

IES Report

ZipWave® | 707 | Clear with EdgeSoft™, fixture in cove | 90 CRI | SO

707-Z9-4-48-AW / EW-XX-X-0-Z-SO-359-C1-0-AL-0

	2700K	3000K	3500K	4000K
Efficacy - Lumens per Watt	58	60	61	62
Total Lumens, 4' rail length (1219mm)	1527	1575	1607	1623
Lumens per foot (305mm)	382	394	402	406
Input Power (W), 4' rail length (1219mm)	26.5	26.5	26.5	26.5
Watts per foot (305mm)	6.7	6.7	6.7	6.7
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: L121911562



Report No: L121911562

Issue Date: 1/23/2020

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

Model Number: 707-Z9-48-AW-Z-SO-359-C1-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: 1/18/20 - 1/23/20

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

Manufacturer:	Vode Lighting
Model Number:	707-Z9-48-AW-Z-SO-359-C1-AL
Driver Model Number:	eldoLED ECOdrive 566/L

Test Summary

Total Lumens:	1606.97
Efficacy:	60.59
Color Redering Index:	93.6
Correlated Color Temperature:	3254
Input Voltage (VAC/60Hz):	120.04V
Input Current (Amp):	0.2237
Input Power (W):	26.52
Input Power Factor:	0.9879
Current ATHD (%):	11.0%

Test Condition

Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	0:35
Total Operating Time (Hours):	5:05

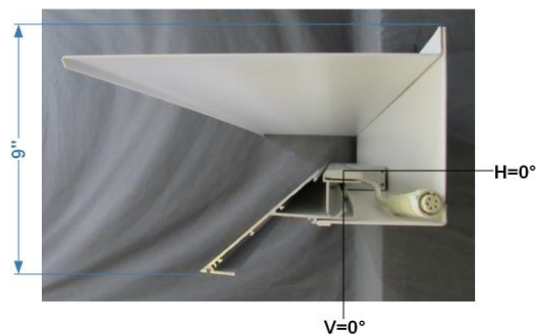
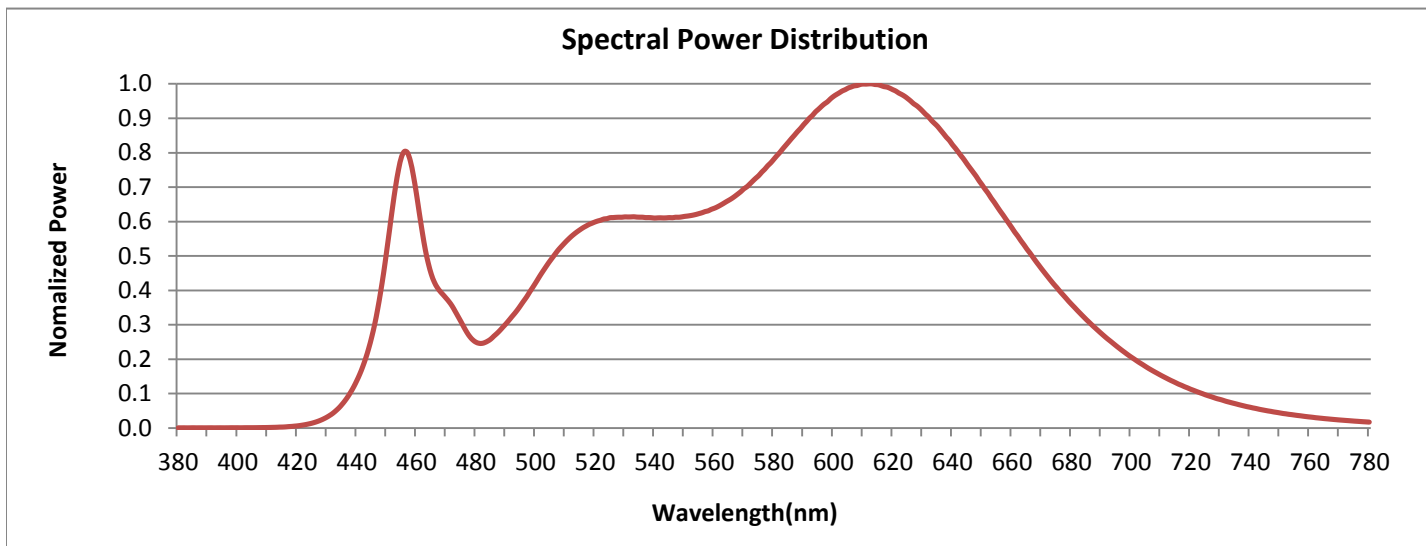


FIG. 1 LUMINAIRE

Colorimetry Test Results

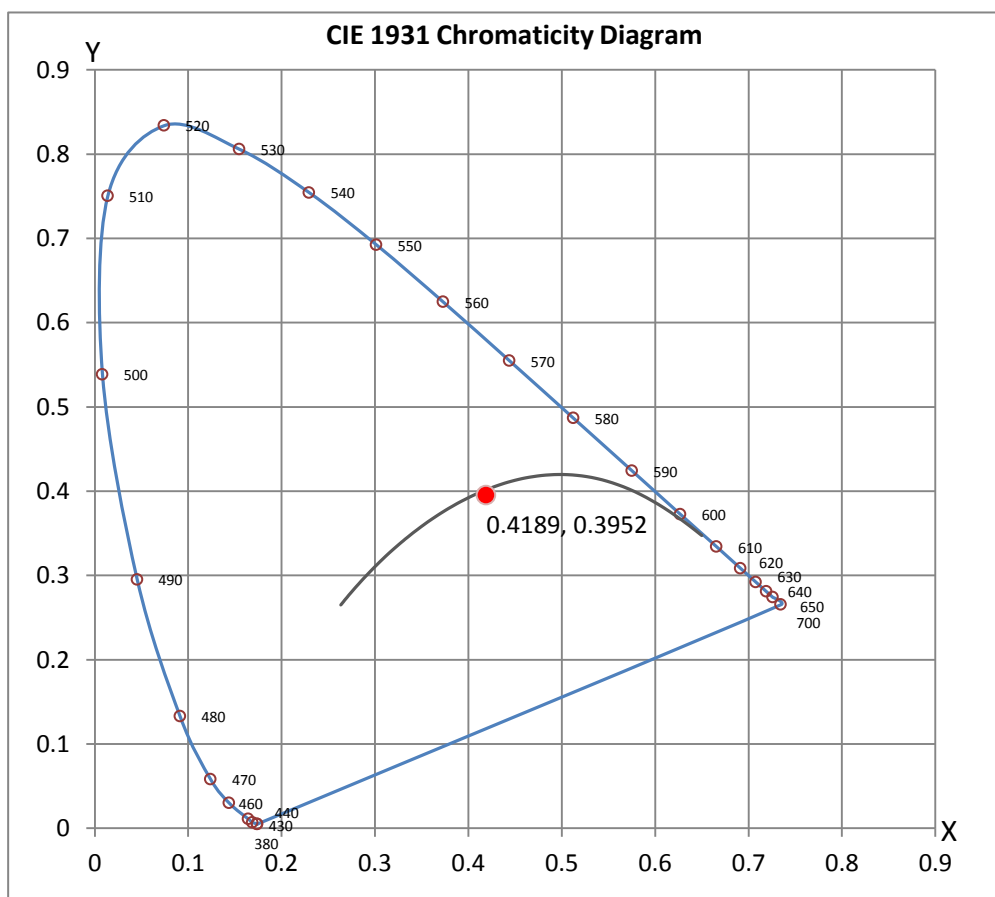


CRI & CCT

x	0.4189
y	0.3952
u'	0.2427
v'	0.5151
CRI	93.60
CCT	3254
Duv	-0.00080

R Values

R1	95.79
R2	99.16
R3	97.27
R4	95.78
R5	96.01
R6	95.48
R7	89.54
R8	79.54
R9	55.21
R10	97.91
R11	98.42
R12	78.14
R13	97.59
R14	99.39
R15	89.59





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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: 12*



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

Photometric Test Report

IES INDOOR REPORT

PHOTOMETRIC FILENAME : L121911562.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] L121911562
[TESTLAB] LIGHT LABORATORY, INC. (www.lightlaboratory.com)
[ISSUEDATE] 1/23/2020
[MANUFAC] Vode Lighting
[LUMCAT] 707-Z9-48-AW-Z-SO-359-C1-AL
[LUMINAIRE] ZipWave LED, 48", Armstrong wall cove part no. AXIDLCWKE48, 3500K, 90 CRI, zipper board,
[MORE] clear lens w/edgesoft, standard output, clear anodized finish
[BALLASTCAT] eldoLED ECOdrive 566/L
[OTHER] INDICATING THE CANDELA VALUES ARE ABSOLUTE AND
[MORE] SHOULD NOT BE FACTORED FOR DIFFERENT LAMP RATINGS.
[INPUT] 120.04VAC, 26.52W
[TEST PROCEDURE] IESNA:LM-79-08

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	1607
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	61
Total Luminaire Watts	26.52
Ballast Factor	1.00
CIE Type	Semi-Direct
Spacing Criterion (0-180)	0.38
Spacing Criterion (90-270)	1.92
Spacing Criterion (Diagonal)	3.06
Basic Luminous Shape	Rectangular
Luminous Length (0-180)	0.06 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	127	1783	6623
55	236	2277	8636
65	426	2877	12041
75	696	3306	19139
85	1550	5167	37202

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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>
0.0	78	78	78	78	78	78	78	78	78	78
5.0	56	56	56	56	56	57	58	58	59	61
10.0	42	42	43	43	43	44	45	47	49	51
15.0	31	32	32	32	33	34	37	39	42	45
20.0	23	23	23	24	25	27	30	33	36	40
25.0	16	16	17	18	19	22	27	28	32	36
30.0	11	11	11	13	15	18	20	27	29	33
35.0	4	5	6	9	12	15	17	23	29	32
37.5	2	2	2	4	6	11	16	20	28	31
40.0	2	2	2	4	6	9	12	16	26	30
42.5	2	2	2	4	7	9	12	16	19	31
45.0	2	2	3	5	7	10	13	16	19	28
47.5	2	2	3	5	7	10	13	17	19	28
50.0	2	2	3	5	8	11	14	17	20	28
52.5	3	3	4	6	8	11	14	18	21	28
55.0	3	3	4	6	9	11	14	18	21	29
57.5	4	4	4	6	9	11	15	18	21	29
60.0	4	4	5	6	9	11	14	18	21	29
62.5	4	4	5	6	9	11	14	18	20	28
65.0	4	4	5	6	8	11	13	17	19	27
67.5	4	4	5	6	8	10	13	16	18	25
70.0	4	4	5	6	8	10	12	15	18	21
72.5	4	4	5	6	7	9	11	14	17	19
75.0	4	4	5	6	7	9	11	13	16	19
77.5	4	4	4	5	7	8	10	12	14	17
80.0	4	4	4	5	6	7	9	10	12	15
85.0	3	3	4	4	5	6	7	8	9	10
90.0	3	3	3	4	4	4	5	6	6	7
95.0	3	3	4	4	4	5	6	6	7	8
100.0	3	3	4	4	5	6	7	8	9	10
105.0	3	3	4	4	5	6	8	10	12	14
110.0	3	3	3	5	6	8	9	12	15	16
115.0	3	3	3	5	7	9	12	15	17	22
120.0	3	3	3	5	8	11	14	17	23	27
125.0	2	2	3	6	9	13	15	22	28	34
130.0	2	2	4	7	10	13	20	27	34	39
135.0	2	2	4	7	12	15	24	31	37	40
140.0	2	2	4	7	10	18	24	32	35	39
145.0	2	2	3	6	10	14	21	26	33	36
150.0	2	2	2	4	7	12	16	22	27	32
155.0	2	2	2	3	5	8	12	15	20	24
160.0	2	2	2	2	4	5	7	11	14	17
165.0	2	2	2	2	2	2	4	5	7	9
170.0	2	2	2	2	2	2	2	2	2	3
175.0	0	0	0	0	0	0	0	0	0	0
180.0	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>	<u>95</u>
0.0	78	78	78	78	78	78	78	78	78	78
5.0	62	63	65	67	69	71	73	75	77	80
10.0	54	56	59	62	66	69	73	77	81	85
15.0	48	52	55	59	64	68	73	79	84	90

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CANDELA TABULATION - (Cont.)

20.0	44	48	52	57	62	68	74	81	88	95
25.0	40	45	50	56	62	68	75	83	91	101
30.0	38	43	49	55	62	69	77	85	95	106
35.0	37	42	48	55	62	69	78	87	97	110
37.5	36	42	48	55	62	70	78	88	99	112
40.0	35	41	48	55	62	70	79	89	101	115
42.5	35	41	47	55	63	71	80	91	103	118
45.0	34	41	47	55	63	71	81	92	104	120
47.5	31	40	48	55	63	72	82	93	106	123
50.0	31	38	47	55	63	73	83	94	107	125
52.5	32	37	46	55	64	73	83	95	108	127
55.0	32	38	45	55	64	74	84	96	110	129
57.5	32	38	44	53	64	73	85	97	111	131
60.0	32	38	44	52	63	73	85	97	112	133
62.5	31	37	44	51	61	73	85	98	112	134
65.0	30	36	43	50	59	71	84	98	113	136
67.5	28	34	41	49	57	69	83	98	113	137
70.0	29	32	38	46	55	66	81	97	112	138
72.5	26	29	35	43	52	63	77	95	111	139
75.0	21	29	32	39	47	58	73	93	110	140
77.5	19	25	28	34	42	52	67	88	108	140
80.0	17	20	26	29	35	44	59	82	103	135
85.0	12	14	16	19	21	32	36	53	72	91
90.0	7	8	9	10	11	11	11	12	16	42
95.0	9	10	11	13	16	18	29	53	61	83
100.0	12	14	16	21	27	42	54	70	77	88
105.0	15	19	24	32	46	57	71	79	84	86
110.0	21	26	33	47	59	70	79	87	91	90
115.0	26	34	47	58	68	78	85	91	94	94
120.0	34	46	55	65	74	81	87	92	95	95
125.0	44	51	59	67	74	80	85	90	93	93
130.0	45	52	59	65	71	76	80	85	87	88
135.0	45	49	55	61	65	70	73	76	79	81
140.0	43	48	51	55	59	61	65	68	69	71
145.0	40	44	46	49	52	54	56	57	59	60
150.0	35	38	40	43	45	46	47	48	49	49
155.0	28	32	34	35	36	38	39	39	38	37
160.0	19	22	24	26	28	28	28	27	27	26
165.0	10	13	15	17	18	18	18	18	17	16
170.0	3	4	5	6	7	7	7	7	6	5
175.0	0	0	0	0	0	0	0	0	0	0
180.0	0	0	0	0	0	0	0	0	0	0

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>
0.0	78	78	78	78	78	78	78	78	78	78
5.0	82	84	86	89	91	94	96	98	100	102
10.0	89	93	97	102	106	111	115	119	123	127
15.0	96	103	109	117	124	131	139	146	154	160
20.0	104	113	122	133	144	156	167	180	192	204
25.0	112	124	137	151	167	184	195	222	243	266
30.0	119	135	152	172	194	209	251	282	317	346
35.0	125	143	163	187	203	252	289	330	365	397
37.5	129	148	172	190	234	277	322	363	400	433
40.0	133	155	181	202	257	306	351	394	433	467

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CANDELA TABULATION - (Cont.)

42.5	137	161	181	230	281	333	380	425	465	500
45.0	140	166	188	245	301	353	402	447	488	522
47.5	145	174	199	266	324	378	428	474	514	545
50.0	149	181	211	288	346	401	452	496	533	563
52.5	153	177	243	306	366	422	471	512	545	570
55.0	157	184	260	324	385	439	485	522	549	570
57.5	162	193	276	339	400	451	492	522	546	567
60.0	165	200	287	350	408	455	491	518	542	562
62.5	170	210	299	361	415	455	485	512	535	555
65.0	164	245	310	368	411	444	474	498	520	538
67.5	169	254	315	365	402	434	462	486	506	523
70.0	173	258	313	354	390	421	447	470	488	503
72.5	176	257	302	341	376	404	429	449	466	479
75.0	176	248	288	325	358	385	406	424	438	451
77.5	171	231	270	305	335	359	378	395	409	422
80.0	173	197	249	281	308	329	348	365	379	392
85.0	120	157	190	205	244	264	282	299	314	327
90.0	61	94	124	150	173	193	202	227	241	254
95.0	102	117	138	161	180	195	205	225	238	250
100.0	107	116	125	134	140	145	198	219	267	280
105.0	109	114	118	123	127	131	135	137	138	139
110.0	113	116	116	116	117	118	118	118	117	115
115.0	114	116	115	112	109	107	105	102	99	95
120.0	106	115	113	109	103	99	93	88	84	79
125.0	97	110	108	104	99	92	85	77	71	65
130.0	88	102	101	97	91	86	79	71	62	54
135.0	79	87	91	88	83	77	71	64	56	48
140.0	71	73	80	78	73	68	62	56	49	44
145.0	60	59	62	65	62	58	53	47	44	35
150.0	48	46	46	46	50	47	43	40	33	28
155.0	36	35	33	32	31	36	33	29	25	21
160.0	25	23	21	20	18	18	17	18	16	13
165.0	14	12	11	9	7	7	5	4	4	4
170.0	5	4	4	4	3	3	3	3	3	3
175.0	0	0	0	0	0	0	0	0	0	0
180.0	0	0	0	0	0	0	0	0	0	0

Vert. Horizontal Angles
Angles

	<u>150</u>	<u>155</u>	<u>160</u>	<u>165</u>	<u>170</u>	<u>175</u>	<u>180</u>
0.0	78	78	78	78	78	78	78
5.0	104	106	107	108	109	109	109
10.0	131	134	137	139	141	142	142
15.0	166	172	177	181	184	186	187
20.0	210	225	234	242	248	252	253
25.0	286	306	322	335	344	350	351
30.0	371	393	411	425	435	441	443
35.0	424	448	467	482	493	499	501
37.5	461	486	506	522	532	539	541
40.0	497	521	541	557	567	573	575
42.5	529	554	573	587	596	602	603
45.0	550	573	592	605	614	620	621
47.5	572	594	609	622	628	632	633
50.0	586	603	615	625	632	636	637
52.5	589	605	617	626	633	636	637
55.0	588	604	616	624	630	634	635

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CANDELA TABULATION - (Cont.)

57.5	584	599	610	619	625	628	628
60.0	579	593	604	612	618	622	623
62.5	570	583	593	601	606	610	610
65.0	553	565	574	582	586	589	590
67.5	537	547	556	562	567	570	570
70.0	515	526	533	539	542	545	546
72.5	490	499	507	512	516	519	520
75.0	462	471	479	485	489	492	493
77.5	433	442	450	457	461	464	465
80.0	403	412	420	426	431	433	435
85.0	338	348	356	362	366	369	369
90.0	265	274	281	287	291	294	295
95.0	260	269	277	283	287	290	291
100.0	289	295	302	305	309	311	310
105.0	139	142	147	213	259	307	318
110.0	113	109	104	100	97	95	94
115.0	92	87	82	76	70	67	66
120.0	74	69	62	54	49	46	45
125.0	59	52	45	38	33	29	28
130.0	46	41	30	23	19	14	15
135.0	42	30	22	14	6	5	4
140.0	34	26	18	9	8	4	3
145.0	29	22	14	8	7	4	3
150.0	22	17	10	9	6	3	3
155.0	16	11	10	7	5	3	3
160.0	10	9	8	6	4	3	3
165.0	6	6	5	4	3	3	3
170.0	3	3	3	3	3	3	3
175.0	0	0	0	0	0	0	0
180.0	0	0	0	0	0	0	0

IES INDOOR REPORT
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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	35.62	N.A.	2.20
0-30	98.37	N.A.	6.10
0-40	210.83	N.A.	13.10
0-60	597.95	N.A.	37.20
0-80	1047.09	N.A.	65.20
0-90	1201.76	N.A.	74.80
10-90	1193.96	N.A.	74.30
20-40	175.21	N.A.	10.90
20-50	345.79	N.A.	21.50
40-70	621.62	N.A.	38.70
60-80	449.14	N.A.	27.90
70-80	214.64	N.A.	13.40
80-90	154.68	N.A.	9.60
90-110	216.71	N.A.	13.50
90-120	281.65	N.A.	17.50
90-130	332.62	N.A.	20.70
90-150	391.86	N.A.	24.40
90-180	405.21	N.A.	25.20
110-180	188.50	N.A.	11.70
0-180	1606.97	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	7.80
10-20	27.82
20-30	62.74
30-40	112.46
40-50	170.59
50-60	216.53
60-70	234.50
70-80	214.64
80-90	154.68
90-100	120.17
100-110	96.54
110-120	64.93
120-130	50.98
130-140	36.53
140-150	22.70
150-160	10.56
160-170	2.66
170-180	0.13

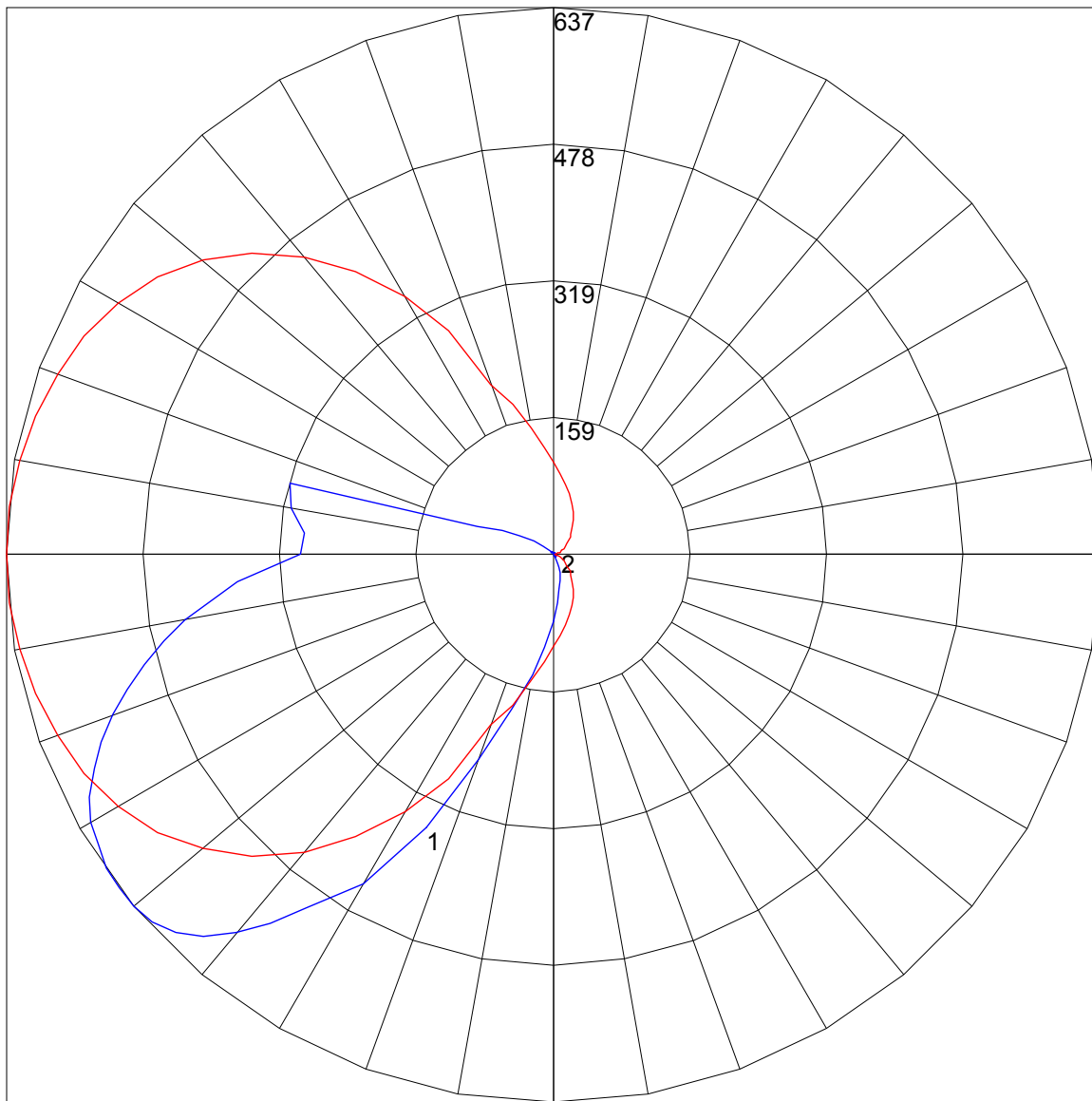
IES INDOOR REPORT
PHOTOMETRIC FILENAME : L121911562.IES

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	113	113	113	113	107	107	107	107	97	97	97	88	88	88	79	79	79	75
1	98	91	85	79	92	86	80	75	77	72	68	69	65	62	61	58	55	51
2	86	75	67	59	81	71	63	56	63	57	51	56	51	46	49	45	41	38
3	77	64	54	46	72	60	51	44	53	46	40	47	41	36	41	36	32	28
4	69	55	44	36	65	52	42	35	46	38	32	40	34	28	35	30	25	22
5	63	48	37	30	59	45	36	28	40	32	26	35	28	23	31	25	21	18
6	57	42	32	25	53	40	30	24	35	27	21	31	24	19	27	22	17	14
7	53	38	28	21	49	35	26	20	32	24	18	28	21	16	24	19	14	12
8	48	34	24	18	45	32	23	17	28	21	16	25	19	14	22	17	12	10
9	45	30	22	16	42	29	21	15	26	19	13	23	17	12	20	15	11	8
10	42	28	19	14	39	26	18	13	24	17	12	21	15	11	18	13	9	7

POLAR GRAPH



Maximum Candela = 637 Located At Horizontal Angle = 180, Vertical Angle = 50
1 - Vertical Plane Through Horizontal Angles (180 - 0) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (50) (Through Max. Cd.)