Test Report

Customer Company & Address:			
Elec-Tech International Co., Ltd. ADD: 1 JINFENG RD TANGJIAWAN TOWN XIANGZHOU DISTRICT ZHUHAIGUANGDONG P.R. CHINA 519085			
Contact Person:	Sean Luo		
Telephone:	0756-3639678	**Fax/Email address:**	0756-3639656

Manufacturer:	Elec-Tech International Co., Ltd.
Brand Name:	ETI, Commercial Electric
Country of Origin:	China
Country of Export:	United States, Canada
Product Description:	LED Strip Lighting Total Amount Of Light Source: 140 Pcs Manufacturer Of Light Source: Everlight Electronics., Ltd. Model Number Of Light Source: 45-21S
Model Number:	542611XX (where “xx” denotes 41～50, color temperature identifies 4000K)
Electrical Specification:	Rated voltage: 120 VAC Frequency: 60 Hz Wattage: 20 W

Test Laboratory & Address:			
UL Verification Services (Guangzhou) Co., Ltd. ADD: Building A1, 1F & 2F, Nansha Science and Technology Innovation Center, No. 25, South Huanshi Avenue , Nansha District, Guangzhou 511458, China			
Telephone:	+86 20 28667188	**Fax:**	+86 20 83486605

Receipt of Test Samples :	2015-01-22	**Test Period:**	2015-01-22 ~ 2015-01-28

Tested By	**Approved By**
Jackson Zeng /Jackson Zeng	Sean Xiao / Sean Xiao
Test Personnel Name & Signatory	**Approval Name & Signatory**

Test Report

Statement of Results

Test Flow	Test Method	Sample ID (Lab)	Sample Serial No.	Pass/Fail/NA
1.	Integrating Sphere Test	2044201-S004	N/A	Evaluate by customer

Deviation from Test Method (*if any*)

N/A

Remark *(if any)*

1. This report shall not be used by the client to claim product endorsement by NVLAP, NIST or any agency of the US government.

Test Report

Test No. 1 : Integrating Sphere Test

Environmental Conditions

Temperature:	25.1 °C

Test Equipment

Equipment ID	Equipment Name	Last Calibration Date	Next Calibration Date
GVS-LE-PE001	Integrating Sphere	Before Use	Before Use
GVS-LE-FS019	Measurement Standard Lamp	08/19/2014	08/18/2015

Test Sample

2044201-S004

Test Method

The sample was tested according to the IES LM-79-2008.
Photometric paramters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained at 25º C ± 1º 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 rated voltage and was stabilized before measurement. Chromaticity coordinates, correlated color temperature and color rendering index were calculated from the spectral radiant flux measurements taken at 1 nm intervals over the range of 380 to 780 nm.

Test Results

Test Type	Voltage (V AC)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Orientation	Operate time (Min.)	Stabilization time (Min.)
Input	119.95	60	0.161	19.10	0.989	Base up	58	50

Test Type	CCT (K)	Luminous Flux (lm)	Color Rendering Index Ra	Luminous Efficacy (lm/W)
Output	3919	1889.9	82.9	98.95

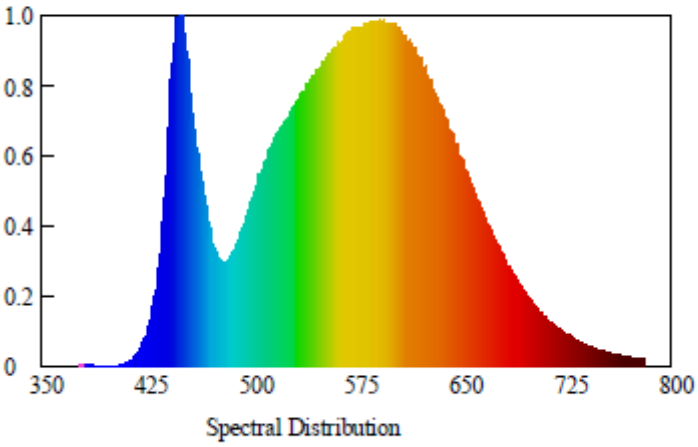
Test Report

Test Condition

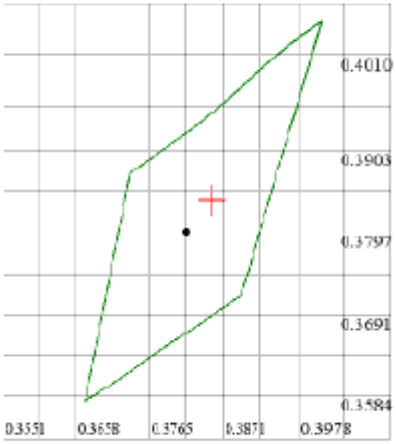
Temperature: 25.1°C RH: ----%

Spectrum Range: 380-780 nm Scan Step: 1 nm

Spectroradiometric Parameters



Spectral Distribution



Nominal CCT:LED_4000K
x0=0.3855 y0=0.3839

Chromaticity Coordinates: x=0.3855 y=0.3839 u'=0.2256 v'=0.5054

Correlated Color Temperature: 3919 K Dominant Wavelength: 577.0 nm(E)

Luminous Flux: 1889.913 lm Purity: 0.3093

Chromaticity Difference: +0.00186Duv Peak Wavelength: 450.6 nm

Color Ratio: Kr=37.7% Kg=53.3% Kb=8.9%

Bandwidth: 25.5nm Radiant Flux: 5.413 W

Rendering Index: Ra=82.9

R1=81	R2=88	R3=93	R4=81	R5=80	R6=83	R7=88	R8=68
R9=17	R10=71	R11=79	R12=58	R13=83	R14=96	R15=76	

Test Report

Test No.2: Goniophotometer Test

Environmental Conditions

Temperature:	25.1 º C

Test Equipment

Equipment ID	Equipment Name	Last Calibration Date	Calibration Due Date
GVS-LE-GS002	Goniophotometer	Before Use	Before Use
GVS-LE-FS019	Measurement Standard Lamp	08/19/2014	08/18/2015
GVS-LE-CA008	Digital Calliper	09/18/2014	09/17/2015

Test Sample

2044201-S004

Test Method

The sample was tested according to the IES LM-79-2008.
Photometric paramters were measured using a type C goniophotometer and software.
The ambient temperature shall be maintained at 25° C ± 1° 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 rated voltage and was stabilized before measurement. Luminous flux, luminaire efficacy, zonal lumen were calculated from the software taken at 0.5° vertical intervals and 22.5° horizontal intervals.

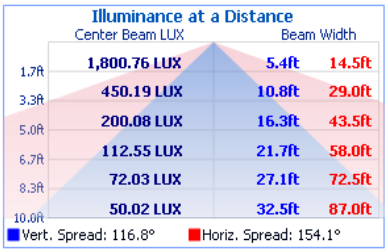
Test Results

Test Type	Voltage (V AC)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Opreate time (Min.)	Stabilization time (Min.)
Input	119.98	60	0.160	19.11	0.987	120	60

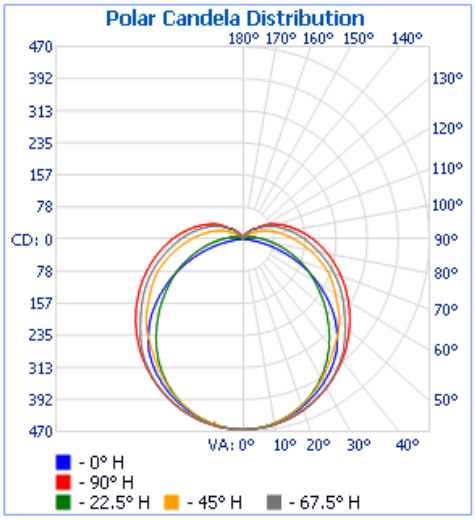
Test Type	Flux (lm)	Field angle (10%)		Beam angle (50%)		Zonal Lumen Result		Luminous Efficacy (lm/W)
		Horizontal Spread	Vertical Spread	Horizontal Spread	Vertical Spread	0º-60º	60º-90º	
Output	1937.1	n/a	160.9	154.1	116.8	58.1%	28.7%	101.37

Test Report

Beam Angle

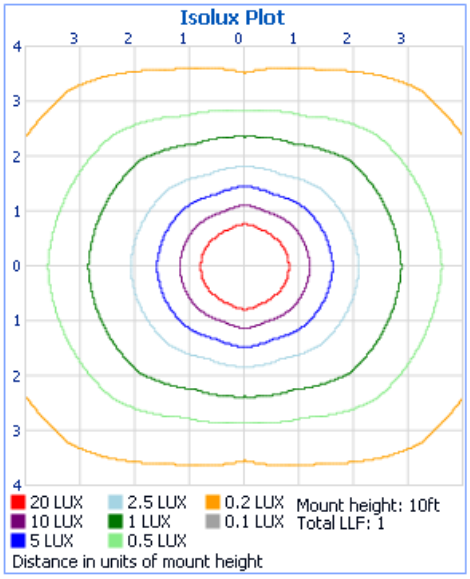


Light Distribution Curve

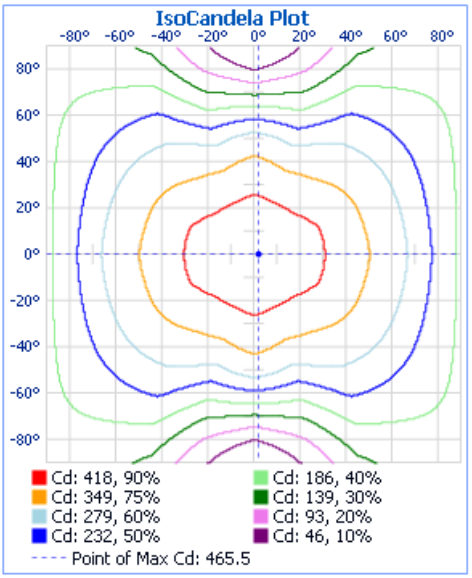


Test Report

Isolux Plot



IsoCandela Plot:



Test Report

Zonal Lumen Tabulation

Zonal Lumen Summary

Zone	Lumens	% Luminaire
0-30	365.6	18.9%
0-40	606.9	31.3%
0-60	1,125.4	58.1%
60-90	555.3	28.7%
70-100	424.6	21.9%
90-120	211.7	10.9%
0-90	1,680.7	86.8%
90-180	256.3	13.2%
0-180	1,937.1	100%

Lumens Per Zone

Zone	Lumens	% Total	Zone	Lumens	% Total
0-5	11.1	0.6%	90-95	54.0	2.8%
5-10	32.9	1.7%	95-100	45.5	2.3%
10-15	53.8	2.8%	100-105	37.9	2%
15-20	73.0	3.8%	105-110	30.8	1.6%
20-25	90.1	4.7%	110-115	24.7	1.3%
25-30	104.7	5.4%	115-120	18.9	1%
30-35	116.4	6.0%	120-125	13.8	0.7%
35-40	124.9	6.4%	125-130	9.8	0.5%
40-45	130.2	6.7%	130-135	7.3	0.4%
45-50	132.0	6.8%	135-140	5.3	0.3%
50-55	130.4	6.7%	140-145	3.6	0.2%
55-60	125.9	6.5%	145-150	2.3	0.1%
60-65	119.5	6.2%	150-155	1.3	0.1%
65-70	110.7	5.7%	155-160	0.7	0%
70-75	99.7	5.1%	160-165	0.3	0%
75-80	87.3	4.5%	165-170	0.1	0%
80-85	74.8	3.9%	170-175	0.0	0%
85-90	63.4	3.3%	175-180	0.0	0%

Test Report

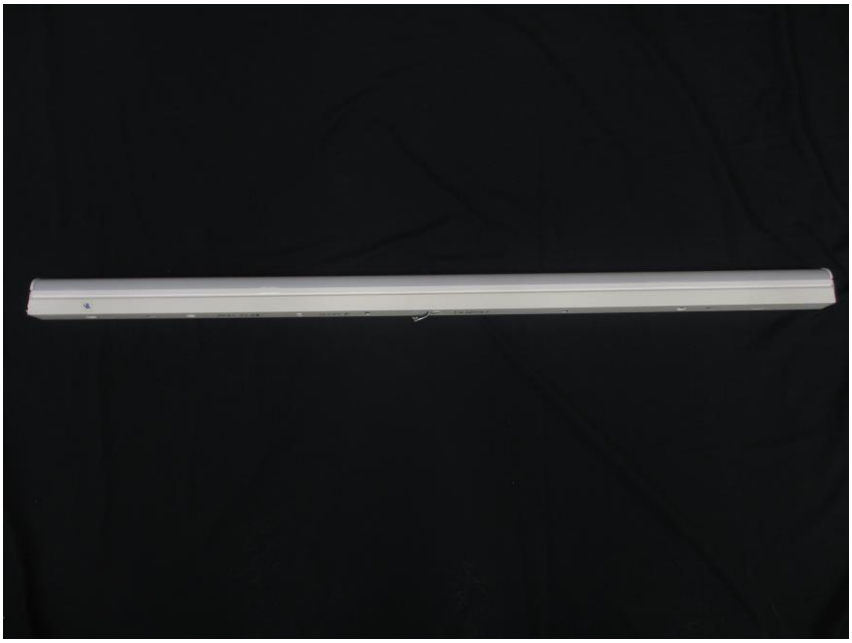
Intensity Data(cd)

Candela Table - Type C

	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5	360
0	465	465	465	465	465	465	465	465	465	465	465	465	465	465	465	465	465
1	465	464	464	465	**465**	465	464	464	465	464	464	465	**465**	465	464	464	465
2	464	464	464	465	464	465	464	464	464	464	464	465	464	465	464	464	464
3	464	463	464	464	465	464	464	463	464	463	464	464	465	464	464	463	464
4	464	463	463	464	464	464	463	463	464	463	463	464	464	464	463	463	464
5	463	462	462	463	464	463	462	462	463	462	462	463	464	463	462	462	463
6	462	461	461	463	463	463	461	461	462	461	461	463	463	463	461	461	462
7	461	460	461	462	463	462	461	460	461	460	461	462	463	462	461	460	461
8	460	459	459	461	462	461	459	459	460	459	459	461	462	461	459	459	460
9	458	459	463	463	461	460	459	458	458	456	451	458	461	460	459	458	458
10	457	456	456	459	460	459	456	456	457	456	456	459	460	459	456	456	457
11	455	455	455	458	458	458	455	455	455	455	455	458	458	458	455	455	455
12	453	452	453	457	458	457	453	452	453	452	453	457	458	457	453	452	453
13	452	451	451	455	456	455	451	451	452	451	451	455	456	455	451	451	452
14	450	448	448	454	455	454	448	448	450	448	448	454	455	454	448	448	450
15	448	446	447	452	454	452	447	446	448	446	447	452	454	452	447	446	448
16	446	443	444	451	452	451	444	443	446	443	444	451	452	451	444	443	446
17	443	441	441	449	450	449	441	441	443	441	441	449	450	449	441	441	443
18	441	438	438	447	449	447	438	438	441	438	438	447	449	447	438	438	441
19	439	435	436	445	447	445	436	435	439	435	436	445	447	445	436	435	439
20	436	432	433	443	445	443	433	432	436	432	433	443	445	443	433	432	436
25	422	414	416	432	433	432	416	414	422	414	416	432	433	432	416	414	422
30	407	392	397	418	420	418	397	392	407	392	397	418	420	418	397	392	407
35	387	368	375	403	404	403	375	368	387	368	375	403	404	403	375	368	387
40	365	338	355	384	388	384	355	338	365	338	355	384	388	384	355	338	365
50	303	275	318	337	349	337	318	275	303	275	318	337	349	337	318	275	303
55	264	242	293	313	329	313	293	242	264	242	293	313	329	313	293	242	264
60	222	211	270	291	307	291	270	211	222	211	270	291	307	291	270	211	222
65	177	181	248	268	286	268	248	181	177	181	248	268	286	268	248	181	177
70	131	151	227	245	263	245	227	151	131	151	227	245	263	245	227	151	131
75	86	121	201	221	241	221	201	121	86	121	201	221	241	221	201	121	86
80	44	94	176	197	220	197	176	94	44	94	176	197	220	197	176	94	44
85	13	71	152	176	198	176	152	71	13	71	152	176	198	176	152	71	13
90	0	52	129	157	177	157	129	52	0	52	129	157	177	157	129	52	0
95	0	38	109	137	157	137	109	38	0	38	109	137	157	137	109	38	0
100	0	28	92	120	138	120	92	28	0	28	92	120	138	120	92	28	0
105	0	17	76	104	120	104	76	17	0	17	76	104	120	104	76	17	0
110	0	13	61	90	103	90	61	13	0	13	61	90	103	90	61	13	0
115	0	10	45	76	87	76	45	10	0	10	45	76	87	76	45	10	0
120	0	8	32	62	72	62	32	8	0	8	32	62	72	62	32	8	0
125	0	6	25	45	53	45	25	6	0	6	25	45	53	45	25	6	0
130	0	5	19	36	41	36	19	5	0	5	19	36	41	36	19	5	0
135	0	3	15	29	34	29	15	3	0	3	15	29	34	29	15	3	0
140	0	2	11	23	27	23	11	2	0	2	11	23	27	23	11	2	0
145	0	2	8	17	20	17	8	2	0	2	8	17	20	17	8	2	0
150	0	2	5	11	14	11	5	2	0	2	5	11	14	11	5	2	0
155	0	1	3	7	9	7	3	1	0	1	3	7	9	7	3	1	0
160	0	1	2	4	5	4	2	1	0	1	2	4	5	4	2	1	0
165	0	0	2	3	5	3	2	0	0	0	2	3	5	3	2	0	0
170	0	0	1	1	2	1	1	0	0	0	1	1	2	1	1	0	0
175	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0
180	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Test Report

Photos of sample:



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