



8165 E Kaiser Blvd.  
 Anaheim, CA 92808  
 www.lightlaboratory.com

Report No: L092011501



**Report No:** L092011501

**Issue Date:** 9/23/2020

**Report Prepared For:** Vode Lighting  
 21684 8th Street East, Suite 700, Sonoma, CA 95476

**Model Number:** 707-Z2-48-Z-SO-359-A3-WH

**Test:** Photometric/Colorimetric/Electrical Test/TM-30

**Standards Used:** Appropriate part or all test guidelines were used for test performed:  
*IESNA LM79: 2008* Approved Methods for Electrical and Photometric Measurements of Solid-State Lighting Products  
*ANSI NEMA ANSLG C78.377: 2008* Specification of the Chromaticity of Solid State Lighting Products  
*ANSI C82.77:2002:* Harmonic Emission Limits-Related Quality Requirements for Lighting Equipment

**Description of Sample:** Client submitted the sample. Received in working and undamaged condition. No modifications were necessary.

**Special Test Condition:** Fixture is tested with no special conditions.

**Sample Arrival Date:** 9/18/20

**Date of Tests:** 9/21/20 - 9/23/20

**Seasoning of Sample:** No seasoning was performed in accordance with IESNA LM-79.

**Equipment List**

Equipment Used	Model No	Stock No	Calibration Due Date
Chroma Programmable AC Source	61604	PS-AC02	--
Yokogawa Digital Power Meter	WT210	MT-EL06-S4	1/9/21
BK PRECISION	1747	PS-DC04	1/10/21
Fluke Digital Thermometer	52K/J	MT-TP05	1/10/21
LLI Type C Goniophotometer System	RMG-C-MKII	CD-LL04-GC	--
LLI 2M Sphere	2MR97	CD-SN03-S2	--
LLI Spectroradiometer	SPR-3000	MT-SC01-S2	Before Use

**General Information**

<b>Manufacturer:</b>	Vode Lighting
<b>Model Number:</b>	707-Z2-48-Z-SO-359-A3-WH
<b>Driver Model Number:</b>	MEAN WELL HLG-40H-36A (700mA)

**Test Summary**

<b>Total Lumens:</b>	2389.79
<b>Efficacy:</b>	91.82
<b>Color Redering Index:</b>	94.8
<b>Correlated Color Temperature:</b>	3291
<b>Input Voltage (VAC/60Hz):</b>	120.05
<b>Input Current (Amp):</b>	0.2184
<b>Input Power (W):</b>	26.03
<b>Input Power Factor:</b>	0.9928
<b>Current ATHD (%):</b>	9.2%

**Test Condition**

<b>Ambient Temperature (°C):</b>	25.0
<b>Stabilization Time (Hours):</b>	1:25
<b>Total Operating Time (Hours):</b>	3:00

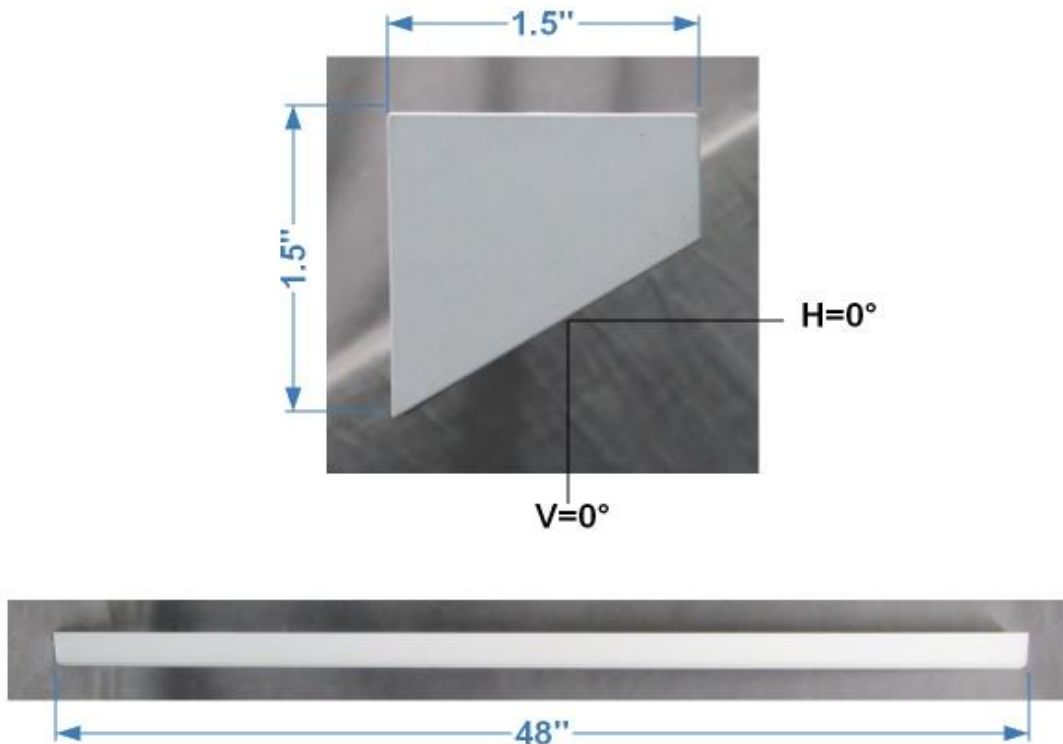
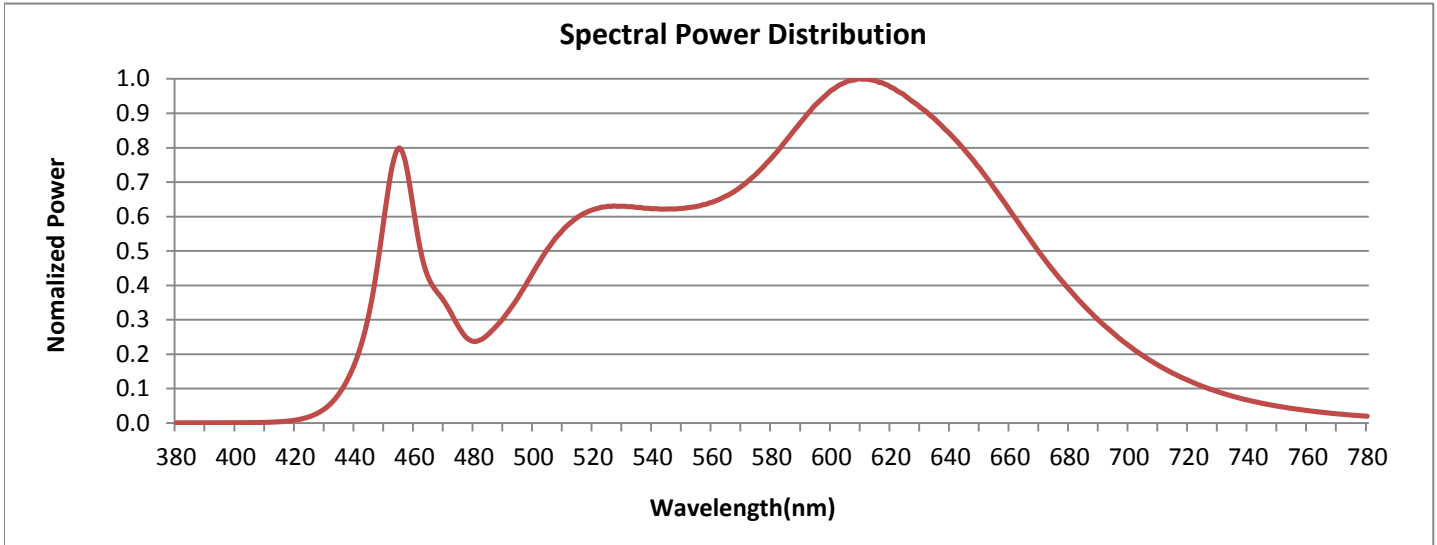


FIG. 1 LUMINAIRE

**Colorimetry Test Results**

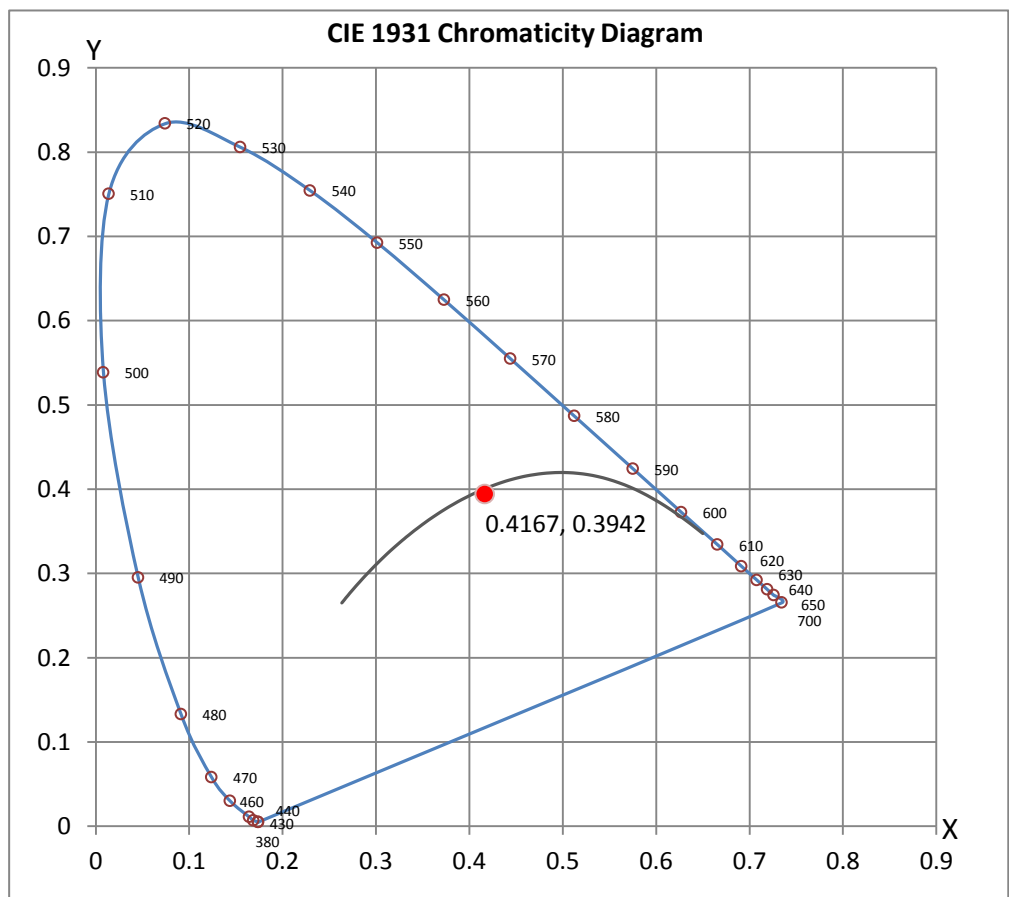


**CRI & CCT**

x	0.4167
y	0.3942
u'	0.2417
v'	0.5144
CRI	94.80
CCT	3291
Duv	-0.00082

**R Values**

R1	96.82
R2	99.07
R3	98.38
R4	97.79
R5	97.25
R6	95.83
R7	91.14
R8	82.04
R9	59.77
R10	97.83
R11	96.55
R12	79.70
R13	98.32
R14	99.49
R15	90.96



## Test Methods

### Photometric Measurements - Goniophotometer

A Custom Light Laboratory Type C Rotating Mirror Goniophotometer was used to measure candelas(intensity) at each angle of distribution as defined by IESNA for the appropriate fixture type.

Ambient temperature is set to 25°C and is measured from the center of the fixture, within 1ft from the outside of the fixture. Temperature is maintained at 25°C throughout the testing process and the sample is stabilized for at least 30mins and longer as necessary for the sample to achieve stabilization.

Electrical measurements are measured using the listed equipment.

### Spectral Measurements - Integrating Sphere

A Sensing Spectroradiometer SPR-3000, in conjunction with Light Laboratory 2 meter integrating sphere was used to measure chromaticity coordinates, correlated color temperature(CCT) and the color rendering index(CRI) for each sample.

Ambient temperature is set to 25°C and is measured from the center of the fixture, within 1ft from the outside of the fixture. Temperature is maintained at 25°C throughout the testing process and the sample is stabilized for at least 30mins and longer as necessary for the sample to achieve stabilization.

Electrical measurements are measured using the listed equipment.

### Disclaimers:

This report must not be used by the customer to claim product certification, approval or endorsement by NVLAP, NIST or any agency of Federal Government.

Report Prepared by : Keyur Patel

Test Report Reviewed by:



Steve Kang  
Quality Assurance

*\*Attached are photometric data reports. Total number of pages: 12*

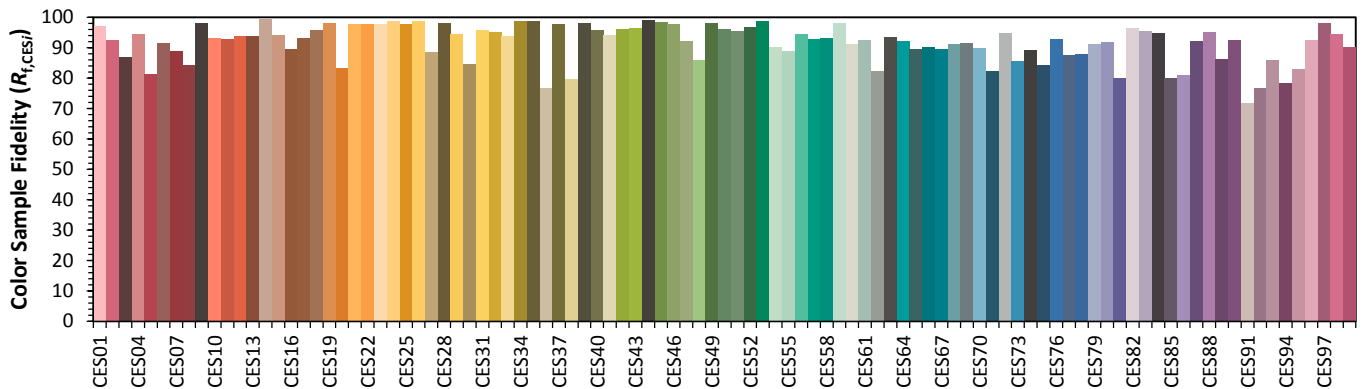
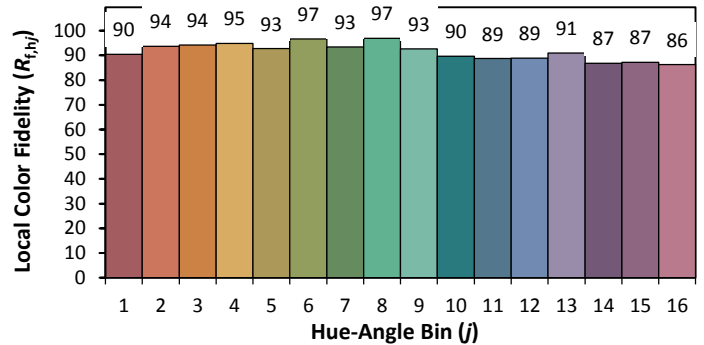
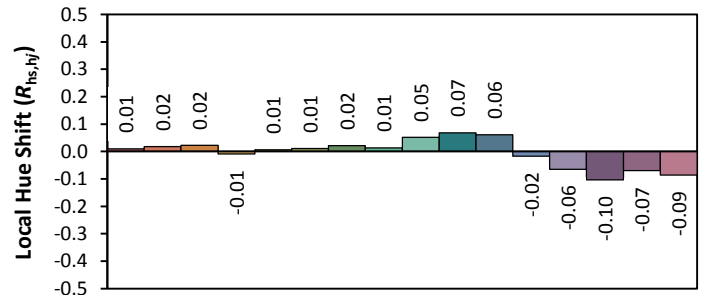
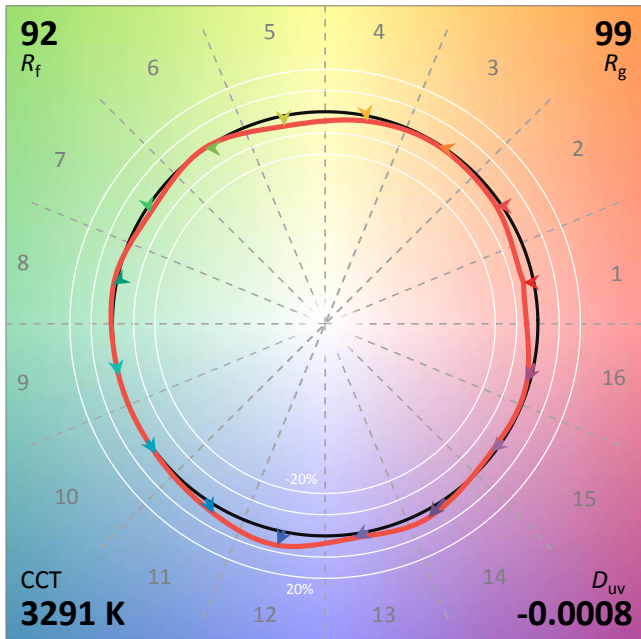
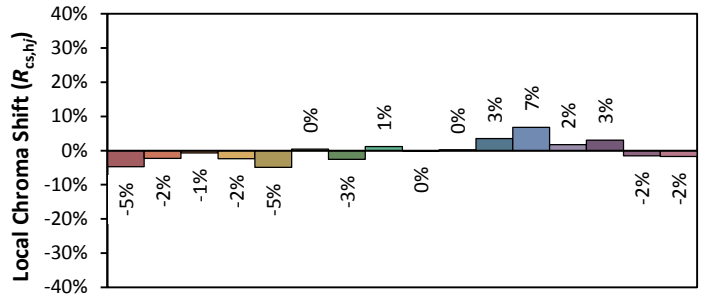
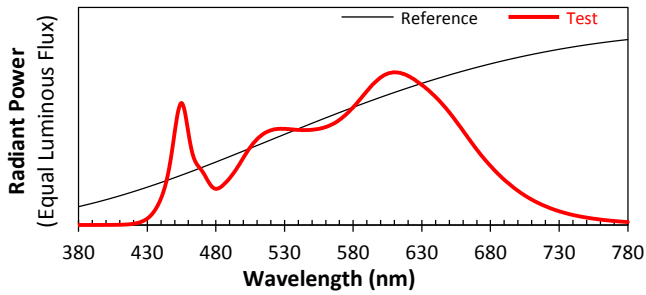
# ANSI/IES TM-30-18 Color Rendition Report

Source: LED Luminaire

Manufacturer: Vode Lighting

Date: 9/23/2020

Model: 707-Z2-48-Z-SO-359-A3-WH



Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

x **0.4167**  
 y **0.3942**  
 u' **0.2416**  
 v' **0.5144**

CIE 13.3-1995	
(CRI)	
R <sub>a</sub>	95
R <sub>g</sub>	60



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# Photometric Test Report

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : L092011501.IES**

## DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002  
[TEST] L092011501  
[TESTLAB] LIGHT LABORATORY, INC. (www.lightlaboratory.com)  
[ISSUEDATE] 9/23/2020  
[MANUFAC] Vode Lighting  
[LUMCAT] 707-Z2-48-Z-SO-359-A3-WH  
[LUMINAIRE] ZipTwo LED, 48", 3500K, 90 CRI, zipper board,  
[MORE] square 30 degree asymmetric, critical edge lens, standard output  
[BALLASTCAT] MEAN WELL HLG-40H-36A (700mA)  
[OTHER] INDICATING THE CANDELA VALUES ARE ABSOLUTE AND  
[MORE] SHOULD NOT BE FACTORED FOR DIFFERENT LAMP RATINGS.  
[INPUT] 120.05VAC, 26.03W  
[TEST PROCEDURE] IESNA:LM-79-08

## CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	2390
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	92
Total Luminaire Watts	26.03
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.74
Spacing Criterion (90-270)	1.26
Spacing Criterion (Diagonal)	1.38
Basic Luminous Shape	Rectangular w/Sides
Luminous Length (0-180)	0.13 ft
Luminous Width (90-270)	3.99 ft
Luminous Height	0.08 ft

## LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	14302	13960	13189
55	13804	13456	12551
65	13285	12911	11847
75	12767	12329	10932
85	12231	11758	9994

CANDELA TABULATION

	<u>0</u>	<u>5</u>	<u>10</u>	<u>15</u>	<u>20</u>	<u>25</u>	<u>30</u>	<u>35</u>	<u>40</u>	<u>45</u>
<b>0</b>	705.86	705.86	705.86	705.86	705.86	705.86	705.86	705.86	705.86	705.86
<b>5</b>	741.17	741.01	740.75	740.00	739.08	737.65	736.23	734.47	732.54	730.19
<b>10</b>	778.73	778.47	777.38	775.71	773.61	770.85	767.49	763.39	759.11	753.83
<b>15</b>	807.56	807.23	805.63	803.20	799.77	795.16	790.04	783.76	776.63	769.09
<b>20</b>	827.68	827.18	825.08	821.73	817.29	811.08	804.12	795.83	786.27	776.04
<b>25</b>	838.07	837.40	834.97	830.78	825.16	817.62	809.15	798.59	786.94	774.37
<b>30</b>	839.41	838.16	835.31	830.45	823.91	815.19	805.13	792.89	779.31	764.56
<b>35</b>	830.86	829.69	826.17	820.89	813.51	803.87	792.39	778.81	763.72	746.62
<b>40</b>	813.43	812.17	808.32	802.62	794.65	783.92	771.18	756.60	740.33	721.73
<b>45</b>	787.95	786.61	782.83	776.55	768.00	756.68	742.93	727.59	709.99	690.04
<b>50</b>	755.59	754.33	750.14	743.69	734.80	722.90	708.40	692.14	674.20	653.66
<b>55</b>	717.53	716.28	711.92	705.04	695.91	683.75	669.50	652.15	632.45	611.16
<b>60</b>	675.12	673.69	669.42	662.46	652.74	640.16	625.33	607.56	587.44	565.39
<b>65</b>	628.18	626.67	622.56	615.60	605.55	592.80	577.55	559.61	538.82	516.78
<b>70</b>	578.22	576.71	572.44	565.31	554.92	542.26	527.00	508.64	487.94	465.39
<b>75</b>	525.41	524.07	519.46	512.25	502.19	489.45	474.19	456.25	434.80	412.00
<b>80</b>	470.59	469.25	464.55	457.43	447.12	434.38	418.53	400.60	380.39	357.34
<b>85</b>	413.09	411.49	406.97	400.01	390.12	376.71	361.45	342.59	325.41	303.28
<b>90</b>	353.91	352.48	347.95	341.25	332.70	319.87	305.12	287.35	267.99	245.77
<b>95</b>	295.90	294.47	290.20	283.33	273.94	261.53	247.20	229.93	210.57	189.95
<b>100</b>	235.88	234.62	230.43	223.81	214.76	203.11	189.36	173.10	154.82	135.29
<b>105</b>	176.53	175.44	171.59	165.30	156.84	145.85	133.03	117.94	100.92	82.90
<b>110</b>	119.53	118.53	114.84	109.14	101.34	91.20	79.47	65.55	49.96	33.45
<b>115</b>	65.22	64.04	60.77	55.58	48.62	39.40	28.75	16.18	4.53	0.00
<b>120</b>	14.25	13.24	10.48	6.37	2.35	0.00	0.00	0.00	0.00	0.00
<b>125</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>130</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>135</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>140</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>145</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>150</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>155</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>160</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>165</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>170</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>175</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>180</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Vert. Angles Horizontal Angles

	<u>50</u>	<u>55</u>	<u>60</u>	<u>65</u>	<u>70</u>	<u>75</u>	<u>80</u>	<u>85</u>	<u>90</u>	<u>95</u>
<b>0</b>	705.86	705.86	705.86	705.86	705.86	705.86	705.86	705.86	705.86	705.86
<b>5</b>	727.84	725.33	722.40	719.55	716.70	713.51	710.33	707.06	704.12	700.60
<b>10</b>	748.38	742.60	736.39	729.61	723.07	716.03	708.82	701.78	694.73	687.11
<b>15</b>	760.54	751.65	741.93	731.70	721.56	711.08	699.76	688.95	678.30	666.90
<b>20</b>	764.56	752.74	739.83	726.17	712.42	698.51	683.67	669.34	655.00	639.91
<b>25</b>	760.28	745.70	729.77	713.01	696.24	679.31	660.53	642.85	625.24	606.72
<b>30</b>	748.13	730.78	712.09	692.64	673.28	653.16	631.36	610.74	590.21	568.75
<b>35</b>	728.10	708.73	687.94	665.82	643.77	620.21	596.66	573.36	550.14	526.08
<b>40</b>	701.02	680.23	657.35	632.96	608.65	583.08	557.01	531.53	506.30	479.81
<b>45</b>	668.50	645.86	620.89	594.98	568.83	541.25	513.34	486.26	458.85	430.60
<b>50</b>	630.02	606.05	579.98	552.48	524.99	496.07	466.48	437.56	408.98	379.05
<b>55</b>	587.36	562.38	535.13	506.80	478.13	448.63	417.86	386.93	357.17	327.75
<b>60</b>	540.83	514.68	487.52	458.94	428.51	398.00	366.56	336.81	305.46	273.77

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : L092011501.IES**

**CANDELA TABULATION - (Cont.)**

65	491.96	464.97	437.23	408.06	376.87	344.52	315.18	283.91	251.89	220.21
70	440.75	413.76	384.92	350.05	325.41	293.38	261.95	230.60	198.92	168.57
75	387.52	360.36	332.78	302.44	272.18	240.41	209.31	178.46	146.69	118.11
80	334.12	307.13	278.46	248.62	218.87	187.85	156.92	127.16	97.40	73.60
85	278.46	251.98	224.23	195.06	166.48	136.80	107.21	79.05	51.64	25.15
90	221.80	196.99	170.33	142.92	115.85	88.52	60.86	33.36	7.80	0.00
95	167.06	143.59	118.36	92.46	67.06	41.49	15.26	0.00	0.00	0.00
100	113.83	91.96	68.48	44.34	20.54	2.10	0.00	0.00	0.00	0.00
105	63.12	42.83	21.12	3.02	0.00	0.00	0.00	0.00	0.00	0.00
110	15.34	1.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
115	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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
125	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
135	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
145	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
155	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
165	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
175	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

**Vert. Horizontal Angles**

	<u>100</u>	<u>105</u>	<u>110</u>	<u>115</u>	<u>120</u>	<u>125</u>	<u>130</u>	<u>135</u>	<u>140</u>	<u>145</u>
0	705.86	705.86	705.86	705.86	705.86	705.86	705.86	705.86	705.86	705.86
5	697.42	694.15	691.05	688.20	685.35	683.08	680.40	677.97	675.79	673.86
10	680.23	673.28	666.40	659.95	653.83	647.79	642.26	636.81	632.12	627.84
15	656.18	645.28	635.22	624.99	615.60	606.72	598.25	590.12	583.08	576.54
20	625.83	611.41	597.92	584.42	572.18	560.53	549.63	538.82	529.68	521.13
25	589.45	572.60	555.59	539.32	524.49	510.49	497.33	484.42	473.44	463.30
30	548.46	528.18	509.40	490.62	473.27	457.01	442.00	427.34	414.85	403.19
35	503.62	480.98	459.69	438.74	419.46	401.52	384.84	368.49	354.58	342.00
40	455.17	430.35	407.13	385.09	363.80	344.43	325.91	308.98	294.22	280.48
45	404.12	377.71	352.90	329.85	307.38	286.76	267.23	249.54	233.95	219.54
50	351.22	323.56	298.16	273.77	250.30	229.26	209.23	190.78	174.77	160.27
55	298.92	270.25	244.01	218.53	195.56	173.43	153.82	135.29	119.03	104.11
60	244.60	216.69	188.69	164.13	141.41	119.87	100.17	81.14	65.30	50.55
65	190.95	163.46	136.89	112.74	88.77	67.98	48.70	30.43	14.75	2.52
70	140.07	112.49	86.84	63.46	39.98	19.53	3.69	0.00	0.00	0.00
75	90.78	64.63	39.73	16.85	0.00	0.00	0.00	0.00	0.00	0.00
80	44.43	19.11	1.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00
85	3.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
105	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
110	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
115	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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
125	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
135	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00



**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : L092011501.IES**

**CANDELA TABULATION - (Cont.)**

140	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
150	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
160	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
170	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
180	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

**Vert. Horizontal Angles**

	<u>150</u>	<u>155</u>	<u>160</u>	<u>165</u>	<u>170</u>	<u>175</u>	<u>180</u>
0	705.86	705.86	705.86	705.86	705.86	705.86	705.86
5	672.19	670.59	669.34	668.41	667.66	667.24	667.07
10	623.99	620.80	618.04	616.02	614.35	613.59	613.26
15	570.76	566.06	562.04	558.94	556.59	555.42	554.75
20	513.84	507.81	502.86	498.67	495.82	493.98	493.39
25	454.58	447.20	441.00	436.05	432.53	430.52	429.68
30	392.97	384.75	377.38	371.93	367.90	365.56	364.97
35	331.02	321.72	313.84	307.72	303.44	300.85	299.92
40	268.49	258.60	250.22	243.68	239.07	236.38	235.38
45	207.05	196.65	187.93	181.06	176.28	173.35	172.51
50	147.45	136.89	127.83	120.79	116.10	113.00	112.16
55	91.20	81.48	71.75	64.80	59.93	56.92	55.99
60	37.64	27.16	18.36	11.40	6.71	4.02	3.35
65	1.51	1.51	1.51	1.51	1.51	1.51	1.51
70	0.00	0.00	0.00	0.00	0.00	0.00	0.00
75	0.00	0.00	0.00	0.00	0.00	0.00	0.00
80	0.00	0.00	0.00	0.00	0.00	0.00	0.00
85	0.00	0.00	0.00	0.00	0.00	0.00	0.00
90	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100	0.00	0.00	0.00	0.00	0.00	0.00	0.00
105	0.00	0.00	0.00	0.00	0.00	0.00	0.00
110	0.00	0.00	0.00	0.00	0.00	0.00	0.00
115	0.00	0.00	0.00	0.00	0.00	0.00	0.00
120	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
130	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
140	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
150	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
160	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
170	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
180	0.00	0.00	0.00	0.00	0.00	0.00	0.00

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : L092011501.IES**

**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	258.68	N.A.	10.80
0-30	548.73	N.A.	23.00
0-40	897.59	N.A.	37.60
0-60	1593.27	N.A.	66.70
0-80	2087.01	N.A.	87.30
0-90	2240.49	N.A.	93.80
10-90	2173.57	N.A.	91.00
20-40	638.91	N.A.	26.70
20-50	1001.26	N.A.	41.90
40-70	973.06	N.A.	40.70
60-80	493.74	N.A.	20.70
70-80	216.36	N.A.	9.10
80-90	153.48	N.A.	6.40
90-110	138.04	N.A.	5.80
90-120	149.05	N.A.	6.20
90-130	149.30	N.A.	6.20
90-150	149.30	N.A.	6.20
90-180	149.30	N.A.	6.20
110-180	11.26	N.A.	0.50
0-180	2389.79	N.A.	100.00

Total Luminaire Efficiency = N.A.%

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	66.92
10-20	191.76
20-30	290.06
30-40	348.85
40-50	362.35
50-60	333.33
60-70	277.38
70-80	216.36
80-90	153.48
90-100	93.88
100-110	44.16
110-120	11.01
120-130	0.25
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : L092011501.IES**

**COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD**

Effective Floor Cavity Reflectance 0.20

RC	80				70				50			30			10			0
	RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	
0	118	118	118	118	114	114	114	114	108	108	108	102	102	102	96	96	96	94
1	105	99	94	90	102	96	92	88	91	87	84	86	83	80	81	79	76	74
2	95	86	78	72	92	83	76	70	79	73	68	74	69	65	70	66	63	60
3	86	75	66	59	83	73	65	58	69	62	56	65	59	54	62	57	53	50
4	79	66	57	50	76	64	56	49	61	53	48	58	51	46	55	49	45	42
5	72	59	49	42	70	57	49	42	54	47	41	52	45	40	49	43	39	36
6	67	53	44	37	64	52	43	37	49	41	36	47	40	35	45	39	34	32
7	62	48	39	33	60	47	38	32	45	37	32	43	36	31	41	35	30	28
8	58	44	35	29	56	43	34	29	41	33	28	39	32	28	37	31	27	25
9	54	40	32	26	52	39	31	26	38	30	25	36	30	25	35	29	24	22
10	50	37	29	24	49	36	28	23	35	28	23	33	27	23	32	26	22	20

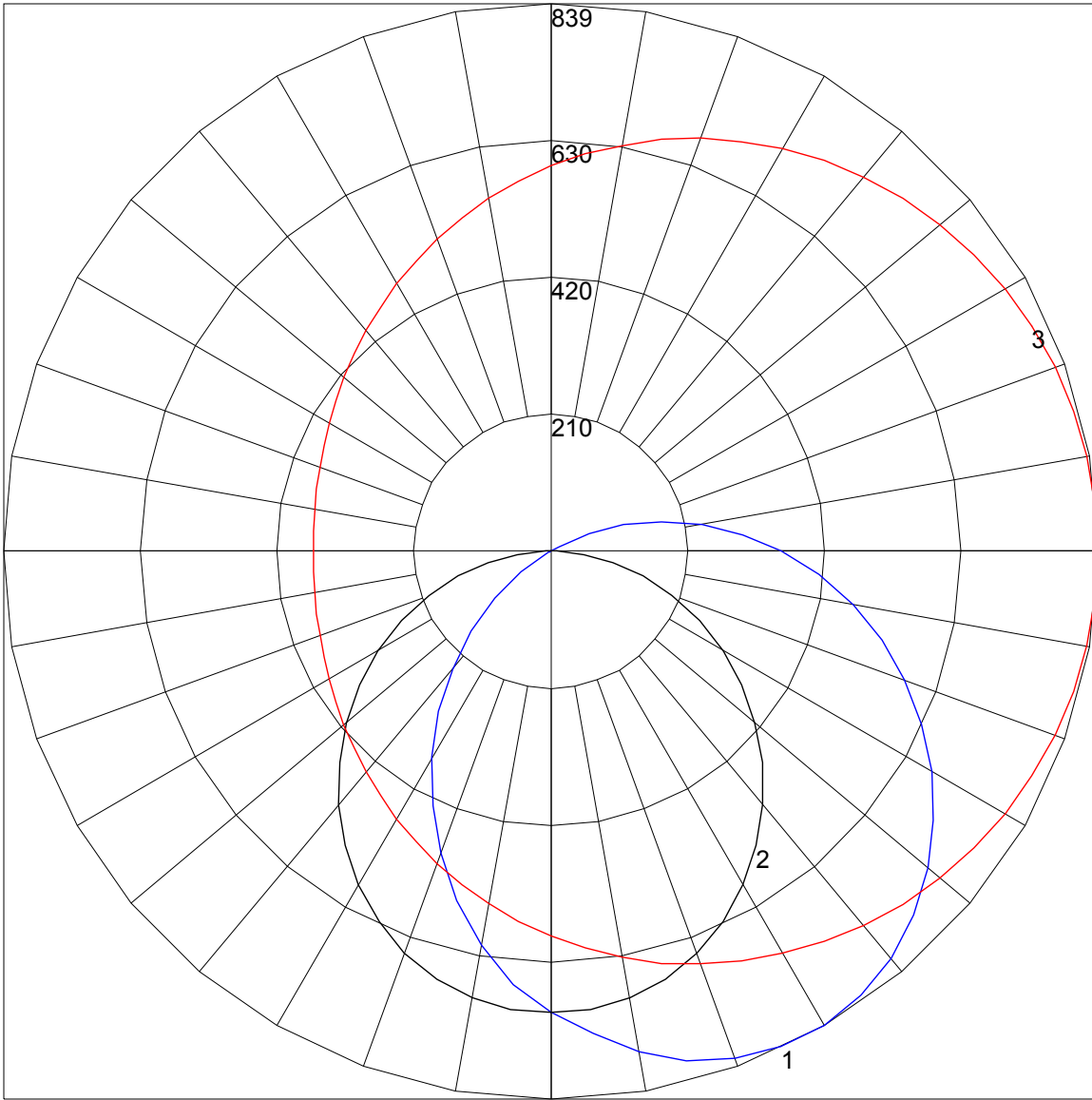
**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : L092011501.IES**

**UGR TABLE - CORRECTED**

Reflectances											
Ceiling Cavity	70	70	50	50	30	70	70	50	50	30	
Walls	50	30	50	30	30	50	30	50	30	30	
Floor Cavity	20	20	20	20	20	20	20	20	20	20	
Room Size		UGR Viewed Crosswise					UGR Viewed Endwise				
X=2H	Y=2H	24.1	25.6	24.5	26.1	26.5	18.2	19.8	18.7	20.2	20.7
	3H	27.0	28.4	27.5	28.9	29.4	19.7	21.2	20.2	21.6	22.1
	4H	28.5	29.8	29.0	30.3	30.8	20.3	21.6	20.8	22.1	22.6
	6H	30.0	31.3	30.5	31.8	32.3	20.6	21.9	21.1	22.4	22.9
	8H	30.8	32.0	31.3	32.5	33.1	20.7	22.0	21.2	22.5	23.0
	12H	31.7	32.9	32.2	33.4	33.9	20.8	22.0	21.3	22.5	23.0
4H	2H	24.5	25.8	25.0	26.3	26.8	19.5	20.8	19.9	21.3	21.8
	3H	27.6	28.8	28.1	29.3	29.8	21.3	22.4	21.8	22.9	23.5
	4H	29.2	30.3	29.8	30.8	31.4	21.9	23.0	22.5	23.5	24.1
	6H	31.0	31.9	31.5	32.5	33.0	22.4	23.4	23.0	23.9	24.5
	8H	31.9	32.8	32.4	33.3	33.9	22.6	23.5	23.1	24.0	24.6
	12H	32.9	33.7	33.4	34.3	34.9	22.7	23.5	23.2	24.1	24.7
8H	4H	29.4	30.3	30.0	30.9	31.5	23.0	23.9	23.5	24.4	25.0
	6H	31.3	32.1	31.9	32.7	33.3	23.7	24.5	24.3	25.1	25.7
	8H	32.4	33.1	33.0	33.7	34.3	24.0	24.7	24.6	25.3	25.9
	12H	33.5	34.2	34.1	34.7	35.4	24.2	24.8	24.8	25.4	26.1
12H	4H	29.4	30.3	30.0	30.8	31.4	23.3	24.1	23.9	24.7	25.3
	6H	31.4	32.1	32.0	32.6	33.3	24.2	24.9	24.8	25.4	26.1
	8H	32.5	33.1	33.1	33.7	34.4	24.6	25.2	25.2	25.8	26.5

Maximum UGR = 35.4

POLAR GRAPH



Maximum Candela = 839.41 Located At Horizontal Angle = 0, Vertical Angle = 30  
# 1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)  
# 2 - Vertical Plane Through Horizontal Angles (90 - 270)  
# 3 - Horizontal Cone Through Vertical Angle (30) (Through Max. Cd.)