

**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.:	GZO130803-10A	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-8024E42	1309022-1	Y	LED Lamp, 120-277 Vac, 50/60Hz employed LED of SAMSUNG LED, TYPE 5630

Model name(s):	LED-8024E42, LED-8024E42C	Representative (Tested) Model:	LED-8024E42	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 and Photometric Measurements
(Refer to Work Instruction QD25)

IES LM-79 2008

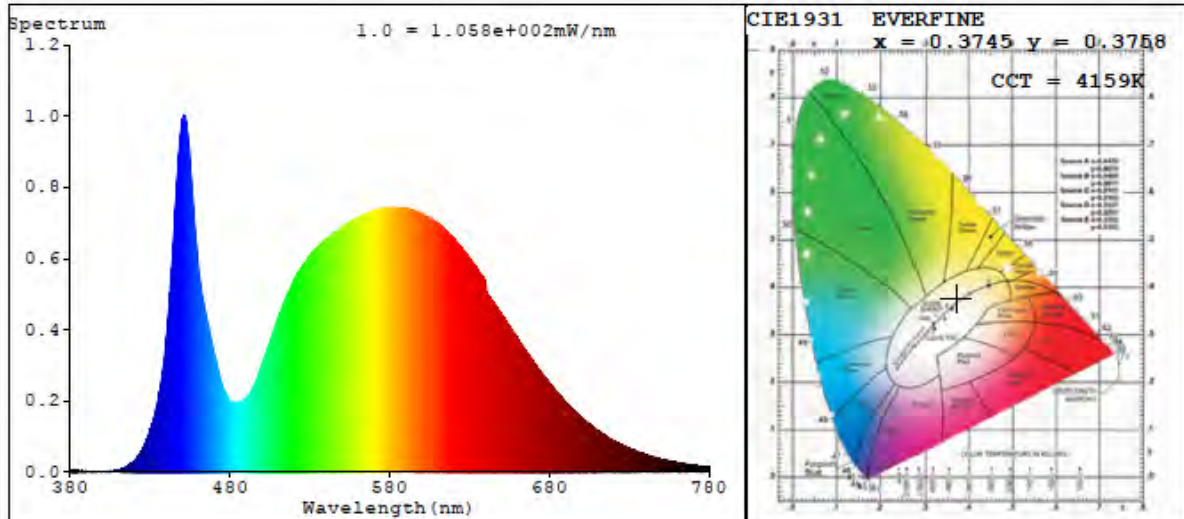
Electrical Measurement

Test date	2013-09-02		Test Ambient:	25.5 ° C		
Sample No.	Voltage (V AC)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD
1309022-1	120.0	60	0.4150	45.5	0.9133	13.81%
	277.0	60	0.1771	45.7	0.9343	17.82%

Photometric and Chromaticity Measurements

Test date	2013-09-02		Test Ambient:	25.5 ° C		
Sample No.	Voltage (V AC)		Frequency (Hz)			
1309022-1	120.0		60			
Lumen Flux (lm)	Efficacy (lm/w)	CRI	R9	CCT (K)		
4958	109.04	81.7	19	4159		
Chromaticity Coordinate			Duv			
x=0.3745 y=0.3758		u'=0.2216 v'=0.5003	0.0013			

Color Data:



Colorimetric Quantities

Chromaticity Coordinate: x=0.3745 y=0.3758/u'=0.2216 v'=0.5003

CCT=4159K(Duv=0.0013) Dominant WL:Ld =577.7nm Purity=25.1%

Peak WL:Lp=451.3nm FWHM=20.1nm

Render Index:Ra=81.7

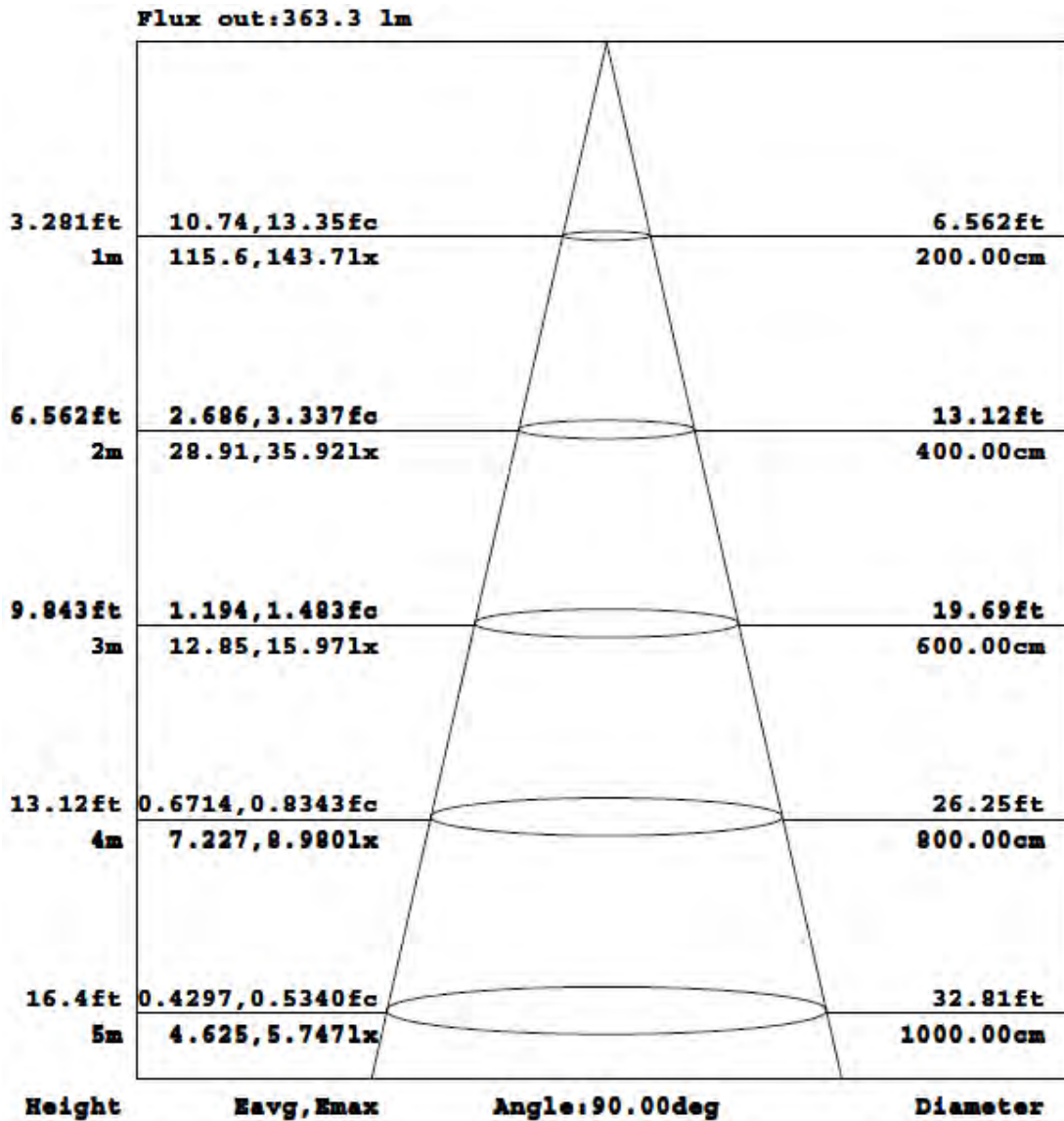
R1 =80 R2 =86 R3 =89 R4 =81 R5 =79 R6 =79 R7 =89

R8 =70 R9 =19 R10=65 R11=77 R12=51 R13=81 R14=94 R15=77

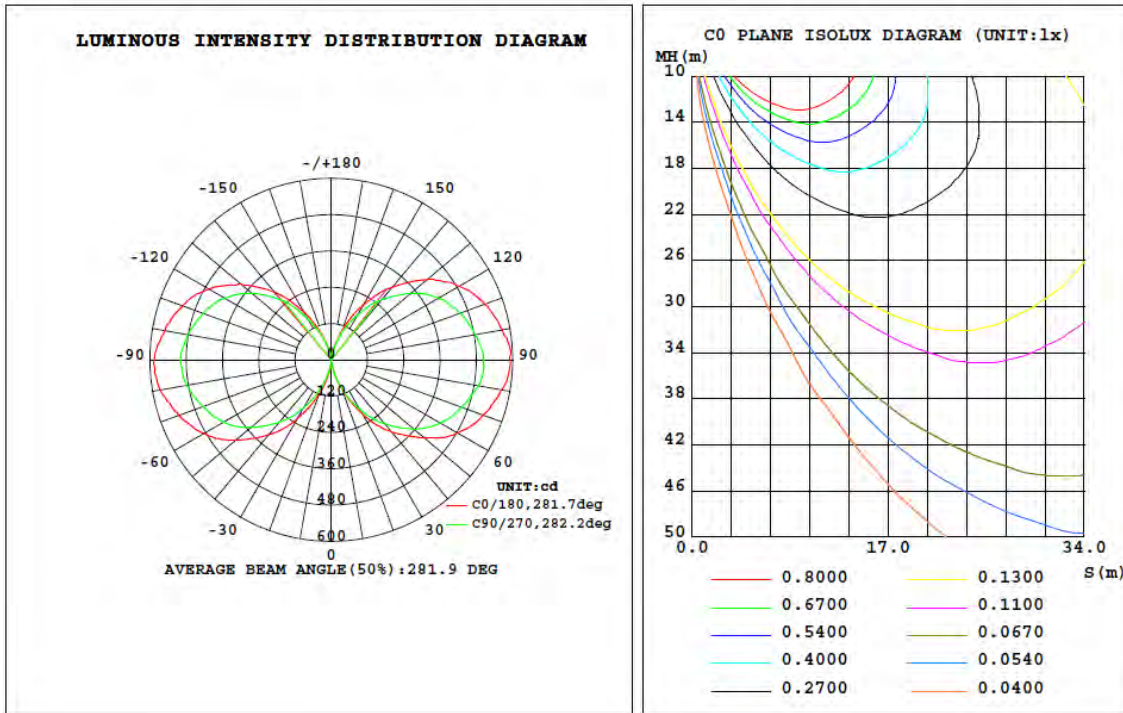
Zonal Lumen Summary

Zone	%Lamp / Luminaire
0 - 60	18.0 %
60 - 90	32.5 %
0 - 90	50.5 %
90 - 180	49.5 %
0 - 180	100 %

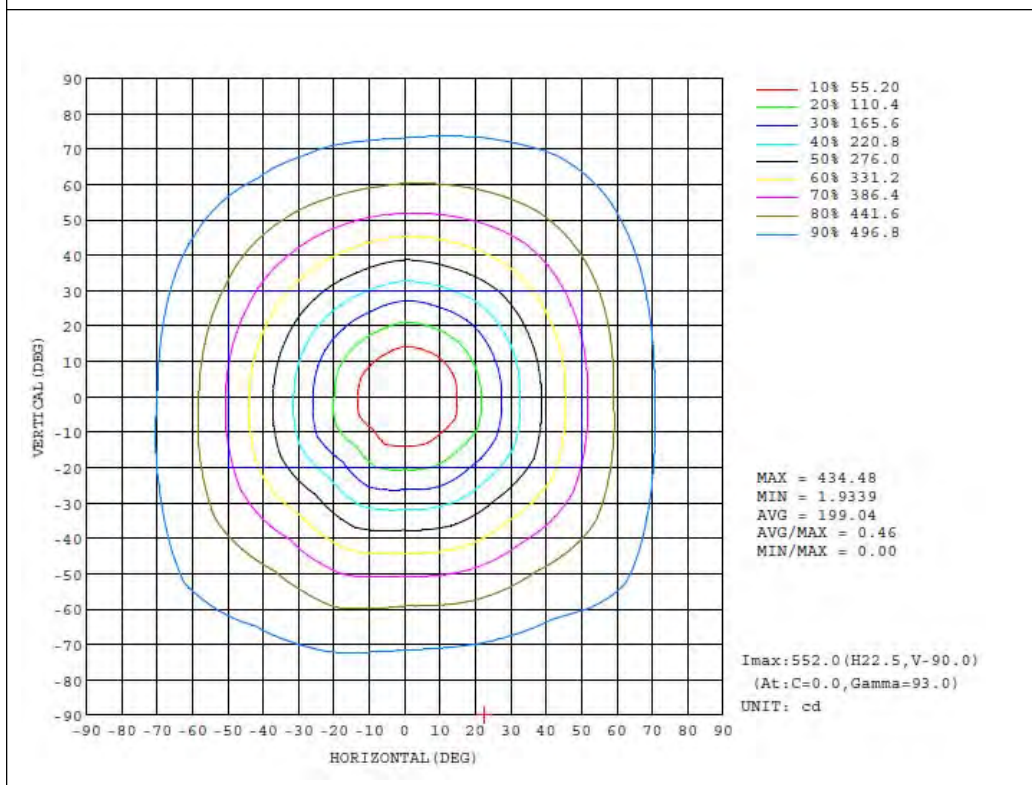
Illuminance Plots



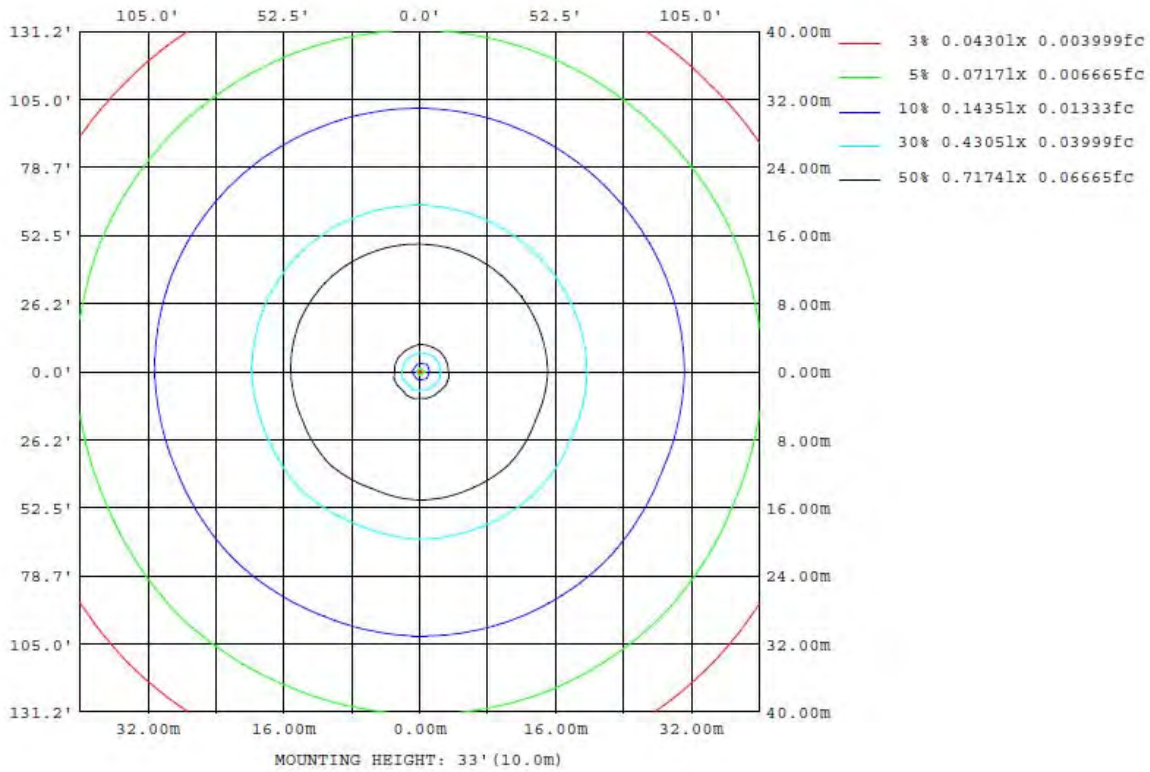
Candela Plots



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	2.51	2.51	2.51	2.51	2.51	2.51	2.51	2.51	2.51	2.51	2.51	2.51	2.51	2.51	2.51	2.51			
5	10.3	9.81	10.2	11.2	10.9	11.5	13.6	13.8	15.1	14.7	13.9	14.0	11.6	10.7	10.4	9.97			
10	28.5	24.7	27.8	28.7	28.3	27.3	37.0	33.0	38.4	35.0	35.2	35.5	28.0	27.9	26.3	26.6			
15	61.0	52.8	58.6	59.8	60.6	54.7	71.5	64.2	73.1	67.5	67.6	70.4	57.3	56.8	58.1	56.7			
20	104	92.3	96.8	101	98.2	91.5	115	104	120	111	110	114	94.6	96.1	97.6	99.0			
25	154	137	146	151	143	134	165	153	171	161	157	162	138	140	144	146			
30	207	186	191	199	188	179	213	201	223	211	204	212	180	182	189	195			
35	263	239	242	250	236	225	263	253	277	263	255	263	229	231	240	248			
40	311	281	288	296	275	267	307	298	322	310	297	307	269	272	286	295			
45	354	323	329	338	316	305	347	339	367	352	338	347	308	309	329	337			
50	400	367	371	384	356	345	390	383	412	395	380	389	347	345	367	378			
55	447	409	410	422	390	380	424	421	454	434	417	427	382	383	407	420			
60	482	441	442	454	417	407	455	451	487	462	447	459	412	411	440	454			
65	513	469	469	479	440	430	477	478	513	487	468	483	434	434	465	482			
70	534	489	487	503	459	453	496	501	538	508	490	501	453	453	484	505			
75	554	512	507	528	476	472	514	519	554	528	504	518	470	468	503	524			
80	572	530	524	548	494	491	533	537	574	544	520	534	486	484	519	544			
85	588	546	537	563	503	501	542	548	584	553	530	542	495	493	531	555			
90	592	549	542	565	505	503	544	549	587	557	534	546	499	497	538	562			
95	590	546	535	559	497	496	535	544	578	546	526	537	492	490	533	556			
100	575	530	521	544	483	482	520	529	559	532	513	522	483	478	520	540			
105	559	517	507	530	470	472	505	515	544	516	499	506	467	464	504	522			
110	540	497	490	512	454	453	488	495	525	496	483	488	453	447	489	505			
115	518	477	467	488	434	434	467	474	501	472	462	466	432	426	468	480			
120	488	450	444	463	409	411	441	447	469	443	433	437	408	400	441	454			
125	452	417	411	429	379	380	406	411	429	408	400	405	378	370	413	423			
130	414	377	371	392	342	344	365	370	388	366	360	365	343	336	375	382			
135	363	333	328	349	300	305	321	326	339	324	316	322	301	297	332	335			
140	314	288	285	304	262	264	279	283	293	281	271	278	259	259	286	295			
145	264	241	237	254	217	219	229	230	239	236	216	233	212	220	234	250			
150	207	189	186	202	169	173	179	177	185	187	163	190	157	176	174	203			
155	155	141	136	153	126	126	130	128	130	137	114	142	109	132	124	155			
160	105	94.8	90.4	103	84.6	83.7	83.7	80.1	82.8	86.8	73.5	93.5	71.8	88.0	81.9	105			
165	59.3	51.4	50.2	57.2	47.3	43.5	44.7	41.4	43.3	42.7	38.3	48.2	38.7	46.2	44.9	58.7			
170	25.2	21.2	20.7	23.7	19.2	16.7	16.5	15.1	14.4	13.9	13.2	16.5	14.3	16.7	18.0	23.2			
175	5.02	4.29	3.89	3.57	3.07	2.28	2.19	1.84	0.34	0.32	0.66	1.65	1.31	1.37	3.25	3.81			
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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