

TEST REPORT

Product Name : LED Tube

Model Number : LT-I1218

Prepared for : iLighting Global Enterprise Co., Ltd
Address : Room B3, 18/F Bonsun Industrial Building, 364-366 Sha Tsui Road, Tsuen Wan, Hong Kong

Prepared by : EMTEK (DONGGUAN) CO., LTD.
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Report Number : EDG2404290339L00101R
Date(s) of Tests : November 24, 2023 to May 06, 2024
Date of issue : May 07, 2024



TEST REPORT

COMMISSION REGULATION (EU) 2019/2020

Directive 2009/125/EC of the European Parliament and of the Council

Report Reference No.....: EDG2404290339L00101R

Compiled by.....: Sam Lin

Approved by.....: June Luo

Date of issue.....: May 07, 2024

Contents: 13 pages



Testing laboratory

Name.....: EMTEK(DONGGUAN) CO., LTD.

Address: -1&2F., Building 2, Zone A, Zhongda Marine Biotechnology Research and Development Base, No. 9, Xincheng Avenue, Songshanhu High-technology Industrial Development Zone, Dongguan, Guangdong, China

Testing location.....: Same as above

Client

Applicant name: iLighting Global Enterprise Co., Ltd

Address: Room B3, 18/F Bonsun Industrial Building, 364-366 Sha Tsui Road, Tsuen Wan, Hong Kong

Manufacturer name.....: iLighting Global Enterprise Co., Ltd

Address: Room B3, 18/F Bonsun Industrial Building, 364-366 Sha Tsui Road, Tsuen Wan, Hong Kong

Factory name: iLighting Global Enterprise Co., Ltd

Address: Room B3, 18/F Bonsun Industrial Building, 364-366 Sha Tsui Road, Tsuen Wan, Hong Kong

Test specification :

Test procedure.....: EU 2019/2020
EU 2019/2015
EU2021/341
EU2021/340

Test standard: See Page 5

Test item description.....: Ecodesign Directive

Product name: LED Tube

Trade Mark.....: 

Model/Type reference.....: LT-I1218

Ratings: 100-240V~, 50/60Hz

General information:

Lighting technology used: ☐HL/☐LFL T5 HE/☐LFLT5 HO/☐CFLni/
☐otherFL/☐HPS/☐MH/☐otherHID/
☒LED/☐OLED/☐mixed/☐other

Mains or non-mains: ☒MLS/☐NMLS

Colour-tuneable light source: ☐Yes /☒No

High luminance light source: ☐Yes /☒No

Anti-glare shield: ☐Yes /☒No

Use of Luminaries: ☒Indoor/☐Outdoor/☐Industry

Directionality: ☒NDLS /☐DLS

Connected light source (CLS): ☐Yes /☒No

Envelope: ☒No /☐Second /☐Non-clear

Dimmable: ☐Yes /☐Only with specific dimmers /☒No

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..... : November 23, 2023

Date (s) of performance of tests..... : November 24, 2023 to May 06, 2024

General remarks:

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

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

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

Throughout this report a ☐ comma/ ☒ point is used as the decimal separator.

General product information:

Sample No.:E2404290339-01~E2404290339-10

Summary of testing:

The light source of the products meets the requirement of EU 2019/2020.

Reference Test Standard:

Light emitting diode modules shall be measured according to methods set out in the following documents:

Measured parameter	Reference	Remarks
Lumen	IEC62612:2013+A1:2015+A2:2018	
Lamp efficacy, luminous efficacy	IEC62612:2013+A1:2015+A2:2018	
Lamp survival factor	IEC62612:2013+A1:2015+A2:2018	The compliance criteria of the regulations shall be applied.
Lumen maintenance	IEC62612:2013+A1:2015+A2:2018	The compliance criteria of the regulations shall be applied.
Chromaticity coordinates	EN 13032-4:2015	
Colour consistency	IEC62612:2013+A1:2015+A2:2018	
CCT	EN 13032-4:2015	
CRI	EN 13032-4:2015	
Lamp dimensions	IEC62612:2013+A1:2015+A2:2018	
Dimmability	IEC62612:2013+A1:2015+A2:2018	The presence of a symbol or warning shall be checked A list of compatible dimmers is not possible due to the arbitrary combination with control gears.
Beam angle	IEC62612:2013+A1:2015+A2:2018, IEC/TR 61341-2010	
Peak intensity	IEC62612:2013+A1:2015+A2:2018, IEC/TR 61341-2010	
Cone lumen	L2(AP)005	

Table

Table 1 Declare Information

a)	Useful Luminous Flux: 1750lm ☒ in sphere ☐ in wide cone ☐ in narrow cone
b)	CCT: 4000K
c)	Nominal beam angle in degrees(only for directional-lamp): N/A
d)	electrical interface details:100-240V~, 50/60Hz
e)	L ₇₀ B ₅₀ Life Time: 50000 hours
f)	on-mode power (P _{on}): 8.3W
g)	standby power (P _{sb}): ☒ -, ☐ x.xx
h)	networked standby power (P _{net}) for CLS: ☒ -, ☐ x.xx
i)	Colour Rendering: 80
l)	Warning: ☐ N/A, ☒ The lamp is not suitable for dimming, ☐ The lamp can be dimmed only with specific dimmers
	Energy consumption in on-mode (kWh/1000 h): 9
	Energy efficiency class: ☒ A ☐ B ☐ C ☐ D ☐ E ☐ F ☐ G
	Outer dimensions (mm): Height 1210 , Width 25 , Depth 25
	Spectral power distribution: See data 3
	Claim of equivalent power: ☐ yes (W) , ☒ -
	Chromaticity coordinates (x and y): (0.374, 0.377)
	R9: 0
	Survival factor: 0.90
	The lumen maintenance factor: 96.00%
	Displacement factor: 0.95
	Colour consistency in McAdam ellipses: <6
	Claim that an LED light source replaces a fluorescent lamp without ballast: ☐ yes (W) ☒ -
	Flicker metric (Pst LM) (rounded to the first decimal): 1.0
	Stroboscopic effect metric (SVM) (rounded to the first decimal): 0.4
	Rated peak intensity (only for directional-lamp): N/A
Remark: '-': not applicable	

Data

Summary of Test Result			
Item	Result (Average)	Requirements	Verdict
$P_{on}(W)$	8.3	$P \leq 2W$: The determined value shall not exceed the declared value by more than 0,20 W. $2W \leq P \leq 5W$: The determined value shall not exceed the declared value by more than 10 %. $5W < P \leq 100W$: The determined value shall not exceed the declared value by more than 5 %. $P > 100W$: The determined value shall not exceed the declared value by more than 2,5 %.	P
$P_{onmax}(W)$	17.4	the declared power consumption of a light source P_{on} shall not exceed the maximum allowed power P_{onmax}	P
no-load power $P_{no}(W)$	/	shall not exceed 0,5 W	N/A
standby power $P_{sb}(W)$	/	shall not exceed 0,5 W	N/A
networked standby power $P_{net}(W)$	/	shall not exceed 0,5 W	N/A
Useful Luminous Flux(lm)	1780.4	The determined value shall not be less than the declared value minus 10 %.	P
Colour Rendering(Ra)	82	≥ 80 for indoor	P
Displacement factor	0.97	No limit at $P_{on} \leq 5 W$; $DF \geq 0,5$ at $5 W < P_{on} \leq 10 W$; $DF \geq 0,7$ at $10 W < P_{on} \leq 25 W$; $DF \geq 0,9$ at $25 W < P_{on}$;	P
Colour consistency (SDCM)	3.1	within a six-step MacAdam ellipse or less	P
CCT(K)	4188	The determined value shall not deviate from the declared value by more than 10 %.	P
Beam angle (degrees)	/	The determined value shall not deviate from the declared value by more than 25 %.	N/A
Flicker [P_{st} LM]	0.113	$P_{st} LM \leq 1,0$ at full-load.	P
Stroboscopic effect [SVM]	0.018	$SVM \leq 0,9$ at full-load(except for HID with $\Phi_{use} > 4 \text{ km}$ and for light sources intended for use in outdoor applications, industrial applications or other applications where lighting standards allow a $CRI < 80$)	P
Lumen Maintenance factor at 3600h	97.42%	The lumen maintenance factor $XLMF\%$ after endurance testing according to Annex V shall be at least $XLMF_{MIN}\%$ calculated as follows: $XLMF_{MIN}\% = 100 \times e^{(3000 \times \ln(0.7))/L70}$ where L70 is the declared L70B50 lifetime (in hours) If the calculated value for $XLMF_{MIN}$ exceeds 96,0 %, an $XLMF_{MIN}$ value of 96,0 % shall be used	P
Lamp Survival Factor at 3600h	1.0	At least 9 light sources of the test sample must be operational after completing the test	P

Data

Data1-1:

Sample No.	Test voltage(V)	Current (A)	P _{on} (W)	Total Luminous Flux(lm)	Φ _{use} (lm)	P _{onmax} (W)	Total mains efficacy η _{TM} (lm/W)	Energy efficiency class
1	230.20	0.037	8.29	1753.70	1753.70	17.40	211.60	A
2	230.20	0.037	8.29	1787.02	1787.02	17.70	215.68	A
3	230.20	0.037	8.27	1785.27	1785.27	17.69	215.90	A
4	230.20	0.037	8.27	1783.51	1783.51	17.67	215.72	A
5	230.20	0.037	8.31	1785.27	1785.27	17.69	214.95	A
6	230.20	0.037	8.28	1774.74	1774.74	17.59	214.39	A
7	230.20	0.037	8.30	1774.74	1774.74	17.59	213.72	A
8	230.20	0.037	8.29	1788.77	1788.77	17.72	215.65	A
9	230.20	0.037	8.27	1788.77	1788.77	17.72	216.20	A
10	230.20	0.037	8.29	1781.76	1781.76	17.66	214.99	A
Average	230.20	0.037	8.29	1780.36	1780.36	17.64	214.88	A

Sample No.	Displacement factor	Power Factor	CCT(K)	Colour consistency (SDCM)	coordinates x	coordinates y	Ra	R9
1	0.9724	0.9694	4190	3.1	0.3736	0.3765	81.7	17
2	0.9718	0.9689	4190	3.1	0.3737	0.3767	81.7	17
3	0.9720	0.9689	4190	3.2	0.3737	0.3769	81.6	17
4	0.9727	0.9696	4196	3.3	0.3735	0.3770	81.8	18
5	0.9722	0.9690	4175	2.8	0.3741	0.3761	81.6	16
6	0.9731	0.9699	4182	3.0	0.3739	0.3766	81.6	16
7	0.9726	0.9694	4185	3.0	0.3737	0.3763	81.7	17
8	0.9724	0.9694	4195	3.2	0.3734	0.3764	81.6	16
9	0.9722	0.9691	4183	3.0	0.3739	0.3769	81.7	17
10	0.9727	0.9696	4196	3.3	0.3733	0.3762	81.6	17
Average	0.9724	0.9693	4188	3.1	0.3737	0.3765	81.7	17

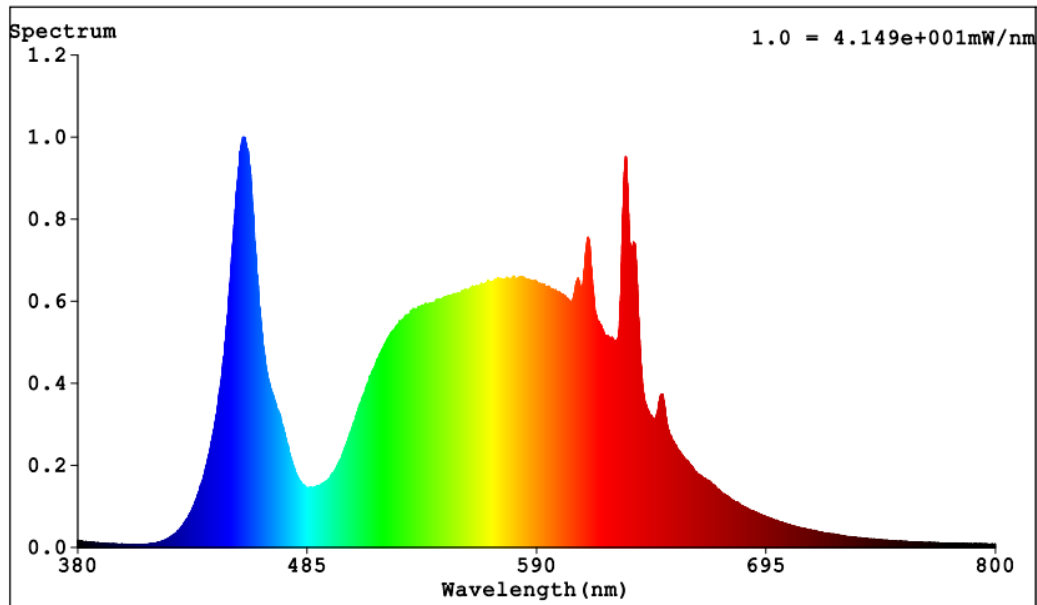
Data

Data 2-1:

Sample No.	At 3600h		
	Luminous Flux (lm)	Lumen Maintenance(%)	Lamp Survival(Y/N)
1	1709.2	97.46%	Y
2	1740.2	97.38%	Y
3	1738.7	97.39%	Y
4	1743.6	97.76%	Y
5	1747.1	97.86%	Y
6	1731.3	97.55%	Y
7	1723.6	97.12%	Y
8	1742.4	97.41%	Y
9	1741.0	97.33%	Y
10	1727.8	96.97%	Y
Average	1734.5	97.42%	Y

Data

Data 3: Spectral power distribution:



Equipment List

☒ Integrating Sphere System					
Device	Manufacture	Model	Serial No	Calibration Date	Due Date
Integrating Sphere	EVERFINE	R98	ELD0055	2023-12-06	2024-12-05
Power meter	YOKOGAWA	WT210	ELD0058	2023-12-07	2024-12-06
Temperature and humidity meter	Anymetre	JR900A	ELD0152	2023-05-18	2024-05-17
High accuracy array spectra-radio meter	EVERFINE	HAAS-2000	ELD0052	2023-12-06	2024-12-05
Standard Light Source	EVERFINE	D204	ELD0183	2023-12-13	2024-12-12
Spectral Flickering Irradiance Meter	EVERFINE	LFA-3000	ELD0169-1	2023-12-11	2024-12-10

Photos

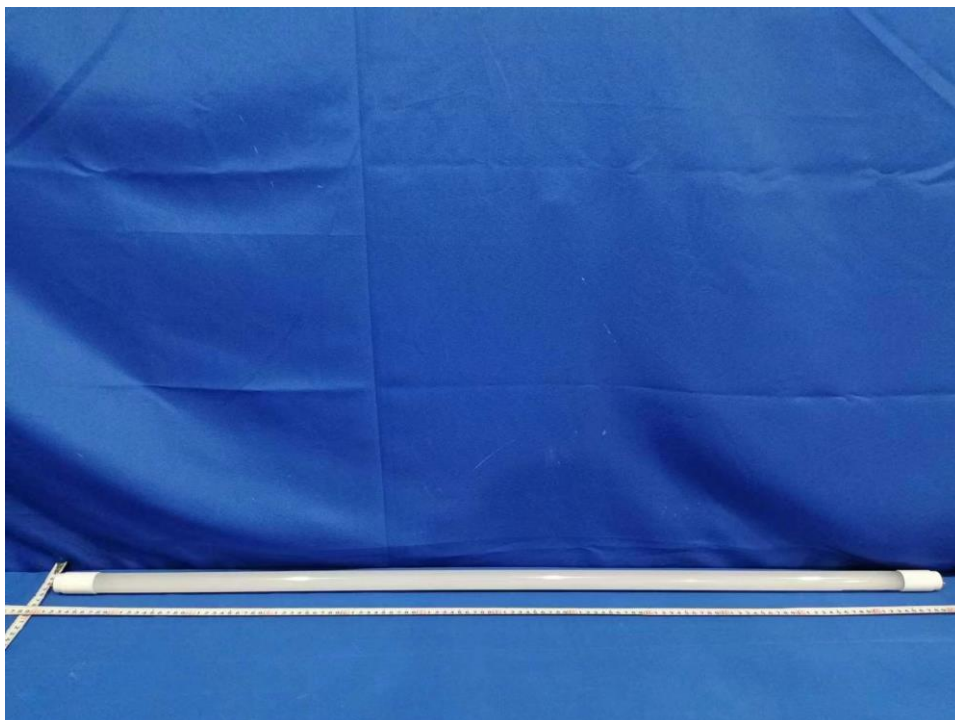


Figure 1: Overview



Figure 2: Overview

*** End of Report ***

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