



UL LLC  
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## Photometric Test Report

Relevant Standards  
IES LM-79-2008, ANSI C82.77-10-2014, UL 1598-2008  
CIE 13.3-1995, CIE 15-2004, ANSI C78.377-2017  
IES TM-30-2018

### Prepared For **SloanLED**

5725 Olivas Park Dr  
Ventura, CA 93003-7697  
United States

**Catalog Number**  
**701269-6W2A1-MB REV A**

Order Number

13234102

Test Number

13234102.01A

Revised:

2020-03-05

Test Date

2020-02-13 - 2020-03-05

Prepared By

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Approved By

Yilmaz Yucelidag, Project Handler

The results contained in this report pertain only to the tested sample.  
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## Table of Contents

<b>Summary of Results</b>	Page 3
<b>Integrating Sphere Results</b>	Page 4
<b>Distribution Results</b>	
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
<b>In-Situ Results</b>	Page 9

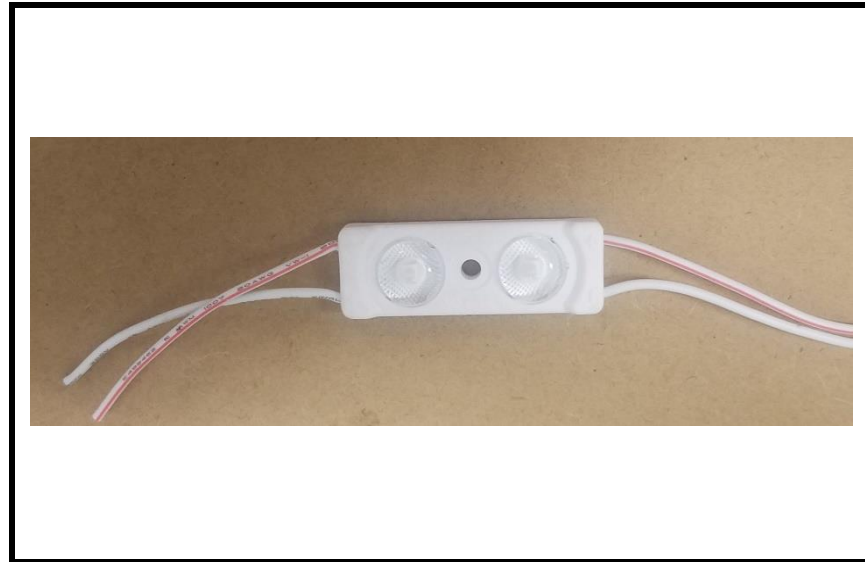
Laboratory results may not be representative of field performance  
Ballast factors have not been applied

Testing was performed in a 2-meter integrating sphere using the  $4\pi$  geometry method.  
Absorption correction was employed for Sphere measurement



**Luminaire Description:** Rectangular plastic housing  
**Lamp:** Three (3) LEDs with optics below each  
**Mounting:** VBU

**Luminaire**



**Luminaire Characteristics**

Luminous Length: 1.75 in.  
Luminous Width: 2.250 in.  
Luminous Height: 0.25 in.

**Summary of Results**

**Integrating Sphere**

Luminous Flux: 114.1 Lumens  
Efficacy: 116.13 lm/w  
CCT: 6678 K  
CRI (Ra): 71.1

**Distribution**

Total Luminaire Output: 107.4 Lumens  
Luminaire Efficacy: 110 lm/w  
Maximum Candela: 33 Candela

**Electrical Data at 12 VACVDC**

Test Temperature: 24.1 °C  
Voltage: 12.06 VACV  
Current: 0.08149 A  
Power: 0.9825 W

**In-Situ**

LED Temperature: 43.5 °C  
Measured LED Current: 0.03980 A

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



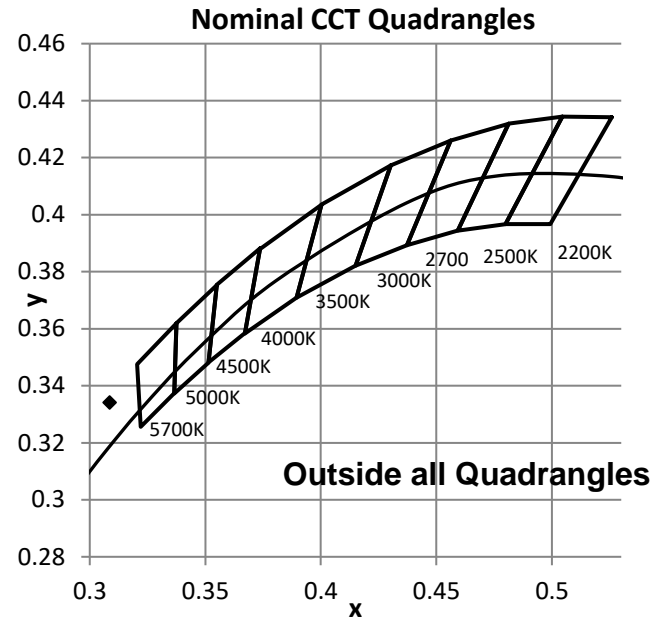
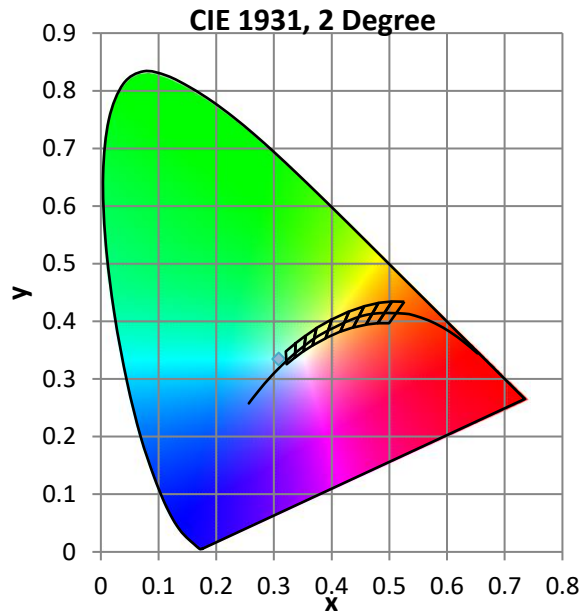
## Color Quality - Integrating Sphere

### Integrating Sphere Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.1 °C	12.06 VDC	0.08149 A	0.9825 W	N/A	N/A	N/A

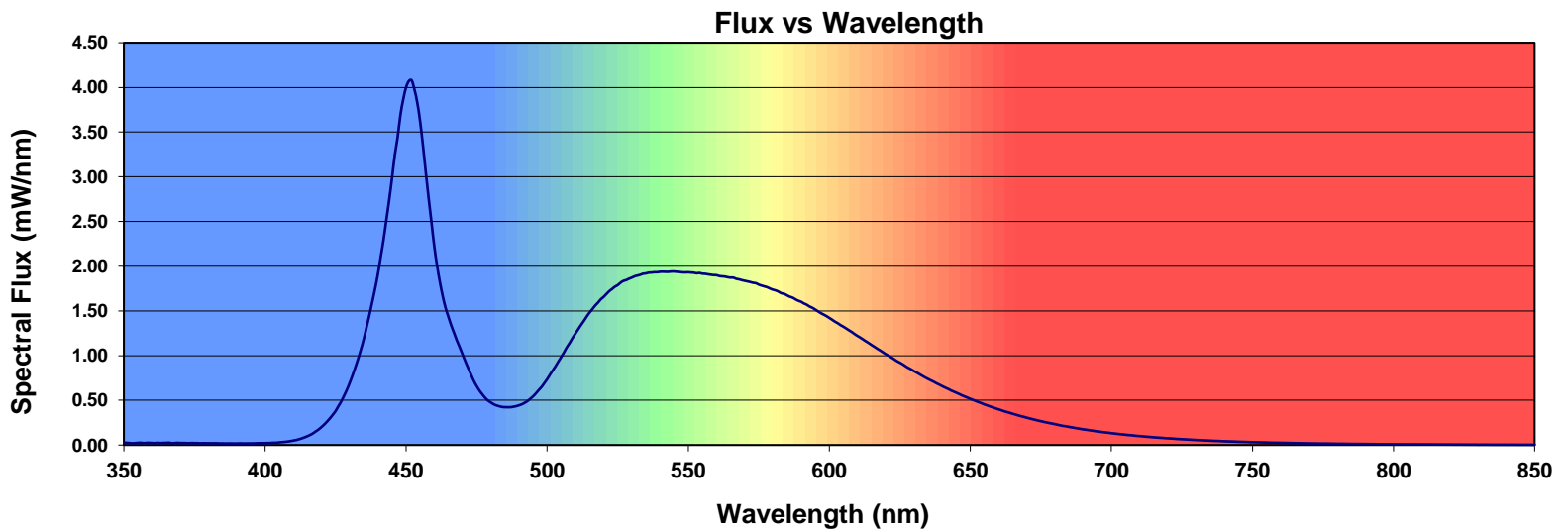
### Summary of Results

<b>Total Output:</b>	114 Lumens	<b>Chromaticity (x):</b>	0.3086
<b>Efficacy:</b>	116.1 lm/w	<b>Chromaticity (y):</b>	0.3342
<b>CCT:</b>	6678 K	<b>Chromaticity (u'):</b>	0.1931
<b>CRI (Ra):</b>	71.1	<b>Chromaticity (v'):</b>	0.4705
<b>CRI (R9):</b>	-40.4	<b>TM-30 Rf:</b>	73.1
<b>Peak Wavelength:</b>	451 nm	<b>TM-30 Rg:</b>	90.8
<b>Dominant Wavelength:</b>	492 nm	<b>Duv:</b>	0.0071
<b>S/P Ratio:</b>	2.08		



### Color Rendering Index Detail

Ra (CRI)	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
71.1	67.4	75.1	79.3	71.3	68.9	66.3	82.4	58.1	-40.4	40.0	67.5	36.8	68.8	88.5	60.9





## Distribution - Goniophotometer

### Distribution Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.7 °C	12.07 VDC	0.08087 A	0.9759 W	N/A	N/A	N/A

### Summary of Results

#### Spacing Criteria

0-180: 2.95  
90-270: 2.86

#### Total Lumen Output:

107.4 Lumens

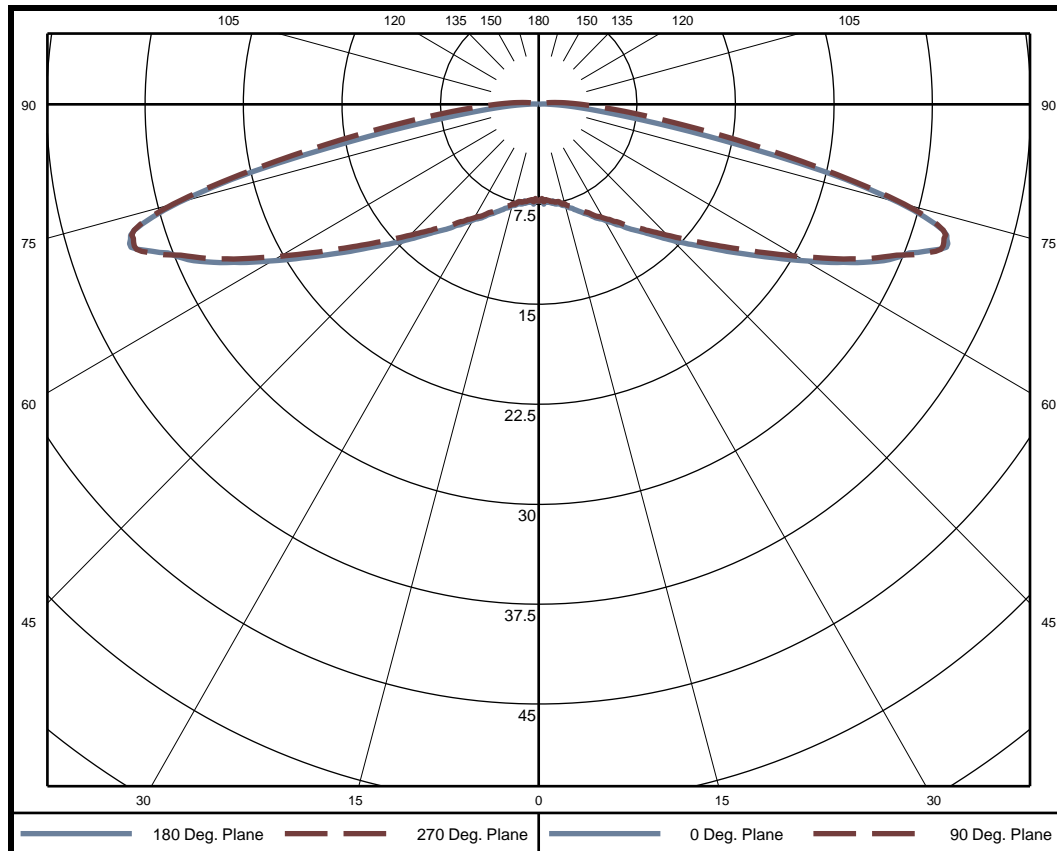
#### Luminaire Efficacy:

110.0 lm/w

#### Maximum Candela:

33 Candela

### Polar Plot



### Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	0.17	0.2%	60-65	12.39	11.5%	120-125	0.00	0.0%
5-10	0.53	0.5%	65-70	15.11	14.1%	125-130	0	0.0%
10-15	0.91	0.8%	70-75	16.49	15.4%	130-135	0	0.0%
15-20	1.34	1.2%	75-80	11.28	10.5%	135-140	0	0.0%
20-25	1.84	1.7%	80-85	5.13	4.8%	140-145	0.00	0.0%
25-30	2.42	2.3%	85-90	2.27	2.1%	145-150	0	0.0%
30-35	3.10	2.9%	90-95	1.02	0.9%	150-155	0	0.0%
35-40	3.92	3.6%	95-100	0.43	0.4%	155-160	0	0.0%
40-45	4.93	4.6%	100-105	0.17	0.2%	160-165	0	0.0%
45-50	6.20	5.8%	105-110	0.08	0.1%	165-170	0	0.0%
50-55	7.79	7.3%	110-115	0.03	0.0%	170-175	0	0.0%
55-60	9.83	9.2%	115-120	0.01	0.0%	175-180	0	0.0%

Zone	Lumens	% of Luminaire
0-40	14	13.2%
0-60	43	40.0%
0-90	106	98.4%
90-180	2	1.6%



**Candela Tabulation**

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	7.14	7.14	7.14	7.14	7.14	7.14	7.14	7.14	7.14	7.14	7.14	7.14	7.14	7.14	7.14	7.14
5	7.27	7.35	7.37	7.31	7.19	7.31	7.37	7.35	7.27	7.35	7.37	7.31	7.19	7.31	7.37	7.35
10	7.58	7.58	7.58	7.53	7.44	7.53	7.58	7.58	7.58	7.58	7.58	7.53	7.44	7.53	7.58	7.58
15	7.86	7.87	7.84	7.77	7.71	7.77	7.84	7.87	7.86	7.87	7.84	7.77	7.71	7.77	7.84	7.87
20	8.45	8.51	8.48	8.36	8.30	8.36	8.48	8.51	8.45	8.51	8.48	8.36	8.30	8.36	8.48	8.51
25	9.13	9.17	9.16	9.02	8.95	9.02	9.16	9.17	9.13	9.17	9.16	9.02	8.95	9.02	9.16	9.17
30	10.00	10.08	10.03	9.88	9.82	9.88	10.03	10.08	10.00	10.08	10.03	9.88	9.82	9.88	10.03	10.08
35	11.12	11.20	11.10	10.97	10.83	10.97	11.10	11.20	11.12	11.20	11.10	10.97	10.83	10.97	11.10	11.20
40	12.53	12.59	12.50	12.32	12.16	12.32	12.50	12.59	12.53	12.59	12.50	12.32	12.16	12.32	12.50	12.59
45	14.40	14.43	14.29	14.06	13.88	14.06	14.29	14.43	14.40	14.43	14.29	14.06	13.88	14.06	14.29	14.43
50	16.66	16.71	16.55	16.30	16.08	16.30	16.55	16.71	16.66	16.71	16.55	16.30	16.08	16.30	16.55	16.71
55	19.64	19.67	19.52	19.22	18.98	19.22	19.52	19.67	19.64	19.67	19.52	19.22	18.98	19.22	19.52	19.67
60	23.44	23.44	23.34	23.04	22.79	23.04	23.34	23.44	23.44	23.44	23.34	23.04	22.79	23.04	23.34	23.44
65	27.92	27.74	27.83	27.63	27.38	27.63	27.83	27.74	27.92	27.74	27.83	27.63	27.38	27.63	27.83	27.74
70	31.95	31.80	31.96	32.04	32.21	32.04	31.96	31.80	31.95	31.80	31.96	32.04	32.21	32.04	31.96	31.80
75	28.42	28.06	28.09	28.31	28.85	28.31	28.09	28.06	28.42	28.06	28.09	28.31	28.85	28.31	28.09	28.06
80	11.74	13.75	14.08	14.89	15.43	14.89	14.08	13.75	11.74	13.75	14.08	14.89	15.43	14.89	14.08	13.75
85	3.50	5.86	6.07	6.95	7.10	6.95	6.07	5.86	3.50	5.86	6.07	6.95	7.10	6.95	6.07	5.86
90	0.89	2.58	2.82	3.32	3.39	3.32	2.82	2.58	0.89	2.58	2.82	3.32	3.39	3.32	2.82	2.58
95	0.29	0.93	1.27	1.62	1.69	1.62	1.27	0.93	0.29	0.93	1.27	1.62	1.69	1.62	1.27	0.93
100	0.01	0.15	0.54	0.80	0.85	0.80	0.54	0.15	0.01	0.15	0.54	0.80	0.85	0.80	0.54	0.15
105	0.00	0.00	0.20	0.42	0.44	0.42	0.20	0.00	0.00	0.00	0.20	0.42	0.44	0.42	0.20	0.00
110	0.00	0.00	0.05	0.21	0.23	0.21	0.05	0.00	0.00	0.00	0.05	0.21	0.23	0.21	0.05	0.00
115	0.00	0.00	0.00	0.08	0.10	0.08	0.00	0.00	0.00	0.00	0.00	0.08	0.10	0.08	0.00	0.00
120	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	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)

	0	45	90
0	2810	2810	2810
45	7016	6747	6954
55	11190	10660	11240
65	19910	18720	20600
75	28200	25580	31020
85	5998	8983	14130

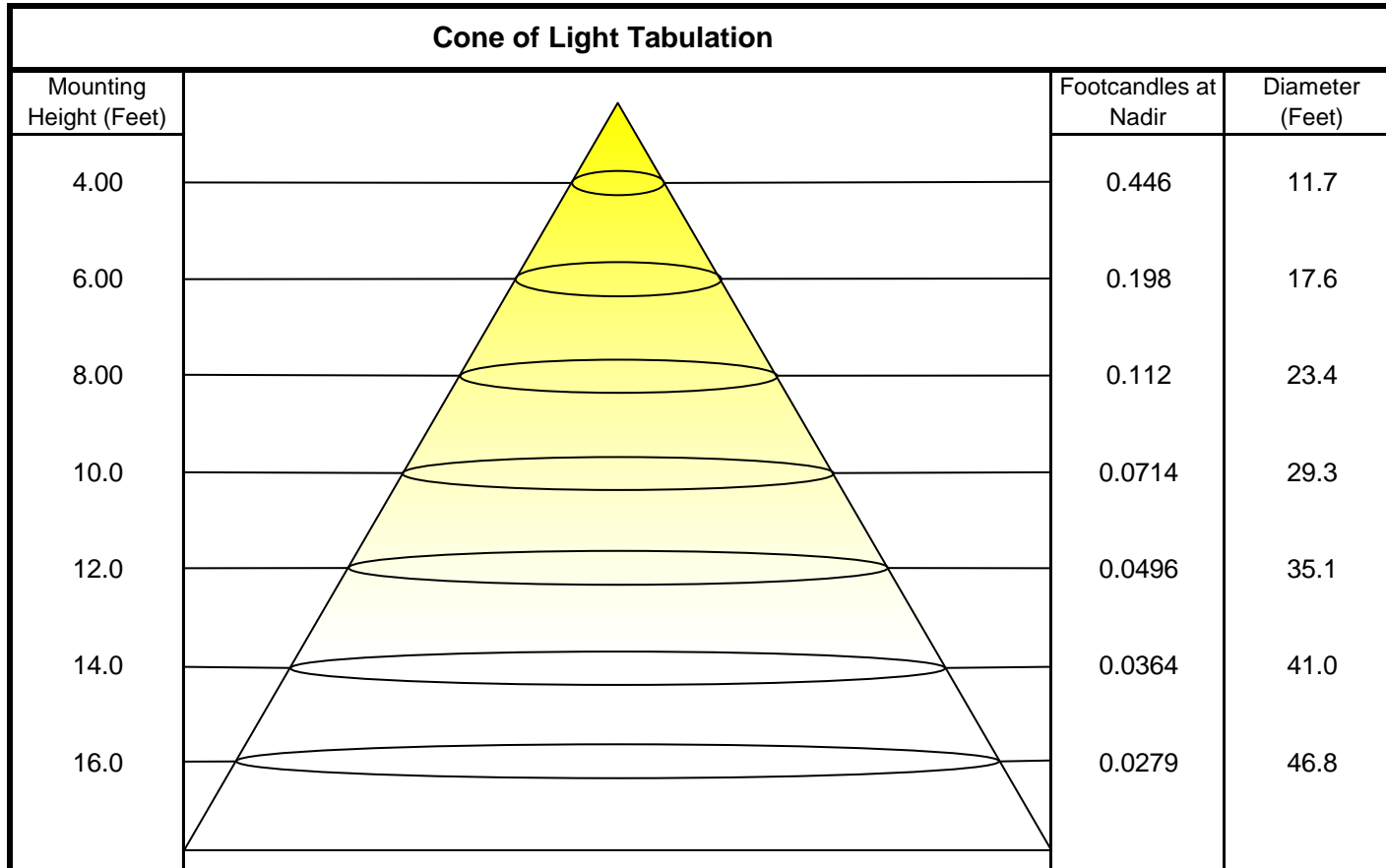


### Coefficients of Utilization - Zonal Cavity Method

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 percent of total lumen output delivered to the task surface **																	
0	119	119	119	119	116	116	116	116	110	110	110	105	105	105	101	101	101	98
1	101	94	87	81	98	91	85	79	86	81	76	82	77	73	78	74	71	68
2	87	75	65	56	84	73	63	55	68	60	53	65	58	52	61	55	50	47
3	77	62	50	41	73	60	49	40	56	47	39	53	45	38	50	43	37	34
4	68	52	40	31	65	50	39	30	47	37	30	44	36	29	42	34	28	25
5	61	45	33	24	59	43	32	24	41	31	23	38	30	23	36	28	22	20
6	56	39	28	20	54	38	27	19	36	26	19	34	25	19	32	24	18	16
7	51	35	24	16	49	34	23	16	32	23	16	30	22	15	28	21	15	13
8	47	31	21	14	45	30	20	14	29	20	13	27	19	13	26	18	13	11
9	44	28	18	12	42	27	18	12	26	18	12	25	17	11	23	16	11	9
10	41	26	17	10	40	25	16	10	24	16	10	23	15	10	22	15	10	8

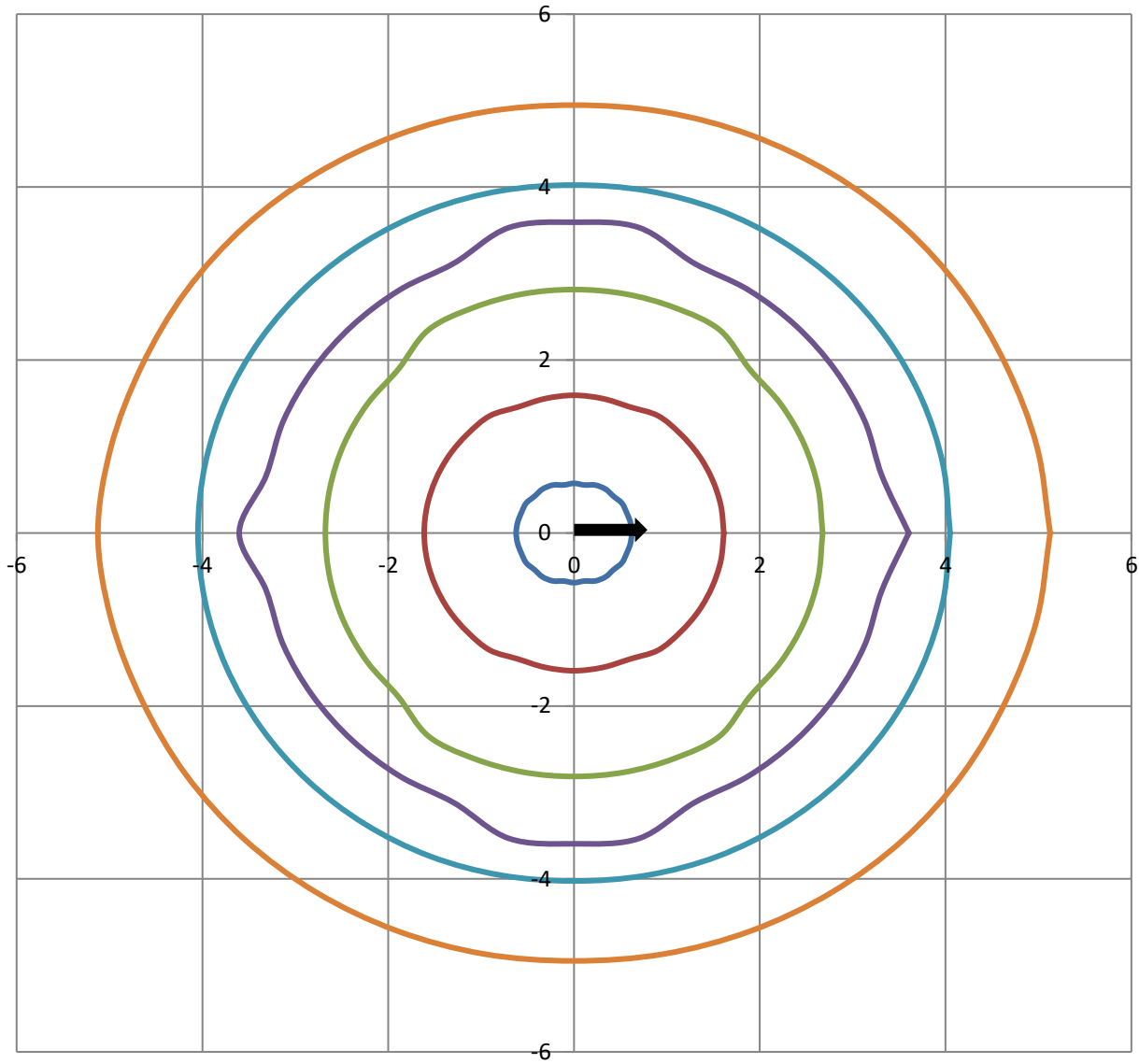
Beam and Field Information	
CIE Type:	Direct
Center Beam Intensity:	7.14 Candela
Central Cone Intensity:	7 Candela
Beam Flux:	105.1 Lumens
Beam Angle (0-180):	169.8 Degrees
Beam Angle (90-270):	179.2 Degrees
Field Angle (0-180):	181.7 Degrees
Field Angle (90-270):	202.6 Degrees



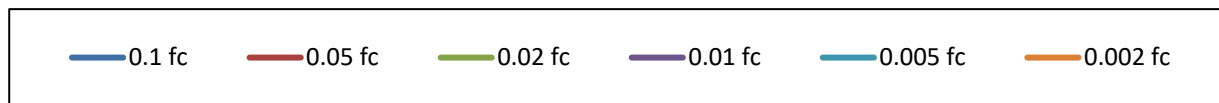


# ISOFootcandle Plot

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
21.0 °C	11.99 VDC	N/A	N/A	N/A	N/A	N/A

### Summary of Results

LED Temperature: 43.5 °C

Measured LED Current: 0.03980 A

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

LED Temperature Location



Thermocouple Reference

