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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, UL 1598-2008

**Prepared For**  
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**Catalog Number**  
**LE481-145-V1-A-5**  
Order Number  
11304304  
Test Number  
1260400

Test Date

2016-06-11

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

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:** Two Thomas Research Products PLED75W-054-C1400

**Luminaire**



**Luminaire Characteristics**  
Luminous Length: 48.00 in.  
Luminous Width: 12.38 in.

### Summary of Results

#### Integrating Sphere

Luminous Flux: 14290 Lumens  
Efficacy: 101.3 lm/w  
CCT: 5443 K  
CRI (Ra): 85.5

#### Distribution

Total Luminaire Output: 14570 Lumens  
Luminaire Efficacy: 103.2 lm/w  
Maximum Candela: 5429 Candela

#### Electrical Data at 277 VAC

Test Temperature: 25.6 °C  
Voltage: 277.0 VAC  
Current: 0.5344 A  
Power: 138.9 W  
Power Factor: 0.938  
Frequency: 60 Hz  
Current THD: 15.1 %

#### In-Situ

LED Temperature: 61.2 °C  
Driver Temperature: 57.1 °C  
Measured LED Current: 0.03410 A

Temperature is offset to an ambient temperature of 25°C as described in UL1598-2008.



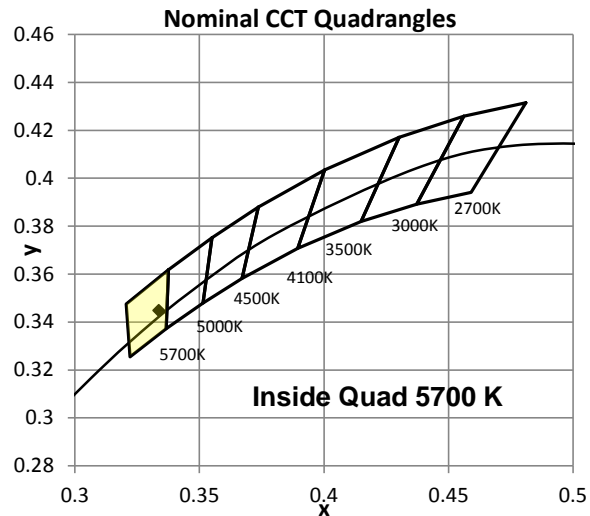
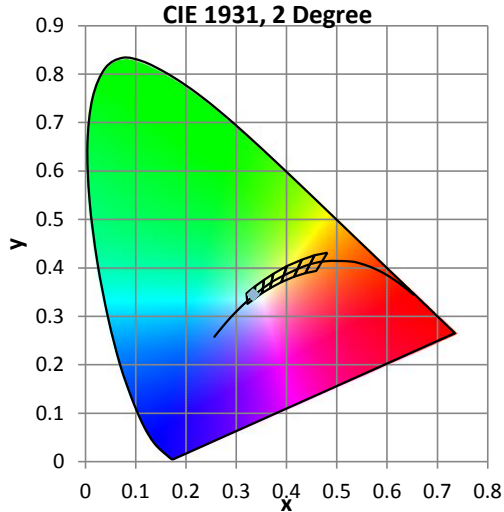
## Color Quality - Integrating Sphere

### Integrating Sphere Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.0 °C	120.0 VAC	1.181 A	141.1 W	0.995	60 Hz	6.02 %

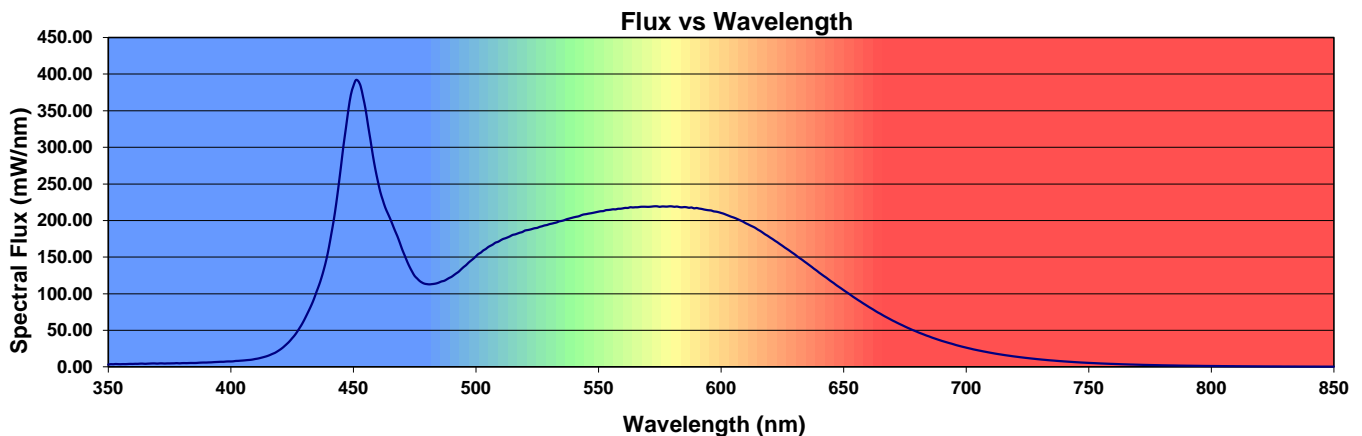
### Summary of Results

<b>Total Output:</b>	14290 Lumens	<b>Chromaticity (x):</b>	0.3337
<b>Efficacy:</b>	101.3 lm/w	<b>Chromaticity (y):</b>	0.3448
<b>CCT:</b>	5443 K	<b>Chromaticity (u'):</b>	0.2063
<b>CRI (Ra):</b>	85.5	<b>Chromaticity (v'):</b>	0.4796
<b>CRI (R9):</b>	19.1	<b>TM-30 R<sub>f</sub>:</b>	83.5
<b>Peak Wavelength:</b>	451.4 nm	<b>TM-30 R<sub>g</sub>:</b>	95.8
<b>Dominant Wavelength:</b>	554.4 nm	<b>Duv:</b>	0.0012
<b>S/P Ratio:</b>	2.086		



### Color Rendering Index Detail

Ra (CRI)	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14
85.5	84.3	90.6	93.6	84.9	84.7	85.7	88.3	71.5	19.1	76.7	84.2	65.5	86.1	96.7





## Distribution - Goniophotometer

### Distribution Test Conditions

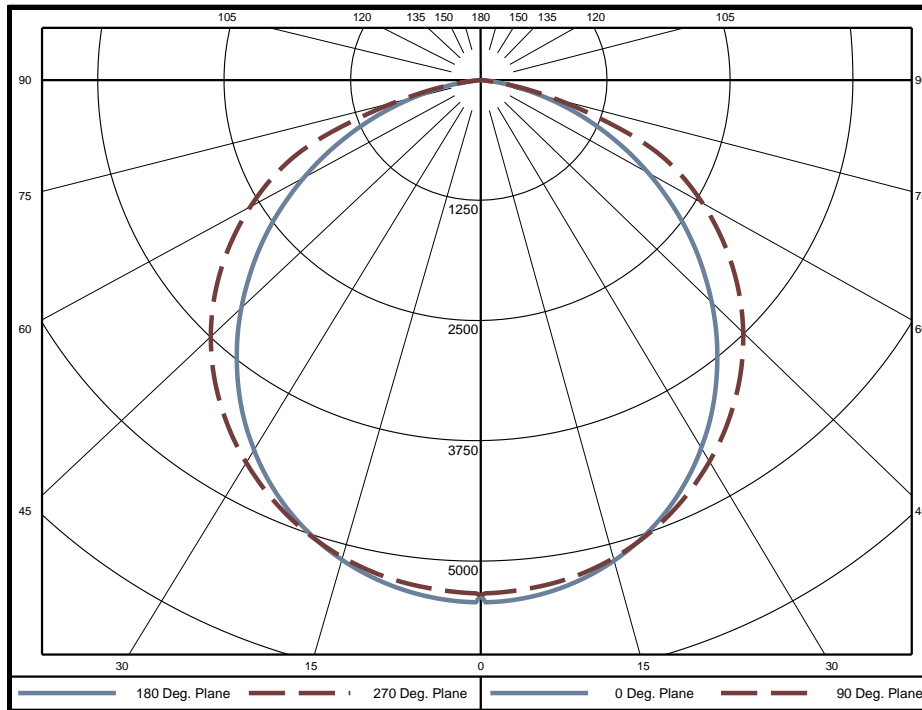
Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.6 °C	120.0 VAC	1.181 A	141.2 W	0.995	60 Hz	6.03 %

### Summary of Results

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

**Total Lumen Output:** 14570 Lumens  
**Luminaire Efficacy:** 103.2 lm/w  
**Maximum Candela:** 5429 Candela

### Polar Plot



### Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	128	0.9%	60-65	985	6.8%	120-125	0	0.0%
5-10	379	2.6%	65-70	797	5.5%	125-130	0	0.0%
10-15	616	4.2%	70-75	553	3.8%	130-135	0	0.0%
15-20	832	5.7%	75-80	300	2.1%	135-140	0	0.0%
20-25	1018	7.0%	80-85	96	0.7%	140-145	0	0.0%
25-30	1168	8.0%	85-90	9	0.1%	145-150	0	0.0%
30-35	1276	8.8%	90-95	0	0.0%	150-155	0	0.0%
35-40	1340	9.2%	95-100	0	0.0%	155-160	0	0.0%
40-45	1357	9.3%	100-105	0	0.0%	160-165	0	0.0%
45-50	1328	9.1%	105-110	0	0.0%	165-170	0	0.0%
50-55	1255	8.6%	110-115	0	0.0%	170-175	0	0.0%
55-60	1138	7.8%	115-120	0	0.0%	175-180	0	0.0%

Zone	Lumens	% of Luminaire
0-40	6757	46.4%
0-60	11835	81.2%
0-90	14575	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	5356	5356	5356	5356	5356	5356	5356	5356	5356	5356	5356	5356	5356	5356	5356	5356
5	5399	5351	5308	5304	5310	5304	5308	5351	5399	5351	5308	5304	5310	5304	5308	5351
10	5313	5267	5233	5239	5250	5239	5233	5267	5313	5267	5233	5239	5250	5239	5233	5267
15	5172	5131	5111	5130	5144	5130	5111	5131	5172	5131	5111	5130	5144	5130	5111	5131
20	4976	4942	4942	4976	4994	4976	4942	4942	4976	4942	4942	4976	4994	4976	4942	4942
25	4728	4706	4725	4778	4804	4778	4725	4706	4728	4706	4725	4778	4804	4778	4725	4706
30	4424	4420	4463	4544	4578	4544	4463	4420	4424	4420	4463	4544	4578	4544	4463	4420
35	4082	4087	4162	4278	4323	4278	4162	4087	4082	4087	4162	4278	4323	4278	4162	4087
40	3697	3718	3829	3981	4036	3981	3829	3718	3697	3718	3829	3981	4036	3981	3829	3718
45	3286	3314	3467	3649	3715	3649	3467	3314	3286	3314	3467	3649	3715	3649	3467	3314
50	2856	2891	3083	3287	3361	3287	3083	2891	2856	2891	3083	3287	3361	3287	3083	2891
55	2411	2452	2672	2894	2977	2894	2672	2452	2411	2452	2672	2894	2977	2894	2672	2452
60	1957	2011	2237	2479	2565	2479	2237	2011	1957	2011	2237	2479	2565	2479	2237	2011
65	1501	1573	1805	2042	2120	2042	1805	1573	1501	1573	1805	2042	2120	2042	1805	1573
70	1060	1138	1373	1516	1490	1516	1373	1138	1060	1138	1373	1516	1490	1516	1373	1138
75	640	718	898	841	817	841	898	718	640	718	898	841	817	841	898	718
80	297	371	369	346	318	346	369	371	297	371	369	346	318	346	369	371
85	67	80	44	29	29	29	44	80	67	80	44	29	29	29	44	80
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	13980	13980	13980
45	12130	12790	13710
55	10970	12160	13540
65	9270	11140	13090
75	6457	9056	8238
85	2001	1321	867

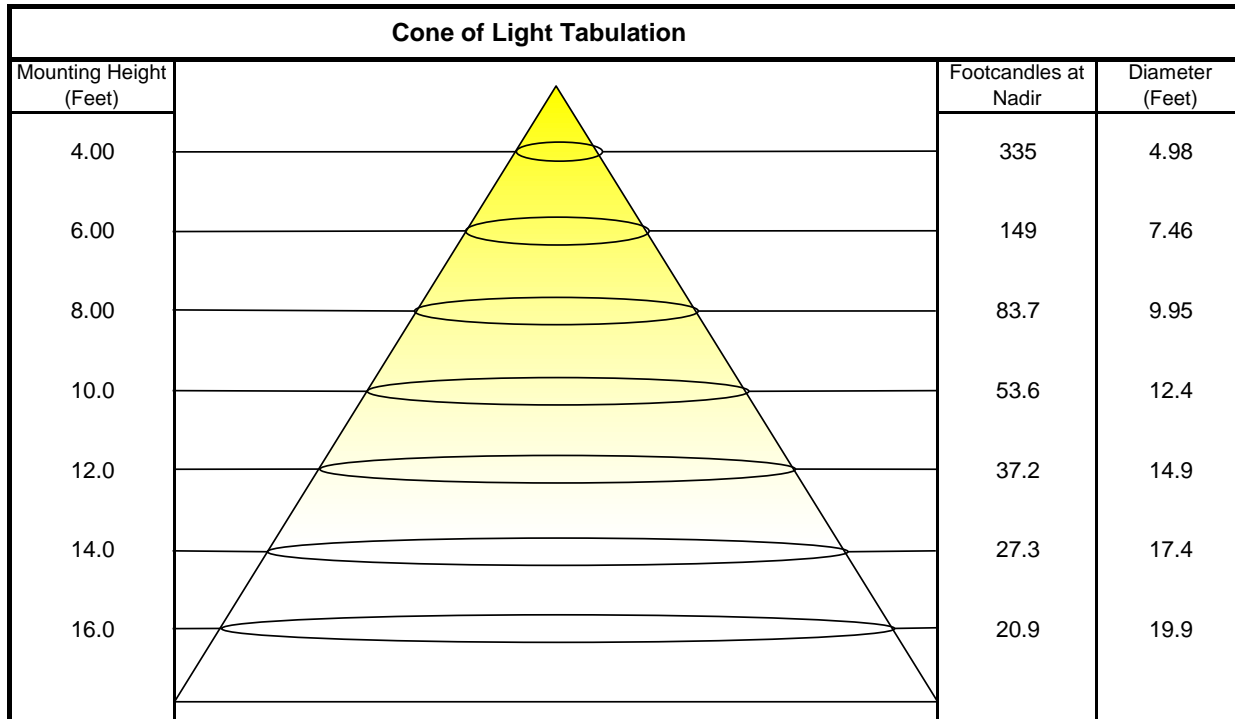


### Utilization of Lumens - Zonal Cavity Method

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	17349	17349	17349	17349	16945	16945	16945	16945	16192	16192	16192	15503	15503	15503	14871	14871	14871	14573
1	15938	15279	14688	14155	15545	14949	14412	13925	14333	13891	13486	13766	13407	13074	13244	12956	12686	12386
2	14521	13357	12394	11584	14141	13083	12198	11446	12568	11823	11180	12094	11472	10926	11655	11141	10683	10373
3	13248	11745	10582	9655	12889	11516	10437	9568	11083	10159	9398	10683	9896	9235	10312	9647	9077	8762
4	12133	10413	9153	8191	11800	10220	9043	8133	9855	8832	8021	9517	8630	7912	9202	8438	7805	7492
5	11159	9307	8013	7057	10854	9144	7928	7018	8836	7763	6941	8548	7605	6865	8280	7454	6791	6484
6	10305	8381	7090	6163	10027	8243	7022	6135	7980	6892	6080	7735	6766	6026	7506	6646	5973	5674
7	9555	7599	6332	5444	9303	7481	6278	5423	7257	6173	5383	7047	6071	5343	6849	5973	5304	5016
8	8895	6935	5703	4857	8666	6834	5659	4841	6641	5573	4811	6460	5490	4781	6289	5410	4752	4475
9	8310	6366	5175	4371	8104	6278	5139	4359	6112	5067	4336	5955	4999	4313	5806	4932	4290	4025
10	7791	5874	4727	3963	7604	5798	4697	3954	5654	4637	3936	5517	4580	3918	5387	4524	3900	3646

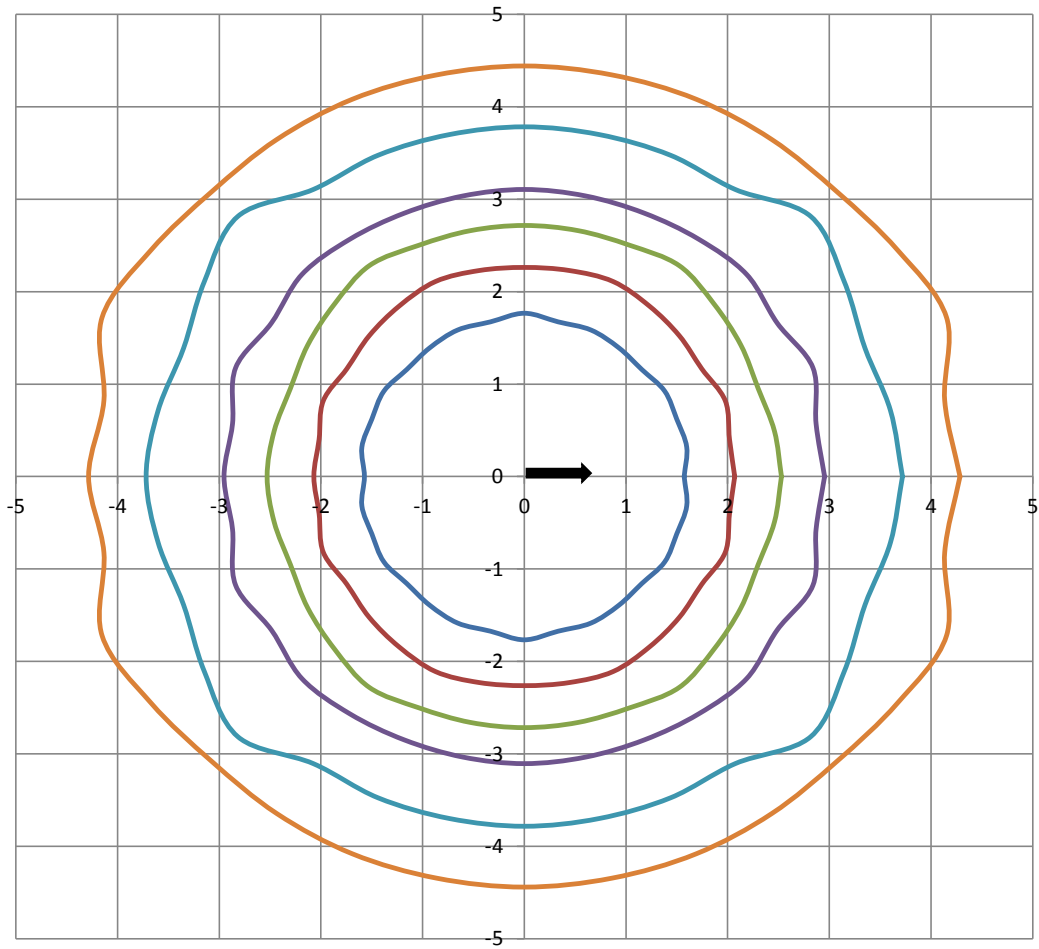
Beam and Field Information	
CIE Type:	Direct
Center Beam Intensity:	5356 Candela
Central Cone Intensity:	5347 Candela
Beam Flux:	10751.9 Lumens
Beam Angle (0-180):	104.0 Degrees
Beam Angle (90-270):	117.3 Degrees
Field Angle (0-180):	152.8 Degrees
Field Angle (90-270):	155.4 Degrees





# ISOFootcandle Plot

Mounting Height - 8 Feet



Grid Lines in Units of Mounting Height







## In-Situ Test

### In-Situ Test Conditions

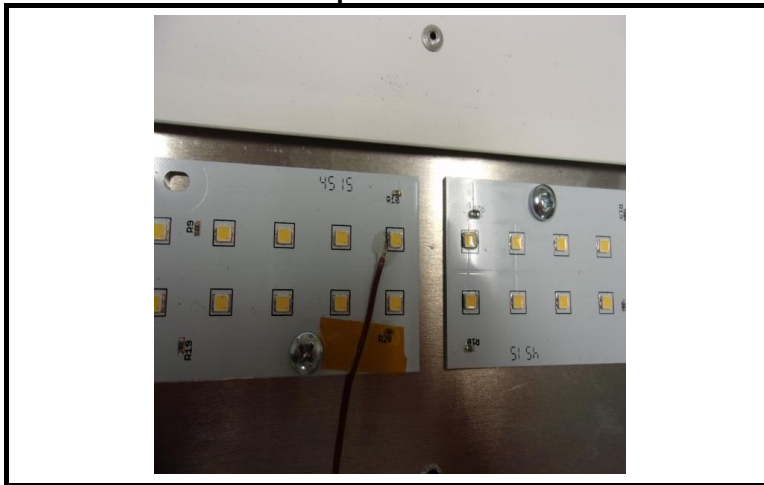
Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
23.0 °C	120.0 VAC	N/A	N/A	N/A	60 Hz	N/A

### Summary of Results

LED Temperature: 61.2 °C  
Driver Temperature: 57.1 °C  
Measured LED Current: 0.03410 A

Temperatures are offset to an ambient temperature of 25°C as described in UL1598-2008

### LED Temperature Location



### Driver Temperature Location

