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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
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LEINS3-P9-6-3-V1-D2-C2-LGL-RS-535-PB
Order Number
11729723
Test Number
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2017-05-04 - 2017-05-05

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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: Formed black steel housing, upper frosted lens, linear prismatic reflectors, clear glass lens enclosure
Lamp: 864 White LEDs
Mounting: Pendant
Ballast/Driver: Philips Advance Xitanium XI054C150V054BST1 driver

Luminaire



Luminaire Characteristics

Luminous Length: 67.25 in.
Luminous Width: 20.50 in.

Summary of Results

Integrating Sphere

Luminous Flux: 14680 Lumens
Efficacy: 112.7 lm/w
CCT: 4308 K
CRI (Ra): 84.8

Distribution

Total Luminaire Output: 12740 Lumens
Luminaire Efficacy: 97.7 lm/w
Maximum Candela: 5689 Candela

Electrical Data at 120 VAC

Test Temperature: 25.6 °C
Voltage: 120.1 VAC
Current: 1.088 A
Power: 130.3 W
Power Factor: 0.997
Frequency: 60 Hz
Current THD: 4.76 %

In-Situ

LED Temperature: 43.3 °C
Driver Temperature: 43.0 °C
Measured LED Current: 0.04592 A

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



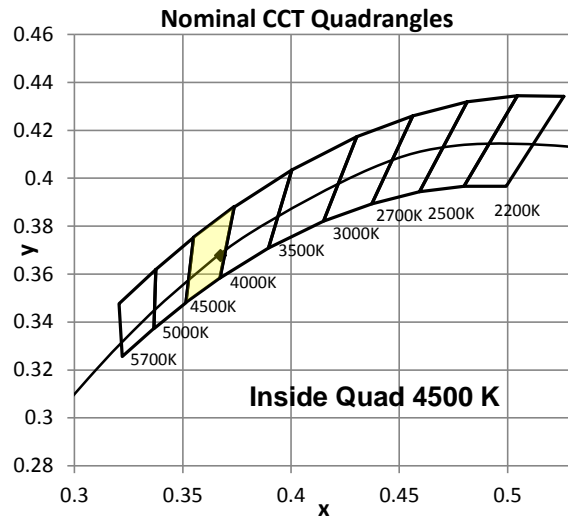
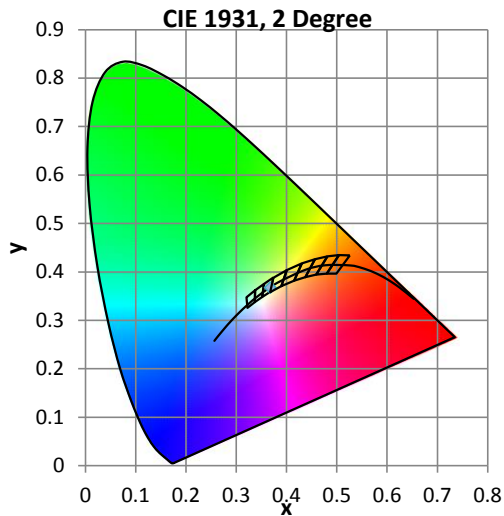
Color Quality - Integrating Sphere

Integrating Sphere Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.6 °C	120.1 VAC	1.088 A	130.3 W	0.997	60 Hz	4.76 %

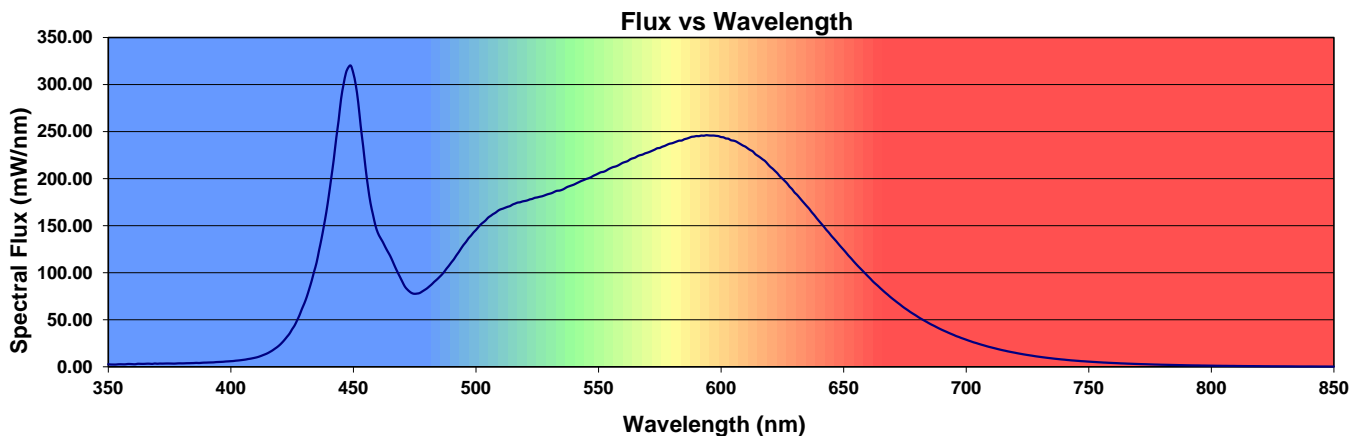
Summary of Results

Total Output:	14680 Lumens	Chromaticity (x):	0.3675
Efficacy:	112.7 lm/w	Chromaticity (y):	0.3677
CCT:	4308 K	Chromaticity (u'):	0.2202
CRI (Ra):	84.8	Chromaticity (v'):	0.4956
CRI (R9):	14.6	TM-30 R_f:	84.1
Peak Wavelength:	448.5 nm	TM-30 R_g:	97.1
Dominant Wavelength:	578 nm	Duv:	0.0004
S/P Ratio:	1.796		



Color Rendering Index Detail

Ra (CRI)	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14
84.8	83.3	89.8	94.8	85.0	84.1	86.2	87.1	68.0	14.6	76.2	85.1	68.9	84.9	97.3





Distribution - Goniophotometer

Distribution Test Conditions

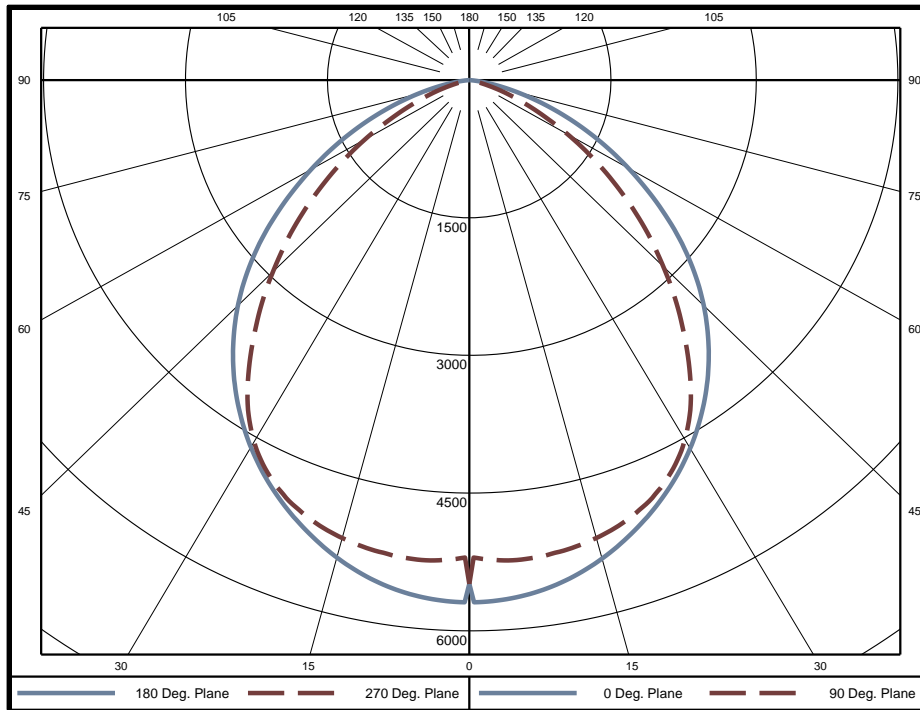
Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.9 °C	120.0 VAC	1.089 A	130.4 W	0.998	60 Hz	4.76 %

Summary of Results

Spacing Criteria
 0-180: 1.25
 90-270: 1.25

Total Lumen Output: 12740 Lumens
Luminaire Efficacy: 97.7 lm/w
Maximum Candela: 5689 Candela

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	132	1.0%	60-65	645	5.1%	120-125	0	0.0%
5-10	393	3.1%	65-70	440	3.5%	125-130	0	0.0%
10-15	641	5.0%	70-75	253	2.0%	130-135	0	0.0%
15-20	866	6.8%	75-80	106	0.8%	135-140	0	0.0%
20-25	1060	8.3%	80-85	23	0.2%	140-145	0	0.0%
25-30	1211	9.5%	85-90	0	0.0%	145-150	0	0.0%
30-35	1305	10.2%	90-95	0	0.0%	150-155	0	0.0%
35-40	1327	10.4%	95-100	0	0.0%	155-160	0	0.0%
40-45	1281	10.1%	100-105	0	0.0%	160-165	0	0.0%
45-50	1179	9.3%	105-110	0	0.0%	165-170	0	0.0%
50-55	1032	8.1%	110-115	0	0.0%	170-175	0	0.0%
55-60	849	6.7%	115-120	0	0.0%	175-180	0	0.0%

Zone	Lumens	% of Luminaire
0-40	6935	54.4%
0-60	11276	88.5%
0-90	12743	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	5488	5488	5488	5488	5488	5488	5488	5488	5488	5488	5488	5488	5488	5488	5488	5488
5	5657	5654	5573	5377	5250	5377	5573	5654	5657	5654	5573	5377	5250	5377	5573	5654
10	5559	5571	5521	5347	5227	5347	5521	5571	5559	5571	5521	5347	5227	5347	5521	5571
15	5397	5425	5397	5265	5166	5265	5397	5425	5397	5425	5397	5265	5166	5265	5397	5425
20	5183	5227	5215	5122	5048	5122	5215	5227	5183	5227	5215	5122	5048	5122	5215	5227
25	4934	4971	4973	4910	4853	4910	4973	4971	4934	4971	4973	4910	4853	4910	4973	4971
30	4641	4662	4653	4600	4542	4600	4653	4662	4641	4662	4653	4600	4542	4600	4653	4662
35	4303	4299	4261	4149	4078	4149	4261	4299	4303	4299	4261	4149	4078	4149	4261	4299
40	3919	3883	3754	3570	3499	3570	3754	3883	3919	3883	3754	3570	3499	3570	3754	3883
45	3493	3406	3175	2999	2913	2999	3175	3406	3493	3406	3175	2999	2913	2999	3175	3406
50	3012	2881	2612	2423	2337	2423	2612	2881	3012	2881	2612	2423	2337	2423	2612	2881
55	2481	2351	2081	1861	1766	1861	2081	2351	2481	2351	2081	1861	1766	1861	2081	2351
60	1948	1828	1566	1328	1235	1328	1566	1828	1948	1828	1566	1328	1235	1328	1566	1828
65	1441	1336	1074	840	761	840	1074	1336	1441	1336	1074	840	761	840	1074	1336
70	964	884	633	458	406	458	633	884	964	884	633	458	406	458	633	884
75	548	486	287	167	138	167	287	486	548	486	287	167	138	167	287	486
80	227	177	60	33	30	33	60	177	227	177	60	33	30	33	60	177
85	32	6	0	0	1	0	0	6	32	6	0	0	1	0	0	6
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)

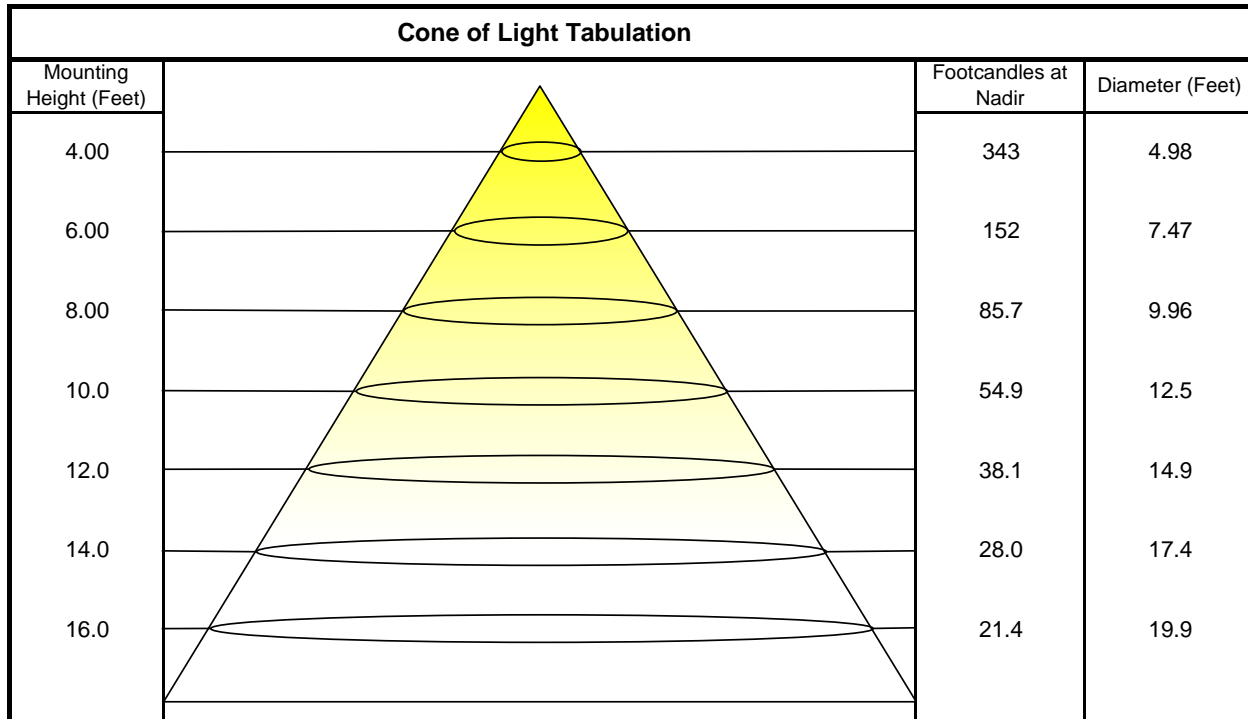
Vertical Angle (Degrees)	Horizontal Angle (Degrees)		
	0	45	90
0	6170	6170	6170
45	5554	5049	4632
55	4862	4079	3462
65	3833	2858	2023
75	2381	1248	601
85	408	0	7



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	15172	15172	15172	15172	14819	14819	14819	14819	14160	14160	14160	13558	13558	13558	13004	13004	13004	12744
1	14096	13587	13131	12719	13762	13303	12889	12514	12771	12432	12122	12282	12008	11755	11831	11613	11409	11158
2	12976	12063	11308	10673	12657	11829	11136	10548	11389	10808	10307	10983	10501	10077	10608	10211	9857	9602
3	11936	10741	9815	9078	11637	10545	9688	8998	10178	9446	8843	9838	9216	8694	9522	8998	8549	8292
4	11000	9615	8600	7825	10723	9451	8504	7772	9142	8320	7669	8855	8144	7569	8588	7977	7471	7215
5	10165	8658	7605	6828	9910	8520	7531	6791	8259	7388	6721	8015	7251	6651	7788	7120	6584	6331
6	9421	7842	6783	6022	9189	7725	6724	5997	7503	6611	5946	7295	6503	5897	7101	6398	5848	5602
7	8760	7144	6097	5363	8548	7044	6050	5344	6853	5959	5307	6675	5871	5271	6508	5786	5235	4996
8	8171	6543	5519	4815	7980	6457	5481	4801	6293	5406	4774	6139	5335	4746	5995	5265	4720	4489
9	7647	6022	5028	4356	7473	5948	4996	4345	5806	4935	4324	5673	4875	4303	5547	4818	4283	4061
10	7178	5570	4607	3967	7020	5505	4581	3958	5382	4530	3942	5265	4480	3926	5155	4432	3909	3696

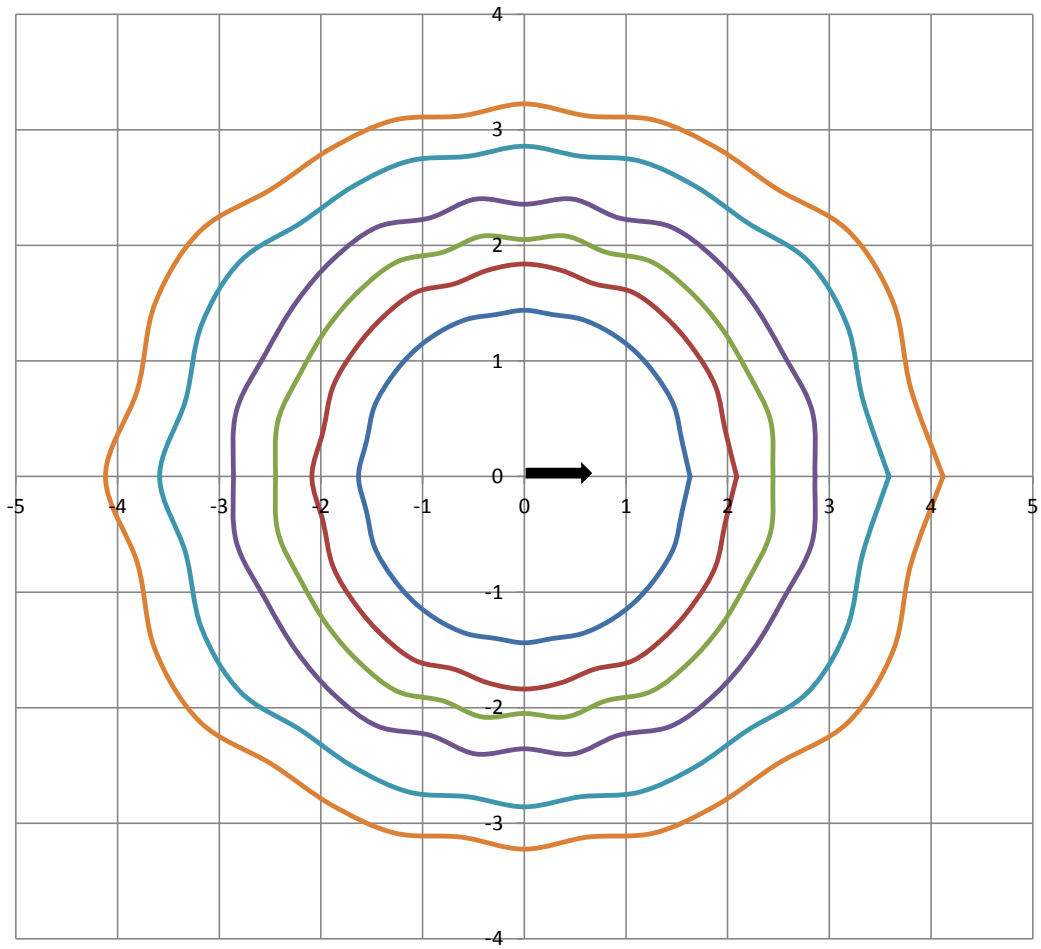
Beam and Field Information	
CIE Type:	Direct
Center Beam Intensity:	5488 Candela
Central Cone Intensity:	5507 Candela
Beam Flux:	9240.8 Lumens
Beam Angle (0-180):	105.1 Degrees
Beam Angle (90-270):	92.9 Degrees
Field Angle (0-180):	150.0 Degrees
Field Angle (90-270):	135.6 Degrees





ISOFootcandle Plot

Mounting Height - 8 Feet



Grid Lines in Units of Mounting Height





In-Situ Test

In-Situ Test Conditions

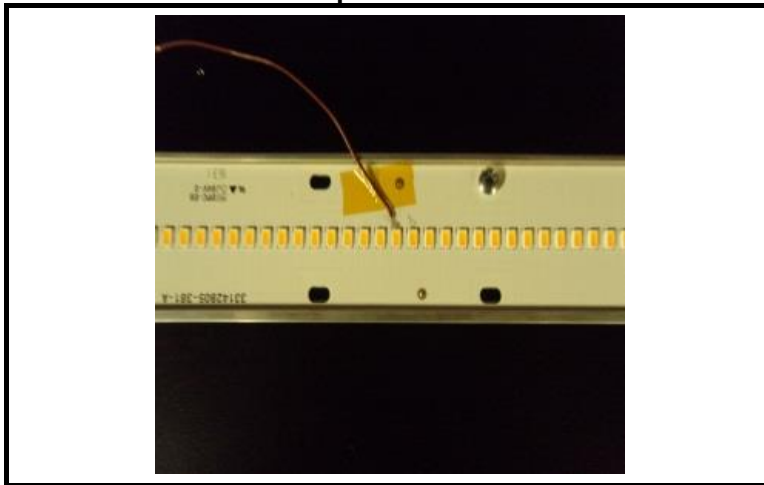
Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.2 °C	120.0 VAC	N/A	N/A	N/A	60 Hz	N/A

Summary of Results

LED Temperature: 43.3 °C
Driver Temperature: 43.0 °C
Measured LED Current: 0.04592 A

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

LED Temperature Location



Driver Temperature Location

