



UL LLC  
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## Photometric Test Report

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

**Prepared For**  
**SloanLED**

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**Catalog Number**  
**701269-6WSA3**

Order Number  
12177674

Test Number  
12177674.01

Revised Date  
2018-03-07  
Test Date

2018-02-23 - 2018-03-06

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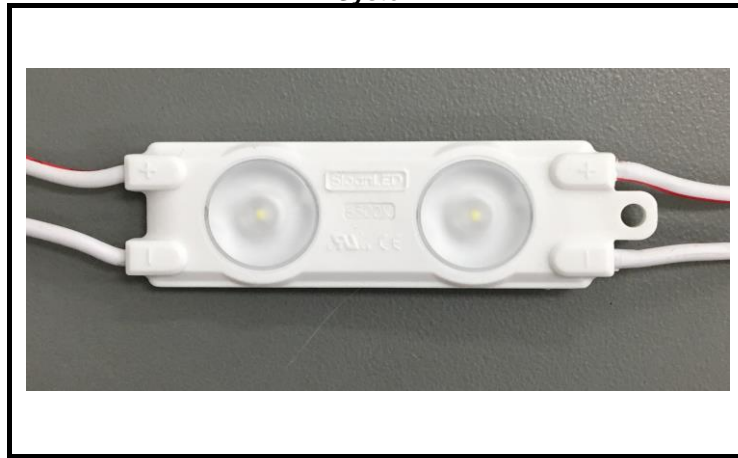
Laboratory results may not be representative of field performance  
Ballast factors have not been applied

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



**System Description:** Rectangular white housing  
**Lamp:** Two (2) white LEDs with optics  
**Mounting:** Surface – Ceiling

**System**



**System Characteristics**

Luminous Length: 1.50 in.  
Luminous Width: 0.7700 in.  
Luminous Height: 0.13 in.

**Summary of Results**

**Integrating Sphere**

Luminous Flux: 111 Lumens  
Efficacy: 107.4 lm/w  
CCT: 6499 K  
CRI (Ra): 71.7

**Distribution**

Total System Output: 109.9 Lumens  
System Efficacy: 103.6 lm/w  
Maximum Candela: 32 Candela

**Electrical Data at 12 VDC**

Test Temperature: 24.5 °C  
Voltage: 12.02 VDC  
Current: 0.08597 A  
Power: 1.033 W  
Power Factor: 1.000

**In-Situ**

LED Temperature: 47.5 °C  
Measured LED Current: 0.04270 A

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



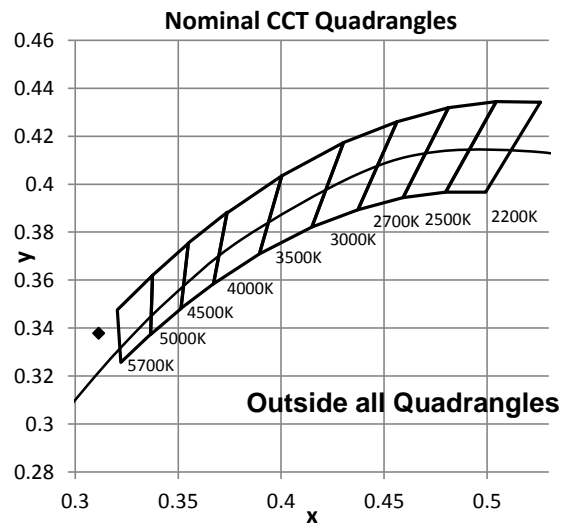
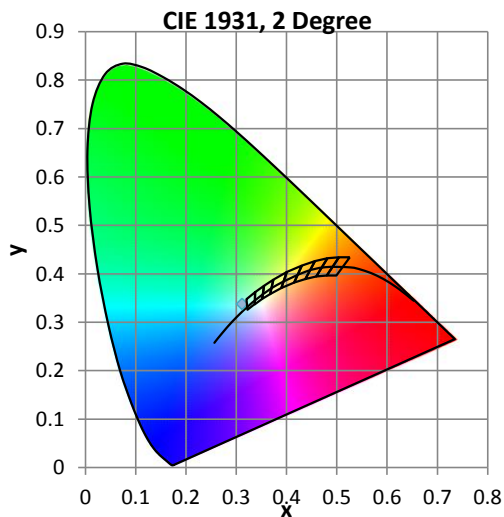
## Color Quality - Integrating Sphere

### Integrating Sphere Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.5 °C	12.02 VDC	0.08597 A	1.033 W	N/A	N/A	N/A

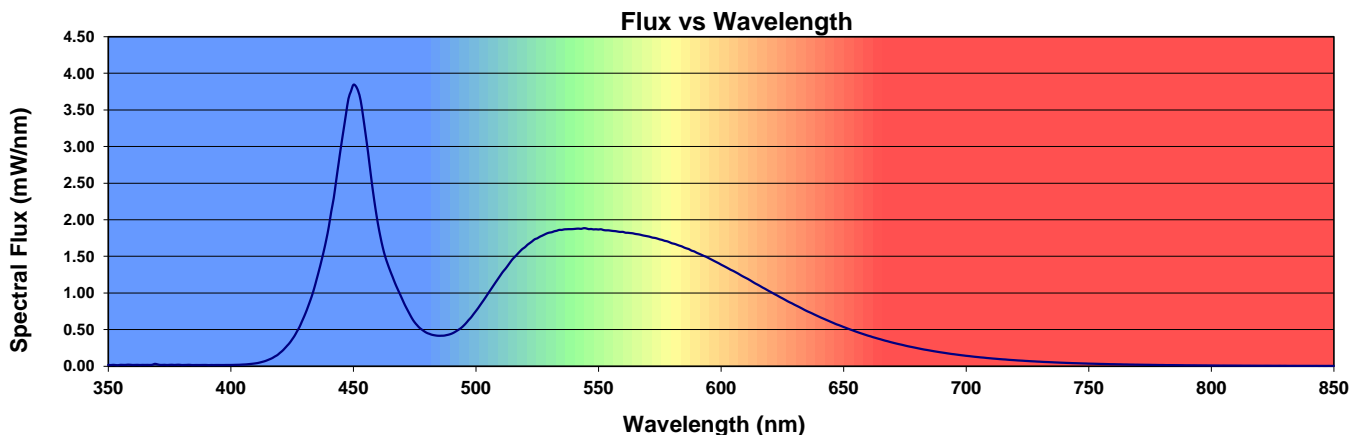
### Summary of Results

<b>Total Output:</b>	111 Lumens	<b>Chromaticity (x):</b>	0.3115
<b>Efficacy:</b>	107.4 lm/w	<b>Chromaticity (y):</b>	0.3378
<b>CCT:</b>	6499 K	<b>Chromaticity (u'):</b>	0.1937
<b>CRI (Ra):</b>	71.7	<b>Chromaticity (v'):</b>	0.4728
<b>CRI (R9):</b>	-35.8	<b>TM-30 Rf:</b>	70.7
<b>Peak Wavelength:</b>	450.4 nm	<b>TM-30 Rg:</b>	91.8
<b>Dominant Wavelength:</b>	494.4 nm	<b>Duv:</b>	0.0082
<b>S/P Ratio:</b>	2.06		



### Color Rendering Index Detail

Ra (CRI)	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
71.7	68.2	75.3	79.6	72.2	69.7	66.9	82.5	59.2	-35.8	40.9	68.9	38.3	69.3	88.6	61.8





## Distribution - Goniophotometer

### Distribution Test Conditions

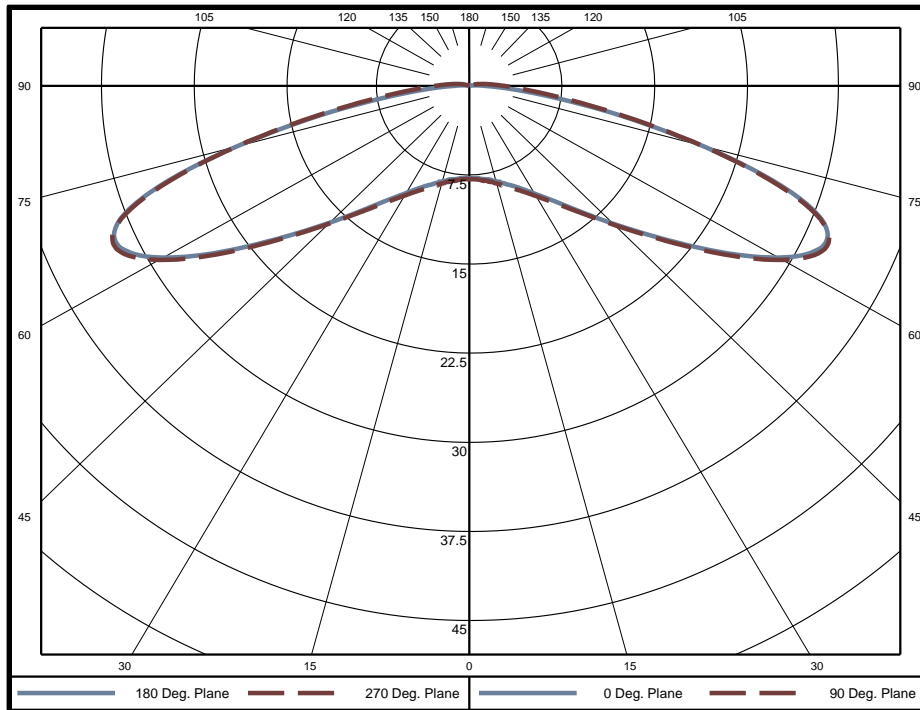
Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.0 °C	12.01 VDC	0.08837 A	1.061 W	N/A	N/A	N/A

### Summary of Results

**Spacing Criteria**  
 0-180: 3.29  
 90-270: 3.33

**Total Lumen Output:** 109.9 Lumens  
**System Efficacy:** 103.6 lm/w  
**Maximum Candela:** 32 Candela

### Polar Plot



### Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	0.19	0.2%	60-65	15.05	13.7%	120-125	0	0.0%
5-10	0.57	0.5%	65-70	15.77	14.3%	125-130	0	0.0%
10-15	0.98	0.9%	70-75	12.84	11.7%	130-135	0	0.0%
15-20	1.44	1.3%	75-80	7.81	7.1%	135-140	0	0.0%
20-25	1.96	1.8%	80-85	3.95	3.6%	140-145	0	0.0%
25-30	2.58	2.3%	85-90	1.95	1.8%	145-150	0	0.0%
30-35	3.34	3.0%	90-95	1.00	0.9%	150-155	0	0.0%
35-40	4.34	3.9%	95-100	0.49	0.4%	155-160	0	0.0%
40-45	5.65	5.1%	100-105	0.22	0.2%	160-165	0	0.0%
45-50	7.41	6.7%	105-110	0.10	0.1%	165-170	0	0.0%
50-55	9.69	8.8%	110-115	0.04	0.0%	170-175	0	0.0%
55-60	12.48	11.4%	115-120	0.01	0.0%	175-180	0	0.0%

Zone	Lumens	% of Luminaire
0-40	15	14.0%
0-60	51	46.1%
0-90	108	98.3%
90-180	2	1.7%



**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	7.77	7.77	7.77	7.77	7.77	7.77	7.77	7.77	7.77	7.77	7.77	7.77	7.77	7.77	7.77	7.77
5	7.83	7.91	7.98	7.96	7.92	7.96	7.98	7.91	7.83	7.91	7.98	7.96	7.92	7.96	7.98	7.91
10	8.01	8.08	8.18	8.16	8.10	8.16	8.18	8.08	8.01	8.08	8.18	8.16	8.10	8.16	8.18	8.08
15	8.27	8.41	8.55	8.52	8.50	8.52	8.55	8.41	8.27	8.41	8.55	8.52	8.50	8.52	8.55	8.41
20	8.79	8.95	9.07	9.08	9.03	9.08	9.07	8.95	8.79	8.95	9.07	9.08	9.03	9.08	9.07	8.95
25	9.46	9.62	9.78	9.78	9.71	9.78	9.78	9.62	9.46	9.62	9.78	9.78	9.71	9.78	9.78	9.62
30	10.45	10.61	10.80	10.76	10.67	10.76	10.80	10.61	10.45	10.61	10.80	10.76	10.67	10.76	10.80	10.61
35	11.79	12.02	12.19	12.12	12.03	12.12	12.19	12.02	11.79	12.02	12.19	12.12	12.03	12.12	12.19	12.02
40	13.73	13.99	14.14	14.02	13.89	14.02	14.14	13.99	13.73	13.99	14.14	14.02	13.89	14.02	14.14	13.99
45	16.39	16.67	16.80	16.65	16.52	16.65	16.80	16.67	16.39	16.67	16.80	16.65	16.52	16.65	16.80	16.67
50	19.81	20.15	20.32	20.10	20.00	20.10	20.32	20.15	19.81	20.15	20.32	20.10	20.00	20.10	20.32	20.15
55	24.23	24.58	24.80	24.51	24.54	24.51	24.80	24.58	24.23	24.58	24.80	24.51	24.54	24.51	24.80	24.58
60	28.91	29.26	29.51	29.27	29.29	29.27	29.51	29.26	28.91	29.26	29.51	29.27	29.29	29.27	29.51	29.26
65	31.68	32.06	32.08	31.98	31.94	31.98	32.08	32.06	31.68	32.06	32.08	31.98	31.94	31.98	32.08	32.06
70	29.05	29.15	29.02	28.88	28.81	28.88	29.02	29.15	29.05	29.15	29.02	28.88	28.81	28.88	29.02	29.15
75	19.59	19.43	19.51	19.63	19.54	19.63	19.51	19.43	19.59	19.43	19.51	19.63	19.54	19.63	19.51	19.43
80	9.75	10.02	10.30	10.53	10.52	10.53	10.30	10.02	9.75	10.02	10.30	10.53	10.52	10.53	10.30	10.02
85	3.80	4.88	5.15	5.25	5.24	5.25	5.15	4.88	3.80	4.88	5.15	5.25	5.24	5.25	5.15	4.88
90	1.26	2.35	2.76	2.85	2.84	2.85	2.76	2.35	1.26	2.35	2.76	2.85	2.84	2.85	2.76	2.35
95	0.51	0.93	1.51	1.62	1.62	1.62	1.51	0.93	0.51	0.93	1.51	1.62	1.62	1.62	1.51	0.93
100	0.09	0.20	0.77	0.91	0.92	0.91	0.77	0.20	0.09	0.20	0.77	0.91	0.92	0.91	0.77	0.20
105	0.00	0.00	0.37	0.51	0.52	0.51	0.37	0.00	0.00	0.00	0.37	0.51	0.52	0.51	0.37	0.00
110	0.00	0.00	0.12	0.25	0.27	0.25	0.12	0.00	0.00	0.00	0.12	0.25	0.27	0.25	0.12	0.00
115	0.00	0.00	0.00	0.09	0.10	0.09	0.00	0.00	0.00	0.00	0.00	0.09	0.10	0.09	0.00	0.00
120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
125	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
130	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
135	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
140	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
145	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
155	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
165	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
170	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
175	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
180	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

**Average Luminance (cd/m<sup>2</sup>)**  
Horizontal Angle (Degrees)

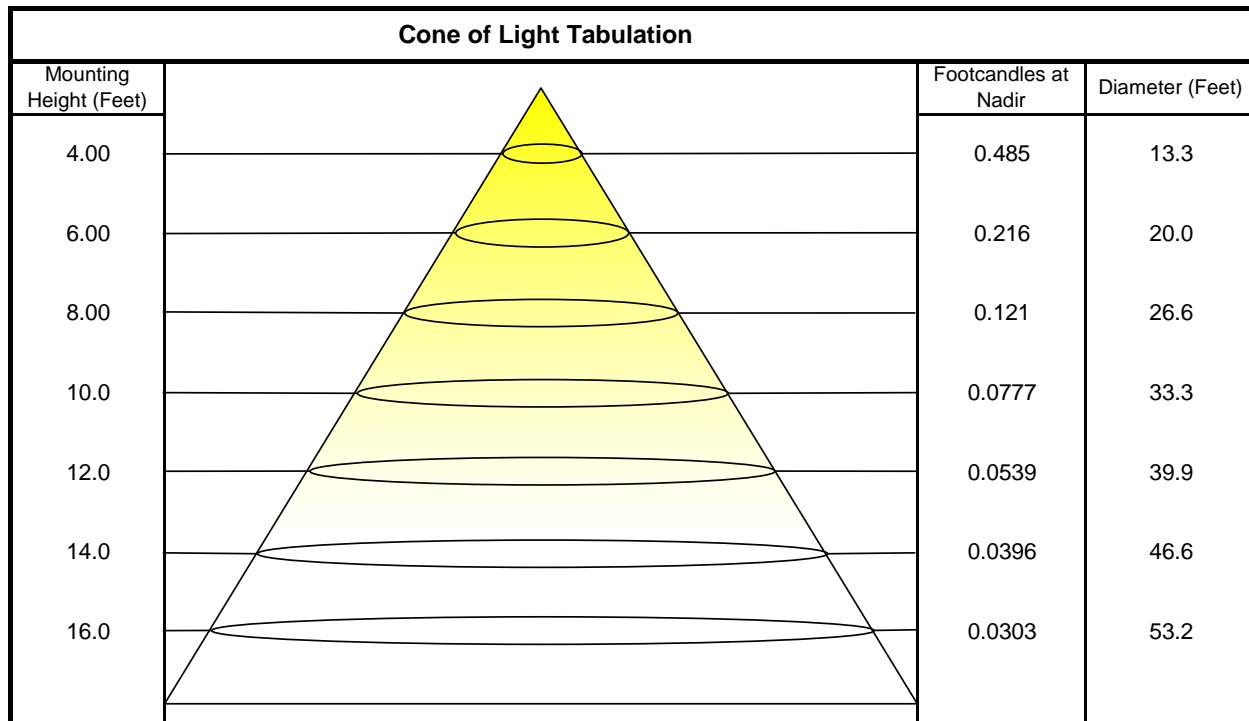
Vertical Angle (Degrees)	Horizontal Angle (Degrees)		
	0	45	90
0	10420	10420	10420
45	28720	27170	26970
55	50660	46500	46620
65	85350	74230	75240
75	77500	61380	63090
85	29940	26570	28260



### 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	130	130	130	130	127	127	127	127	121	121	121	115	115	115	110	110	110	108
1	113	105	98	92	110	102	96	90	97	92	87	92	88	84	88	84	81	78
2	98	85	75	66	95	83	73	65	78	70	63	74	67	61	70	64	59	56
3	86	70	58	48	83	68	57	48	64	55	47	61	52	45	57	50	44	41
4	77	59	47	37	74	58	46	36	54	44	36	51	42	35	48	40	34	31
5	69	51	38	29	66	49	38	29	47	36	28	44	35	27	41	33	27	24
6	63	44	32	23	60	43	32	23	41	30	23	38	29	22	36	28	22	19
7	57	39	28	19	55	38	27	19	36	26	19	34	25	18	32	24	18	15
8	53	35	24	16	51	34	24	16	32	23	16	31	22	16	29	21	15	13
9	49	32	21	14	47	31	21	14	29	20	14	28	19	13	27	19	13	11
10	46	29	19	12	44	28	19	12	27	18	12	26	17	12	24	17	11	9

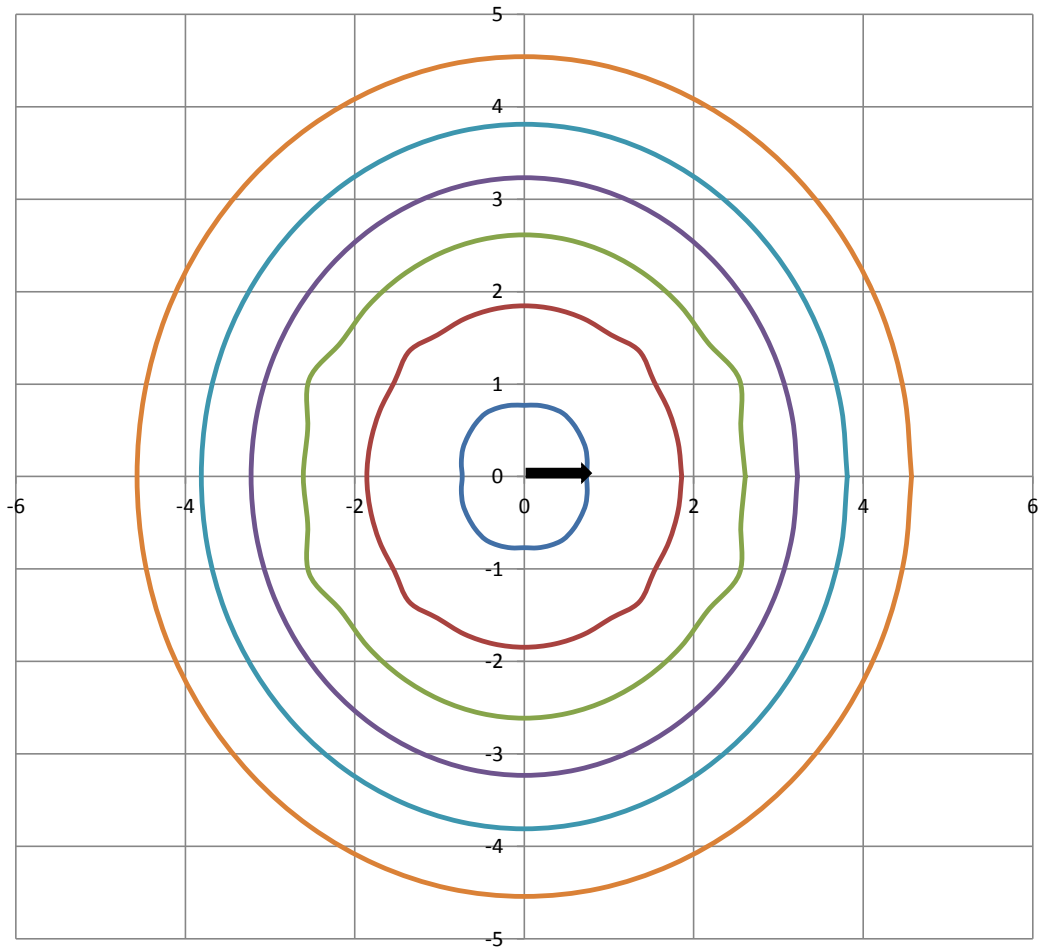
Beam and Field Information	
CIE Type:	Direct
Center Beam Intensity:	7.77 Candela
Central Cone Intensity:	8 Candela
Beam Flux:	106.9 Lumens
Beam Angle (0-180):	169.8 Degrees
Beam Angle (90-270):	174.6 Degrees
Field Angle (0-180):	185.6 Degrees
Field Angle (90-270):	203.2 Degrees



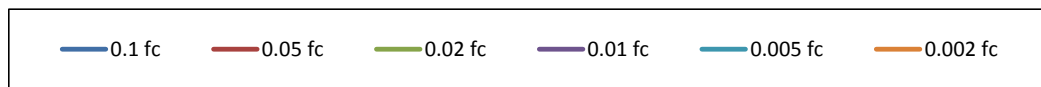


# ISOFootcandle Plot

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
25.0 °C	12.01 VDC	N/A	N/A	N/A	N/A	N/A

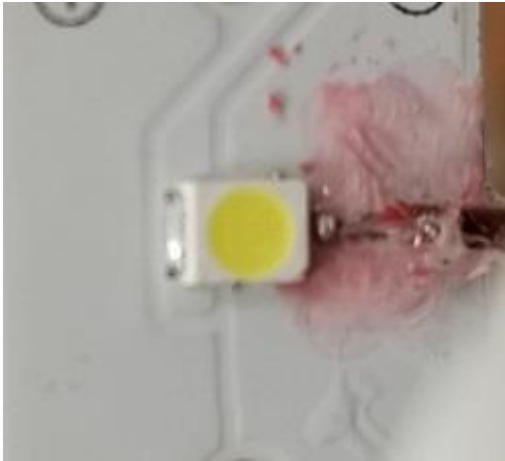
### Summary of Results

LED Temperature: 47.5 °C

Measured LED Current: 0.04270 A

Temperatures are offset to an ambient temperature of 25°C as described in UL1993-2017.

#### LED Temperature Location



#### Thermocouple Reference

