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Photometric Test Report

Relevant Standards
IES LM-79-2008, ANSI C82.77-2002, UL 1598-2008
CIE 13.3-1995, CIE 15-2004, ANSI C78.377-2015
IES TM-30-2015

Prepared For
TechBrite LLC
1000 Kieley Pl
Cincinnati, OH 45217
United States

Catalog Number
LT424SS1B30BC000,RT424SS1B30BC000
Order Number
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Test Date

2017-05-11 - 2017-05-15

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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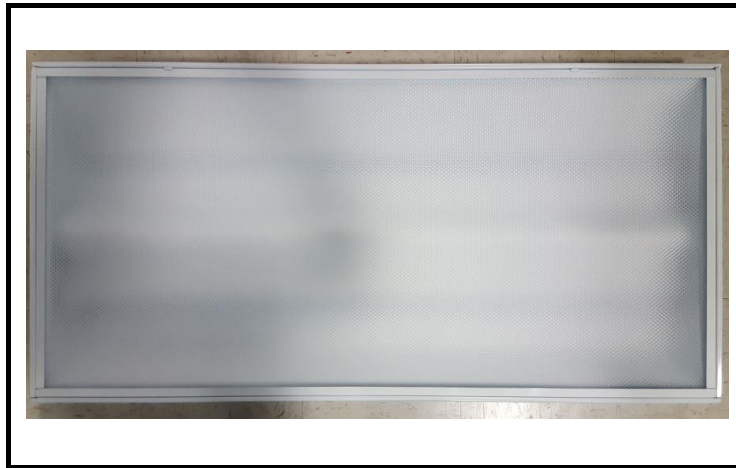
Laboratory results may not be representative of field performance
Ballast factors have not been applied

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



Luminaire Description: White steel housing, prismatic lens enclosure. Tested in an A.L.P EL 2x4 housing.
Lamp: 224 white LEDs
Mounting: Surface – Ceiling
Ballast/Driver: Everline D10CC55UNVTZ-C

Luminaire



Luminaire Characteristics

Luminous Length: 45.00 in.
Luminous Width: 21.00 in.

Summary of Results

Integrating Sphere

Luminous Flux: 4234 Lumens
Efficacy: 123.5 lm/w
CCT: 3067 K
CRI (Ra): 82.9

Distribution

Total Luminaire Output: 4077 Lumens
Luminaire Efficacy: 118.7 lm/w
Maximum Candela: 1694 Candela

Electrical Data at 277 VAC

Test Temperature: 24.9 °C
Voltage: 277.0 VAC
Current: 0.1296 A
Power: 34.65 W
Power Factor: 0.965
Frequency: 60 Hz
Current THD: 8.26 %

In-Situ

LED Temperature: 39.8 °C
Driver Temperature: 42.9 °C
Measured LED Current: 0.04480 A

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



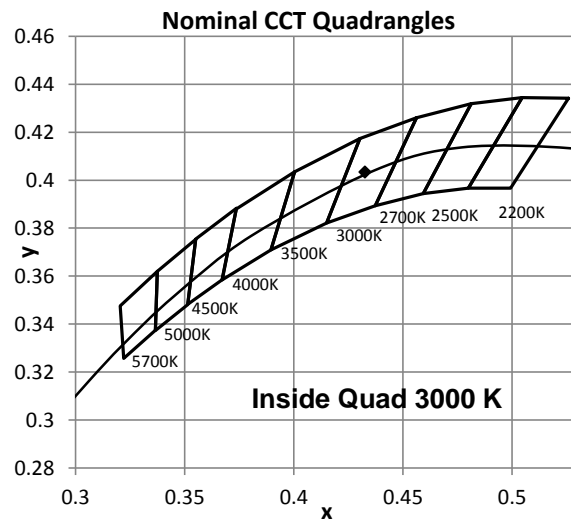
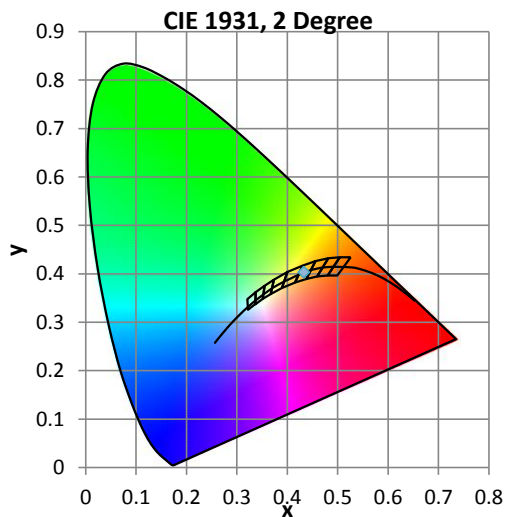
Color Quality - Integrating Sphere

Integrating Sphere Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.9 °C	120.0 VAC	0.2889 A	34.29 W	0.989	60 Hz	6.75 %

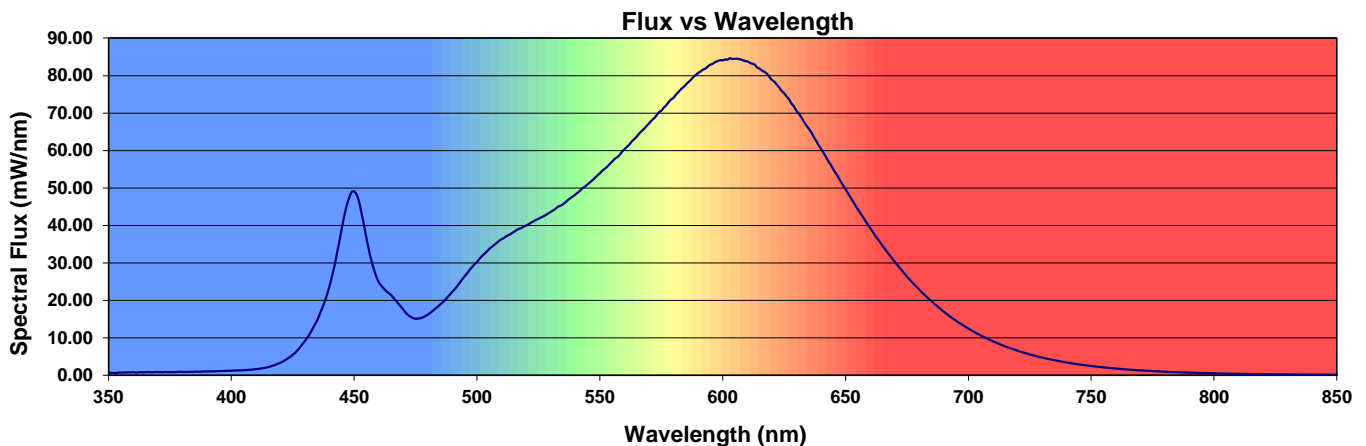
Summary of Results

Total Output:	4234 Lumens	Chromaticity (x):	0.4326
Efficacy:	123.5 lm/w	Chromaticity (y):	0.4034
CCT:	3067 K	Chromaticity (u'):	0.2480
CRI (Ra):	82.9	Chromaticity (v'):	0.5205
CRI (R9):	8.4	TM-30 Rf:	83.5
Peak Wavelength:	604.3 nm	TM-30 Rg:	96.7
Dominant Wavelength:	582.4 nm	Duv:	0.0003
S/P Ratio:	1.367		



Color Rendering Index Detail

Ra (CRI)	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14
82.9	81.0	90.5	96.9	81.3	81.4	88.4	83.6	60.2	8.4	78.5	80.7	72.7	83.1	98.7





Distribution - Goniophotometer

Distribution Test Conditions

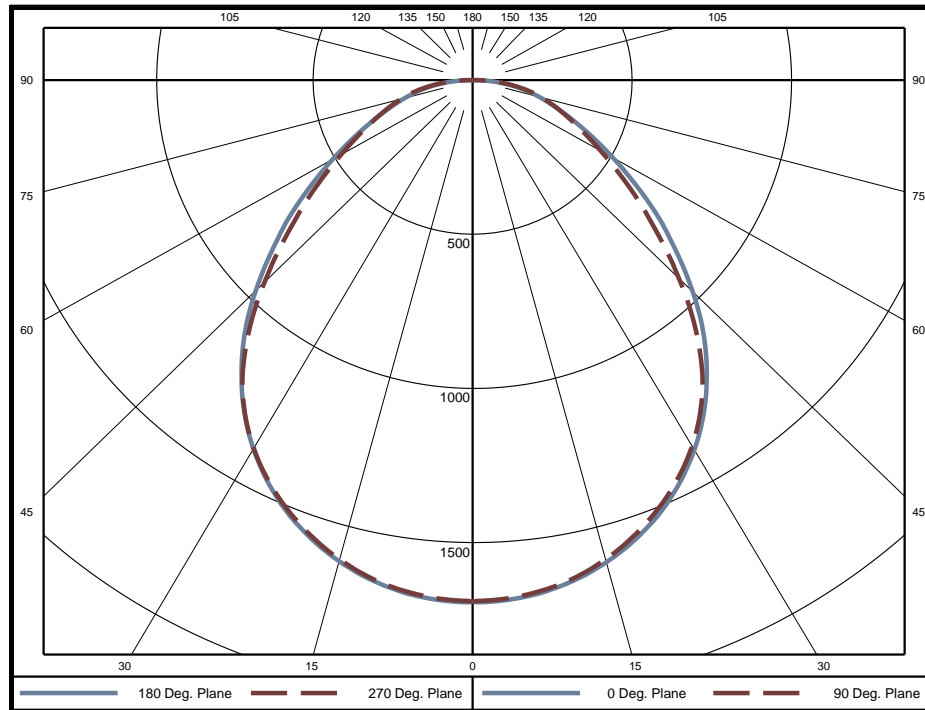
Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.7 °C	120.0 VAC	0.2870 A	34.34 W	0.997	60 Hz	6.68 %

Summary of Results

Spacing Criteria
 0-180: 1.22
 90-270: 1.22

Total Lumen Output: 4077 Lumens
Luminaire Efficacy: 118.7 lm/w
Maximum Candela: 1694 Candela

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	40.4	1.0%	60-65	209.0	5.1%	120-125	0	0.0%
5-10	119.6	2.9%	65-70	168.1	4.1%	125-130	0	0.0%
10-15	194.2	4.8%	70-75	133.6	3.3%	130-135	0	0.0%
15-20	261.2	6.4%	75-80	101.0	2.5%	135-140	0	0.0%
20-25	317.8	7.8%	80-85	64.6	1.6%	140-145	0	0.0%
25-30	361.2	8.9%	85-90	25.2	0.6%	145-150	0	0.0%
30-35	388.6	9.5%	90-95	0	0.0%	150-155	0	0.0%
35-40	396.6	9.7%	95-100	0	0.0%	155-160	0	0.0%
40-45	382.9	9.4%	100-105	0	0.0%	160-165	0	0.0%
45-50	350.3	8.6%	105-110	0	0.0%	165-170	0	0.0%
50-55	306.3	7.5%	110-115	0	0.0%	170-175	0	0.0%
55-60	256.6	6.3%	115-120	0	0.0%	175-180	0	0.0%

Zone	Lumens	% of Luminaire
0-40	2080	51.0%
0-60	3376	82.8%
0-90	4077	100.0%
90-180	0	0.0%



Candela Tabulation
Horizontal Angle (Degrees)

Vertical Angle (Degrees)	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	338
0	1692	1692	1692	1692	1692	1692	1692	1692	1692	1692	1692	1692	1692	1692	1692	1692
5	1686	1684	1685	1682	1681	1682	1685	1684	1686	1684	1685	1682	1681	1682	1685	1684
10	1662	1660	1659	1657	1655	1657	1659	1660	1662	1660	1659	1657	1655	1657	1659	1660
15	1619	1617	1616	1613	1610	1613	1616	1617	1619	1617	1616	1613	1610	1613	1616	1617
20	1560	1558	1554	1551	1547	1551	1554	1558	1560	1558	1554	1551	1547	1551	1554	1558
25	1484	1479	1473	1471	1470	1471	1473	1479	1484	1479	1473	1471	1470	1471	1473	1479
30	1389	1382	1375	1374	1375	1374	1375	1382	1389	1382	1375	1374	1375	1374	1375	1382
35	1273	1263	1256	1254	1255	1254	1256	1263	1273	1263	1256	1254	1255	1254	1256	1263
40	1137	1126	1116	1103	1100	1103	1116	1126	1137	1126	1116	1103	1100	1103	1116	1126
45	980	971	957	931	919	931	957	971	980	971	957	931	919	931	957	971
50	814	812	792	755	744	755	792	812	814	812	792	755	744	755	792	812
55	659	652	628	603	595	603	628	652	659	652	628	603	595	603	628	652
60	514	504	485	473	469	473	485	504	514	504	485	473	469	473	485	504
65	393	385	370	371	371	371	370	385	393	385	370	371	371	371	370	385
70	297	294	283	293	295	293	283	294	297	294	283	293	295	293	283	294
75	221	220	217	226	230	226	217	220	221	220	217	226	230	226	217	220
80	153	152	153	159	162	159	153	152	153	152	153	159	162	159	153	152
85	79	77	81	85	86	85	81	77	79	77	81	85	86	85	81	77
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/m²)
Horizontal Angle (Degrees)

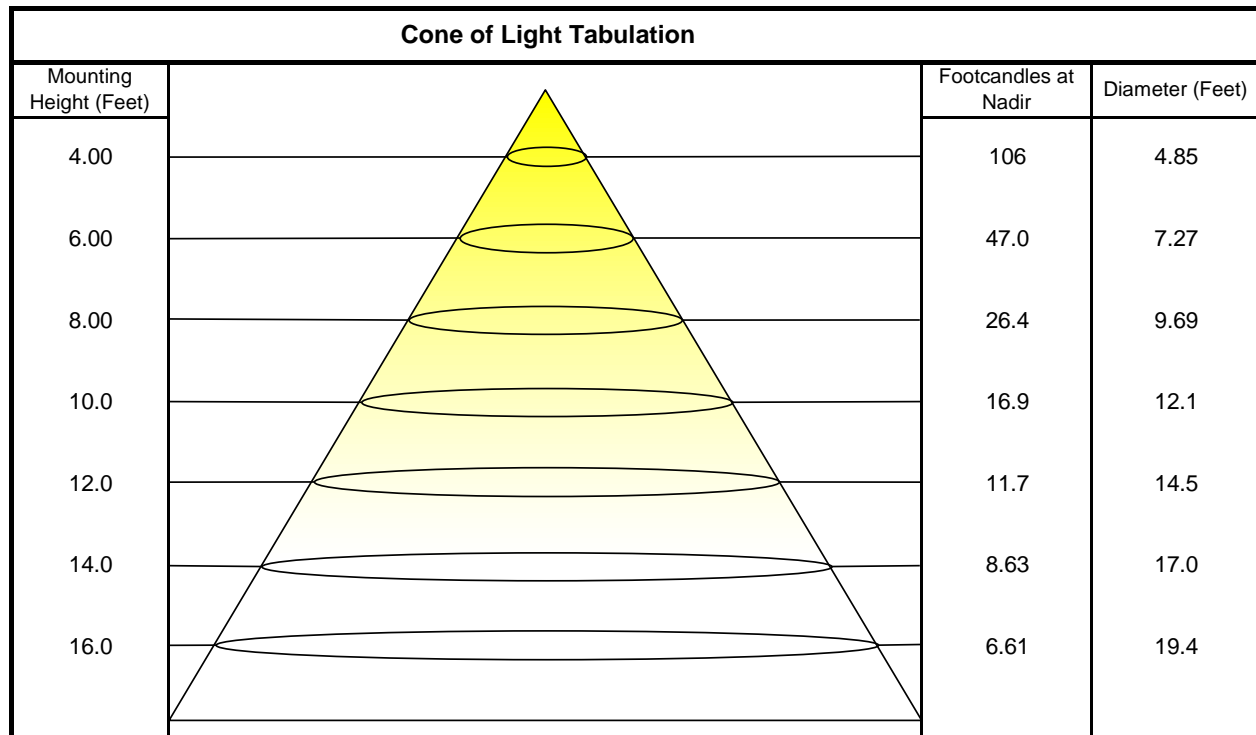
Vertical Angle (Degrees)	Horizontal Angle (Degrees)		
	0	45	90
0	2775	2775	2775
45	2272	2219	2133
55	1884	1797	1703
65	1524	1437	1440
75	1402	1373	1456
85	1485	1520	1618



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	4854	4854	4854	4854	4741	4741	4741	4741	4530	4530	4530	4337	4337	4337	4160	4160	4160	4077
1	4454	4268	4101	3950	4344	4176	4024	3886	4003	3878	3763	3844	3743	3648	3698	3616	3540	3456
2	4077	3757	3492	3270	3972	3681	3437	3231	3537	3333	3156	3405	3234	3084	3283	3142	3016	2930
3	3739	3330	3013	2760	3640	3266	2972	2735	3146	2894	2687	3035	2821	2641	2932	2751	2596	2510
4	3441	2973	2631	2370	3349	2920	2601	2354	2819	2541	2322	2726	2485	2290	2638	2431	2260	2175
5	3177	2675	2323	2064	3094	2630	2299	2053	2544	2254	2031	2465	2210	2009	2391	2167	1988	1904
6	2944	2421	2071	1819	2868	2383	2052	1811	2311	2015	1795	2243	1981	1780	2180	1947	1765	1683
7	2738	2206	1861	1619	2669	2173	1846	1613	2111	1816	1602	2053	1788	1590	1999	1761	1579	1501
8	2554	2020	1685	1454	2492	1992	1672	1450	1939	1648	1441	1889	1625	1432	1842	1603	1424	1348
9	2391	1860	1535	1315	2334	1836	1525	1312	1790	1505	1305	1747	1486	1299	1706	1467	1292	1220
10	2245	1721	1407	1198	2194	1700	1399	1196	1660	1382	1190	1622	1366	1185	1587	1351	1180	1111

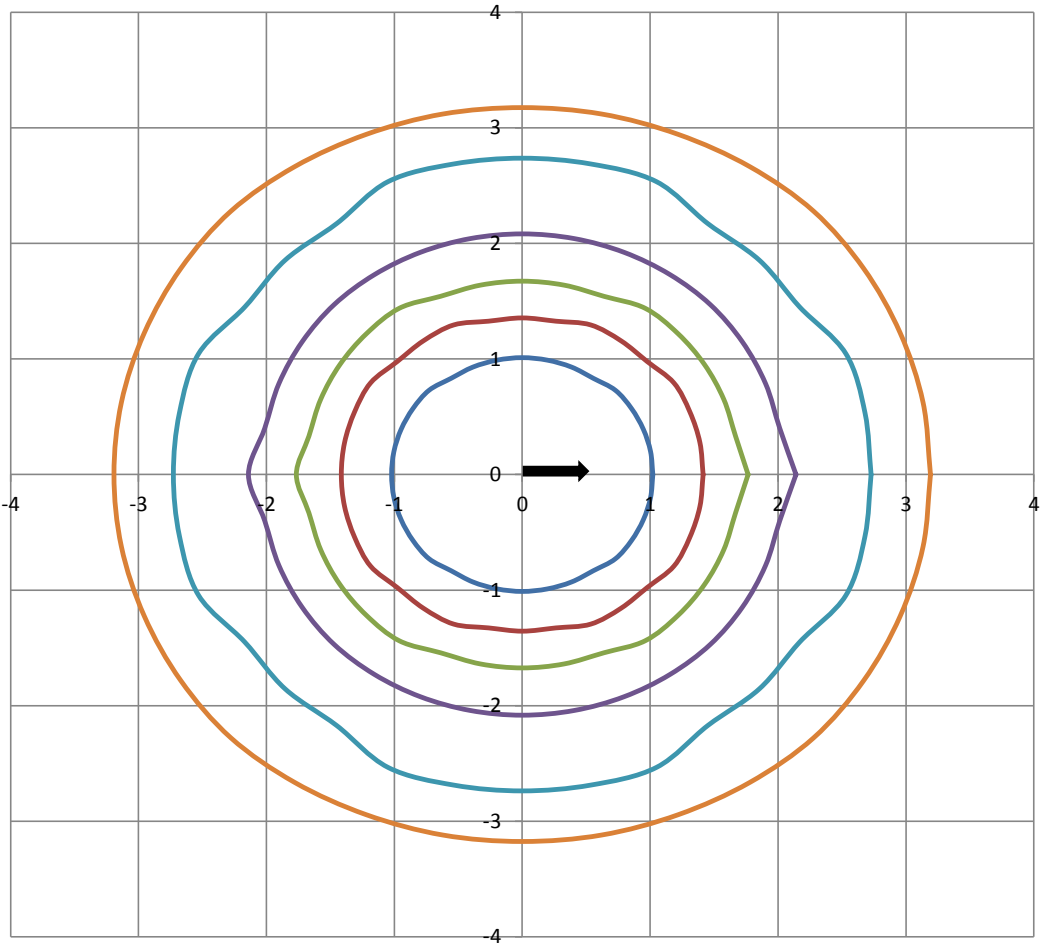
Beam and Field Information	
CIE Type:	Direct
Center Beam Intensity:	1692 Candela
Central Cone Intensity:	1689 Candela
Beam Flux:	2692.1 Lumens
Beam Angle (0-180):	98.0 Degrees
Beam Angle (90-270):	94.1 Degrees
Field Angle (0-180):	157.7 Degrees
Field Angle (90-270):	159.0 Degrees





ISOFootcandle Plot

Mounting Height - 8 Feet



Grid Lines in Units of Mounting Height





In-Situ Test

In-Situ Test Conditions

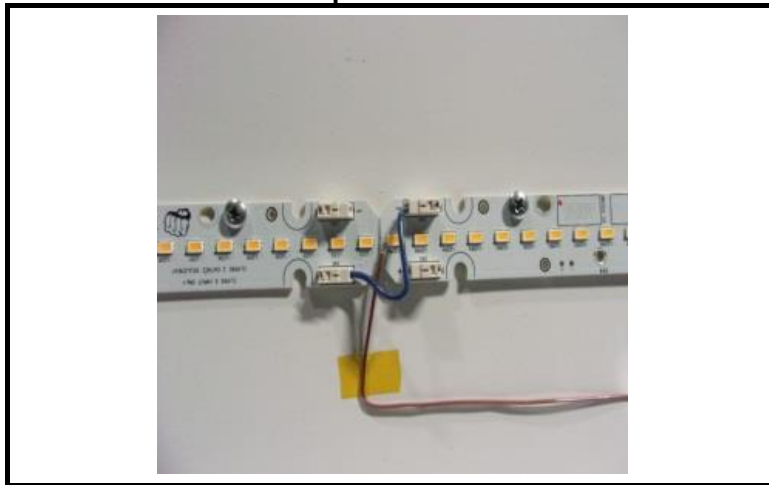
Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
23.6 °C	120.0 VAC	N/A	N/A	N/A	60 Hz	N/A

Summary of Results

LED Temperature: 39.8 °C
Driver Temperature: 42.9 °C
Measured LED Current: 0.04480 A

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

LED Temperature Location



Driver Temperature Location

