



UL Verification Services Inc.
7036 Snowdrift Road
Allentown, PA 18106
610-774-1300



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
LT424SS1B30DC000,RT424SS1B30DC000
Order Number
11748594
Test Number
11748594.01

Test Date

2017-05-11 - 2017-05-12

Prepared By

Vita Mazzola, Administrative Assistant

Approved By

Tiffany Hamm, Project Handler

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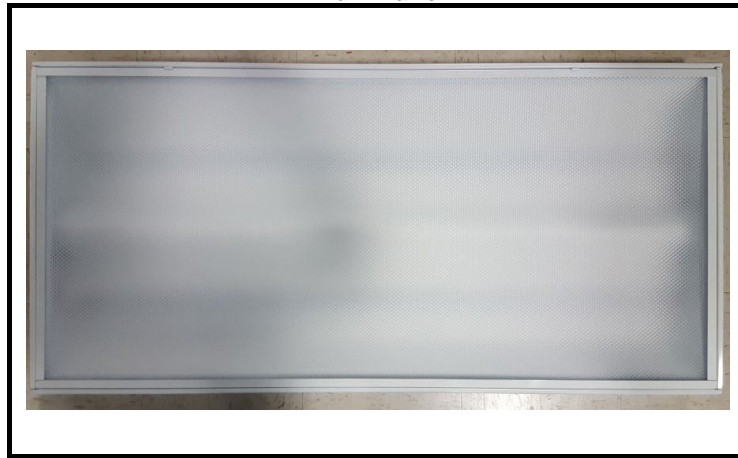
Laboratory results may not be representative of field performance
Ballast factors have not been applied

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



Luminaire Description: 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: 5877 Lumens
Efficacy: 120.0 lm/w
CCT: 3074 K
CRI (Ra): 82.8

Distribution

Total Luminaire Output: 5673 Lumens
Luminaire Efficacy: 115.7 lm/w
Maximum Candela: 2357 Candela

Electrical Data at 277 VAC

Test Temperature: 24.7 °C
Voltage: 277.0 VAC
Current: 0.1793 A
Power: 48.72 W
Power Factor: 0.981
Frequency: 60 Hz
Current THD: 6.87 %

In-Situ

LED Temperature: 47.0 °C
Driver Temperature: 48.6 °C
Measured LED Current: 0.06350 A

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



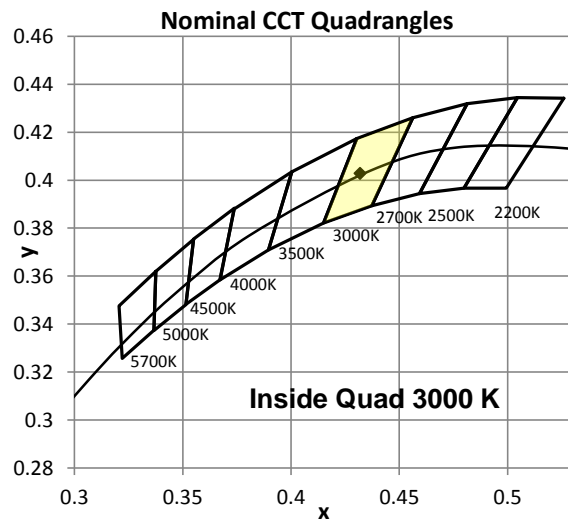
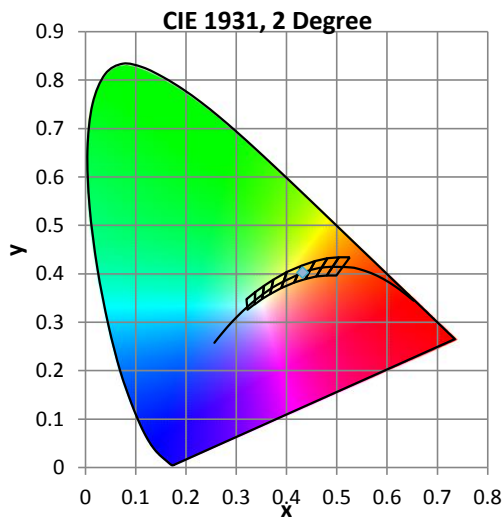
Color Quality - Integrating Sphere

Integrating Sphere Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.6 °C	120.1 VAC	0.4100 A	48.97 W	0.995	60 Hz	5.26 %

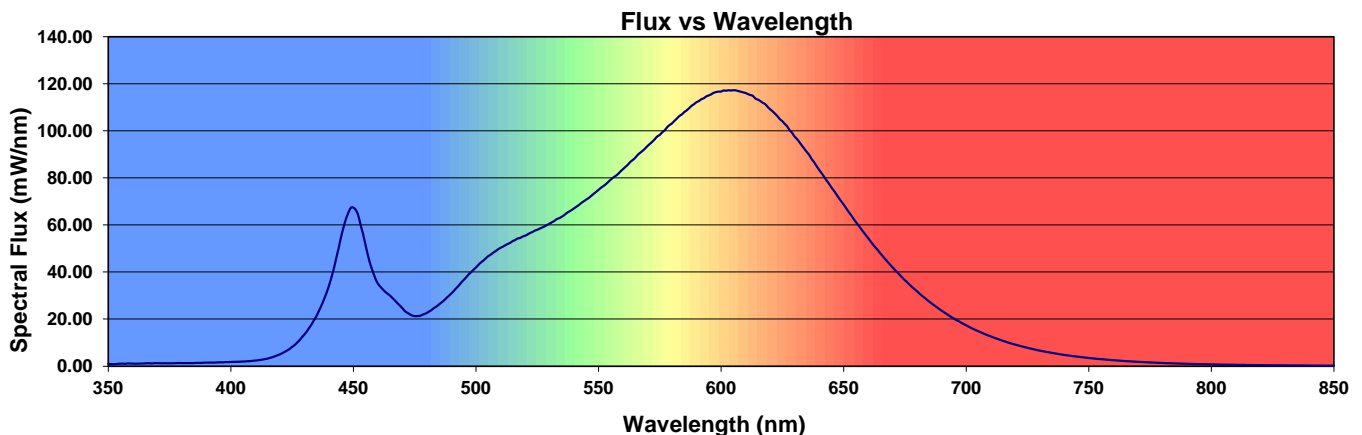
Summary of Results

Total Output:	5877 Lumens	Chromaticity (x):	0.4319
Efficacy:	120.0 lm/w	Chromaticity (y):	0.4028
CCT:	3074 K	Chromaticity (u'):	0.2479
CRI (Ra):	82.8	Chromaticity (v'):	0.5201
CRI (R9):	7.9	TM-30 Rf:	83.4
Peak Wavelength:	604.2 nm	TM-30 Rg:	96.7
Dominant Wavelength:	582.4 nm	Duv:	0.0002
S/P Ratio:	1.369		



Color Rendering Index Detail

Ra (CRI)	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14
82.8	80.9	90.4	96.8	81.1	81.2	88.3	83.5	60.0	7.9	78.3	80.5	72.7	83.0	98.7





Distribution - Goniophotometer

Distribution Test Conditions

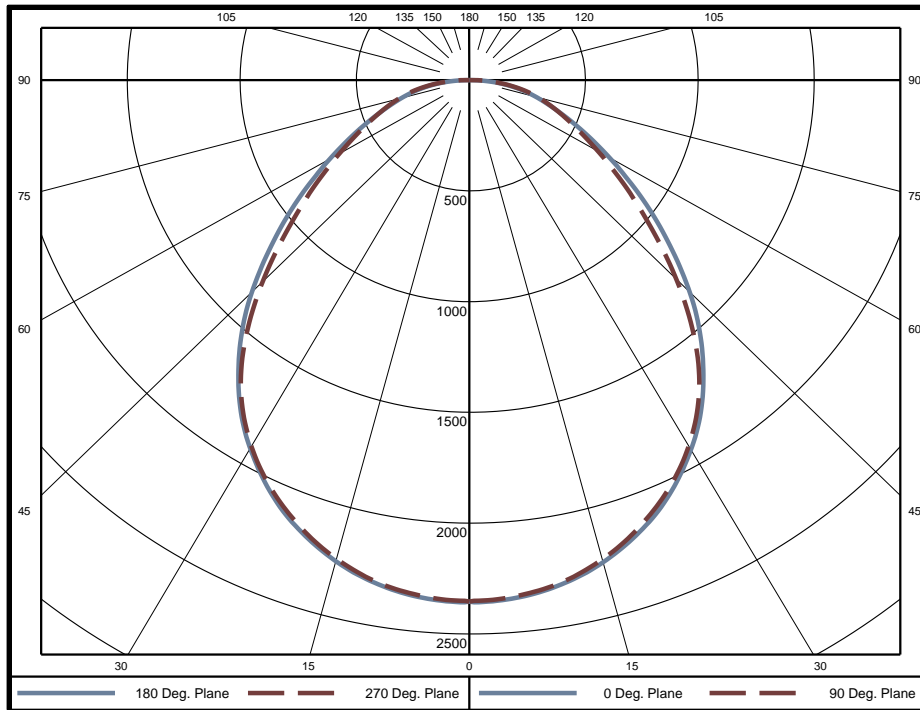
Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.2 °C	120.0 VAC	0.4093 A	49.02 W	0.998	60 Hz	5.18 %

Summary of Results

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

Total Lumen Output: 5673 Lumens
Luminaire Efficacy: 115.7 lm/w
Maximum Candela: 2357 Candela

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	56.2	1.0%	60-65	291.4	5.1%	120-125	0	0.0%
5-10	166.3	2.9%	65-70	234.5	4.1%	125-130	0	0.0%
10-15	270.2	4.8%	70-75	186.0	3.3%	130-135	0	0.0%
15-20	363.4	6.4%	75-80	140.6	2.5%	135-140	0	0.0%
20-25	442.1	7.8%	80-85	89.8	1.6%	140-145	0	0.0%
25-30	502.5	8.9%	85-90	35.7	0.6%	145-150	0	0.0%
30-35	540.8	9.5%	90-95	0	0.0%	150-155	0	0.0%
35-40	551.8	9.7%	95-100	0	0.0%	155-160	0	0.0%
40-45	532.8	9.4%	100-105	0	0.0%	160-165	0	0.0%
45-50	487.2	8.6%	105-110	0	0.0%	165-170	0	0.0%
50-55	424.8	7.5%	110-115	0	0.0%	170-175	0	0.0%
55-60	356.4	6.3%	115-120	0	0.0%	175-180	0	0.0%

Zone	Lumens	% of Luminaire
0-40	2893	51.0%
0-60	4695	82.8%
0-90	5673	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	337.5	
	0	2354	2354	2354	2354	2354	2354	2354	2354	2354	2354	2354	2354	2354	2354	2354	2354
	5	2346	2343	2343	2340	2339	2340	2343	2343	2346	2343	2343	2340	2339	2340	2343	2343
	10	2311	2309	2308	2305	2303	2305	2308	2309	2311	2309	2308	2305	2303	2305	2308	2309
	15	2253	2251	2248	2243	2241	2243	2248	2251	2253	2251	2248	2243	2241	2243	2248	2251
	20	2171	2167	2162	2157	2153	2157	2162	2167	2171	2167	2162	2157	2153	2157	2162	2167
	25	2065	2059	2050	2047	2046	2047	2050	2059	2065	2059	2050	2047	2046	2047	2050	2059
	30	1931	1922	1913	1912	1913	1912	1913	1922	1931	1922	1913	1912	1913	1912	1913	1922
	35	1772	1759	1749	1744	1747	1744	1749	1759	1772	1759	1749	1744	1747	1744	1749	1759
	40	1580	1567	1551	1537	1532	1537	1551	1567	1580	1567	1551	1537	1532	1537	1551	1567
	45	1363	1352	1332	1295	1283	1295	1332	1352	1363	1352	1332	1295	1283	1295	1332	1352
	50	1130	1127	1098	1051	1036	1051	1098	1127	1130	1127	1098	1051	1036	1051	1098	1127
	55	911	904	872	836	829	836	872	904	911	904	872	836	829	836	872	904
	60	713	701	674	660	655	660	674	701	713	701	674	660	655	660	674	701
	65	548	537	517	518	519	518	517	537	548	537	517	518	519	518	517	537
	70	413	410	395	408	411	408	395	410	413	410	395	408	411	408	395	410
75	309	306	302	314	320	314	302	306	309	306	302	314	320	314	302	306	
80	213	211	212	221	225	221	212	211	213	211	212	221	225	221	212	211	
85	110	108	113	118	120	118	113	108	110	108	113	118	120	118	113	108	
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)

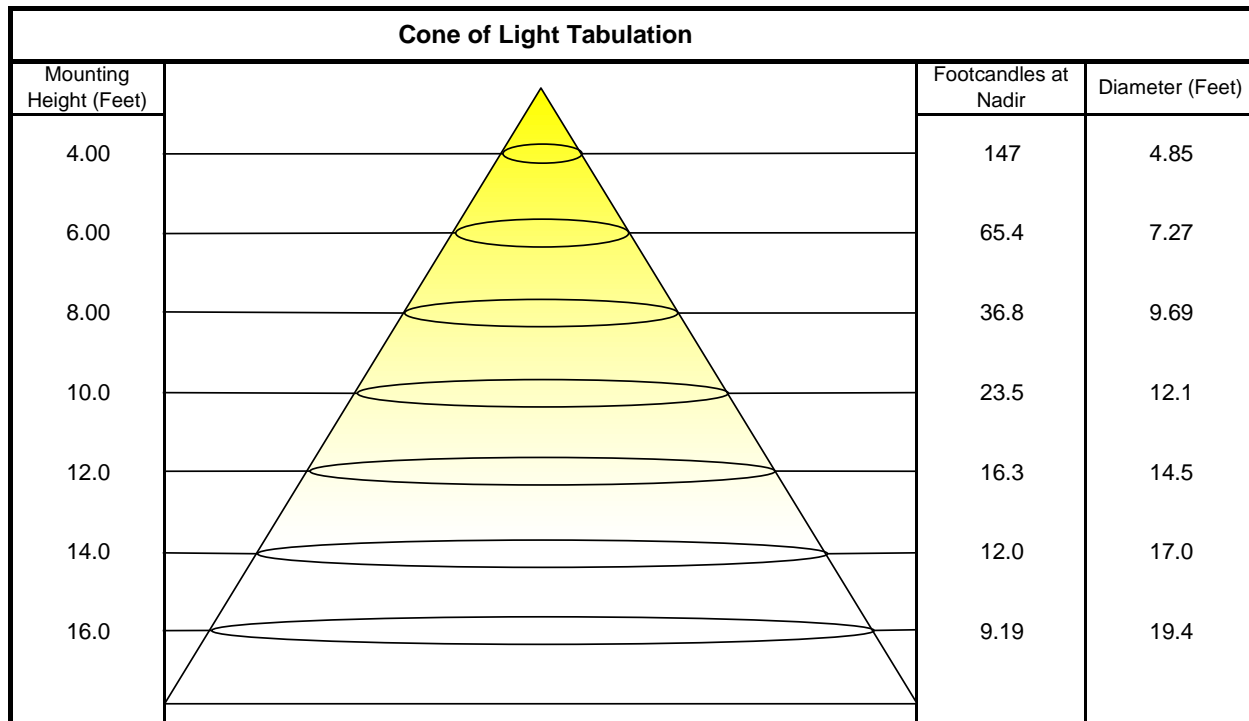
Vertical Angle (Degrees)	Horizontal Angle (Degrees)			
	0	45	90	
	0	3860	3860	3860
	45	3163	3090	2976
	55	2606	2493	2371
	65	2126	2005	2012
75	1956	1912	2026	
85	2070	2118	2264	



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	6753	6753	6753	6753	6596	6596	6596	6596	6303	6303	6303	6035	6035	6035	5789	5789	5789	5673
1	6197	5938	5705	5496	6044	5810	5598	5406	5569	5395	5236	5348	5207	5076	5145	5031	4925	4808
2	5673	5227	4859	4549	5526	5121	4782	4495	4921	4636	4390	4737	4500	4291	4567	4371	4196	4076
3	5202	4632	4191	3840	5064	4544	4135	3805	4377	4027	3738	4222	3924	3674	4079	3827	3612	3492
4	4787	4137	3661	3297	4660	4062	3618	3274	3922	3536	3230	3792	3457	3186	3671	3382	3144	3025
5	4421	3721	3232	2871	4304	3658	3199	2856	3540	3135	2825	3430	3074	2795	3327	3015	2765	2649
6	4096	3369	2881	2530	3990	3316	2855	2519	3215	2804	2497	3121	2755	2476	3033	2709	2455	2342
7	3809	3069	2589	2253	3713	3023	2568	2244	2937	2527	2228	2857	2488	2212	2781	2450	2197	2088
8	3554	2811	2344	2023	3467	2772	2327	2017	2698	2293	2005	2629	2261	1993	2563	2230	1981	1876
9	3326	2588	2136	1830	3248	2554	2122	1825	2490	2094	1816	2430	2067	1807	2373	2042	1798	1697
10	3123	2394	1958	1667	3052	2365	1946	1663	2309	1923	1656	2257	1901	1649	2207	1879	1642	1545

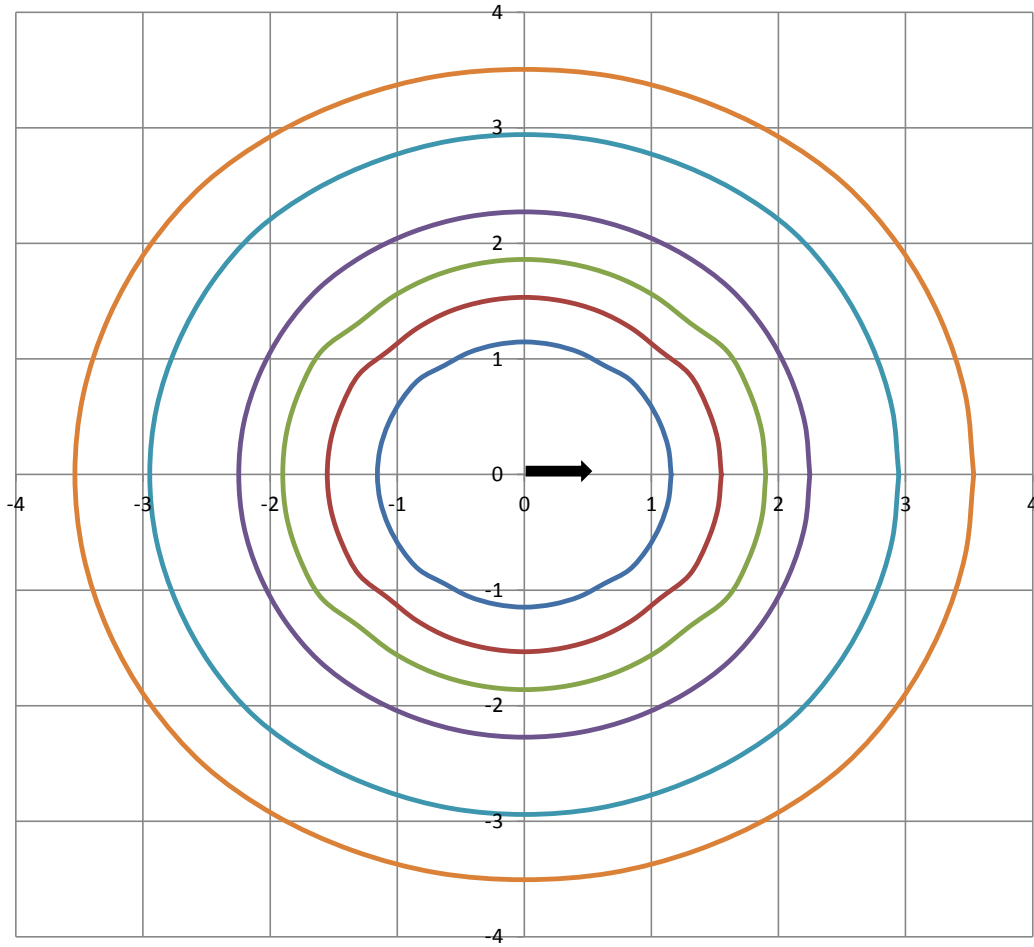
Beam and Field Information	
CIE Type:	Direct
Center Beam Intensity:	2354 Candela
Central Cone Intensity:	2350 Candela
Beam Flux:	3743.4 Lumens
Beam Angle (0-180):	97.9 Degrees
Beam Angle (90-270):	94.2 Degrees
Field Angle (0-180):	157.7 Degrees
Field Angle (90-270):	158.9 Degrees





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
24.6 °C	120.0 VAC	N/A	N/A	N/A	60 Hz	N/A

Summary of Results

LED Temperature: 47.0 °C
Driver Temperature: 48.6 °C
Measured LED Current: 0.06350 A

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

LED Temperature Location



Driver Temperature Location

