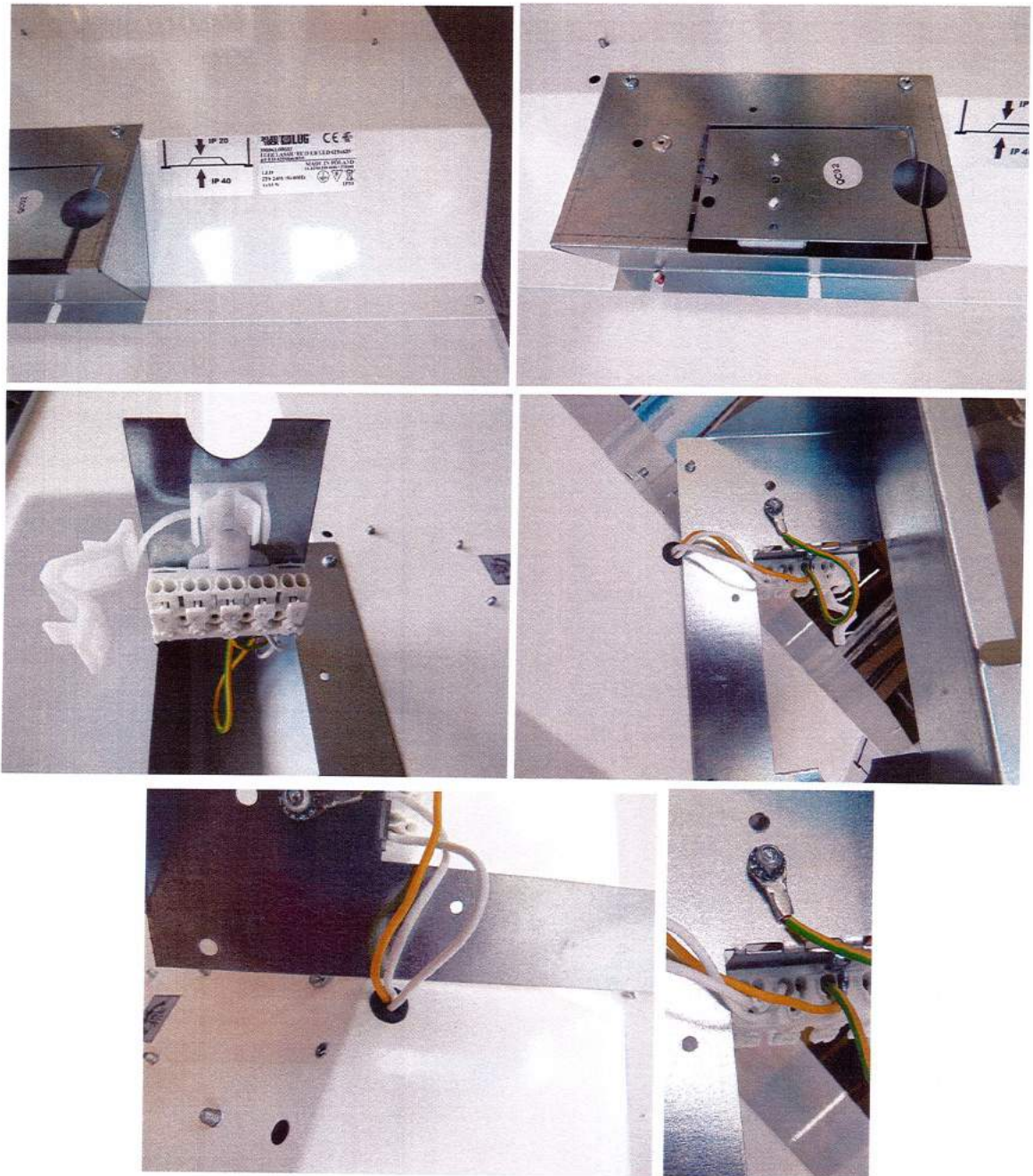
ANNEX 3: screw terminals (part of the luminaire)		
not applicable		---

ANNEX 4: screwless terminals (part of the luminaire)		
not applicable		---

ANNEX 5: photo



ANNEX 5: photo



ANNEX 6: installation

WAŻNE INFORMACJE | IMPORTANT INFORMATIONS | IMPORTANTES INFORMACOES ÚTEIS | ВАЖНАЯ ИНФОРМАЦИЯ | WICHTIGE INFORMATIONEN

Podczas montażu oprawy oraz czyszczenia komponentów proszę nie używać ostrych narzędzi.
Use protective gloves during the mounting.
Durant l'installation et l'entretien du luminaire il est recommandé de ne pas utiliser de gants de protection.
Für Montage und Wartung der Leuchte sind Handschuhe zu verwenden.
Bei Montage und Wartung der Leuchte sind Handschuhe zu verwenden.

Krótkie światło zalecane do użytku w miejscach, gdzie nie powinno być światła.

Remove the dirt & dust with soft cloth.
Le processus de nettoyage doit être effectué en utilisant un tissu doux et sec.
Removal of dirt and dust should be done using a soft, dry cloth.

Short light should be used in places where there should not be light.

Ne pas utiliser de lumière vive dans les endroits où il ne faut pas de lumière.

Do not use bright light in places where there should not be light.

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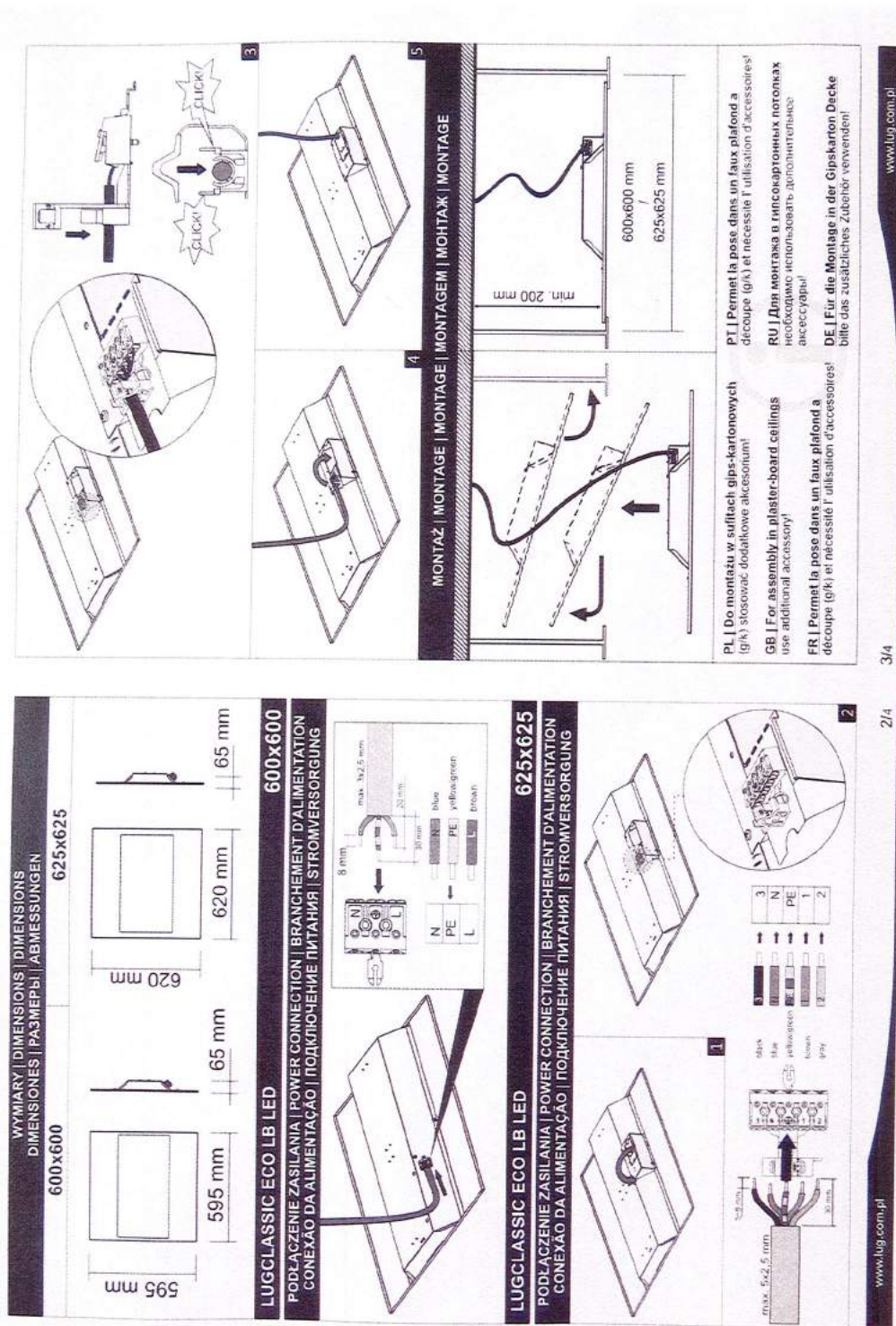
Ne pas utiliser de lumière vive dans les endroits où il ne faut pas de lumière.

Do not use bright light in places where there should not be light.

Ne pas utiliser de lumière vive dans les endroits où il ne faut pas de lumière.

Do not use

ANNEX 6: installation



Deklaracja Zgodności WE

(EC Declaration of Conformity, EG - Konformitätsklärung, Déclaration de conformité)

06/001/15/CE

My (We, Wir, Nous)

LUG Light Factory Spółka z o. o.
65-127 Zielona Góra, ul. Gorzowska 11

deklarujemy z pełną odpowiedzialnością, że wyrób:

(hereby declare on our own responsibility, that the product:, hiermit bestätigen wir, dass die leuchte:,

déclarons sous notre seule responsabilité que le produit:)

Typ wyrobu:	OPRAWY RASTROWE I MODUŁOWE
(Model type:, Typenart:, Type du produit:)	(Louver & recessed luminaires)
	(Raster und modulleuchten; Persiennes et modulaire)
Nazwa wyrobu:	LUGCLASSIC LB ECO LED NT
(Model name:, Nom du produit:, Bezeichnung:)	(220-240V/50/60Hz, IP65)
Oznaczenie fabryczne:	ZAŁĄCZNIK (Annex, Anbau, Annexe)
(Type number:, Art.Nr. :,Référence:)	

jest zgodny z postanowieniami następujących dyrektyw:

(is in conformity with the following directives:, entspricht die Bestimmungen der folgenden Richtlinien:,

est conforme aux dispositions des directives suivantes:)

ErP

(Eco-design of Energy-Related Products)

RoHS

(Restriction of Hazardous Substances)

Niskonapięciowa

(LVD, EG-Niederspannungsrichtlinie, Basse tension)

Kompatybilności elektromagnetycznej

(EMC, Compatibilité électromagnétique, Elektromagnetische Verträglichkeit)

2009/125/WE (2009/125/EG, EC)

2011/65/WE (2011/65/EG, EC)

2006/95/WE (2006/95/EG, EC)

2004/108/WE (2004/108/EG, EC)

oraz z następującymi normami: (and with the following standards:, und folgende Normen:, ainsi que les normes suivantes:)

PN-EN 60598-1:2011

EN 60598-2-1:1989

PN-EN 55015:2013-10

PN-EN 61547:2009

PN-EN 61000-3-2:2007/A2:2010

PN-EN 61000-3-3:2013-10

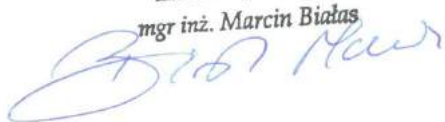
PN-EN 62471:2010

rok oznaczenia produktu symbolem CE:

15

(implementation year of the EC regulation:, Anbringung der CE-Kennzeichnung:, année de marquage du produit par le symbole CE:)

LUG Light Factory Sp. z o.o.
Inżynier Laboratorium
Laboratory Engineer
mgr inż. Marcin Biały



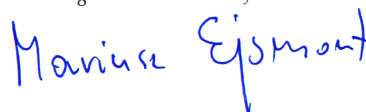
.....
Wystawił:

(Compiled by:, Zusammengestellt von:, Publié:)

Zielona Góra, 2015-02-13

DYREKTOR
DS. TECHNICZNYCH

mgr inż. Mariusz Ejsmont



.....
Podpis osoby upoważnionej

(Signature of authorized person, Unterschrift des Bevollmächtigten,

Signature de la personne autorisée)

Strona (Page, Seite) 1 / 2

LUGCLASSIC LB ECO LED NT

Oznaczenie fabryczne:*(Type number., Art.Nr. ;Référéce:)*

300061.00062

300061.00063

300061.00064

300061.00065

300061.00071

300061.00072

300061.00073

300061.00074

Model:

LUGCLASSIC ECO LB LED n/t ED 3150lm/830

LUGCLASSIC ECO LB LED n/t ED 3150lm/840

LUGCLASSIC ECO LB LED n/t ED 4500lm/830

LUGCLASSIC ECO LB LED n/t ED 4500lm/840

LUGCLASSIC ECO LB LED DALI n/t ED 3150lm/830

LUGCLASSIC ECO LB LED DALI n/t ED 3150lm/840

LUGCLASSIC ECO LB LED DALI n/t ED 4500lm/830

LUGCLASSIC ECO LB LED DALI n/t ED 4500lm/840



**NARODOWY INSTYTUT ZDROWIA PUBLICZNEGO
- PAŃSTWOWY ZAKŁAD HIGIENY**

**NATIONAL INSTITUTE OF PUBLIC HEALTH
- NATIONAL INSTITUTE OF HYGIENE**

**ZAKŁAD HIGIENY ŚRODOWISKA
DEPARTMENT OF ENVIRONMENTAL HYGIENE**

24 Chocimska 00-791 Warsaw • Phone (22) 5421354; (22) 5421349 • Fax (22) 5421287 • e-mail: sek-zhk@pzh.gov.pl

**ATEST HIGIENICZNY
HYGIENIC CERTIFICATE**

HK/B/0997/01/2014

ORYGINAŁ

Wyrób / product: **Oprawa oświetleniowa: LUGCLASSIC**
modele: PAR, PPAR, SLA, PLX, MPRM, PRM, LED, ECO LED, LB ECO LED,
typ montażu: NT, PT, GK,
typ źródła światła: T5, T8, LED

Zawierający / containing: stal, aluminium i inne składniki wg dokumentacji producenta

Przeznaczone do / destined: oświetlania pomieszczeń w obiektach szpitalnych i budynkach opieki zdrowotnej, a także w zakładach przemysłowych branży kosmetycznej i spożywczej

Wymieniony wyżej produkt odpowiada wymaganiom higienicznym przy spełnieniu następujących warunków
/ is acceptable according to hygienic criteria with the following conditions:

- Atest nie dotyczy parametrów technicznych i walorów użytkowych
- Zastosowanie wyrobów musi być zgodne z przepisami dotyczącymi obiektu, w którym są one montowane

Wytwórca / producer:

LUG Light Factory Sp. z o. o.
65-127 Zielona Góra
ul. Gorzowska 11



Niniejszy dokument wydano na wniosek / this certificate issued for:

LUG Light Factory Sp. z o. o.
65-127 Zielona Góra
ul. Gorzowska 11

Atest może być zmieniony lub unieważniony po przedstawieniu stosownych dowodów przez którąkolwiek stronę. Niniejszy atest traci ważność po 2019-08-29 lub w przypadku zmian w recepturze albo w technologii wytwarzania wyrobu.

**The certificate may be corrected or cancelled after appropriate motivation.
The certificate loses its validity after 2019-08-29
or in the case of changes in composition or in technology of production.**

Data wydania atestu higienicznego: 29 sierpnia 2014

The date of issue of the certificate: 29th August 2014

Kierownik
Zakładu Higieny Środowiska

[Signature]
dr Bożena Krogulska

Reprodukowanie, kopiowanie, fotografowanie, skanowanie, digitalizacja Atestu Higienicznego w celach marketingowych bez zgody NIZP-PZH jest zabronione.

proj. T. Podsiady

**LUG**[®]LUG Light Factory Ltd.
Producer of Professional Lighting Fittings

PHOTOMETRIC TEST REPORT

Test Report according to LM-79 / EN13032

1. DEVICE UNDER TEST SPECIFICATION:

TEST REPORT NO. :	011/2016
TEST PROTOCOL NO.:	4338
PLACE/DATE:	ZIELONA GÓRA, 24.05.2016
TESTED AND COMPILED BY:	MARCIN BIAŁAS
APPROVED BY:	MARIUSZ EJSMONT
DEVICE UNDER TEST:	LIGHT FITTING
LUMINAIRE NAME:	LUGCLASSIC ECO LB LED 600 PT 4500 840 EASY CONNECT
ARTICLE NO:	300061.00070
MANUFACTURER:	LUG LIGHT FACTORY
VERSION INFO:	STANDARD
LED MODULE:	ML1402500W840425 48 LED LUG
LAMP IDENTIFICATION :	LED 4000K
LED DRIVER:	OSRAM OT FIT 50 220...240/350 D L
INPUT VOLTAGE/FREQUENCY:	230V/50Hz
LUMINAIRE DIMENSIONS :	L : 0.595 m / W : 0.595 m / H : 0.060 m
LIGHT OUTPUT DIMENSIONS :	L : 0.560 m / W : 0.285 m

1

2. GONIOPHOTOMETRY TEST RESULTS:

LUMINOUS FLUX :	3970 lm
ACTIVE POWER :	34,20 W
EFFICIENCY :	116,1 lm/W
RMS SUPPLY CURRENT	0,157 A
POWER FACTOR:	0,949
RMS SUPPLY VOLTAGE :	230,2 V
FREQUENCY :	50,0 Hz
CURRENT THD (IEC) :	18,9%
LIGHT DISTRIBUTION ANGLE:	N/A°
TOTAL ACCURACY :	± 5 %
AMBIENT TEMPERATURE :	25 °C ± 1 °C

**LUG[®]**

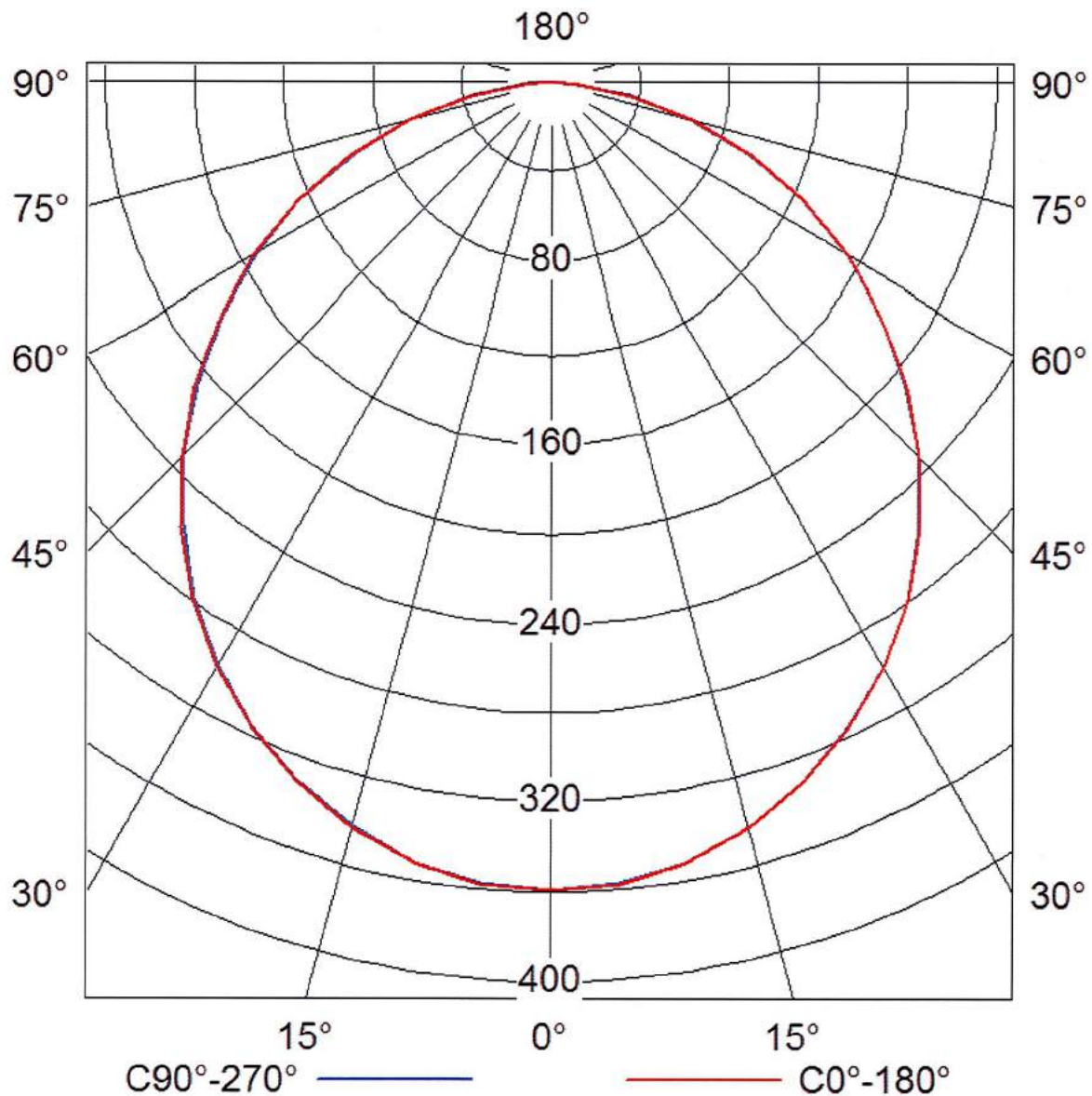
LUG Light Factory Ltd.
Producer of Professional Lighting Fittings



3. LIGHT DISTRIBUTION (POLAR) CURVE :

 $I(0^\circ) = 359.10 \text{ [cd/klm]}$

100.0%

2

**LUG[®]****LUG Light Factory Ltd.**
Producer of Professional Lighting Fittings**4. LUMINOUS INTENSITY DISTRIBUTION in cd/1000lm : C/°**

C/°	90	105	120	135	150	165	180	195	210	225	240	255	270
0	359,1	359,1	359,1	359,1	359,1	359,1	359,1	359,1	359,1	359,1	359,1	359,1	359,1
5	357,3	357,5	357,3	357,2	357,2	357,4	357,5	357,4	357,4	357,6	357,4	357,5	357,1
10	352,0	351,5	351,7	351,8	351,9	352,0	352,1	352,7	352,3	352,3	352,2	352,1	352,2
15	342,7	342,7	342,9	343,1	343,0	343,3	343,5	344,0	343,8	343,6	343,7	343,3	343,4
20	330,8	331,0	330,7	331,0	330,9	331,6	331,3	331,8	331,8	331,8	331,8	331,4	331,3
25	315,7	315,8	315,5	315,8	316,3	316,7	316,6	317,3	317,1	317,2	316,8	316,7	316,2
30	298,0	297,8	297,8	298,3	298,3	299,0	299,2	300,0	299,4	299,6	299,1	299,0	298,6
35	278,0	278,2	278,0	278,4	278,3	279,2	279,1	280,1	279,9	279,9	279,4	279,4	279,1
40	255,7	256,2	255,9	256,1	256,6	257,3	257,4	258,2	257,8	257,9	257,6	257,4	257,2
45	232,1	232,2	232,1	232,4	232,6	233,6	233,6	234,5	234,3	234,4	233,9	233,8	233,2
50	206,8	207,0	206,8	207,3	207,4	208,4	208,5	209,4	209,1	209,1	208,7	208,4	208,0
55	179,8	180,3	180,0	180,7	180,8	182,0	182,0	182,9	182,6	182,5	182,0	181,9	181,7
60	151,9	152,5	151,9	152,4	152,8	153,8	153,9	154,8	154,5	154,5	153,9	153,8	153,6
65	124,9	123,3	123,1	123,6	124,0	125,0	125,2	126,0	125,6	125,7	124,9	124,9	124,4
70	93,0	93,6	93,1	93,6	94,0	95,1	95,3	96,0	95,8	95,8	95,0	94,8	94,4
75	65,2	63,0	63,1	63,7	64,1	65,1	65,3	65,9	65,8	65,7	64,9	64,7	64,3
80	35,3	34,7	34,8	35,0	35,4	36,4	36,5	37,2	36,9	36,9	36,3	36,1	35,7
85	10,8	10,8	10,8	11,2	11,4	12,1	12,3	12,4	12,4	12,4	12,2	11,8	11,5
90	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0

**LUG[®]**LUG Light Factory Ltd.
Producer of Professional Lighting Fittings

SPECTRUM TEST REPORT

Date : 2016/05/24

Information

User : MARCIN BIALAS Measure Time : 11:48:53

Model NO. : MK350S Light Source : LED 4000K

Memo :

BASIC

u' : 0,2227

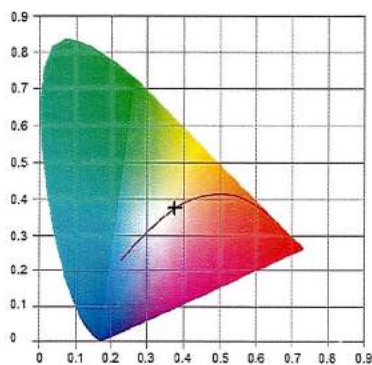
v' : 0,5009

CCT : 4103K

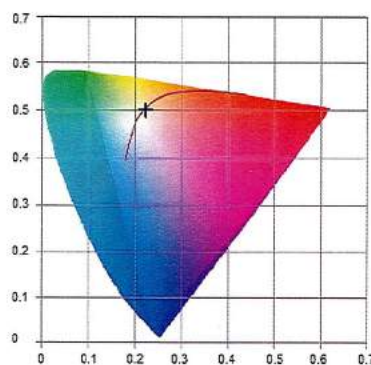
CRI : 81,0

R9 : -0,0642

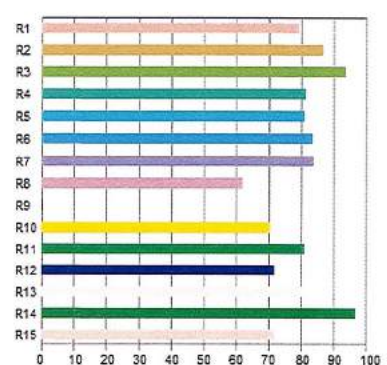
CIE1931



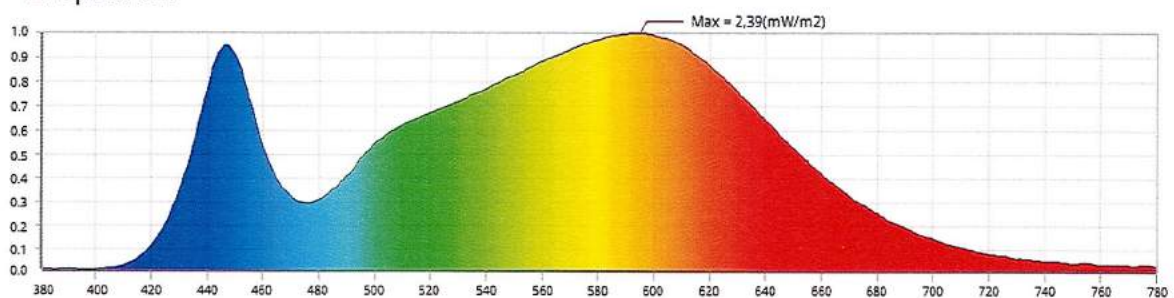
CIE1976



CRI



Spectrum



Features

CCT : 4103K	x : 0,3766	Δx : 0,0006	f_c : 13,1	PPF-R : 0,6958	R1 : 78,9	R6 : 83,0	R11 : 80,6
LUX : 141	y : 0,3764	Δy : 0,0025	λ_D : 578	PPF-G : 0,9082	R2 : 86,5	R7 : 83,6	R12 : 71,4
CRI : 81,0	u' : 0,2227	Δu : -0,0006	λ_P : 595	PPF-B : 0,3687	R3 : 93,4	R8 : 61,5	R13 : 80,0
I-Time : 1000	v' : 0,5009	Δv : 0,0012	λ_{PV} : 2,39	PPF-UV : 0,0024	R4 : 80,9	R9 : -0,0642	R14 : 96,7
Flicker : N/A	Duv : 0,0010	Purity : 0,2598	PPF : 1,97	PPF-NIR : 0,0734	R5 : 80,5	R10 : 70,1	R15 : 71,6
SP-ratio : 1,70	CQS : 83,2	X : 141	Y : 141	Z : 92,4	TLCI : 65,2	GAI : 74,3	

**LUG®**

LUG Light Factory Ltd.
Producer of Professional Lighting Fittings



5. TEST INFORMATION

Test performed after 1h of aging

Photometric Method:

□ Sphere-spectroradiometer Lisun LMS-9000A(Plus)

Scan Range: 380nm~800nm:1nm

Sphere diameter: 1.50m, 4PI

Integration Time: Auto

√ Spectrometer: UPRTek Advanced MK350S

Scan Range: 380nm~780nm:1nm

Integration Time: Auto

Stabilization Time: 60 min

Goniophotometer type C-Gama Spectro Color ®

Precision of angle settings 0,2°

Precision of position read 0,005°

Photometer – luxmeter Digi02 Spectro Color ®, accuracy: class a

Powermeter with harmonic analyser: PF9811 Everfine, accuracy: class 0,5

AC testing power source DPS1005 Everfine

6. AUTHORIZED SIGNATURES

Tested by:

LUG Light Factory Sp. z o.o.
Inżynier Laboratorium
Laboratory Engineer

mgr inż. Marcin Białas

Approved by:

5



LUG Light Factory Ltd.
Producer of Professional Lighting Fittings



PHOTOMETRIC TEST REPORT

Test Report according to LM-79 / EN13032

1. DEVICE UNDER TEST SPECIFICATION:

TEST REPORT NO. :	121/2016
TEST PROTOCOL NO. :	3361
PLACE/DATE:	ZIELONA GÓRA, 04.07.2018
TESTED AND COMPILED BY:	MARCIN BIAŁAS
APPROVED BY:	KRZYSZTOF OLEK
DEVICE UNDER TEST:	LIGHT FITTING
LUMINAIRE NAME:	LUGCLASSIC ECO LB LED n/t 3700lm/840 biały
ARTICLE NO:	300061.00065
MANUFACTURER:	LUG LIGHT FACTORY
VERSION INFO:	STANDARD
LED MODULE:	ML1402500W840425 48 LED LUG
LAMP IDENTIFICATION :	LED 4000K
LED DRIVER:	OSRAM OT FIT 50 220...240/350 D L
INPUT VOLTAGE/FREQUENCY:	230V/50Hz
LUMINAIRE DIMENSIONS :	L : 0.626 m / W : 0.626 m / H : 0.070 m
LIGHT OUTPUT DIMENSIONS :	L : 0.560 m / W : 0.285 m

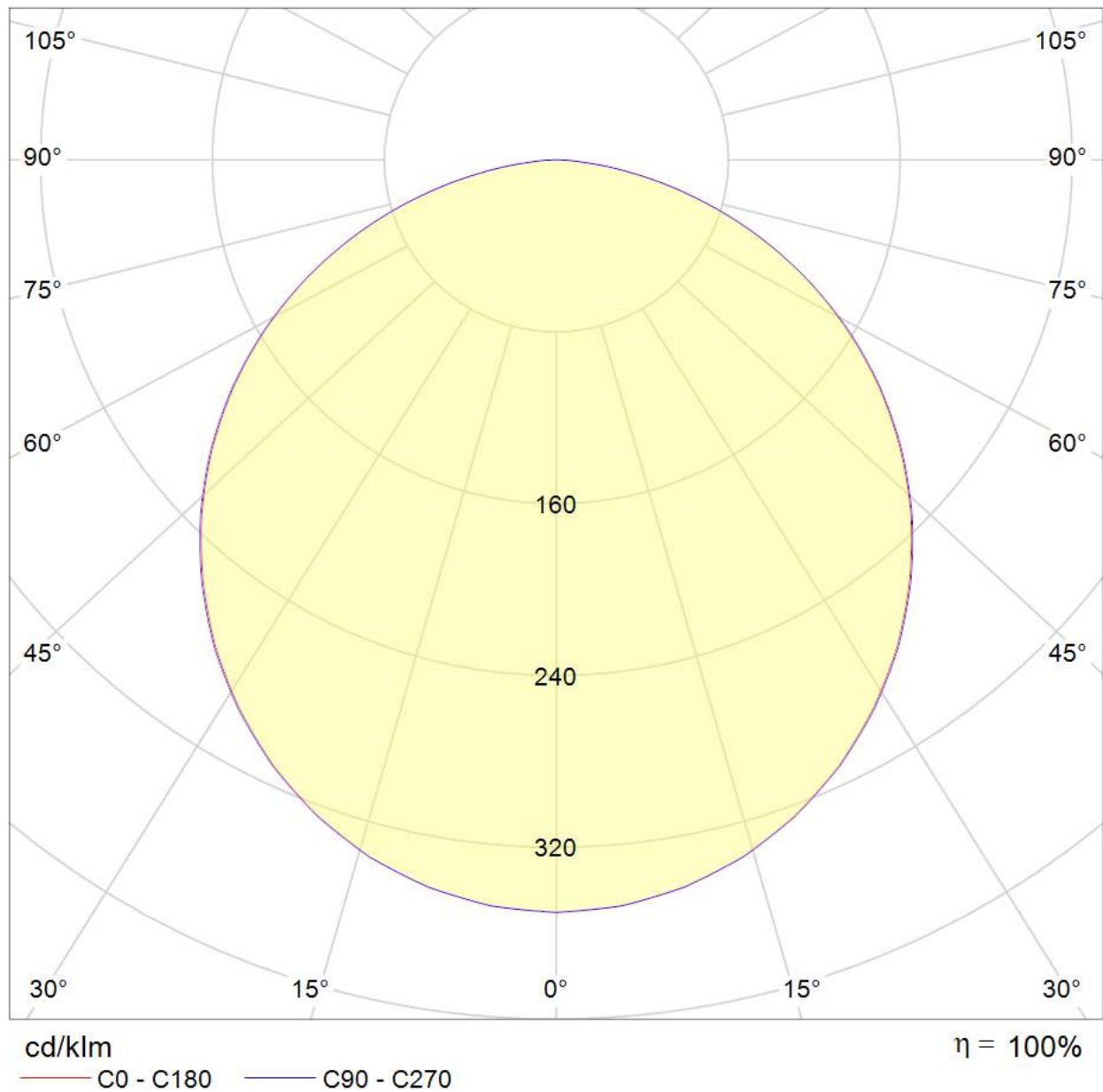
1

2. GONIOPHOTOMETRY TEST RESULTS:

LUMINOUS FLUX :	3688 lm
ACTIVE POWER :	36,60 W
EFFICIENCY :	100,8 lm/W
RMS SUPPLY CURRENT	0,167 A
POWER FACTOR:	0,937
RMS SUPPLY VOLTAGE :	230,0 V
FREQUENCY :	50,0 Hz
CURRENT THD (IEC) :	18,9%
LIGHT DISTRIBUTION ANGLE:	N/A°
TOTAL ACCURACY :	± 5 %
AMBIENT TEMPERATURE :	25 °C ± 1 °C



3. LIGHT DISTRIBUTION (POLAR) CURVE :



**LUG**[®]**LUG Light Factory Ltd.**
Producer of Professional Lighting Fittings**4. LUMINOUS INTENSITY DISTRIBUTION in cd/1000lm : C/γ**

C/γ	0	15	30	45	60	75	90
0	350,3	350,3	350,3	350,3	350,3	350,3	350,3
5	348,6	348,7	348,7	348,6	348,6	348,7	348,6
10	343,7	343,9	343,8	343,9	343,8	343,9	343,7
15	335,8	336,0	335,9	336,1	336,0	336,0	336,0
20	324,8	325,2	325,1	325,2	325,1	325,4	325,2
25	311,2	311,6	311,5	311,7	311,6	311,8	311,7
30	294,9	295,4	295,3	295,6	295,5	295,6	295,6
35	276,5	277,0	276,7	277,1	277,1	277,4	277,3
40	255,7	256,2	256,1	256,5	256,5	256,8	256,6
45	233,3	233,8	233,6	234,1	233,9	234,4	234,1
50	208,8	209,3	209,2	209,6	209,6	210,0	209,8
55	182,8	183,2	183,0	183,5	183,5	183,8	183,7
60	155,0	155,6	155,6	155,8	155,9	156,3	156,0
65	126,1	126,6	126,3	126,8	126,6	127,1	126,8
70	96,0	96,4	96,4	96,6	96,6	96,9	96,7
75	65,7	66,2	65,8	66,4	66,0	66,5	66,0
80	36,6	37,0	36,9	37,1	37,0	37,1	37,0
85	12,0	12,3	12,4	12,5	12,4	12,5	12,3
90	0,0	0,0	0,0	0,0	0,0	0,0	0,0

**LUG**[®]LUG Light Factory Ltd.
Producer of Professional Lighting Fittings

SPECTRUM TEST REPORT

Date : 2016/05/24

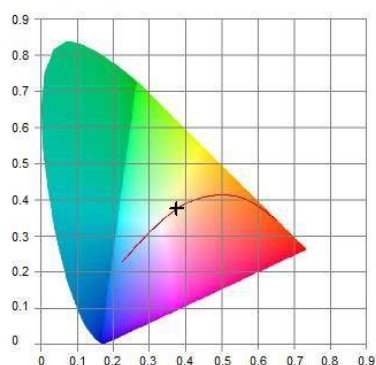
Information

User : MARCIN BIALAS	Measure Time : 11:48:53
Model NO. : MK350S	Light Source : LED 4000K
Memo :	

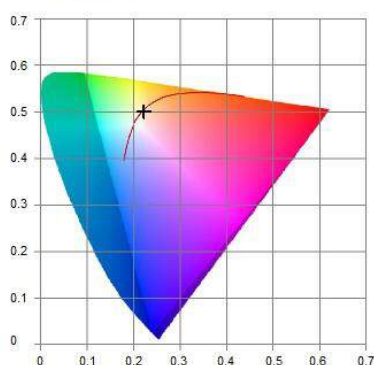
BASIC

u'	: 0,2227
v'	: 0,5009
CCT	: 4103K
CRI	: 81,0
R9	: -0,0642

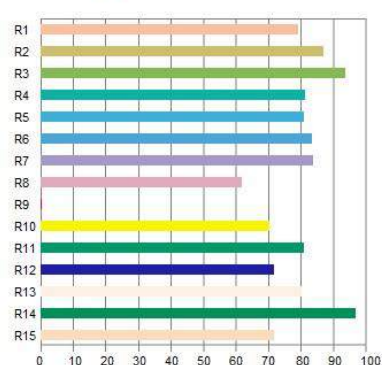
CIE1931



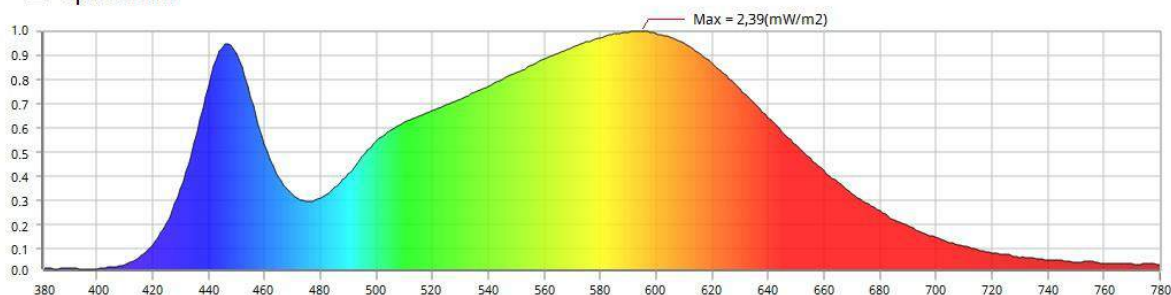
CIE1976



CRI



Spectrum



Features

CCT : 4103K	x : 0,3766	Δx : 0,0006	fc : 13,1	PPF-R : 0,6958	R1 : 78,9	R6 : 83,0	R11 : 80,6
LUX : 141	y : 0,3764	Δy : 0,0025	λD : 578	PPF-G : 0,9082	R2 : 86,5	R7 : 83,6	R12 : 71,4
CRI : 81,0	u' : 0,2227	Δu : -0,0006	λP : 595	PPF-B : 0,3687	R3 : 93,4	R8 : 61,5	R13 : 80,0
I-Time : 1000	v' : 0,5009	Δv : 0,0012	λPV : 2,39	PPF-UV : 0,0024	R4 : 80,9	R9 : -0,0642	R14 : 96,7
Flicker : N/A	Duv : 0,0010	Purity : 0,2598	PPF : 1,97	PPF-NIR : 0,0734	R5 : 80,5	R10 : 70,1	R15 : 71,6
SP-ratio : 1,70	CQS : 83,2	X : 141	Y : 141	Z : 92,4	TLCI : 65,2	GAI : 74,3	



LUG Light Factory Ltd.
Producer of Professional Lighting Fittings



5. TEST INFORMATION

Test performed after 1h of aging

Photometric Method:

□ Sphere-spectroradiometer Lisun LMS-9000A(Plus)

Scan Range: 380nm~800nm:1nm

Sphere diameter: 1.50m, 4PI

Integration Time: Auto

√ Spectrometer: UPRTek Advanced MK350S

Scan Range: 380nm~780nm:1nm

Integration Time: Auto

Stabilization Time: 60 min

Goniophotometer type C-Gama Spectro Color ®

Precision of angle settings 0,2°

Precision of position read 0,005°

Photometer – luxmeter Digi02 Spectro Color ®, accuracy: class a

Powermeter with harmonic analyser: PF9811 Everfine, accuracy: class 0,5

AC testing power source DPS1005 Everfine