

## IES Report

ZipThree® | 707 | Symmetric, uplight only | 90 CRI | HO

707-Z3-4-48-XX-XX-X-0-Z-HO-359-U1-X-XX-X

	2700K	3000K	3500K	4000K
Efficacy - Lumens per Watt	122	126	128	130
Total Lumens, 4' rail length (1219mm)	6537	6743	6881	6950
Lumens per foot (305mm)	1634	1686	1720	1737
Input Power (W), 4' rail length (1219mm)	53.8	53.8	53.8	53.8
Watts per foot (305mm)	13.5	13.5	13.5	13.5
CRI	94	94	94	94

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: L121911541R01



**Report No:** L121911541R01

**Issue Date:** 1/2/2020

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

**Model Number:** 707-Z3-48-Z-HO-359-U1-AL

**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:** 12/16/19

**Date of Tests:** 12/17/19 - 12/24/19

**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-Z3-48-Z-HO-359-U1-AL
<b>Driver Model Number:</b>	MEAN WELL HLG-60H-36A

### Test Summary

<b>Total Lumens:</b>	6880.72
<b>Efficacy:</b>	127.82
<b>Color Redering Index:</b>	93.9
<b>Correlated Color Temperature:</b>	3413
<b>Input Voltage (VAC/60Hz):</b>	120.04
<b>Input Current (Amp):</b>	0.4496
<b>Input Power (W):</b>	53.83
<b>Input Power Factor:</b>	0.9974
<b>Current ATHD (%):</b>	4.6%

### Test Condition

<b>Ambient Temperature (°C):</b>	25.0
<b>Stabilization Time (Hours):</b>	0:30
<b>Total Operating Time (Hours):</b>	1:30

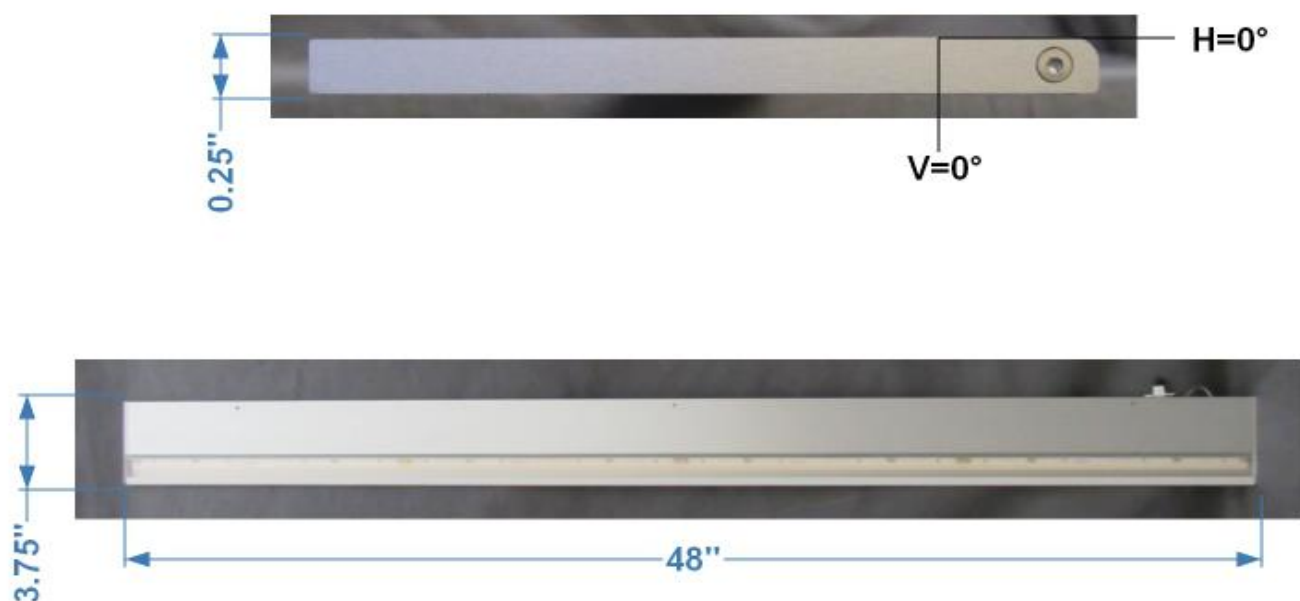
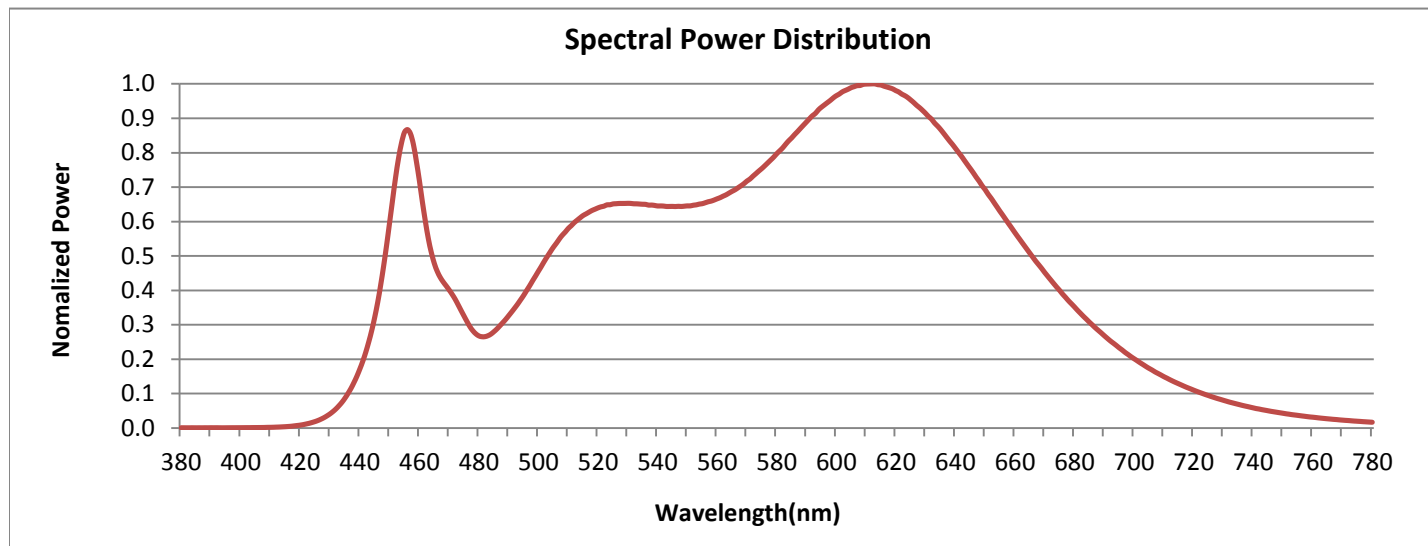


FIG. 1 LUMINAIRE

## Colorimetry Test Results

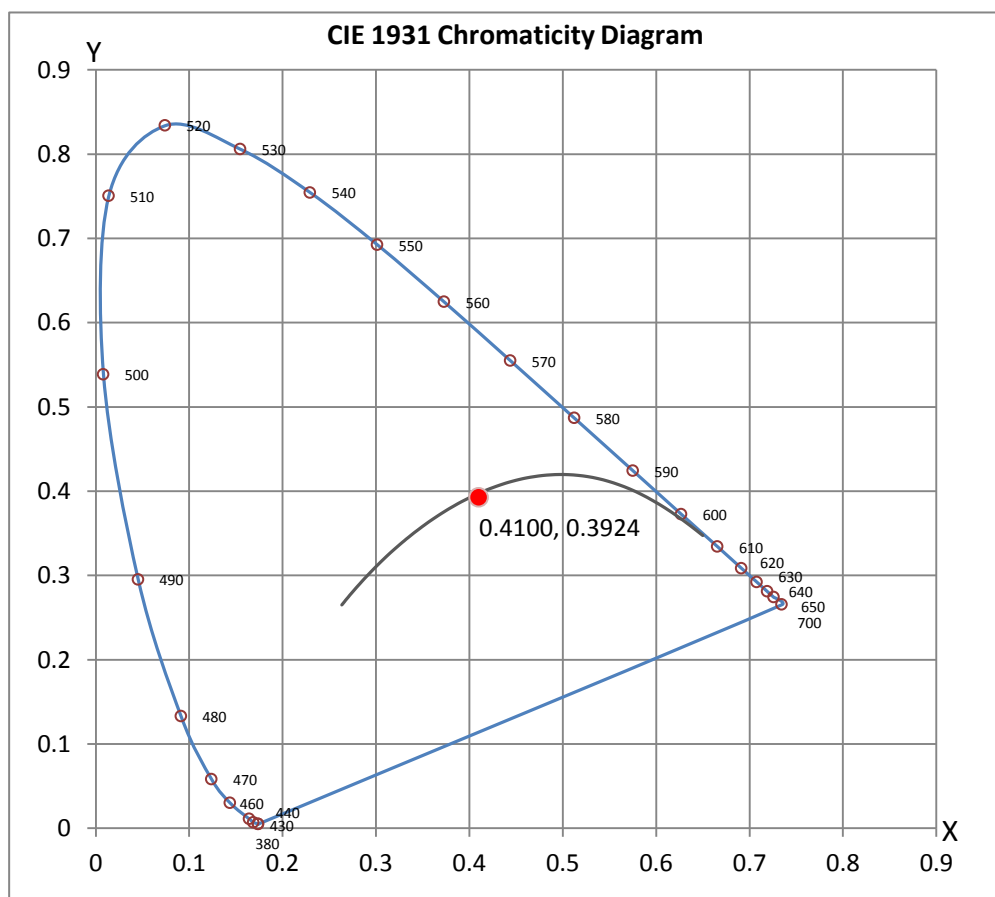


### CRI & CCT

x	0.4100
y	0.3924
u'	0.2381
v'	0.5127
CRI	93.90
CCT	3413
Duv	-0.00027

### R Values

R1	95.79
R2	98.82
R3	98.07
R4	95.99
R5	95.80
R6	96.00
R7	90.38
R8	80.51
R9	56.07
R10	96.86
R11	98.29
R12	76.93
R13	97.45
R14	99.66
R15	89.83





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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: 9*



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www.lightlaboratory.com

## Photometric Test Report

### IES INDOOR REPORT

PHOTOMETRIC FILENAME : L121911541R01.IES

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002  
[TEST] L121911541R01  
[TESTLAB] LIGHT LABORATORY, INC. (www.lightlaboratory.com)  
[ISSUEDATE] 1/2/2020  
[MANUFAC] Vode Lighting  
[LUMCAT] 707-Z3-48-Z-HO-359-U1-AL  
[LUMINAIRE] ZipThree LED, 48", 3500K, 90 CRI, zipper board, symmetric lens up,  
[MORE] high output, clear anodized finish  
[BALLASTCAT] MEAN WELL HLG-60H-36A  
[OTHER] INDICATING THE CANDELA VALUES ARE ABSOLUTE AND  
[MORE] SHOULD NOT BE FACTORED FOR DIFFERENT LAMP RATINGS.  
[INPUT] 120.04VAC, 53.83W  
[TEST PROCEDURE] IESNA:LM-79-08

### CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	6881
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	128
Total Luminaire Watts	53.83
Ballast Factor	1.00
CIE Type	Indirect
Spacing Criterion (0-180)	N.A.
Spacing Criterion (90-270)	N.A.
Spacing Criterion (Diagonal)	N.A.
Basic Luminous Shape	Rectangular
Luminous Length (0-180)	0.07 ft
Luminous Width (90-270)	3.98 ft
Luminous Height	0.00 ft

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

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	0	0	0
55	0	0	0
65	0	0	0
75	0	0	0
85	0	0	0

IES INDOOR REPORT  
PHOTOMETRIC FILENAME : L121911541R01.IES

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>
0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0
35	0	0	0	0	0	0	0	0	0	0
40	0	0	0	0	0	0	0	0	0	0
45	0	0	0	0	0	0	0	0	0	0
50	0	0	0	0	0	0	0	0	0	0
55	0	0	0	0	0	0	0	0	0	0
60	0	0	0	0	0	0	0	0	0	0
65	0	0	0	0	0	0	0	0	0	0
70	0	0	0	0	0	0	0	0	0	0
75	0	0	0	0	0	0	0	0	0	0
80	0	0	0	0	0	0	0	0	0	0
85	0	0	0	0	0	0	0	0	0	0
90	0	0	0	0	0	0	0	0	0	0
95	82	82	82	82	82	82	83	82	82	82
100	192	193	193	193	194	195	196	197	198	199
105	333	333	334	335	336	338	340	343	345	347
110	502	502	503	505	507	510	513	517	521	525
115	699	699	700	703	706	709	713	718	722	727
120	920	921	922	925	928	932	936	941	946	951
125	1160	1161	1162	1164	1168	1171	1176	1181	1186	1191
130	1406	1406	1407	1410	1413	1416	1420	1425	1429	1434
135	1645	1645	1647	1649	1650	1653	1657	1660	1664	1668
140	1864	1864	1865	1866	1868	1870	1873	1875	1878	1881
145	2056	2056	2057	2058	2059	2060	2062	2064	2066	2067
150	2218	2218	2219	2219	2220	2221	2222	2223	2224	2225
155	2351	2351	2352	2352	2352	2352	2353	2354	2355	2355
160	2455	2455	2455	2456	2456	2456	2456	2457	2457	2457
165	2533	2534	2534	2534	2534	2534	2534	2534	2534	2534
170	2587	2587	2587	2588	2587	2587	2587	2587	2587	2587
175	2617	2617	2617	2617	2617	2617	2617	2618	2618	2617
180	2626	2626	2626	2626	2626	2626	2626	2626	2626	2626

Vert. Horizontal Angles  
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>
0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0
35	0	0	0	0	0	0	0	0	0
40	0	0	0	0	0	0	0	0	0
45	0	0	0	0	0	0	0	0	0
50	0	0	0	0	0	0	0	0	0
55	0	0	0	0	0	0	0	0	0
60	0	0	0	0	0	0	0	0	0

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : L121911541R01.IES**

**CANDELA TABULATION - (Cont.)**

<b>65</b>	0	0	0	0	0	0	0	0	0
<b>70</b>	0	0	0	0	0	0	0	0	0
<b>75</b>	0	0	0	0	0	0	0	0	0
<b>80</b>	0	0	0	0	0	0	0	0	0
<b>85</b>	0	0	0	0	0	0	0	0	0
<b>90</b>	0	0	0	0	0	0	0	0	0
<b>95</b>	82	82	81	80	80	79	78	77	77
<b>100</b>	199	200	201	201	202	202	201	201	200
<b>105</b>	350	352	355	356	357	358	358	358	358
<b>110</b>	528	531	534	537	539	540	541	542	542
<b>115</b>	731	735	739	742	745	747	748	749	749
<b>120</b>	956	961	965	969	972	974	976	976	977
<b>125</b>	1196	1200	1204	1208	1211	1214	1215	1216	1217
<b>130</b>	1438	1442	1446	1450	1453	1454	1456	1457	1457
<b>135</b>	1671	1674	1678	1681	1683	1685	1686	1686	1686
<b>140</b>	1883	1886	1888	1890	1892	1893	1894	1894	1895
<b>145</b>	2069	2071	2072	2073	2075	2075	2076	2076	2076
<b>150</b>	2226	2227	2228	2229	2229	2230	2230	2230	2230
<b>155</b>	2356	2356	2356	2356	2357	2357	2357	2358	2357
<b>160</b>	2457	2458	2458	2458	2458	2458	2458	2458	2457
<b>165</b>	2535	2534	2534	2535	2535	2534	2535	2534	2535
<b>170</b>	2587	2587	2587	2587	2588	2588	2587	2587	2587
<b>175</b>	2618	2618	2617	2618	2618	2618	2618	2618	2618
<b>180</b>	2626	2626	2626	2626	2626	2626	2626	2626	2626



**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : L121911541R01.IES**

**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	0.00	N.A.	0.00
0-30	0.00	N.A.	0.00
0-40	0.00	N.A.	0.00
0-60	0.00	N.A.	0.00
0-80	0.00	N.A.	0.00
0-90	0.00	N.A.	0.00
10-90	0.00	N.A.	0.00
20-40	0.00	N.A.	0.00
20-50	0.00	N.A.	0.00
40-70	0.00	N.A.	0.00
60-80	0.00	N.A.	0.00
70-80	0.00	N.A.	0.00
80-90	0.00	N.A.	0.00
90-110	471.00	N.A.	6.80
90-120	1194.42	N.A.	17.40
90-130	2259.13	N.A.	32.80
90-150	4832.57	N.A.	70.20
90-180	6880.72	N.A.	100.00
110-180	6409.73	N.A.	93.20
0-180	6880.72	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	0.00
10-20	0.00
20-30	0.00
30-40	0.00
40-50	0.00
50-60	0.00
60-70	0.00
70-80	0.00
80-90	0.00
90-100	97.93
100-110	373.07
110-120	723.43
120-130	1064.71
130-140	1283.00
140-150	1290.43
150-160	1084.15
160-170	715.13
170-180	248.87

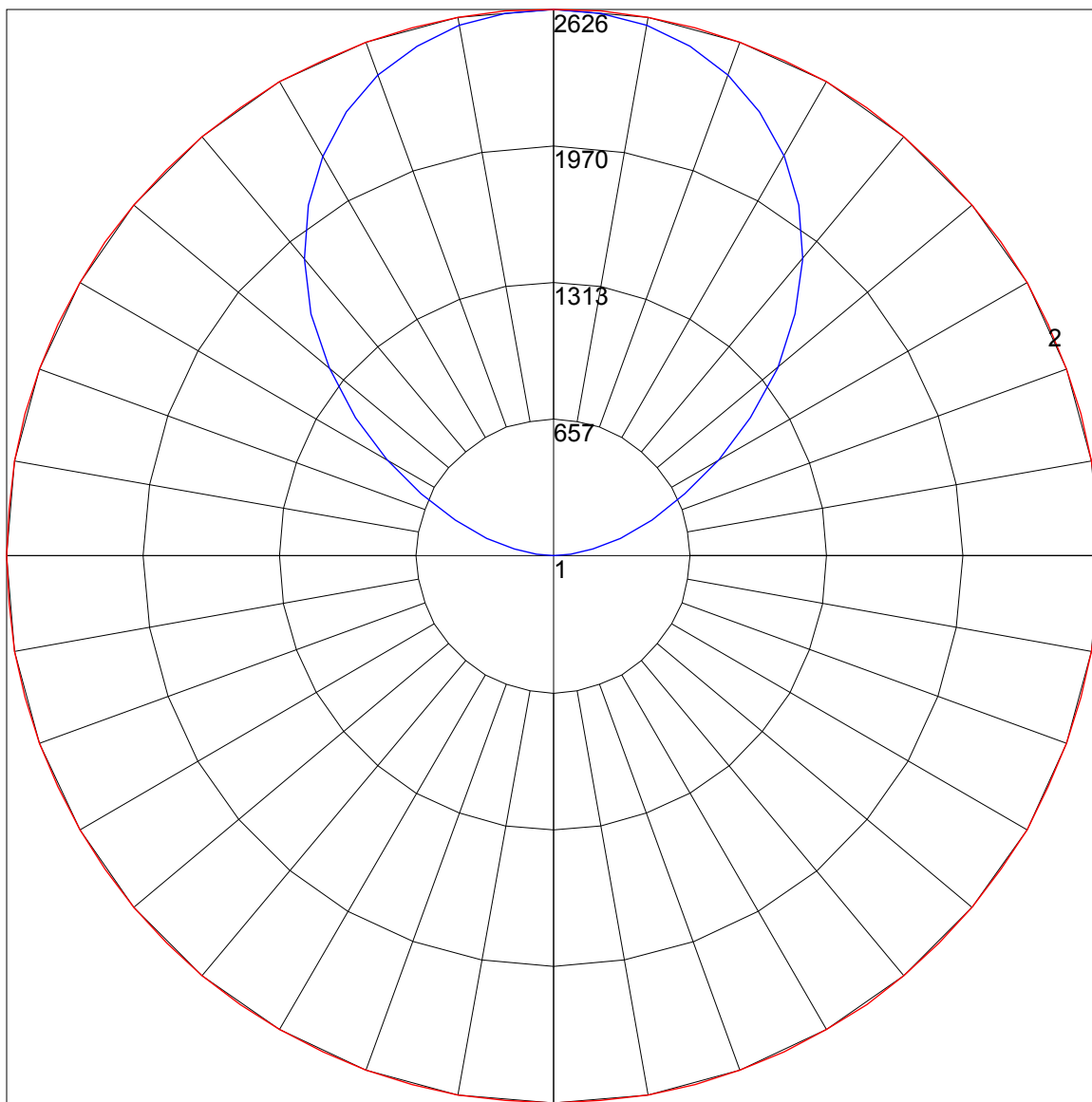
**IES INDOOR REPORT**  
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**COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD**

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	95	95	95	95	81	81	81	81	56	56	56	32	32	32	10	10	10	0
1	87	83	79	76	74	71	68	65	48	47	45	28	27	26	9	9	8	0
2	79	72	66	62	67	62	57	53	42	40	37	24	23	22	8	7	7	0
3	72	63	56	51	61	54	49	44	37	34	31	21	20	18	7	6	6	0
4	65	56	48	43	56	48	42	37	33	29	26	19	17	16	6	6	5	0
5	60	49	42	36	51	42	36	32	29	25	22	17	15	13	5	5	4	0
6	55	44	36	31	47	38	32	27	26	22	19	15	13	11	5	4	4	0
7	50	39	32	27	43	34	28	23	23	19	17	14	11	10	4	4	3	0
8	47	35	28	23	40	30	24	20	21	17	14	12	10	9	4	3	3	0
9	43	32	25	20	37	28	22	18	19	15	13	11	9	8	4	3	3	0
10	40	29	22	18	34	25	19	16	17	14	11	10	8	7	3	3	2	0

POLAR GRAPH



Maximum Candela = 2626 Located At Horizontal Angle = 0, Vertical Angle = 180  
# 1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)  
# 2 - Horizontal Cone Through Vertical Angle (180) (Through Max. Cd.)