



NVLAP Lab Code: 200952-0

Verification Services

Project No: 4786795152-1
 Report No: 4786795152-1b
 Report Issued Date: 2015-02-08


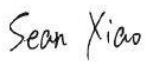
Test Report

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 Shop Lighting Total Amount Of Light Source: 200 Pcs Manufacturer Of Light Source: Everlight Model Number Of Light Source: 45-21S
Model Number:	542541XX (where "xx" denotes 41~50, color temperature identifies 4000K)
Electrical Specification:	Rated voltage: 120 VAC Frequency: 60 Hz Wattage: 42 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 ~ 2015-02-06
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Tested By	Approved By
 /Jackson Zeng	 / Sean Xiao
Test Personnel Name & Signatory	Approval Name & Signatory

The results reported herein have been performed in accordance with the laboratory's terms of accreditation. This report shall not be reproduced except in full without the written approval of the Laboratory. The results in this report apply to the test sample(s) mentioned above at the time of the testing period only and are not to be used to indicate applicability to other similar products. This report does not imply that the product(s) has met the criteria for certification.



Test Report

Statement of Results

Test Flow	Test Method	Sample ID (Lab)	Sample Serial No.	Pass/Fail/NA
1.	Integrating Sphere Test	2044200-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
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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

2044200-S004

Test Method

The sample was tested according to the IES LM-79-2008.
Photometric parameters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained at 25° C ± 1° 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	120.01	60	0.370	40.99	0.923	Base up	58	50

Test Type	CCT (K)	Luminous Flux (lm)	Color Rendering Index Ra	Luminous Efficacy (lm/W)
Output	4121	3301.3	84.5	80.54



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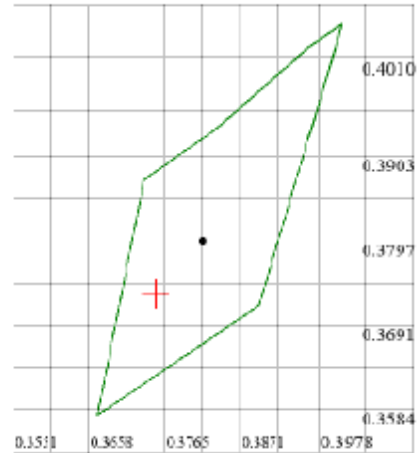
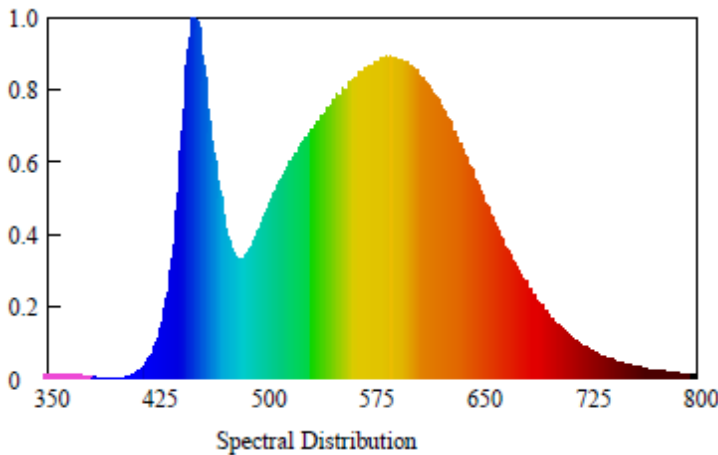
Test Report

Test Condition

Temperature: 25.1°C
Spectrum Range: 350-800 nm

RH: ----%
Scan Step: 1 nm

Spectroradiometric Parameters



Nominal CCT:LED 4000K
x0=0.3752 y0=0.3731

Chromaticity Coordinates: $x=0.3752$ $y=0.3731$ $u'=0.2231$ $v'=0.4992$

Correlated Color Temperature: 4121 K

Dominant Wavelength: 577.0 nm(E)

Luminous Flux: 3301.339 lm

Purity: 0.2458

Chromaticity Difference: -0.00013Duv

Peak Wavelength: 453.3 nm

Color Ratio: $K_r=37.3\%$ $K_g=53.0\%$ $K_b=9.6\%$

Bandwidth: 28.1nm

Radiant Flux: 9.198 W

Rendering Index: $R_a=84.5$

R1=83 R2=91 R3=95 R4=81 R5=82 R6=86 R7=88 R8=70

R9=23 R10=77 R11=79 R12=61 R13=86 R14=97 R15=79



Test Report

Test No.2: Goniophotometer Test

Environmental Conditions

Temperature: 25.1 ° 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

2044200-S004

Test Method

The sample was tested according to the IES LM-79-2008.
Photometric parameters 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	119.96	60	0.366	41.02	0.934	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	0°-60°	60°-90°	
Output	3344.6	154.1	156.1	95.9	99.2	81.9%	18.1%	81.54



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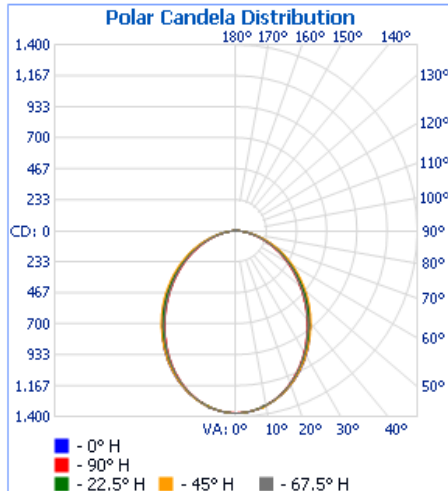
Test Report

Beam Angle

	Illuminance at a Distance	
	Center Beam LUX	Beam Width
1.7R	5,322.79 LUX	3.9ft 3.7ft
3.3R	1,330.70 LUX	7.8ft 7.4ft
5.0R	591.42 LUX	11.7ft 11.1ft
6.7R	332.67 LUX	15.7ft 14.8ft
8.3R	212.91 LUX	19.6ft 18.5ft
10.0R	147.86 LUX	23.5ft 22.2ft

■ Vert. Spread: 99.2° ■ Horiz. Spread: 95.9°

Light Distribution Curve





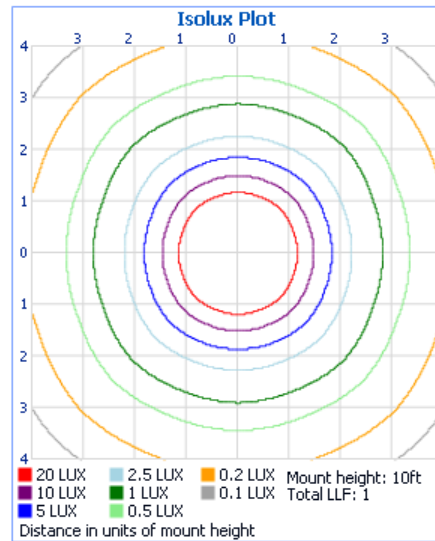
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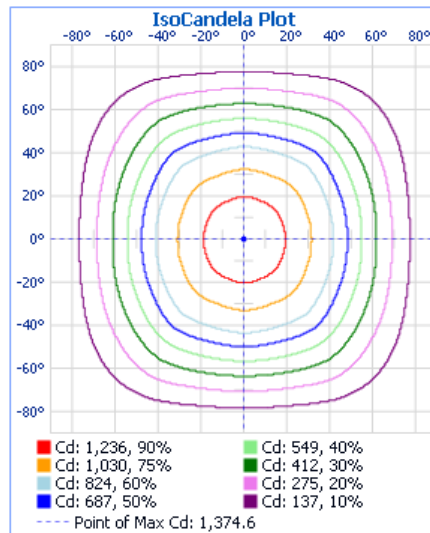
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Isolux Plot



IsoCandela Plot:





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Test Report

Zonal Lumen Tabulation

Zonal Lumen Summary

Zone	Lumens	% Luminaire
0-30	1,023.6	30.6%
0-40	1,632.5	48.8%
0-60	2,738.0	81.9%
60-90	605.8	18.1%
70-100	238.5	7.1%
90-120	0.1	0%
0-90	3,343.8	100%
90-180	0.8	0%
0-180	3,344.6	100%

Lumens Per Zone

Zone	Lumens	% Total	Zone	Lumens	% Total
0-5	32.7	1.0%	90-95	0.0	0%
5-10	96.6	2.9%	95-100	0	0%
10-15	155.8	4.7%	100-105	0	0%
15-20	207.6	6.2%	105-110	0	0%
20-25	249.9	7.5%	110-115	0.0	0%
25-30	281.0	8.4%	115-120	0.0	0%
30-35	300.5	9.0%	120-125	0.0	0%
35-40	308.4	9.2%	125-130	0.1	0%
40-45	305.0	9.1%	130-135	0.1	0%
45-50	291.7	8.7%	135-140	0.1	0%
50-55	269.2	8.0%	140-145	0.1	0%
55-60	239.6	7.2%	145-150	0.1	0%
60-65	203.9	6.1%	150-155	0.1	0%
65-70	163.5	4.9%	155-160	0.1	0%
70-75	119.7	3.6%	160-165	0.1	0%
75-80	75.7	2.3%	165-170	0.0	0%
80-85	36.1	1.1%	170-175	0.0	0%
85-90	6.9	0.2%	175-180	0.0	0%



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Intensity Data(cd)

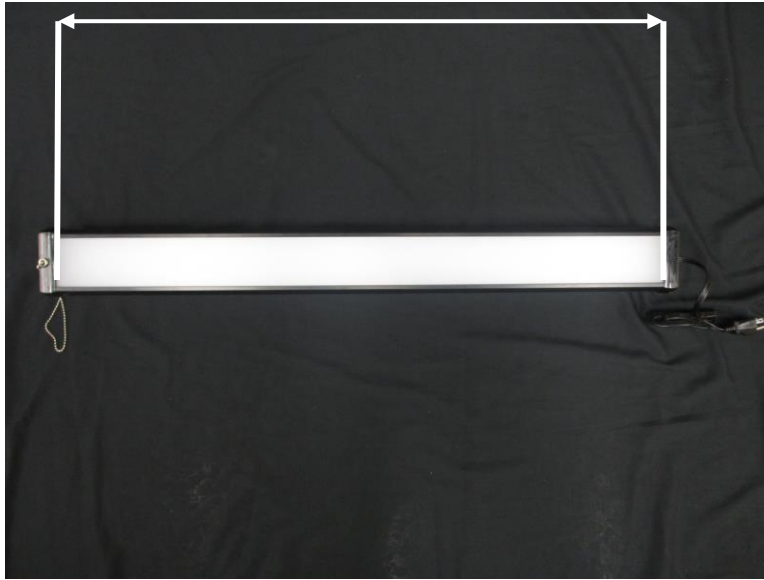
Candela Table - Type C																	
	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5	360
0	1374	1374	1374	1374	1374	1374	1374	1374	1374	1374	1374	1374	1374	1374	1374	1374	1374
1	1374	1375	1374	1373	1373	1373	1374	1375	1374	1375	1374	1373	1373	1373	1374	1375	1374
2	1372	1373	1372	1372	1372	1372	1372	1373	1372	1373	1372	1372	1372	1372	1372	1373	1372
3	1373	1371	1371	1370	1369	1370	1371	1371	1373	1371	1371	1370	1369	1370	1371	1371	1373
4	1368	1367	1368	1367	1366	1367	1368	1367	1368	1367	1368	1367	1366	1367	1368	1367	1368
5	1365	1364	1364	1364	1363	1364	1364	1364	1365	1364	1364	1364	1363	1364	1364	1364	1365
6	1360	1359	1360	1359	1359	1359	1360	1359	1360	1359	1360	1359	1359	1359	1360	1359	1360
7	1355	1353	1356	1355	1354	1355	1356	1353	1355	1353	1356	1355	1354	1355	1356	1353	1355
8	1350	1348	1350	1349	1348	1349	1350	1348	1350	1348	1350	1349	1348	1349	1350	1348	1350
9	1344	1346	1354	1330	1342	1342	1343	1342	1344	1337	1336	1356	1342	1342	1343	1342	1344
10	1337	1335	1338	1335	1335	1335	1338	1335	1337	1335	1338	1335	1335	1335	1338	1335	1337
11	1329	1326	1330	1327	1324	1327	1330	1326	1329	1326	1330	1327	1324	1327	1330	1326	1329
12	1322	1320	1322	1320	1316	1320	1322	1320	1322	1320	1322	1320	1316	1320	1322	1320	1322
13	1312	1310	1313	1308	1309	1308	1313	1310	1312	1310	1313	1308	1309	1308	1313	1310	1312
14	1304	1301	1305	1298	1297	1298	1305	1301	1304	1301	1305	1298	1297	1298	1305	1301	1304
15	1292	1290	1293	1288	1285	1288	1293	1290	1292	1290	1293	1288	1285	1288	1293	1290	1292
16	1284	1281	1284	1277	1274	1277	1284	1281	1284	1281	1284	1277	1274	1277	1284	1281	1284
17	1272	1267	1273	1263	1263	1263	1273	1267	1272	1267	1273	1263	1263	1263	1273	1267	1272
18	1262	1255	1262	1251	1249	1251	1262	1255	1262	1255	1262	1251	1249	1251	1262	1255	1262
19	1248	1243	1247	1239	1235	1239	1247	1243	1248	1243	1247	1239	1235	1239	1247	1243	1248
20	1235	1229	1234	1225	1223	1225	1234	1229	1235	1229	1234	1225	1223	1225	1234	1229	1235
25	1165	1153	1163	1146	1143	1146	1163	1153	1165	1153	1163	1146	1143	1146	1163	1153	1165
30	1080	1068	1079	1059	1053	1059	1079	1068	1080	1068	1079	1059	1053	1059	1079	1068	1080
35	987	973	991	959	957	959	991	973	987	973	991	959	957	959	991	973	987
40	887	874	897	858	853	858	897	874	887	874	897	858	853	858	897	874	887
50	678	672	696	650	643	650	696	672	678	672	696	650	643	650	696	672	678
55	575	574	595	550	542	550	595	574	575	574	595	550	542	550	595	574	575
60	471	474	493	450	442	450	493	474	471	474	493	450	442	450	493	474	471
65	375	378	393	355	345	355	393	378	375	378	393	355	345	355	393	378	375
70	283	277	296	259	255	259	296	277	283	277	296	259	255	259	296	277	283
75	190	186	199	173	171	173	199	186	190	186	199	173	171	173	199	186	190
80	105	104	109	96	92	96	109	104	105	104	109	96	92	96	109	104	105
85	35	35	37	32	32	32	37	35	35	35	37	32	32	32	37	35	35
90	0	1	1	0	0	0	1	1	0	1	1	0	0	0	1	1	0
95	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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110	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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120	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
125	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
130	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
135	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
140	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
145	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
150	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
155	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
160	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
165	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
170	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
175	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
180	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1



Test Report

Photos of sample:

34.25"



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