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## Photometric Test Report

Relevant Standards  
IES LM-79-2008  
ANSI C78.377-2011, ANSI C82.77-2002  
CIE 13.3-1995, CIE 15-2004, IES TM-30-15

**Prepared For**  
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**Catalog Number**  
**LE481-115-V1-A-5**  
Order Number  
11304304  
Test Number  
1260404

Test Date

2016-06-13

Prepared By

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Approved By

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The results contained in this report pertain only to the tested sample.  
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Laboratory results may not be representative of field performance  
Ballast factors have not been applied

Testing was performed in a 3-meter integrating sphere using the  $4\pi$  geometry method.  
Absorption correction was employed for Sphere measurement



**Luminaire Description:** White steel enamel housing, white steel reflector, frosted plastic lens with clear glass lens enclosure  
**Lamp:** 320 White LEDs  
**Mounting:** Recessed  
**Ballast/Driver:** Thomas Research Products PLED75W-054-C1400

**Luminaire**



**Luminaire Characteristics**  
Luminous Length: 48.00 in.  
Luminous Width: 7.375 in.

### Summary of Results

#### Integrating Sphere

Luminous Flux: 11490 Lumens  
Efficacy: 106.0 lm/w  
CCT: 5399 K  
CRI (Ra): 85.6

#### Distribution

Total Luminaire Output: 11180 Lumens  
Luminaire Efficacy: 103.1 lm/w  
Maximum Candela: 4159 Candela

#### Electrical Data at 120 VAC

Test Temperature: 25.1 °C  
Voltage: 120.0 VAC  
Current: 0.9095 A  
Power: 108.4 W  
Power Factor: 0.993  
Frequency: 60 Hz  
Current THD: 6.61 %



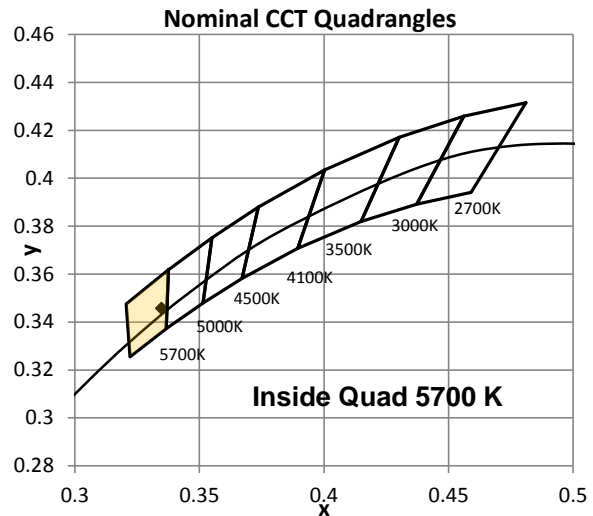
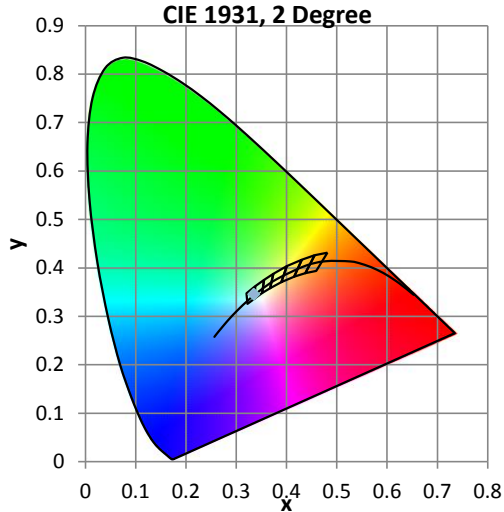
## Color Quality - Integrating Sphere

### Integrating Sphere Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.1 °C	120.0 VAC	0.9095 A	108.4 W	0.993	60 Hz	6.61 %

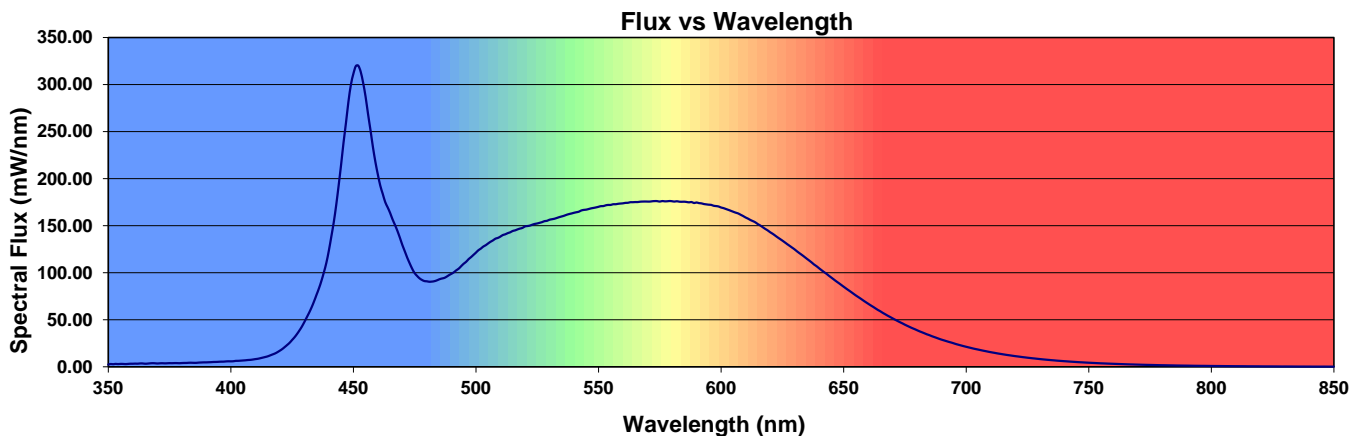
### Summary of Results

<b>Total Output:</b>	11490 Lumens	<b>Chromaticity (x):</b>	0.3348
<b>Efficacy:</b>	106.0 lm/w	<b>Chromaticity (y):</b>	0.3457
<b>CCT:</b>	5399 K	<b>Chromaticity (u'):</b>	0.2067
<b>CRI (Ra):</b>	85.6	<b>Chromaticity (v'):</b>	0.4802
<b>CRI (R9):</b>	20.0	<b>TM-30 R<sub>f</sub>:</b>	83.6
<b>Peak Wavelength:</b>	451.6 nm	<b>TM-30 R<sub>g</sub>:</b>	95.7
<b>Dominant Wavelength:</b>	559.3 nm	<b>Duv:</b>	0.0011
<b>S/P Ratio:</b>	2.08		



### Color Rendering Index Detail

Ra (CRI)	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14
85.6	84.5	90.9	93.9	85.0	84.9	86.0	88.4	71.7	20.0	77.3	84.3	65.3	86.4	96.9





## Distribution - Goniophotometer

### Distribution Test Conditions

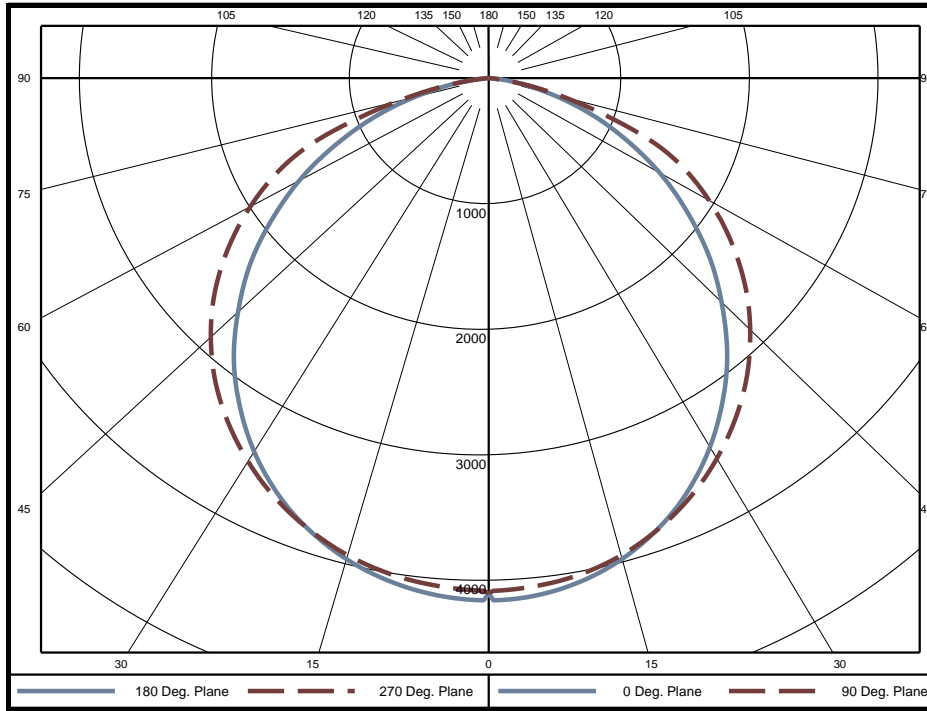
Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.1 °C	120.0 VAC	0.9096 A	108.5 W	0.993	60 Hz	6.63 %

### Summary of Results

**Spacing Criteria**  
 0-180: 1.23  
 90-270: 1.23

**Total Lumen Output:** 11180 Lumens  
**Luminaire Efficacy:** 103.1 lm/w  
**Maximum Candela:** 4159 Candela

### Polar Plot



### Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	98	0.9%	60-65	757	6.8%	120-125	0	0.0%
5-10	290	2.6%	65-70	612	5.5%	125-130	0	0.0%
10-15	472	4.2%	70-75	425	3.8%	130-135	0	0.0%
15-20	637	5.7%	75-80	232	2.1%	135-140	0	0.0%
20-25	780	7.0%	80-85	76	0.7%	140-145	0	0.0%
25-30	894	8.0%	85-90	9	0.1%	145-150	0	0.0%
30-35	977	8.7%	90-95	0	0.0%	150-155	0	0.0%
35-40	1027	9.2%	95-100	0	0.0%	155-160	0	0.0%
40-45	1041	9.3%	100-105	0	0.0%	160-165	0	0.0%
45-50	1019	9.1%	105-110	0	0.0%	165-170	0	0.0%
50-55	963	8.6%	110-115	0	0.0%	170-175	0	0.0%
55-60	874	7.8%	115-120	0	0.0%	175-180	0	0.0%

Zone	Lumens	% of Luminaire
0-40	5175	46.3%
0-60	9072	81.1%
0-90	11183	100.0%
90-180	0	0.0%



**Candela Tabulation**

Horizontal Angle (Degrees)

	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5
0	4103	4103	4103	4103	4103	4103	4103	4103	4103	4103	4103	4103	4103	4103	4103	4103
5	4137	4101	4066	4061	4062	4061	4066	4101	4137	4101	4066	4061	4062	4061	4066	4101
10	4071	4037	4009	4011	4015	4011	4009	4037	4071	4037	4009	4011	4015	4011	4009	4037
15	3964	3933	3915	3926	3933	3926	3915	3933	3964	3933	3915	3926	3933	3926	3915	3933
20	3815	3789	3785	3807	3817	3807	3785	3789	3815	3789	3785	3807	3817	3807	3785	3789
25	3627	3609	3619	3655	3672	3655	3619	3609	3627	3609	3619	3655	3672	3655	3619	3609
30	3399	3390	3419	3474	3498	3474	3419	3390	3399	3390	3419	3474	3498	3474	3419	3390
35	3137	3137	3188	3270	3302	3270	3188	3137	3137	3137	3188	3270	3302	3270	3188	3137
40	2853	2859	2933	3041	3083	3041	2933	2859	2853	2859	2933	3041	3083	3041	2933	2859
45	2535	2551	2656	2790	2835	2790	2656	2551	2535	2551	2656	2790	2835	2790	2656	2551
50	2215	2229	2364	2512	2565	2512	2364	2229	2215	2229	2364	2512	2565	2512	2364	2229
55	1867	1893	2053	2211	2268	2211	2053	1893	1867	1893	2053	2211	2268	2211	2053	1893
60	1526	1555	1718	1892	1952	1892	1718	1555	1526	1555	1718	1892	1952	1892	1718	1555
65	1170	1216	1386	1557	1612	1557	1386	1216	1170	1216	1386	1557	1612	1557	1386	1216
70	834	883	1053	1154	1133	1154	1053	883	834	883	1053	1154	1133	1154	1053	883
75	505	556	687	645	626	645	687	556	505	556	687	645	626	645	687	556
80	239	289	285	270	245	270	285	289	239	289	285	270	245	270	285	289
85	59	66	41	30	29	30	41	66	59	66	41	30	29	30	41	66
90	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
100	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
110	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
120	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
130	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
135	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
140	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
145	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
150	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
155	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
160	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
165	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
170	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
175	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
180	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

**Average Luminance (cd/m<sup>2</sup>)**

Horizontal Angle (Degrees)

	0	45	90
0	17970	17970	17970
45	15690	16450	17550
55	14250	15670	17320
65	12120	14360	16700
75	8551	11610	10590
85	2985	2042	1465

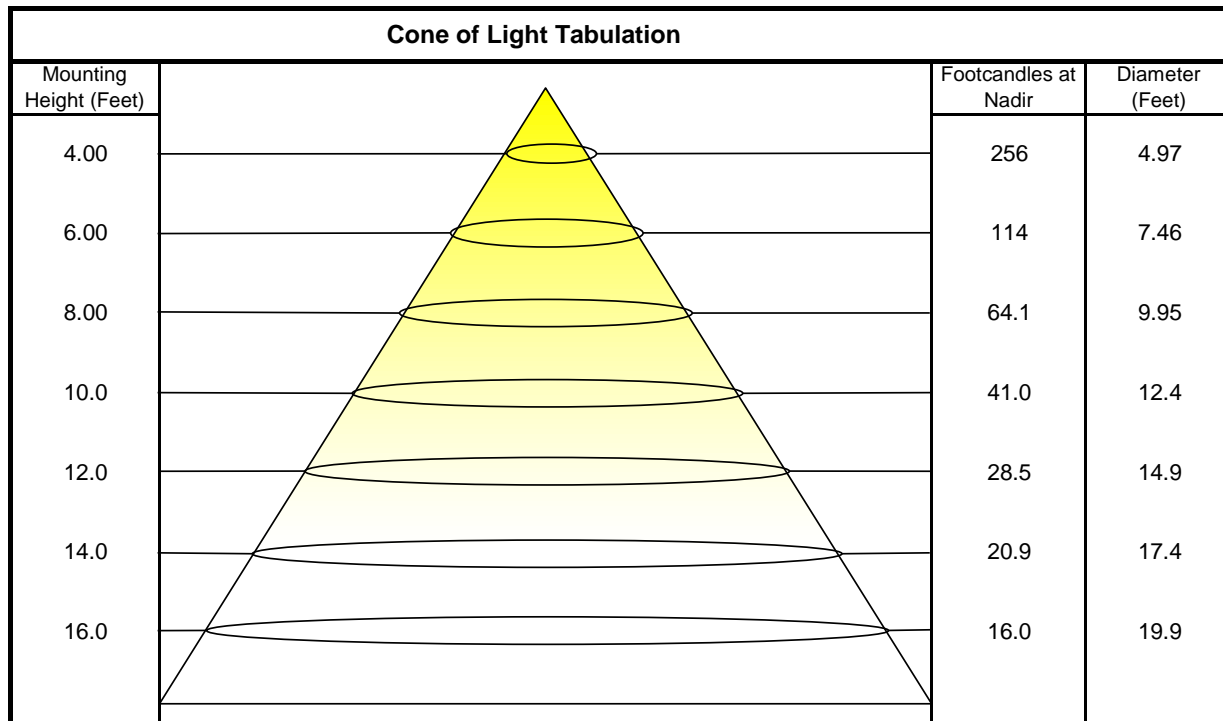


### Utilization of Lumens - Zonal Cavity Method

Effective Floor Cavity Reflectance 20%

Ceiling Cavity Reflectance	80				70				50			30			10			0
Wall Reflectance	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
Room Cavity Ratio (RCR)	** Values are expressed as Lumens delivered to the task surface **																	
0	13312	13312	13312	13312	13002	13002	13002	13002	12424	12424	12424	11896	11896	11896	11410	11410	11410	11182
1	12226	11719	11265	10855	11925	11467	11053	10679	10993	10653	10342	10558	10282	10026	10158	9936	9729	9498
2	11138	10244	9504	8882	10847	10033	9353	8776	9638	9066	8572	9274	8797	8377	8937	8543	8191	7953
3	10161	9007	8113	7401	9886	8831	8002	7335	8499	7789	7205	8192	7587	7079	7907	7396	6958	6716
4	9306	7985	7017	6278	9050	7836	6933	6234	7557	6770	6148	7297	6616	6064	7055	6468	5983	5742
5	8559	7136	6143	5409	8324	7011	6077	5379	6774	5951	5319	6554	5830	5262	6348	5714	5205	4969
6	7903	6426	5434	4723	7690	6320	5383	4701	6118	5283	4659	5930	5186	4618	5754	5094	4577	4348
7	7328	5827	4854	4172	7134	5736	4812	4156	5564	4731	4125	5402	4653	4094	5251	4578	4064	3843
8	6821	5317	4371	3722	6646	5239	4337	3710	5091	4271	3686	4952	4208	3664	4821	4146	3641	3428
9	6373	4880	3966	3349	6214	4813	3938	3340	4685	3884	3322	4565	3831	3304	4451	3780	3287	3083
10	5975	4503	3623	3037	5832	4445	3599	3030	4334	3554	3016	4229	3510	3002	4130	3467	2988	2793

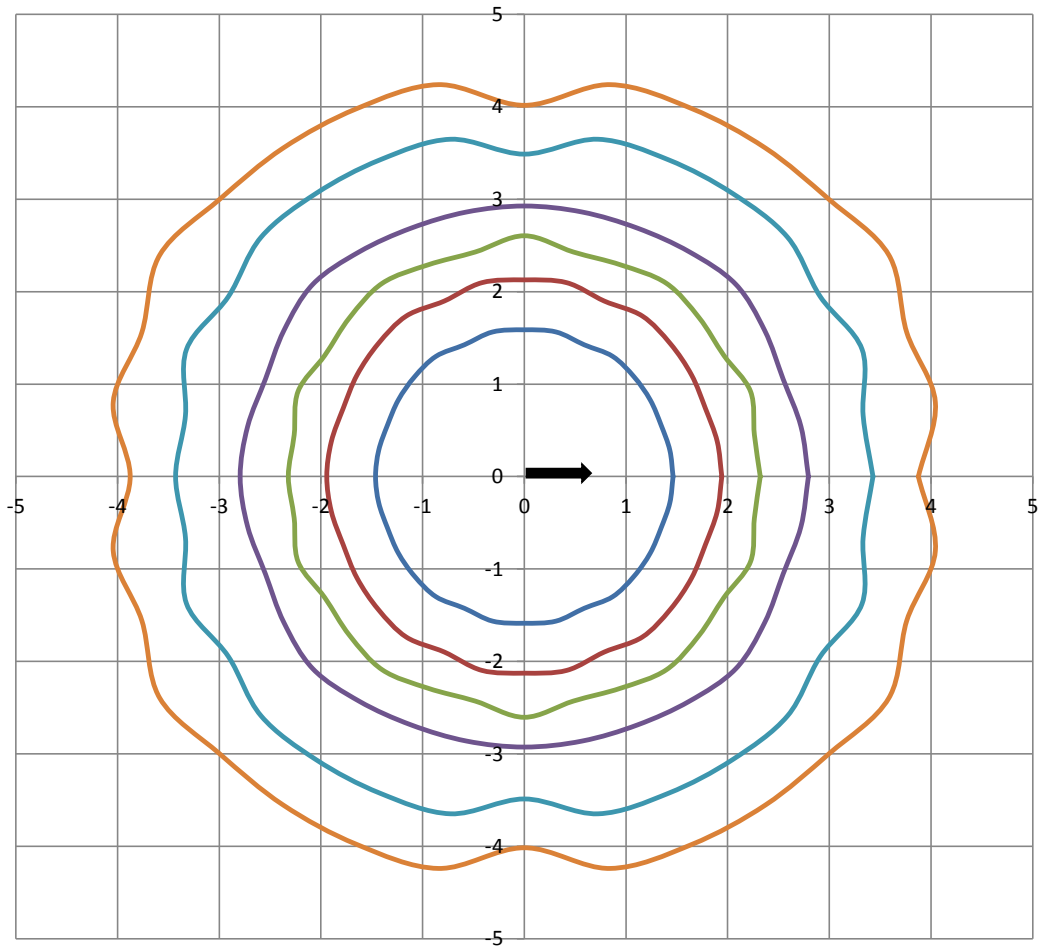
Beam and Field Information	
CIE Type:	Direct
Center Beam Intensity:	4103 Candela
Central Cone Intensity:	4095 Candela
Beam Flux:	8248.6 Lumens
Beam Angle (0-180):	104.7 Degrees
Beam Angle (90-270):	116.9 Degrees
Field Angle (0-180):	153.3 Degrees
Field Angle (90-270):	155.4 Degrees





# ISOFootcandle Plot

Mounting Height - 8 Feet



Grid Lines in Units of Mounting Height

