



Report No.: GZE150406-J

NVLAP LAB CODE 201011-0

## LM-79-08 Test Report

For

### PREMIUM QUALITY LIGHTING

(Brand Name: SUPERIOR LIFE®)

2285 Ward Avenue, Simi Valley, Ca 93065

### Outdoor Pole/Arm-Mounted Area and Roadway

### Luminaires

Model name(s): 83520

Representative (Tested) Model: 83518(3000K)  
83520(5000K)

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

Test & Report By:

*Sean Zhuo*

Engineer: Sean Zhuo

Date: May.12,2015

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	May.12,2015
Test Report No.	GZE150406-J
Laboratory Contact Name	Tommy Liang

**Product Information:**

Organization Name	PREMIUM QUALITY LIGHTING	
Brand Name	SUPERIOR LIFE®	
Model Number	83518 (3000K)	
SKU (if available)	N/A	
Type of Luminaire (for integral lamps, list base type and lamp type)	Outdoor Pole/Arm-Mounted Area and Roadway Luminaires	
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**

	Integrating Sphere	Goniophotometer	
Input Wattage	--	200.4	W
Input Current	--	1.680	A
Input Voltage (ac)	--	120.0	V
Power Factor	--	0.9936	
Off-State Power	--	0	W

**Photometric Characteristics**

Total Initial Lumen Output	--	19639	lm
Initial Lumen Efficacy	--	97.99	lm/w
Correlated color temperature / CCT	3116	--	K
Color rendering index / CRI	74.4	--	
R9 Value	0	--	
Duv	0.0007	--	

**Luminous Intensity Distribution**

Center beam candlepower (if applicable)	-----	19970	cd
Beam angle (if applicable)		74.9	°
Zonal lumens in the 0°-60° zone		91	%
Zonal lumens in the 60°-90° zone		8.9	%
Zonal lumens in the 90°-120° zone		0	%
Zonal lumens in the 120°-180° zone		0.1	%

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**Laboratory Information:**

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Date of Test Report	May.12,2015
Test Report No.	GZE150406-J
Laboratory Contact Name	Tommy Liang

**Product Information:**

Organization Name	PREMIUM QUALITY LIGHTING	
Brand Name	SUPERIOR LIFE®	
Model Number	83520 (5000K)	
SKU (if available)	N/A	
Type of Luminaire (for integral lamps, list base type and lamp type)	Outdoor Pole/Arm-Mounted Area and Roadway Luminaires	
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	199.4	--	W
Input Current	1.671	--	A
Input Voltage (ac)	120.0	--	V
Power Factor	0.9944	--	
Off-State Power	0	--	W

**Photometric Characteristics**

Total Initial Lumen Output	20424	--	lm
Initial Lumen Efficacy	102.43	--	lm/w
Correlated color temperature / CCT	5016	--	K
Color rendering index / CRI	71.9	--	
R9 Value	0	--	
Duv	0.0015	--	

**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			%

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Test Specifications:	
Date of Receipt	: Apr.14,2014
Date of Test	: Apr.21,2014
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  $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$ , 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  $1^{\circ}$  vertical intervals and  $22.5^{\circ}$  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  $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$ . 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.

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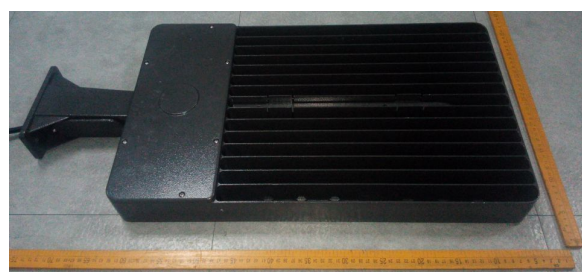
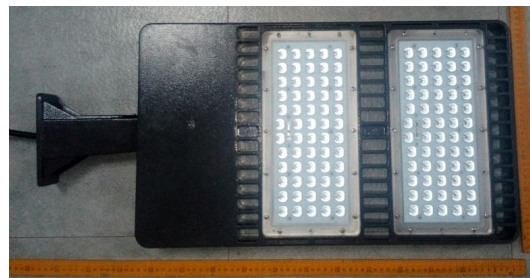
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**1. Product Information:**

Brand Name	Superior Life®
Model Number	83520
Luminaire Type	Outdoor Pole/Arm-Mounted Area and Roadway Luminaires
Rated Voltage / Frequency	110 ~ 240/277Vac, 50/60Hz
Nominal Power	200W
Rated Initial Lamp Lumen	--
Declared CCT	3000K,3500K,4000K,4500K,5000K
LED Manufacturer	SAMSUNG ELECTRONICS Co.,Ltd
LED Model	LH351B
Sample Receipt Date	Apr.14,2015
Sample Number	GZE150406-J1(3000K),J2(5000K)

**Photo**


<b>2.1 Electrical, Photometric and Chromaticity Measurements</b> (Refer to Work Instruction QD25)	<b>IES LM-79 2008</b>
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<b>Test date</b>	2015-04-21	<b>Test Ambient:</b>	25.2 ° C
<b>Test Orientation</b>	As intended	<b>Stabilization Time (min)</b>	90
<b>Model Number</b>	83520 (3000K)		

### Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
GZE150406	120.0	60	1.680	200.4	0.9936	5.91
-J1	277.0	60	0.7870	195.9	0.8985	12.20

### Sphere-Spectroradiometer Method:

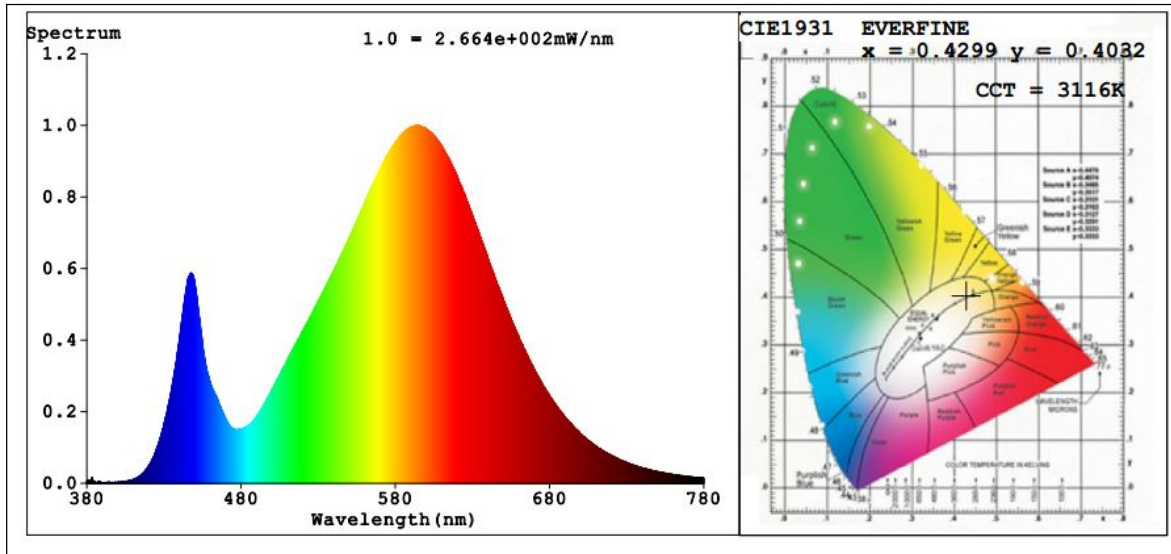
Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Color Rendering Index (CRI)	74.4
R9	0
CCT (K)	3116
Chromaticity (x, y)	x=0.4299 y=0.4032
Chromaticity (u', v')	u'=0.2464 v'=0.5200
Duv	0.0007

Special Color Rendering Indices			
R1	71	R9	0
R2	83	R10	61
R3	94	R11	66
R4	71	R12	55
R5	70	R13	73
R6	77	R14	96
R7	80	R15	64
R8	50	--	--

### Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	19639
Luminous Efficacy (lm/W)	97.99
Beam Angle°	74.9
Center Beam Candle Power (cd)	19970
S/MH(C0/180)	1.74
S/MH(C90/270)	0.63

**Spectral Power Distribution & Chromaticity Diagram**



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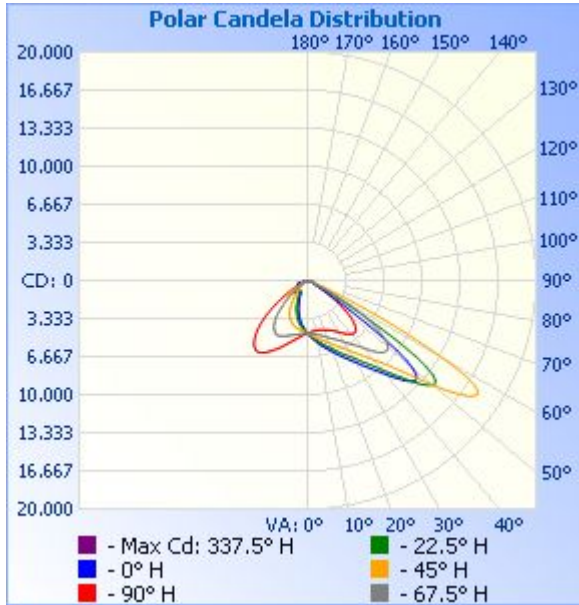
<b>Zonal Lumen Tabulation</b>
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Zonal Lumen Summary			
Zone	Lumens	% Lamp	% Luminaire
0-30	4,151.4	21.1%	21.1%
0-40	7,717.6	39.3%	39.3%
0-60	17,861.0	90.9%	91%
60-90	1,749.9	8.9%	8.9%
70-100	422.0	2.1%	2.1%
90-120	4.6	0%	0%
0-90	19,610.9	99.9%	99.9%
90-180	25.9	0.1%	0.1%
0-180	19,636.8	100%	100%

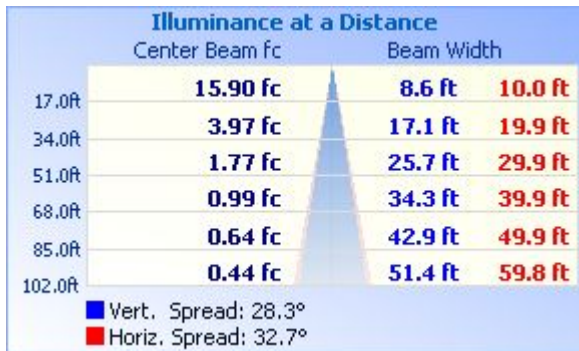
Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	443.3	2.3%	90-100	0.1	0%
10-20	1,356.5	6.9%	100-110	1.1	0%
20-30	2,351.7	12.0%	110-120	3.4	0%
30-40	3,566.2	18.2%	120-130	5.4	0%
40-50	5,083.7	25.9%	130-140	5.7	0%
50-60	5,059.7	25.8%	140-150	4.3	0%
60-70	1,327.9	6.8%	150-160	3.2	0%
70-80	335.2	1.7%	160-170	2.0	0%
80-90	86.8	0.4%	170-180	0.7	0%



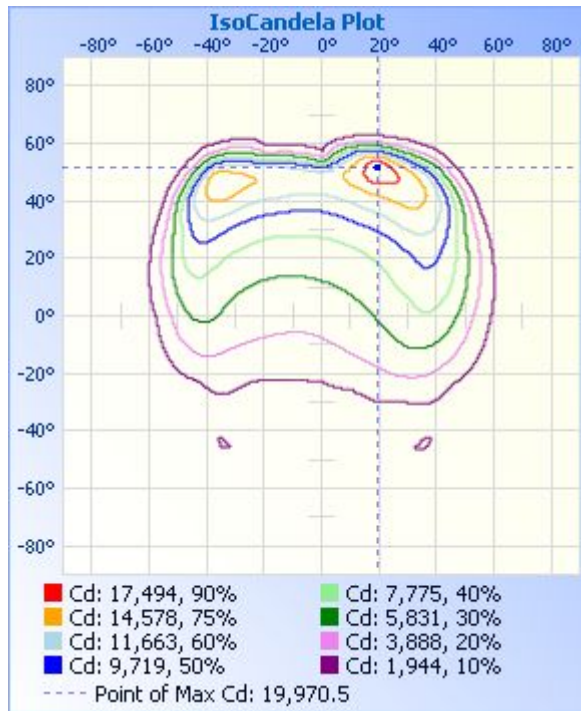
### Photometric Data



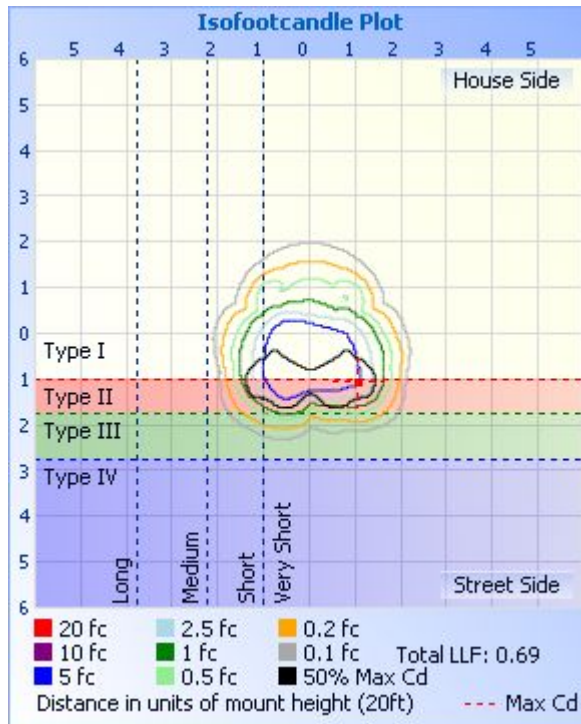
### Illuminance Plots



### ISOCANDELA DIAGRAM



### ISOLUX DIAGRAM



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**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	4595	4595	4595	4595	4595	4595	4595	4595	4595	4595	4595	4595	4595	4595	4595	4595	4595
1	4688	4668	4635	4602	4569	4527	4504	4495	4501	4523	4556	4594	4630	4664	4686	4696	4688
2	4789	4742	4680	4613	4540	4462	4415	4396	4410	4454	4519	4599	4665	4735	4781	4798	4789
3	4885	4817	4727	4626	4517	4402	4324	4296	4317	4387	4489	4607	4706	4811	4875	4899	4885
4	4986	4892	4779	4639	4495	4341	4233	4186	4220	4318	4461	4622	4753	4891	4975	5008	4986
5	5081	4970	4831	4658	4473	4285	4138	4080	4120	4246	4435	4645	4805	4979	5072	5110	5081
6	5180	5052	4888	4681	4455	4227	4048	3976	4020	4177	4407	4666	4863	5067	5180	5216	5180
7	5281	5137	4946	4704	4440	4170	3958	3868	3920	4102	4385	4690	4919	5157	5289	5325	5281
8	5379	5227	5006	4728	4432	4118	3872	3759	3818	4028	4359	4713	4983	5249	5403	5438	5379
9	5479	5315	5070	4752	4429	4066	3782	3654	3713	3951	4337	4734	5045	5346	5517	5553	5479
10	5577	5398	5132	4782	4420	4022	3696	3551	3606	3871	4315	4758	5115	5445	5626	5670	5577
11	5679	5482	5196	4817	4423	3986	3611	3439	3487	3786	4290	4789	5185	5546	5737	5779	5679
12	5783	5569	5257	4856	4430	3952	3530	3313	3359	3696	4265	4824	5259	5647	5845	5886	5783
13	5891	5659	5311	4899	4445	3921	3446	3186	3230	3603	4243	4852	5338	5750	5957	5992	5891
14	5991	5752	5368	4949	4460	3892	3360	3060	3102	3508	4215	4885	5426	5857	6068	6099	5991
15	6097	5850	5440	4999	4481	3867	3273	2931	2972	3409	4185	4922	5518	5972	6178	6203	6097
16	6205	5956	5515	5054	4506	3841	3186	2803	2844	3299	4146	4957	5613	6091	6295	6316	6205
17	6309	6056	5595	5117	4533	3819	3099	2676	2703	3189	4104	4997	5720	6219	6409	6434	6309
18	6418	6151	5670	5181	4559	3798	3011	2546	2568	3079	4067	5037	5829	6344	6528	6552	6418
19	6540	6249	5748	5246	4580	3776	2927	2417	2431	2961	4017	5078	5943	6478	6645	6669	6540
20	6673	6364	5845	5315	4608	3755	2839	2290	2297	2844	3958	5119	6056	6619	6765	6803	6673
21	6814	6481	5954	5382	4640	3734	2747	2166	2165	2724	3900	5173	6172	6771	6895	6951	6814
22	6952	6609	6068	5442	4671	3710	2656	2044	2032	2599	3840	5220	6293	6931	7040	7098	6952
23	7096	6744	6175	5504	4707	3685	2559	1923	1903	2471	3766	5270	6410	7083	7198	7251	7096
24	7242	6887	6277	5573	4753	3661	2464	1807	1775	2342	3687	5312	6530	7239	7363	7400	7242
25	7386	7034	6376	5651	4804	3637	2368	1695	1656	2212	3602	5347	6647	7397	7542	7557	7386
26	7534	7157	6488	5736	4867	3613	2266	1584	1545	2080	3518	5381	6771	7560	7724	7719	7534
27	7692	7288	6603	5824	4935	3591	2165	1489	1452	1953	3430	5418	6889	7725	7913	7890	7692
28	7856	7435	6726	5920	5002	3565	2060	1401	1373	1827	3326	5442	7008	7881	8105	8068	7856
29	8026	7585	6853	6035	5078	3534	1955	1329	1309	1711	3223	5455	7119	8044	8294	8265	8026

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30	8204	7741	7000	6153	5159	3499	1848	1268	1265	1599	3119	5445	7229	8218	8499	8485	8204
31	8399	7911	7146	6269	5250	3464	1742	1220	1235	1501	2998	5416	7336	8401	8702	8705	8399
32	8624	8108	7309	6379	5336	3437	1639	1180	1217	1411	2869	5374	7425	8590	8903	8963	8624
33	8853	8323	7489	6498	5429	3408	1538	1144	1198	1332	2730	5307	7507	8783	9103	9250	8853
34	9068	8547	7679	6649	5537	3375	1447	1117	1174	1264	2584	5223	7561	8979	9307	9562	9068
35	9303	8786	7875	6808	5649	3347	1362	1094	1157	1206	2427	5125	7599	9176	9550	9904	9303
36	9545	9012	8088	6953	5756	3311	1289	1072	1150	1158	2266	5005	7601	9358	9822	10252	9545
37	9809	9273	8317	7115	5851	3274	1224	1057	1148	1122	2103	4865	7562	9530	10130	10607	9809
38	10087	9547	8553	7302	5945	3238	1166	1047	1145	1092	1940	4714	7504	9665	10506	10950	10087
39	10401	9872	8802	7502	6028	3180	1122	1040	1146	1069	1787	4538	7414	9778	10924	11287	10401
40	10731	10211	9070	7726	6089	3102	1087	1032	1151	1049	1638	4345	7294	9842	11376	11654	10731
41	11059	10568	9348	7965	6130	3010	1061	1024	1150	1034	1508	4149	7149	9883	11833	12064	11059
42	11418	10940	9659	8218	6140	2896	1039	1016	1147	1020	1396	3924	6949	9911	12318	12553	11418
43	11766	11335	10019	8456	6122	2755	1020	1006	1152	1008	1298	3673	6760	9880	12799	13106	11766
44	12107	11777	10426	8690	6063	2582	1002	1000	1183	997	1216	3390	6541	9789	13257	13722	12107
45	12406	12248	10873	8887	5953	2391	986	995	1254	990	1149	3108	6307	9650	13691	14388	12406
46	12657	12715	11387	9053	5808	2183	971	996	1374	986	1095	2825	6021	9480	14112	15089	12657
47	12844	13157	11965	9159	5634	1978	959	999	1536	982	1055	2549	5723	9274	14525	15805	12844
48	12851	13588	12633	9228	5414	1774	959	1005	1606	979	1030	2290	5405	9023	14879	16561	12851
49	12606	13962	13344	9236	5154	1579	1025	1026	1497	985	1048	2028	5082	8756	15204	17355	12606
50	12095	14230	14122	9189	4860	1391	1255	1061	1285	1003	1187	1782	4743	8423	15458	18103	12095
51	11200	14326	14932	9046	4514	1225	1630	1104	1161	1032	1440	1542	4368	8036	15641	18762	11200
52	9896	14203	15738	8797	4123	1074	1849	1134	1095	1039	1741	1325	4021	7588	15678	19332	9896
53	8156	13733	16484	8442	3719	942	2129	1079	1041	1001	2083	1134	3662	7114	15557	19769	8156
54	6249	12862	17133	8032	3315	828	2167	984	976	936	2243	974	3320	6636	15222	19970	6249
55	4544	11507	17618	7545	2911	730	1950	912	922	895	2126	843	2984	6136	14678	19787	4544
56	3225	9682	17870	6983	2551	650	1656	869	876	851	1937	737	2663	5633	13896	19132	3225
57	2377	7622	17775	6356	2236	588	1365	823	836	800	1630	653	2356	5102	12865	17741	2377
58	1800	5664	17215	5714	1941	540	1088	779	804	759	1290	591	2066	4581	11662	15577	1800
59	1488	4113	16015	5047	1675	503	879	741	761	724	975	545	1795	4032	10374	12736	1488
60	1181	3021	14093	4324	1437	476	742	707	708	698	795	511	1570	3431	8946	9518	1181
61	875	2281	11769	3586	1226	456	657	679	692	678	695	487	1344	2819	7415	6760	875

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62	764	1752	9548	2914	1047	441	596	655	680	660	629	470	1119	2249	5980	4889	764
63	687	1471	7446	2326	894	430	550	629	670	638	577	455	964	1693	4636	3409	687
64	636	1191	5536	1762	775	420	516	598	660	609	538	441	829	1228	3481	2383	636
65	602	1028	4013	1343	675	409	491	560	653	574	509	425	722	765	2557	1784	602
66	572	891	2788	925	596	396	469	523	652	540	486	408	625	535	1873	1481	572
67	549	775	1956	646	529	382	451	493	662	507	465	392	548	437	1525	1187	549
68	531	673	1579	491	474	368	432	468	684	479	443	376	481	387	1180	990	531
69	510	588	1202	408	428	354	412	448	718	454	420	359	424	357	835	823	510
70	487	514	824	369	388	339	392	430	763	431	394	341	377	335	650	683	487
71	466	457	646	342	355	322	369	412	816	409	361	322	340	316	509	565	466
72	463	416	504	318	326	306	343	395	865	387	324	305	311	299	401	467	463
73	507	381	394	296	300	289	315	378	878	366	286	288	284	284	324	397	507
74	552	349	320	276	277	273	282	361	800	346	252	270	262	270	270	349	552
75	558	316	269	257	256	256	250	346	639	326	224	251	241	255	234	313	558
76	535	287	233	241	236	239	221	330	512	306	203	231	224	230	207	282	535
77	502	260	203	224	217	220	196	311	434	280	183	210	206	201	185	254	502
78	461	237	177	201	199	200	176	277	412	246	166	188	187	180	163	227	461
79	417	215	154	177	181	179	158	248	393	219	148	163	169	161	144	202	417
80	369	195	136	157	164	158	141	221	364	190	126	139	148	143	126	179	369
81	319	177	120	140	144	136	121	194	326	164	108	119	128	124	108	164	319
82	268	164	105	123	126	119	105	167	283	139	92	103	109	107	91	150	268
83	221	149	89	108	109	104	90	142	237	116	75	86	92	91	75	132	221
84	174	129	74	93	92	89	74	117	194	95	60	69	74	74	59	109	174
85	127	103	60	77	74	72	60	93	150	74	46	50	56	57	45	82	127
86	86	76	45	62	57	56	46	71	110	55	31	29	34	38	31	56	86
87	56	53	32	45	39	40	32	49	66	32	13	9	12	16	17	39	56
88	35	39	19	28	15	20	16	23	22	8	1	0	0	2	5	22	35
89	2	14	9	11	1	2	1	2	0	0	0	0	0	0	0	0	2
90	0	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	0
92	0	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	0

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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	1	0	0	1	0	0	0	0	0	0
100	0	0	0	0	0	1	1	0	0	1	0	0	0	0	0	0
101	0	0	0	0	0	1	1	0	1	1	0	0	0	0	0	0
102	0	0	0	0	0	1	1	0	1	2	0	0	0	0	0	0
103	0	0	0	0	0	2	2	0	1	2	1	0	0	0	0	0
104	0	0	0	0	1	2	2	0	2	3	1	0	0	0	0	0
105	0	0	0	0	1	3	3	1	2	4	1	0	0	0	0	0
106	0	0	0	0	1	4	3	1	3	5	2	0	0	0	0	0
107	0	0	0	1	1	5	4	1	3	6	2	0	0	0	0	0
108	0	0	0	1	2	6	5	1	4	7	2	0	0	0	0	0
109	0	0	0	1	2	7	5	1	5	8	3	0	0	0	0	0
110	0	0	0	1	2	8	6	1	5	8	3	0	0	0	0	0
111	0	0	0	1	3	8	7	2	6	9	3	0	0	0	0	0
112	0	0	0	1	3	9	7	2	7	10	4	0	0	0	0	0
113	0	0	0	2	4	10	8	2	7	10	4	0	0	0	0	0
114	0	0	0	2	4	11	8	3	8	11	5	0	0	0	0	0
115	0	0	0	2	5	11	9	4	9	11	5	1	0	0	0	0
116	0	0	0	2	5	12	9	4	9	11	5	1	0	0	0	0
117	0	0	0	3	6	12	10	5	10	11	6	1	0	0	0	0
118	0	0	0	3	7	12	10	6	11	12	6	1	0	0	0	0
119	0	0	0	3	7	13	10	7	11	12	7	2	0	0	0	0
120	0	0	0	4	8	13	10	8	12	12	7	2	0	0	0	0
121	0	0	0	4	8	14	11	9	13	12	7	2	0	0	0	0
122	0	0	0	4	9	14	11	10	13	13	8	3	0	0	0	0
123	0	0	0	1	5	9	14	12	11	13	13	8	3	0	0	0
124	0	0	0	1	5	10	15	12	12	14	13	8	3	1	0	0
125	0	0	0	1	6	10	14	12	13	14	13	8	3	1	0	0

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126	0	0	0	1	6	11	14	13	14	14	13	9	4	1	0	0	0
127	0	0	0	1	6	11	14	13	14	15	13	9	4	1	0	0	0
128	0	0	0	1	7	11	14	14	15	15	13	9	4	1	0	0	0
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137	0	1	1	3	10	12	13	16	16	14	11	9	6	3	1	0	0
138	0	1	1	3	10	12	13	16	16	14	11	9	6	3	1	1	0
139	0	1	1	3	10	12	12	16	16	13	10	9	6	3	1	1	0
140	0	1	1	3	10	12	12	15	15	13	10	9	6	3	1	1	0
141	1	1	1	3	10	12	12	15	15	13	10	9	6	3	1	1	1
142	1	1	1	4	10	12	12	15	15	13	10	9	6	3	1	1	1
143	1	1	1	4	10	12	12	14	14	12	10	9	6	3	1	1	1
144	1	1	2	4	10	11	11	14	14	12	10	8	6	4	2	1	1
145	1	1	2	4	10	11	11	13	13	12	10	8	6	4	2	1	1
146	1	1	2	4	10	11	11	13	13	12	10	8	6	4	2	1	1
147	1	1	2	4	10	11	11	13	13	12	10	8	6	4	2	1	1
148	1	1	2	4	10	11	11	12	13	11	10	8	6	4	2	1	1
149	1	1	2	4	10	11	11	12	13	11	10	8	6	4	2	1	1
150	1	1	3	4	9	11	11	12	12	11	10	8	6	4	3	2	1
151	2	2	3	4	9	10	11	12	12	11	10	8	6	4	3	2	2
152	2	2	3	4	9	10	11	12	12	11	10	8	6	4	3	2	2
153	2	2	3	4	9	10	11	12	12	11	10	8	6	4	3	2	2
154	2	2	3	5	9	10	11	12	12	11	10	8	5	5	3	2	2
155	2	2	3	5	9	10	11	12	11	11	10	8	5	5	3	2	2
156	3	2	4	5	9	10	11	11	11	11	10	8	5	5	4	3	3
157	3	3	4	5	9	10	11	11	11	11	10	8	5	5	4	3	3

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158	3	3	4	5	8	9	11	11	11	11	9	8	6	5	4	3	3
159	3	3	4	5	8	9	10	11	11	11	9	8	6	6	4	3	3
160	3	3	4	6	8	9	10	11	11	10	9	8	6	6	4	4	3
161	4	3	4	6	8	9	10	10	11	10	9	8	7	6	5	4	4
162	4	4	4	6	8	8	10	10	10	10	9	8	7	6	5	4	4
163	4	4	4	6	8	8	10	10	10	10	9	8	7	6	5	4	4
164	4	4	4	6	9	8	9	10	10	10	9	8	7	6	5	5	4
165	4	4	4	6	9	8	9	10	10	10	9	8	7	6	5	5	4
166	5	4	5	6	9	8	9	10	10	10	9	8	7	6	5	5	5
167	5	5	5	6	9	8	9	10	10	10	9	8	7	6	6	5	5
168	5	5	5	6	9	9	9	10	10	10	9	8	7	7	6	6	5
169	5	5	5	6	9	9	9	9	10	10	9	8	7	7	6	6	5
170	6	5	5	6	9	9	9	9	9	9	9	8	7	7	6	6	6
171	6	5	6	7	9	9	9	9	9	9	9	8	7	7	7	6	6
172	6	6	6	7	9	9	9	9	9	9	9	8	7	7	7	6	6
173	6	6	6	7	9	9	9	9	9	9	9	8	8	7	7	7	6
174	6	6	6	7	9	9	9	8	9	9	8	8	8	7	7	7	6
175	7	6	7	7	9	9	9	8	9	9	8	8	8	8	7	7	7
176	7	6	7	7	9	9	8	8	9	9	8	8	8	8	7	7	7
177	7	7	7	7	9	9	8	8	9	8	8	7	7	8	7	7	7
178	7	6	7	7	9	8	8	8	8	8	8	7	7	8	7	7	7
179	7	6	7	7	8	8	8	8	8	7	7	7	8	8	7	7	7
180	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7

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## Test Voltage:277V

### Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
GZE150406 -J1	277.0	60	0.7870	195.9	0.8985	12.20

### Goniophotometer Method:

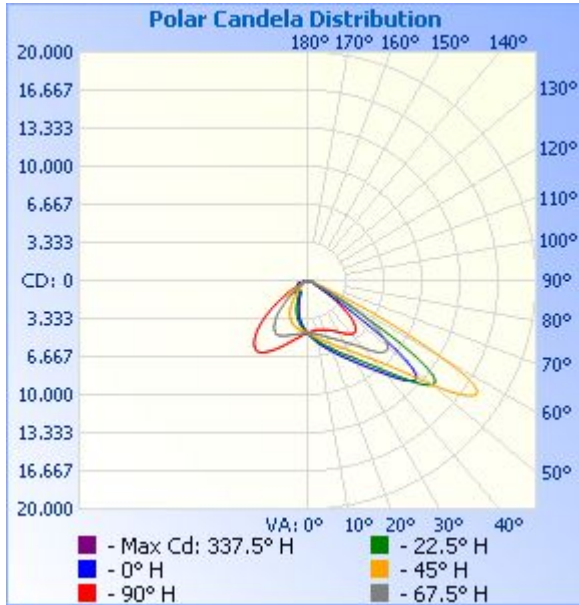
Parameter	Result
Test Voltage (V)	277.0
Frequency (Hz)	60
Total Luminous (lm)	19572
Luminous Efficacy (lm/W)	99.91
Beam Angle°	74.9
Center Beam Candle Power (cd)	19877
S/MH(C0/180)	1.74
S/MH(C90/270)	0.63

**Zonal Lumen Tabulation**

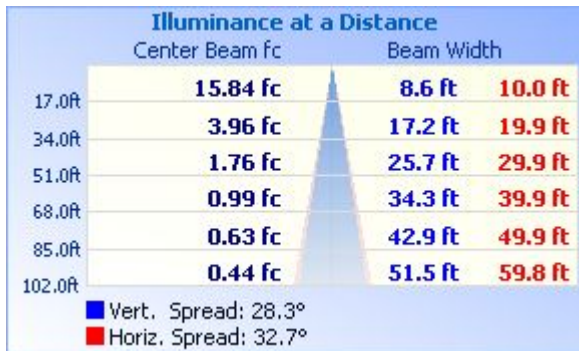
<b>Zonal Lumen Summary</b>			
Zone	Lumens	% Lamp	% Luminaire
0-30	4,135.9	21.1%	21.1%
0-40	7,692.2	39.3%	39.3%
0-60	17,802.0	91%	91%
60-90	1,741.6	8.9%	8.9%
70-100	420.2	2.1%	2.1%
90-120	4.5	0%	0%
0-90	19,543.6	99.9%	99.9%
90-180	25.5	0.1%	0.1%
0-180	19,569.2	100%	100%

<b>Lumens Per Zone</b>					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	441.5	2.3%	90-100	0.0	0%
10-20	1,351.3	6.9%	100-110	1.0	0%
20-30	2,343.2	12.0%	110-120	3.4	0%
30-40	3,556.3	18.2%	120-130	5.3	0%
40-50	5,070.8	25.9%	130-140	5.6	0%
50-60	5,039.0	25.7%	140-150	4.3	0%
60-70	1,321.5	6.8%	150-160	3.1	0%
70-80	333.7	1.7%	160-170	2.0	0%
80-90	86.4	0.4%	170-180	0.7	0%

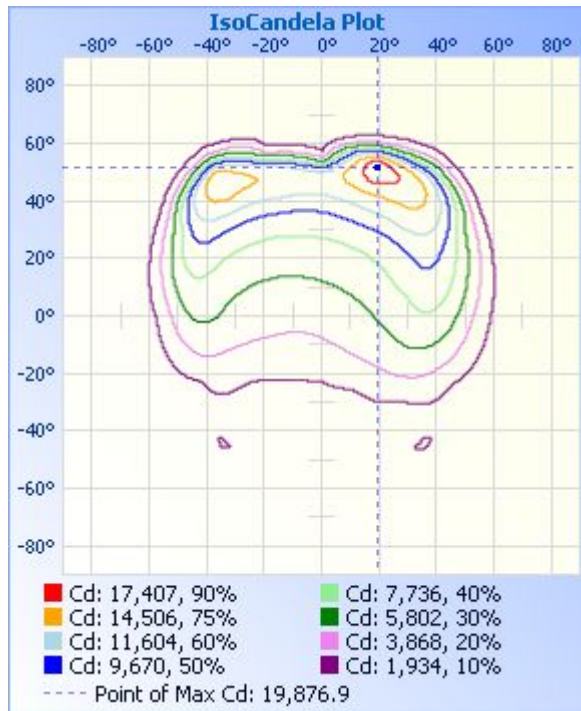
### Photometric Data



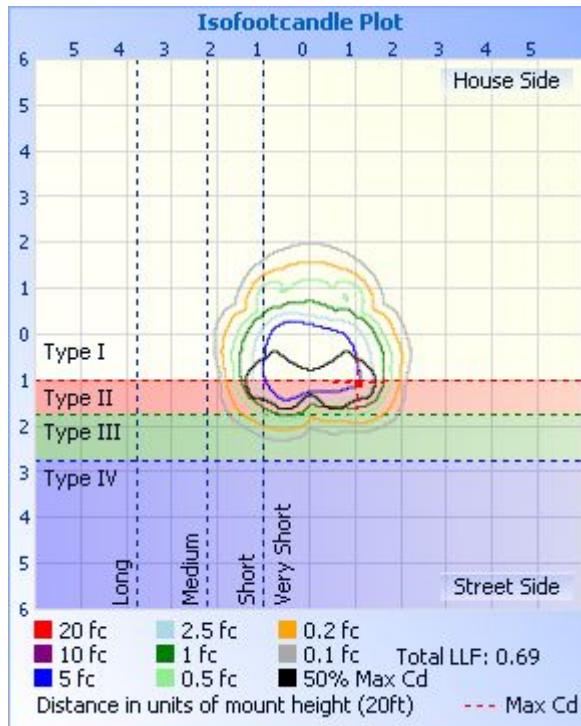
### Illuminance Plots



### ISOCANDELA DIAGRAM



### ISOLUX DIAGRAM



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**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	4577	4577	4577	4577	4577	4577	4577	4577	4577	4577	4577	4577	4577	4577	4577	4577	4577
1	4672	4649	4620	4582	4547	4508	4485	4476	4486	4507	4538	4575	4608	4643	4667	4678	4672
2	4769	4724	4666	4593	4522	4443	4394	4376	4393	4434	4502	4578	4647	4716	4762	4779	4769
3	4866	4799	4714	4604	4497	4383	4309	4276	4298	4368	4472	4586	4684	4791	4856	4882	4866
4	4968	4875	4766	4621	4477	4325	4217	4168	4203	4299	4445	4601	4733	4872	4957	4988	4968
5	5064	4952	4821	4640	4456	4267	4121	4063	4103	4229	4418	4619	4783	4955	5056	5092	5064
6	5163	5034	4875	4663	4438	4209	4028	3958	4002	4158	4389	4642	4843	5043	5161	5195	5163
7	5263	5121	4934	4688	4424	4154	3940	3848	3902	4083	4365	4665	4900	5139	5269	5304	5263
8	5362	5211	4994	4712	4415	4100	3854	3741	3798	4010	4342	4690	4961	5229	5384	5417	5362
9	5461	5298	5058	4736	4410	4052	3764	3637	3696	3933	4320	4712	5024	5325	5498	5532	5461
10	5559	5382	5118	4766	4403	4008	3679	3534	3589	3853	4298	4737	5093	5424	5605	5647	5559
11	5662	5466	5182	4802	4407	3971	3596	3412	3472	3767	4272	4767	5165	5526	5714	5757	5662
12	5764	5554	5242	4842	4415	3937	3513	3291	3343	3677	4248	4803	5236	5624	5824	5857	5764
13	5869	5643	5297	4884	4430	3906	3432	3169	3214	3584	4224	4829	5315	5726	5935	5968	5869
14	5968	5734	5357	4931	4445	3878	3345	3042	3085	3491	4199	4863	5398	5834	6046	6076	5968
15	6078	5836	5428	4983	4466	3855	3258	2914	2957	3389	4166	4899	5495	5945	6160	6180	6078
16	6185	5939	5501	5040	4492	3829	3171	2786	2826	3280	4125	4937	5590	6067	6273	6294	6185
17	6289	6037	5580	5100	4521	3806	3082	2660	2687	3172	4087	4975	5694	6191	6388	6410	6289
18	6396	6138	5658	5164	4546	3786	2995	2530	2551	3063	4046	5012	5804	6322	6507	6530	6396
19	6517	6233	5734	5230	4571	3763	2913	2400	2416	2942	3996	5051	5918	6452	6626	6648	6517
20	6651	6351	5830	5301	4598	3745	2823	2274	2280	2827	3936	5095	6029	6597	6746	6780	6651
21	6797	6466	5937	5366	4631	3722	2730	2149	2149	2704	3879	5144	6144	6745	6873	6928	6797
22	6934	6593	6054	5428	4661	3698	2639	2029	2017	2580	3818	5194	6266	6903	7014	7075	6934
23	7075	6728	6165	5492	4697	3674	2545	1907	1887	2452	3742	5243	6382	7056	7169	7222	7075
24	7219	6867	6263	5558	4742	3649	2448	1792	1761	2326	3662	5287	6503	7211	7331	7372	7219
25	7364	7014	6364	5634	4797	3625	2351	1680	1642	2193	3579	5321	6620	7370	7512	7534	7364
26	7511	7139	6477	5723	4861	3600	2251	1571	1535	2063	3496	5355	6742	7532	7697	7694	7511
27	7666	7272	6594	5810	4927	3578	2148	1476	1443	1937	3406	5393	6859	7695	7892	7865	7666
28	7832	7416	6718	5909	4996	3554	2044	1390	1365	1815	3304	5416	6978	7853	8081	8045	7832
29	8005	7569	6846	6021	5071	3524	1940	1320	1304	1699	3202	5427	7090	8015	8266	8243	8005

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30	8183	7721	6993	6141	5155	3488	1834	1261	1259	1589	3099	5416	7205	8186	8467	8458	8183
31	8384	7894	7139	6259	5246	3454	1728	1214	1231	1493	2977	5389	7312	8375	8668	8683	8384
32	8601	8091	7300	6369	5333	3425	1626	1175	1213	1404	2848	5348	7400	8560	8870	8934	8601
33	8833	8303	7479	6489	5425	3399	1527	1139	1194	1326	2708	5279	7481	8755	9070	9220	8833
34	9046	8530	7671	6636	5534	3366	1437	1113	1171	1259	2561	5195	7541	8953	9276	9531	9046
35	9282	8768	7871	6794	5647	3332	1353	1091	1154	1202	2405	5097	7582	9152	9516	9874	9282
36	9526	8998	8078	6943	5752	3298	1281	1068	1147	1156	2245	4977	7583	9339	9789	10226	9526
37	9785	9257	8310	7102	5845	3265	1215	1053	1145	1119	2085	4837	7544	9510	10094	10581	9785
38	10061	9531	8545	7290	5939	3222	1159	1043	1142	1089	1924	4680	7482	9644	10464	10923	10061
39	10375	9854	8797	7492	6017	3161	1115	1037	1142	1066	1770	4506	7392	9753	10895	11261	10375
40	10702	10186	9055	7715	6080	3083	1082	1029	1147	1047	1625	4314	7277	9823	11342	11630	10702
41	11033	10555	9339	7948	6119	2988	1055	1020	1146	1031	1496	4115	7138	9863	11805	12041	11033
42	11390	10913	9653	8204	6129	2874	1034	1012	1142	1017	1386	3893	6943	9892	12285	12537	11390
43	11743	11312	10007	8441	6107	2731	1014	1002	1148	1004	1290	3639	6743	9864	12772	13081	11743
44	12081	11760	10421	8679	6044	2557	997	995	1180	994	1209	3358	6529	9780	13234	13690	12081
45	12377	12225	10863	8875	5934	2364	980	991	1252	987	1143	3077	6296	9640	13663	14356	12377
46	12623	12695	11385	9031	5786	2157	965	992	1374	982	1090	2796	6008	9468	14083	15050	12623
47	12808	13131	11959	9139	5609	1952	953	994	1535	978	1050	2523	5706	9262	14502	15770	12808
48	12812	13562	12614	9205	5388	1751	954	1002	1596	976	1025	2264	5387	9012	14864	16517	12812
49	12570	13933	13331	9214	5127	1558	1023	1022	1484	982	1045	2005	5061	8736	15179	17304	12570
50	12051	14202	14100	9169	4826	1372	1264	1057	1274	1001	1191	1756	4723	8402	15449	18049	12051
51	11156	14293	14913	9017	4474	1210	1632	1101	1152	1029	1447	1522	4349	8018	15621	18696	11156
52	9865	14177	15709	8769	4090	1061	1840	1129	1086	1035	1740	1306	4004	7563	15661	19266	9865
53	8123	13705	16458	8418	3685	930	2125	1070	1034	996	2083	1119	3646	7103	15538	19689	8123
54	6215	12816	17101	8008	3280	818	2149	976	969	931	2227	963	3308	6614	15204	19877	6215
55	4503	11493	17580	7517	2876	722	1935	906	916	891	2107	834	2970	6121	14656	19684	4503
56	3214	9671	17822	6958	2525	644	1634	863	871	847	1913	729	2654	5609	13877	19020	3214
57	2367	7612	17718	6329	2209	583	1346	818	832	796	1608	647	2347	5088	12835	17616	2367
58	1784	5631	17166	5693	1922	536	1072	775	800	755	1266	586	2059	4563	11637	15391	1784
59	1481	4082	15963	5028	1654	500	868	736	757	721	959	541	1787	4018	10348	12555	1481
60	1178	3007	14078	4303	1422	473	736	703	704	696	786	508	1543	3418	8912	9301	1178
61	875	2273	11726	3582	1212	454	650	676	689	676	688	485	1300	2813	7391	6662	875

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62	761	1747	9520	2905	1033	440	592	652	678	658	625	467	1115	2250	5943	4797	761
63	682	1464	7442	2321	886	429	546	626	667	636	573	453	961	1679	4619	3365	682
64	632	1186	5527	1757	765	418	514	595	658	606	535	439	826	1216	3460	2354	632
65	599	1024	4001	1385	669	407	488	556	652	572	507	423	718	755	2548	1765	599
66	570	884	2792	1017	589	394	467	521	651	537	484	406	623	533	1867	1471	570
67	547	771	1951	650	524	381	449	491	661	505	463	390	545	436	1516	1181	547
68	528	669	1567	491	469	367	430	466	684	476	441	374	479	385	1174	985	528
69	507	586	1192	408	424	352	411	446	719	452	418	357	423	356	833	820	507
70	484	510	817	368	385	337	390	428	765	430	392	339	375	334	648	680	484
71	463	454	644	341	352	321	368	411	819	407	360	321	339	315	507	563	463
72	460	413	502	318	323	304	342	393	868	386	322	303	310	298	401	466	460
73	502	379	392	295	298	288	313	376	877	364	283	286	283	283	323	395	502
74	547	347	319	275	275	271	280	360	793	345	250	268	261	269	269	347	547
75	554	314	268	257	254	255	248	345	633	325	223	250	241	254	233	311	554
76	533	285	232	240	234	237	219	329	505	305	201	230	223	229	207	280	533
77	500	259	202	223	215	218	195	309	432	279	182	209	205	201	184	252	500
78	460	236	177	200	198	199	175	276	412	245	165	186	187	180	163	226	460
79	416	215	153	177	180	178	157	247	392	219	148	161	168	161	143	201	416
80	368	194	135	156	163	157	140	220	362	189	125	138	148	142	125	178	368
81	319	177	120	139	143	135	120	193	325	163	107	119	128	124	108	163	319
82	268	163	105	123	126	118	104	166	281	138	91	103	109	107	91	148	268
83	221	148	89	108	108	103	89	141	236	116	75	85	92	91	74	131	221
84	175	128	74	93	91	88	74	116	192	94	59	68	74	74	59	109	175
85	128	103	60	78	73	72	59	92	149	74	46	50	57	57	45	83	128
86	87	76	45	62	56	55	45	70	109	54	31	28	35	38	31	56	87
87	57	53	32	46	37	39	32	48	65	32	13	9	12	16	17	39	57
88	36	39	19	28	15	19	16	22	22	7	1	0	0	2	5	23	36
89	3	14	9	11	1	1	1	1	0	0	0	0	0	0	0	1	3
90	0	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	0
92	0	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	0

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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	1	0	0	0	0	0
100	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0
101	0	0	0	0	0	0	1	1	0	1	1	0	0	0	0	0
102	0	0	0	0	0	0	1	1	0	1	2	0	0	0	0	0
103	0	0	0	0	0	0	2	1	0	1	3	0	0	0	0	0
104	0	0	0	0	0	1	2	2	0	1	3	1	0	0	0	0
105	0	0	0	0	0	1	3	2	0	2	4	1	0	0	0	0
106	0	0	0	0	0	1	4	3	0	3	5	1	0	0	0	0
107	0	0	0	0	0	1	5	4	1	3	6	2	0	0	0	0
108	0	0	0	0	1	2	6	4	1	4	7	2	0	0	0	0
109	0	0	0	0	1	2	7	5	1	5	7	3	0	0	0	0
110	0	0	0	0	1	2	7	6	1	5	8	3	0	0	0	0
111	0	0	0	0	1	3	8	7	1	6	9	4	0	0	0	0
112	0	0	0	0	1	3	9	7	2	7	10	4	0	0	0	0
113	0	0	0	0	2	4	10	8	2	7	10	4	0	0	0	0
114	0	0	0	0	2	4	10	8	3	8	11	5	0	0	0	0
115	0	0	0	0	2	5	11	8	3	9	11	5	1	0	0	0
116	0	0	0	0	2	5	11	9	4	9	11	6	1	0	0	0
117	0	0	0	0	3	6	12	9	5	10	11	6	1	0	0	0
118	0	0	0	0	3	7	12	10	6	11	11	6	1	0	0	0
119	0	2	0	0	3	7	13	10	7	11	12	7	2	0	0	0
120	0	0	0	0	4	8	13	10	8	12	12	7	2	0	0	0
121	0	0	0	0	4	8	13	11	9	13	12	7	2	0	0	0
122	0	0	0	0	4	9	14	11	10	13	12	8	3	0	0	0
123	0	0	0	0	5	9	14	11	11	13	12	8	3	1	0	0
124	0	0	0	1	5	10	14	11	12	14	13	8	3	1	0	0
125	0	0	0	1	6	10	14	12	13	14	13	9	3	1	0	0

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126	0	0	0	1	6	11	14	12	14	14	13	9	4	1	0	0	0
127	0	0	0	1	6	11	15	13	14	15	13	9	4	1	0	0	0
128	0	0	0	1	7	11	15	14	15	15	13	9	5	1	0	0	0
129	0	0	0	1	7	12	14	15	15	15	13	9	5	1	0	0	0
130	0	0	0	2	8	12	14	15	16	15	13	9	5	2	0	0	0
131	0	0	0	2	8	12	14	16	16	16	13	9	5	2	0	0	0
132	0	0	0	2	9	12	14	17	16	15	13	9	6	2	0	0	0
133	0	0	1	2	9	12	14	17	16	16	12	9	6	2	0	0	0
134	0	0	1	2	9	12	14	17	16	15	12	9	6	2	0	0	0
135	0	0	1	2	9	12	14	17	16	15	12	9	6	2	0	0	0
136	0	0	1	3	10	12	14	17	16	15	11	9	6	2	0	0	0
137	1	0	1	3	10	12	13	16	16	14	11	9	6	2	0	0	1
138	0	0	1	3	10	12	13	16	16	14	11	9	6	3	1	0	0
139	0	1	1	3	10	12	12	15	15	13	10	9	6	3	1	0	0
140	0	1	1	3	10	12	12	15	15	13	10	9	6	3	1	0	0
141	0	1	1	3	10	12	12	15	15	13	10	9	6	3	1	0	0
142	0	1	1	3	10	12	11	15	14	12	10	9	6	3	1	1	0
143	1	1	2	4	10	12	11	14	14	12	10	9	6	3	1	1	1
144	1	1	2	4	10	12	11	13	14	12	10	8	6	3	1	1	1
145	1	1	2	4	10	11	11	13	13	12	10	8	6	3	1	1	1
146	1	1	2	4	10	11	11	12	13	12	10	8	6	4	2	1	1
147	1	1	2	4	10	11	11	12	13	11	10	8	6	4	2	1	1
148	1	1	2	4	10	11	11	12	13	11	10	8	6	4	2	1	1
149	1	1	2	4	10	11	11	12	13	11	10	8	6	4	2	1	1
150	1	2	2	4	9	10	10	12	12	11	10	8	6	4	2	1	1
151	1	2	3	4	9	10	11	12	12	11	10	8	6	4	3	2	1
152	1	2	3	4	9	10	11	11	12	11	10	8	6	4	3	2	1
153	2	2	3	4	9	10	11	11	12	11	10	8	6	4	3	2	2
154	2	2	3	5	9	10	11	11	11	11	10	8	6	5	3	2	2
155	2	2	3	5	9	10	11	11	11	11	10	8	5	5	3	2	2
156	2	2	3	5	9	10	11	11	11	10	9	8	5	5	3	3	2
157	3	3	4	5	8	10	10	11	11	10	9	8	5	5	4	3	3

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158	3	3	4	5	8	9	10	11	11	10	9	8	6	5	4	3	3
159	3	3	4	5	8	9	10	10	10	10	9	8	6	5	4	3	3
160	3	3	4	5	8	9	10	10	10	10	9	8	6	5	4	3	3
161	3	3	4	5	8	9	10	10	10	10	9	8	7	5	4	4	3
162	4	4	4	6	8	9	10	10	10	10	9	8	7	5	4	4	4
163	4	4	4	6	8	8	9	10	10	10	9	8	7	6	4	4	4
164	4	4	4	6	9	8	9	10	10	10	9	8	7	6	5	4	4
165	4	4	4	6	9	8	9	10	10	10	9	8	7	6	5	5	4
166	4	4	4	6	9	8	9	9	10	10	9	8	7	6	5	5	4
167	5	5	5	6	9	8	9	9	10	10	9	8	7	6	5	5	5
168	5	5	5	6	9	9	9	9	10	10	9	8	7	6	6	5	5
169	5	5	5	6	9	9	9	9	9	9	9	8	7	6	6	6	5
170	5	5	5	6	9	9	9	9	9	9	9	8	7	7	6	6	5
171	6	5	6	6	9	9	8	9	9	9	9	8	7	7	6	6	6
172	6	6	6	6	9	9	8	8	9	9	9	8	7	7	6	6	6
173	6	6	6	7	9	9	8	8	9	9	9	8	7	7	6	6	6
174	6	6	6	7	9	9	8	8	9	9	9	8	8	7	7	6	6
175	6	6	7	7	9	9	8	8	8	9	8	8	8	7	7	7	6
176	7	6	7	7	9	8	8	8	8	8	8	8	8	7	7	7	7
177	7	6	7	7	8	8	8	8	8	8	8	7	7	8	7	7	7
178	7	6	7	7	8	8	8	8	8	8	7	7	7	8	7	7	7
179	7	7	7	7	8	8	8	7	8	7	7	7	7	8	7	7	7
180	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7

<b>2.2 Electrical, Photometric and Chromaticity Measurements</b> (Refer to Work Instruction QD25)	<b>IES LM-79 2008</b>
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<b>Test date</b>	2015-04-21	<b>Test Ambient:</b>	25.2 ° C
<b>Test Orientation</b>	As intended	<b>Stabilization Time (min)</b>	90
<b>Model Number</b>	83520 (5000K)		

### Electrical Measurement:

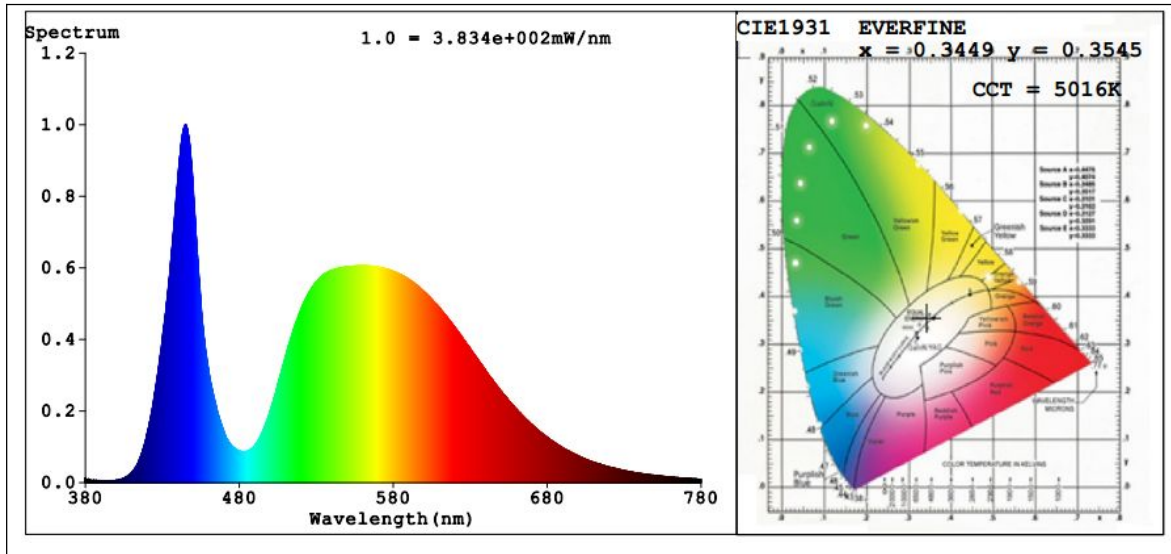
Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
GZE150406	120.0	60	1.671	199.4	0.9944	6.21
-J2	277.0	60	0.7802	197.2	0.9125	12.64

### Sphere-Spectroradiometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Color Rendering Index (CRI)	71.9
R9	0
CCT (K)	5016
Chromaticity (x, y)	x=0.3449 y=0.3545
Chromaticity (u', v')	u'=0.2102 v'=0.4861
Duv	0.0015
Total Luminous (lm)	20424
Luminous Efficacy (lm/W)	102.43

Special Color Rendering Indices			
R1	72	R9	0
R2	75	R10	39
R3	76	R11	73
R4	74	R12	45
R5	72	R13	71
R6	66	R14	86
R7	79	R15	67
R8	62	--	--

**Spectral Power Distribution & Chromaticity Diagram**



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### 3. Test Equipment

Equipment ID	Equipment Name	Last Calibration Date	Next Calibration Date
ST-R-336	2 meter Integrating Sphere	2014-07-01	2015-06-30
ST-R-331	Spectral analysis system HAAS-2000	2014-07-01	2015-06-30
D204	Standard Lamp	2014-07-01	2015-06-30
PF2010	Power Meter for Integrating Sphere	2014-07-01	2015-06-30
EE-09	Goniophotometer system	2014-07-01	2015-06-30
D908S	Standard Lamp	2014-07-01	2015-06-30
PF210	Power Meter for Goniophotometer	2014-07-01	2015-06-30
ST-R-181A	Temperature Tester	2014-07-01	2015-06-30
Uncertainty Photometric Measurement (Sphere):1.74% Chromaticity Measurement(Sphere):14.3K Photometric Measurement(Goniophotometer):1.62%			

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