

**IES Report**

**WingRail® | 107 | Diffuse | 90 CRI | HO**

107-WG-XX-4-48-XX-XX-XX-XX-X-X-Z-HO-359-D1-X-XX-X

	2700K	3000K	3500K	4000K
Efficacy - Lumens per Watt	66	68	69	71
Total Lumens, 4' rail length (1219mm)	3222	3324	3392	3460
Lumens per foot (305mm)	806	831	848	865
Input Power (W), 4' rail length (1219mm)	49.2	49.2	49.2	49.2
Watts per foot (305mm)	12.4	12.4	12.4	12.4
CRI	96	96	96	96

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: L091700112



**Report No:** L091700112

**Issue Date:** 9/21/2017

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

**Model Number:** 107-WG-48-Z-HO-359-D1

**Test:** Electrical and Photometric tests

**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.

**Testing Condition:** Fixture is tested with no special conditions.

**Sample Arrival Date:** 9/15/17

**Date of Tests:** 9/18/17 - 9/21/17

**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-S1	11/28/17
ITECH	IT6122	PS-DC03-S1	11/28/17
Fluke Digital Thermometer	52k/J	MT-TP02-GC	11/28/17
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

\*All Results in accordance to IESNA LM-79-2008: Approved Method for the Electrical and Photometric Testing of Solid-State Lighting.

**Test Summary**

<b>Manufacturer:</b>	Vode Lighting
<b>Model Number:</b>	107-WG-48-Z-HO-359-D1
<b>Driver Model Number:</b>	MEAN WELL HLG-60H-36A
<b>Total Lumens:</b>	3391.70
<b>Input Voltage (VAC/60Hz):</b>	120.00
<b>Input Current (Amp):</b>	0.41
<b>Input Power (W):</b>	49.22
<b>Input Power Factor:</b>	1.00
<b>Current ATHD @ 120V(%):</b>	6%
<b>Current ATHD @ 277V(%):</b>	N/A
<b>Efficacy:</b>	69
<b>Color Rendering Index (CRI):</b>	96
<b>Correlated Color Temperature (K):</b>	3357
<b>Chromaticity Coordinate x:</b>	0.4125
<b>Chromaticity Coordinate y:</b>	0.3919
<b>Ambient Temperature (°C):</b>	25.0
<b>Stabilization Time (Hours):</b>	0:55
<b>Total Operating Time (Hours):</b>	1:45

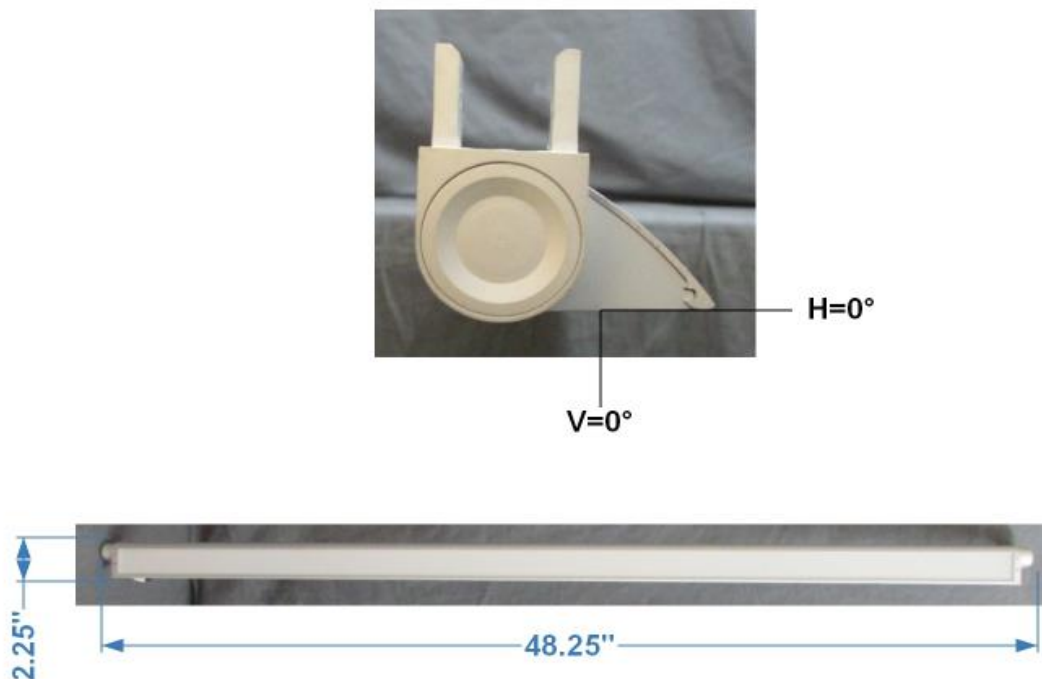
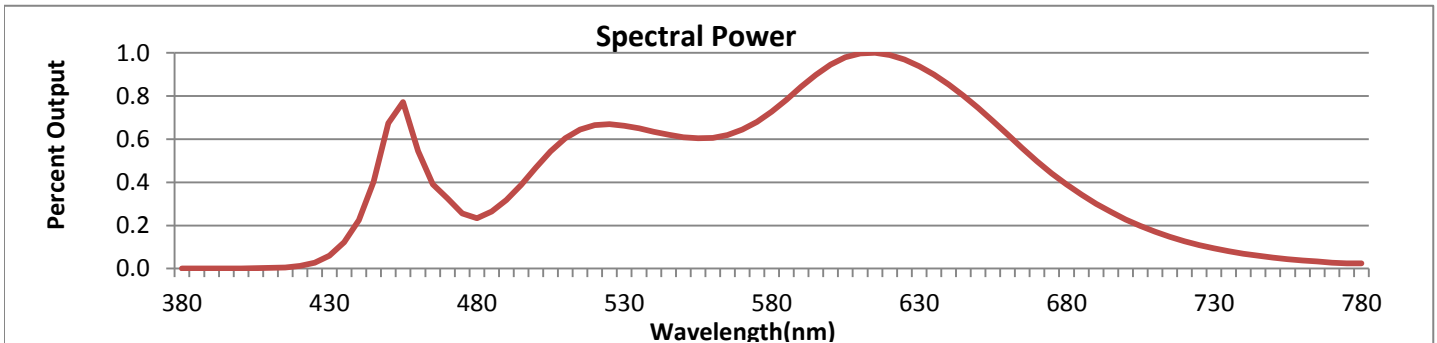


FIG. 1 LUMINAIRE

\*All Results in accordance to IESNA LM-79-2008: Approved Method for the Electrical and Photometric Testing of Solid-State Lighting.



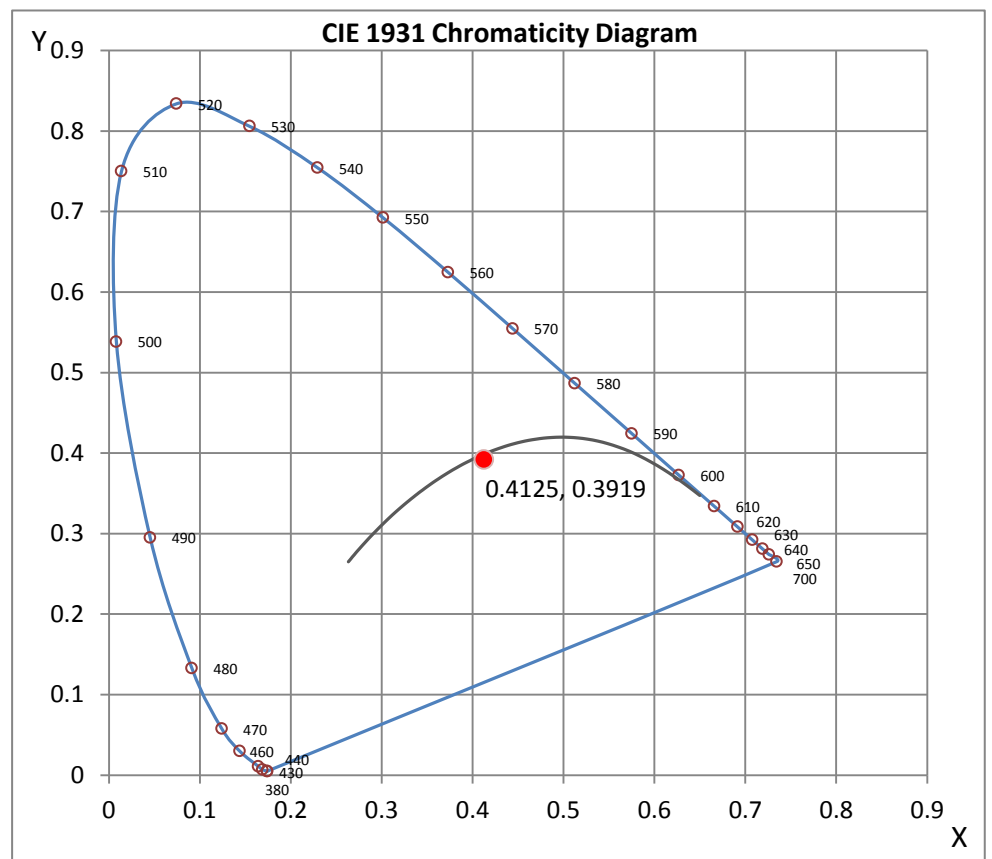
Wavelength	W/m <sup>2</sup> nm	440	0.2250	510	0.6048	580	0.7274	650	0.7454	720	0.1266
380	0.0009	450	0.6743	520	0.6648	590	0.8429	660	0.6218	730	0.0934
390	0.0010	460	0.5448	530	0.6623	600	0.9459	670	0.4972	740	0.0688
400	0.0012	470	0.3250	540	0.6337	610	0.9983	680	0.3906	750	0.0509
410	0.0028	480	0.2340	550	0.6093	620	0.9903	690	0.3004	760	0.0378
420	0.0125	490	0.3178	560	0.6062	630	0.9377	700	0.2277	770	0.0279
430	0.0600	500	0.4684	570	0.6439	640	0.8539	710	0.1704	780	0.0241

**CRI & CCT**

x	0.4125
y	0.3919
u'	0.2399
v'	0.5128
CRI	95.70
CCT	3357
Duv	-0.00099

**R Values**

R1	97.75
R2	98.75
R3	99.02
R4	96.12
R5	97.77
R6	94.23
R7	94.02
R8	88.28
R9	72.52
R10	97.86
R11	89.22
R12	83.47
R13	97.32
R14	98.76



\*All Results in accordance to IESNA LM-79-2008: Approved Method for the Electrical and Photometric Testing of Solid-State Lighting.

## 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 Released by:



Jeff Ahn  
Engineering Manager

Test Report Reviewed by:



Steve Kang  
Quality Assurance

*\*Attached are photometric data reports. Total number of pages: 9*



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# Photometric Test Report

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : L091700112.IES**

**DESCRIPTION INFORMATION (From Photometric File)**

IESNA:LM-63-2002  
[TEST] L091700112  
[TESTLAB] LIGHT LABORATORY, INC. (www.lightlaboratory.com)  
[ISSUEDATE] 9/21/2017  
[MANUFAC] Vode Lighting  
[LUMCAT] 107-WG-48-Z-HO-359-D1  
[LUMINAIRE] WingRail LED, 48", 3500K, 90 CRI, zipper board,  
[MORE] diffuse lens, high output  
[BALLASTCAT] MEAN WELL HLG-60H-36A  
[OTHER] INDICATING THE CANDELA VALUES ARE ABSOLUTE AND  
[MORE] SHOULD NOT BE FACTORED FOR DIFFERENT LAMP RATINGS.  
[INPUT] 120VAC, 49.22W  
[TEST PROCEDURE] IESNA:LM-79-08

**CHARACTERISTICS**

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	3392
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	69
Total Luminaire Watts	49.22
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.26
Spacing Criterion (90-270)	1.26
Spacing Criterion (Diagonal)	1.38
Basic Luminous Shape	Rectangular
Luminous Length (0-180)	0.13 ft
Luminous Width (90-270)	3.83 ft
Luminous Height	0.00 ft

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

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	24161	24161	24161
55	23121	23196	23271
65	21362	21618	21771
75	18025	18526	19027
85	11399	11895	13382

**IES INDOOR REPORT**  
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**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>	1197	1197	1197	1197	1197	1197	1197	1197	1197	1197
<b>5</b>	1192	1192	1192	1191	1191	1191	1191	1191	1191	1191
<b>10</b>	1176	1176	1175	1175	1175	1175	1175	1175	1175	1175
<b>15</b>	1149	1149	1148	1148	1148	1148	1148	1148	1148	1148
<b>20</b>	1111	1111	1111	1110	1110	1110	1110	1110	1110	1110
<b>25</b>	1064	1064	1064	1063	1063	1063	1063	1063	1063	1063
<b>30</b>	1008	1008	1007	1007	1007	1007	1007	1007	1007	1007
<b>35</b>	943	943	942	942	942	942	942	942	942	942
<b>40</b>	871	870	870	870	870	870	870	870	870	870
<b>45</b>	791	791	790	790	790	791	791	791	791	791
<b>50</b>	705	705	705	705	705	705	706	706	706	706
<b>55</b>	614	614	614	614	614	615	615	615	616	616
<b>60</b>	518	518	518	518	519	519	520	520	521	521
<b>65</b>	418	418	418	419	419	420	421	421	422	423
<b>70</b>	316	317	317	318	318	319	320	321	321	322
<b>75</b>	216	216	217	217	218	219	220	220	221	222
<b>80</b>	121	121	122	122	123	124	125	126	127	128
<b>85</b>	46	46	46	46	46	47	47	47	47	48
<b>90</b>	0	0	0	0	0	0	0	0	0	0

**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>
<b>0</b>	1197	1197	1197	1197	1197	1197	1197	1197	1197
<b>5</b>	1191	1191	1191	1191	1191	1191	1191	1191	1191
<b>10</b>	1175	1175	1175	1175	1175	1175	1175	1175	1175
<b>15</b>	1148	1148	1148	1148	1148	1148	1148	1148	1147
<b>20</b>	1110	1110	1110	1110	1110	1110	1110	1110	1110
<b>25</b>	1063	1063	1063	1063	1063	1062	1062	1062	1062
<b>30</b>	1006	1006	1006	1006	1006	1006	1006	1006	1006
<b>35</b>	942	942	942	942	942	942	941	942	941
<b>40</b>	870	870	870	869	869	869	870	869	869
<b>45</b>	791	791	791	791	791	791	791	791	791
<b>50</b>	706	706	707	707	707	707	707	707	707
<b>55</b>	616	616	617	617	617	617	618	618	618
<b>60</b>	521	522	523	523	523	524	524	524	524
<b>65</b>	423	424	425	425	426	426	426	427	426
<b>70</b>	323	324	325	325	326	327	327	327	327
<b>75</b>	223	225	225	226	227	227	228	228	228
<b>80</b>	129	130	131	132	133	134	134	134	134
<b>85</b>	48	49	50	51	52	53	54	54	54
<b>90</b>	0	0	0	0	0	0	0	0	0

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : L091700112.IES**

**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	437.11	N.A.	12.90
0-30	926.93	N.A.	27.30
0-40	1516.16	N.A.	44.70
0-60	2676.31	N.A.	78.90
0-80	3330.25	N.A.	98.20
0-90	3391.7	N.A.	100.00
10-90	3278.51	N.A.	96.70
20-40	1079.05	N.A.	31.80
20-50	1688.99	N.A.	49.80
40-70	1578.08	N.A.	46.50
60-80	653.93	N.A.	19.30
70-80	236.00	N.A.	7.00
80-90	61.46	N.A.	1.80
90-110	0.00	N.A.	0.00
90-120	0.00	N.A.	0.00
90-130	0.00	N.A.	0.00
90-150	0.00	N.A.	0.00
90-180	0.00	N.A.	0.00
110-180	0.00	N.A.	0.00
0-180	3391.7	N.A.	100.00

Total Luminaire Efficiency = N.A.%

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	113.20
10-20	323.91
20-30	489.82
30-40	589.23
40-50	609.94
50-60	550.21
60-70	417.93
70-80	236.00
80-90	61.46
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00



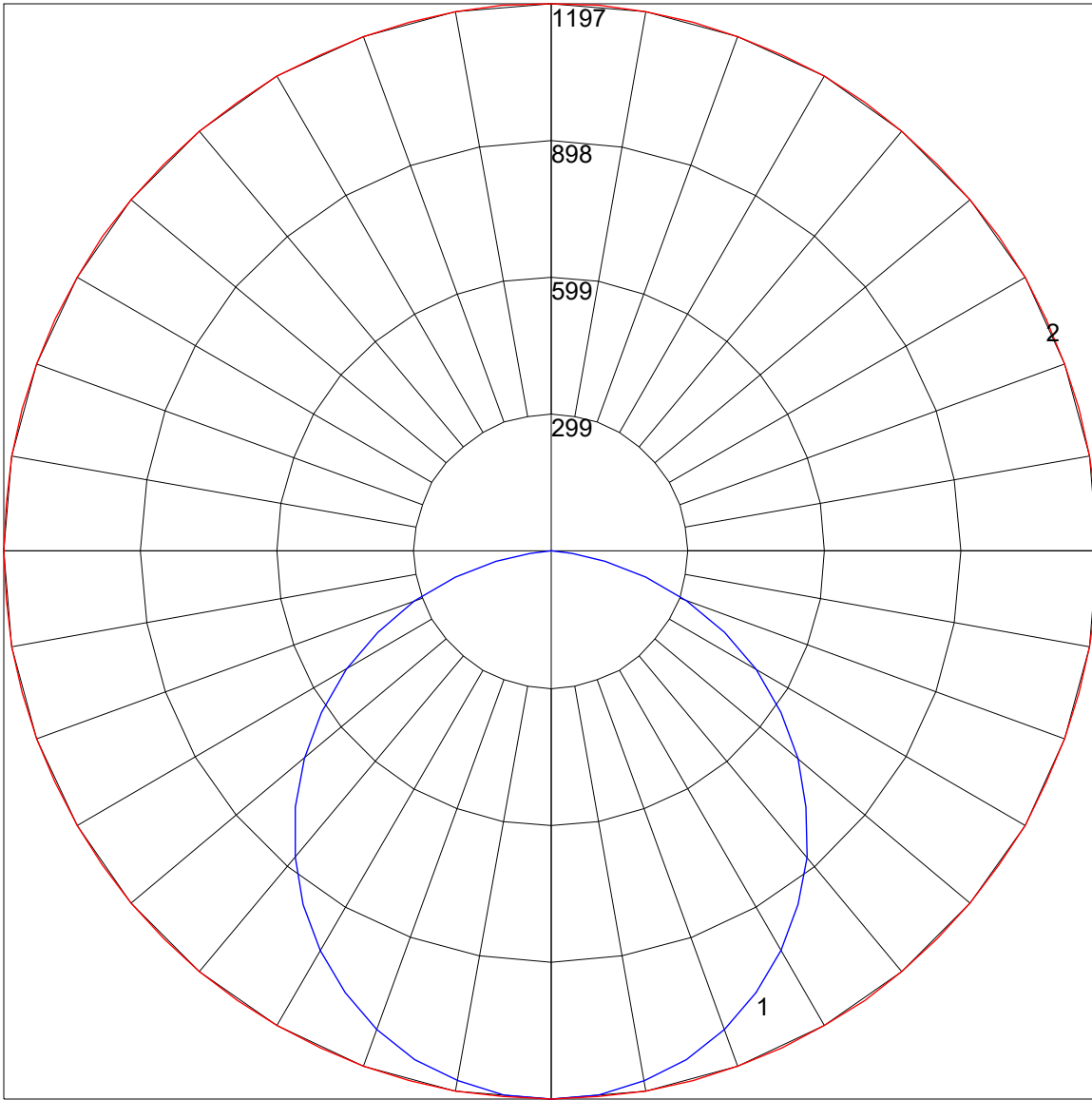
**IES INDOOR REPORT**  
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**COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD**

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	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	109	104	100	96	106	102	98	94	97	94	91	93	91	88	90	88	86	84
2	99	91	84	78	96	89	82	77	85	80	75	82	77	73	79	75	72	70
3	90	79	71	65	88	78	70	64	75	68	63	72	66	62	69	65	61	59
4	82	70	61	55	80	69	61	54	66	59	54	64	58	53	62	57	52	50
5	76	63	54	47	74	62	53	47	60	52	46	58	51	46	56	50	45	43
6	70	57	48	41	68	56	47	41	54	46	40	52	45	40	50	44	40	38
7	65	51	42	36	63	50	42	36	49	41	36	47	41	36	46	40	35	33
8	60	47	38	32	59	46	38	32	45	37	32	43	37	32	42	36	32	30
9	56	43	35	29	55	42	34	29	41	34	29	40	33	29	39	33	29	27
10	53	40	32	26	52	39	31	26	38	31	26	37	31	26	36	30	26	24

POLAR GRAPH



Maximum Candela = 1197 Located At Horizontal Angle = 0, Vertical Angle = 0  
# 1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)  
# 2 - Horizontal Cone Through Vertical Angle (0) (Through Max. Cd.)