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ACCREDITED

NVLAP LAB CODE 201042-0

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

TechBrite LLC

1000 Kieley Pl
Cincinnati, OH 45217
United States

Catalog Number

L424SS1B30DC000,R424SS1B30DC000

Order Number

11621025

Test Number

11621025.01

Test Date

2017-02-14 - 2017-02-20

Prepared By

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Approved By

Tiffany Hamm, Project Handler

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: Tested in A.L.P. EL 2x4 housing, white steel housing, prismatic lens enclosure
Lamp: 288 white LEDs
Mounting: Surface – Ceiling
Ballast/Driver: Philips X1054C150V054BSTI

Luminaire

Luminaire Characteristics

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

Summary of Results

Integrating Sphere

Luminous Flux:	7552	Lumens
Efficacy:	131.8	lm/w
CCT:	3123	K
CRI (Ra):	83.3	

Distribution

Total Luminaire Output:	7400	Lumens
Luminaire Efficacy:	128.9	lm/w
Maximum Candela:	3045	Candela

Electrical Data at 277 VAC

Test Temperature:	24.9	°C
Voltage:	277.0	VAC
Current:	0.2101	A
Power:	56.30	W
Power Factor:	0.968	
Frequency:	60	Hz
Current THD:	8.35	%

In-Situ

LED Temperature:	38.5	°C
Driver Temperature:	56.0	°C
Measured LED Current:	0.06010	A

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

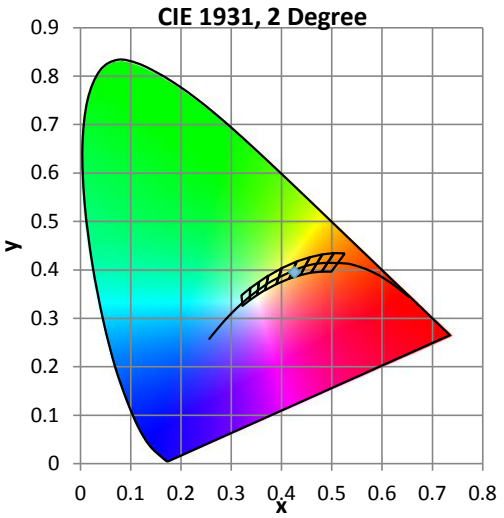
Color Quality - Integrating Sphere

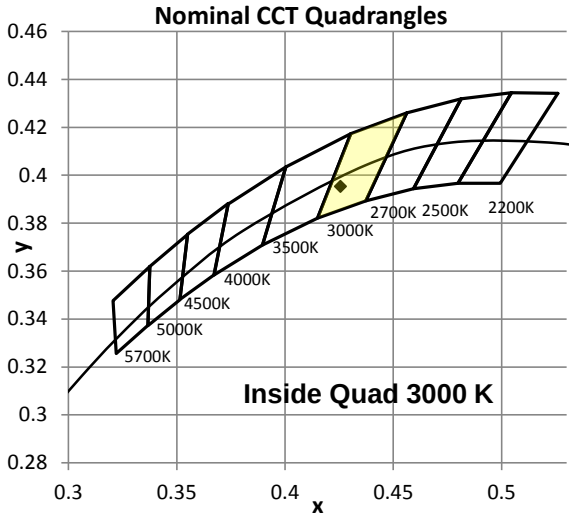
Integrating Sphere Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.9 °C	120.0 VAC	0.4798 A	57.29 W	0.995	60 Hz	5.07 %

Summary of Results

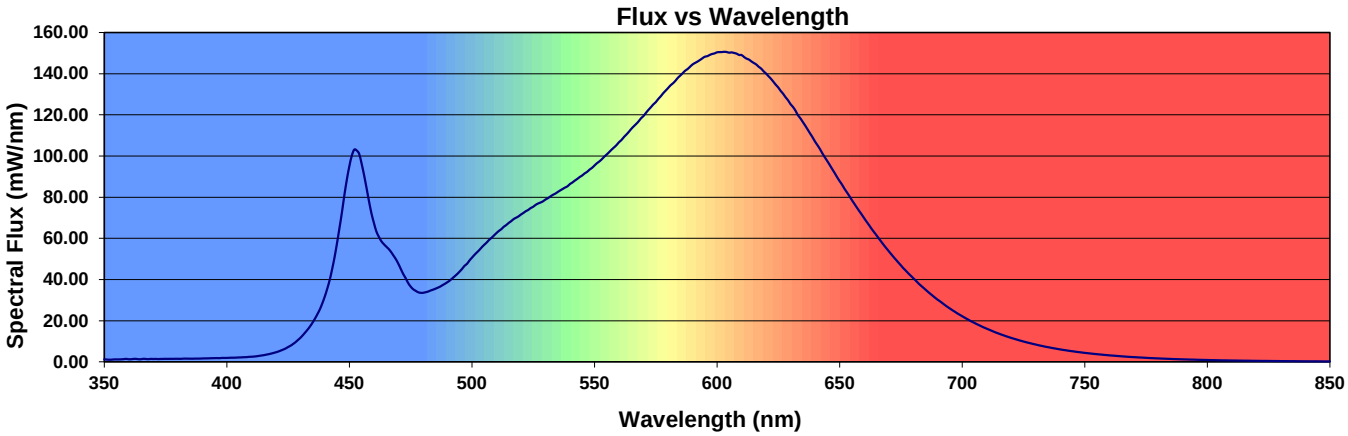
Total Output:	7552	Lumens	**Chromaticity (x):**	0.4257
Efficacy:	131.8	lm/w	**Chromaticity (y):**	0.3952
CCT:	3123	K	**Chromaticity (u'):**	0.2471
CRI (Ra):	83.3		**Chromaticity (v'):**	0.5162
CRI (R9):	11.3		**TM-30 R_f:**	82.9
Peak Wavelength:	602.6	nm	**TM-30 R_g:**	96.1
Dominant Wavelength:	583.1	nm	**Duv:**	-0.0024
S/P Ratio:	1.414			





Color Rendering Index Detail

Ra (CRI)	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14
83.3	82.2	92.2	95.7	80.6	82.4	90.0	82.7	60.7	11.3	81.7	79.7	71.5	84.8	98.4



Distribution - Goniophotometer

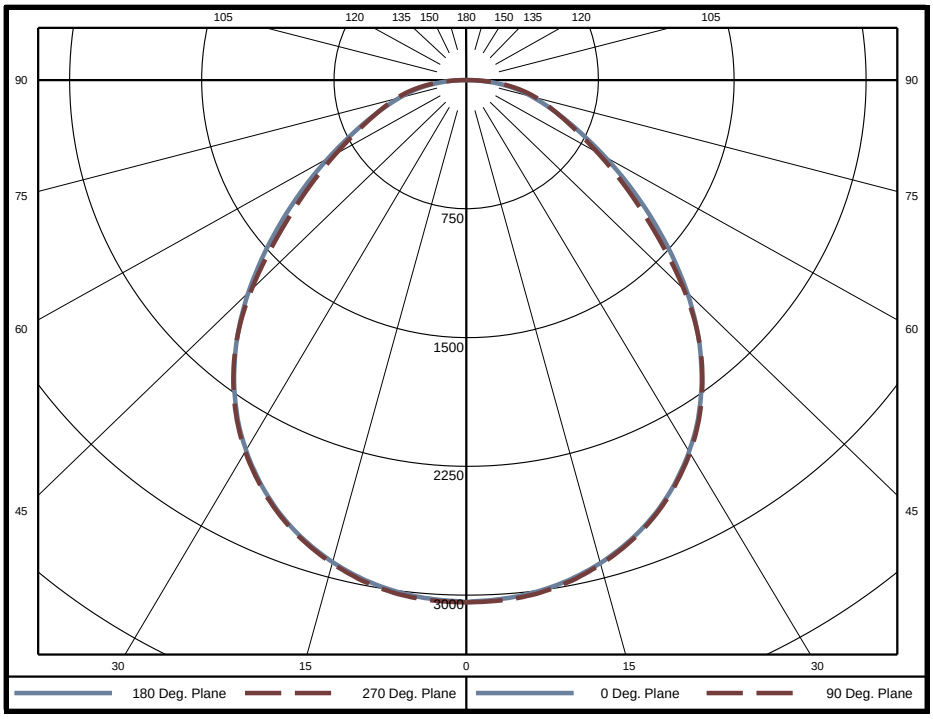
Distribution Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.1 °C	120.0 VAC	0.4791 A	57.40 W	0.998	60 Hz	5.01 %

Summary of Results

Spacing Criteria			
0-180: 1.22	**Total Lumen Output:**	7400	Lumens
90-270: 1.22	**Luminaire Efficacy:**	128.9	lm/w
	Maximum Candela:	3045	Candela

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	72.6	1.0%	60-65	374.4	5.1%	120-125	0	0.0%
5-10	215.5	2.9%	65-70	298.0	4.0%	125-130	0	0.0%
10-15	350.8	4.7%	70-75	236.7	3.2%	130-135	0	0.0%
15-20	473.0	6.4%	75-80	181.6	2.5%	135-140	0	0.0%
20-25	576.7	7.8%	80-85	118.3	1.6%	140-145	0	0.0%
25-30	656.6	8.9%	85-90	44.6	0.6%	145-150	0	0.0%
30-35	707.6	9.6%	90-95	0	0.0%	150-155	0	0.0%
35-40	724.3	9.8%	95-100	0	0.0%	155-160	0	0.0%
40-45	703.0	9.5%	100-105	0	0.0%	160-165	0	0.0%
45-50	644.0	8.7%	105-110	0	0.0%	165-170	0	0.0%
50-55	558.3	7.5%	110-115	0	0.0%	170-175	0	0.0%
55-60	464.2	6.3%	115-120	0	0.0%	175-180	0	0.0%

Zone	Lumens	% of Luminaire
0-40	3777	51.0%
0-60	6147	83.1%
0-90	7400	100.0%
90-180	0	0.0%

Candela Tabulation

Horizontal Angle (Degrees)

Vertical 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	3041	3041	3041	3041	3041	3041	3041	3041	3041	3041	3041	3041	3041	3041	3041	3041
5	3022	3025	3034	3034	3033	3034	3034	3025	3022	3025	3034	3034	3033	3034	3034	3025
10	2983	2988	2998	2995	2993	2995	2998	2988	2983	2988	2998	2995	2993	2995	2998	2988
15	2913	2919	2925	2922	2920	2922	2925	2919	2913	2919	2925	2922	2920	2922	2925	2919
20	2812	2817	2819	2818	2820	2818	2819	2817	2812	2817	2819	2818	2820	2818	2819	2817
25	2676	2678	2678	2681	2685	2681	2678	2678	2676	2678	2678	2681	2685	2681	2678	2678
30	2506	2503	2505	2510	2514	2510	2505	2503	2506	2503	2505	2510	2514	2510	2505	2503
35	2298	2289	2294	2298	2306	2298	2294	2289	2298	2289	2294	2298	2306	2298	2294	2289
40	2049	2041	2039	2043	2053	2043	2039	2041	2049	2041	2039	2043	2053	2043	2039	2041
45	1765	1760	1754	1741	1740	1741	1754	1760	1765	1760	1754	1741	1740	1741	1754	1760
50	1460	1463	1452	1408	1397	1408	1452	1463	1460	1463	1452	1408	1397	1408	1452	1463
55	1169	1166	1142	1110	1107	1110	1142	1166	1169	1166	1142	1110	1107	1110	1142	1166
60	910	895	875	862	863	862	875	895	910	895	875	862	863	862	875	895
65	696	677	658	667	672	667	658	677	696	677	658	667	672	667	658	677
70	527	512	494	525	530	525	494	512	527	512	494	525	530	525	494	512
75	393	388	382	408	417	408	382	388	393	388	382	408	417	408	382	388
80	276	271	277	289	298	289	277	271	276	271	277	289	298	289	277	271
85	142	141	150	162	161	162	150	141	142	141	150	162	161	162	150	141
90	9	16	20	25	24	25	20	16	9	16	20	25	24	25	20	16
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^2)

Horizontal Angle (Degrees)

Vertical Angle (Degrees)	0	45	90
0	4988	4988	4988
45	4094	4070	4035
55	3343	3265	3165
65	2701	2552	2608
75	2490	2420	2640
85	2679	2818	3036

Utilization of Lumens - Zonal Cavity Method

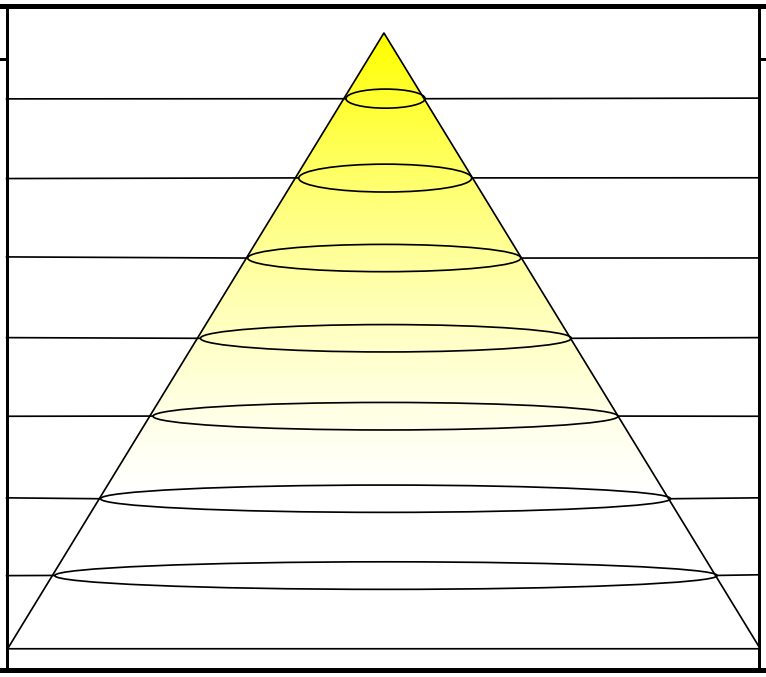
Effective Floor Cavity Reflectance 20%																		
Ceiling Cavity Reflectance	80				70				50			30			10			0
Wall Reflectance	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
Room Cavity Ratio (RCR)	** Values are expressed as Lumens delivered to the task surface **																	
0	8810	8810	8810	8810	8605	8605	8605	8605	8223	8223	8223	7873	7873	7873	7551	7551	7551	7400
1	8087	7750	7447	7175	7887	7582	7307	7058	7269	7042	6835	6981	6797	6626	6715	6568	6430	6277
2	7404	6824	6345	5941	7212	6686	6245	5871	6425	6055	5735	6185	5876	5605	5964	5709	5481	5325
3	6791	6049	5474	5017	6611	5933	5401	4972	5715	5260	4885	5514	5126	4801	5327	5000	4719	4563
4	6249	5402	4782	4308	6083	5305	4726	4278	5122	4619	4220	4952	4517	4164	4794	4419	4109	3954
5	5771	4859	4222	3751	5619	4777	4179	3731	4623	4095	3691	4479	4016	3652	4345	3939	3613	3462
6	5347	4399	3762	3306	5209	4330	3728	3291	4198	3662	3262	4076	3599	3234	3961	3538	3207	3059
7	4971	4006	3380	2942	4846	3947	3353	2931	3835	3300	2910	3730	3249	2890	3631	3199	2869	2727
8	4638	3669	3059	2641	4524	3618	3037	2633	3522	2994	2617	3431	2952	2602	3346	2911	2586	2449
9	4340	3377	2787	2389	4238	3333	2769	2383	3250	2733	2371	3172	2698	2359	3097	2665	2347	2215
10	4075	3124	2554	2175	3982	3086	2539	2171	3013	2509	2161	2945	2480	2152	2880	2452	2143	2016

Beam and Field Information

CIE Type:	Direct
Center Beam Intenisty:	3041 Candela
Central Cone Intensity:	3037 Candela
Beam Flux:	4969.0 Lumens
Beam Angle (0-180):	98.0 Degrees
Beam Angle (90-270):	96.3 Degrees
Field Angle (0-180):	157.7 Degrees
Field Angle (90-270):	159.5 Degrees

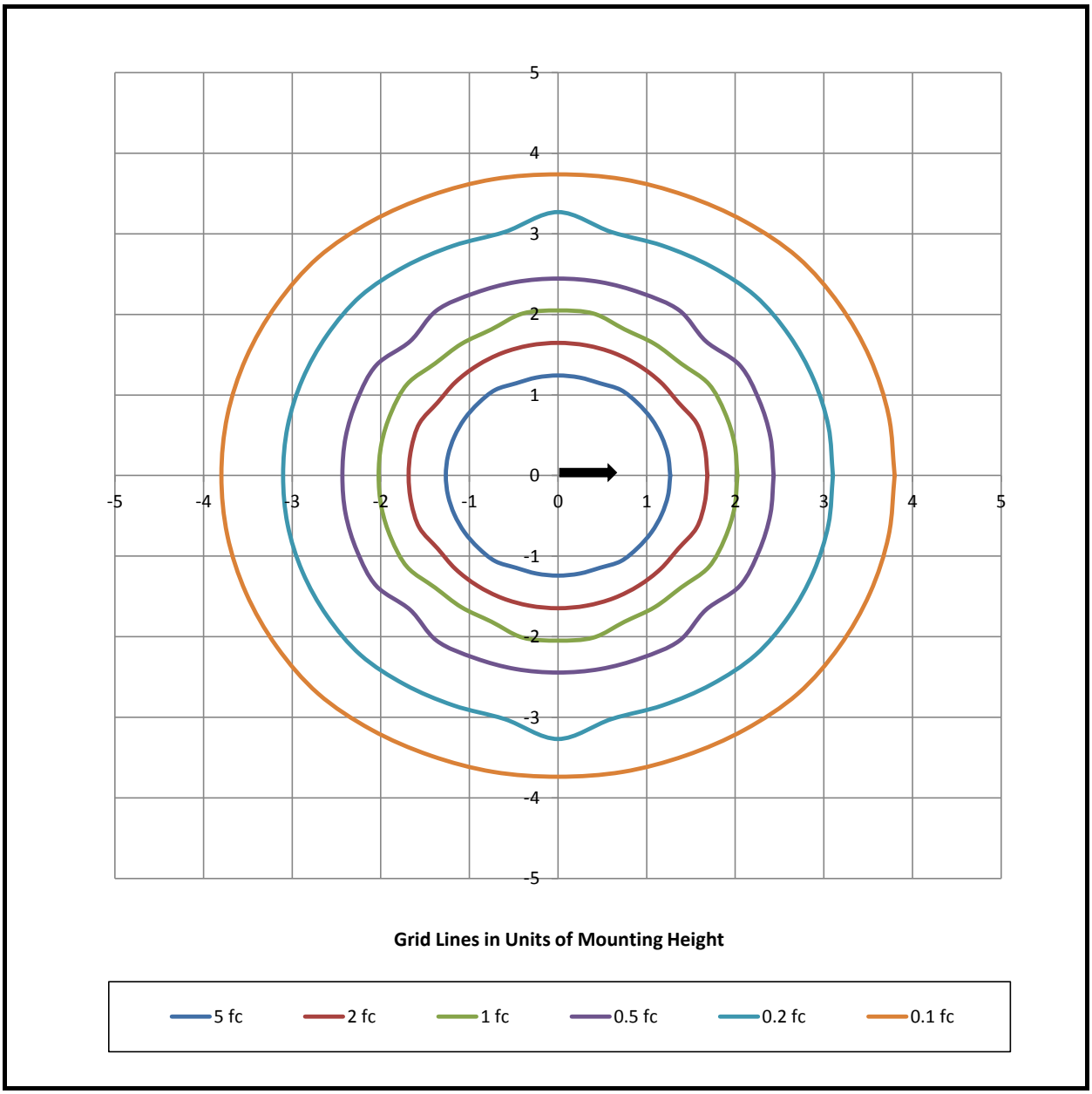
Cone of Light Tabulation

Mounting Height (Feet)	Footcandles at Nadir	Diameter (Feet)
4.00	190	4.89
6.00	84.5	7.34
8.00	47.5	9.79
10.0	30.4	12.2
12.0	21.1	14.7
14.0	15.5	17.1
16.0	11.9	19.6



ISOFootcandle Plot

Mounting Height - 8 Feet



In-Situ Test

In-Situ Test Conditions

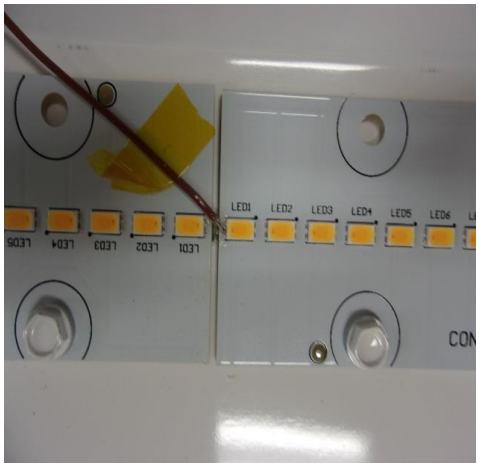
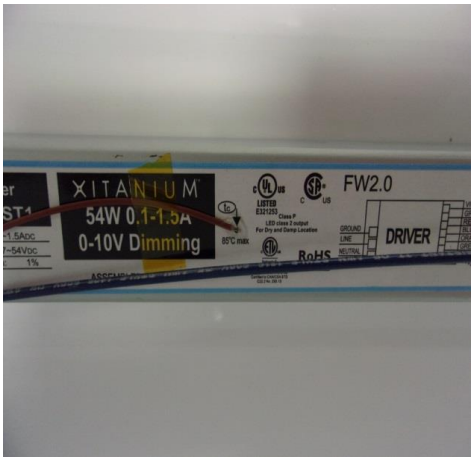
Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.2 °C	120.0 VAC	N/A	N/A	N/A	60 Hz	N/A

Summary of Results

LED Temperature:	38.5	°C
Driver Temperature:	56.0	°C
Measured LED Current:	0.06010	A

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

LED Temperature Location



Driver Temperature Location