

LM-79-08 Test Report

For

ELEC-TECH INTERNATIONAL CO LTD

No. 1 Jinfeng Road, Tangjiawan Town, Xiangzhou District, Zhuhai City, Guandong Province, P.R.
China 519085

LED Tube Lamp

Model name(s):
542173XX

Representative (Tested) Model:
54217361

Model Difference: ##=61-70 intends CCT, 5000K

Prepare By:

Review By:

Engineer: Derek Lai

Technical Lead: Vincent Yuan

Date: 2018-06-05

Date:

Note: This report does not imply product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

Product Information:

Client Name:	ELEC-TECH INTERNATIONAL CO LTD
Brand Name:	ETI
Model Number:	542173XX (XX=61-70)
Product type:	Replacement Lamps ("Plug and Play") (UL type A)
Rating Input:	120-277Vac, 50/60Hz, 16W
Declared CCT:	5000K
Declared Light Output	2000lm
LED Manufacturer:	EVERLIGHT
LED Model:	67-21S
LED Quantity:	90 pcs
Forward current of LED Chip:	150mA
Date of Receipt Samples:	2018-05-21
Quantity of Receipt Samples:	1
Sample Number:	180521002-S3

Laboratory Information:

Test Laboratory:	Dongguan New Testing Centre Co., Ltd
Laboratory Address:	3F, No. 1 the 1 st North Industry Road, Songshan Lake Science & Technology Park, Dongguan, Guangdong, China
Laboratory Contact Name:	Neil Zhong
Laboratory Contact E-mail:	Neil_ntc@163.com

Report Information

Issued Date of Test Report:	
Revised Date of Test Report:	N/A
Test Report No.:	NTCR18060005
Remark (If applicable)	N/A

Test Specifications:	
Date of Test	2018-06-01
Test item	1. Total Luminous Flux 2. Luminous Distribution Intensity 3. Luminous Efficacy 4. Correlated Color Temperature 5. Color Rendering Index 6. Chromaticity Coordinate 7. THD and PF
Reference Standard	IES LM-79-2008 Electrical and Photometric Measurements of Solid-State Lighting Products ANSI C78.377-2008 Specifications for the Chromaticity of Solid State Lighting Products CIE 13.3-1995 Method of Measuring and Specifying Color Rendering Properties of Light Sources CIE 15-2004 Technical Report Colorimetry DLC Technical Requirement V4.2

Test Methods
<p>1. Photometric and Electrical measurements – Light Distribution Method:</p> <p>Photometric parameters were measured using the goniophotometer and software. The ambient temperature shall be maintained at $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$, measured at a point not more than 1 m from the sample and at the same height as the sample. The sample was operated at 120 Volts AC, 60Hz. It was stabilized before measurement was made. Luminous flux, luminaire efficacy, zonal lumen were calculated from the software taken at 1° vertical intervals and 22.5° Vertical intervals.</p>
<p>2. Photometric and Electrical Measurements – Integrating Sphere Method:</p> <p>Photometric parameters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained at $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$. The sample measurements were made using a spectroradiometer connected by a fiber optic cable and detector through the detector port of the integrating sphere. The sample was operated at 120 Volts AC, 60Hz. It was stabilized before measurement was made. Chromaticity coordinates, correlated color temperature and color rendering index were calculated from the spectral radiant flux measurements taken at least 5 nm intervals over the range of 380 to 780 nm.</p>
<p>3. THD and PF measurements</p> <p>The sample was tested according to the ANSI C82.77-2002, the sample was operated at rated voltage and was stabilized before measurement. The total harmonic distortion were calculated from the digital power meter.</p>

Integrating Sphere Test Results (Bare Lamp)

Test Condition:

Test Ambient	Test Humidity	Orientation	Stabilization Time	Test Time
25.4 °C	41 %	Face Down	90 min	25 min

Electrical Data:

Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
120.0	60	0.1284	15.37	0.9974

Output Data:

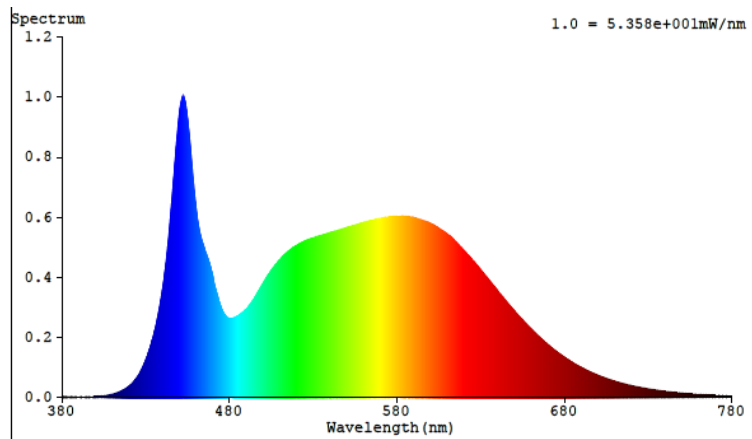
Light Output (lm)	Efficacy (lm/W)
2067.4	134.52

Color Data:

Parameter	Result
CCT (K)	5048
Color Rendering Index (CRI)	83.8
R9	10
Chromaticity, x	0.3444
Chromaticity, y	0.3584
Chromaticity u'	0.2084
Chromaticity v'	0.4878
Duv	0.00364

Special Color Rendering			
R1	82	R9	10
R2	89	R10	74
R3	94	R11	82
R4	83	R12	62
R5	83	R13	84
R6	85	R14	97
R7	87	R15	76
R8	38	-	-

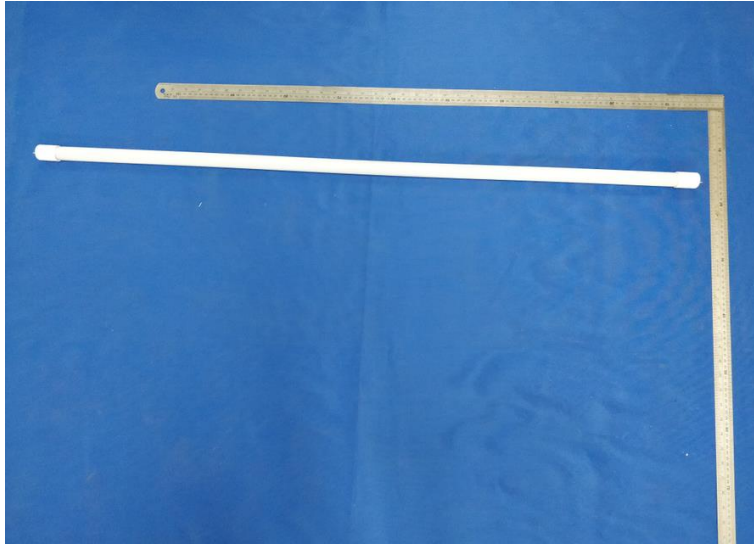
Spectrum Diagram:



THD and PF Measurement Test Result:

Electrical Measurement:

Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	iTHD
277.0	60	0.1194	31.90	0.9658	8.13



Equipment List:

Equipment ID	Equipment Name	Last Cal.	Due Cal.
NTC-F01-001	Goniophotometer System	2017-11-18	2018-11-17
NTC-F01-006	2.0 meter Integrating Sphere	2017-11-18	2018-11-17
NTC-F01-013	Standard Lamp	2017-11-18	2018-11-17
NTC-F01-002	Digital Power Meter	2017-11-18	2018-11-17
NTC-F01-020	Temperature & Humidity Meter	2017-11-23	2018-11-22



NVLAP LAB CODE 600150-0

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Report Version: V1.1

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