

IES Report

ZipWave® | 707 | Clear with EdgeSoft™ | 90 CRI | HO

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

	2700K	3000K	3500K	4000K
Efficacy - Lumens per Watt	100	103	105	109
Total Lumens, 4' rail length (1219mm)	5350	5519	5631	5744
Lumens per foot (305mm)	1337	1380	1408	1436
Input Power (W), 4' rail length (1219mm)	53.9	53.9	53.9	53.9
Watts per foot (305mm)	13.5	13.5	13.5	13.5
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](#).

Report No: L101707605

Issue Date: 11/1/2017

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

Model Number: 707-Z9-48-AW--Z-HO-359-C1

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: 10/26/17

Date of Tests: 10/27/17 - 11/1/17

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

Manufacturer:	Vode Lighting
Model Number:	707-Z9-48-AW--Z-HO-359-C1
Driver Model Number:	PHILIPS ADVANCE XI075C200V054BST1
Total Lumens:	5631.32
Input Voltage (VAC/60Hz):	120.00
Input Current (Amp):	0.45
Input Power (W):	53.86
Input Power Factor:	0.99
Current ATHD @ 120V(%):	10%
Current ATHD @ 277V(%):	N/A
Efficacy:	105
Color Rendering Index (CRI):	96
Correlated Color Temperature (K):	3348
Chromaticity Coordinate x:	0.4129
Chromaticity Coordinate y:	0.3919
Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	0:35
Total Operating Time (Hours):	1:25

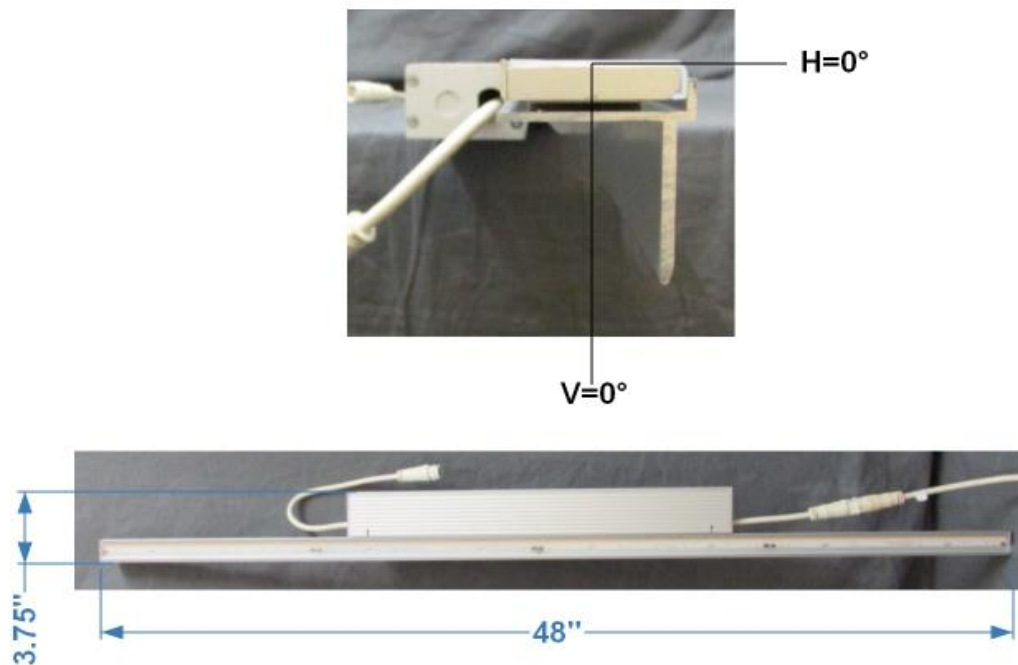
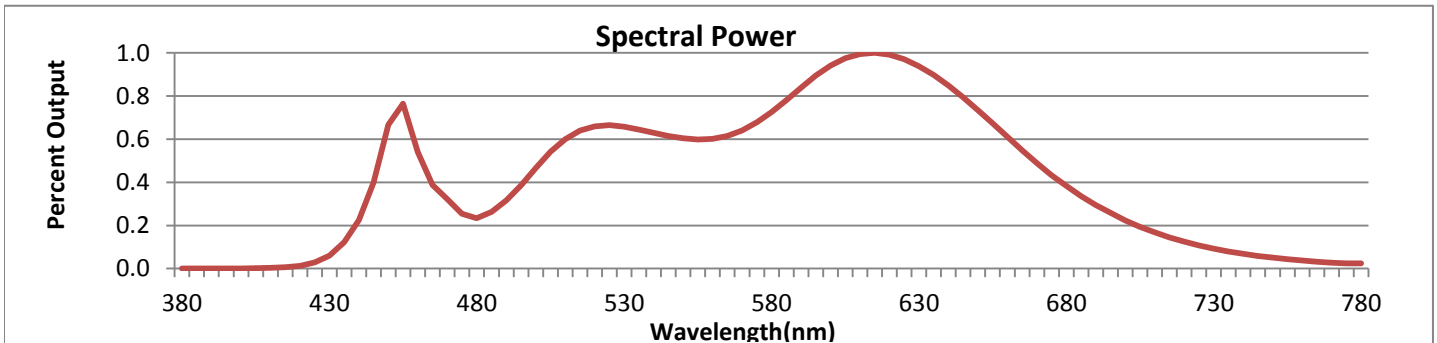


FIG. 1 LUMINAIRE

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



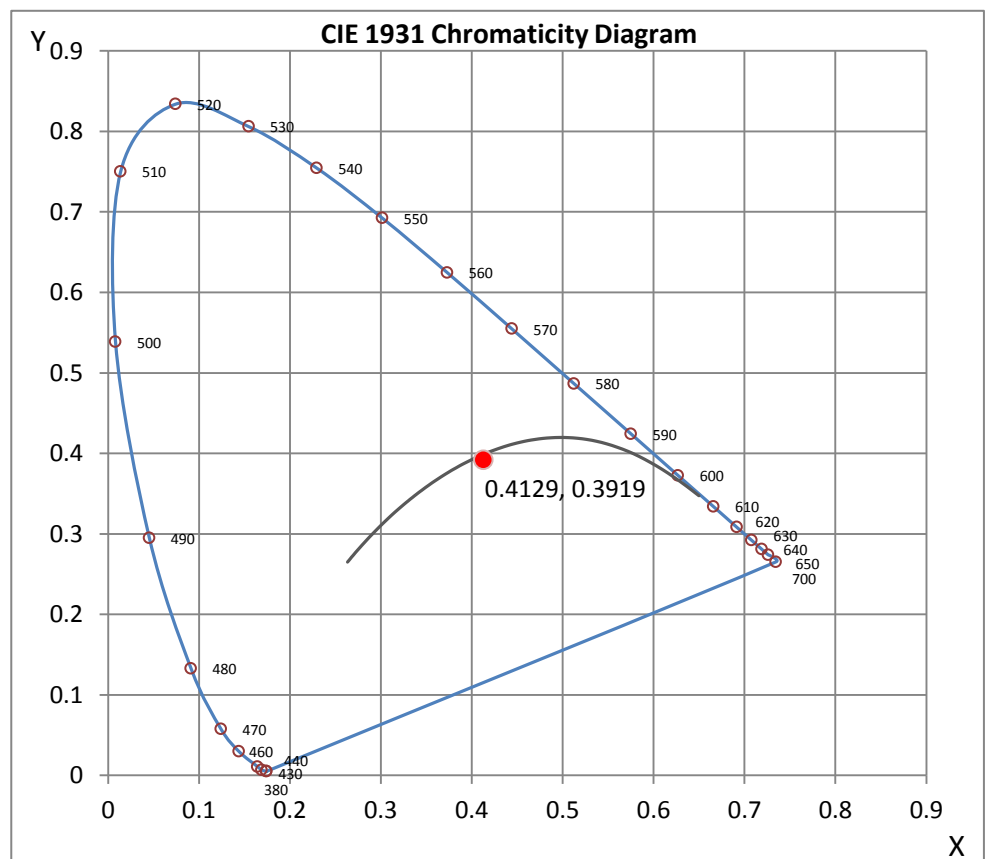
Wavelength	W/m ² nm	440	0.2240	510	0.6005	580	0.7258	650	0.7357	720	0.1247
380	0.0010	450	0.6674	520	0.6595	590	0.8396	660	0.6115	730	0.0924
390	0.0009	460	0.5407	530	0.6583	600	0.9411	670	0.4888	740	0.0681
400	0.0012	470	0.3225	540	0.6294	610	0.9952	680	0.3835	750	0.0503
410	0.0029	480	0.2329	550	0.6042	620	0.9916	690	0.2944	760	0.0373
420	0.0125	490	0.3164	560	0.6012	630	0.9388	700	0.2232	770	0.0276
430	0.0605	500	0.4667	570	0.6407	640	0.8496	710	0.1677	780	0.0239

CRI & CCT

x	0.4129
y	0.3919
u'	0.2402
v'	0.5129
CRI	95.60
CCT	3348
Duv	-0.00107

R Values

R1	97.70
R2	98.66
R3	98.95
R4	96.09
R5	97.68
R6	94.03
R7	93.88
R8	88.10
R9	72.20
R10	97.64
R11	89.13
R12	83.70
R13	97.26
R14	98.80



*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 : L101707605.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] L101707605
[TESTLAB] LIGHT LABORATORY, INC. (www.lightlaboratory.com)
[ISSUEDATE] 11/1/2017
[MANUFAC] Vode Lighting
[LUMCAT] 707-Z9-48-AW--Z-HO-359-C1
[LUMINAIRE] ZipWave LED, 48", wall cove, 3500K, 90 CRI, zipper board,
[MORE] clear lens w/edge softening, high output
[BALLASTCAT] PHILIPS ADVANCE XI075C200V054BST1
[OTHER] INDICATING THE CANDELA VALUES ARE ABSOLUTE AND
[MORE] SHOULD NOT BE FACTORED FOR DIFFERENT LAMP RATINGS.
[INPUT] 120VAC, 53.86W
[TEST PROCEDURE] IESNA:LM-79-08

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	5631
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	105
Total Luminaire Watts	53.86
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)	0.08 ft
Luminous Width (90-270)	4.00 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

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	10	10	10	10	10	9	9	8	7	7
95	49	49	49	49	49	49	49	49	49	50
100	124	124	125	125	126	127	128	129	131	133
105	223	223	224	225	226	229	232	235	239	244
110	345	345	346	348	351	355	360	366	372	380
115	490	491	493	496	501	506	513	522	531	541
120	662	663	666	670	676	684	693	704	716	729
125	861	862	865	871	878	887	898	910	924	937
130	1078	1079	1083	1088	1096	1106	1117	1129	1142	1154
135	1302	1303	1306	1311	1318	1326	1335	1345	1356	1368
140	1512	1513	1515	1519	1524	1530	1537	1546	1555	1564
145	1698	1699	1701	1704	1708	1713	1718	1725	1733	1741
150	1858	1859	1860	1862	1866	1870	1875	1880	1886	1893
155	1993	1994	1995	1997	1999	2003	2006	2010	2014	2018
160	2103	2104	2104	2106	2107	2109	2111	2113	2116	2118
165	2186	2186	2187	2187	2188	2189	2190	2191	2192	2193
170	2242	2243	2243	2243	2244	2244	2244	2245	2245	2246
175	2275	2275	2275	2275	2275	2275	2275	2275	2275	2276
180	2287	2287	2287	2287	2287	2287	2287	2287	2287	2287

Vert. 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>
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 : L101707605.IES**

CANDELA TABULATION - (Cont.)

65	0	0	0	0	0	0	0	0	0
70	0	0	0	0	0	0	0	0	0
75	0	0	0	0	0	0	0	0	0
80	0	0	0	0	0	0	0	0	0
85	0	0	0	0	0	0	0	0	0
90	6	5	5	4	4	3	2	2	1
95	50	51	51	52	52	52	52	52	52
100	136	138	141	143	145	147	148	149	149
105	249	254	258	263	267	271	274	276	276
110	388	395	403	410	416	422	427	430	430
115	552	562	572	582	591	599	606	610	612
120	742	754	766	778	789	799	808	814	815
125	951	964	977	991	1003	1015	1024	1030	1032
130	1167	1181	1194	1208	1221	1232	1240	1246	1247
135	1380	1392	1405	1417	1429	1438	1446	1450	1451
140	1575	1586	1597	1607	1616	1624	1630	1633	1634
145	1750	1759	1767	1775	1782	1787	1791	1793	1794
150	1899	1905	1911	1916	1921	1924	1927	1928	1929
155	2023	2026	2030	2033	2036	2038	2039	2041	2040
160	2120	2122	2124	2126	2128	2129	2130	2131	2131
165	2194	2195	2196	2197	2198	2199	2199	2200	2200
170	2246	2247	2247	2247	2248	2248	2248	2248	2249
175	2276	2276	2276	2276	2276	2276	2277	2277	2277
180	2287	2287	2287	2287	2287	2287	2287	2287	2287

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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	1.77	N.A.	0.00
10-90	1.77	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	1.77	N.A.	0.00
90-110	332.69	N.A.	5.90
90-120	878.64	N.A.	15.60
90-130	1721.82	N.A.	30.60
90-150	3866.1	N.A.	68.70
90-180	5629.55	N.A.	100.00
110-180	5296.86	N.A.	94.10
0-180	5631.32	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	1.77
90-100	65.89
100-110	266.80
110-120	545.95
120-130	843.18
130-140	1055.93
140-150	1088.35
150-160	928.62
160-170	618.54
170-180	216.29

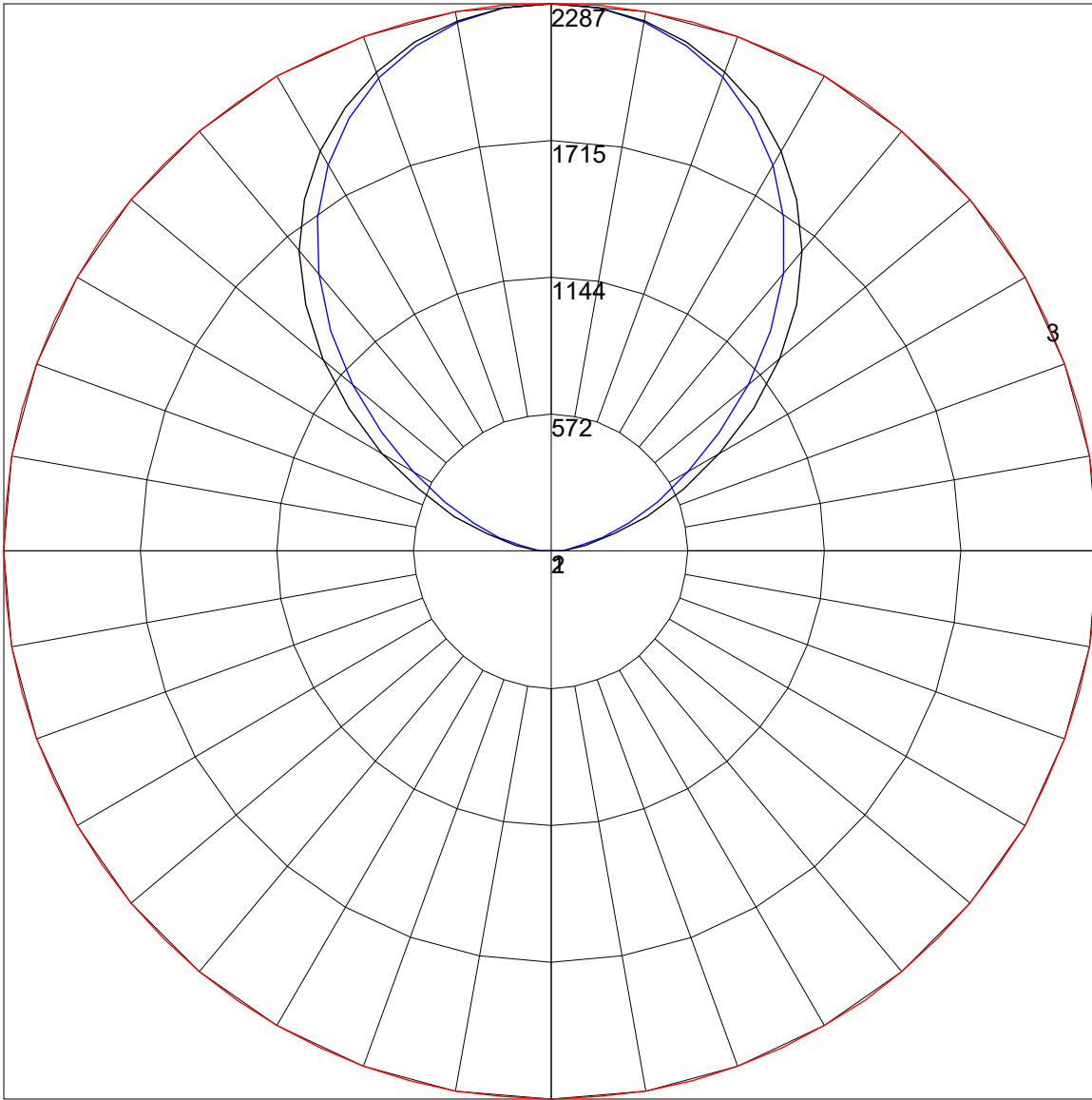
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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

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	
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 = 2287 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.)