

TEST REPORT
COMMISSION REGULATION (EU) 2019/2020 of 1 October 2019
laying down ecodesign requirements for light sources and separate control gears pursuant to Directive 2009/125/EC of the European Parliament and of the Council
Report Reference No......: CstarLYK05R5

Compiled by (+ signature).....: Jesse Fu

Approved by (+ signature): Jason Zhang

Date of issue: December 18, 2025


4XHFRN16A

Testing laboratory: **Shenzhen C-Star Test Co., Ltd.**
 1302, Fucheng Science and Technology Innovation Building,
 No. 9-1 Fuhua Road, Fumin Community, Fucheng Street,
 Longhua District, Shenzhen City, Guangdong Province,
 518000 China

Address.....: as above

Testing location.....: as above

Applicant.....: LEXON

Address.....: 125 avenue des Champs-Élysées 75008 Paris France

Standard.....: COMMISSION REGULATION (EU) 2019/2020
 COMMISSION DELEGATED REGULATION (EU) 2019/2015
 COMMISSION DELEGATED REGULATION (EU)2021/340
 COMMISSION REGULATION (EU) 2021/341

Test Report Form No......: TRF (EU) No 2019/2020

Master TRF (date).....: Dated 2021-11

Test item description: BALLOON DOG LAMP

Trade Mark: LEXON

Manufacturer: LEXON

Address.....: 125 avenue des Champs-Élysées 75008 Paris France

Model /Type reference: LX-JK-BDL-A

Ratings.....: DC 5V, 12.0W

Test case verdicts

Test case does not apply to the test object.....: N(N/A)

Test item does meet the requirement: P(Pass)

Test item does not meet the requirement: F(Fail)

Testing

Date of receipt of test item: May.15, 2025

Date(s) of performance of test.....: May.15, 2025 to Oct.30, 2025

Test item particulars:
Type of light source:

 Lighting technology used
 HL LFLT5HE LFL T5HO CFLni
 HPS MH other HID LED
 mixed OLED Others: _____

 Non-directional or directional NDLS DLS

 Mains or non-mains NMLS MLS

 Connected light source (CLS) Yes No

 Colour-tuneable light source Yes No

 Envelope NO second non-clear

 Anti-glare shield Yes No

 High luminance light source Yes No

 Dimmable Yes No only with specific dimmers

 Control gear Integrated External

 Use of light source: Indoor Outdoor Industry

Lamp cap installed: N/A

General product parameters :

Energy consumption in on-mode (kWh/1000 h)...: 12.0

 Energy efficiency class.....: A B C D E F G

Rated useful luminous flux (lm):.....: 1100lm

Rated CCT (K):.....: 6500K

Excitation Purity(%):.....: N/A

On-mode power (Pon), expressed in W.....: 12.0W

Standby power (Psb) (W):.....: N/A

Networked standby power(Pnet)for CLS (W):.....: N/A

Rated Ra.....: 80

Outer dimensions.....(mm): 300*400*300

Spectral power distribution.....	: See attachment 2
Claim of equivalent power	: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> N/A
Chromaticity coordinates (x and y).....	: x:0.3351, y:0.3526
Peak luminous intensity(cd)	: 355
Beam angle in degrees(°).....	: 360°
R9 colour rendering index value R9.....	: 66
Survival factor	: 100%
The lumen maintenance factor.....	: 96%
Displacement factor (cos φ1).....	: 0.7
Colour consistency in McAdam ellipses.....	: 5.0
Claims that an LED light source replaces a fluorescent light source without integrated ballast of a particular wattage.....	: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Flicker metric (Pst LM)	: 0.005
Stroboscopic effect metric (SVM).....	: 0.00
Rated life time(h)	: 30000h
Indicative lifetime L70B50(h).....	: 30000h

Attachments:

- The test report includes: ATTACHMENT 1(S) of Energy efficiency classes
- The test report includes: ATTACHMENT 2(S) of Spectral power distribution
- The test report includes: ATTACHMENT 3(S) of Photos

Summary of testing:

1. These results are in compliance with the ecodesign requirements of the Commission Regulation (EU) 2019/2020.

Equipment List:

Instrument	Equipment ID	Model	Calibration Date	Calibration DueDate
Full-field Speed Goniophotometer	SLCS-S-112	GO-R10320	2025/09/20	2026/09/20
Digital Power Meter	SLCS-S-103	PF2010	2025/09/20	2026/09/20
AC Testing Power Source	SLCS-S-110	DPS1060	2025/09/20	2026/09/20
Total SpectralRadiant FluxStandard Lamp	SLCS-S-143	D908S	2025/09/20	2026/09/20
2m IntegratingSphere System	SLCS-S-038	SPR-2700	2025/09/20	2026/09/20
Digital Power Meter	SLCS-S-058	WT310	2025/09/20	2026/09/20
AC Testing Power Source	SLCS-S-111	APW-105N	2025/09/20	2026/09/20
Standard Lamp	SLCS-S-10400	S1101040017	2025/09/20	2026/09/20
Power Meter	SLCS-S-060	PF910400	2025/09/20	2026/09/20
Flicker Photometer	SLCS-S-119	FP-210	2025/09/20	2026/09/20

General remarks

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

This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.

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

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

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

(EU) No 2019/2020			
Clause	Requirement - Test	Result - Remark	Verdict
1	ENERGY EFFICIENCY REQUIREMENTS		
1.1	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:		P
	$P_{on} < P_{onmax} = C \times (L + \Phi_{use} / (F \times \eta)) \times R$	$P_{on} = 12.0W < P_{onmax} = 12.2W$	P
	Correction factor (C): The value for correction factor (C) is specified in Table 2 of (EU) No 2019/2020, depending on the light source type	1.08	P
	End loss factor (L): The value for end loss factor is specified in Table 1 of (EU) No 2019/2020, depending on the light source type	1.5	P
	Useful luminous flux (Φ_{use}):	1100lm	P
	Efficacy factor (F):		P
	1,00 for non-directional light sources (NDLS, using total flux)	1.00	P
	0,85 for directional light sources (DLS, using flux in a cone)	0.85	N/A
	Threshold efficacy (η): The value for threshold efficacy is specified in Table 1 of (EU) No 2019/2020, depending on the light source type	120	P
	CRI factor (R):		P
	0,65 for $CRI \leq 25$		N/A
	$(CRI + 80) / 160$ for $CRI > 25$, rounded to two decimals	1.06	P
1.1	Standby power		N/A
	The standby power P_{sb} of a light source shall not exceed 0,5 W.		N/A
	The networked standby power P_{net} of a connected light source shall not exceed 0,5 W.		N/A
1.2	From 1 September 2021, the minimum energy efficiency requirements of a separate control gear operating at full-load as follows		N/A
	Declared output power of the control gear (P_{cg}) or declared power of the light source (P_{ls}) in W, as applicable		N/A
	Control gear for HL light sources all wattages $P_{cg}: 0,91$		N/A
	Control gear for FL light sources		N/A
	$P_{ls} 5: 0,71$		N/A

(EU) No 2019/2020			
Clause	Requirement - Test	Result - Remark	Verdict
	$5 < P_{Is} \ 10400: P_{Is} / (2 \times \sqrt{P_{Is}/36 + 38/36 \times P_{Is} + 1})$		N/A
	10400 $P_{Is} : 0,91$		N/A
	<u>Control gear for HID light sources</u>		N/A
	$P_{Is} \ 30: 0,78$		N/A
	$30 < P_{Is} \ 75: 0,85$		N/A
	$75 < P_{Is} \ 105: 0,87$		N/A
	$105 < P_{Is} \ 405: 0,90$		N/A
	$405 < P_{Is}: 0,92$		N/A
	<u>Control gear for LED or OLED light source</u> all wattages $P_{cg}: P_{cg}^{0,81} / (1,09 \times P_{cg}^{0,81} + 2,10)$		N/A
1.2.1	No-load power		N/A
	The no-load power P_{no} of a separate control gear shall not exceed 0,5 W.		N/A
1.2.2	Standby power		N/A
	The standby power P_{sb} of a separate control gear shall not exceed 0,5 W.		N/A
1.2.3	Networked standby power		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		N/A
2.1	Functional requirements for light sources from 1 September 2021		N/A
2.1.1	Colour rendering		P
	For HID with $u_{se} > 4$ klm and for light sources intended for use in out door applications, industrial applications or other applications: CRI < 80		N/A
	Other light sources: CRI ≥ 80		P
2.1.2	Displacement factor (DF, $\cos \phi$) at power input P_{on} for LED and OLED MLS		P
	$P_{on} \ 5 \text{ W}: \text{No limit}$		N/A
	$5 \text{ W} < P_{on} \ 10 \text{ W}: \text{DF} 0,5$		N/A
	$10 \text{ W} < P_{on} \ 25 \text{ W}: \text{DF} 0,7$		P
	$25 \text{ W} < P_{on}: \text{DF} 0,9$		N/A
2.1.3	Lumen maintenance factor (for LED and OLED)		P

(EU) No 2019/2020			
Clause	Requirement - Test	Result - Remark	Verdict
	The lumen maintenance factor XLMF% after endurance testing shall be at least XLMF, MIN% calculated as follows: $X_{LMF,MIN}\% = 100 \times e^{-\frac{(3000 \times \ln(0.7))}{L_{70}}}$ where L ₇₀ is the declared L ₇₀ B ₅₀ lifetime (in hours)	96,0%	P
	The calculated value for X _{LMF,MIN} exceeds 96,0%, an X _{LMF,MIN} value of 96,0 % shall be used		P
2.1.4	Survival factor after endurance testing (for LED and OLED)		P
	>0.9		P
2.1.5	Colour consistency for LED and OLED light sources		P
	Variation of chromaticity coordinates within a six-step MacAdam ellipse or less.		P
2.1.6	Flicker for LED and OLED MLS		N/A
	P _{st} LM ≤ 1,0 at full-load		N/A
2.1.7	Stroboscopic effect for LED and LED MLS		P
	SVM ≤ 0,9 at full-load (except for HID with Φ _{use} > 4 klm and for light sources intended for use in outdoor applications, industrial applications or other applications where lighting standards allow a CRI < 80)	0,000	P
	From 1 September 2024: SVM ≤ 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)	0,003	P
3.(a)	Information to be displayed on the light source itself		P
	Useful luminous flux (lm)	1100lm	P
	Correlated colour temperature (K)	6500K	P
	Beam angle (°) For directional light sources	360°	N/A
3.(b)	Information to be visibly displayed on the packaging		P
3.(b)(1)	Light source placed on the market, not in a containing product		P
	(a) Useful luminous flux (lm): - 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 (180°), in a wide cone (120°) or in a narrow cone (90°)		P

(EU) No 2019/2020			
Clause	Requirement - Test	Result - Remark	Verdict
	(b) Correlated Colour Temperature, rounded to the nearest 100 K		P
	(c) Beam angle in degrees For directional light sources		N/A
	(d) electrical interface details, e.g. cap- or connector-type, type of power supply (e.g. 230 VAC 50 Hz, 12 V DC)		P
	(e) L70B50 lifetime for LED and OLED light sources, expressed in hours		P
	(f) on-mode power (P _{on}), expressed in W		P
	(g) 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		P
	(h) 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		P
	(i) Colour Rendering Index, rounded to the nearest integer		P
	(j) Clear indication to this effect, 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 < 83.		P
	(k) Information on non-standard conditions (such as ambient temperature T _a ≠ 25 °C or specific thermal management is necessary)		P
	(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		P
	(m) if the light source contains mercury: a warning of this, including the mercury content in mg rounded to the first decimal place		P
	(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

(EU) No 2019/2020			
Clause	Requirement - Test	Result - Remark	Verdict
3.(b)(2)	Separate control gears For separate control gear placed on the market as a stand-alone product, not as a part of a containing product		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
	(c) the efficiency in full-load, expressed inpercentage		N/A
	(d) the no-load power (Pno), expressed in W androunded to the second decimal, or the indication that the gear is not intended to operate in no-loadmode. If the value is zero, it may be omitted fromthe packaging but shall nonetheless be declared in the technical documentation and on websites		N/A
	(e) the standby power (Psb), expressed in W androunded to the second decimal. If the value is zero, it may be omitted from the packaging but shall nonetheless be declared in		N/A
	(f) the networked standby power(Pnet), 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
	(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
	(g) a warning if the control gear is not suitable for		N/A
	dimming of light sources or can be used only withspecific 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		

(EU) No 2019/2020			
Clause	Requirement - Test	Result - Remark	Verdict
	(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
3.(c)	Information to be visibly displayed on a free-access website of the manufacturer, importer or authorised representative		N/A
3.(c)(1)	Separate control gears For any separate control gear that is placed on the EU market, the following information shall be displayed on at least one free-access website:		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		N/A

Appendix-Test Data Sheet
1、 Initial Lumen Measurement :

Sample No.	Power Pon (W)	Disp. Factor	Luminous Flux Φ_{total} (lm)	Luminous Flux Φ_{use} (lm)	Efficacy (lm/W)	Beam angle (°)
1	12.29	0.846	1024.15	1024.15	83.33	-
2	12.28	0.848	1024.26	1024.26	83.41	-
3	12.27	0.849	1024.25	1024.25	83.48	-
4	12.29	0.846	1024.17	1024.17	83.33	-
5	12.28	0.849	1024.18	1024.18	83.40	-
6	12.28	0.848	1024.35	1024.35	83.42	-
7	12.29	0.847	1024.14	1024.14	83.33	-
8	12.28	0.848	1024.16	1024.16	83.40	-
9	12.27	0.849	1024.17	1024.17	83.47	-
10	12.26	0.846	1024.33	1024.33	83.55	-
Avg.	12.28	0.848	1024.22	1024.22	83.41	-

2、 Color Performance:

Color Temp (CCT)	Color rendering (Ra)	R9	SDCM	x	y
6864	89.4	66	4.3	0.3351	0.3526
6867	89.3	66	4.3	0.3349	0.3523
6868	89.5	66	4.3	0.3349	0.3526
6867	89.3	66	4.3	0.3350	0.3524
6868	89.3	66	4.3	0.3349	0.3523
6867	89.5	66	4.3	0.3350	0.3526
6867	89.5	66	4.3	0.3350	0.3527
6868	89.3	66	4.3	0.3351	0.3525
6868	89.5	66	4.3	0.3350	0.3524
6867	89.4	66	4.3	0.3349	0.3525
6867	89.4	66	4.3	0.3350	0.3525

3. Different Mode Power 、 Flicker、 Stroboscopic Effect and Lumen Maintenance Test:

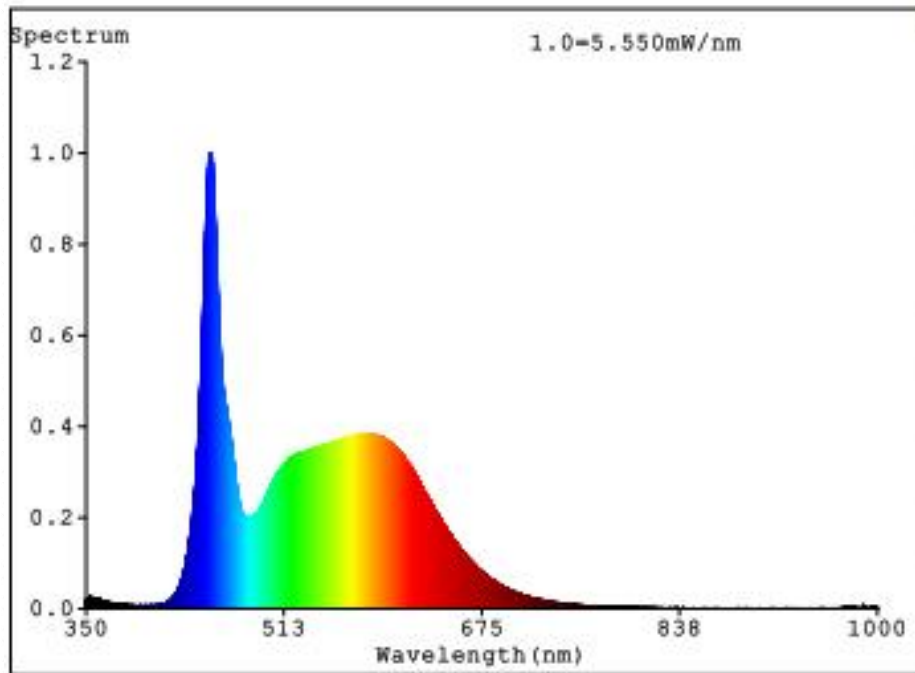
Sample No.	No-Load Power Pno	Standby Power Psb	Network Sb. PowerPnet	Flicker PstLM	Stroboscopic Effect SVM	Total Luminous flux (lm) After 3600h	Lumen Maintenanceat 3600h (%)	Survival factor at 3600h
1	N/A	N/A	N/A	0.002	0.000	999.37	97.58%	P
2	N/A	N/A	N/A	0.002	0.000	999.27	97.56%	P
3	N/A	N/A	N/A	0.005	0.000	999.36	97.57%	P
4	N/A	N/A	N/A	0.001	0.000	999.18	97.56%	P
5	N/A	N/A	N/A	0.004	0.000	999.09	97.55%	P
6	N/A	N/A	N/A	0.005	0.000	999.46	97.57%	P
7	N/A	N/A	N/A	0.001	0.000	999.25	97.57%	P
8	N/A	N/A	N/A	0.004	0.000	999.38	97.58%	P
9	N/A	N/A	N/A	0.006	0.000	999.28	97.57%	P
10	N/A	N/A	N/A	0.004	0.000	999.34	97.56%	P
Avg.	N/A	N/A	N/A	0.004	0.000	999.33	97.57%	P

ATTACHMENT 1(S) of Energy efficiency classes

Energy efficiency classes				
Standard	Clause	Model No.	Verdict	
(EU) 2019/2015	Energy class	LX-JK-BDL-A	P	
Conditions	-Test conditions: -ambition: 25°C/65%R.H. -Test voltage:AC230V/50Hz			
Φ _{use}	1100lm (Declared)			
P _{on}	P _{on} =12.0W (Declared)			
F _{TM}	1.0			
η _{TM}	91.6lm/w (Declared)			
Technical requirements		Test result		
$\eta_{TM} = (\Phi_{use}/P_{on}) \times F_{TM} \text{ (lm/W).}$		Energy efficiency class	Total mains efficacy η _{TM} (lm/W)	--
		A	210 ≤ η _{TM}	N
		B	185 ≤ η _{TM} < 210	N
		C	160 ≤ η _{TM} < 185	N
		D	135 ≤ η _{TM} < 160	N
		E	110 ≤ η _{TM} < 135	N
		F	85 ≤ η _{TM} < 110	P
		G	η _{TM} < 85	N
Factors F _{TM} by light source type				
Light source type		Factor F _{TM}	--	
Non-directional (NDLS) operating on mains (MLS)		1.000	N	
Non-directional (NDLS) not operating on mains (NMLS)		0.926	N	
Directional (DLS) operating on mains (MLS)		1.176	N	
Directional (DLS) not operating on mains (NMLS)		1.089	P	



ATTACHMENT 2(S) of Spectral power distribution



ATTACHMENT 3(S) of Photos

Photo 1:



***** END OF REPORT *****

