

**Test Datasheet**

Test Location:	<input type="checkbox"/>	1. B802, No.11 Caipin Road, Guangzhou Science City, Guangzhou, Guangdong, China
	<input checked="" type="checkbox"/>	2. R108, 1 st Floor No.69 GuangPu West Road, Guangzhou Science City, Guangzhou, Guangdong, China
	<input type="checkbox"/>	3. Other:
Project No.:	GZO130803-13B	Test by: Mountain Ye
Applicant:	Light Efficient Design, LLC	
Applicant Address	188 S. Northwest Highway, Cary, IL 60013, USA	
Standard/Method	IES LM-79 2008	

Test & Report By:

Mountain Ye

Mountain Ye

Date: 2013-09-02

Review By:

Tommy Liang

Tommy Liang

Test No.	Done +++	Test Name
1	X	Electrical and Photometric Measurements:

Model No.	Sample No.	Sample acceptance Y/N	Product Identification and Ratings
LED-8024M57	1309019-2	Y	LED Lamp, 120-277 Vac, 50/60Hz employed LED of SAMSUNG LED, TYPE 5630

Model name(s):	LED-8024M57, LED-8024M57C	Representative (Tested) Model:	LED-8024M57	All construction are the same, except model name

TEST METHODS

1. Seasoning in Sample Orientation:

See IES LM-80 report (LED products) or Energy Star Report for CFL/ILL.

2. 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° vertical intervals and 22.5° horizontal intervals.

3. 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.

1.1 Electrical and Photometric Measurements
(Refer to Work Instruction QD25)

IES LM-79 2008

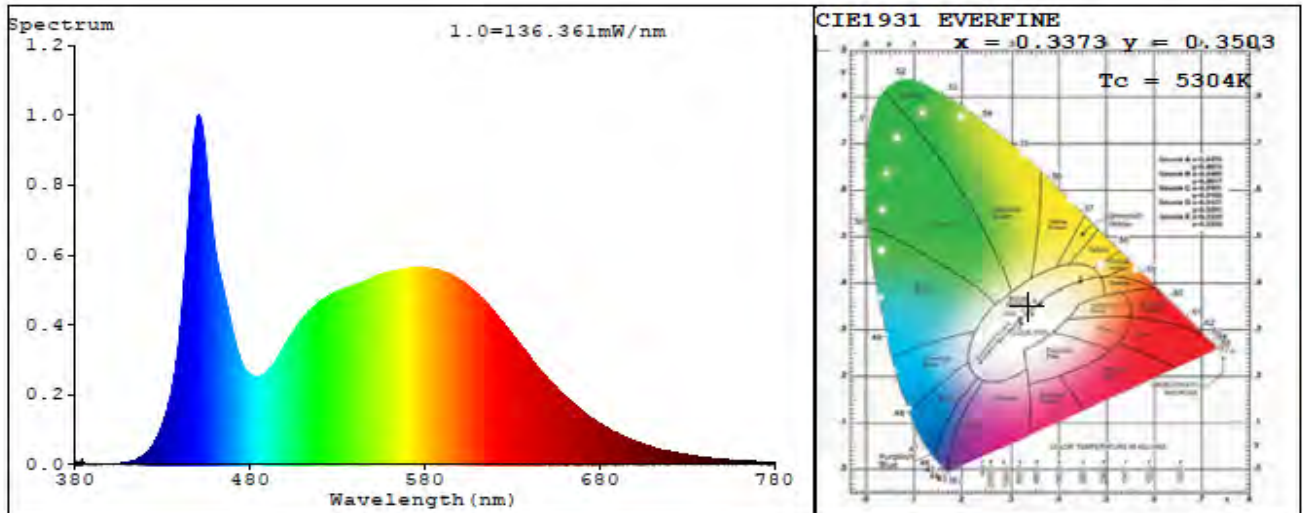
Electrical Measurement

Test date	2013-09-02		Test Ambient:	25.5 ° C		
Sample No.	Voltage (V AC)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD
1309019-2	120.0	60	0.4092	45.6	0.9226	7.53%
	277.1	60	0.1786	45.7	0.9276	17.15%

Photometric and Chromaticity Measurements

Test date	2013-09-02		Test Ambient:	25.5 ° C		
Sample No.	Voltage (V AC)		Frequency (Hz)			
1309021-2	120.0		60			
Lumen Flux (lm)		Efficacy (lm/w)	CRI	R9	CCT (K)	
4992		109.5	82.7	6	5304	
Chromaticity Coordinate			Duv			
x=0.3373 y=0.3503		u'=0.2067 v'=0.4829		0.0025		

Color Data:



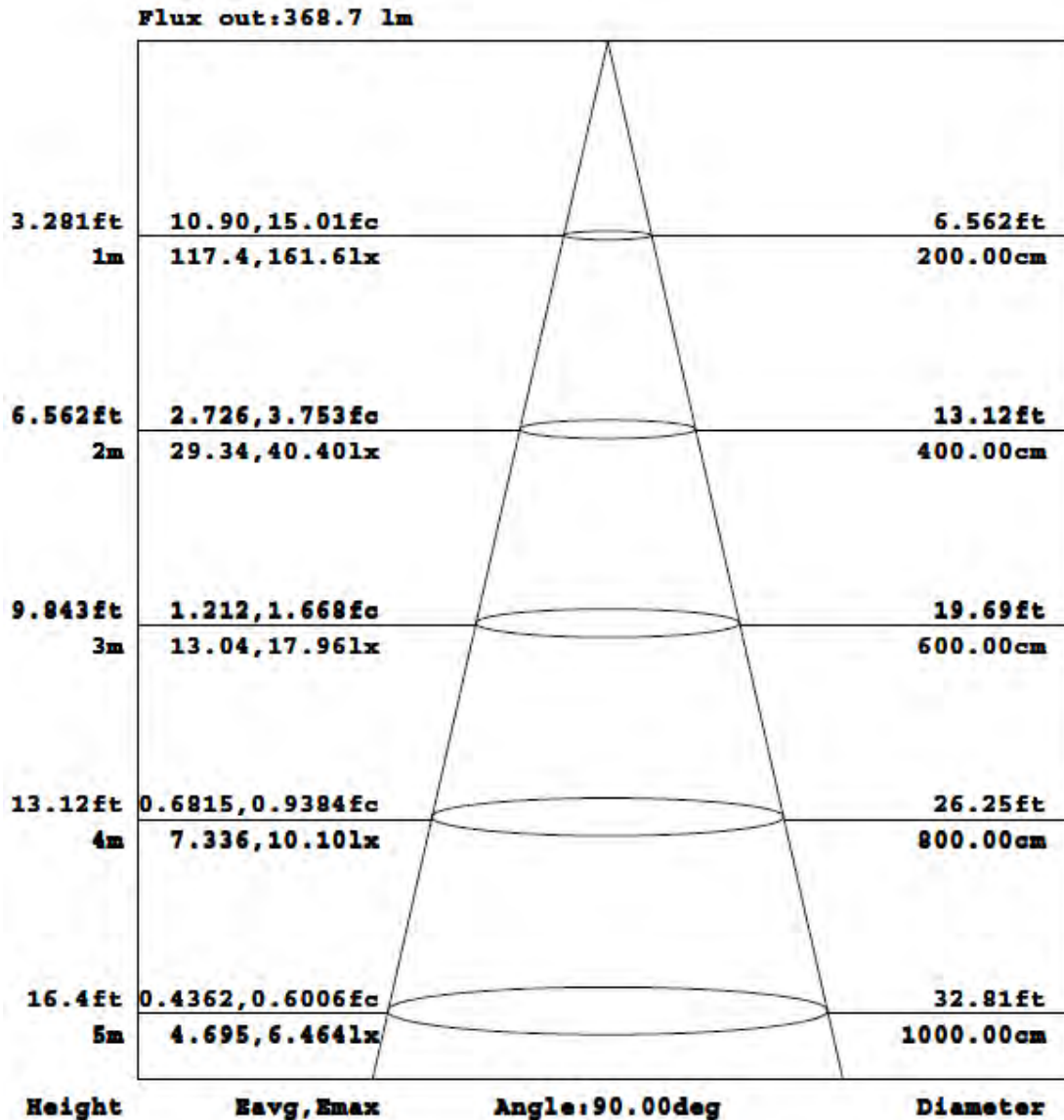
Color Parameters:

Chromaticity Coordinate: x=0.3373 y=0.3503/u'=0.2067 v'=0.4829
 Tc=5304K (Duv=0.0025) Dominant WL:Ld =563.3nm Purity=6.3%
 Peak WL:Lp=450.9nm HWL:Lhd=22.7nm
 Render Index: Ra=82.7 CRI=75.5
 R1 =81 R2 =88 R3 =92 R4 =82 R5 =81 R6 =83 R7 =87
 R8 =67 R9 =6 R10=71 R11=80 R12=60 R13=83 R14=96 R15=76

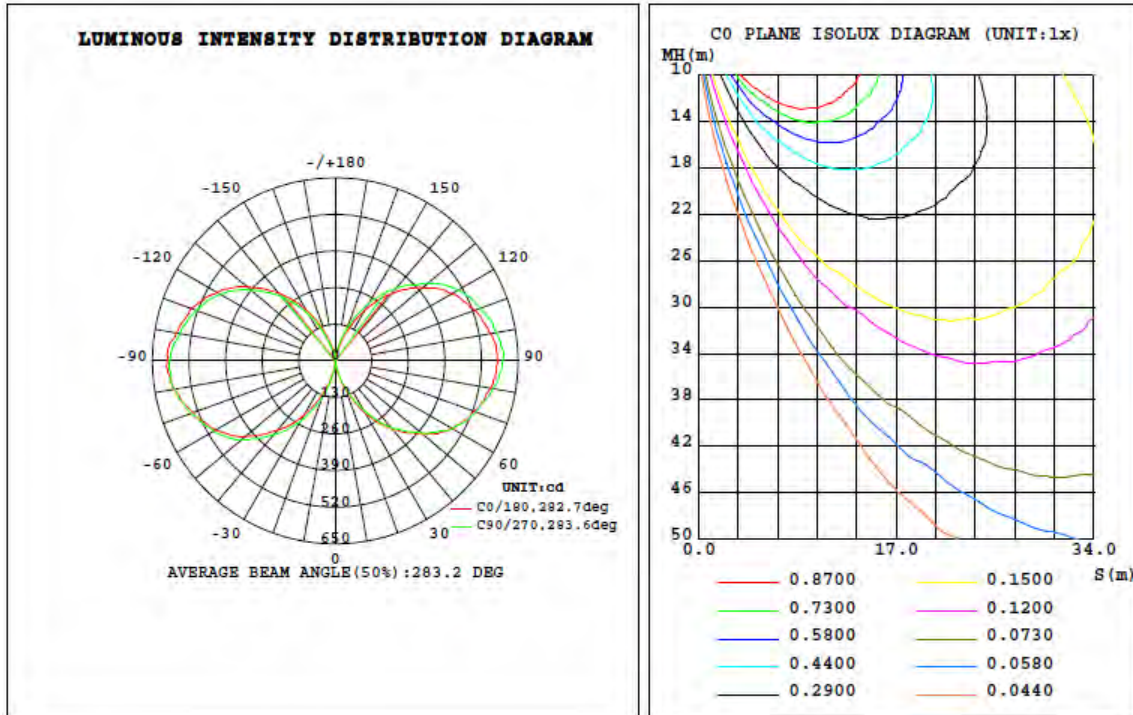
Zonal Lumen Summary

Zone	%Lamp / Luminaire
0 - 60	18.0 %
60 - 90	32.3 %
0 - 90	50.3 %
90 - 180	49.7 %
0 - 180	100.0 %

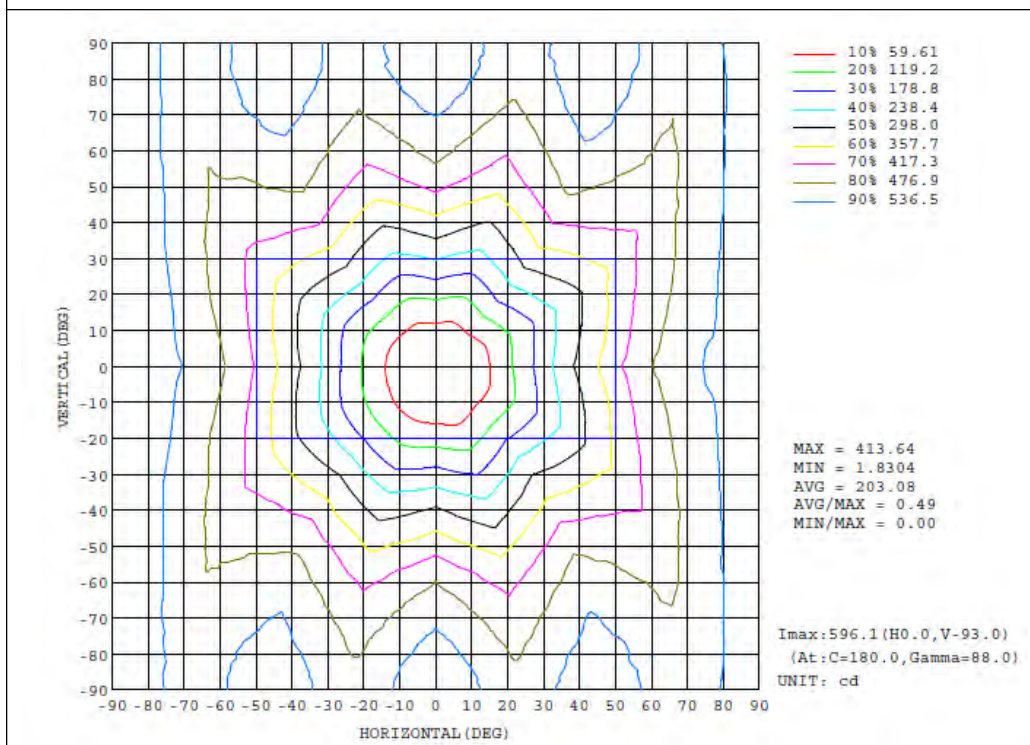
Illuminance Plots



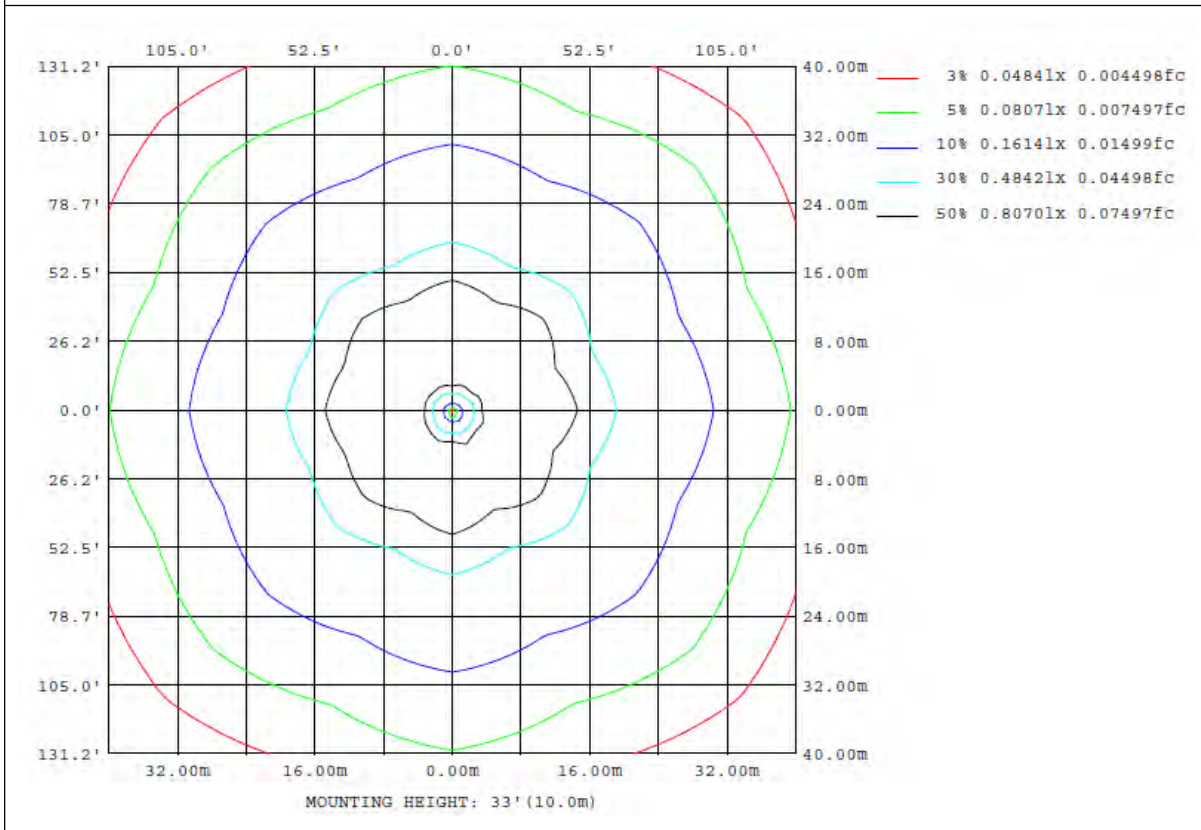
Candela Plots



ISOCANDELA DIAGRAM



ISOLUX DIAGRAM



Candela Tabulation

Table--1

UNIT: cd

γ (DEG) \ C (DEG)	0	23	45	68	90	113	135	158	180	203	225	248	270	293	315	338			
0	4.01	4.01	4.01	4.01	4.01	4.01	4.01	4.01	4.01	4.01	4.01	4.01	4.01	4.01	4.01	4.01			
5	10.8	9.37	8.29	7.54	7.45	8.40	9.63	11.2	12.7	15.0	16.3	16.4	17.2	16.1	14.2	12.1			
10	28.2	24.8	24.5	20.2	23.2	24.2	27.1	31.1	33.4	36.5	40.9	40.5	45.8	39.8	38.6	28.6			
15	60.2	53.5	57.4	45.0	52.8	53.2	54.8	61.2	67.9	70.1	80.6	75.9	87.9	74.8	77.4	56.6			
20	109	91.9	99.1	80.1	96.5	90.5	94.4	97.4	115	113	128	119	137	114	124	92.2			
25	156	133	151	121	149	133	143	139	166	157	181	163	190	160	177	133			
30	214	176	203	164	201	177	194	182	221	205	235	214	245	205	227	171			
35	268	221	257	208	256	225	247	225	275	254	290	256	295	246	281	214			
40	316	258	309	250	309	267	294	263	322	293	334	294	344	285	325	247			
45	359	296	352	288	352	302	337	297	372	330	386	337	390	325	365	281			
50	403	333	399	327	398	340	382	335	418	370	433	375	435	363	408	313			
55	447	368	440	364	441	375	420	367	457	404	471	407	472	398	451	347			
60	479	398	478	395	481	404	454	391	494	430	500	434	502	422	478	373			
65	505	424	505	424	509	429	482	412	514	450	522	455	522	445	503	395			
70	523	448	528	445	531	450	502	428	541	469	544	477	544	467	521	416			
75	547	467	552	463	551	468	523	444	565	486	570	497	564	484	547	429			
80	562	484	566	478	568	478	539	458	582	505	584	509	579	499	555	444			
85	571	498	581	497	584	494	554	466	591	507	594	514	586	507	561	453			
90	579	508	595	503	595	501	561	473	600	508	592	516	591	509	565	461			
95	574	505	592	499	594	498	561	468	594	495	583	504	579	502	559	452			
100	561	495	578	490	581	482	549	456	575	485	567	493	563	492	545	439			
105	543	480	562	477	570	469	538	443	558	466	549	477	546	475	531	433			
110	528	464	542	462	547	452	517	426	548	452	533	458	523	461	509	418			
115	503	445	521	443	531	435	496	401	517	428	512	440	504	440	489	400			
120	480	425	501	419	503	413	474	378	486	406	479	411	473	414	461	380			
125	447	401	465	391	473	384	440	351	452	376	442	377	437	382	426	353			
130	406	369	424	360	431	355	399	322	411	342	395	339	390	343	384	320			
135	360	329	376	319	383	318	355	283	365	298	349	296	346	301	341	283			
140	311	289	332	278	339	277	310	248	317	259	299	257	298	258	293	245			
145	262	245	281	240	288	237	264	209	266	218	247	210	246	209	244	203			
150	204	197	225	192	234	190	209	165	206	174	190	165	192	162	191	156			
155	151	149	169	146	178	145	157	123	152	132	133	119	136	116	138	114			
160	99.4	104	116	103	126	102	106	84.5	102	92.5	80.0	78.1	77.8	72.9	84.3	72.8			
165	55.2	61.7	66.5	61.3	73.9	60.4	60.8	48.9	55.9	53.9	42.1	40.8	36.7	37.3	40.7	39.9			
170	22.7	27.6	29.0	28.1	33.7	28.0	26.1	20.8	20.0	20.6	15.0	12.8	11.2	11.8	13.0	14.6			
175	5.15	6.50	7.24	8.08	7.72	7.45	5.65	4.36	2.57	2.86	1.10	0.37	0.10	0.00	0.95	1.79			
180	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			

Annex (Photo of Products):



Test Equipment

Equipment ID	Equipment Name	Last Calibration Date	Next Calibration Date
ST-R-336	2 meter Integrating Sphere	2013-07-08	2014-07-07
ST-R-331	Spectral analysis system HAAS-2000	2013-06-21	2014-06-20
D204	Standard Lamp	2013-06-28	2014-06-27
PF2010	Power Meter for Integrating Sphere	2013-06-20	2014-06-19
EE-09	Goniophotometer system	2013-06-21	2014-06-20
D908S	Standard Lamp	2013-07-05	2014-07-04
PF210	Power Meter for Goniophotometer	2013-06-20	2014-06-19
ST-R-181A	Temperature Tester	2013-08-14	2014-08-13

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