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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
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Cincinnati, OH 45217
United States

Catalog Number
LT424SS1B30AC000,RT424SS1B30AC000
Order Number
11748594
Test Number
11748594.09

Test Date

2017-05-11 - 2017-05-12

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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Table of Contents

Summary of Results	Page 3
Integrating Sphere Results	Page 4
Distribution Results	
Conditions / Summary of Results / Polar Plot / Zonal Lumens	Page 5
Candela Tabulation / Average Luminance	Page 6
Coefficients of Utilization / Cone of Light	Page 7
ISOfootcandle Plot	Page 8
In-Situ Results	Page 9

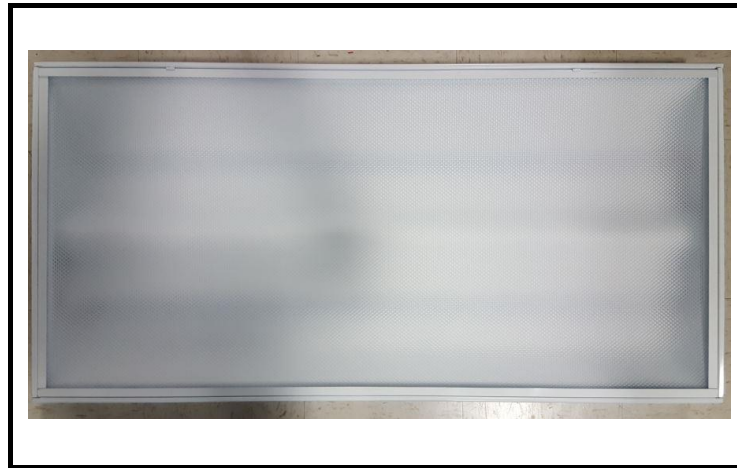
Laboratory results may not be representative of field performance
Ballast factors have not been applied

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: 3777 Lumens
Efficacy: 125.1 lm/w
CCT: 3066 K
CRI (Ra): 83.0

Distribution

Total Luminaire Output: 3641 Lumens
Luminaire Efficacy: 120.3 lm/w
Maximum Candela: 1513 Candela

Electrical Data at 277 VAC

Test Temperature: 24.7 °C
Voltage: 277.0 VAC
Current: 0.1158 A
Power: 30.68 W
Power Factor: 0.950
Frequency: 60 Hz
Current THD: 8.90 %

In-Situ

LED Temperature: 37.7 °C
Driver Temperature: 40.9 °C
Measured LED Current: 0.03970 A

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



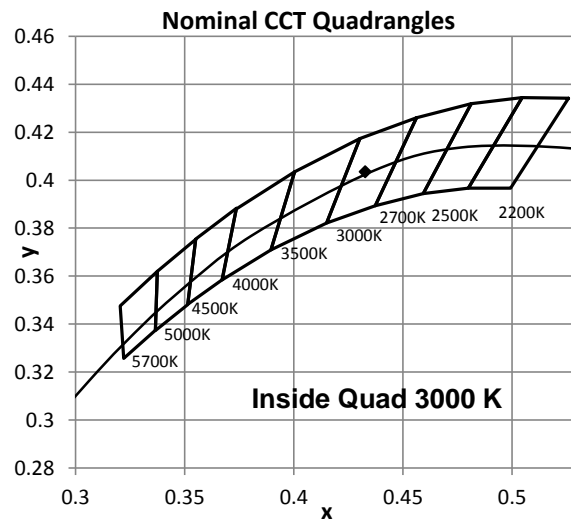
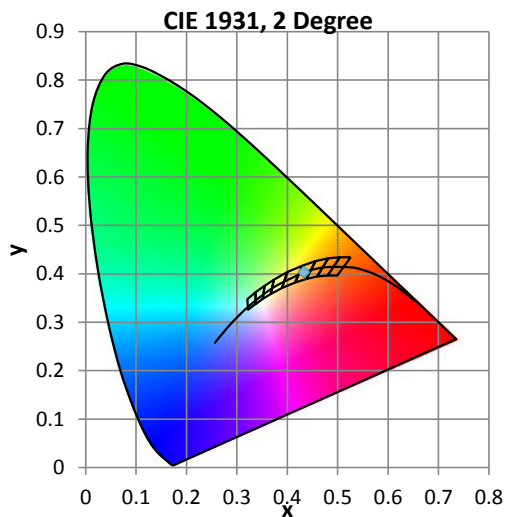
Color Quality - Integrating Sphere

Integrating Sphere Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.7 °C	119.9 VAC	0.2551 A	30.20 W	0.987	60 Hz	7.24 %

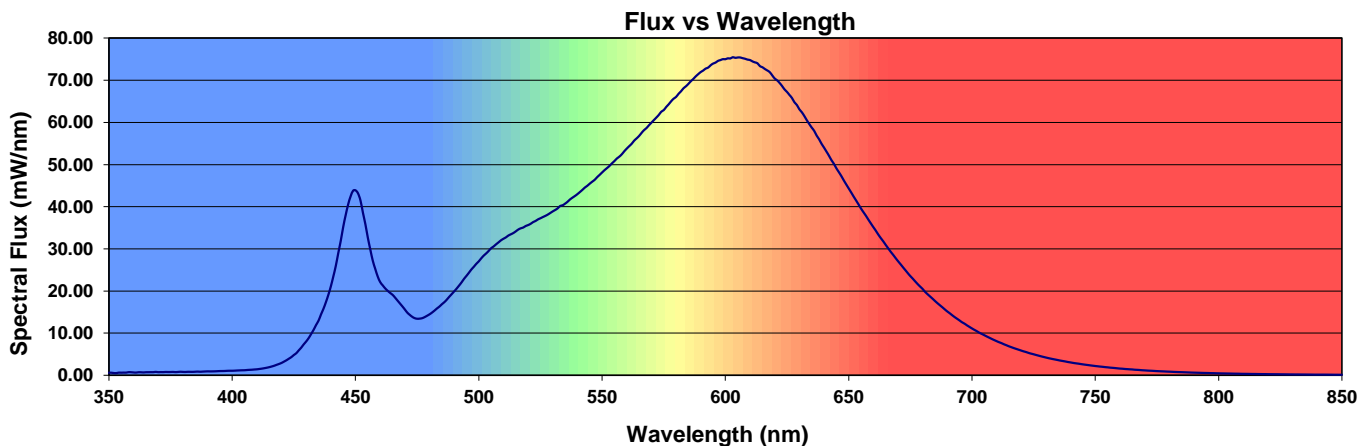
Summary of Results

Total Output:	3777 Lumens	Chromaticity (x):	0.4327
Efficacy:	125.1 lm/w	Chromaticity (y):	0.4035
CCT:	3066 K	Chromaticity (u'):	0.2481
CRI (Ra):	83.0	Chromaticity (v'):	0.5205
CRI (R9):	8.7	TM-30 Rf:	83.6
Peak Wavelength:	604.9 nm	TM-30 Rg:	96.7
Dominant Wavelength:	582.4 nm	Duv:	0.0004
S/P Ratio:	1.366		



Color Rendering Index Detail

Ra (CRI)	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14
83.0	81.1	90.5	96.9	81.4	81.4	88.5	83.7	60.3	8.7	78.5	80.8	72.7	83.2	98.7





Distribution - Goniophotometer

Distribution Test Conditions

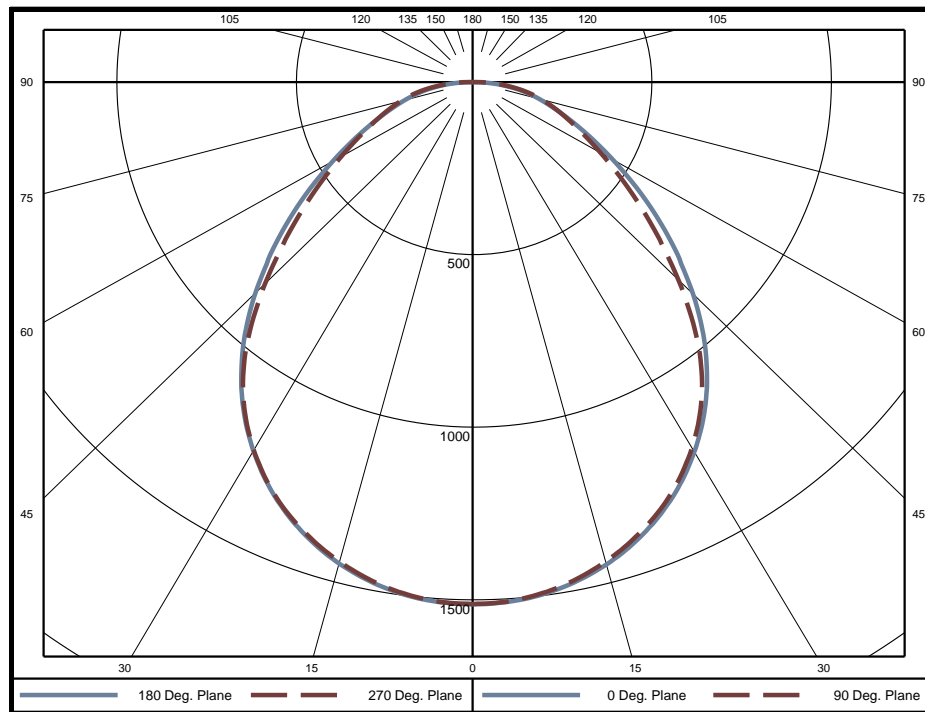
Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.0 °C	120.0 VAC	0.2532 A	30.27 W	0.996	60 Hz	7.20 %

Summary of Results

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

Total Lumen Output: 3641 Lumens
Luminaire Efficacy: 120.3 lm/w
Maximum Candela: 1513 Candela

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	36.1	1.0%	60-65	186.0	5.1%	120-125	0	0.0%
5-10	106.9	2.9%	65-70	149.7	4.1%	125-130	0	0.0%
10-15	173.6	4.8%	70-75	119.0	3.3%	130-135	0	0.0%
15-20	233.5	6.4%	75-80	90.3	2.5%	135-140	0	0.0%
20-25	284.1	7.8%	80-85	58.0	1.6%	140-145	0	0.0%
25-30	322.9	8.9%	85-90	22.9	0.6%	145-150	0	0.0%
30-35	347.2	9.5%	90-95	0	0.0%	150-155	0	0.0%
35-40	354.2	9.7%	95-100	0	0.0%	155-160	0	0.0%
40-45	341.9	9.4%	100-105	0	0.0%	160-165	0	0.0%
45-50	313.0	8.6%	105-110	0	0.0%	165-170	0	0.0%
50-55	273.3	7.5%	110-115	0	0.0%	170-175	0	0.0%
55-60	228.7	6.3%	115-120	0	0.0%	175-180	0	0.0%

Zone	Lumens	% of Luminaire
0-40	1859	51.0%
0-60	3015	82.8%
0-90	3641	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	1513	1513	1513	1513	1513	1513	1513	1513	1513	1513	1513	1513	1513	1513	1513	1513
5	1506	1507	1507	1505	1505	1505	1507	1507	1506	1507	1507	1505	1505	1505	1507	1507
10	1484	1485	1483	1481	1479	1481	1483	1485	1484	1485	1483	1481	1479	1481	1483	1485
15	1448	1447	1444	1441	1439	1441	1444	1447	1448	1447	1444	1441	1439	1441	1444	1447
20	1395	1393	1388	1386	1384	1386	1388	1393	1395	1393	1388	1386	1384	1386	1388	1393
25	1327	1322	1318	1316	1316	1316	1318	1322	1327	1322	1318	1316	1316	1316	1318	1322
30	1241	1234	1230	1228	1228	1228	1230	1234	1241	1234	1230	1228	1228	1228	1230	1234
35	1138	1129	1123	1119	1119	1119	1123	1129	1138	1129	1123	1119	1119	1119	1123	1129
40	1016	1006	997	985	981	985	997	1006	1016	1006	997	985	981	985	997	1006
45	876	870	856	830	820	830	856	870	876	870	856	830	820	830	856	870
50	731	728	706	674	665	674	706	728	731	728	706	674	665	674	706	728
55	589	583	558	536	530	536	558	583	589	583	558	536	530	536	558	583
60	458	449	432	420	419	420	432	449	458	449	432	420	419	420	432	449
65	351	343	329	330	331	330	329	343	351	343	329	330	331	330	329	343
70	265	261	252	261	264	261	252	261	265	261	252	261	264	261	252	261
75	197	196	193	202	206	202	193	196	197	196	193	202	206	202	193	196
80	137	135	137	143	146	143	137	135	137	135	137	143	146	143	137	135
85	71	70	73	77	78	77	73	70	71	70	73	77	78	77	73	70
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)

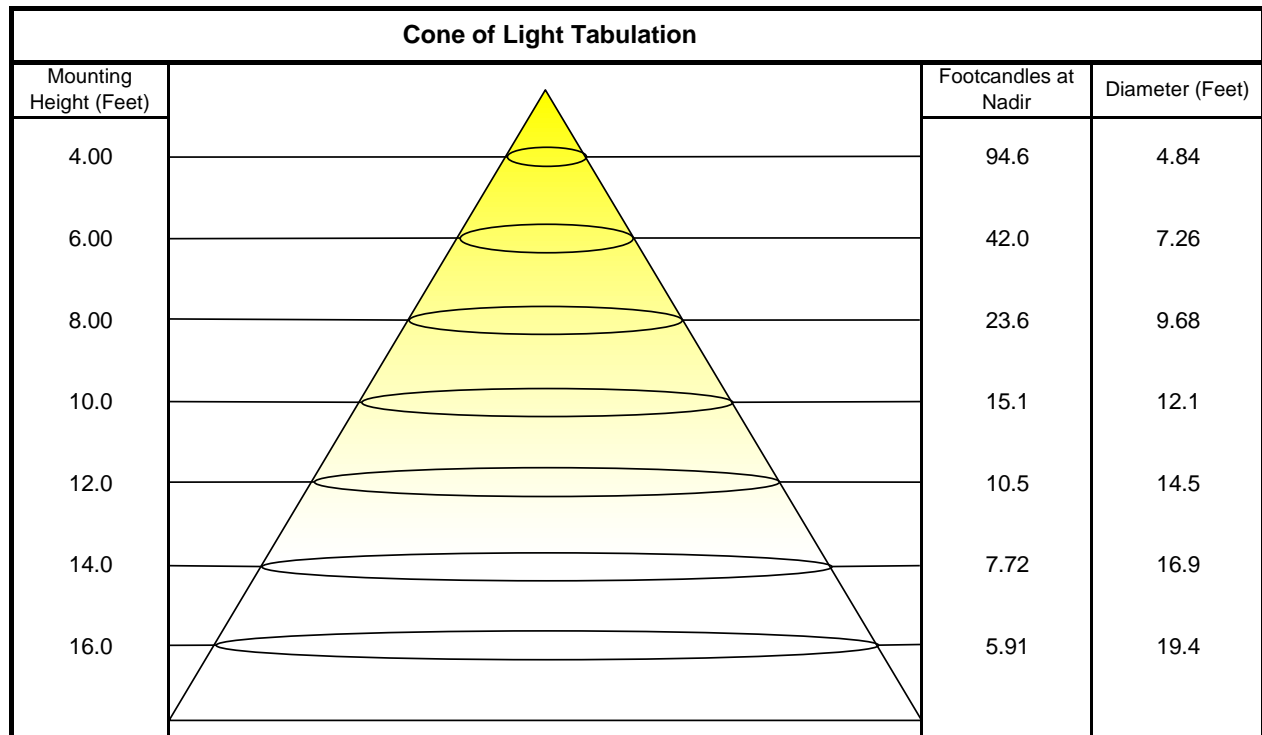
Vertical Angle (Degrees)	Horizontal Angle (Degrees)		
	0	45	90
0	2481	2481	2481
45	2032	1986	1901
55	1684	1596	1517
65	1361	1277	1284
75	1250	1224	1304
85	1331	1367	1466



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	4335	4335	4335	4335	4234	4234	4234	4234	4046	4046	4046	3874	3874	3874	3716	3716	3716	3641
1	3978	3812	3662	3528	3880	3729	3594	3471	3575	3463	3361	3433	3342	3258	3303	3230	3162	3086
2	3642	3356	3119	2920	3547	3287	3070	2886	3159	2977	2819	3041	2889	2755	2932	2806	2694	2617
3	3340	2974	2691	2466	3251	2917	2655	2443	2810	2585	2401	2711	2520	2359	2619	2457	2319	2242
4	3073	2656	2351	2117	2992	2608	2323	2103	2518	2270	2074	2435	2220	2046	2357	2172	2019	1943
5	2838	2389	2076	1844	2763	2349	2054	1834	2273	2013	1814	2202	1974	1795	2136	1936	1776	1701
6	2630	2163	1850	1625	2562	2129	1833	1618	2065	1801	1604	2004	1770	1590	1948	1739	1577	1504
7	2446	1970	1663	1447	2384	1941	1649	1442	1886	1623	1431	1834	1598	1421	1786	1573	1411	1341
8	2282	1805	1505	1299	2226	1780	1494	1295	1733	1473	1288	1688	1452	1280	1646	1432	1272	1205
9	2136	1662	1372	1176	2085	1640	1363	1173	1599	1345	1167	1561	1328	1161	1524	1311	1155	1090
10	2005	1537	1257	1071	1960	1519	1250	1069	1483	1235	1064	1449	1221	1059	1418	1207	1055	993

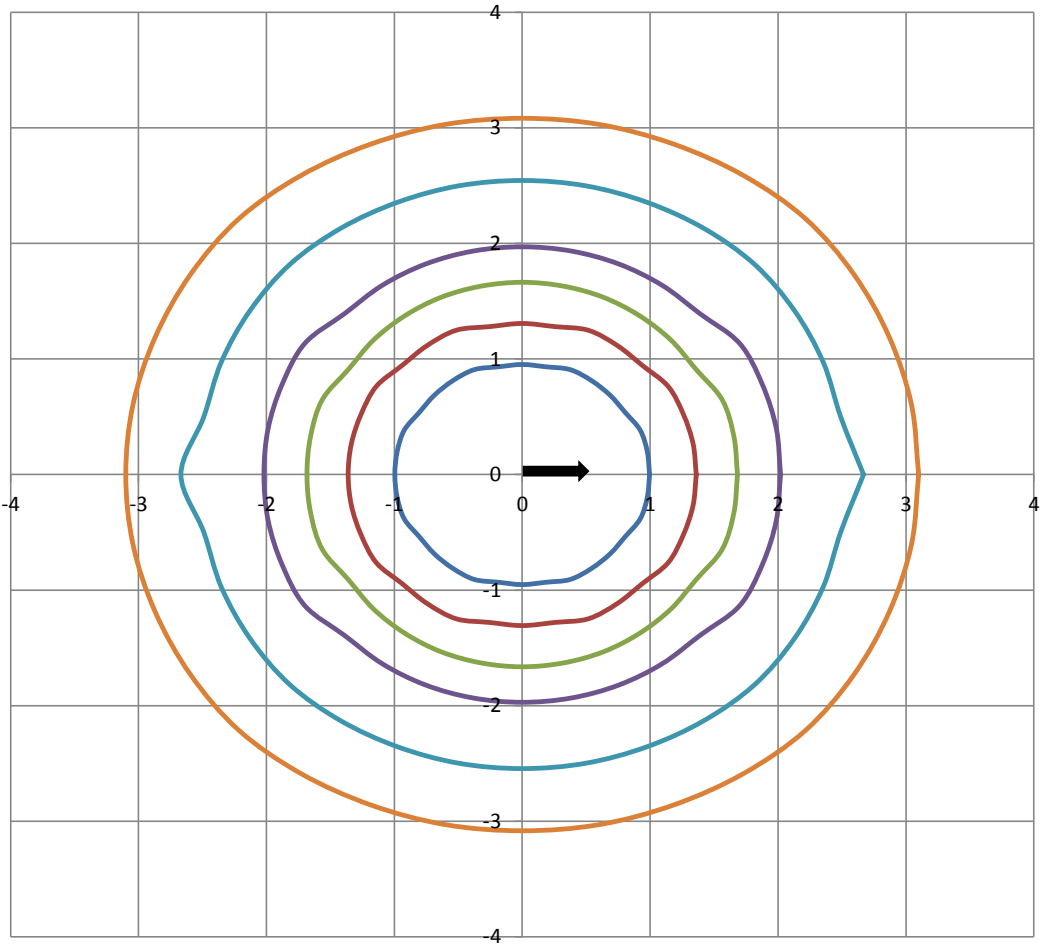
Beam and Field Information	
CIE Type:	Direct
Center Beam Intensity:	1513 Candela
Central Cone Intensity:	1511 Candela
Beam Flux:	2404.4 Lumens
Beam Angle (0-180):	98.3 Degrees
Beam Angle (90-270):	93.8 Degrees
Field Angle (0-180):	157.6 Degrees
Field Angle (90-270):	159.1 Degrees





ISOFootcandle Plot

Mounting Height - 8 Feet



Grid Lines in Units of Mounting Height





In-Situ Test

In-Situ Test Conditions

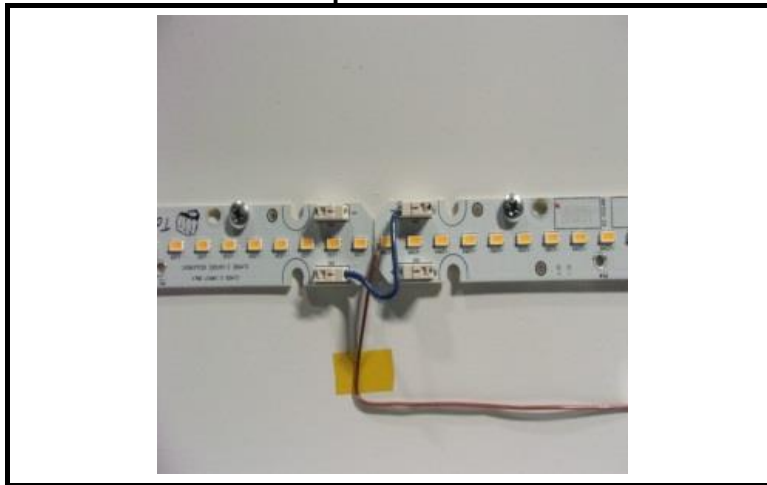
Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.3 °C	120.0 VAC	N/A	N/A	N/A	60 Hz	N/A

Summary of Results

LED Temperature: 37.7 °C
Driver Temperature: 40.9 °C
Measured LED Current: 0.03970 A

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

LED Temperature Location



Driver Temperature Location

