

TEST REPORT

Ecodesign requirements for Light sources and Separate control gears

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Manufacturer's name	Same as applicant
Address	Same as applicant
Test specification:	
Standard	☒ COMMISSION REGULATION (EU) 2019/2020 ☒ COMMISSION REGULATION (EU) 2021/341 ☒ COMMISSION DELEGATED REGULATION (EU) 2019/2015 ☒ COMMISSION DELEGATED REGULATION (EU) 2021/340 ☒ 2021 No.1095 ENERGY CONSERVATION
Test procedure	SGS-CSTC
Non-standard test method	None
Test Report Form No.	(EU) 2019/2020_H
Test Report Form(s) Originator	SGS-CSTC
Master TRF	2021-10-13

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Ningbo Branch

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Test item description : LED module (LED light source)

Trade Mark : --

Model/Type reference : See page 5

Ratings : See page 5

Lamp cap : --

Test or reference Standard : ☐ CIE 84: 1989
☒ CIE 13.3: 1995
☒ CIE 015: 2018
☒ CIE 97: 2005
☒ CIE 18.2: 1983
☒ CIE S 025/E: 2015
☒ EN 13032-1: 2004 + A1: 2012
☒ EN 13032-4: 2015+ A1: 2019
☐ IEC TR 63158: 2018
☐ IEC 61547: 2020
☐ IEC 63103: 2020
☐ EN 62384: 2016+ A1: 2009
☐ EN 62612: 2013 + A1: 2017 + A11: 2017 + A2: 2018
☒ EN 62717: 2017 + A2: 2019
☐ EN 62722-1: 2016
☐ EN 62722-2-1: 2016
☐ EN 60061: 1993 + All amendment
☐ EN 60064: 1995 + All amendment
☐ EN 60357: 2003 + All amendment
☐ EN 60969: 1993 + A1: 1993 + A2: 2000

Possible test case verdicts:

- test case does not apply to the test object... : N/A

- test object does meet the requirement..... : P (Pass)

- test object does not meet the requirement .. : F (Fail)

Testing :

Date of receipt of test item : 2021-04-20

Date (s) of performance of tests : 2021-04-23 to 2021-10-13

General remarks:

The test results presented in this report relate only to the object tested.

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"(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 is used as the decimal separator.

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Summary of testing:

1. These tests fulfil the requirements of standard ISO/IEC 17025.
2. When determining the test conclusion, the Measurement Uncertainty of test has been considered.
3. National Differences for UK Legislation was considered in this test report.

Factory Location:

Same as applicant

Testing Location:

Same as applicant

Copy of marking plate

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective National Certification Body that own these marks.

Label, packaging and website information were not provided by applicant.

General product information:

This product is LED module, which belongs to light sources.

They are used in the luminaires, which are the same except for appearance and model name.

Product information see below table:

LED module on 6500K white light mode						
Model No.	Rated input (V)	Power (W)	Luminous flux (lm)	CCT (K)	Dim	L ₇₀ B ₅₀ lifetime (h)
EPL09	12	9	1350	6500	No	15000

LED luminaire	
Model No.	<p>PAR56-135S-W, F5602-135S-W, 561092W10, XYZW09, XYZW09L, XYZW10, XYZW10L, PAR56-LT-W, F5602-LT-W, F5606-LT-W</p> <p>X = 2 digits, means times of 1/8 inches. Represents the diameter of the light body.</p> <p>Y = 2 digits, means the different light body.</p> <p>Z = 2 digits, means the different decoration enclosure.</p> <p>L = 1-3 digits, means the number of LED.</p> <p>T = "S, S2, S5" means the LED type 0.06W, 0.2W and 0.5W.</p>

EU 2019/2020 + EU 2021/341			
Clause	Requirement + Test	Result - Remark	Verdict
	Classification		-
	Light source : ☒ Yes ☐ No		-
	Separate control gear : ☐ Yes ☒ No		-
	Containing product : ☐ Yes ☒ No		-
	Light source removeable : ☐ Yes ☐ No		-
	Replaceability of light source : ☐ Replaceable ☐ No-user replaceable ☐ No replaceable		-
	Control gear removeable : ☐ Yes ☐ No		-
	Replaceability of control gear : ☐ Replaceable ☐ No-user replaceable ☐ No replaceable		-
Article 2	Definitions		P
	'light source' means an electrically operated product intended to emit, or, in the case of a non-incandescent light source, intended to be possibly tuned to emit, light, or both, with all of the following optical characteristics:		P
(a)	chromaticity coordinates x and y in the range $0,270 < x < 0,530$ and $-2,3172 x^2 + 2,3653 x - 0,2199 < y < -2,3172 x^2 + 2,3653 x - 0,1595$		P
(b)	a luminous flux < 500 lumen per mm ² of projected light-emitting surface area		P
(c)	a luminous flux between 60 and 82 000 lumen;		P
(d)	a colour rendering index (CRI) > 0		P
	High-pressure sodium (HPS) light sources that do not fulfil condition (a) are considered light sources for the purposes of this Regulation		N/A
ANNEX II	Ecodesign requirements		P
1	Energy efficiency requirements		P
(a)	Energy efficiency requirements for light source		P
	From 1 September 2021, the declared power consumption of a light source P_{on} shall not exceed the maximum allowed power P_{onmax} (in W)	See table 1	P
	The standby power P_{sb} of a light source shall not exceed 0,5 W.	No standby function	N/A
	The networked standby power P_{net} of a connected light source shall not exceed 0,5 W.	No networked standby function	N/A
(b)	Energy efficiency requirements for separate control gear		N/A
	From 1 September 2021, the values set in Table 3 of (EU) 2019/2020 for the minimum energy efficiency requirements of a separate control gear operating at full-load shall apply		N/A

EU 2019/2020 + EU 2021/341			
Clause	Requirement + Test	Result - Remark	Verdict
	Multi-wattage separate control gears shall comply with the requirements according to the maximum declared power on which they can operate.		N/A
	The no-load power P_{no} of a separate control gear shall not exceed 0,5 W.		N/A
	The standby power P_{sb} of a separate control gear shall not exceed 0,5 W.		N/A
	The networked standby power P_{net} of a connected separate control gear shall not exceed 0,5 W.		N/A
2	Functionality requirements		P
	From 1 September 2021, the functional requirements specified in Table 4 of (EU) 2019/2020 shall apply for light sources	See table 3	P
3	Information requirements		N/A
	From 1 September 2021 the following information requirements shall apply:		N/A
(a)	Information to be displayed on the light source itself		N/A
	For all light sources, except CTLS, LFL, CFLni, other FL, and HID, the value and physical unit of the useful luminous flux (lm) and correlated colour temperature (K) shall be displayed in a legible font on the surface		N/A
	For directional light sources, the beam angle ($^{\circ}$) shall also be indicated.		N/A
	If there is room for only two values, the useful luminous flux and the correlated colour temperature shall be displayed. If there is room for only one value, the useful luminous flux shall be displayed.		N/A
(b)	Information to be visibly displayed on the packaging		N/A
(1)	Light source placed on the market, not in a containing product		N/A
	In a packaging containing information to be visibly displayed at a point-of-sale prior to its purchase, the following information shall be clearly and prominently displayed on the packaging:		N/A
	(a) the useful luminous flux (Φ_{use}) in a font at least twice as large as the display of the on-mode power (P_{on}), clearly indicating if it refers to the flux in a sphere (360°), in a wide cone (120°) or in a narrow cone (90°);		N/A
	(b) the correlated colour temperature, rounded to the nearest 100 K, also expressed graphically or in words, or the range of correlated colour temperatures that can be set		N/A
	(c) the beam angle in degrees (for directional light sources), or the range of beam angles that can be set;		N/A
	(d) electrical interface details, e.g. cap- or connector-type, type of power supply (e.g. 230 V AC 50 Hz, 12 V DC);		N/A
	(e) the L70B50 lifetime for LED and OLED light sources, expressed in hours;		N/A
	(f) the on-mode power (P_{on}), expressed in W		N/A

EU 2019/2020 + EU 2021/341			
Clause	Requirement + Test	Result - Remark	Verdict
	(g) the standby power (P_{sb}), expressed in W and rounded to the second decimal. If the value is zero, it may be omitted from the packaging;		N/A
	(h) the networked standby power (P_{net}) for CLS, expressed in W and rounded to the second decimal. If the value is zero, it may be omitted from the packaging		N/A
	(i) the colour rendering index, rounded to the nearest integer, or the range of CRI-values that can be set		N/A
	(j) if $CRI < 80$, and the light source is intended for use in outdoor applications, industrial applications or other applications where lighting standards allow a $CRI < 80$, a clear indication to this effect. For HID light sources with useful luminous flux $> 4\,000\text{ lm}$, this indication is not mandatory;		N/A
	(k) if the light source is designed for optimum use in non-standard conditions (such as ambient temperature $T_a \neq 25\text{ }^{\circ}\text{C}$ or specific thermal management is necessary): information on those conditions;		N/A
	(l) a warning if the light source cannot be dimmed or can be dimmed only with specific dimmers or with specific wired or wireless dimming methods. In the latter cases a list of compatible dimmers and/or methods shall be provided on the manufacturer's website;		N/A
	(m) if the light source contains mercury: a warning of this, including the mercury content in mg rounded to the first decimal place;		N/A
	(n) if the light source is within the scope of Directive 2012/19/EU, without prejudice to marking obligations pursuant to Article 14(4) of Directive 2012/19/EU, or contains mercury: a warning that it shall not be disposed of as unsorted municipal waste.		N/A
	Items (a) to (d) shall be displayed on the packaging in the direction meant to face prospective buyer; for other items this is also recommended, if space permits.		N/A
	For light sources that can be set to emit light with different characteristics, the information shall be reported for the reference control settings. In addition, a range of obtainable values may be indicated.		N/A
(2)	Separate control gears:		N/A
	If a separate control gear is placed on the market as a stand-alone product and not as a part of a containing product, in a packaging containing information to be visibly displayed to potential buyers, prior to their purchase, the following information shall be clearly and prominently displayed on the packaging:		N/A
	(a) the maximum output power of the control gear (for HL, LED and OLED) or the power of the light source for which the control gear is intended (for FL and HID)		N/A
	(b) the type of light source(s) for which it is intended		N/A

EU 2019/2020 + EU 2021/341			
Clause	Requirement + Test	Result - Remark	Verdict
	(c) the efficiency in full-load, expressed in percentage		N/A
	(d) the no-load power (P _{no}), expressed in W and rounded to the second decimal, or the indication that the gear is not intended to operate in no-load mode. If the value is zero, it may be omitted from the packaging but shall nonetheless be declared in the technical documentation and on websites;		N/A
	(e) the standby power (P _{sb}), expressed in W and rounded to the second decimal. If the value is zero, it may be omitted from the packaging but shall nonetheless be declared in the technical documentation and on websites;		N/A
	(f) where applicable, the networked standby power (P _{net}), expressed in W and rounded to the second decimal. If the value is zero, it may be omitted from the packaging but shall nonetheless be declared in the technical documentation and on websites;		N/A
	(g) a warning if the control gear is not suitable for dimming of light sources or can be used only with specific types of dimmable light sources or using specific wired or wireless dimming methods. In the latter cases, detailed information on the conditions in which the control gear can be used for dimming shall be provided on the manufacturer's or importer's website;		N/A
	(h) a QR-code redirecting to a free-access website of the manufacturer, importer or authorised representative, or the internet address for such a website, where full information on the control gear can be found		N/A
(c)	Information to be visibly displayed on a free-access website for separate control gears		N/A
	(a) the information specified in point 3(b)(2), except 3(b)(2)(h)		N/A
	(b) the outer dimensions in mm		N/A
	(c) the mass in grams of the control gear, without packaging, and without lighting control parts and non-lighting parts, if any and if they can be physically separated from the control gear;		N/A
	(d) instructions on how to remove lighting control parts and non-lighting parts, if any, or how to switch them off or minimise their power consumption during control-gear testing for market surveillance purposes;		N/A
	(e) if the control gear can be used with dimmable light sources, a list of minimum characteristics that the light sources should have to be fully compatible with the control gear during dimming, and possibly a list of compatible dimmable light sources		N/A
	(f) recommendations on how to dispose of it at the end of its life in line with Directive 2012/19/EU		N/A
(d)	Technical documentation for separate control gears		N/A

EU 2019/2020 + EU 2021/341			
Clause	Requirement + Test	Result - Remark	Verdict
	The information specified in point 3(c) of this Annex shall also be contained in the technical documentation file		N/A
(e)	Information for products specified in point 3 of Annex III		N/A
	For the light sources and separate control gears specified in point 3 of Annex III the intended purpose shall be stated in the technical documentation		N/A
	The technical documentation file drawn up for the purposes of conformity assessment, in accordance with Article 5 of this Regulation shall list the technical parameters that make the product design specific to qualify for the exemption		N/A
	For light sources indicated in point 3(p) of Annex III it shall be stated: 'This light source is only for use by photo sensitive patients. Use of this light source will lead to increased energy cost compared to an equivalent more energy efficient product.'		N/A
ANNEX III	Exemptions		N/A
1	This Regulation shall not apply to light sources and separate control gears specifically tested and approved to operate in other directives or regulations specified in (EU) 2019/2020 ANNEX III point 1		N/A
2	This Regulation shall not apply to		N/A
	(a) double-capped fluorescent T5 light sources with power $P \leq 13$ W		N/A
	(b) electronic displays		N/A
	(c) light sources and separate control gears in battery-operated products		N/A
	(d) light sources for spectroscopy and photometric applications		N/A
	(e) light sources and separate control gears on bicycles and other non-motorised vehicles.		N/A
3	Any light source or separate control gear within the scope of this Regulation shall be exempt from the requirements of this Regulation, with the exception of the information requirements set out in point 3(e) of Annex II, if they are specifically designed and marketed for their intended use in at least one of the following applications:		N/A
	(a) signalling		N/A
	(b) image capture and image projection		N/A
	(c) light sources with specific effective ultraviolet power > 2 mW/klm and intended for use in applications requiring high UV-content		N/A
	(d) light sources with a peak radiation around 253,7 nm and intended for germicidal use (destruction of DNA)		N/A

EU 2019/2020 + EU 2021/341			
Clause	Requirement + Test	Result - Remark	Verdict
	(e) light sources emitting 5 % or more of total radiation power of the range 250-800 nm in the range of 250-315 nm and/or 20 % or more of total radiation power of the range 250-800 nm in the range of 315-400 nm, and intended for disinfection or fly trapping		N/A
	(f) light sources with the primary purpose of emitting radiation around 185,1 nm and intended to be used for the generation of ozone		N/A
	(g) light sources emitting 40 % or more of total radiation power of the range 250-800 nm in the range of 400-480 nm, and intended for coral zooxanthellae symbioses		N/A
	(h) FL light sources emitting 80 % or more of total radiation power of the range 250-800 nm in the range of 250-400 nm, and intended for sun-tanning		N/A
	(i) HID light sources emitting 40 % or more of total radiation power of the range 250-800 nm in the range of 250-400 nm, and intended for sun-tanning		N/A
	(j) light sources with a photosynthetic efficacy > 1,2 µmol/J, and/or emitting 25 % or more of total radiation power of the range 250-800 nm in the range of 700-800 nm, and intended for use in horticulture		N/A
	(k) HID light sources with correlated colour temperature CCT > 7000 K and intended for use in applications requiring such a high CCT		N/A
	(l) light sources with a beam angle of less than 10° and intended for spot-lighting applications requiring a very narrow light beam		N/A
	(m) halogen light sources with cap-type G9.5, GX9.5, GY9.5, GZ9.5, GZX9.5, GZY9.5, GZZ9.5, K39d, G9.5HPL, G16d, GES/E40 (low voltage (24V) silver crown only), GX16, GX16d, GY16, G22, G38, GX38, GX38Q, P28s, P40s, PGJX28, PGJX 36, PGJX50, R7s with a luminous flux > 12 000 lm, QXL, designed and marketed specifically for entertainment events		N/A
	(n) colour-tuneable light sources that can be set to at least the colours listed in this point and which have for each of these colours, measured at the dominant wavelength, a minimum excitation purity of blue (90%); green (65%); red (95%) and are intended for use in applications requiring high-quality coloured light		N/A
	(o) light sources accompanied by an individual calibration certificate detailing the exact radiometric flux and/or spectrum under specified conditions, and intended for use in photometric calibration, or for laboratory use or quality control applications for the evaluation of coloured surfaces and materials under standard viewing conditions		N/A

EU 2019/2020 + EU 2021/341			
Clause	Requirement + Test	Result - Remark	Verdict
	(p) light sources provided specifically for use by photosensitive patients, to be sold in pharmacies and other authorised selling points (e.g. suppliers of disability products), upon presentation of a medical prescription;		N/A
	(q) incandescent light sources (not including halogen light sources) fulfilling all of the following conditions: power ≤ 40 W, length ≤ 60 mm, diameter ≤ 30 mm, declared suitable for operation at ambient temperature ≥ 300 °C, and intended for use in high temperature applications such as ovens;		N/A
	(r) halogen light sources fulfilling all of the following conditions: cap-type G4, GY6.35 or G9, power ≤ 60 W, declared suitable for operation at ambient temperature ≥ 300 °C, and intended for use in high temperature applications such as ovens		N/A
	s) incandescent light sources with blade contact-, metal lug-, cable-, litz wire-, metric thread-, pin base- or non-standard customised electrical interface, encasing made from quartz-glass tubes, specifically designed and exclusively marketed for industrial or professional electro-heating equipment		N/A
	(t) halogen light sources fulfilling all of the following conditions: R7s cap, CCT $\leq 2\,500$ K, length not in the ranges 75-80 mm and 110-120 mm, specifically designed and marketed for industrial or professional electroheating equipment		N/A
	(u) single capped fluorescent lamps (CFLni) having a diameter of 16 mm (T5), 2G11 4 pin base, with CCT = 3200 K and chromaticity coordinates $x = 0,415$ $y = 0,377$, or with CCT = 5 500 K and chromaticity coordinates $x = 0,330$ $y = 0,335$, specifically designed and marketed for studio and video applications for traditional filmmaking		N/A
	(v) LED or OLED light sources, complying with the definition of 'original works of art' as defined in Directive 2001/84/EC of the European Parliament and of the Council (17), made by the artist him/herself in a limited number below 10 pieces		N/A
	(w) light sources that		N/A
	(1) are specifically designed and exclusively marketed for scene-lighting use in film-studios, TV-studios and locations, and photographic-studios and locations, or for stage-lighting use in theatres, during concerts or other entertainment events and that		N/A
	(2) meet at least one of the following specifications:		N/A
	a) LED with power ≥ 100 W and CRI > 90 ;		N/A
	b) GES/E40, K39d socket with changeable Colour Temperature down to 1 800 K (undimmed), used with low voltage power supply;		N/A

EU 2019/2020 + EU 2021/341			
Clause	Requirement + Test	Result - Remark	Verdict
	c) LED with power ≥ 180 W and arranged to direct output to an area smaller than the light emitting surface;		N/A
	d) Incandescent light source that is DWE type and has 650 W power, 120 V voltage and pressure screw terminal;		N/A
	e) LED with power ≥ 100 W that allows the user to set different correlated colour temperatures for the emitted light;		N/A
	f) LFL T5 with G5 cap with CRI ≥ 85 and CCT 2 900, 3 000, 3 200, 5 600 or 6 500 K.		N/A
	(x) incandescent DLS fulfilling all of the following conditions: E27 cap, clear envelope, power ≥ 100 W and ≤ 400 W, CCT $\leq 2\,500$ K, specifically designed and exclusively marketed for infrared heating		N/A
4	CLS and CSCG designed and marketed specifically for entertainment events, for connection to high speed control networks in always-listening mode, shall be exempt from the requirements on standby (P_{sb}) and on networked standby (P_{net}) of points 1(a) and 1(b) of Annex II		N/A

ANNEX 1	Energy efficiency requirements
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Table 1 - Energy efficiency requirements for light source

Model	EPL09		
Parameters	Requirements	Result	Verdict
Calculated P_{onmax} (W)	$P_{onmax} = C \times (L + \Phi_{use}/(F \times \eta)) \times R$ (W)	12,75	--
Declared P_{on} (W)	Declared $P_{on} \leq P_{onmax}$	9	P
P_{sb} for light source with standby power mode (W)	$P_{sb} \leq 0,5$ W	No standby function	N/A
P_{net} for CLS with standby power mode (W)	$P_{net} \leq 0,5$ W	No networked standby function	N/A
Calculations Parameters	Value		
Declared useful luminous flux Φ_{use} (lm)	1350		
Threshold efficacy (η) (lm/W)	120,0		
End loss factor (L) (W)	1,5		
Correction factor (C)	1,00		
Efficacy factor (F)	1,00		
CRI factor (R)	1,00		

ANNEX 1	Energy efficiency requirements
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Table 2 - Energy efficiency classes of light sources

Model	EPL09		
Parameters	Requirements	Rated value	Measured value
Calculated total mains efficacy η_{TM} (lm/W)	$\eta_{TM} = (\Phi_{\text{use declared}} / P_{\text{on declared}}) \times F_{TM}$	138,9	137,2
Total mains efficacy η_{TM} (lm/W)	Energy efficiency class	Energy efficiency class (Rated)	Energy efficiency class (Measured)
$210 \leq \eta_{TM}$	A	☐	☐
$185 \leq \eta_{TM} < 210$	B	☐	☐
$160 \leq \eta_{TM} < 185$	C	☐	☐
$135 \leq \eta_{TM} < 160$	D	☒	☒
$110 \leq \eta_{TM} < 135$	E	☐	☐
$85 \leq \eta_{TM} < 110$	F	☐	☐
$\eta_{TM} < 85$	G	☐	☐

ANNEX 2	Function requirements
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Table 3 - Function requirements for light sources

Model	EPL09		
Parameters	Requirements	Result	Verdict
Colour rendering	☒ $CRI \geq 80$ ☐ except for HID with $\Phi_{use} > 4 \text{ klm}$ and for light sources intended for use in outdoor applications, industrial applications or other applications where lighting standards allow a $CRI < 80$	84,3	P
Displacement factor for LED and OLED MLS	☐ No limit at $P_{on} \leq 5 \text{ W}$, ☐ $DF \geq 0,5$ at $5 \text{ W} < P_{on} \leq 10 \text{ W}$ ☐ $DF \geq 0,7$ at $10 \text{ W} < P_{on} \leq 25 \text{ W}$ ☐ $DF \geq 0,9$ at $25 \text{ W} < P_{on}$	NMLS	N/A
Lumen maintenance factor (for LED and OLED)	$X_{LMF,MIN}\% = 100 \times e^{((3000 \times \ln(0.7))/L_{70})}$ ☐ 10000 h; 89,9% ☒ 15000 h; 93,1% ☐ 25000 h; 95,8% ☐ $\geq 26200 \text{ h}$; 96,0% ☐ Others:	95,1%	P
Survival factor (for LED and OLED)	$\geq 0,9$ after 3600 h	1,0	P
Colour consistency for LED and OLED light sources	Variation of chromaticity coordinates within a six-step MacAdam ellipse or less	5,2	P
Flicker for LED and OLED MLS	$P_{st} \text{ LM} \leq 1,0$ at full-load	NMLS	N/A
Stroboscopic effect for LED and OLED MLS	☐ $\leq 0,9$ at full-load (except for light sources intended for use in outdoor applications, industrial applications or other applications where lighting standards allow a $CRI < 80$) ☐ From 1 September 2024: $\leq 0,4$ at full-load (except for light sources intended for use in outdoor applications, industrial applications or other applications where lighting standards allow a $CRI < 80$)	NMLS	N/A

ANNEX 3
Test results
Table 4 - Test results for light sources

Model	EPL09							
Sample	Test Voltage (V)	P _{on} (W)	Φ _{use} (lm)	CCT (K)	CRI	Colour consistency	Lamp survival factor at 3600h	Lumen Maintenance (%) at 3600h
1	12	8,96	1339,0	6525	84,4	5,5	Survival	95,0
2	12	9,07	1347,0	6516	84,3	5,8	Survival	94,0
3	12	9,05	1343,0	6496	84,4	5,1	Survival	96,0
4	12	9,10	1346,0	6512	84,2	4,7	Survival	96,0
5	12	9,06	1344,0	6523	84,2	5,3	Survival	95,0
6	12	8,92	1347,0	6525	84,2	4,8	Survival	94,0
7	12	8,81	1345,0	6515	84,3	4,9	Survival	95,0
8	12	9,00	1350,0	6522	84,3	5,6	Survival	95,0
9	12	9,12	1357,0	6519	84,4	5,5	Survival	95,0
10	12	9,12	1348,0	6526	84,2	5,3	Survival	96,0
Average	12	9,09	1346,6	6518	84,3	5,2	1,0	95,1
Declared value	-	9	1350.0	6500	80	6	0,9	93,1
Verification Limit	-	☐ P _{on} ≤ 2 W ≤ declared value+0,20W ☐ 2 W < P _{on} ≤ 5 W ≤ declared value +10% ☒ 5 W < P _{on} ≤ 100 W ≤ declared value +5% ☐ 100 W < P _{on} ≤ Declared value +2,5%	≥ declared value - 10%	declared value-10% ≤ Test value ≤ declared value+10%	≥ declared value-2	≤ declared value	☒ LED and OLED ≥ 0,9	☒ LED and OLED ≥ X _{LMF,MIN} %
Verdict	-	P	P	P	P	P	P	P

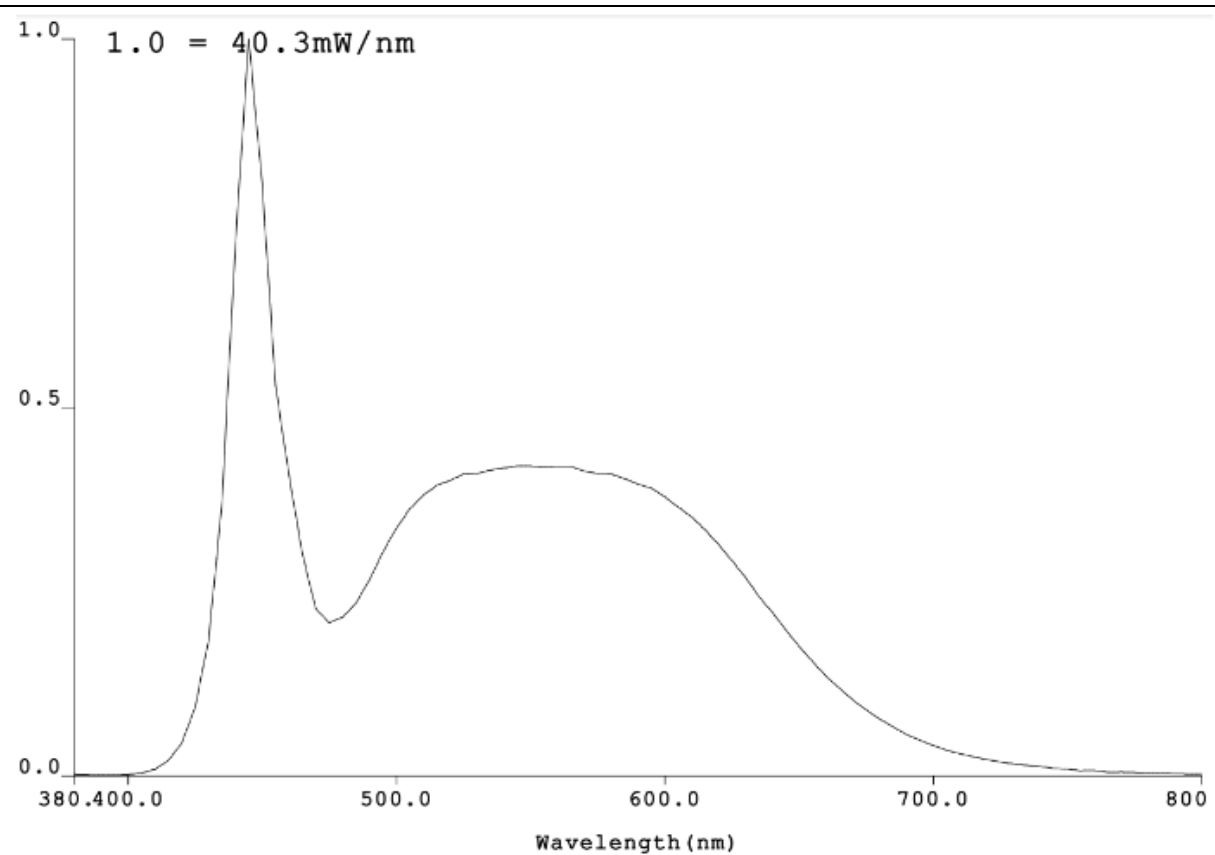
ANNEX 4	Public information for registration
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Public information for light source (including it is a part in a containing product)	
Model identifier:	EPL09
Type of light source:	
Lighting technology used:	☐ HL ☐ LFL T5 HE ☐ LFL T5 HO ☐ CFLni ☐ other FL ☐ HPS ☐ MH ☐ other HID ☒ LED ☐ OLED ☐ mixed ☐ other
Non-directional or directional:	☐ Directional ☒ Non-directional
Light source cap-type (or other electric interface)	Internal wire
Mains or non-mains:	☐ Mains ☒ Non-mains
Connected light source (CLS):	☐ Yes ☒ No
Colour-tuneable light source:	☐ Yes ☒ No
Envelope (other HID):	☒ No ☐ Second ☐ Non-clear ☐ Second + Non-clear
High luminance light source:	☐ Yes ☒ No
Anti-glare shield:	☐ Yes ☒ No
Dimmable:	☐ Yes ☒ No ☐ Only with specific dimmers

ANNEX 4	Public information for registration
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General product parameters:	
Parameters	Value
Energy consumption in on-mode (kWh/1 000 h)	9
Energy efficiency class	☐ A ☐ B ☐ C ☒ D ☐ E ☐ F ☐ G
Useful luminous flux (lm)	1350
Beam angle correspondence	☒ Sphere (360°) ☐ Wide cone (120°) ☐ Narrow cone (90°)
Correlated colour temperature type	☒ Single value ☐ Range ☐ Steps
Correlated colour temperature (K)	6500
On-mode power (W)	9
Standby power (W)	0
Networked standby power for CLS (W)	N/A
Colour rendering index	N/A
Colour rendering index range (Minimum)	N/A
Colour rendering index range (Maximum)	N/A
Outer dimensions (Height) (millimetre)	150
Outer dimensions (Width) (millimetre)	150
Outer dimensions (Depth) (millimetre)	2
Claim of equivalent power	☐ Yes ☒ Not applicable
Equivalent power (W)	N/A
Chromaticity coordinates (x)	0,313
Chromaticity coordinates (y)	0,337
Parameters for directional light sources:	
Peak luminous intensity (cd)	N/A
Beam angle (degrees)	N/A
Beam angle (degrees) (Minimum)	N/A
Beam angle (degrees) (Maximum)	N/A

ANNEX 4	Public information for registration
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Parameters for LED and OLED light sources:	
Parameters	Value
R9 colour rendering index	0
Survival factor	0,90
Lumen maintenance factor	0,93
Parameters for LED and OLED mains light sources:	
Parameters	Value
Displacement factor	N/A
Colour consistency in McAdam ellipses	6
Claims that an LED light source replaces a fluorescent light source without integrated ballast of a particular wattage	☐ Yes ☒ Not applicable
Replacement claim (W)	N/A
Flicker metric (P_{st} LM)	N/A
Stroboscopic effect metric (SVM)	N/A
Spectral power distribution in the range 250 nm to 800 nm, at full-load	
 <p>1.0 = 40.3mW/nm</p> <p>Wavelength (nm)</p>	

ANNEX 5	Photo documentation
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Type of equipment, model: LED Module

Details of: EPL09

View:

☒ general

☐ front

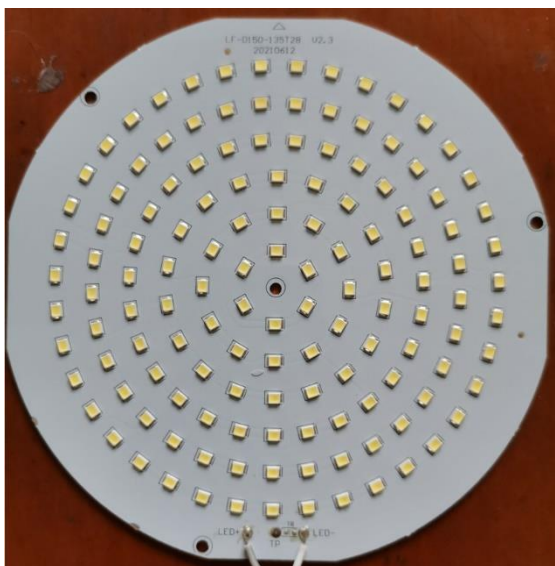
☐ rear

☐ right

☐ left

☐ top

☐ bottom



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