

## IES Report

# ZipTwo® | 707 | Square 3519, Single Side Diffuse | 90 CRI | SO

707-Z2-4-48-XX-XX-X-0-Z-SO-359-FA-X-BL-0

	2700K	3000K	3500K	4000K
Efficacy - Lumens per Watt	29	30	30	31
Total Lumens, 4' rail length (1219mm)	740	764	779	787
Lumens per foot (305mm)	185	191	195	197
Input Power (W), 4' rail length (1219mm)	26.0	26.0	26.0	26.0
Watts per foot (305mm)	6.6	6.6	6.6	6.6
CRI	95	95	95	95

Due to the large number of options in Vode's product offering, most Vode IES reports are factored reports prepared from source reports. Source reports are the IES test reports prepared for Vode by an NVLAP accredited photometric test laboratory. Factored reports are based on data from the Vode source reports.

If the data above is in black, it is directly from a Vode source report. If it is in grey, it is factored from Vode source reports. Reference details on Vode source reports can be found on the [IES File Finder](#) page on [vode.com](#).



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

Report No: L082011215



**Report No:** L082011215

**Issue Date:** 9/8/2020

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

**Model Number:** 707-Z2-48-Z-SO-359-FA-BL

**Test:** Photometric/Colorimetric/Electrical Test

**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:** 8/21/20

**Date of Tests:** 8/22/20 - 9/8/20

**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-FA-BL
<b>Driver Model Number:</b>	MEAN WELL HLG-40H-36A

### Test Summary

<b>Total Lumens:</b>	779.32
<b>Efficacy:</b>	29.93
<b>Color Redering Index:</b>	94.2
<b>Correlated Color Temperature:</b>	3236
<b>Input Voltage (VAC/60Hz):</b>	120.05
<b>Input Current (Amp):</b>	0.2184
<b>Input Power (W):</b>	26.04
<b>Input Power Factor:</b>	0.9930
<b>Current ATHD (%):</b>	9.0%

### Test Condition

<b>Ambient Temperature (°C):</b>	25.0
<b>Stabilization Time (Hours):</b>	0:55
<b>Total Operating Time (Hours):</b>	2:30

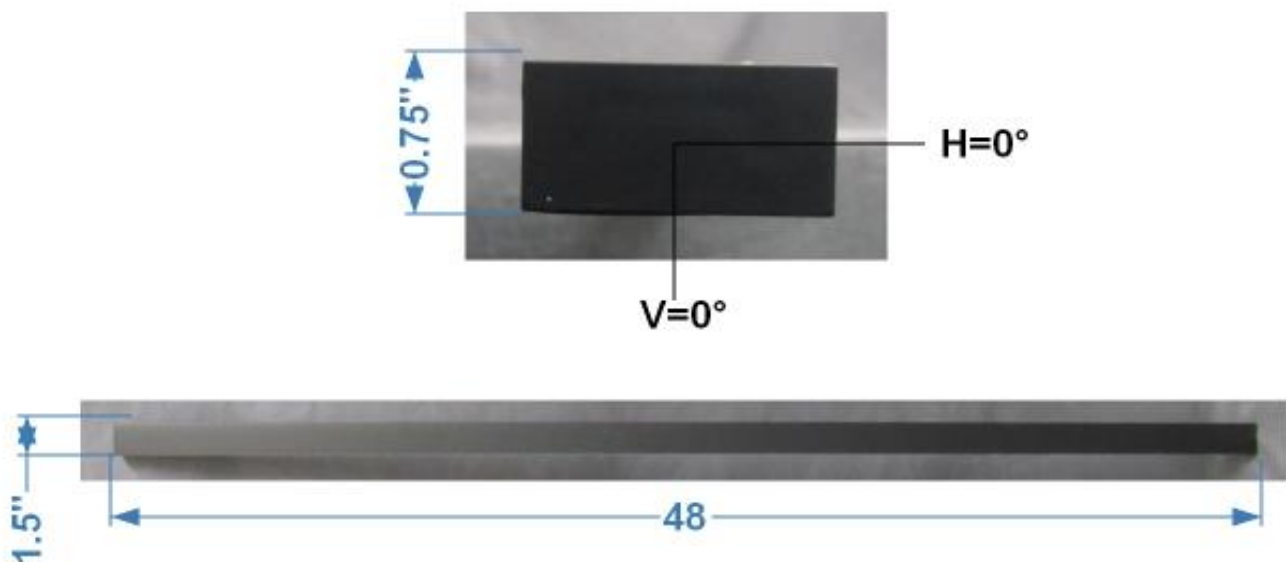
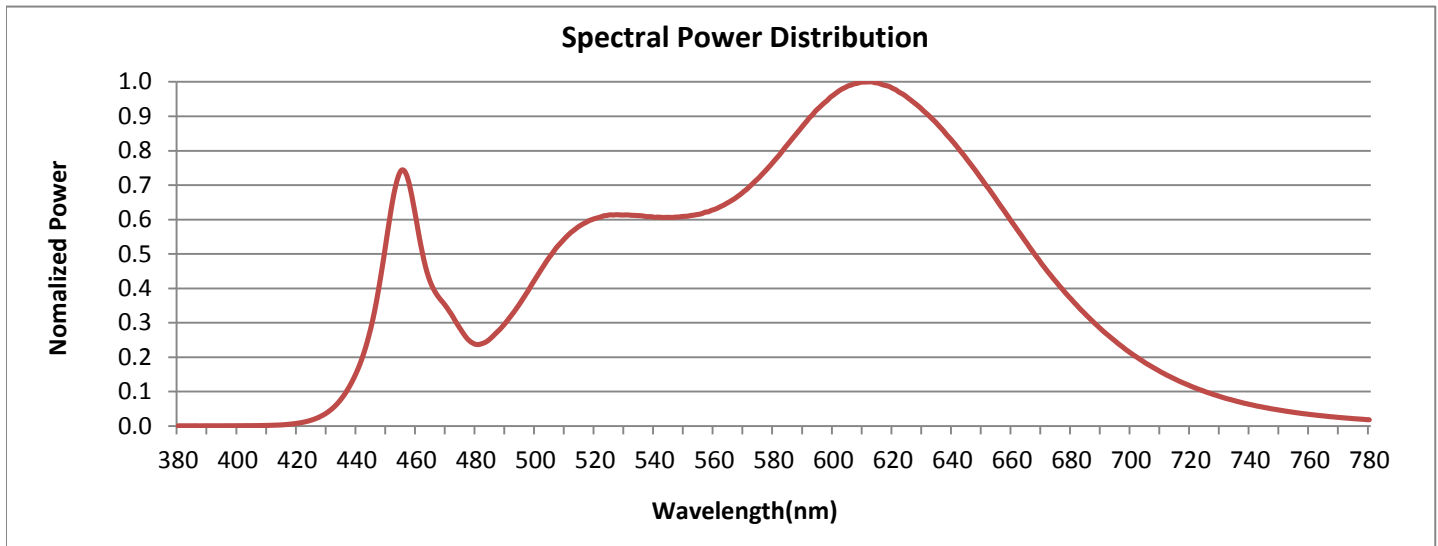


FIG. 1 LUMINAIRE

## Colorimetry Test Results

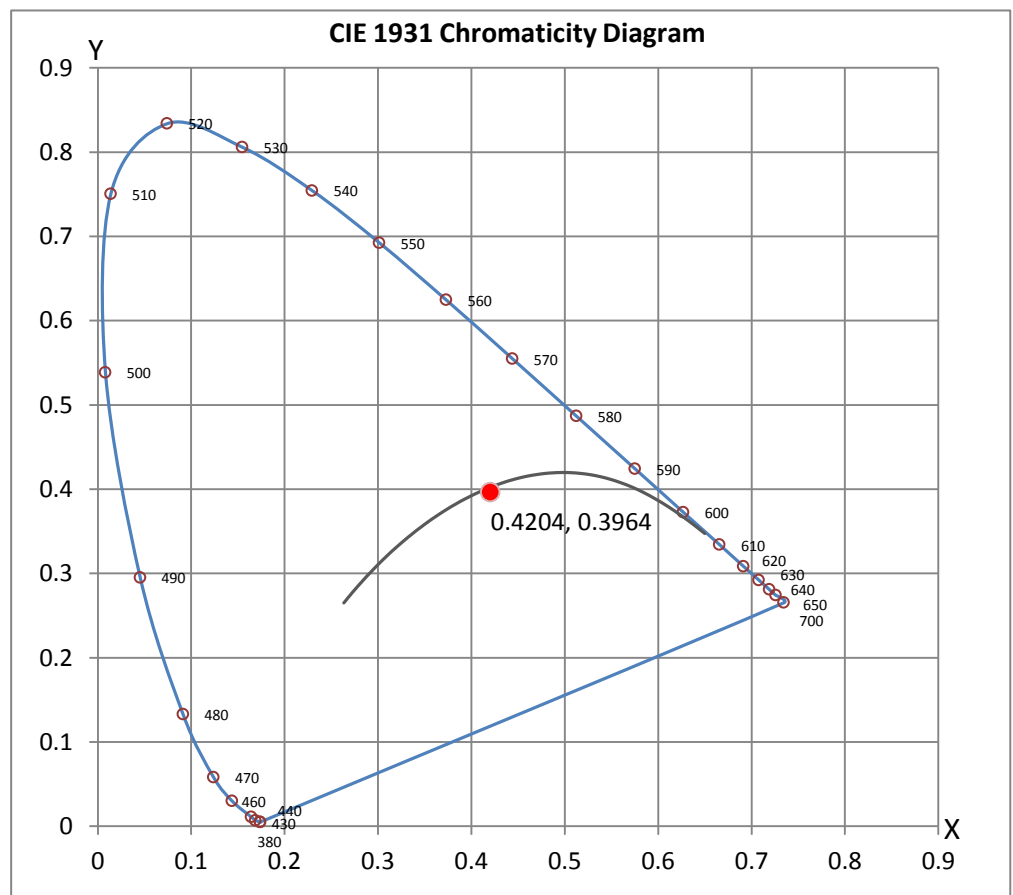


### CRI & CCT

x	0.4204
y	0.3964
u'	0.2431
v'	0.5158
CRI	94.20
CCT	3236
Duv	-0.00056

### R Values

R1	96.35
R2	99.13
R3	97.78
R4	97.18
R5	96.87
R6	95.65
R7	90.29
R8	80.44
R9	56.63
R10	98.03
R11	97.29
R12	80.08
R13	97.97
R14	99.48
R15	90.00





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## 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: 13*

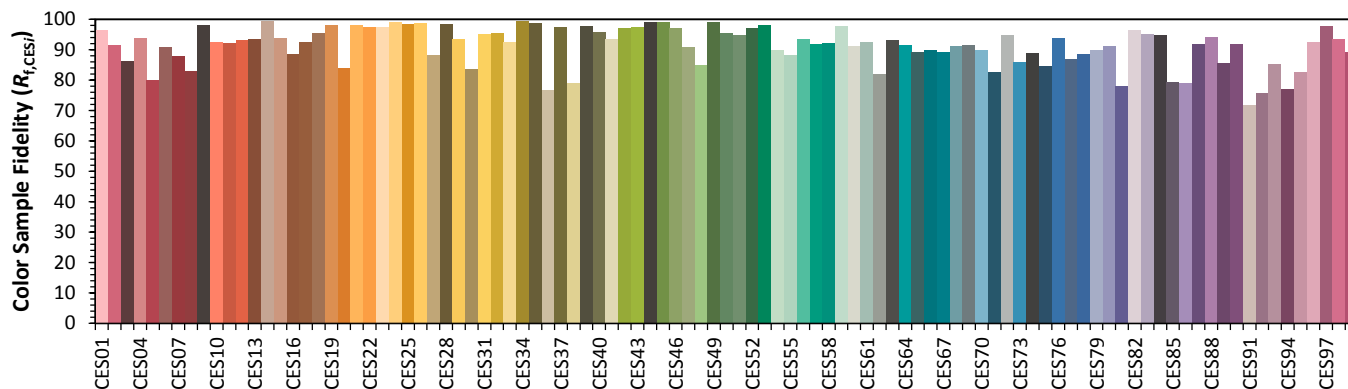
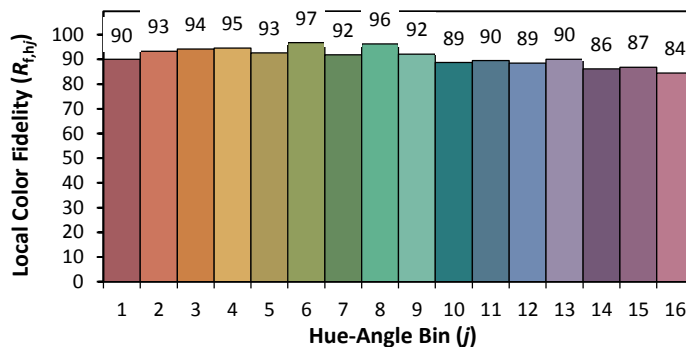
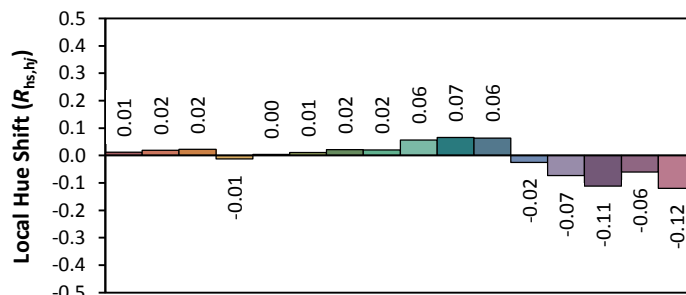
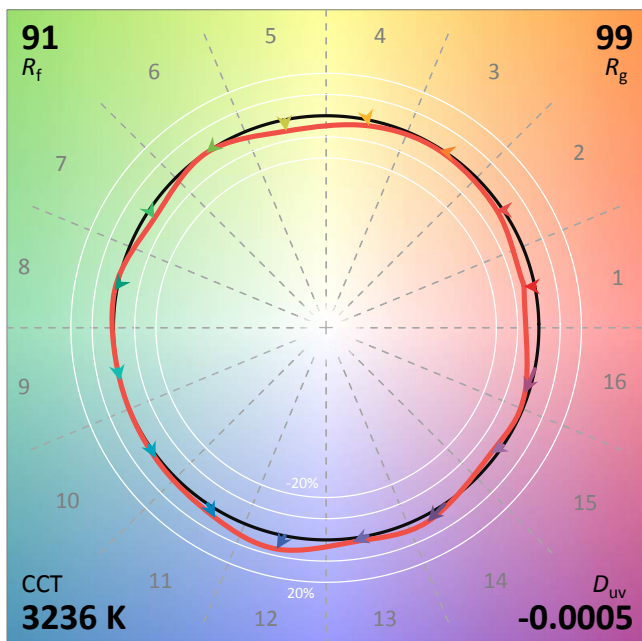
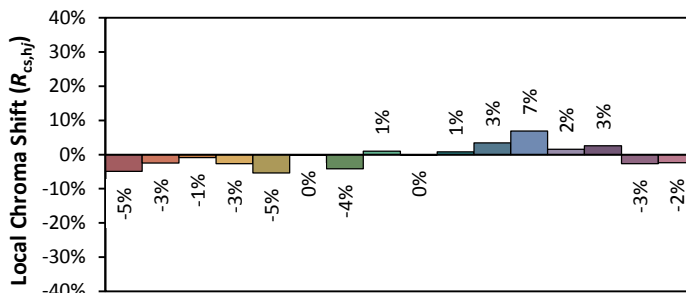
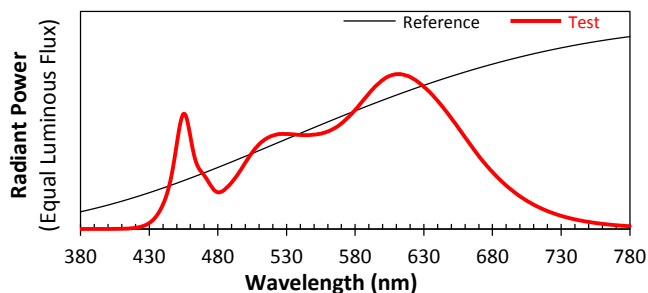
# ANSI/IES TM-30-18 Color Rendition Report

Source: LED Luminaire

Manufacturer: Vode Lighting

Date: 9/8/2020

Model: 707-Z2-48-Z-SO-359-FA-BL



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

$x$  **0.4204**  
 $y$  **0.3964**  
 $u'$  **0.2431**  
 $v'$  **0.5159**

CIE 13.3-1995  
(CRI)

$R_a$  94  
 $R_g$  57



8165 E. Kaiser Blvd. Anaheim, CA 92808  
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## Photometric Test Report

### IES INDOOR REPORT

PHOTOMETRIC FILENAME : L082011215.IES

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002  
[TEST] L082011215  
[TESTLAB] LIGHT LABORATORY, INC. (www.lightlaboratory.com)  
[ISSUE DATE] 9/8/2020  
[MANUFAC] Vode Lighting  
[LUMCAT] 707-Z2-48-Z-SO-359-FA-BL  
[LUMINAIRE] ZipTwo LED, 48", 3500K, 90 CRI, zipper board,  
[MORE] square 3519, single side diffuse black 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, 26.04W  
[TEST PROCEDURE] IESNA:LM-79-08

### CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	779
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	30
Total Luminaire Watts	26.04
Ballast Factor	1.00
CIE Type	General Diffuse
Spacing Criterion (0-180)	N.A.
Spacing Criterion (90-270)	N.A.
Spacing Criterion (Diagonal)	N.A.
Basic Luminous Shape	Vertical Rectangle
Luminous Length (0-180)	0.00 ft
Luminous Width (90-270)	3.99 ft
Luminous Height	0.05 ft

### LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	0	54	134
55	0	62	121
65	0	63	109
75	0	66	98
85	0	70	91

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>	2.17	2.17	2.17	2.17	2.17	2.17	2.17	2.17	2.17	2.17
<b>5</b>	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
<b>10</b>	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.59
<b>15</b>	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.50	0.50
<b>20</b>	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34
<b>25</b>	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34
<b>30</b>	0.50	0.50	0.50	0.50	0.42	0.42	0.42	0.42	0.34	0.34
<b>35</b>	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.42	0.42
<b>40</b>	0.67	0.67	0.67	0.67	0.59	0.59	0.59	0.50	0.50	0.50
<b>45</b>	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.59	0.59	0.50
<b>50</b>	0.84	0.84	0.84	0.84	0.75	0.75	0.67	0.67	0.59	0.59
<b>55</b>	0.84	0.84	0.84	0.84	0.84	0.84	0.75	0.75	0.75	0.67
<b>60</b>	1.01	1.01	1.01	1.01	0.92	0.92	0.84	0.84	0.75	0.67
<b>65</b>	1.01	1.01	1.01	1.01	1.01	1.01	0.92	0.84	0.84	0.75
<b>70</b>	1.17	1.17	1.09	1.09	1.01	1.01	1.01	0.92	0.84	0.75
<b>75</b>	1.17	1.17	1.17	1.17	1.09	1.01	1.01	0.92	0.92	0.84
<b>80</b>	1.17	1.17	1.17	1.17	1.17	1.09	1.01	1.01	0.92	0.84
<b>85</b>	1.17	1.17	1.17	1.17	1.17	1.17	1.09	1.01	0.92	0.92
<b>90</b>	1.34	1.34	1.26	1.26	1.17	1.17	1.09	1.09	0.92	0.92
<b>95</b>	1.34	1.34	1.34	1.34	1.26	1.17	1.17	1.09	1.01	1.01
<b>100</b>	1.51	1.51	1.51	1.51	1.43	1.43	1.34	1.26	1.17	1.09
<b>105</b>	1.68	1.68	1.68	1.68	1.59	1.59	1.51	1.43	1.34	1.26
<b>110</b>	1.84	1.84	1.76	1.76	1.76	1.68	1.59	1.59	1.43	1.43
<b>115</b>	1.84	1.93	1.84	1.84	1.84	1.76	1.76	1.76	1.59	1.51
<b>120</b>	2.01	2.01	2.01	1.93	1.93	1.93	1.84	1.76	1.68	1.59
<b>125</b>	2.01	2.10	2.10	2.01	1.93	1.93	1.93	1.76	1.76	1.59
<b>130</b>	2.01	2.10	2.10	2.10	2.01	1.93	1.93	1.93	1.59	1.59
<b>135</b>	2.01	2.01	2.10	1.93	1.93	1.93	1.84	1.68	1.68	1.68
<b>140</b>	2.01	2.01	2.10	2.10	2.10	1.84	1.76	1.76	1.76	1.76
<b>145</b>	2.01	2.01	2.10	2.10	1.84	1.76	1.84	1.84	1.84	1.93
<b>150</b>	2.01	2.10	2.10	1.84	1.76	1.84	1.84	1.93	2.18	2.10
<b>155</b>	2.01	2.10	2.10	1.68	1.84	1.84	2.01	2.18	2.18	2.10
<b>160</b>	2.01	2.01	1.68	1.76	1.76	2.18	2.18	2.18	2.18	2.18
<b>165</b>	2.01	1.59	1.59	1.76	2.26	2.43	2.60	2.93	3.44	4.02
<b>170</b>	4.02	3.60	3.77	4.36	4.53	4.69	4.86	5.03	5.20	5.37
<b>175</b>	4.19	4.69	5.20	5.62	5.70	5.78	5.87	5.95	6.04	6.12
<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>	2.17	2.17	2.17	2.17	2.17	2.17	2.17	2.17	2.17	2.17
<b>5</b>	0.67	0.67	0.67	0.75	0.84	0.92	1.09	1.34	1.68	2.26
<b>10</b>	0.59	0.67	0.67	0.67	0.67	0.67	0.75	1.01	1.59	3.27
<b>15</b>	0.50	0.50	0.50	0.67	0.67	0.67	0.67	0.84	1.68	4.28
<b>20</b>	0.34	0.50	0.50	0.50	0.50	0.67	0.67	0.75	1.68	5.53
<b>25</b>	0.34	0.34	0.34	0.50	0.50	0.50	0.67	0.67	1.59	6.62
<b>30</b>	0.34	0.34	0.34	0.34	0.50	0.50	0.50	0.67	1.68	7.88
<b>35</b>	0.42	0.34	0.34	0.34	0.34	0.50	0.50	0.59	1.68	9.05
<b>40</b>	0.42	0.42	0.34	0.34	0.34	0.34	0.50	0.50	1.76	10.14
<b>45</b>	0.50	0.42	0.42	0.34	0.34	0.34	0.50	0.50	1.76	11.15
<b>50</b>	0.59	0.50	0.42	0.42	0.34	0.34	0.34	0.50	1.76	11.99
<b>55</b>	0.59	0.59	0.42	0.42	0.42	0.34	0.34	0.50	1.84	12.91
<b>60</b>	0.59	0.59	0.50	0.42	0.42	0.34	0.34	0.34	1.76	13.58



**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : L082011215.IES**

**CANDELA TABULATION - (Cont.)**

65	0.67	0.59	0.59	0.42	0.42	0.34	0.34	0.34	1.84	14.25
70	0.75	0.59	0.59	0.50	0.42	0.42	0.34	0.34	1.76	14.67
75	0.75	0.67	0.59	0.59	0.42	0.42	0.34	0.34	1.76	15.09
80	0.75	0.75	0.59	0.59	0.42	0.42	0.34	0.34	1.76	15.42
85	0.75	0.75	0.59	0.59	0.42	0.42	0.34	0.34	1.68	15.42
90	0.84	0.75	0.59	0.59	0.42	0.42	0.42	0.34	1.51	15.42
95	0.92	0.84	0.75	0.59	0.59	0.50	0.42	0.34	0.92	15.68
100	1.01	0.92	0.84	0.75	0.67	0.59	0.50	0.50	1.09	15.84
105	1.17	1.09	0.92	0.84	0.75	0.67	0.50	0.50	1.26	15.34
110	1.26	1.17	1.09	0.92	0.84	0.67	0.67	0.67	1.51	13.50
115	1.43	1.26	1.09	1.01	1.01	0.84	0.84	0.92	1.84	11.99
120	1.51	1.43	1.26	1.26	1.09	1.09	0.92	1.43	2.18	10.14
125	1.51	1.43	1.34	1.34	1.26	1.26	1.17	2.01	2.60	9.22
130	1.59	1.51	1.43	1.34	1.34	1.34	1.43	2.43	2.93	7.80
135	1.68	1.59	1.59	1.43	1.43	1.51	2.01	2.77	3.19	7.29
140	1.68	1.76	1.59	1.51	1.43	1.93	2.52	3.02	3.44	6.79
145	2.01	1.76	1.59	1.51	1.84	2.77	2.93	3.35	3.69	6.29
150	2.10	1.93	1.84	2.18	2.93	3.69	3.69	3.94	4.44	6.37
155	2.10	2.01	2.60	3.35	3.94	4.19	4.44	4.69	5.11	6.71
160	2.60	3.27	3.94	4.44	4.61	4.78	5.03	5.28	5.70	6.87
165	4.36	4.78	5.03	5.20	5.20	5.37	5.62	5.87	6.12	6.87
170	5.45	5.62	5.70	5.78	5.87	6.04	6.20	6.45	6.62	7.04
175	6.12	6.12	6.20	6.37	6.54	6.62	6.87	6.96	7.04	7.13
180	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>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	2.17	2.17	2.17	2.17	2.17	2.17	2.17	2.17	2.17	2.17
5	3.02	3.86	4.78	5.70	6.71	7.54	8.38	9.22	9.98	10.65
10	5.28	7.54	9.89	12.15	14.17	16.01	17.86	19.53	21.12	22.55
15	7.80	11.48	14.84	18.02	21.21	24.23	27.24	30.09	32.61	35.04
20	10.39	15.26	19.62	24.06	28.58	33.03	37.13	41.24	44.93	48.45
25	12.91	18.78	24.48	30.34	36.38	42.08	47.61	53.06	58.09	62.78
30	15.17	22.21	29.34	36.55	44.26	51.38	58.34	65.38	71.67	77.87
35	17.10	25.73	34.28	42.92	52.14	60.86	69.49	77.96	85.92	93.46
40	19.28	29.34	39.15	49.29	60.35	70.58	80.89	91.12	100.92	109.81
45	21.38	32.36	44.01	55.66	68.23	80.30	92.12	104.19	115.85	126.41
50	23.22	35.63	48.53	61.70	76.11	89.69	103.36	117.69	130.60	142.84
55	25.15	38.56	52.98	67.56	83.49	98.91	114.17	130.35	144.93	159.01
60	26.82	41.41	57.00	73.01	90.53	107.38	124.31	142.17	158.43	174.19
65	28.17	43.92	60.61	77.87	96.73	114.92	133.28	152.73	170.58	187.77
70	29.51	46.52	63.79	82.06	102.10	121.46	140.99	161.78	180.98	199.25
75	30.93	48.28	66.31	85.50	106.46	126.74	147.28	168.40	189.11	208.39
80	31.77	49.62	68.32	88.10	109.81	130.77	151.81	173.60	194.14	214.59
85	32.27	50.55	69.66	89.78	111.91	133.20	154.66	176.70	197.57	218.11
90	32.52	51.05	70.25	90.61	112.91	134.20	155.83	177.88	198.66	219.03
95	32.69	51.13	70.33	90.61	112.83	134.20	155.49	177.29	197.91	218.11
100	32.78	51.05	69.99	90.03	111.99	132.95	153.90	175.28	195.39	215.26
105	32.61	50.63	69.16	88.69	109.98	130.35	150.88	171.67	191.12	210.23
110	32.02	49.79	67.73	86.59	107.21	126.83	146.36	166.31	185.00	203.27
115	29.51	48.45	65.72	83.74	102.85	122.13	140.74	159.60	177.20	194.39
120	24.98	45.68	62.87	80.30	98.33	115.76	133.78	151.30	167.73	183.74
125	21.88	38.89	56.58	72.59	89.69	106.88	125.07	141.83	156.92	171.50
130	18.53	31.60	49.54	65.22	80.05	95.39	110.73	127.25	143.76	158.01
135	15.59	27.58	39.57	56.58	70.50	83.66	97.32	111.32	125.07	139.82

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : L082011215.IES**

**CANDELA TABULATION - (Cont.)**

<b>140</b>	13.66	23.05	32.19	44.59	61.19	73.43	84.24	95.98	107.46	119.53
<b>145</b>	11.99	18.61	27.75	35.46	46.86	63.46	73.68	81.98	90.78	100.42
<b>150</b>	11.65	16.85	22.97	31.02	37.89	46.61	59.18	69.49	76.36	82.40
<b>155</b>	10.73	15.51	20.37	25.15	31.94	37.81	43.25	51.22	58.09	64.88
<b>160</b>	9.72	13.92	17.86	21.71	25.40	29.34	34.03	38.89	43.51	46.27
<b>165</b>	8.72	11.48	14.92	17.94	20.79	23.72	25.90	28.50	30.76	33.95
<b>170</b>	7.96	9.47	11.40	13.75	15.84	17.69	19.20	20.45	22.05	23.30
<b>175</b>	7.46	7.96	8.72	9.47	10.39	11.48	12.41	13.24	13.75	14.33
<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**

	<b><u>150</u></b>	<b><u>155</u></b>	<b><u>160</u></b>	<b><u>165</u></b>	<b><u>170</u></b>	<b><u>175</u></b>	<b><u>180</u></b>
<b>0</b>	2.17	2.17	2.17	2.17	2.17	2.17	2.17
<b>5</b>	11.15	11.65	12.07	12.41	12.66	12.74	12.74
<b>10</b>	23.81	24.90	25.90	26.57	27.08	27.24	27.33
<b>15</b>	37.22	38.98	40.49	41.83	42.58	43.00	43.25
<b>20</b>	51.64	54.32	56.58	58.34	59.60	60.27	60.52
<b>25</b>	67.06	70.75	73.93	76.28	78.04	79.05	79.47
<b>30</b>	83.41	88.10	92.21	95.22	97.57	99.00	99.58
<b>35</b>	100.42	106.29	111.40	115.43	118.36	120.20	120.71
<b>40</b>	118.28	125.49	131.69	136.63	140.24	142.59	143.34
<b>45</b>	136.38	145.02	152.64	158.51	162.95	165.80	166.64
<b>50</b>	154.24	164.71	173.68	180.81	186.09	189.44	190.45
<b>55</b>	172.01	184.08	194.47	202.69	208.81	212.83	214.09
<b>60</b>	188.77	202.52	214.42	223.64	230.52	235.04	236.55
<b>65</b>	203.78	218.78	231.86	242.08	249.71	254.74	256.33
<b>70</b>	217.10	232.53	246.44	257.42	265.64	270.92	272.60
<b>75</b>	226.91	243.01	257.59	268.91	277.29	282.91	284.67
<b>80</b>	233.45	249.96	264.72	276.28	284.83	290.28	292.04
<b>85</b>	237.22	253.90	268.57	280.14	288.52	294.06	295.73
<b>90</b>	238.06	254.57	268.99	280.31	288.69	294.06	295.90
<b>95</b>	236.72	252.90	267.23	278.38	286.60	291.96	293.55
<b>100</b>	233.45	249.21	263.12	274.02	282.15	287.35	289.03
<b>105</b>	227.92	243.26	256.67	267.23	275.19	280.06	281.65
<b>110</b>	220.12	234.71	247.62	257.84	265.22	270.00	271.59
<b>115</b>	210.15	223.89	236.05	245.77	252.65	257.01	258.35
<b>120</b>	198.41	211.07	222.22	231.19	237.64	241.58	242.92
<b>125</b>	184.92	196.48	206.71	214.84	220.63	224.23	225.49
<b>130</b>	170.08	180.31	189.53	196.82	202.02	205.20	206.21
<b>135</b>	154.15	163.21	171.34	177.62	182.07	184.92	185.75
<b>140</b>	132.36	145.18	152.14	157.76	161.53	164.04	164.80
<b>145</b>	110.73	121.38	132.69	137.22	140.66	142.67	143.34
<b>150</b>	90.28	98.41	107.80	116.60	119.45	121.21	121.71
<b>155</b>	69.99	76.36	83.24	91.79	97.74	99.16	99.75
<b>160</b>	47.86	49.96	55.16	61.11	70.16	72.34	72.76
<b>165</b>	35.96	37.30	37.39	40.40	44.51	50.97	51.13
<b>170</b>	23.97	24.31	23.30	22.13	23.81	28.75	32.52
<b>175</b>	14.59	14.59	14.33	13.16	11.65	11.82	17.27
<b>180</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00

**IES INDOOR REPORT**  
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**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	4.68	N.A.	0.60
0-30	16.23	N.A.	2.10
0-40	39.27	N.A.	5.00
0-60	132.81	N.A.	17.00
0-80	290.18	N.A.	37.20
0-90	381.94	N.A.	49.00
10-90	381.37	N.A.	48.90
20-40	34.60	N.A.	4.40
20-50	72.73	N.A.	9.30
40-70	165.75	N.A.	21.30
60-80	157.37	N.A.	20.20
70-80	85.15	N.A.	10.90
80-90	91.76	N.A.	11.80
90-110	177.81	N.A.	22.80
90-120	252.60	N.A.	32.40
90-130	311.89	N.A.	40.00
90-150	379.13	N.A.	48.60
90-180	397.38	N.A.	51.00
110-180	219.57	N.A.	28.20
0-180	779.32	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	0.57
10-20	4.10
20-30	11.55
30-40	23.04
40-50	38.13
50-60	55.40
60-70	72.22
70-80	85.15
80-90	91.76
90-100	91.79
100-110	86.02
110-120	74.79
120-130	59.29
130-140	41.71
140-150	25.53
150-160	12.78
160-170	4.63
170-180	0.85

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	10	0
0	107	107	107	107	99	99	99	99	83	83	83	68	68	68	55	55	55	49
1	92	85	78	73	83	77	72	67	63	59	55	51	48	45	39	37	35	29
2	81	71	62	55	73	64	57	50	52	46	41	41	37	33	31	28	25	19
3	72	60	50	43	65	55	46	39	44	37	32	35	29	25	26	22	18	14
4	65	52	42	35	59	47	38	32	38	31	26	30	24	20	22	18	14	10
5	59	45	36	28	54	41	33	26	33	26	21	26	20	16	19	15	11	8
6	54	40	31	24	49	37	28	22	30	23	18	23	18	13	17	13	9	6
7	50	36	27	20	45	33	24	18	26	20	15	21	15	11	15	11	8	5
8	46	32	23	17	42	29	21	16	24	17	13	19	13	10	14	10	7	4
9	43	29	21	15	39	27	19	14	22	15	11	17	12	8	13	9	6	3
10	40	27	19	13	36	24	17	12	20	14	10	16	11	7	12	8	5	3

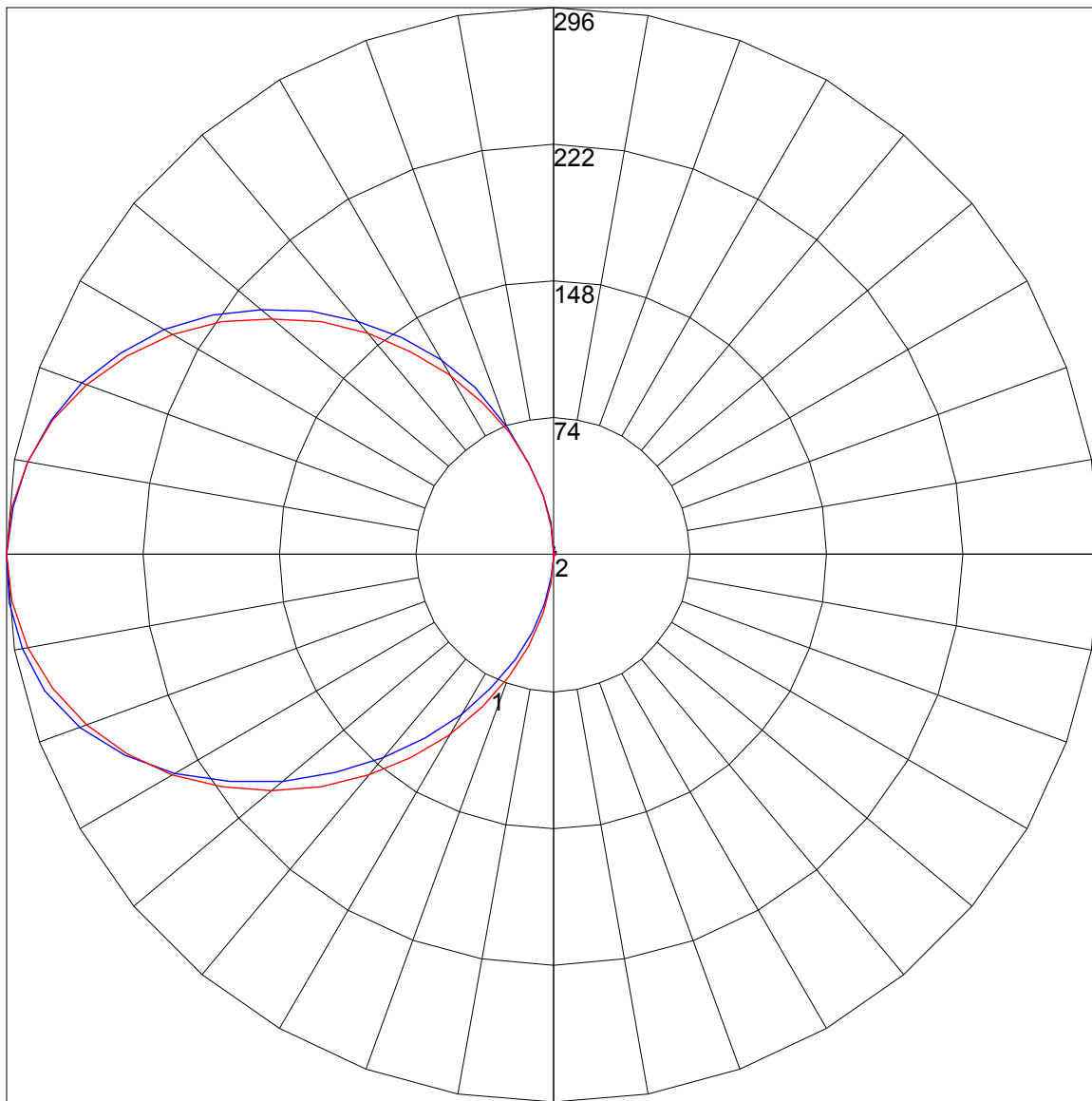
**IES INDOOR REPORT**  
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**UGR TABLE - CORRECTED**

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	0.0	0.0	0.0	0.0	0.0	9.1	10.2	10.0	11.1	12.4
	3H	0.0	0.0	0.0	0.0	0.0	10.4	11.3	11.3	12.3	13.6
	4H	0.0	0.0	0.0	0.0	0.0	10.8	11.7	11.7	12.7	14.0
	6H	0.0	0.0	0.0	0.0	0.0	11.0	11.9	12.0	12.9	14.2
	8H	0.0	0.0	0.0	0.0	0.8	11.1	11.9	12.0	12.9	14.2
	12H	0.0	0.0	0.0	0.9	2.2	11.1	11.9	12.1	12.9	14.2
4H	2H	0.0	0.0	0.0	0.0	0.0	14.6	15.6	15.6	16.5	17.8
	3H	0.0	0.0	0.0	0.0	0.0	16.3	17.1	17.2	18.1	19.4
	4H	0.0	0.0	0.0	0.0	0.0	16.9	17.6	17.8	18.6	20.0
	6H	0.0	0.0	0.0	0.0	0.0	17.2	17.9	18.2	19.0	20.3
	8H	0.0	0.0	0.0	0.0	1.2	17.4	18.0	18.3	19.0	20.4
	12H	0.0	0.2	0.6	1.2	2.6	17.4	18.0	18.4	19.0	20.4
8H	4H	0.0	0.0	0.0	0.0	0.0	20.2	20.9	21.2	21.9	23.2
	6H	0.0	0.0	0.0	0.0	0.0	21.0	21.5	22.0	22.6	23.9
	8H	0.0	0.0	0.0	0.0	1.3	21.2	21.7	22.2	22.8	24.1
	12H	0.0	0.4	0.9	1.4	2.8	21.4	21.8	22.4	22.9	24.3
12H	4H	0.0	0.0	0.0	0.0	0.0	21.3	21.9	22.3	22.9	24.3
	6H	0.0	0.0	0.0	0.0	0.0	22.3	22.8	23.3	23.8	25.2
	8H	0.0	0.0	0.0	0.0	1.3	22.7	23.1	23.7	24.2	25.6

Maximum UGR = 25.6

POLAR GRAPH



Maximum Candela = 295.9 Located At Horizontal Angle = 180, Vertical Angle = 90  
# 1 - Vertical Plane Through Horizontal Angles (180 - 0) (Through Max. Cd.)  
# 2 - Horizontal Cone Through Vertical Angle (90) (Through Max. Cd.)