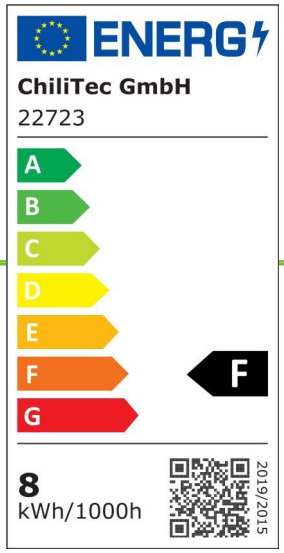
LED Spiegelleuchte "Banho 400" 230V, 8W, 640lm, 40cm, 4000K

Produktdetails

Elegant und dezent zu gleich - diese sehr schöne LED-Spiegelleuchte lässt sich einfach über dem Spiegel anbringen und sorgt mit Leuchtfeld für ordentlich Licht vor dem Spiegel. Kein Blendeffekt dank mattem Frontcover.

- Duo-Befestigung: Geeeignet für Wand- und Top-Montage
- formschönes Aluminium-Gehäuse, mattes Glas
- Lichtfarbe 4000k / neutralweiß
- 8W, 640 lumen
- Leuchtwinkel 110°
- 100% Hell 0,1 Sek.
- Ein/Aus 20.000x
- Leuchtdauer 20.000 Std.
- RA >80
- Leistungsfaktor >0,55
- Energieeffizienzklasse A+ bis 08/2021
- Energieeffizienzklasse F ab 09/2021
- Spannung 230V~
- Verbrauch / 1000h 8kWh
- nicht dimmbar
- Maße 400x112x44mm
- IP44, geeignet für Feuchträume



Artikel-Nr.:	**22723**
EAN:	4250416327390
VPE innen:	0
VPE außen:	20
Einheit:	Stück
WEEE Reg.-Nr.:	DE25841852

Es sind keine besonderen Vorkehrungen für den Betrieb des Produktes zu nennen. Es sind keine gesonderten Prüfbedingungen für dieses Produkt zu nennen bzw. zu befolgen. Konformitätserklärung: Hiermit erklären wir, die ChiliTec GmbH, dass das aufgeführte Produkt die Bedingungen, erforderlichen technischen Vorraussetzungen und Anforderungen bezüglich elektrischer Sicherheit erfüllt. Des weiteren werden die Richtlinien des Rates zur Angleichung der Rechtsvorschriften der EU-Mitgliedstaaten über die elektromagnetische Verträglichkeit EMC - (2014/30/EU), die Niederspannungs-Richtlinie LVD (2014/35/EU), die Ökodesign-Richtlinie (ErP) (2019/2020/EU & 2019/2015/EU), sowie ROHS-Richtlinie (2011/65/EG - (EU) No. 2015/863) erfüllt. Die Berechtigung zum Tragen des CE Zeichens wird durch Konformität zu den o.g. Richtlinien EMC/LVD/ErP/ROHS erfüllt.

Lehre, 01.02.2021

Tobias Meyer - Technical Director

Elektronische Geräte, die mit der durchgestrichenen Abfalltonne gekennzeichnet sind gehören nicht in den Hausmüll!! Diese Geräte können Sie kostenlos an Sammelstellen der Komunen abgeben, erkundigen Sie sich hier bei Ihrer Gemeindeverwaltung, dem zuständigen Rathaus oder einem lokalem bzw. städtischem Abfallentsorgungsbetrieb. Vielen Dank.

Product Service

TEST REPORT
PPP 11118C:2021
TÜV SÜD Test Report for ErP verification of
Ecodesign and Energy labelling requirement for Light Source Implementation measure (EU) 2019/2020 and (EU) 2019/2015

Report No.: Date of issue: Project handler:	70.402.20.499.08-25 2021-07-23 Tianchen ZHANG
Testing laboratory: Address: Testing location:	TÜV SÜD Certification and Testing (China) Co., Ltd. Shanghai Branch No. 151 Hengtong Road, 200070, Shanghai, P.R.China No. 1999, Duhui Road, Shanghai, 201108, P. R. China
Client: Client number: Address: Contact person:	[redacted] ELECTRONICS LIGHTING CO.,LTD. 097243 NO.38 JINGGANGSHAN ROAD,BEIUN 315800 Ningbo, PEOPLE'S REPUBLIC OF CHINA Gu Samantha
Standard:	This TÜV SÜD test report form is based on the following requirements: (EU) 2019/2020:2019-10-01 with Corrigendum; (EU) 2019/2015:2019-03-11; (EU) 2021/341:2021-02-23; (EU) 2021/340:2020-12-17
TRF number and revision:	PPP 11118C:2021 Rev.00:2021-07
eDoc_ID:	107082
TRF originated by:	TÜV SÜD Product Service, Mr. Richard Xu
Copyright blank test report:	This test report is based on the content of the standard (see above). The test report considered selected clauses of the a.m. standard(s) and experience gained with product testing. It was prepared by TÜV SÜD Product Service. TÜV SÜD Group takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context.
General disclaimer:	This test report may only be quoted in full. Any use for advertising purposes must be granted in writing. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production.
Scheme:	☐ TÜV Mark ☒ without certification ☐ GS Mark ☐ NRTL Mark ☐ EU-Directive
Non-standard test method: National deviations:	☒ No ☐ Yes, see details under *Summary of testing* N/A
Number of pages *(Report)*: Number of pages *(Attachments)*:	38 N/A

Compiled by: (+ signature)	Tianchen ZHANG	Approved by: (+ signature)	Kaishuang LI

TÜV®

Test sample: Type of test object: Trademark: Model and/or type reference:	30 pre-production samples per model from the factory FIXED LED light N/A W400C40,W400C31,W400C29,W400C40-7,W400C40-8
Rating(s):	67V d.c., 110mA(constant current) For other parameters, refer to page 4.
Manufacturer: Manufacturer number: Address:	[redacted] ELECTRONICS LIGHTING CO.,LTD. 097243 NO.38 JINGGANGSHAN ROAD,BEIUN 315800 Ningbo, PEOPLE'S REPUBLIC OF CHINA
Name and address of factory(ies) [redacted] ELECTRONICS LIGHTING CO.,LTD. NO.38 JINGGANGSHAN ROAD,BEIUN 315800 Ningbo, PEOPLE'S REPUBLIC OF CHINA	
Sub-contractors/ tests (clause): Name:	N/A N/A
Order description:	☒ Complete test according to TRF
	☐ Partial test according to manufacturer's specifications
	☐ Preliminary test
	☐ Spot check
	☐ Others:
Date of order: Date of receipt of test item: Date(s) of performance of test:	2020-12-30 2020-07-30 2020-07-30 to 2021-06-30
Test item particulars:	
Light source type: - LED (Light Emitting Diode) - OLED (Organic Light Emitting Diode) - Incandescent Lamp - CFL (Compact Fluorescent Lamp) - CFLni (Compact Fluorescent Lamp without integrated ballast) - HL (Halogen Lamp) - FL (Fluorescent Lamp, including circular, U-shape, etc.) - LFL (Linear Fluorescent Lamp) - Magnetic induction light source	☒ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

- HID (High-intensity Discharge lamp, including metal halide, high-pressure sodium and mercury vapour type)	☐
Control gear:	
- Integrated	☐
- External	☒
Use of lamp:	
- Indoor	☒
- Outdoor	☐
- Industry	☐
Envelope transparency:	
- Clear lamp	☒
- Non-clear lamp	☐
Dimmable lamp:	☐
Programmable lamp:	☐
Lamp / Module type .....:	☒ NDLS (non-directional light source) ☐ DLS (directional light source) ☐ MLS (mains light source) ☒ NMLS (non-mains light source) ☐ CTLS (colour-tuneable light source) ☐ CLS (connected light source)
Lamps with anti-glare shield:	☐
Lamp cap installed……	N/A
Containing product:	
- Containing product with non-separable light source(s) or/and control gear(s)	☐
- Containing product with separable light source(s) or/and control gear(s)	☒

Purpose of the product (Description of intended use):

FIXED LED light for general lighting applications.

W400C40, W400C31,W400C29 with a same light source, the body outline is different.

Due to the different install ways, W400C40 include models of W400C40-1A,W400C40-1B,W400C40-1C; W400C31 include models of W400C31-1A,W400C31-1B,W400C31-1C; W400C29 include models of W400C29-1A,W400C29-1B,W400C29-1C.

All models are of the same light source.

Characteristic data *(not shown on the marking plate)*:

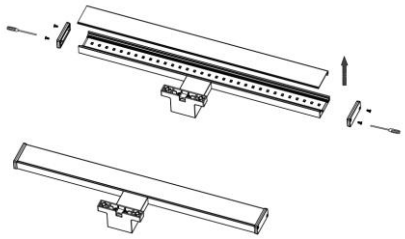
Declared technical data:	For light source
Rated voltage ……..…(V):	67V d.c., 110mA(constant current)
Rated lamp power ……..……(W):	7.4
Rated useful luminous flux……..……(lm):	900
Rated useful luminous flux type ……..…	☒ sphere (360°) ☐ narrow cone (90°) ☐ wide cone (120°)
Rated beam angle ……...(˚):	N/A
Rated peak intensity……(cd):	N/A
Rated CCT ……..……..(K):	3000, 4000, 6500
Rated CRI ……..…….:	80
Rated R9……:	3000K: 3 4000K: 3 6500K: 3
Rated life time ……..……..(h):	20000
Dimensions (mm) of containing product:	W400C40: 101X44X400 W400C31: 110X41X400 W400C29: 120X42X400 W400C40-7:120x47x400 W400C40-8:134x44x780
Weight (g) of the containing product:	W400C40: 240 W400C31: 230 W400C29: 350 W400C40-7:300 W400C40-8:300

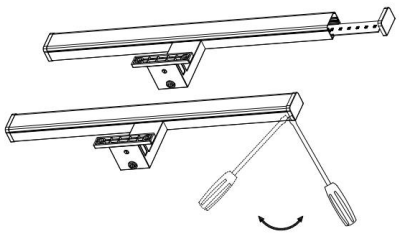
Attachments:

1. Photometric test record of one lamp at initial measurement
2. Test equipment list

If additional information is necessary, please provide

Instruction on how to remove the light source:





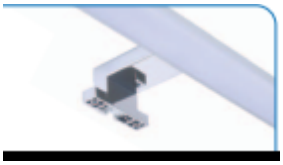
Copy of marking plate:

NOT Provided

Pictures of the product:

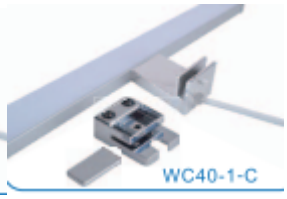
W400C40

-2



-1A

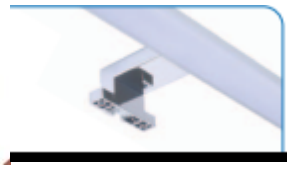
-1B



-1C

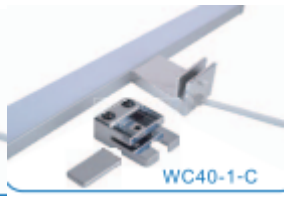
W400C31

-2



-1A

-1B

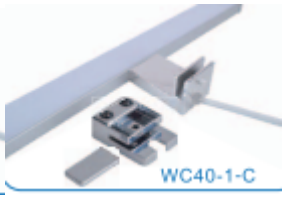


-1C

W400C29

-1A

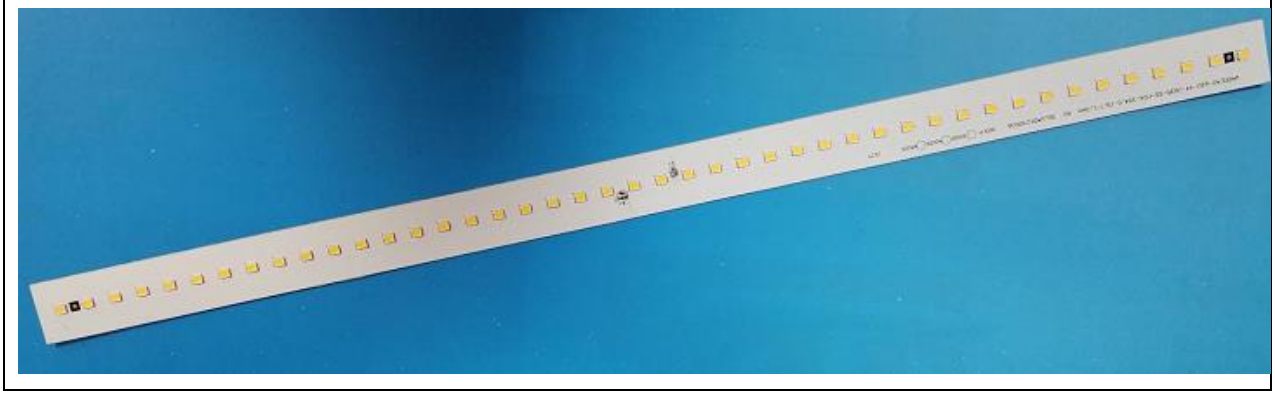
-1B



-1C

W400C40-7/W400C40-8:

Light source:



Summary of testing:

For Ecodesign requirement:

The product meets the energy efficiency, functional & information requirement as specified in EU 2019/2020

For Energy labelling requirement:

Model	All CCTs	3000K	4000K	6500K
Requirement	Rated	Measured	Measured	Measured
η_{TM}	113	126	139	137
EE class	E	E	D	D
E_C (kWh/1000h)	8	8	8	8

Energy efficiency class	Total mains efficacy η_{TM} (lm/W)
A (most efficient)	$210 \leq \eta_{TM}$
B	$185 \leq \eta_{TM} < 210$
C	$160 \leq \eta_{TM} < 185$
D	$135 \leq \eta_{TM} < 160$
E	$110 \leq \eta_{TM} < 135$
F	$85 \leq \eta_{TM} < 110$
G (least efficient)	$\eta_{TM} < 85$

Remarks:

1.LED light source was extracted from the product for the test according to the applicant's requriments (refer Instruction on how to remove the light source on page 5).

2. Model of 3000K was chosen for the full test and model of 4000K and 6500K was chosen for the initial value test only.

☐ deviation(s) found

☒ no deviations found

Additional information on Non-standard test method(s)

Sub clause: N/A

Page: N/A

Rational: N/A

Possible test case verdicts:

test case does not apply to the test object: N/A (not applicable / not included in the order)

test object does meet the requirement: P (Pass)

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

Possible suffixes to the verdicts:

suffix for detailed information for the client: C (Comment)

suffix for important information for factory inspection: M (Manufacturing)

General remarks:

"(see remark #)" refers to a remark 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.*
The test results presented in this report relate only to the object tested.

Product Service

Clause	Requirement + Test	Result – Remark	Verdict

(EU) 2019/2020 - Ecodesign requirement:			
0	Measurement methods		P
	Recognised state of art measurement methods incl. the one published in the Official Journal taking into account the measurement methods of (EU) 2019/2020	List all methods used	P
	- EN 62612:2013+A1:2017+A11:2017 +A2:2018 ☐ - EN 62717:2017+A2:2019 ☒ - EN 13032-4:2015+A1:2019 ☒ - EU 2019/2020 Annex V ☒ - IEC TR 63158:2018 ☐ - IEC TR 61547-1:2020 ☐ - EN IEC 63103:2020 ☐		P
1.	Sample		P
	Number of sample used for test ……:	10pcs per CCT	P
2.	Energy efficiency requirements (Annex II, clause 1 of EU 2019/2020)		P
2.1	Maximum allowed power P_{onmax} of light source (Annex II, clause 1, (a) of EU 2019/2020)		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), defined as a function of the declared useful luminous flux Φ_{use} (in lm) and the declared colour rendering index CRI (-) as follows	Φ_{use} (lm): 900 P_{on} (W): 7.4 P_{onmax} (W): 9.0 $P_{on} \leq P_{onmax}$	P
	$P_{onmax} = C \times (L + \Phi_{use}/(F \times \eta)) \times R$	P_{onmax}: see table above	P
	where:		
	-The values for threshold efficacy (η in lm/W) and end loss factor (L in W) are specified in Table 1, depending on the light source type. They are constants used for computations and do not reflect true parameters of light sources. The threshold efficacy is not the minimum required efficacy; the latter can be computed by dividing the useful luminous flux by the computed maximum allowed power	η : 120 L: 1.5	P

Product Service

Clause	Requirement + Test	Result – Remark	Verdict

Table 1

Threshold efficacy (η) and end loss factor (L)

Light source description	η [lm/W]	L [W]
LFL T5-HE	98,8	1,9
LFL T5-HO, 4 000 ≤ Φ ≤ 5 000 *lm*	83,0	1,9
LFL T5-HO, other *lm* output	79,0	1,9
FL T5 circular	79,0	1,9
FL T8 (including FL T8 U-shaped)	89,7	4,5
From 1 September 2023, for FL T8 of 2-, 4- and 5-foot	120,0	1,5
Magnetic induction light source, any length/flux	70,2	2,3
CFLni	70,2	2,3
FL T9 circular	71,5	6,2
HPS single-ended	88,0	50,0

-

Light source description	η [lm/W]	L [W]
HPS double-ended	78,0	47,7
MH ≤ 405 W single-ended	84,5	7,7
MH > 405 W single-ended	79,3	12,3
MH ceramic double-ended	84,5	7,7
MH quartz double-ended	79,3	12,3
Organic light-emitting diode (OLED)	65,0	1,5
Until 1 September 2023: HL G9, G4 and GY6.35	19,5	7,7
HL R7s ≤ 2 700 lm	26,0	13,0
Other light sources in scope not mentioned above	120,0	1,5 (*)

(*) For connected light sources (CLS) a factor L = 2,0 shall be applied.

-

	-Basic values for correction factor (C) depending on light source type, and additions to C for special light source features are specified in Table 2.	C: 1.00	P

Product Service

Clause	Requirement + Test	Result – Remark	Verdict
	Table 2 **Correction factor C depending on light source characteristics** Light source type / Basic C value Non-directional (NDLS) not operating on mains (NMLS) — 1,00 Non-directional (NDLS) operating on mains (MLS) — 1,08 Directional (DLS) not operating on mains (NMLS) — 1,15 Directional (DLS) operating on mains (MLS) — 1,23 Special light source feature / Bonus on C FL or HID with CCT > 5 000 K — +0,10 FL with CRI > 90 — 0,10 HID with second envelope — +0,10 MH NDLS > 405 W with non-clear envelope — +0,10 DLS with anti-glare shield — +0,20 Colour-tuneable light source (CTLS) — +0,10 High luminance light sources (HLLS) — + 0,0058 · Luminance-HLLS –0,0167		-
	Where applicable, bonuses on correction factor C are cumulative		N/A
	The bonus for HLLS shall not be combined with the basic C-value for DLS (basic C-value for NDLS shall be used for HLLS)		N/A
	-Efficacy factor (F) is:		P
	1,00 for non-directional light sources (NDLS, using total flux)	F: 1.00	P
	0,85 for directional light sources (DLS, using flux in a cone)	F:	N/A
	–CRI factor (R) is:		P
	0,65 for CRI ⩽ 25	R:	N/A
	(CRI+80)/160 for CRI > 25, rounded to two decimals	R: 1.00 (CRI=80)	P
	Light sources that allow the end-user to adapt the spectrum and/or the beam angle of the emitted light, thus changing the values for useful luminous flux, colour rendering index (CRI) and/or correlated colour temperature (CCT), and/or changing the directional/non-directional status of the light source, shall be evaluated using the reference control settings.		N/A
	Standby power P_{sb} and networked standby power P_{net} of light source		N/A
	The standby power P_{sb} of a light source shall not exceed 0,5 W	P_{sb}:	N/A
	The networked standby power P_{net} of a connected	P_{net}:	N/A

Product Service

Clause	Requirement + Test	Result – Remark	Verdict
	light source shall not exceed 0,5 W		
	The allowable values for P_{sb} and P_{net} shall not be added together		N/A
	CLS and CSCG designed and marketed specifically for scene-lighting use in film-studios, TV-studios and locations, and photographic studios and locations, or for stage-lighting use in theatres, discos and during concerts or other entertainment events, for connection to high speed control networks (utilising signalling rates of 250 000 bits per second and higher) in always-listening mode, shall be exempt from the requirements on standby (Psb) and on networked standby (Pnet) of points 1(a) and 1(b) of Annex II		N/A
3	Functional requirements (Annex II, clause 2 of EU 2019/2020)		P
	From 1 September 2021, the functional requirements should apply for **light sources** (Annex II, clause 2, table 4 of EU 2019/2020)		
3.1	Colour rendering		P
	CRI ≥ 80	CRI: see test table 1	P
	except for HID with Φuse > 4 klm and for light sources intended for use in outdoor applications, industrial applications or other applications where lighting standards allow a CRI< 80, when a clear indication to this effect is shown on the light source packaging and in all relevant printed and electronic documentation	CRI:	N/A
3.2	Displacement factor (DF, cos φ_1) at power input P_{on} for LED and OLED MLS		N/A
	No limit at $P_{on} \leq 5$ W	P_{on}:	N/A
	DF ≥ 0,5 at 5 W < P_{on} ≤ 10 W	P_{on}: DF:	N/A
	DF ≥ 0,7 at 10 W < P_{on} ≤ 25 W	P_{on}: DF:	N/A
	DF ≥ 0,9 at 25 W < P_{on}	P_{on}: DF:	N/A
3.3	Lumen maintenance factor (for LED and OLED)		P
	The lumen maintenance factor X_{LMF}% after endurance testing shall be at least $X_{LMF,MIN}$ % calculated as follows		P
	$X_{LMF,MIN}\% = 100 \times e^{\frac{(3000 \times \ln(0.7))}{L_{70}}}$ where L_{70} is the declared $L_{70}B_{50}$ lifetime (in hours)	L_{70}: 20000h $X_{LMF,MIN}$ %: 94.8% X_{LMF}%: see test table 1	P

Product Service

Clause	Requirement + Test	Result – Remark	Verdict
	If the calculated value for $X_{LMF,MIN}$ exceeds 96,0 %, an $X_{LMF,MIN}$ value of 96,0 % shall be used	$X_{LMF,MIN}$%=96,0%	N/A
3.4	Survival factor (SF) (for LED and OLED)		
	At least 9 light sources of the 10 test samples must be operational after completing the endurance testing	10 light sources are operational after endurance testing	P
3.5	Colour consistency for LED and OLED light sources		P
	Variation of chromaticity coordinates within a six-step MacAdam ellipse or less.	see test table 1	P
3.6	Flicker for LED and OLED MLS		N/A
	P_{st} LM ≤ 1,0 at full-load		N/A
3.7	Stroboscopic effect for LED and OLED MLS		
	SVM ≤ 0,9 at full-load		N/A
	From 1 September 2024: SVM ⩽ 0,4 at full-load		N/A
	except for light sources intended for use in outdoor applications, industrial applications or other applications where lighting standards allow a CRI < 80		N/A
4	Information requirements (Annex II, clause 3 of EU 2019/2020)		P
	From 1 September 2021 the following information requirements shall apply:		P
4.1	Information to be displayed on the light source itself		P
	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 if, after the inclusion of safety-related information, there is sufficient space available for it without unduly obstructing the light emission	See page 4	P
	For directional light sources, the beam angle (°) 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		N/A
	If there is room for only one value, the useful luminous flux shall be displayed		N/A
4.2	Information to be visibly displayed on the packaging		P
4.2.1	Light source placed on the market, not in a containing product		P
	If a light source is placed on the market, not in a containing product, 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	See page 4	P

Product Service

Clause	Requirement + Test	Result – Remark	Verdict
	in a sphere (360°), in a wide cone (120°) or in a narrow cone (90°)		
(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	See page 4	P
(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)	See page 4	P
(e)	the $L_{70}B_{50}$ lifetime for LED and OLED light sources, expressed in hours	See page 4	P
(f)	the on-mode power (P_{on}), expressed in W	See page 4	P
(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	See page 4	P
(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 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 Ta≠ 25 ° 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	Non-dimmable	P
(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		P
	Items (a) to (d) shall be displayed on the packaging in the direction meant to face		P

Product Service

Clause	Requirement + Test	Result – Remark	Verdict
	prospective buyer; for other items this is also recommended, if space permits		
	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
	The information does not need to use the exact wording on the list above. Alternatively, it may be displayed in the form of graphs, drawings or symbols		P
5	Removal of light sources and separate control gears (Article 4 of EU 2019/2020)		P
5.1	Manufacturers, importers or authorised representatives of containing products shall ensure that light sources and separate control gears can be replaced with the use of common available tools and without permanent damage to the containing product, unless a technical justification related to the functionality of the containing product is provided in the technical documentation explaining why the replacement of light sources and separate control gear is not appropriate		P
	The technical documentation shall also provide instructions on how light sources and separate control gears can be removed without being permanently damaged for verification purposes by market surveillance authorities		P
5.2	Manufacturers, importers or authorized representatives of containing products shall provide information about the replaceability or non-replaceability of light sources and control gears by end-users or qualified persons without permanent damage to the containing product. Such information shall be available on a free-access website. For products sold directly to end-users, this information shall be on the packaging, at least in the form of a pictogram, and in the user instructions		P
5.3	Manufacturers, importers or authorised representatives of containing products shall ensure that light sources and separate control gears can be dismantled from containing products at end of life. Dismantling instructions shall be available on a free access website		P
6	Circumvention (Article 7 of EU 2019/2020)		P
	The manufacturer, importer or authorised representative shall not place on the market products designed to be able to detect they are being tested (e.g. by recognising the test conditions or test cycle), and to react specifically by automatically altering their performance during		P

Clause	Requirement + Test	Result – Remark	Verdict
	the test with the aim of reaching a more favourable level for any of the parameters declared by the manufacturer, importer or authorised representative in the technical documentation or included in any of the documentation provided.		
	The energy consumption of the product and any of the other declared parameters shall not deteriorate after a software or firmware update when measured with the same test standard originally used for the declaration of conformity, except with explicit consent of the end-user prior to the update.		P
	A software update shall never have the effect of changing the product's performance in a way that makes it non- compliant with the ecodesign requirements applicable for the declaration of conformity.		P

Table 1a	**Test data**											
Model:	**3000K**											
Voltage (V):		**67V d.c.**			**Frequency (Hz):**			**-**				
Φ_{use} measured at:		sphere			**Ambient (T/rh) (°C / %)**			**25/55**				
Test item	**Measured Value**										**Average**	**Limit**
Sample:	1	2	3	4	5	6	7	8	9	10	-	-
U (V) [1)]	64.5	64.5	64.4	64.4	64.6	64.6	64.5	64.6	64.5	64.5	64.5	-
I (mA) [1)]	110	110	110	110	110	110	110	109.9	110	110	109.99	-
P (W) [1)]	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	≤ 7.4
DF (cos φ_1) [1)2)7)]	–	–	–	–	–	–	–	–	–	–	–	–
Φ_{use} (lm) [1)]	970.0	969.9	973.8	967.0	972.4	959.0	968.7	963.5	969.1	970.2	968.3	≥ 900
CCT (K) [1)]	2904	2908	2899	2906	2896	2902	2892	2897	2896	2904	2900.4	-
CRI [1)2)]	84.7	84.8	84.9	84.6	84.7	84.8	84.6	84.7	84.7	84.6	84.71	≥ 80 [3)]
Color consistency [2)]	1.7	1.8	2.1	1.7	2	1.8	2	2.1	2	1.6	1.88	≤ 6-step
R9	16	17	17	16	16	17	16	17	16	16	16.4	
SF @ 3000h [2)5)8)]	S	S	S	S	S	S	S	S	S	S	SF:S	≥ 90%
Φ_{use}, @ 3000h[8)] (lm)	929.3	931.1	934.8	928.3	934.5	922.6	927.0	919.2	932.3	934.3	929.6	-
X_{LMF} @ 3000h [2) 8)6)] (%)	95.8	96.0	96.0	96.0	96.1	96.2	95.7	95.4	96.2	96.3	96.0	≥94.8
Flicker [1)2)]	-	-	-	-	-	-	-	-	-	-	-	P_{st} LM ≤ 1,0 at full-load
Stroboscopic effect [1)2)]	-	-	-	-	-	-	-	-	-	-	-	SVM ≤ 0,4 at full-load [4)]
Supplementary information:												

[1] initial measurement value after aging of: 30 min

[2] for LED and OLED

[3] except for HID with Φuse > 4 klm and for light sources intended for use in outdoor applications, industrial applications or other applications where lighting standards allow a CRI< 80

[4] for HID with Φuse > 4 klm and for light sources intended for use in outdoor applications, industrial applications or other applications where lighting standards allow a CRI< 80

[5] 'survival factor' (SF) means the defined fraction of the total number of light sources that continue to operate at a given time under defined conditions and switching frequency

[6] 'lumen maintenance factor' (X_{LMF}) means the ratio of the luminous flux emitted by a light source at a given time in its life to the initial luminous flux

[7] 'displacement factor (DF) (cos φ_1)' means the cosine of the phase angle φ_1 between the fundamental harmonic of the mains supply voltage and the fundamental harmonic of the mains current. It is used for mains light sources using LED- or OLED-technology. The displacement factor is measured at full-load, for the reference control settings where applicable, with any lighting control parts in control mode and non-lighting parts disconnected, switched off or set to minimum power consumption according to the manufacturer's instructions

[8] '3000h' referes to the total operation time of the cycling test of (EU)2019/2020 Annex V, the total test time is 3600h (1200 cycle of 150min 'ON' and 30min 'OFF')

Chromaticity coordinates (x,y) [1]:0.4407,0.4008

Measured beam angle (°): N/A

Peak intensity (cd) [1]: N/A

Φ_{use} @90° (lm) : N/A

Table 1b	**Test data**											
Model:	**4000K**											
Voltage (V):		**67V d.c.**			**Frequency (Hz):**			**-**				
Φ_{use} measured at:		sphere			**Ambient (T/rh) (°C / %)**			**25/55**				
Test item	**Measured Value**										**Average**	**Limit**
Sample:	1	2	3	4	5	6	7	8	9	10	-	-
U (V) [1)]	65.1	65.2	65.2	65.1	65.1	65.3	65.3	65.3	65.2	65.3	65.2	-
I (mA) [1)]	110	110	109.9	110	110	110	110	110	110	110	109.99	-
P (W) [1)]	7.16	7.17	7.17	7.16	7.16	7.18	7.18	7.18	7.17	7.18	7.17	≤ 7.4
DF (cos φ_1) [1)2)7)]	-	-	-	-	-	-	-	-	-	-	-	-
Φ_{use} (lm) [1)]	1082	1082	1078	1075	1081	1080	1076	1081	1072	1083	1079	≥900
CCT (K) [1)]	3958	3940	3942	3949	3939	3942	3939	3957	3939	3955	3946	-
CRI [1)2)]	83	83	82.9	83.2	83.1	83.1	83.3	83.2	83.1	83.2	83.11	≥ 80 [3)]
Color consistency [2)]	2.4	2.4	2.3	2.3	2.5	2.5	2.6	2.4	2.7	2.4	2.45	≤ 6-step
R9	10	9	9	10	10	10	10	10	10	10	9.8	-
SF @ 3000h [2)5)8)]	-	-	-	-	-	-	-	-	-	-	-	≥ 90%
Φ_{use}, @ 3000h[8)] (lm)	-	-	-	-	-	-	-	-	-	-	-	-
X_{LMF} @ 3000h [2) 8)6)] (%)	-	-	-	-	-	-	-	-	-	-	-	≥94.8
Flicker [1)2)]	-	-	-	-	-	-	-	-	-	-	-	P_{st} LM ≤ 1,0 at full-load
Stroboscopic effect [1)2)]	-	-	-	-	-	-	-	-	-	-	-	SVM ≤ 0,4 at full-load [4)]
Supplementary information:												

[1] initial measurement value after aging of: 30 min

[2] for LED and OLED

[3] except for HID with Φuse > 4 klm and for light sources intended for use in outdoor applications, industrial applications or other applications where lighting standards allow a CRI< 80

[4] for HID with Φuse > 4 klm and for light sources intended for use in outdoor applications, industrial applications or other applications where lighting standards allow a CRI< 80

[5] 'survival factor' (SF) means the defined fraction of the total number of light sources that continue to operate at a given time under defined conditions and switching frequency

[6] 'lumen maintenance factor' (X_{LMF}) means the ratio of the luminous flux emitted by a light source at a given time in its life to the initial luminous flux

[7] 'displacement factor (DF) (cos φ_1)' means the cosine of the phase angle φ_1 between the fundamental harmonic of the mains supply voltage and the fundamental harmonic of the mains current. It is used for mains light sources using LED- or OLED-technology. The displacement factor is measured at full-load, for the reference control settings where applicable, with any lighting control parts in control mode and non-lighting parts disconnected, switched off or set to minimum power consumption according to the manufacturer's instructions

[8] '3000h' referes to the total operation time of the cycling test of (EU)2019/2020 Annex V, the total test time is 3600h (1200 cycle of 150min 'ON' and 30min 'OFF')

Chromaticity coordinates (x,y) [1]:0.3828,0.3789

Peak intensity (cd) [1]: N/A

Φ_{use} @90° (lm) : N/A

Table 1c	**Test data**											
Model:	**6500K**											
Voltage (V):		**67V d.c.**			**Frequency (Hz):**			**-**				
Φ_{use} measured at:		sphere			**Ambient (T/rh) (°C / %)**			**25/55**				
Test item	**Measured Value**										**Average**	**Limit**
Sample:	1	2	3	4	5	6	7	8	9	10	-	-
U (V) [1)]	65.0	65.3	65.2	65.1	65.2	65.2	65.2	65.1	65.2	65.1	65.2	-
I (mA) [1)]	110	110	110	110	110	110	110	110	110	110	110	-
P (W) [1)]	7.15	7.18	7.17	7.16	7.18	7.17	7.18	7.16	7.17	7.16	7.17	≤ 7.4
DF (cos φ_1) [1)2)7)]	-	-	-	-	-	-	-	-	-	-	-	-
Φ_{use} (lm) [1)]	1044	1029	1061	1065	1073	1070	1070	1057	1073	1071	1061	≥ 900
CCT (K) [1)]	6242	6182	6142	6150	6150	6140	6156	6194	6142	6130	6163	-
CRI [1)2)]	82.1	82.6	81.6	82	81.9	81.7	81.7	81.7	81.7	81.7	81.87	≥ 80 [3)]
Color consistency [2)]	2.9	3.9	4.1	3.9	4.1	4.1	3.9	3.4	4	4.1	3.84	≤ 6-step
R9	4	7	3	4	4	3	3	3	3	3	3.7	-
SF @ 3000h [2)5)8)]	-	-	-	-	-	-	-	-	-	-	-	≥ 90%
Φ_{use}, @ 3000h[8)] (lm)	-	-	-	-	-	-	-	-	-	-	-	-
X_{LMF} @ 3000h [2) 8)6)] (%)	-	-	-	-	-	-	-	-	-	-	-	≥94.8
Flicker [1)2)]	-	-	-	-	-	-	-	-	-	-	-	P_{st} LM ≤ 1,0 at full-load
Stroboscopic effect [1)2)]	-	-	-	-	-	-	-	-	-	-	-	SVM ≤ 0,4 at full-load [4)]

Supplementary information:

[1] initial measurement value after aging of: 30 min

[2] for LED and OLED

[3] except for HID with Φuse > 4 klm and for light sources intended for use in outdoor applications, industrial applications or other applications where lighting standards allow a CRI< 80

[4] for HID with Φuse > 4 klm and for light sources intended for use in outdoor applications, industrial applications or other applications where lighting standards allow a CRI< 80

[5] 'survival factor' (SF) means the defined fraction of the total number of light sources that continue to operate at a given time under defined conditions and switching frequency

[6] 'lumen maintenance factor' (X_{LMF}) means the ratio of the luminous flux emitted by a light source at a given time in its life to the initial luminous flux

[7] 'displacement factor (DF) (cos φ_1)' means the cosine of the phase angle φ_1 between the fundamental harmonic of the mains supply voltage and the fundamental harmonic of the mains current. It is used for mains light sources using LED- or OLED-technology. The displacement factor is measured at full-load, for the reference control settings where applicable, with any lighting control parts in control mode and non-lighting parts disconnected, switched off or set to minimum power consumption according to the manufacturer's instructions

[8] '3000h' referes to the total operation time of the cycling test of (EU)2019/2020 Annex V, the total test time is 3600h (1200 cycle of 150min 'ON' and 30min 'OFF')

Chromaticity coordinates (x,y) [1]:0.3173,0.3400

Peak intensity (cd) [1]: N/A

Φ_{use} @90° (lm) : N/A

Clause	Requirement + Test	Result – Remark	Verdict

(EU) 2019/2015 - Energy labelling requirement:			
6	Measurment methods		P
	Recognised state of art measurement methods incl. the one published in the Official Journal taking into account the measurement methods of EU 2019/2015		P
7	Method for calculating the total mains efficacy (Annex II, EU 2019/2015)		P
7.1	Calculation the total mains efficacy		
	The energy efficiency class of light sources shall be determined as set out in Annex II, Table 1 of EU 2020/2015	See attached table 2	P
	on the basis of the total mains efficacy η_{TM}, which is calculated by dividing the declared useful luminous flux Φ_{use} (expressed in lm) by the declared on mode power consumption P_{on} (expressed in W) and multiplying by the applicable factor F_{TM} of Annex II, Table 2 of EU 2019/2015 as follow: $\eta_{TM} = (\Phi_{use}/P_{on}) \times F_{TM}$ (lm/W)	See attached table 2	P
	declared useful luminous flux Φ_{use} (expressed in lm)	See attached table 2	P
	declared on mode power consumption P_{on} (expressed in W)	See attached table 2	P
	applicable factor F_{TM} of Annex II, Table 2 of EU 2019/2015		-
	Factors F_{TM} by light source type (Table 2 of Annex II, EU 2019/2015)		-
	Light source type / Factor F_{TM}		-
	Non-directional (NDLS) operating on mains (MLS) / 1,000		N/A
	Non-directional (NDLS) not operating on mains (NMLS) / 0,926		P
	Directional (DLS) operating on mains (MLS) / 1,176		N/A
	Directional (DLS) not operating on mains (NMLS) / 1,089		N/A
7.2	CALCULATION OF THE ENERGY CONSUMPTION		
	The weighted energy consumption (Ec) is calculated in kWh/1000 h as follows and is rounded to two decimal places: $Ec=P_{on}\times 1000h/1000$	See attached table 2	P
8	Evaluation		
	Declared values are not more favorable then value based on measured data	See attached table 2	P

Clause	Requirement + Test	Result – Remark	Verdict
9	Exemptions (Annex IV of EU 2019/2015)		N/A
9.1	This Regulation shall not apply to light sources specifically tested and approved to operate		N/A
(a)	in radiological and nuclear medicine installations that are subject to radiation safety standards as set out in Council Directive 2013/59/Euratom		N/A
(b)	for emergency use		N/A
(c)	in or on military or civil defence establishments, equipment, ground vehicles, marine equipment or aircraft as set out in Member States' regulations or in documents issued by the European Defence Agency		N/A
(d)	in or on motor vehicles, their trailers and systems, interchangeable towed equipment, components and separate technical units, as set out in Regulation (EC) No 661/2009 of the European Parliament and of the Council, Regulation (EU) No 167/2013 of the European Parliament and of the Council and Regulation (EU) No 168/2013 of the European Parliament and of the Council		N/A
(e)	in or on non-road mobile machinery as set out in Regulation (EU) 2016/1628 of the European Parliament and of the Council and in or on their trailers		N/A
(f)	in or on interchangeable equipment as set out in Directive 2006/42/EC of the European Parliament and of the Council intended to be towed or to be mounted and fully raised from the ground or that cannot articulate around a vertical axis when the vehicle to which it is attached is in use on a road by vehicles as set out in Regulation (EU) No 167/2013		N/A
(g)	in or on civil aviation aircraft as set out in Commission Regulation (EU) No 748/2012		N/A
(h)	in railway vehicle lighting as set out in Directive 2008/57/EC of the European Parliament and of the Council		N/A
(i)	in marine equipment as set out in Directive 2014/90/EU of the European Parliament and of the Council		N/A
(j)	in medical devices as set out in Council Directive 93/42/EEC or Regulation (EU) 2017/745 of the European Parliament and of the Council and in vitro medical devices as set out in Directive 98/79/EC of the European Parliament and of the Council		N/A
9.2	In addition, this Regulation shall not apply to		N/A
(a)	electronic displays (e.g. televisions, computer monitors, notebooks, tablets, mobile phones, e-readers, game consoles), including but not limited to displays within the scope of Commission Regulation (EU) 2019/2021 and of Commission Regulation (EU) No 617/2013		N/A

Clause	Requirement + Test	Result – Remark	Verdict
(b)	light sources in range hoods within the scope of Commission Delegated Regulation (EU) No 65/2014		N/A
(c)	light sources in battery-operated products, including but not limited to e.g. torches, mobile phones with an integrated torch light, toys including light sources, desk lamps operating only on batteries, armband lamps for cyclists, solar-powered garden lamps		N/A
(d)	light sources on bicycles and other non-motorised vehicles		N/A
(e)	light sources for spectroscopy and photometric applications, such as for example UV-VIS spectroscopy, molecular spectroscopy, atomic absorption spectroscopy, nondispersive infrared (NDIR), fourier-transform infrared (FTIR), medical analysis, ellipsometry, layer thickness measurement, process monitoring or environmental monitoring		N/A
9.3	Any light source within the scope of this Delegated Regulation shall be exempt from the requirements of this Regulation, with the exception of the requirements set out in point 4 of Annex V, if it is specifically designed and marketed for its intended use in at least one of the following applications		N/A
(a)	signalling (including, but not limited to, road-, railway-, marine- or air traffic- signalling, traffic control or airfield lamps)		N/A
(b)	image capture and image projection (including, but not limited to, photocopying, printing (directly or in preprocessing), lithography, film and video projection, holography);		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
(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 having the primary purpose to emit 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

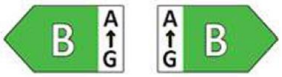
Clause	Requirement + Test	Result – Remark	Verdict
(i)	HID light sources emitting 40 % or more of total radiation power of the range 250-800 nm in the range of 250-400 nm, and intended for sun-tanning		N/A
(j)	light sources with a photosynthetic efficacy > 1,2 μmol/J, and/or emitting 25 % or more of total radiation power of the range 250-800 nm in the range of 700-800 nm, and intended for use in horticulture		N/A
(k)	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, made by the artist him/herself in a limited number below 10 pieces		N/A
(l)	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 (e.g. stretch blow-moulding process in PET-Industry, 3D-printing, photovoltaic and electronic manufacturing processes, drying or hardening of adhesives, inks, paints or coatings)		N/A
9.4	Light sources specifically designed and exclusively marketed for products in the scope of Commission Regulations (EU) 2019/2023, (EU) 2019/2022, (EU) No 932/2012 and (EU) 2019/2019, shall be exempt from the requirements of points 1(e)(7b), 1(e)(7c) and 1(e)(7d) of Annex VI to this Regulation		N/A
10	Product information (Annex V of EU 2019/2015)		P
10.1	Product information sheet	Optional: Manufatcurer can declare based on a draft	P
10.1.1	Pursuant to point 1(b) of Article 3, the supplier shall enter into the product database the information as set out in Annex V, Table 3, including when the light source is a part in a containing product	See attached table 3	P
	For light sources that can be tuned to emit light at full-load with different characteristics, the values of parameters that vary with these characteristics shall be reported at the reference control settings		P
	If the light source is no longer placed on the EU market, the supplier shall put in the product database the date (month, year) when the placing on the EU market stopped		P
10.2	Information to be displayed in the documentation for a containing product		P

Clause	Requirement + Test	Result – Remark	Verdict
	If a light source is placed on the market as a part in a containing product, the technical documentation for the containing product shall clearly identify the contained light source(s), including the energy efficiency class		P
	If a light source is placed on the market as a part in a containing product, the following text shall be displayed, clearly legible, in the user manual or booklet of instructions:		P
	'This product contains a light source of energy efficiency class <X>'		P
	where <X> shall be replaced by the energy efficiency class of the contained light source		P
	If the product contains more than one light source, the sentence can be in the plural, or repeated per light source, as suitable		N/A
10.3	Information to be displayed on the supplier's free access website	Optional: Manufatcurer can declare based on a draft	P
(a)	The reference control settings, and instructions on how they can be implemented, where applicable		N/A
(b)	Instructions on how to remove lighting control parts and/or non-lighting parts, if any, or how to switch them off or minimize their power consumption		N/A
(c)	If the light source is dimmable: a list of dimmers it is compatible with, and the light source — dimmer compatibility standard(s) it is compliant with, if any		N/A
(d)	If the light source contains mercury: instructions on how to clean up the debris in case of accidental breakage		N/A
(e)	Recommendations on how to dispose of the light source at the end of its life in line with Directive 2012/19/EU of the European Parliament and of the Council		P
10.4	Information for products specified in point 3 of Annex IV		P
	For the light sources specified in point 3 of Annex IV, their intended use shall be stated on all forms of packaging, product information and advertisement, together with a clear indication that the light source is not intended for use in other applications		P
	The technical documentation file drawn up for the purposes of conformity assessment, in accordance with paragraph 3 of Article 3 of Regulation (EU) 2017/1369 shall list the technical parameters that make the product design specific to qualify for the exemption		P
11	Technical documentation (Annex VI of EU 2019/2015)		P
11.1	The technical documentation referred to in point 1(d) of Article 3 shall include:	Optional: Manufatcurer can declare his intention based on a draft	P
(a)	the name and address of the supplier		P

Clause	Requirement + Test	Result – Remark	Verdict
(b)	supplier’s model identifier		P
(c)	the model identifier of all equivalent models already placed on the market		P
(d)	identification and signature of the person empowered to bind the supplier		P
(e)	the declared values for the following technical parameters; these values are considered as the declared values for the purpose of the verification procedure in Annex IX		P
(1)	useful luminous flux (Φ_{use}) in lm		P
(2)	colour rendering index (CRI)		P
(3)	on-mode power (P_{on}) in W		P
(4)	beam angle in degrees for directional light sources (DLS)		N/A
(4a)	peak luminous intensity in cd for directional light sources (DLS)		N/A
(5)	correlated colour temperature (CCT) in K		P
(6)	standby power (P_{sb}) in W, including when it is zero		N/A
(7)	networked standby power (P_{net}) in W for connected light sources (CLS)		N/A
(7a)	R9 colour rendering index value for LED and OLED light sources		P
(7b)	survival factor for LED and OLED light sources		P
(7c)	lumen maintenance factor for LED and OLED light sources		P
(7d)	indicative lifetime L70B50 for LED and OLED light sources		P
(8)	displacement factor (cos ϕ 1) for LED and OLED mains light sources		N/A
(9)	colour consistency in MacAdam ellipse steps for LED and OLED light sources		P
(10)	luminance-HLLS in cd/mm^2 (only for HLLS)		N/A
(11)	flicker metric (P_{st}LM) for LED and OLED light sources		N/A
(12)	stroboscopic effect metric (SVM) for LED and OLED light sources		N/A
(13)	excitation purity, only for CTLS, for the following colours and dominant wavelength within the given range		N/A
	Colour Dominant wave-length range		N/A
	Blue 440 nm — 490 nm		N/A
	Green 520 nm — 570 nm		N/A
	Red 610 nm — 670 nm		N/A
(f)	the calculations performed with the parameters, including the determination of the energy efficiency class		P
(g)	references to the harmonised standards applied or other standards used		P
(h)	testing conditions if not described sufficiently in point (g)		N/A

Clause	Requirement + Test	Result – Remark	Verdict
(i)	the reference control settings, and instructions on how they can be implemented, where applicable		N/A
(j)	instructions on how to remove lighting control parts and/or non-lighting parts, if any, or how to switch them off or minimise their power consumption during light source testing		N/A
(k)	specific precautions that shall be taken when the model is assembled, installed, maintained or tested		P
11.2	The elements listed under point 1 shall also constitute the mandatory specific parts of the technical documentation that the supplier shall enter into the database, pursuant to point 5 of Article 12 of Regulation (EU) 2017/1369		P
12	Information to be provided in visual advertisements, in technical promotional material and in distance selling, except distance selling on the internet (Annex VII of EU 2019/2015)		N/A
12.1	In visual advertisements, for the purposes of ensuring conformity with the requirements laid down in point 1(e) of Article 3 and point 1(c) of Article 4, the energy class and the range of efficiency classes available on the label shall be shown as set out in point 4 of this Annex	Optional: Manufatcurer can declare based on a draft	N/A
12.2	In technical promotional material, for the purposes of ensuring conformity with the requirements laid down in point 1(f) of Article 3 and point 1(d) of Article 4, the energy class and the range of efficiency classes available on the label shall be shown as set out in point 4 of this Annex		N/A
12.3	Any paper-based distance selling must show the energy class and the range of efficiency classes available on the label as set out in point 4 of this Annex		N/A
12.4	The energy efficiency class and the range of energy efficiency classes shall be shown, as indicated in Figure 2, with		N/A
(a)	an arrow, containing the letter of the energy efficiency class in 100 % white, Calibri Bold and in a font size at least equivalent to that of the price, when the price is shown		N/A
(b)	the colour of the arrow matching the colour of the energy efficiency class		N/A
(c)	the range of available energy efficiency classes in 100 % black; and		N/A

Clause	Requirement + Test	Result – Remark	Verdict
(d)	the size shall be such that the arrow is clearly visible and legible. The letter in the energy efficiency class arrow shall be positioned in the centre of the rectangular part of the arrow, with a border of 0,5 pt in 100 % black placed around the arrow and the letter of the energy efficiency class By way of derogation, if the visual advertisement, technical promotional material or paper-based distance selling is printed in monochrome, the arrow can be in monochrome in that visual advertisement, technical promotional material or paper-based distance selling *Figure 2* **Coloured/monochrome left/right arrow, with range of energy efficiency classes indicated** 		N/A
12.5	Telemarketing-based distance selling must specifically inform the customer of the energy efficiency class of the product and of the range of energy efficiency classes available on the label, and that the customer can access the full label and the product information sheet through a free access website, or by requesting a printed copy	Optional: Manufatcurer can declare based on a draft	
12.6	For all the situations mentioned in points 1 to 3 and 5, it must be possible for the customer to access the label and the product information sheet through a link to the product database website, or to request a printed copy		
13	Information to be provided in the case of distance selling on the internet (Annex VIII of EU 2019/2015)		N/A
13.1	The appropriate label made available by suppliers in accordance with point 1(g) Article 3 shall be shown on the display mechanism in proximity to the price of the product. The size shall be such that the label is clearly visible and legible and shall be proportionate to the size specified for the standard label in Annex III		N/A
	The label may be displayed using a nested display, in which case the image used for accessing the label shall comply with the specifications laid down in point 3 of this Annex. If nested display is applied, the label shall appear on the first mouse click, mouse roll-over or tactile screen expansion on the image		N/A
13.2	The image used for accessing the label in the case of nested display, as indicated in Figure 3, shall		N/A
(a)	be an arrow in the colour corresponding to the energy efficiency class of the product on the label		N/A
(b)	indicate the energy efficiency class of the product on the arrow in 100 % white, Calibri Bold and in a font size equivalent to that of the price		N/A
(c)	have the range of available energy efficiency classes in 100 % black; and		N/A

Clause	Requirement + Test	Result – Remark	Verdict
(d)	have one of the following two formats, and its size shall be such that the arrow is clearly visible and legible. The letter in the energy efficiency class arrow shall be positioned in the centre of the rectangular part of the arrow, with a visible border in 100 % black placed around the arrow and the letter of the energy efficiency class: *Figure 3* **Coloured left/right arrow, with range of energy efficiency classes indicated** 		N/A
13.3	In the case of nested display, the sequence of display of the label shall be as follows		N/A
(a)	the image referred to in point 2 of this Annex shall be shown on the display mechanism in proximity to the price of the product		N/A
(b)	the image shall link to the label set out in Annex III		N/A
(c)	the label shall be displayed after a mouse click, mouse roll-over or tactile screen expansion on the image		N/A
(d)	the label shall be displayed by pop up, new tab, new page or inset screen display		N/A
(e)	for magnification of the label on tactile screens, the device conventions for tactile magnification shall apply		N/A
(f)	the label shall cease to be displayed by means of a close option or other standard-closing mechanism		N/A
(g)	the alternative text for the graphic, to be displayed upon failure to display the label, shall be the energy efficiency class of the product in a font size equivalent to that of the price		N/A
13.4	The appropriate product information sheet made available by suppliers in accordance with point 1(h) of Article 3 shall be shown on the display mechanism in proximity to the price of the product. The size shall be such that the product information sheet is clearly visible and legible. The product information sheet may be displayed using a nested display or by referring to the product database, in which case the link used for accessing the product information sheet shall clearly and legibly indicate ‘Product information sheet’. If nested display is used, the product information sheet shall appear on the first mouse click, mouse roll-over or tactile screen expansion on the link		N/A

Clause	Requirement + Test	Result – Remark	Verdict

For reference:

Annex II, table 1 of EU 2019/2015	**Energy Efficiency Class of light sources**		P
	The energy efficiency class of light sources shall be determined as set out in below table, on the basis of the total mains efficacy η_{TM}		P
	Energy efficiency class	Total mains efficacy η_{TM} (lm/W)	-
	A (most efficient)	$210 \leq \eta_{TM}$	
	B	$185 \leq \eta_{TM} < 2107$	
	C	$160 \leq \eta_{TM} < 185$	
	D	$135 \leq \eta_{TM} < 160$	
	E	$110 \leq \eta_{TM} < 135$	
	F	$85 \leq \eta_{TM} < 110$	
	G (least efficient)	$\eta_{TM} < 85$	

Clause	Requirement + Test	Result – Remark	Verdict

Table 2a	**Data calculation & comparision**			**P**
Model	**3000K**			
Item	**Rated value**	**Measured value**	**Deviation**	**Remark**
Beam angle (˚)	-	-	-	-
Φ_{use} (lm)	900	968	+7.6%	P
P_{on} (W)	7.4	7.1	-4.1%	P
η_{TM}	113	126	+12.1%	P
Energy efficiency class	E	E	Same Class	P
E_C (kWh/1000h)	8	8	-	P
Remarks: For the measured values, referring to test table 1a				

Table 2b	**Data calculation & comparision**			**P**
Model	**4000K**			
Item	**Rated value**	**Measured value**	**Deviation**	**Remark**
Beam angle (˚)	-	-	-	-
Φ_{use} (lm)	900	1079	19.9%	P
P_{on} (W)	7.4	7.2	-2.7%	P
η_{TM}	113	139	23.2%	P
Energy efficiency class	E	D	Better Class	P
E_C (kWh/1000h)	8	8	-	P
Remarks: For the measured values, referring to test table 1b				

Table 2c	**Data calculation & comparision**			**P**
Model	**6500K**			
Item	**Rated value**	**Measured value**	**Deviation**	**Remark**
Beam angle (˚)	-	-	-	-
Φ_{use} (lm)	900	1061	+17.9%	P
P_{on} (W)	7.4	7.17	-3.1%	P
η_{TM}	113	137	21.7%	P
Energy efficiency class	E	D	Better Class	P
E_C (kWh/1000h)	8	8	-	P
Remarks: For the measured values, referring to test table 1c				

Table 3	**Product information sheet**		
Supplier’s name or trade mark:	N/A		
Supplier’s address:	N/A		
Model identifier:	See Model and/or type reference on page 2		
Type of light source:	LED		
Lighting technology used:	[LED]	Non-directional or directional:	☒ NDLS ☐ DLS
Light source cap-type (or other electric interface)	[terminal]		
Mains or non-mains:	☒ NMLS ☐ MLS	Connected light source (CLS):	☐ yes ☒ no
Colour-tuneable light source:	☐ yes ☒ no	Envelope:	☒ no ☐ second ☐ non-clear
High luminance light source:	☐ yes ☒ no		
Anti-glare shield:	☐ yes ☒ no	Dimmable:	☐ yes ☐ specific dimmers ☒ no
Product parameters			
Parameter	Value	Parameter	Value
General product parameters:			
Energy consumption in on-mode (kWh/1 000 h), **rounded up to the nearest integer**	8	Energy efficiency class	☐ A ☐ B ☐ C ☐ D ☒ E ☐ F ☐ G
Useful luminous flux (Φ_{use}), indicating if it refers to the flux in a sphere (360°), in a wide cone (120°) or in a narrow cone (90°)	900lm ☒ sphere (360°) ☐ narrow cone (90°) ☐ wide cone (120°)	Correlated colour temperature, rounded to the nearest 100 K, or the range of correlated colour temperatures, rounded to the nearest 100 K, that can be set	☐ 2700K ☒ 3000K ☒ 4000K ☐ 5000K ☒ 6500K ☐ other:
On-mode power (P_{on}), expressed in W	See page 4	Standby power (P_{sb}), expressed in W and rounded to the second decimal	-
Networked standby power (P_{net}) for CLS, expressed in W and	-	Colour rendering index, rounded to the	[80]

rounded to the second decimal			nearest integer, or the range of CRI values that can be set	
Outer dimensions without separate control gear, lighting control parts and nonlighting control parts, if any (millimetre)	Height	See model list ont page 4	Spectral power distribution in the range 250 nm to 800 nm, at full-load	Refer to the attachment 1
	Width	See model list ont page 4		
	Depth	See model list ont page 4		
Claim of equivalent power		[-]	If yes, equivalent power (W)	x
			Chromaticity coordinates (x and y)	**3000K:** 0.440,0.403 **4000K** 0.380,0380 **6500K** 0.313,0.337
Parameters for directional light sources:				
Peak luminous intensity (cd)		-	Beam angle in degrees, or the range of beam angles that can be set	[-]
Parameters for LED and OLED light sources:				
R9 colour rendering index value		3000K 3 4000K: 3 6500K: 3	Survival factor	1.00
the lumen maintenance factor		0.948		
Parameters for LED and OLED mains light sources:				
displacement factor (cos ϕ 1)		-	Colour consistency in McAdam ellipses	6
Claims that an LED light source replaces a fluorescent light source without integrated ballast of a particular wattage.		[-]	If yes then replacement claim (W)	-
Flicker metric (P_{st} LM)		-	Stroboscopic effect metric (SVM)	-

Attachment 1: Photometric test record

3000K:

Lightsource Test Report

Product Infomation

Product Type: W400C40 Product Spec: 3000K
Product Number: 1

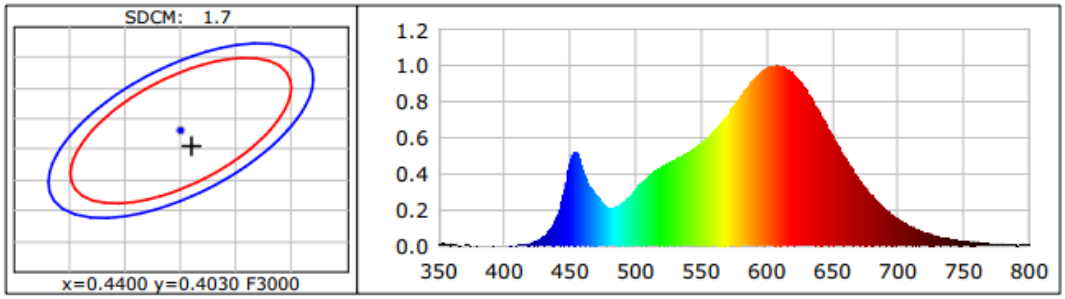
CIE Colorimetric Parameters

Chromaticity coordinates: x=0.4410 y=0.4005 u(u')=0.2547 v=0.3471 v'=0.5206
CCT: Tc=2904K (duv=-0.00194) Color Ratio: R=0.241 G=0.731 B=0.027
Peak Wavelength: 608.1nm Half Bandwidth: 122.5nm
Dominant Wavelength: 583.9nm Color Purity: 0.526
Central Wave: 597.3nm Gravity Wave: 608.0nm
CRI: Ra= 84.7 TM30: Rf= 86, Rg= 96
GAI: GAI_BB_8=99.1, GAI_BB_15=106.5, GAI_EES=54.2

R1 =84	R2 =94	R3 =95	R4 =83	R5 =85	R6 =94	R7 =81	R8 =61
R9 =16	R10=87	R11=83	R12=77	R13=87	R14=98	R15=77	

Color Quality Scale: Qa= 84.1, Qf= 85.6, Qp= 86.3, Qg= 92.6

Q1 =80	Q2 =94	Q3 =85	Q4 =82	Q5 =85	Q6 =86	Q7 =86	Q8 =87
Q9 =95	Q10=91	Q11=88	Q12=85	Q13=84	Q14=75	Q15=76	



Photometric Parameters

Luminous Flux: 970.02 lm Efficiency: 136.72 lm/W Radiant Power: 2.994 W
EEI: 0.09 Energy Efficiency Class: A++ (EU 874-2012)

Electric Parameters

Voltage: 64.504V Current: 0.1100A Power: 7.09W
Power Factor: 1.0000 Frequency: 0.00Hz

4000K:

Lightsource Test Report

Product Infomation

Product Type: W400C40 Product Spec: 4000K
Product Number: 1

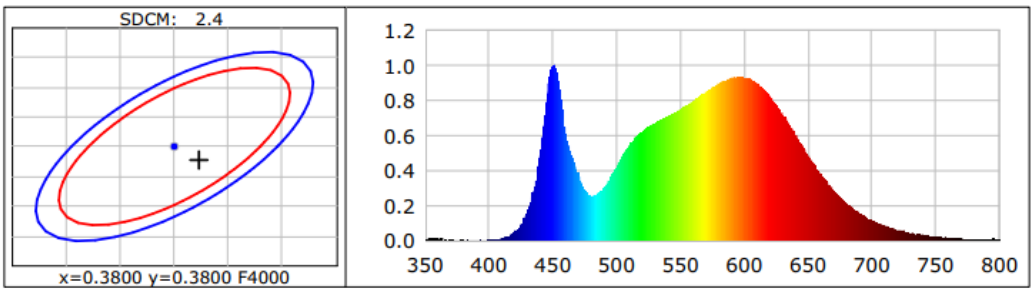
CIE Colorimetric Parameters

Chromaticity coordinates: x=0.3823 y=0.3777 u(u')=0.2259 v=0.3349 v'=0.5023
CCT: Tc=3958K (duv=-0.00008) Color Ratio: R=0.185 G=0.780 B=0.034
Peak Wavelength: 450.7nm Half Bandwidth: 23.1nm
Dominant Wavelength: 579.3nm Color Purity: 0.281
Central Wave: 452.0nm Gravity Wave: 451.0nm
CRI: Ra= 83.0 TM30: Rf= 84, Rg= 96
GAI: GAI_BB_8=93.4, GAI_BB_15=99.7, GAI_EES=73.0

R1 =81	R2 =89	R3 =94	R4 =83	R5 =82	R6 =85	R7 =86	R8 =65
R9 =10	R10=73	R11=81	R12=62	R13=83	R14=97	R15=76	

Color Quality Scale: Qa= 82.6, Qf= 82.7, Qp= 83.0, Qg= 93.4

Q1 =82	Q2 =99	Q3 =79	Q4 =76	Q5 =82	Q6 =84	Q7 =85	Q8 =89
Q9 =97	Q10=88	Q11=85	Q12=84	Q13=84	Q14=73	Q15=76	



Photometric Parameters

Luminous Flux: 1081.7 lm Efficiency: 151.01 lm/W Radiant Power: 3.266 W
EEI: 0.09 Energy Efficiency Class: A++ (EU 874-2012)

Electric Parameters

Voltage: 65.119V Current: 0.1100A Power: 7.16W
Power Factor: 1.0000 Frequency: 0.00Hz

6500K:

Lightsource Test Report

Product Infomation

Product Type: W400C40
Product Number: 1
Product Spec: 6500K
Buyer:

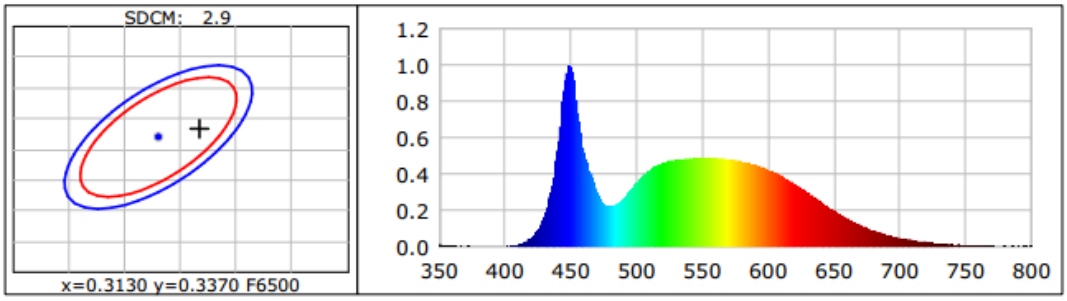
CIE Colorimetric Parameters

Chromaticity coordinates: x=0.3167 y=0.3384 u(u')=0.1971 v=0.3159 v'=0.4738
CCT: Tc=6242K (duv=0.00597)
Color Ratio: R=0.134 G=0.814 B=0.052
Peak Wavelength: 449.1nm
Half Bandwidth: 21.2nm
Dominant Wavelength: 495.6nm
Color Purity: 0.053
Central Wave: 449.9nm
Gravity Wave: 449.0nm
CRI: Ra= 82.1
TM30: Rf= 83, Rg= 96
GAI: GAI_BB_8=90.0, GAI_BB_15=94.8, GAI_EES=86.7

R1 =80	R2 =85	R3 =89	R4 =83	R5 =81	R6 =81	R7 =88	R8 =70
R9 =4	R10=66	R11=82	R12=59	R13=81	R14=94	R15=75	

Color Quality Scale: Qa= 81.9, Qf= 81.8, Qp= 82.5, Qg= 92.0

Q1 =85	Q2 =98	Q3 =78	Q4 =75	Q5 =81	Q6 =83	Q7 =86	Q8 =90
Q9 =96	Q10=86	Q11=83	Q12=82	Q13=82	Q14=71	Q15=76	



Photometric Parameters

Luminous Flux: 1044.2 lm
Efficiency: 145.99 lm/W
Radiant Power: 3.308 W
EEI: 0.09
Energy Efficiency Class: A++ (EU 874-2012)

Electric Parameters

Voltage: 65.032V
Current: 0.1100A
Power: 7.15W
Power Factor: 1.0000
Frequency: 0.00Hz

Attachment 2: Equipment List

No.	Type	Manufacture	Model	Equipment ID	Next Calibration
714	Full-field Speed Goniophotometer	Everfine	GO-R5000	S1207714-YQ	2022-05-14
714a	High-accuracy Intelligent Photometer Head	Everfine	ID-1000_P-B/ID-1000_P-C	S1207714a-YQ	2022-05-14
714b	High-accuracy Digital Photometer Head	Everfine	ID-1000_P-B/ID-1000_P-C	S1207714b-YQ	2022-05-14
714c	High Accuracy Array Spectroradio Meter	Everfine	HAAS-2000	S1207714c-YQ	2022-05-14
714d	Standard Light Source	Everfine	D908	S1207714d-YQ	2022-05-14
714e	Digital Power Meter	Everfine	PF2010	S1207714e-YQ	2022-05-14
714f	Digital CC & CV DC Power Supply	Everfine	WY12010	S1207714f-YQ	2022-05-14
714g	Intelligent AC Power Source	Everfine	DPS1060	S1207714g-YQ	2022-05-14
624	DC Power Supply	Everfine	WY3010	S1108624-YQ	2022-05-14
1024a	Fast Spectroradio Meter	Sensing	SPR-3000	S16101024a-YQ	2022-05-14
525	Reference Lamp	Sensing	0.8422A (110V 100W)	S1004525-YQ	2022-05-14
1184	Digital Power Meter	YOKOGAWA	WT310E-C2-H/G5	S18101184-YQ	2022-05-14
508	Flash Photometer	Sensing	PR-110B	S1004508-YQ	2022-05-14
1022	DC Power Supply	Maynuo	M8853	S16101022-YQ	2022-05-14

- - End of report - -