



Report No.: GZE150956-E

NVLAP LAB CODE 201011-0

LM-79-08 Test Report

For

Premium Quality Lighting, Inc.

2285 Ward Avenue,
Simi Valley, CA 93065

(Brand Name: Superior Life®)

High-bay Luminaires for Commercial and Industrial Buildings

Model name(s): 90414

Model Different: All construction and rating are the same, except CCT

Test & Report By:

Dendi Lin

Engineer: Dendi Lin

Date: Oct.26,2015

Review By:

Tommy Liang

Manager: Tommy Liang

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

Laboratory: Standard-Tech Co. Ltd Testing Center

NVLAP CODE: 201011-0

Report Format Number STD/QR4909-A/2

Address: 8th floor, Block B, No. 11 Caipin Road, Guangzhou Science City, Tianhe, Guangzhou 510663, China

Tel: 8620-3229 0320

Fax: 8620-32290422

<http://www.standard-tech.com>

U.S. Department of Energy

Lighting Facts™ Uniform LM-79 Reporting Template
Laboratory Information:

Name of Test Laboratory	Standard-Tech Co., Ltd.
Date of Test Report	Oct.26,2015
Test Report No.	GZE150956-E
Laboratory Contact Name	Tommy Liang

Product Information:

Organization Name	Premium Quality Lighting, Inc.	
Brand Name	Superior Life®	
Model Number	90414	
SKU (if available)	N/A	
Type of Luminaire (for integral lamps, list base type and lamp type)	High-bay Luminaires for Commercial and Industrial Buildings	
Luminaire Aperture (for downlights)	--	in.
Luminaire Length	--	mm
Luminaires Width	--	mm
Number of Units (modular products)	N/A	s

Integrating Sphere
Goniophotometer
Electrical Measurements:
Output
Output

Input Wattage	--	95.41	W
Input Current	--	0.7978	A
Input Voltage (ac)	--	120.0	V
Power Factor	--	0.9966	
Off-State Power	--	0	W

Photometric Characteristics

--

Total Initial Lumen Output	--	12339	lm
Initial Lumen Efficacy	--	129.33	lm/w
Correlated color temperature / CCT	4095	--	K
Color rendering index / CRI	74.9	--	
R9 Value	0	--	
Duv	-0.0006	--	

Luminous Intensity Distribution

Center beam candlepower (if applicable)	-----	11183	cd
Beam angle (if applicable)		67.3	°
Zonal lumens in the 0°-60° zone		99.8	%
Zonal lumens in the 60°-90° zone		0.1	%
Zonal lumens in the 90°-120° zone		0	%
Zonal lumens in the 120°-180° zone		0.1	%

Laboratory: Standard-Tech Co. Ltd Testing Center
NVLAP CODE: 201011-0

Report Format Number STD/QR4909-A/2

Address: 8th floor, Block B, No. 11 Caipin Road, Guangzhou Science City, Tianhe, Guangzhou 510663, China

 Tel: 8620-3229 0320 Fax: 8620-32290422 <http://www.standard-tech.com>

U.S. Department of Energy

Lighting Facts™ Uniform LM-79 Reporting Template
Laboratory Information:

Name of Test Laboratory	Standard-Tech Co., Ltd.
Date of Test Report	Oct.26,2015
Test Report No.	GZE150956-E
Laboratory Contact Name	Tommy Liang

Product Information:

Organization Name	Premium Quality Lighting, Inc.	
Brand Name	Superior Life®	
Model Number	90414	
SKU (if available)	N/A	
Type of Luminaire (for integral lamps, list base type and lamp type)	High-bay Luminaires for Commercial and Industrial Buildings	
Luminaire Aperture (for downlights)	--	in.
Luminaire Length	--	mm
Luminaires Width	--	mm
Number of Units (modular products)	N/A	

Integrating Sphere
Goniophotometer
Electrical Measurements:
Output
Output

Input Wattage	95.62	--	W
Input Current	0.8009	--	A
Input Voltage (ac)	120.0	--	V
Power Factor	0.9949	--	
Off-State Power	0	--	W

Photometric Characteristics

Total Initial Lumen Output	12709	--	lm
Initial Lumen Efficacy	132.91	--	lm/w
Correlated color temperature / CCT	4818	--	K
Color rendering index / CRI	73.7	--	
R9 Value	0	--	
Duv	0.0041	--	

Luminous Intensity Distribution

Center beam candlepower (if applicable)	-----	cd
Beam angle (if applicable)		°
Zonal lumens in the 0°-60° zone		%
Zonal lumens in the 60°-90° zone		%
Zonal lumens in the 90°-120° zone		%
Zonal lumens in the 120°-180° zone		%

Laboratory: Standard-Tech Co. Ltd Testing Center
NVLAP CODE: 201011-0

Report Format Number STD/QR4909-A/2

Address: 8th floor, Block B, No. 11 Caipin Road, Guangzhou Science City, Tianhe, Guangzhou 510663, China

 Tel: 8620-3229 0320 Fax: 8620-32290422 <http://www.standard-tech.com>

Test Specifications:	
Date of Receipt	: Oct.08,2015
Date of Test	: Oct.12,2015
Test item	: Total Luminous Flux, Luminous Distribution Intensity, Luminous Efficacy, Correlated Color Temperature, Color Rendering Index, Chromaticity Coordinate, Electrical parameters
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 Colour Rendering Properties of Light Sources CIE 15-2004 Technical Report Colorimetry IESNA LM-16-93 Practical Guide to Colorimetry of Light Source IESNA TM-16-05 Technical Memorandum on Light Emitting Diode (LED) Sources and Systems
Reference Work Instruction	QD25

Test Methods

1. Photometric and Electrical measurements – Light Distribution Method:

Photometric parameters were measured using the goniophotometer and software. The ambient temperature shall be maintained at $25\text{ }^{\circ}\text{C} \pm 1\text{ }^{\circ}\text{C}$, 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 ° horizontal intervals.

2. Photometric and Electrical Measurements – Integrating Sphere Method:

Photometric parameters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained at $25\text{ }^{\circ}\text{C} \pm 1\text{ }^{\circ}\text{C}$. 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.

1. Product Information:

Brand Name	Superior Life®
Model Number	90414
Luminaire Type	High-bay Luminaires for Commercial and Industrial Buildings
Rated Voltage / Frequency	100~ 277V, 50/60 Hz
Nominal Power	100W
Rated Initial Lamp Lumen	--
Declared CCT	4100K,4500K,5000K,5500K
LED Manufacturer	Nichia Corporation
LED Model	NF2L757DR
Sample Receipt Date	Oct.08,2015
Sample Number	GZE150956-E1(4100K), E2(5500K)

Photo



2.2 Electrical, Photometric and Chromaticity Measurements (Refer to Work Instruction QD25)	IES LM-79 2008
--	-----------------------

Test date	2015-10-12	Test Ambient:	25.2 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	90414		

Electrical Measurement :

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
GZE150956	120.0	60	0.7978	95.41	0.9966	6.19
-E1	277.0	60	0.3582	94.09	0.9483	11.98

Sphere-Spectroradiometer Method :

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Color Rendering Index (CRI)	74.9
R9	0
CCT (K)	4095
Chromaticity (x, y)	x=0.3760 y=0.3728
Chromaticity (u', v')	u'=0.2238 v'=0.4992
Duv	-0.0006

Special Color Rendering Indices			
R1	72	R9	0
R2	82	R10	57
R3	89	R11	69
R4	73	R12	50
R5	72	R13	73
R6	74	R14	94
R7	82	R15	66
R8	55	--	--

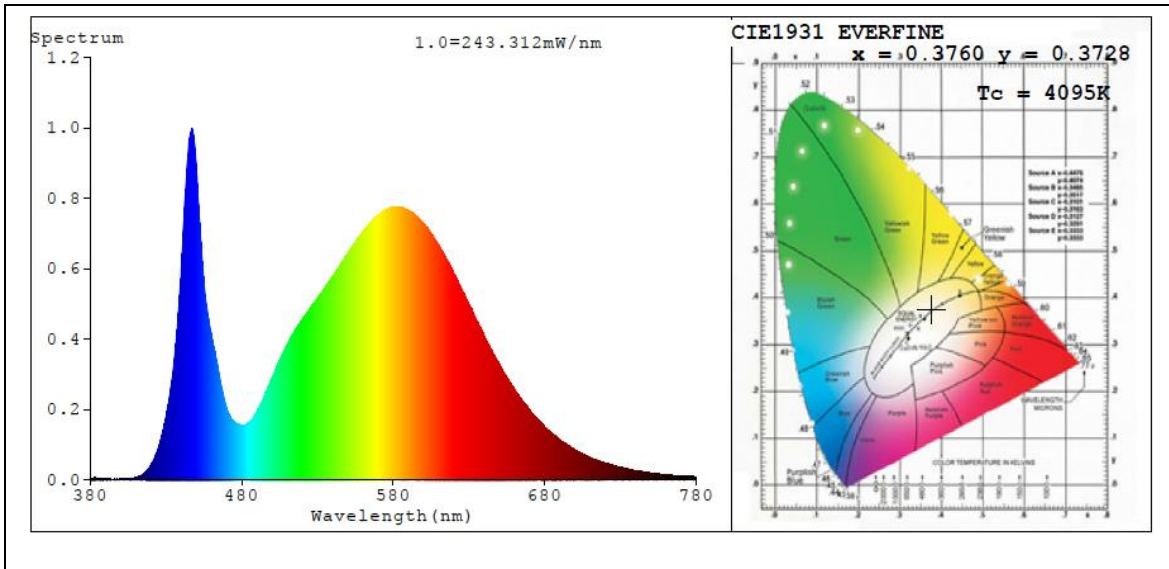
Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	12339
Luminous Efficacy (lm/W)	129.33
Beam Angle °	67.3
Center Beam Candle Power (cd)	11183

Goniophotometer Method for 277V:

Parameter	Result
Test Voltage (V)	277.0
Frequency (Hz)	60
Total Luminous (lm)	12292
Luminous Efficacy (lm/W)	130.64

Spectral Power Distribution & Chromaticity Diagram



Laboratory: Standard-Tech Co. Ltd Testing Center
NVLAP CODE: 201011-0

Report Format Number STD/QR4909-A/2

Address: 8th floor, Block B, No. 11 Caipin Road, Guangzhou Science City, Tianhe, Guangzhou 510663, China

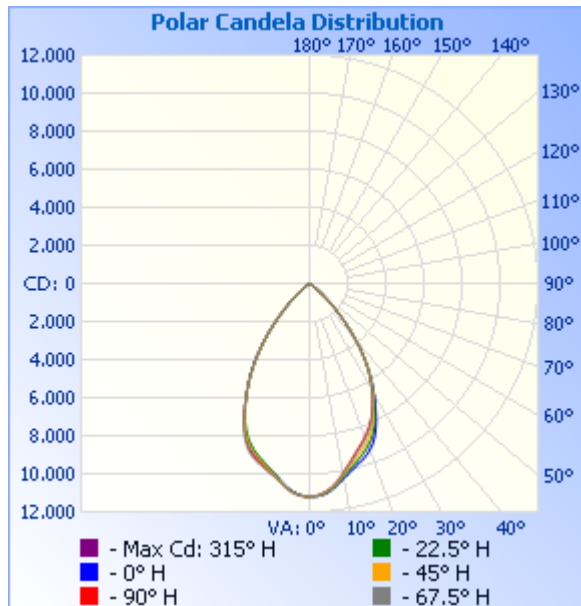
Tel: 8620-3229 0320 Fax: 8620-32290422 <http://www.standard-tech.com>

Zonal Lumen Tabulation

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	7,385.4	59.9%
0-40	10,556.1	85.6%
0-60	12,313.6	99.8%
60-90	9.2	0.1%
70-100	2.5	0%
90-120	0	0%
0-90	12,322.8	99.9%
90-180	13.5	0.1%
0-180	12,336.3	100%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	1,022.3	8.3%	90-100	0	0%
10-20	2,715.0	22.0%	100-110	0	0%
20-30	3,648.2	29.6%	110-120	0	0%
30-40	3,170.7	25.7%	120-130	0.0	0%
40-50	1,516.6	12.3%	130-140	1.1	0%
50-60	240.9	2.0%	140-150	3.2	0%
60-70	6.7	0.1%	150-160	4.3	0%
70-80	2.4	0.0%	160-170	3.5	0%
80-90	0.1	0.0%	170-180	1.4	0%

Photometric Data



Illuminance Plots

Illuminance at a Distance			
	Center Beam fc	Beam Width	
17.0ft	38.7 fc	22.6 ft	22.5 ft
34.0ft	9.7 fc	45.3 ft	45.1 ft
51.0ft	4.3 fc	67.9 ft	67.6 ft
68.0ft	2.4 fc	90.5 ft	90.2 ft
85.0ft	1.5 fc	113.1 ft	112.7 ft
102.0ft	1.1 fc	135.8 ft	135.3 ft

■ Vert. Spread: 67.3°
■ Horiz. Spread: 67.1°

Laboratory: Standard-Tech Co. Ltd Testing Center
 NVLAP CODE: 201011-0

Report Format Number STD/QR4909-A/2

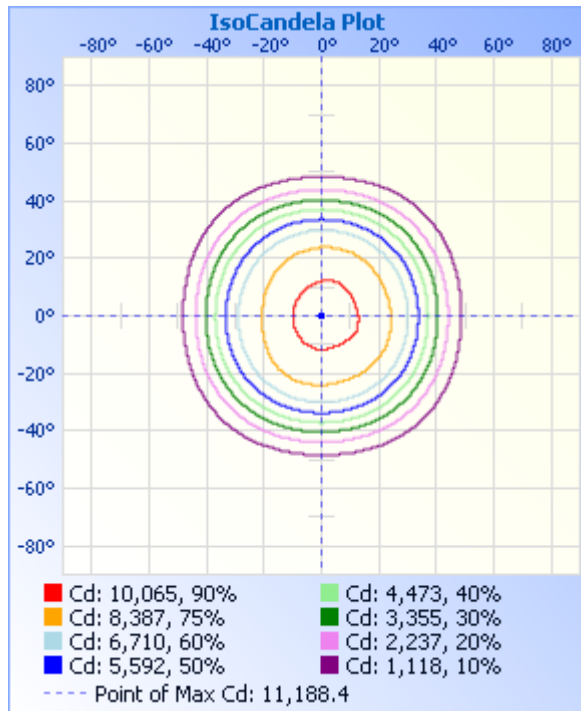
Address: 8th floor, Block B, No. 11 Caipin Road, Guangzhou Science City, Tianhe, Guangzhou 510663, China

Tel: 8620-3229 0320

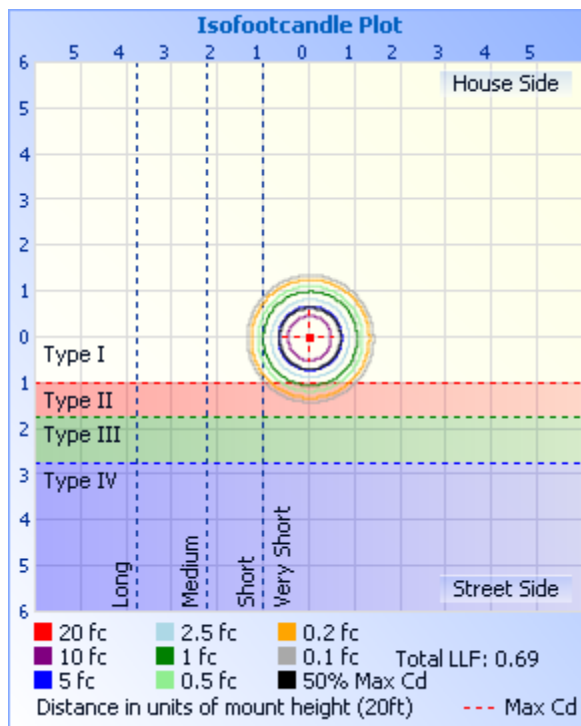
Fax: 8620-32290422

<http://www.standard-tech.com>

ISOCANDELA DIAGRAM



ISOLUX DIAGRAM



Laboratory: Standard-Tech Co. Ltd Testing Center
 NVLAP CODE: 201011-0

Report Format Number STD/QR4909-A/2

Address: 8th floor, Block B, No. 11 Caipin Road, Guangzhou Science City, Tianhe, Guangzhou 510663, China

Tel: 8620-3229 0320 Fax: 8620-32290422 <http://www.standard-tech.com>

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	11183	11183	11183	11183	11183	11183	11183	11183	11183	11183	11183	11183	11183	11183	11183	11183	11183
1	11180	11177	11173	11170	11170	11169	11168	11170	11172	11176	11179	11183	11187	11188	11188	11184	11180
2	11172	11162	11149	11138	11134	11132	11133	11137	11138	11145	11153	11162	11167	11176	11179	11179	11172
3	11147	11133	11106	11084	11080	11076	11073	11077	11082	11091	11109	11120	11130	11143	11148	11150	11147
4	11095	11080	11047	11011	10999	10994	10994	11000	11009	11027	11046	11058	11066	11087	11100	11102	11095
5	11017	10996	10962	10914	10897	10895	10901	10908	10921	10941	10963	10977	10986	11009	11023	11025	11017
6	10911	10885	10842	10790	10780	10779	10790	10795	10806	10823	10845	10868	10874	10903	10925	10925	10911
7	10790	10754	10700	10650	10640	10640	10654	10666	10670	10684	10709	10738	10740	10768	10795	10801	10790
8	10654	10612	10548	10491	10480	10481	10496	10514	10518	10530	10560	10595	10597	10624	10656	10670	10654
9	10512	10455	10383	10319	10304	10305	10334	10359	10362	10374	10409	10455	10453	10475	10509	10530	10512
10	10380	10302	10212	10134	10116	10125	10169	10210	10212	10217	10269	10334	10324	10334	10372	10401	10380
11	10256	10159	10052	9959	9926	9947	10022	10081	10078	10076	10140	10230	10211	10202	10243	10287	10256
12	10141	10022	9897	9787	9746	9781	9895	9982	9972	9955	10032	10145	10115	10077	10119	10184	10141
13	10031	9896	9756	9627	9577	9626	9781	9904	9881	9837	9922	10060	10014	9952	9997	10085	10031
14	9923	9767	9609	9462	9403	9473	9673	9819	9784	9719	9806	9962	9900	9821	9870	9981	9923
15	9819	9644	9471	9314	9239	9329	9561	9737	9689	9601	9696	9868	9795	9695	9747	9881	9819
16	9724	9528	9347	9173	9092	9193	9457	9656	9598	9491	9594	9786	9696	9578	9640	9792	9724
17	9632	9422	9228	9038	8952	9066	9357	9567	9505	9384	9498	9705	9602	9462	9536	9706	9632
18	9529	9300	9101	8902	8815	8933	9244	9468	9401	9264	9387	9607	9497	9339	9419	9606	9529
19	9410	9172	8967	8759	8671	8795	9123	9351	9282	9140	9267	9488	9374	9211	9297	9495	9410
20	9281	9037	8826	8614	8527	8649	8986	9216	9147	9001	9130	9342	9229	9068	9159	9362	9281
21	9127	8888	8677	8466	8382	8500	8833	9058	8986	8842	8967	9167	9055	8904	8998	9197	9127
22	8942	8715	8513	8303	8229	8340	8659	8871	8798	8662	8779	8961	8855	8717	8816	9007	8942
23	8731	8522	8327	8127	8065	8160	8459	8653	8584	8461	8563	8726	8631	8513	8608	8783	8731
24	8499	8312	8130	7939	7887	7969	8235	8404	8344	8239	8328	8463	8382	8290	8378	8536	8499
25	8240	8077	7905	7732	7696	7762	7986	8123	8076	7988	8063	8166	8102	8045	8125	8265	8240
26	7957	7821	7663	7508	7484	7538	7717	7825	7792	7723	7782	7866	7814	7786	7857	7974	7957
27	7669	7550	7412	7277	7266	7301	7440	7519	7498	7450	7495	7560	7527	7517	7583	7678	7669
28	7378	7277	7156	7039	7043	7064	7160	7220	7206	7170	7201	7258	7234	7246	7300	7378	7378
29	7082	7009	6900	6801	6814	6824	6886	6923	6910	6886	6907	6948	6933	6966	7018	7083	7082

Laboratory: Standard-Tech Co. Ltd Testing Center

NVLAP CODE: 201011-0

Report Format Number STD/QR4909-A/2

Address: 8th floor, Block B, No. 11 Caipin Road, Guangzhou Science City, Tianhe, Guangzhou 510663, China

Tel: 8620-3229 0320 Fax: 8620-32290422 <http://www.standard-tech.com>

30	6782	6729	6635	6556	6570	6573	6604	6614	6604	6587	6597	6621	6627	6677	6724	6777	6782
31	6482	6451	6372	6302	6323	6316	6322	6315	6303	6287	6287	6310	6319	6382	6428	6470	6482
32	6184	6164	6103	6047	6067	6056	6048	6024	6009	5991	5984	6002	6015	6080	6128	6165	6184
33	5889	5884	5836	5790	5812	5793	5769	5732	5706	5682	5665	5687	5712	5774	5821	5861	5889
34	5585	5597	5558	5518	5536	5518	5481	5432	5395	5360	5342	5361	5388	5458	5510	5549	5585
35	5267	5290	5258	5226	5250	5224	5176	5111	5065	5027	5000	5023	5051	5121	5176	5221	5267
36	4939	4970	4946	4919	4942	4912	4850	4780	4723	4678	4654	4677	4710	4779	4843	4890	4939
37	4607	4638	4623	4600	4620	4583	4513	4429	4372	4327	4302	4330	4373	4441	4504	4552	4607
38	4265	4302	4291	4261	4281	4245	4165	4078	4023	3981	3967	4006	4041	4108	4157	4203	4265
39	3921	3962	3947	3921	3935	3893	3808	3728	3671	3634	3631	3673	3713	3772	3814	3860	3921
40	3567	3612	3604	3581	3590	3544	3452	3378	3319	3286	3294	3340	3379	3432	3468	3515	3567
41	3227	3266	3262	3243	3245	3194	3097	3028	2968	2940	2959	3008	3053	3102	3129	3176	3227
42	2894	2929	2935	2924	2900	2844	2773	2706	2654	2629	2647	2701	2740	2780	2812	2856	2894
43	2589	2611	2621	2615	2586	2524	2458	2401	2356	2331	2352	2398	2440	2477	2511	2553	2589
44	2283	2303	2316	2309	2285	2222	2163	2110	2073	2053	2070	2114	2143	2181	2220	2260	2283
45	1996	2007	2018	2017	1994	1934	1875	1830	1801	1786	1802	1838	1867	1902	1942	1975	1996
46	1758	1768	1750	1747	1719	1660	1607	1572	1550	1542	1552	1582	1640	1675	1713	1742	1758
47	1521	1528	1524	1518	1463	1415	1369	1342	1327	1323	1331	1350	1413	1450	1484	1511	1521
48	1283	1289	1297	1289	1243	1202	1160	1142	1129	1127	1129	1145	1186	1224	1256	1279	1283
49	1082	1087	1092	1080	1038	1006	971	954	943	942	943	954	988	1024	1056	1076	1082
50	896	902	902	889	857	831	802	785	776	773	775	783	810	843	870	891	896
51	728	733	733	719	695	671	647	633	624	620	621	628	650	679	704	722	728
52	583	588	586	573	548	529	509	495	487	484	484	488	509	534	557	575	583
53	455	458	457	443	421	403	388	376	368	364	365	369	387	408	428	443	455
54	339	345	343	329	311	296	283	272	265	261	262	266	278	295	314	329	339
55	238	242	241	231	216	203	191	183	175	172	173	176	186	199	214	227	238
56	152	157	156	147	136	125	116	109	101	99	100	103	109	120	133	143	152
57	85	89	88	82	73	66	58	52	48	45	46	48	52	59	69	78	85
58	35	38	38	34	31	27	22	19	16	15	16	16	17	20	25	30	35
59	13	13	14	14	14	14	13	13	12	11	11	11	11	12	12	12	13
60	10	10	11	12	12	12	11	11	11	10	10	10	10	10	10	10	10
61	9	9	10	10	11	11	10	10	10	9	9	9	9	9	9	9	9

Laboratory: Standard-Tech Co. Ltd Testing Center
 NVLAP CODE: 201011-0

Report Format Number STD/QR4909-A/2

Address: 8th floor, Block B, No. 11 Caipin Road, Guangzhou Science City, Tianhe, Guangzhou 510663, China

Tel: 8620-3229 0320 Fax: 8620-32290422 <http://www.standard-tech.com>

62	8	8	9	9	9	9	10	9	9	9	8	8	8	8	8	8
63	8	7	8	8	8	9	9	8	8	8	8	7	7	7	8	8
64	7	6	7	7	8	8	8	7	7	7	7	7	7	7	7	7
65	6	6	6	7	7	7	7	7	7	7	6	6	6	6	6	6
66	6	5	6	6	6	6	6	6	6	6	6	6	6	6	6	6
67	5	5	5	6	6	6	6	6	5	5	5	5	5	5	5	5
68	5	5	5	5	5	5	5	5	5	5	4	5	5	5	5	5
69	4	4	4	5	4	5	5	5	4	4	4	4	5	5	4	4
70	4	4	4	4	4	4	5	4	4	4	4	4	4	4	4	4
71	4	3	3	4	4	4	4	4	4	4	3	3	4	4	3	4
72	3	3	3	3	3	4	4	3	3	3	3	3	3	3	3	3
73	3	3	3	3	3	3	3	3	3	3	3	2	3	3	3	3
74	3	2	3	3	2	3	3	3	3	2	2	2	3	3	2	2
75	2	2	2	3	2	2	2	2	2	2	2	2	2	2	2	2
76	2	2	2	2	2	2	2	2	2	2	2	1	2	2	2	2
77	2	2	2	2	1	2	2	2	1	1	1	1	2	2	1	1
78	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1
79	1	1	1	1	1	1	1	1	1	1	2	0	1	1	1	1
80	1	1	1	1	1	1	1	1	1	1	2	0	1	1	1	1
81	1	1	1	1	0	0	0	0	0	0	0	0	1	1	1	0
82	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0
83	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
84	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
85	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
86	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
87	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
88	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
89	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
91	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
92	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
93	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Laboratory: Standard-Tech Co. Ltd Testing Center
 NVLAP CODE: 201011-0

Report Format Number STD/QR4909-A/2

Address: 8th floor, Block B, No. 11 Caipin Road, Guangzhou Science City, Tianhe, Guangzhou 510663, China

Tel: 8620-3229 0320 Fax: 8620-32290422 <http://www.standard-tech.com>

94	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
95	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
96	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
97	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
98	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
99	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
101	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
102	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
103	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
104	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
105	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
106	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
107	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
108	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
109	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
110	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
111	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
112	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
113	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
114	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
115	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
116	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
117	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
118	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
119	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
120	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
121	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
122	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
123	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
124	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

Laboratory: Standard-Tech Co. Ltd Testing Center
NVLAP CODE: 201011-0

Report Format Number STD/QR4909-A/2

Address: 8th floor, Block B, No. 11 Caipin Road, Guangzhou Science City, Tianhe, Guangzhou 510663, China

Tel: 8620-3229 0320 Fax: 8620-32290422 <http://www.standard-tech.com>

126	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
127	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
128	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
129	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0
130	0	0	0	0	1	1	1	0	1	1	0	1	0	0	0	0
131	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0
132	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0
133	1	0	0	0	1	1	1	1	1	1	1	1	1	0	0	1
134	1	1	0	1	2	2	1	2	2	2	2	2	1	1	0	1
135	1	1	1	1	2	2	2	2	2	2	2	2	1	1	1	1
136	1	1	1	1	2	2	2	2	2	2	2	2	2	1	1	1
137	2	1	1	2	3	3	2	3	3	3	2	3	2	1	1	2
138	2	2	2	2	3	3	3	3	3	3	3	3	2	2	1	2
139	2	2	2	2	3	3	3	4	3	4	3	3	2	2	2	2
140	3	3	2	3	4	4	3	4	4	4	3	4	3	2	2	3
141	3	3	2	3	4	4	4	4	4	5	4	4	3	3	2	3
142	3	3	3	3	5	5	4	5	5	5	4	4	3	3	3	3
143	4	4	3	4	5	5	4	5	5	6	5	5	4	3	3	4
144	4	4	3	4	6	5	5	6	6	6	5	5	4	4	4	4
145	4	4	4	4	6	6	5	6	6	7	6	5	5	4	4	4
146	5	5	4	5	6	6	6	6	7	7	6	6	5	4	4	5
147	5	5	5	5	7	6	6	7	7	8	7	6	6	5	5	5
148	6	6	5	6	7	7	7	7	8	8	7	7	6	5	5	6
149	6	6	6	6	8	8	7	8	8	9	8	7	7	6	6	7
150	7	7	6	6	8	8	7	8	9	10	8	7	7	7	6	7
151	7	7	7	7	9	8	8	8	9	10	9	8	8	7	7	8
152	8	8	8	8	9	9	8	9	10	11	9	9	8	7	8	8
153	9	8	8	8	9	9	9	9	10	11	10	9	8	8	8	9
154	9	8	9	8	9	10	9	10	10	12	10	9	9	8	8	9
155	9	9	9	9	9	10	10	10	11	12	10	10	9	9	9	9
156	10	9	9	9	9	11	10	10	11	12	11	10	8	9	9	10
157	10	9	9	9	9	11	10	11	11	12	11	10	8	9	9	10

Laboratory: Standard-Tech Co. Ltd Testing Center
 NVLAP CODE: 201011-0

Report Format Number STD/QR4909-A/2

Address: 8th floor, Block B, No. 11 Caipin Road, Guangzhou Science City, Tianhe, Guangzhou 510663, China

Tel: 8620-3229 0320 Fax: 8620-32290422 <http://www.standard-tech.com>

158	10	9	10	10	9	11	11	11	11	12	11	10	8	9	10	10	10
159	10	10	10	10	10	11	11	11	11	11	11	11	8	10	10	10	10
160	11	10	10	10	10	11	12	12	12	11	11	11	9	10	10	10	11
161	11	10	10	11	11	11	12	12	12	11	12	11	9	10	11	11	11
162	11	11	10	11	12	12	12	12	12	12	12	12	10	10	11	11	11
163	12	11	11	11	12	12	13	13	13	12	13	12	11	11	11	11	12
164	12	12	11	11	13	12	13	13	13	12	13	13	11	11	12	12	12
165	12	12	11	12	13	12	14	13	14	13	13	13	12	11	12	12	12
166	13	12	12	12	13	13	14	14	14	13	14	13	12	12	12	12	13
167	13	13	13	12	14	14	14	14	14	14	14	14	12	12	12	13	13
168	14	14	13	13	14	14	14	14	15	14	14	14	13	12	13	13	14
169	14	14	14	14	14	14	14	15	15	15	15	14	13	13	13	14	14
170	15	14	14	14	15	14	15	15	15	15	15	14	13	13	13	14	15
171	15	14	14	14	15	14	15	15	15	15	16	15	14	13	13	14	15
172	15	14	15	14	14	14	15	15	15	16	16	15	14	13	14	14	15
173	15	14	15	14	14	14	15	15	15	16	16	15	14	14	14	14	15
174	15	15	15	14	14	14	15	15	15	16	16	16	14	14	14	14	15
175	16	15	15	14	14	14	15	15	15	16	16	16	14	14	14	15	16
176	16	15	15	15	14	14	14	14	15	15	15	15	14	14	14	15	16
177	16	15	15	14	14	14	14	14	15	15	15	15	14	14	14	15	16
178	15	15	15	14	14	14	14	14	14	15	15	14	14	14	14	15	15
179	15	15	15	14	13	13	13	14	14	14	14	14	13	14	14	14	15
180	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14

2.2 Electrical, Photometric and Chromaticity Measurements <i>(Refer to Work Instruction QD25)</i>	IES LM-79 2008
---	-----------------------

Test date	2015-10-12	Test Ambient:	25.2 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	90414		

Electrical Measurement :

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
GZE150956	120.0	60	0.8009	95.62	0.9949	6.05
-E2	277.0	60	0.3613	94.26	0.9418	11.57

Color Data :

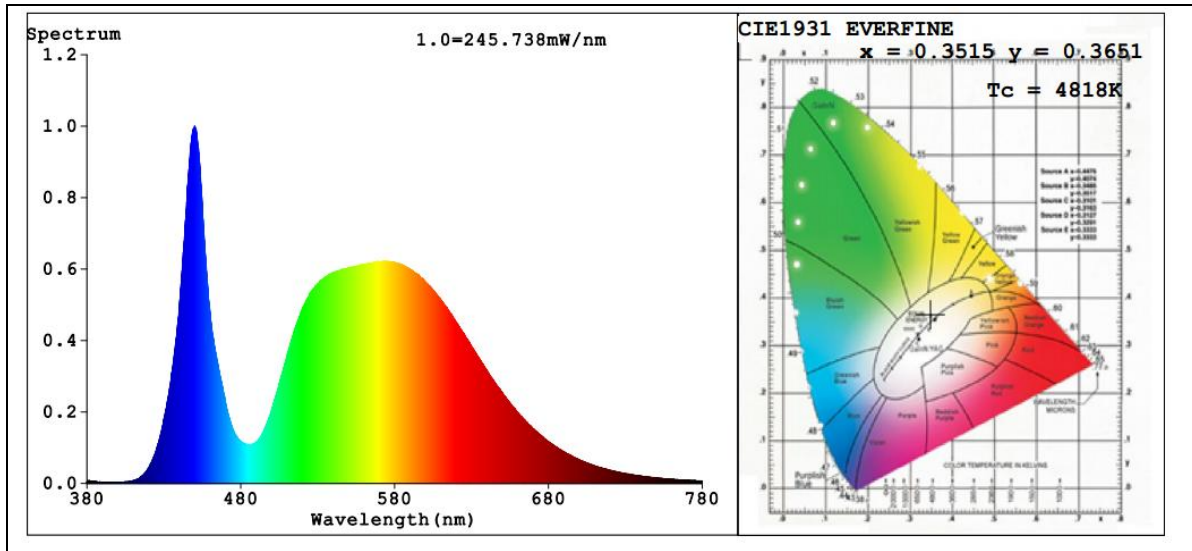
Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Color Rendering Index (CRI)	73.7
R9	0
CCT (K)	4818
Chromaticity (x, y)	x=0.3515 y=0.3651
Chromaticity (u', v')	u'=0.2106 v'=0.4920
Duv	0.0041
Total Luminous (lm)	12709
Luminous Efficacy (lm/W)	132.91

Special Color Rendering Indices			
R1	71	R9	0
R2	78	R10	47
R3	83	R11	70
R4	74	R12	38
R5	71	R13	72
R6	69	R14	90
R7	84	R15	66
R8	60	--	--

Sphere-Spectroradiometer Method (277V):

Parameter	Result
Test Voltage (V)	277.0
Frequency (Hz)	60
Total Initial Lumen Output(lm)	12685
Initial Lumen Efficacy(lm/w)	134.57

Spectral Power Distribution & Chromaticity Diagram



Laboratory: Standard-Tech Co. Ltd Testing Center
 NVLAP CODE: 201011-0

Report Format Number STD/QR4909-A/2

Address: 8th floor, Block B, No. 11 Caipin Road, Guangzhou Science City, Tianhe, Guangzhou 510663, China

Tel: 8620-3229 0320 Fax: 8620-32290422 <http://www.standard-tech.com>

3. Test Equipment

Equipment ID	Equipment Name	Last Calibration Date	Next Calibration Date
ST-R-336	2 meter Integrating Sphere	2015-07-01	2016-06-30
ST-R-331	Spectral analysis system HAAS-2000	2015-07-01	2016-06-30
D204	Standard Lamp	2015-07-01	2016-06-30
PF2010	Power Meter for Integrating Sphere	2015-07-01	2016-06-30
EE-09	Goniophotometer system	2015-07-01	2016-06-30
D908S	Standard Lamp	2015-07-01	2016-06-30
PF210	Power Meter for Goniophotometer	2015-07-01	2016-06-30
ST-R-181A	Temperature Tester	2015-07-01	2016-06-30
Uncertainty: Photometric Measurement (Sphere):1.74% Chromaticity Measurement(Sphere):14.3K Photometric Measurement(Goniophotometer):1.62%			

******* END OF DATASHEET PACKAGE *******