

**IES Report**

**ZipThree® | Ceiling Cable | 707 | Symmetric, up | 80° Symmetric, down | 90 CRI | SO**

707-Z3-XX-4-48-CC-XX-XX-XX-X-0-Z-SO-359-U1S7-0-AL / WH-X

	2700K	3000K	3500K	4000K
Efficacy - Lumens per Watt	101	104	106	110
Total Lumens, 4' rail length (1219mm)	5171	5334	5443	5552
Lumens per foot (305mm)	1293	1333	1361	1388
Lumens per foot UP (305mm)	746	769	785	801
Lumens per foot DOWN (305mm)	547	564	576	587
Input Power (W), 4' rail length (1219mm)	51.4	51.4	51.4	51.4
Watts per foot (305mm)	12.9	12.9	12.9	12.9
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](http://vode.com).



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

Report No: L031805805R01



**Report No:** L031805805R01

**Issue Date:** 4/12/2018

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

**Model Number:** 707-Z3-CC-Z-SO-359-U1S7-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.

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

**Sample Arrival Date:** 3/29/18

**Date of Tests:** 4/5/18 - 4/6/18

**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	1/9/19
BK PRECISION	1747	PS-DC04	1/10/19
Fluke Digital Thermometer	52K/J	MT-TP05	1/10/19
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>	707-Z3-CC-Z-SO-359-U1S7-AL
<b>Driver Model Number:</b>	MEAN WELL HLG-40H-36A(2 DRIVERS)
<b>Total Lumens:</b>	5442.80
<b>Input Voltage (VAC/60Hz):</b>	120.00
<b>Input Current (Amp):</b>	0.43
<b>Input Power (W):</b>	51.37
<b>Input Power Factor:</b>	0.99
<b>Current ATHD @ 120V(%):</b>	9%
<b>Current ATHD @ 277V(%):</b>	N/A
<b>Efficacy:</b>	106
<b>Color Rendering Index (CRI):</b>	96
<b>Correlated Color Temperature (K):</b>	3384
<b>Chromaticity Coordinate x:</b>	0.4119
<b>Chromaticity Coordinate y:</b>	0.3937
<b>Ambient Temperature (°C):</b>	25.0
<b>Stabilization Time (Hours):</b>	0:35
<b>Total Operating Time (Hours):</b>	1:35

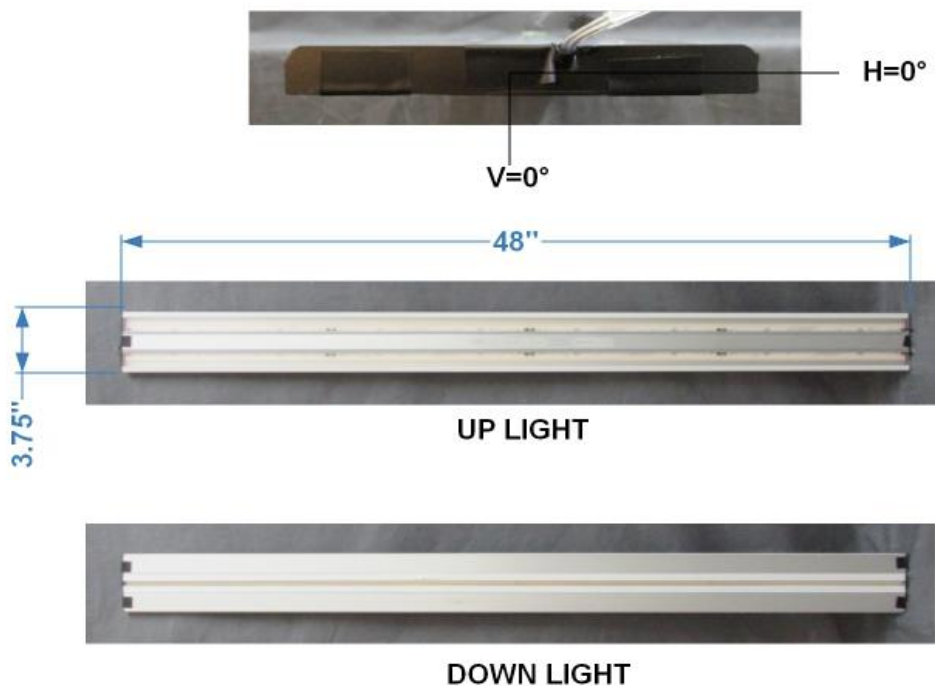
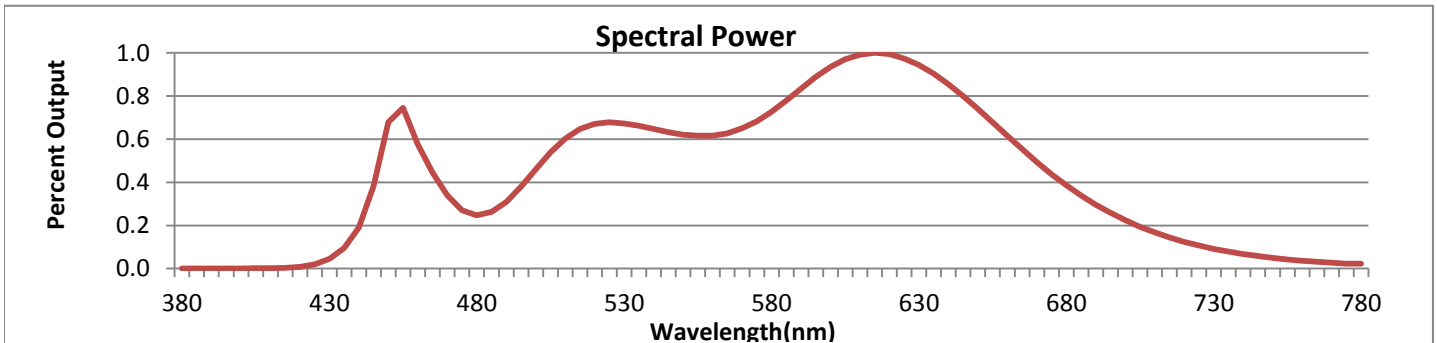


FIG. 1 LUMINAIRE

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



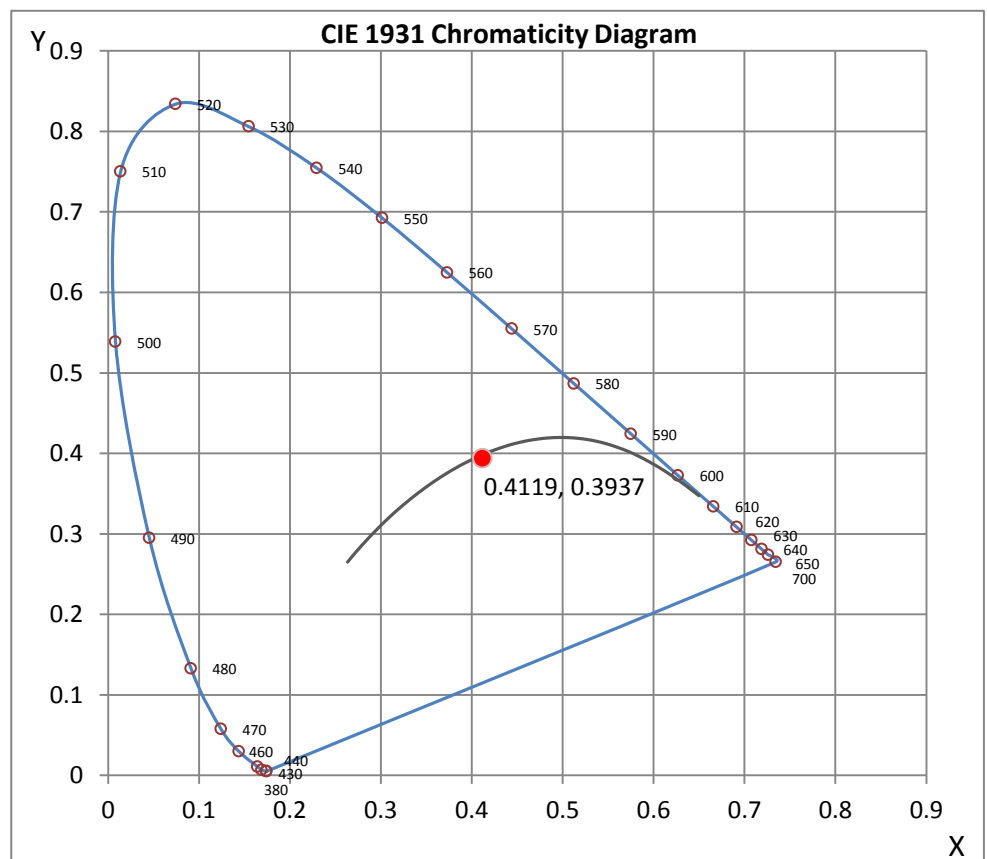
Wavelength	W/m <sup>2</sup> nm	440	0.1900	510	0.6028	580	0.7279	650	0.7412	720	0.1244
380	0.0009	450	0.6794	520	0.6712	590	0.8348	660	0.6161	730	0.0916
390	0.0008	460	0.5768	530	0.6733	600	0.9357	670	0.4929	740	0.0673
400	0.0012	470	0.3400	540	0.6469	610	0.9920	680	0.3860	750	0.0497
410	0.0021	480	0.2465	550	0.6214	620	0.9943	690	0.2963	760	0.0366
420	0.0085	490	0.3092	560	0.6165	630	0.9444	700	0.2242	770	0.0268
430	0.0447	500	0.4608	570	0.6498	640	0.8558	710	0.1677	780	0.0232

**CRI & CCT**

x	0.4119
y	0.3937
u'	0.2388
v'	0.5135
CRI	96.20
CCT	3384
Duv	-0.00010

**R Values**

R1	97.91
R2	99.14
R3	99.12
R4	96.85
R5	98.12
R6	94.93
R7	94.40
R8	88.79
R9	73.38
R10	99.00
R11	90.36
R12	81.07
R13	97.63
R14	98.47



\*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: 10*



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

# Photometric Test Report

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : L031805805R01.IES**

## DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002  
[TEST] L031805805R01  
[TESTLAB] LIGHT LABORATORY, INC. (www.lightlaboratory.com)  
[ISSUEDATE] 4/12/2018  
[MANUFAC] Vode Lighting  
[LUMCAT] 707-Z3-CC-Z-SO-359-U1S7-AL  
[LUMINAIRE] ZipThree Suspended, 48", 3500K, 90 CRI, zipper board,  
[MORE] symmetric lens up/80° symmetric lens down, standard output, clear anodized finish  
[BALLASTCAT] MEAN WELL HLG-40H-36A(2 DRIVERS)  
[OTHER] INDICATING THE CANDELA VALUES ARE ABSOLUTE AND  
[MORE] SHOULD NOT BE FACTORED FOR DIFFERENT LAMP RATINGS.  
[INPUT] 120VAC, 51.37W  
[TEST PROCEDURE] IESNA:LM-79-08

## CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	5443
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	106
Total Luminaire Watts	51.37
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	Rectangular w/Sides
Luminous Length (0-180)	0.25 ft
Luminous Width (90-270)	3.98 ft
Luminous Height	0.02 ft

## LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	6369	8168	7787
55	3213	5050	5444
65	1834	2945	3922
75	1158	1739	2746
85	518	661	1407

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : L031805805R01.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>
<b>0.0</b>	1234	1234	1234	1234	1234	1234	1234	1234	1234	1234
<b>1.0</b>	1233	1233	1234	1234	1234	1234	1234	1234	1234	1234
<b>3.0</b>	1232	1232	1232	1232	1232	1232	1232	1232	1232	1232
<b>5.0</b>	1228	1228	1228	1228	1228	1228	1228	1228	1228	1228
<b>7.0</b>	1222	1222	1222	1222	1222	1222	1222	1223	1223	1223
<b>9.0</b>	1214	1214	1214	1214	1214	1214	1215	1215	1215	1215
<b>11.0</b>	1204	1204	1204	1204	1205	1205	1205	1205	1205	1205
<b>13.0</b>	1192	1192	1192	1192	1192	1193	1193	1193	1193	1194
<b>15.0</b>	1177	1177	1177	1178	1178	1178	1179	1179	1179	1179
<b>17.0</b>	1159	1159	1160	1160	1161	1161	1162	1162	1162	1162
<b>19.5</b>	1133	1133	1133	1134	1135	1136	1137	1137	1137	1137
<b>22.5</b>	1094	1094	1095	1096	1098	1099	1100	1101	1101	1100
<b>25.5</b>	1045	1045	1047	1049	1051	1054	1056	1057	1056	1055
<b>29.0</b>	973	974	976	980	985	989	992	994	994	992
<b>33.0</b>	867	869	873	880	887	895	901	906	907	906
<b>37.5</b>	719	721	728	738	751	764	776	785	790	790
<b>42.5</b>	535	538	546	559	577	595	613	628	638	643
<b>47.5</b>	365	368	376	389	406	426	446	466	481	490
<b>55.0</b>	190	192	197	206	218	232	248	264	279	291
<b>65.0</b>	84	85	87	90	94	100	107	115	123	130
<b>75.0</b>	36	36	36	37	39	41	43	45	48	51
<b>85.0</b>	8	8	8	8	8	8	8	8	9	9
<b>90.0</b>	1	1	1	1	1	1	1	1	1	1
<b>95.0</b>	28	28	28	29	29	29	29	30	30	30
<b>100.0</b>	75	75	75	75	76	77	77	78	79	80
<b>105.0</b>	132	132	133	134	135	137	138	140	142	144
<b>110.0</b>	204	205	205	207	208	211	213	216	219	222
<b>115.0</b>	290	290	292	293	296	298	302	306	310	314
<b>120.0</b>	389	389	391	393	395	399	403	407	412	417
<b>125.0</b>	499	500	501	503	506	510	514	519	525	531
<b>130.0</b>	617	617	619	621	624	628	632	638	643	649
<b>135.0</b>	735	736	737	739	742	746	750	755	759	764
<b>140.0</b>	849	849	850	852	854	857	860	864	867	870
<b>145.0</b>	950	950	951	952	953	955	957	959	961	963
<b>150.0</b>	1034	1034	1035	1035	1036	1037	1038	1039	1040	1042
<b>155.0</b>	1102	1102	1102	1102	1103	1103	1104	1105	1106	1107
<b>160.0</b>	1155	1155	1155	1156	1156	1156	1157	1158	1158	1159
<b>165.0</b>	1196	1196	1197	1197	1197	1198	1198	1199	1200	1200
<b>170.0</b>	1228	1228	1228	1228	1229	1229	1229	1230	1230	1231
<b>175.0</b>	1249	1249	1249	1249	1249	1250	1250	1250	1250	1250
<b>180.0</b>	1257	1257	1257	1257	1257	1257	1257	1257	1257	1257

**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>0.0</b>	1234	1234	1234	1234	1234	1234	1234	1234	1234
<b>1.0</b>	1234	1234	1234	1234	1234	1234	1234	1234	1234
<b>3.0</b>	1232	1232	1232	1232	1232	1232	1232	1232	1232
<b>5.0</b>	1228	1228	1228	1228	1229	1229	1229	1229	1229
<b>7.0</b>	1223	1223	1223	1223	1223	1223	1223	1223	1223
<b>9.0</b>	1215	1215	1215	1215	1215	1215	1215	1215	1215
<b>11.0</b>	1205	1205	1205	1205	1205	1205	1205	1205	1205
<b>13.0</b>	1193	1193	1193	1193	1193	1192	1192	1192	1192
<b>15.0</b>	1179	1179	1178	1178	1177	1177	1177	1176	1176

**IES INDOOR REPORT  
PHOTOMETRIC FILENAME : L031805805R01.IES**

**CANDELA TABULATION - (Cont.)**

<b>17.0</b>	1162	1161	1160	1160	1159	1158	1158	1157	1157
<b>19.5</b>	1136	1135	1134	1132	1131	1130	1128	1128	1127
<b>22.5</b>	1099	1096	1094	1091	1089	1087	1085	1084	1083
<b>25.5</b>	1053	1050	1046	1042	1038	1034	1032	1030	1029
<b>29.0</b>	989	984	978	972	966	961	957	955	954
<b>33.0</b>	901	894	886	877	869	862	856	853	852
<b>37.5</b>	785	777	766	756	745	736	729	725	724
<b>42.5</b>	640	633	623	612	601	592	585	580	578
<b>47.5</b>	492	489	482	473	465	457	451	448	446
<b>55.0</b>	299	303	304	302	299	296	293	292	291
<b>65.0</b>	138	144	148	152	154	155	155	155	155
<b>75.0</b>	55	58	61	63	65	66	67	67	67
<b>85.0</b>	10	10	11	11	12	12	12	12	12
<b>90.0</b>	1	1	1	1	1	1	1	1	1
<b>95.0</b>	30	30	31	31	30	30	30	30	30
<b>100.0</b>	81	82	83	84	84	85	85	85	85
<b>105.0</b>	146	148	150	152	154	155	155	156	156
<b>110.0</b>	226	229	232	235	237	239	240	241	241
<b>115.0</b>	318	323	326	330	333	335	337	338	338
<b>120.0</b>	423	428	432	436	440	442	445	446	447
<b>125.0</b>	536	542	547	551	554	557	560	562	563
<b>130.0</b>	654	659	663	667	671	674	677	679	680
<b>135.0</b>	769	772	776	779	782	785	789	791	792
<b>140.0</b>	873	876	879	882	884	887	891	893	894
<b>145.0</b>	965	967	970	972	975	978	980	982	983
<b>150.0</b>	1043	1045	1047	1049	1051	1054	1056	1058	1059
<b>155.0</b>	1108	1110	1111	1113	1115	1117	1119	1121	1121
<b>160.0</b>	1161	1162	1164	1165	1167	1168	1170	1171	1171
<b>165.0</b>	1201	1203	1204	1205	1206	1207	1208	1209	1209
<b>170.0</b>	1232	1233	1233	1234	1235	1235	1235	1236	1236
<b>175.0</b>	1251	1251	1251	1251	1251	1252	1252	1252	1252
<b>180.0</b>	1257	1257	1257	1257	1257	1257	1257	1257	1257



**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : L031805805R01.IES**

**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	427.46	N.A.	7.90
0-30	879.80	N.A.	16.20
0-40	1322.93	N.A.	24.30
0-60	1990.56	N.A.	36.60
0-80	2266.11	N.A.	41.60
0-90	2302.09	N.A.	42.30
10-90	2207.37	N.A.	40.60
20-40	895.47	N.A.	16.50
20-50	1335.8	N.A.	24.50
40-70	852.24	N.A.	15.70
60-80	275.55	N.A.	5.10
70-80	90.94	N.A.	1.70
80-90	35.98	N.A.	0.70
90-110	194.05	N.A.	3.60
90-120	507.86	N.A.	9.30
90-130	983.24	N.A.	18.10
90-150	2172.42	N.A.	39.90
90-180	3140.71	N.A.	57.70
110-180	2946.65	N.A.	54.10
0-180	5442.8	N.A.	100.00

Total Luminaire Efficiency = N.A.%

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	94.73
10-20	332.73
20-30	452.34
30-40	443.13
40-50	440.33
50-60	227.30
60-70	184.61
70-80	90.94
80-90	35.98
90-100	38.18
100-110	155.87
110-120	313.81
120-130	475.38
130-140	587.48
140-150	601.70
150-160	510.48
160-170	339.04
170-180	118.76

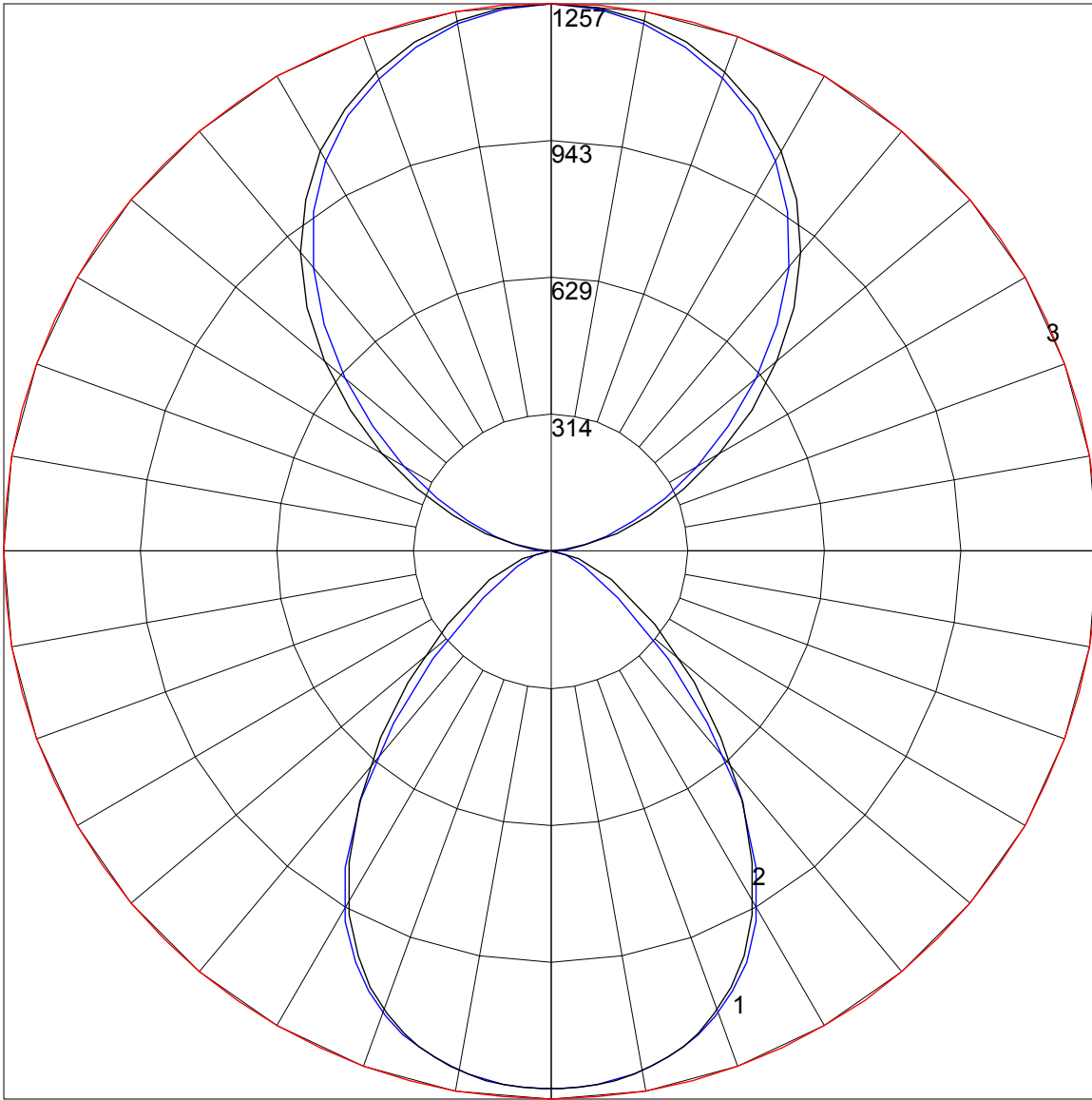
**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : L031805805R01.IES**

**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	10	0
0	105	105	105	105	96	96	96	96	79	79	79	63	63	63	49	49	49	42
1	97	93	89	86	88	85	82	79	70	68	66	57	55	54	44	43	42	37
2	88	82	76	71	81	75	70	66	62	59	56	50	48	46	40	38	37	32
3	81	72	65	60	74	66	60	56	55	51	47	45	42	40	36	34	32	28
4	74	64	57	51	68	59	53	48	50	45	41	41	37	34	32	30	28	24
5	69	58	50	44	63	53	46	41	45	40	36	37	33	30	29	27	25	22
6	63	52	44	39	58	48	41	36	40	35	32	33	30	27	27	24	22	19
7	59	47	39	34	54	43	37	32	37	32	28	31	27	24	25	22	20	17
8	55	43	35	30	50	40	33	29	34	29	25	28	24	22	23	20	18	16
9	51	39	32	27	47	36	30	26	31	26	23	26	22	19	21	18	16	14
10	48	36	29	24	44	33	27	23	29	24	20	24	20	18	20	17	15	13

POLAR GRAPH



Maximum Candela = 1257 Located At Horizontal Angle = 0, Vertical Angle = 180  
# 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 (180) (Through Max. Cd.)