

**Test Report**

Test Location:	[]	1. B802, No.11 Caipin Road, Guangzhou Science City, Guangzhou, Guangdong, China	
	[✓]	2. R108, 1 st Floor No.69 GuangPu West Road, Guangzhou Science City, Guangzhou, Guangdong, China	
	[]	3. Other:	
Project No.:	GZO130803-04A		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, Photometric and Chromaticity Measurements:

Model No.	Sample No.	Sample acceptance Y/N	Product Identification and Ratings
LED-8030M42	1309023-1	Y	LED Lamp, 120-277 Vac, 50/60Hz employed LED of SAMSUNG LED, TYPE 5630

Model name(s):	LED-8030M42, LED-8030M42C	Representative (Tested) Model:	LED-8030M42	All construction are the same, except model name
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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, Photometric and Chromaticity Measurements
(Refer to Work Instruction QD25)

IES LM-79 2008

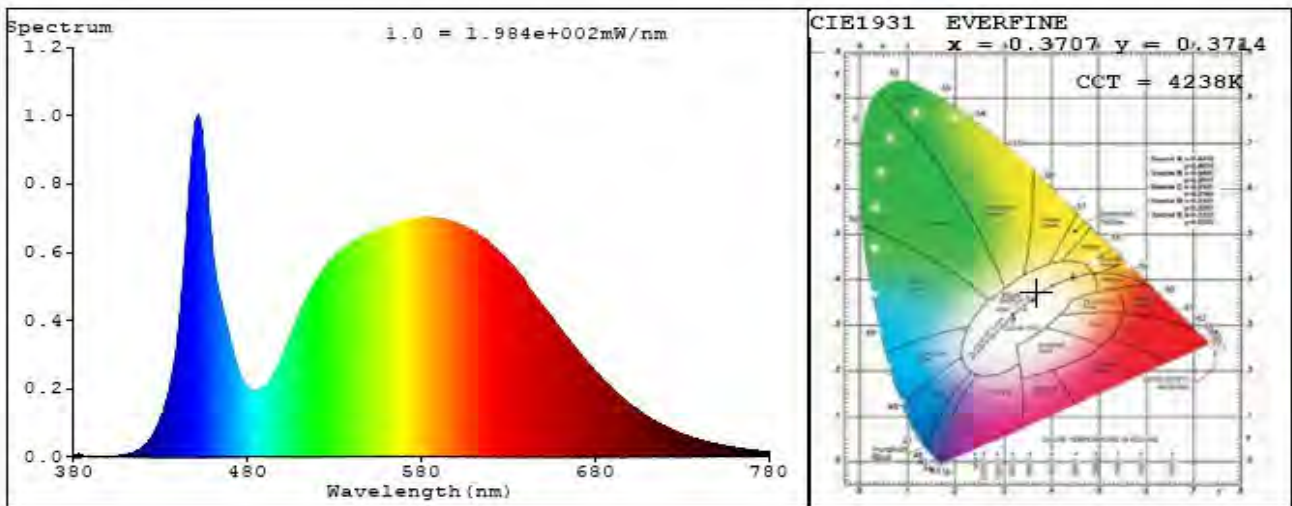
Electrical Measurement

Test date	2013-09-02		Test Ambient:	25.5 ° C		
Sample No.	Voltage (V AC)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD
1309023-1	119.9	60	1.272	149.7	0.9815	11.35%
	276.9	60	0.563	149.1	0.9550	17.31%

Photometric and Chromaticity Measurements

Test date	2013-09-02		Test Ambient:	25.5 ° C		
Sample No.	Voltage (V AC)		Frequency (Hz)			
1309023-1	119.9		60			
Lumen Flux (lm)		Efficacy (lm/w)	CRI	R9	CCT (K)	
13874		92.67	82.9	26	4238	
Chromaticity Coordinate			Duv			
x=0.3707 y=0.3714		u'=0.2208 v'=0.4978		0.0005		

Color Data:



Colorimetric Quantities

Chromaticity Coordinate: x=0.3707 y=0.3714/u'=0.2208 v'=0.4978

CCT=4238K (Duv=0.0005) Dominant WL:Ld =577.8nm Purity=22.7%

Peak WL:Lp=451.7nm FWHM=20.1nm

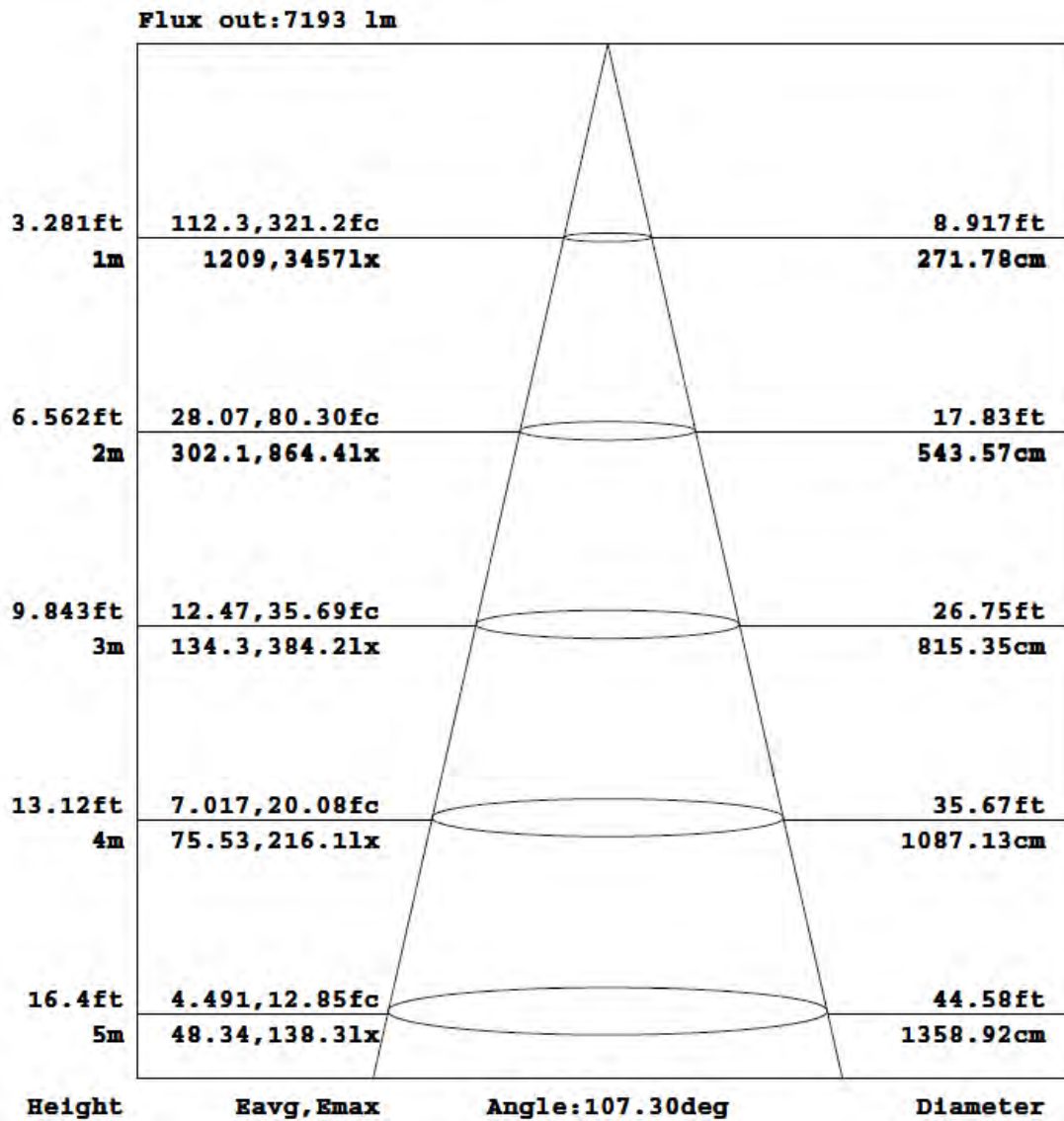
Render Index:Ra=82.9

R1 =82 R2 =87 R3 =89 R4 =82 R5 =81 R6 =80 R7 =89
R8 =73 R9 =26 R10=68 R11=79 R12=53 R13=83 R14=94 R15=79

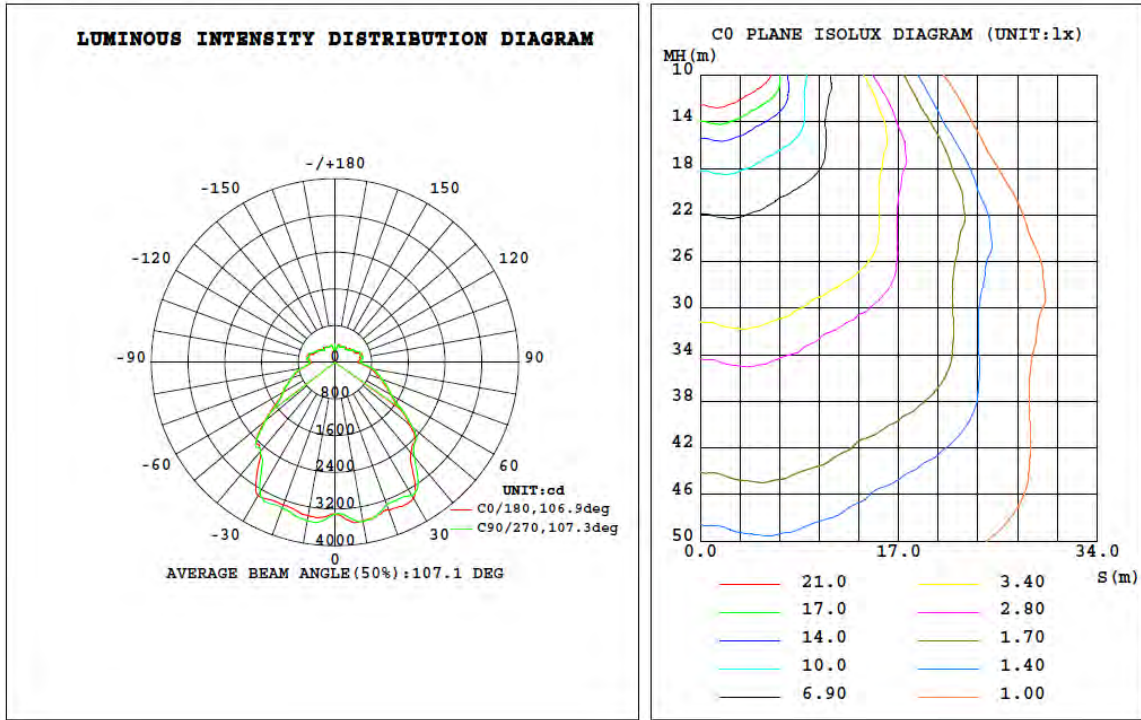
Zonal Lumen Summary

Zone	%Lamp / Luminaire
0 - 60	58.0 %
60 - 90	20.2 %
0 - 90	78.2 %
90 - 180	17.4 %
0 - 180	100 %

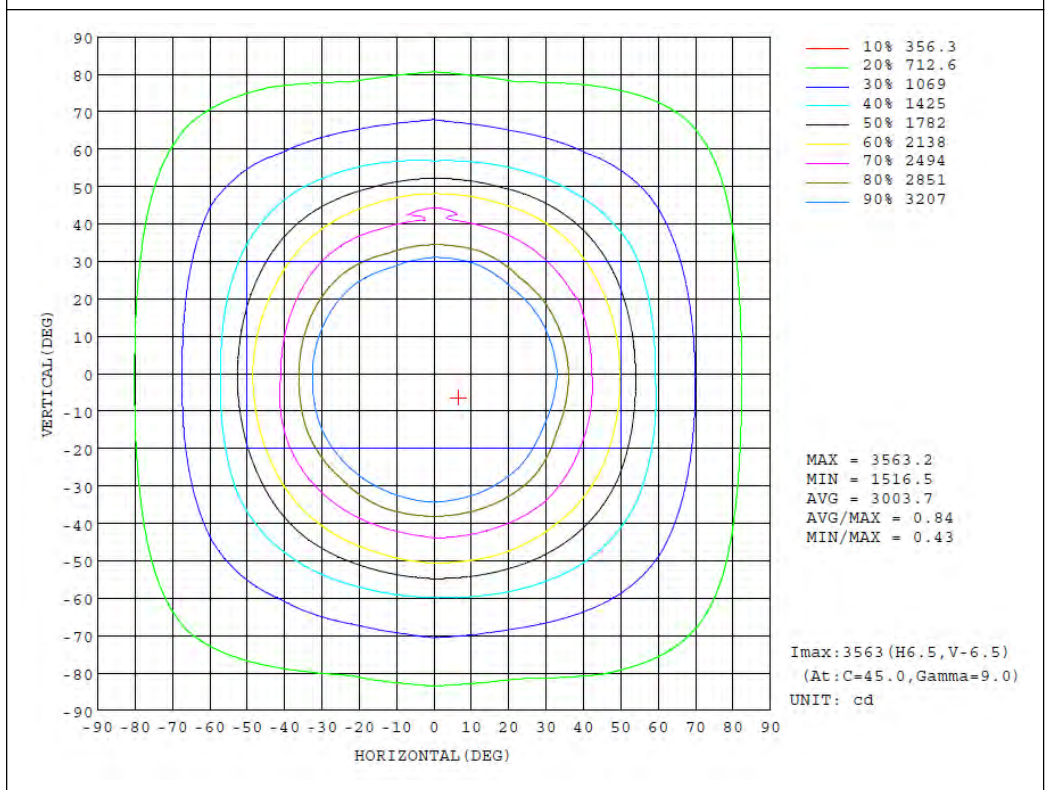
Illuminance Plots



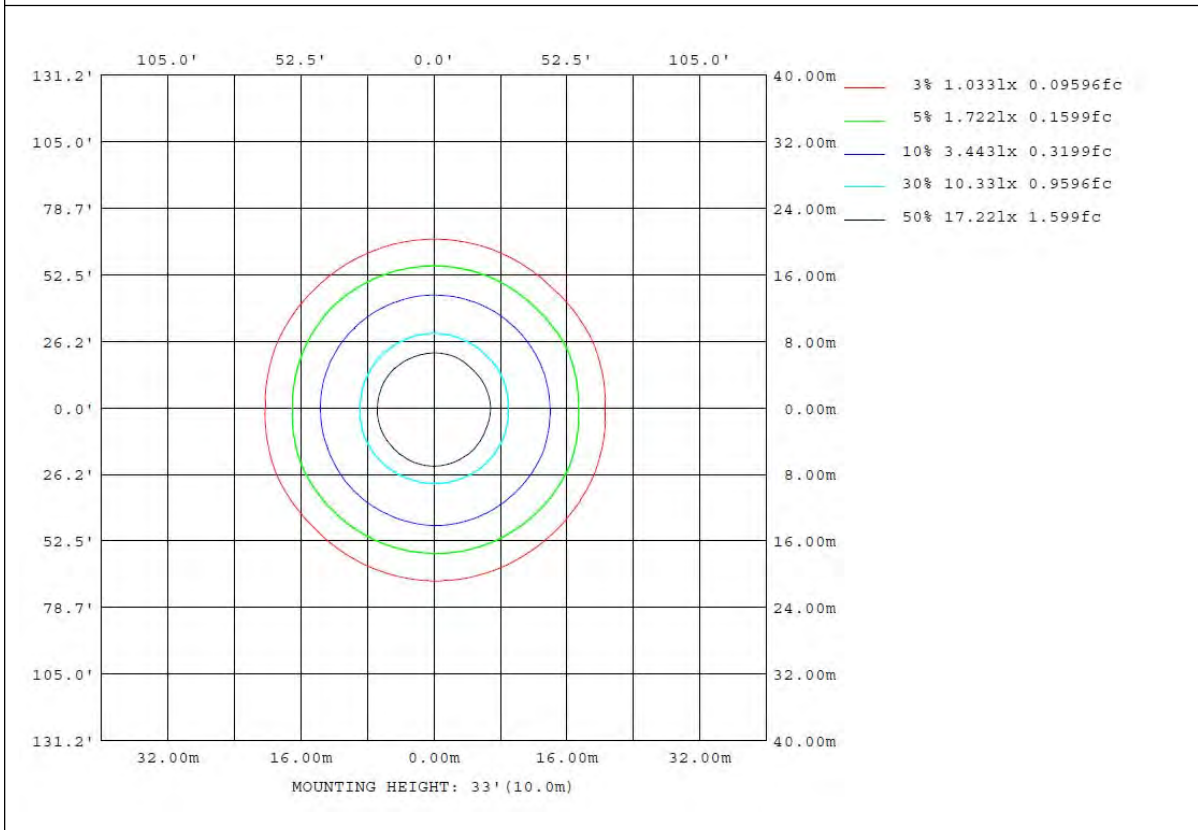
Candela Plots



ISOCANDELA DIAGRAM



ISOLUX DIAGRAM



Candela Tabulation

Table--1

UNIT: cd

C (DEG) \ γ (DEG)	0	23	45	68	90	113	135	158	180	203	225	248	270	293	315	338			
0	3305	3305	3305	3305	3305	3305	3305	3305	3305	3305	3305	3305	3305	3305	3305	3305			
5	3459	3456	3432	3418	3393	3384	3384	3384	3388	3426	3441	3471	3481	3501	3453	3465			
10	3511	3550	3548	3526	3513	3454	3477	3444	3393	3452	3433	3447	3508	3501	3486	3554			
15	3464	3508	3497	3444	3472	3428	3431	3421	3337	3368	3406	3381	3451	3465	3451	3504			
20	3431	3446	3405	3358	3304	3339	3293	3306	3306	3290	3358	3382	3375	3406	3407	3413			
25	3464	3437	3432	3404	3284	3294	3259	3257	3312	3338	3361	3406	3394	3408	3421	3404			
30	3423	3375	3382	3406	3347	3328	3344	3343	3355	3349	3302	3247	3266	3295	3242	3333			
35	2971	2963	3068	3120	3160	3126	3010	3041	2975	2940	2883	2795	2785	2817	2730	2851			
40	2567	2665	2699	2697	2689	2688	2681	2674	2554	2574	2602	2541	2519	2554	2581	2568			
45	2472	2419	2409	2461	2466	2377	2307	2347	2440	2351	2308	2337	2423	2396	2365	2466			
50	2115	2155	2134	2197	2221	2082	2015	1987	2009	1951	1950	1941	1973	1970	2022	2069			
55	1685	1774	1763	1770	1766	1699	1649	1599	1574	1582	1544	1552	1512	1569	1586	1647			
60	1398	1489	1459	1453	1413	1402	1378	1382	1309	1330	1341	1322	1316	1314	1318	1423			
65	1218	1260	1243	1256	1254	1214	1164	1201	1154	1178	1127	1130	1141	1131	1130	1220			
70	1068	1100	1074	1063	1083	1026	1012	1043	1010	1039	987	967	1022	967	993	1044			
75	912	943	938	920	953	882	888	900	882	887	871	838	897	830	877	912			
80	796	819	835	796	847	749	760	757	716	728	721	674	731	674	725	776			
85	617	630	640	601	649	586	579	604	570	597	578	540	596	549	577	606			
90	510	538	547	513	566	502	515	531	520	528	525	494	548	491	508	526			
95	535	551	565	528	572	535	566	576	565	587	582	554	611	541	568	563			
100	558	584	570	555	629	565	568	625	589	583	595	577	602	550	575	583			
105	579	566	573	551	583	564	591	591	615	581	575	590	588	590	569	575			
110	591	578	584	585	587	555	555	562	505	554	538	549	585	544	553	569			
115	495	550	531	532	577	523	489	502	513	505	493	497	512	495	491	516			
120	470	508	491	491	502	476	477	493	467	481	467	471	486	477	468	494			
125	454	470	461	467	477	462	443	457	454	452	438	454	441	443	445	454			
130	444	415	417	438	429	416	427	429	430	428	411	420	400	414	399	413			
135	416	403	395	407	385	386	379	395	384	392	378	385	375	383	377	404			
140	380	383	376	383	363	374	378	385	395	396	387	394	363	386	381	382			
145	402	403	401	406	375	392	406	411	397	403	426	412	396	406	416	411			
150	400	412	429	406	393	397	420	410	393	398	420	403	385	397	422	418			
155	384	405	415	393	375	393	405	403	376	378	410	383	364	380	405	402			
160	372	398	408	383	355	379	399	397	355	365	386	381	362	368	392	401			
165	390	405	413	384	379	372	398	399	368	391	404	400	379	395	384	389			
170	368	389	414	379	380	373	395	374	355	351	376	398	359	344	362	365			
175	303	288	277	301	297	260	276	301	252	256	295	282	253	288	292	263			
180	352	352	362	349	396	354	398	334	315	313	303	341	347	322	339	362			

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

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