

IES Report

ZipWave® | 707 | Clear with EdgeSoft™ | 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	106	109	112	116
Total Lumens, 4' rail length (1219mm)	2809	2898	2957	3016
Lumens per foot (305mm)	702	724	739	754
Input Power (W), 4' rail length (1219mm)	26.6	26.6	26.6	26.6
Watts per foot (305mm)	6.7	6.7	6.7	6.7
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: L101707603



Report No: L101707603

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-SO-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-SO-359-C1
Driver Model Number:	eldoLED SOLOdrive 561/M
Total Lumens:	2957.00
Input Voltage (VAC/60Hz):	120.00
Input Current (Amp):	0.23
Input Power (W):	26.61
Input Power Factor:	0.98
Current ATHD @ 120V(%):	6%
Current ATHD @ 277V(%):	N/A
Efficacy:	111
Color Rendering Index (CRI):	96
Correlated Color Temperature (K):	3344
Chromaticity Coordinate x:	0.4131
Chromaticity Coordinate y:	0.3920
Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	0:30
Total Operating Time (Hours):	1:15

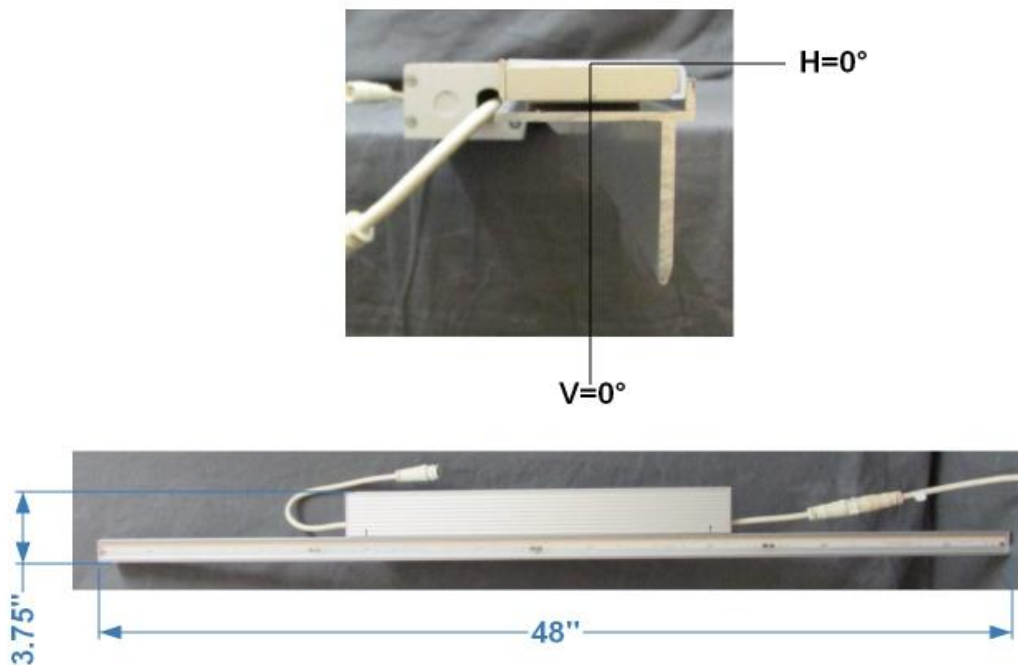
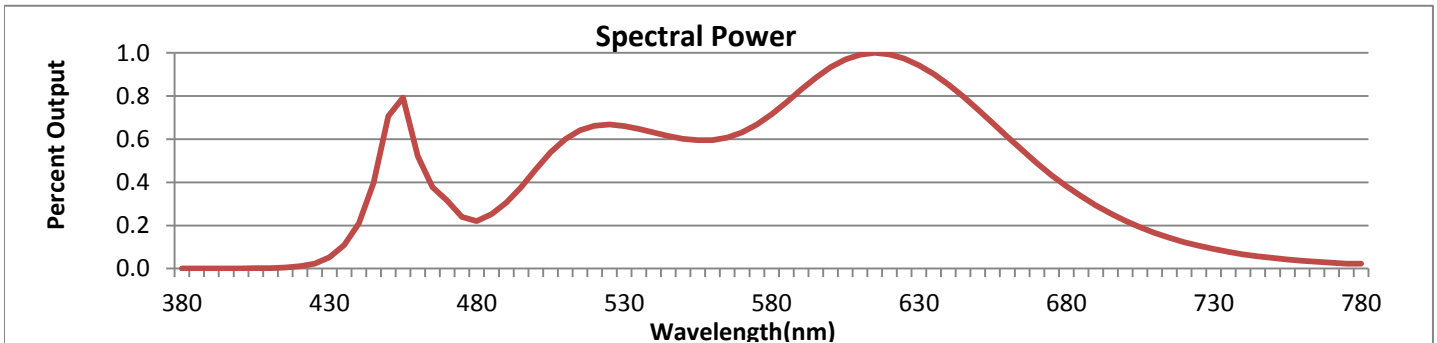


FIG. 1 LUMINAIRE

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



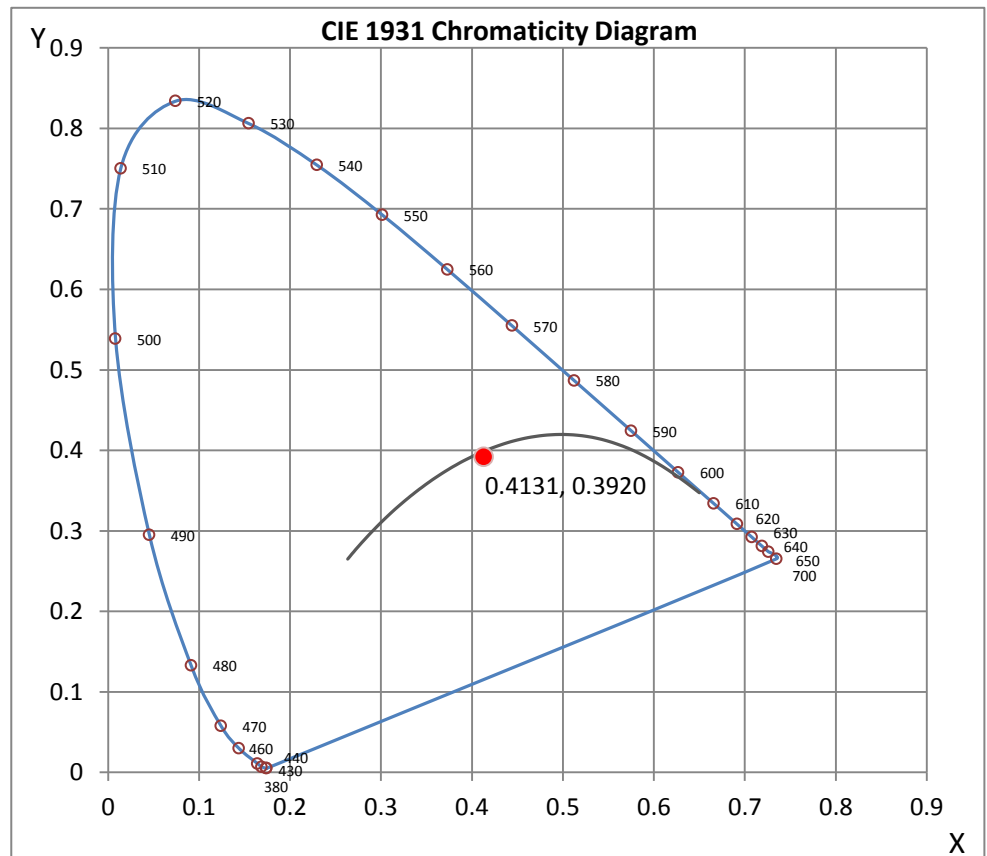
Wavelength	W/m ² nm	440	0.2094	510	0.6004	580	0.7151	650	0.7386	720	0.1227
380	0.0009	450	0.7071	520	0.6622	590	0.8298	660	0.6125	730	0.0905
390	0.0009	460	0.5221	530	0.6611	600	0.9339	670	0.4889	740	0.0663
400	0.0011	470	0.3145	540	0.6311	610	0.9918	680	0.3825	750	0.0489
410	0.0024	480	0.2195	550	0.6018	620	0.9931	690	0.2928	760	0.0362
420	0.0103	490	0.3062	560	0.5951	630	0.9430	700	0.2214	770	0.0266
430	0.0520	500	0.4610	570	0.6312	640	0.8543	710	0.1655	780	0.0229

CRI & CCT

x	0.4131
y	0.3920
u'	0.2403
v'	0.5130
CRI	95.60
CCT	3344
Duv	-0.00107

R Values

R1	97.20
R2	98.61
R3	98.97
R4	95.21
R5	97.24
R6	94.01
R7	94.43
R8	89.17
R9	74.31
R10	97.66
R11	88.05
R12	83.15
R13	96.79
R14	98.49



*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 : L101707603.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] L101707603
[TESTLAB] LIGHT LABORATORY, INC. (www.lightlaboratory.com)
[ISSUEDATE] 11/1/2017
[MANUFAC] Vode Lighting
[LUMCAT] 707-Z9-48-AW--Z-SO-359-C1
[LUMINAIRE] ZipWave LED, 48", wall cove, 3500K, 90 CRI, zipper board,
[MORE] clear lens w/edge softening, standard output
[BALLASTCAT] eldoLED SOLOdrive 561/M
[OTHER] INDICATING THE CANDELA VALUES ARE ABSOLUTE AND
[MORE] SHOULD NOT BE FACTORED FOR DIFFERENT LAMP RATINGS.
[INPUT] 120VAC, 26.61W
[TEST PROCEDURE] IESNA:LM-79-08

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	2957
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	111
Total Luminaire Watts	26.61
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	5	5	5	5	5	5	4	4	4	3
95	23	23	23	23	23	23	24	24	24	25
100	61	61	61	62	62	63	64	65	66	67
105	112	113	113	114	115	116	118	120	123	125
110	175	175	176	177	179	182	185	188	192	196
115	253	253	254	256	258	262	266	271	277	282
120	344	345	347	349	353	357	363	369	376	383
125	452	452	454	457	462	467	473	480	487	495
130	570	570	572	576	580	585	591	597	603	610
135	689	689	691	694	697	701	706	711	716	722
140	799	800	801	803	805	808	812	816	820	825
145	896	896	897	898	900	902	905	908	912	917
150	978	978	978	980	981	983	986	989	992	995
155	1048	1048	1048	1049	1050	1052	1054	1056	1058	1060
160	1104	1104	1105	1105	1106	1107	1108	1109	1110	1111
165	1147	1147	1147	1147	1148	1148	1148	1149	1149	1150
170	1175	1176	1176	1176	1176	1176	1176	1177	1177	1177
175	1192	1193	1192	1193	1193	1192	1193	1193	1193	1193
180	1198	1198	1198	1198	1198	1198	1198	1198	1198	1198

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

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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	3	3	2	2	2	1	1	1	1
95	25	25	26	26	26	27	27	27	27
100	69	71	72	74	75	76	77	77	77
105	128	131	134	137	139	141	143	144	145
110	201	205	210	214	217	221	223	225	226
115	289	295	300	306	311	315	319	322	323
120	390	397	404	410	416	422	427	430	431
125	502	510	516	523	530	537	542	545	546
130	617	624	631	638	645	651	656	659	660
135	728	734	741	748	754	759	763	765	766
140	830	836	842	847	852	856	859	861	861
145	921	926	930	934	938	940	942	944	944
150	999	1002	1004	1007	1010	1012	1013	1013	1014
155	1062	1064	1066	1068	1069	1070	1071	1071	1071
160	1113	1113	1115	1115	1116	1117	1117	1118	1117
165	1151	1151	1152	1152	1153	1153	1153	1153	1153
170	1177	1178	1178	1178	1178	1178	1178	1179	1178
175	1193	1193	1193	1193	1193	1193	1193	1193	1193
180	1198	1198	1198	1198	1198	1198	1198	1198	1198

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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	0.88	N.A.	0.00
10-90	0.88	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	0.88	N.A.	0.00
90-110	170.15	N.A.	5.80
90-120	455.13	N.A.	15.40
90-130	899.75	N.A.	30.40
90-150	2030.59	N.A.	68.70
90-180	2956.12	N.A.	100.00
110-180	2785.97	N.A.	94.20
0-180	2957.00	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	0.88
90-100	32.98
100-110	137.16
110-120	284.99
120-130	444.62
130-140	557.67
140-150	573.17
150-160	487.77
160-170	324.39
170-180	113.36

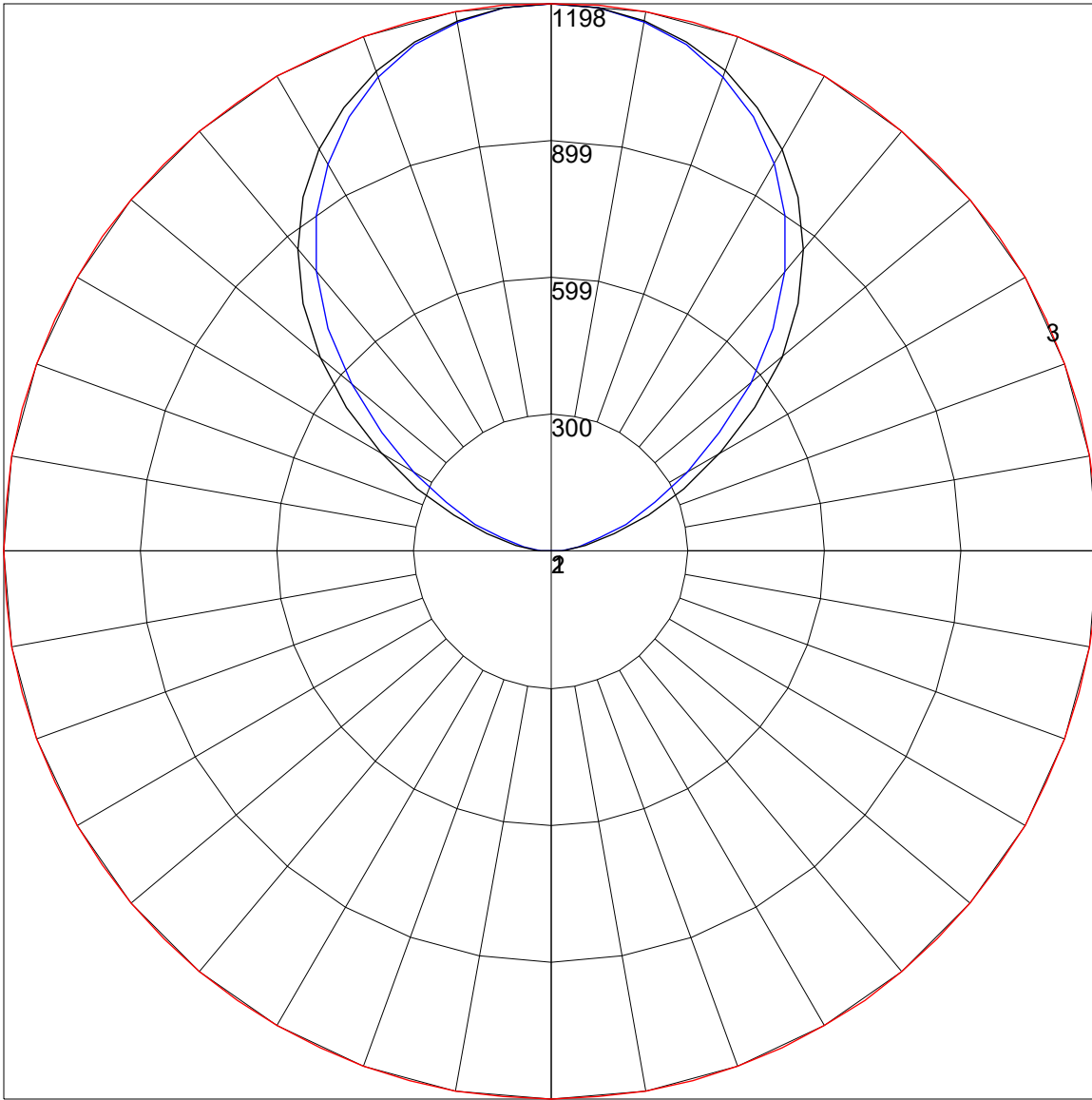
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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

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	27	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 = 1198 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.)