



Verification Services

Project No.:4787237129-2
 Report No.:4787237129-2a
 Report Issued Date: 2016-01-19

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		
Phone Number:	0756-3639678	Email Address:	luolixue@electech.com.cn

Relevant Standards:	IES LM-79-2008		
Product Description:	Luminaire Description: Formed steel housing, white plastic enclosure Amount of Light Source: 120 LEDs of 67-21S Manufacturer Of Light Source: Everlight Electronics Co.,Ltd		
Brand Name:	ETI & Commercial Electric		
Tested Model Number:	545691XX		
Product Family:	N/A		
Allowable Variations:	Where "XX" denotes color temperature, XX=41~50 identifies 4000K		
Electrical Specification:	120 V AC, 60 Hz, 50 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

Sample Reception Date:	2015-12-31	Test Date:	2016-01-05~2016-01-09
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Tested By	Approved By
<i>Candy Zhang</i> /Candy Zhang	<i>Derek</i> /Derek Zhang
Signatory & Test Personnel Name	Signatory & Approval Name

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.



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Statement of Results

Test Flow	Test Item	Sample ID (Lab)	Pass/Fail/NA
1	Integrating Sphere Test	2278176-S002	Evaluate by customer
2	Goniophotometer Test	2278176-S002	Evaluate by customer

Deviation from Test Method (if any)

N/A

Remark (if any)

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



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Test Flow 1: Integrating Sphere Test

Environmental Conditions

Temperature: 25.1°C

Test Equipment

Equipment ID	Equipment Name	Last Calibration Date	Calibration Due Date
GVS-LE-PE003	Integrating Sphere	Before Use	Before Use
GVS-LE-PM009	Digital Power Meter	2015-04-28	2016-04-27
GVS-LE-FS009	Measurement Standard Lamp	2015-08-22	2016-08-21

Test Sample

2278176-S002

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 Factor	Power (W)
Input	120.20	60	0.4104	0.953	47.0

Test Type	CCT (K)	CRI	Lumen Output (lm)	Luminous Efficacy (lm/W)
Output	4199	86.0	3764	80.1



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Test Condition

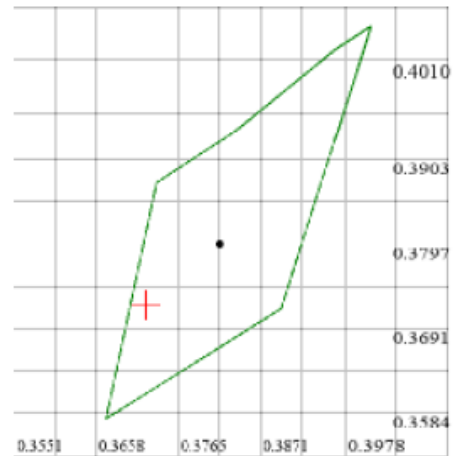
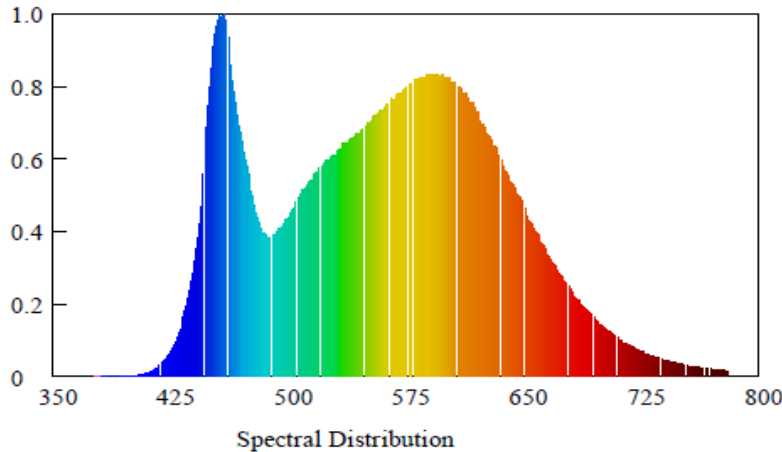
Temperature: 25.1°C

RH: ----%

Spectrum Range: 380-780 nm

Scan Step: 1 nm

Spectroradiometric Parameters



Nominal CCT:LED_4000K
x0=0.3722 y0=0.3721

Chromaticity Coordinates: x=0.3722 y=0.3721 u'=0.2216 v'=0.4983

Correlated Color Temperature: 4199 K

Dominant Wavelength: 577.0 nm(E)

Luminous Flux: 3764.033 lm

Purity: 0.2337

Chromaticity Difference: +0.00028Duv

Peak Wavelength: 459.0 nm

Color Ratio: Kr=37.6% Kg=51.8% Kb=10.6%

Bandwidth: 30.2nm

Radiant Flux: 11.949 W

Rendering Index: Ra=86.0

R1=86 R2=96 R3=95 R4=81 R5=85 R6=92 R7=85 R8=69

R9=27 R10=88 R11=80 R12=64 R13=90 R14=98 R15=81



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Test Flow 2: Goniophotometer Test

Environmental Conditions

Temperature: 25.1°C

Test Equipment

Equipment ID	Equipment Name	Last Calibration Date	Calibration Due Date
GVS-LE-GS003	Goniophotometer	Before Use	Before Use
GVS-LE-PM007	Digital Power Meter	2015-06-09	2016-06-08
GVS-LE-FS009	Measurement Standard Lamp	2015-08-22	2016-08-21

Test Sample

2278176-S002

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 samples were 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

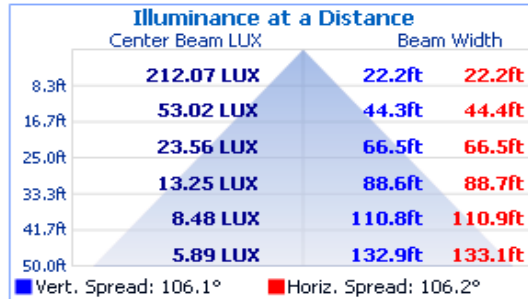
Test Type	Voltage (V AC)	Frequency (Hz)	Current (A)	Power Factor	Power (W)
Input	120.21	60	0.408	0.958	46.9

Test Type	Lumen Output (lm)	Center Beam Candle Power (cd)	Field angle (10%)		Beam angle (50%)		Luminous Efficacy (lm/W)
			Horizontal Spread	Vertical Spread	Horizontal Spread	Vertical Spread	
Output	3718	1373	155.5	156.3	106.2	106.1	79.2

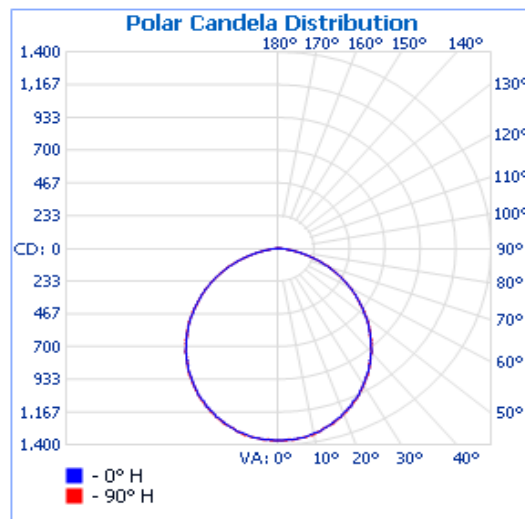


Test Report

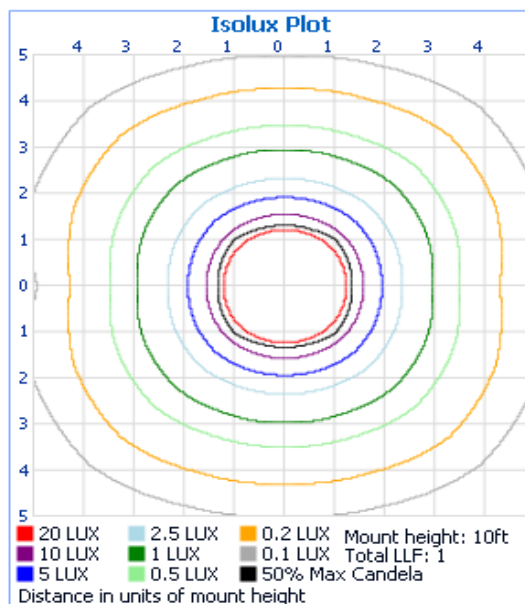
Illuminance at a Distance



Polar Candela Distribution



Isolux Plot





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Zonal Lumen Tabulation

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	1,047.9	28.2%
0-40	1,701.7	45.8%
0-60	2,959.8	79.6%
60-90	751.1	20.2%
70-100	317.4	8.5%
90-120	7.4	0.2%
0-90	3,710.9	99.8%
90-180	7.4	0.2%
0-180	3,718.3	100%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-5	32.7	0.9%	90-95	6.2	0.2%
5-10	96.7	2.6%	95-100	1.1	0%
10-15	156.9	4.2%	100-105	0.0	0%
15-20	211.0	5.7%	105-110	0	0%
20-25	257.1	6.9%	110-115	0	0%
25-30	293.6	7.9%	115-120	0	0%
30-35	319.3	8.6%	120-125	0	0%
35-40	334.5	9.0%	125-130	0	0%
40-45	337.5	9.1%	130-135	0	0%
45-50	329.5	8.9%	135-140	0	0%
50-55	309.9	8.3%	140-145	0	0%
55-60	281.3	7.6%	145-150	0	0%
60-65	243.2	6.5%	150-155	0	0%
65-70	197.7	5.3%	155-160	0	0%
70-75	146.6	3.9%	160-165	0	0%
75-80	94.1	2.5%	165-170	0	0%
80-85	49.5	1.3%	170-175	0	0%
85-90	19.9	0.5%	175-180	0	0%



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Intensity Data(cd)

	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	1368	1368	1368	1368	1368	1368	1368	1368	1368	1368	1368	1368	1368	1368	1368	1368	1368
0.5	1368	1368	1364	1370	1373	1370	1364	1368	1368	1368	1368	1370	1373	1370	1364	1368	1368
1	1368	1370	1370	1368	1373	1368	1370	1370	1368	1370	1370	1368	1373	1368	1370	1370	1368
2	1364	1370	1364	1368	1373	1368	1364	1370	1364	1370	1364	1368	1373	1368	1364	1370	1364
3	1364	1366	1359	1364	1360	1364	1359	1366	1364	1366	1359	1364	1360	1364	1359	1366	1364
4	1364	1366	1364	1364	1368	1364	1364	1366	1364	1366	1364	1364	1368	1364	1364	1366	1364
5	1364	1362	1364	1362	1364	1362	1364	1362	1364	1362	1364	1362	1364	1362	1364	1362	1364
6	1360	1358	1359	1362	1360	1362	1359	1358	1360	1358	1359	1362	1360	1362	1359	1358	1360
7	1360	1358	1355	1354	1355	1354	1355	1358	1360	1358	1355	1354	1355	1354	1355	1358	1360
8	1351	1349	1350	1349	1355	1349	1350	1349	1351	1349	1350	1349	1355	1349	1350	1349	1351
9	1342	1335	1342	1335	1347	1347	1346	1347	1342	1352	1351	1343	1347	1347	1346	1347	1342
10	1338	1339	1339	1339	1347	1339	1339	1339	1338	1339	1339	1339	1347	1339	1339	1339	1338
11	1338	1332	1335	1339	1334	1339	1335	1332	1338	1332	1335	1339	1334	1339	1335	1332	1338
12	1329	1324	1328	1330	1334	1330	1328	1324	1329	1324	1328	1330	1334	1330	1328	1324	1329
13	1321	1315	1324	1322	1317	1322	1324	1315	1321	1315	1324	1322	1317	1322	1324	1315	1321
14	1312	1307	1317	1310	1312	1310	1317	1307	1312	1307	1317	1310	1312	1310	1317	1307	1312
15	1304	1303	1312	1301	1304	1301	1312	1303	1304	1303	1312	1301	1304	1301	1312	1303	1304
16	1291	1292	1301	1295	1304	1295	1301	1292	1291	1292	1301	1295	1304	1295	1301	1292	1291
17	1282	1284	1292	1286	1291	1286	1292	1284	1282	1284	1292	1286	1291	1286	1292	1284	1282
18.5	1269	1263	1279	1268	1274	1268	1279	1263	1269	1263	1279	1268	1274	1268	1279	1263	1269
19.5	1256	1254	1268	1257	1261	1257	1268	1254	1256	1254	1268	1257	1261	1257	1268	1254	1256
24.5	1192	1193	1214	1202	1200	1202	1214	1193	1192	1193	1214	1202	1200	1202	1214	1193	1192
29.5	1127	1117	1148	1133	1127	1133	1148	1117	1127	1117	1148	1133	1127	1133	1148	1117	1127
34.5	1050	1041	1070	1054	1050	1054	1070	1041	1050	1041	1070	1054	1050	1054	1070	1041	1050
39.5	964	954	989	968	964	968	989	954	964	954	989	968	964	968	989	954	964
49.5	762	764	800	779	762	779	800	764	762	764	800	779	762	779	800	764	762
54.5	654	659	697	676	650	676	697	659	654	659	697	676	650	676	697	659	654
59.5	542	557	597	569	546	569	597	557	542	557	597	569	546	569	597	557	542
64.5	430	448	488	462	430	462	488	448	430	448	488	462	430	462	488	448	430
69.5	314	334	379	351	323	351	379	334	314	334	379	351	323	351	379	334	314
74.5	202	224	267	248	211	248	267	224	202	224	267	248	211	248	267	224	202
79.5	99	127	167	156	103	156	167	127	99	127	167	156	103	156	167	127	99
84.5	34	55	94	80	34	80	94	55	34	55	94	80	34	80	94	55	34
89.5	0	8	40	38	0	38	40	8	0	8	40	38	0	38	40	8	0
94.5	0	0	13	15	0	15	13	0	0	0	13	15	0	15	13	0	0
99.5	0	0	0	2	0	2	0	0	0	0	0	2	0	2	0	0	0
104.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
109.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
114.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
119.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
124.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
129.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
134.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
139.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
144.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
149.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
154.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
159.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
164.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
169.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
174.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
179.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
180	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



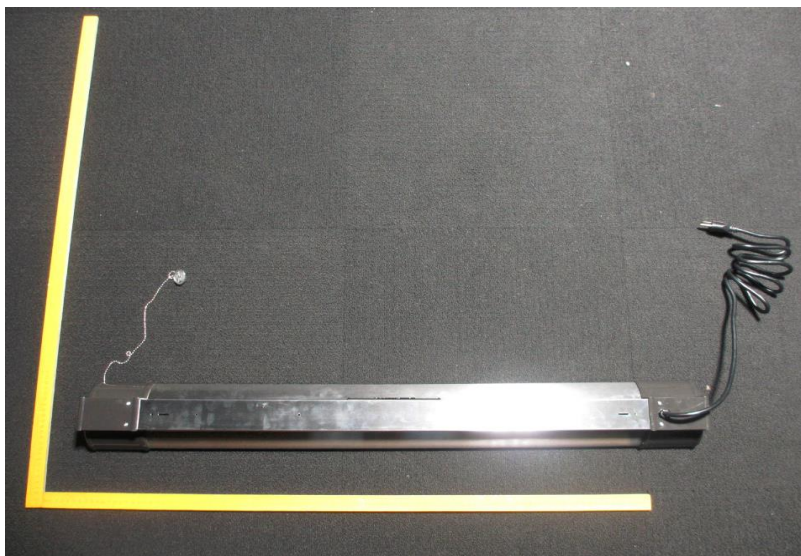
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Photos of sample



End of Test Report