



IES Report

ZipThree® | Ceiling Cable | 707 | Symmetric with EdgeGlow, up | Soft Diffuse, down | 90 CRI | SO

707-Z3-XX-4-48-CC-XX-XX-XX-X-0-Z-SO-359-U2D2-0-BL-X

	2700K	3000K	3500K	4000K
Efficacy - Lumens per Watt	110	113	115	116
Total Lumens, 4' rail length (1219mm)	5695	5874	5994	6054
Lumens per foot (305mm)	821	847	864	873
Lumens per foot UP (305mm)	603	622	635	641
Lumens per foot DOWN (305mm)	1424	1469	1499	1514
Input Power (W), 4' rail length (1219mm)	52.2	52.2	52.2	52.2
Watts per foot (305mm)	13.1	13.1	13.1	13.1
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: L022010920



Report No: L022010920

Issue Date: 2/28/2020

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

Model Number: 707-Z3-48-Z-CC-SO-359-U2D2-BL

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: 2/20/20

Date of Tests: 2/20/20 - 2/28/20

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-Z3-48-Z-CC-SO-359-U2D2-BL
Driver Model Number:	MEAN WELL HLG-40H-36A (2 DRIVERS)

Test Summary

Total Lumens:	5994.27
Efficacy:	115.51
Color Redering Index:	94.8
Correlated Color Temperature:	3390
Input Voltage (VAC/60Hz):	120.04
Input Current (Amp):	0.4351
Input Power (W):	51.89
Input Power Factor:	0.9935
Current ATHD (%):	8.1%

Test Condition

Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	0:45
Total Operating Time (Hours):	2:50

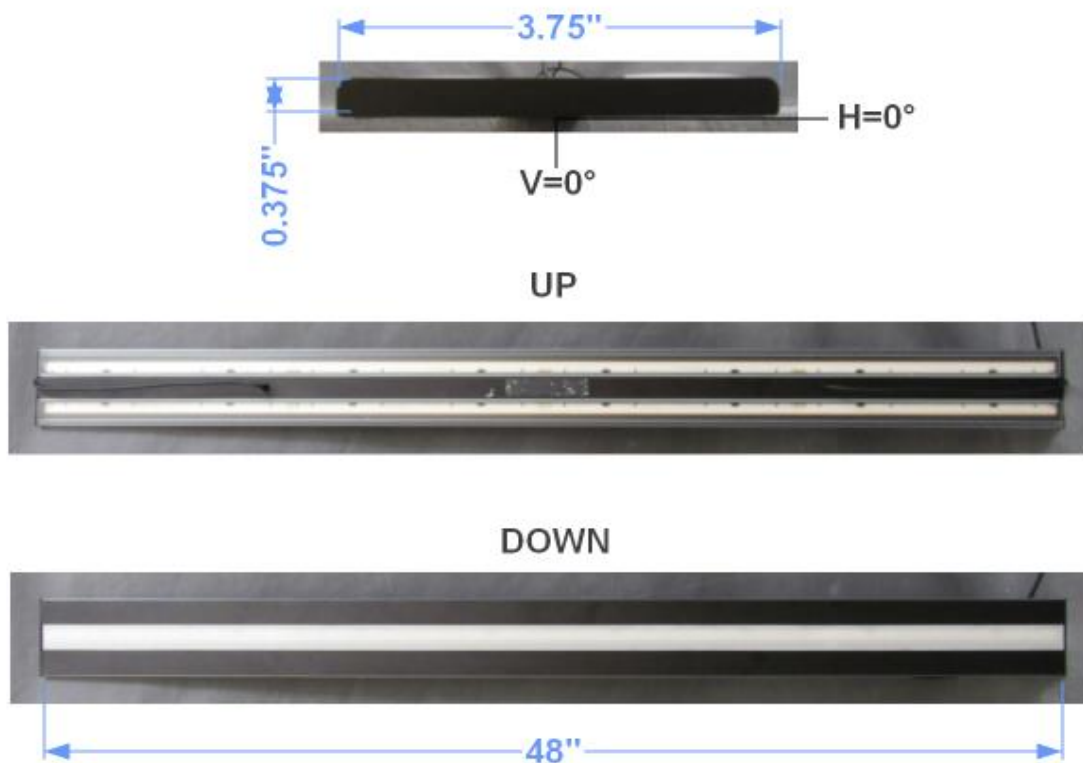
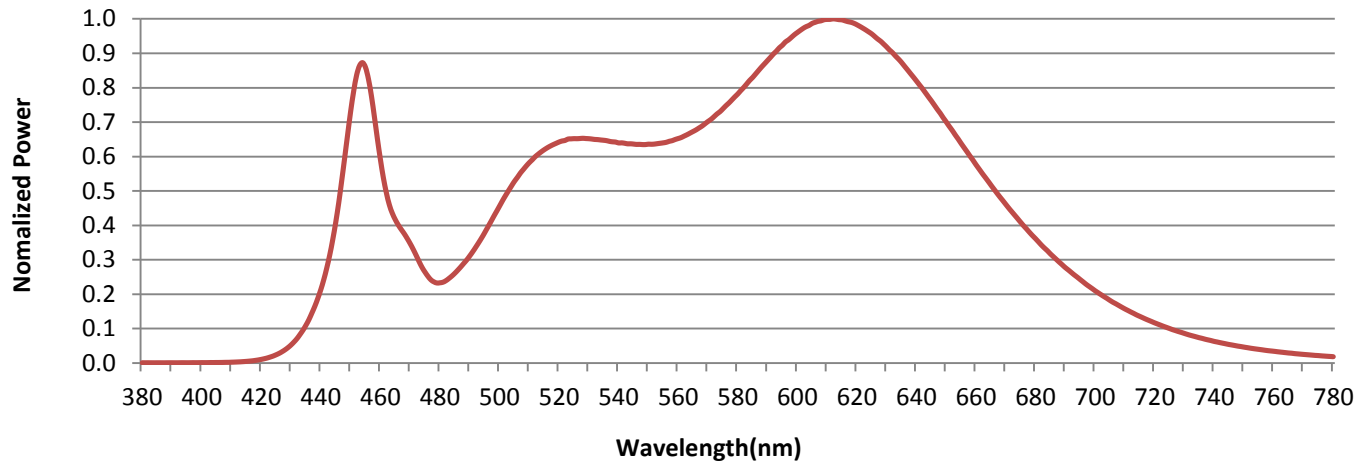


FIG. 1 LUMINAIRE

Colorimetry Test Results

Spectral Power Distribution



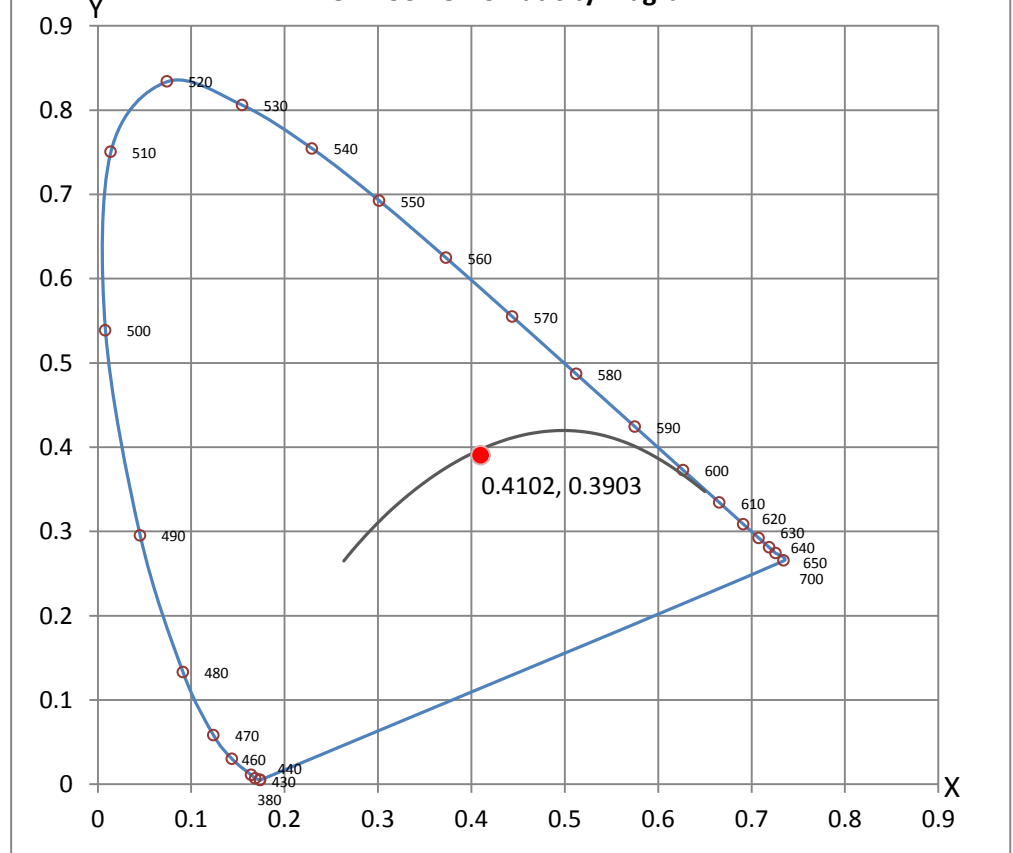
CRI & CCT

x	0.4102
y	0.3903
u'	0.2391
v'	0.5118
CRI	94.80
CCT	3390
Duv	-0.00123

R Values

R1	96.64
R2	98.51
R3	98.66
R4	97.63
R5	97.16
R6	95.99
R7	91.46
R8	82.09
R9	58.83
R10	96.50
R11	95.74
R12	79.22
R13	97.95
R14	99.16
R15	90.94

CIE 1931 Chromaticity Diagram





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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: 10*



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

Photometric Test Report

IES INDOOR REPORT

PHOTOMETRIC FILENAME : L022010920.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] L022010920
[TESTLAB] LIGHT LABORATORY, INC. (www.lightlaboratory.com)
[ISSUE DATE] 2/28/2020
[MANUFAC] Vode Lighting
[LUMCAT] 707-Z3-48-Z-CC-SO-359-U2D2-BL
[LUMINAIRE] ZipThree LED Suspended, 48", 3500K, 90 CRI, zipper board, symmetric lens with edge glow
[MORE] up/soft diffuse 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] 120.04VAC, 51.89W
[TEST PROCEDURE] IESNA:LM-79-08

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	5994
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	116
Total Luminaire Watts	51.89
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)	0.26 ft
Luminous Width (90-270)	3.98 ft
Luminous Height	0.03 ft

LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	7735	7910	8504
55	7186	7414	8210
65	6367	6653	7744
75	5024	5366	6795
85	2674	2991	5160

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>
0	869	869	869	869	869	869	869	869	869	869
5	866	866	866	866	866	866	866	866	866	866
10	856	856	856	856	856	856	856	856	856	855
15	837	837	837	837	837	837	837	837	837	837
20	812	812	812	812	812	812	811	811	811	811
25	779	779	779	779	779	779	778	778	778	778
30	740	740	740	739	739	739	739	739	738	738
35	694	694	694	694	694	694	693	693	693	692
40	643	643	643	643	643	643	642	642	642	642
45	587	587	587	587	587	586	586	586	586	585
50	526	526	526	526	526	526	525	525	525	524
55	462	462	462	462	462	461	461	461	460	460
60	394	394	394	394	393	393	393	393	392	392
65	323	323	323	323	323	322	322	322	322	321
70	251	251	251	251	250	250	250	250	249	249
75	179	179	179	179	179	178	178	178	177	177
80	111	111	111	111	111	110	110	110	109	109
85	52	52	52	52	51	51	51	51	50	50
90	23	23	23	22	21	20	19	18	16	15
95	53	53	53	52	52	51	51	50	49	48
100	98	98	98	99	99	100	100	101	102	102
105	160	160	161	162	163	165	166	168	170	171
110	238	238	239	240	242	245	247	250	252	253
115	332	332	333	335	337	339	341	342	342	344
120	436	436	437	437	438	439	441	446	454	464
125	547	547	549	551	556	562	570	579	588	597
130	684	685	687	691	696	702	708	715	722	728
135	820	821	822	825	828	832	836	840	844	847
140	938	939	940	941	943	945	947	949	952	954
145	1035	1036	1036	1037	1038	1039	1041	1042	1044	1046
150	1116	1116	1116	1117	1117	1118	1119	1120	1121	1123
155	1181	1181	1181	1182	1182	1183	1183	1184	1185	1185
160	1232	1232	1232	1233	1233	1233	1234	1234	1235	1235
165	1271	1271	1271	1271	1271	1272	1272	1272	1272	1272
170	1298	1298	1298	1298	1298	1298	1298	1298	1298	1298
175	1313	1313	1313	1313	1313	1313	1313	1313	1313	1312
180	1316	1316	1316	1316	1316	1316	1316	1316	1316	1316

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>
0	869	869	869	869	869	869	869	869	869
5	866	866	866	866	866	866	866	866	866
10	856	856	855	855	855	855	855	855	856
15	837	837	837	837	837	837	837	837	837
20	811	811	811	811	810	810	810	810	810
25	778	778	777	777	777	777	777	777	777
30	738	738	737	737	737	737	737	737	737
35	692	692	692	691	691	691	691	691	691
40	641	641	641	640	640	640	640	640	640
45	585	585	584	584	584	584	583	583	583
50	524	524	524	523	523	523	523	523	523
55	460	460	459	459	459	459	458	458	458
60	392	391	391	391	391	390	390	390	390

IES INDOOR REPORT
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CANDELA TABULATION - (Cont.)

65	321	321	321	320	320	320	320	320	320
70	249	248	248	248	247	247	247	247	247
75	176	176	176	175	175	175	174	174	174
80	108	108	107	107	106	106	106	105	105
85	49	49	49	48	48	47	47	47	47
90	13	11	10	8	6	5	4	3	3
95	47	46	45	43	42	41	39	40	40
100	102	102	102	101	98	99	101	101	101
105	172	173	171	169	175	178	179	179	179
110	252	252	258	265	270	272	273	273	273
115	350	360	368	375	378	380	381	381	382
120	474	483	490	494	497	499	501	502	502
125	605	611	616	619	622	624	626	627	627
130	732	736	740	743	746	748	749	750	751
135	851	854	857	860	861	863	865	866	866
140	956	959	961	963	965	966	967	968	968
145	1047	1049	1051	1052	1053	1054	1055	1055	1056
150	1124	1125	1126	1127	1128	1128	1129	1129	1129
155	1186	1187	1187	1188	1189	1189	1189	1189	1190
160	1235	1236	1236	1236	1237	1237	1237	1237	1237
165	1273	1273	1273	1273	1273	1273	1273	1273	1273
170	1298	1298	1298	1298	1298	1299	1299	1298	1298
175	1312	1313	1313	1313	1313	1313	1313	1313	1313
180	1316	1316	1316	1316	1316	1316	1316	1316	1316

IES INDOOR REPORT
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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	318.56	N.A.	5.30
0-30	677.08	N.A.	11.30
0-40	1110.33	N.A.	18.50
0-60	1972.77	N.A.	32.90
0-80	2478.21	N.A.	41.30
0-90	2538.58	N.A.	42.40
10-90	2456.25	N.A.	41.00
20-40	791.77	N.A.	13.20
20-50	1243.14	N.A.	20.70
40-70	1180.29	N.A.	19.70
60-80	505.45	N.A.	8.40
70-80	187.59	N.A.	3.10
80-90	60.36	N.A.	1.00
90-110	239.71	N.A.	4.00
90-120	593.33	N.A.	9.90
90-130	1123.25	N.A.	18.70
90-150	2425.89	N.A.	40.50
90-180	3455.69	N.A.	57.60
110-180	3215.98	N.A.	53.70
0-180	5994.27	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	82.33
10-20	236.23
20-30	358.53
30-40	433.24
40-50	451.37
50-60	411.07
60-70	317.85
70-80	187.59
80-90	60.36
90-100	56.76
100-110	182.95
110-120	353.61
120-130	529.92
130-140	649.80
140-150	652.85
150-160	545.88
160-170	359.08
170-180	124.83

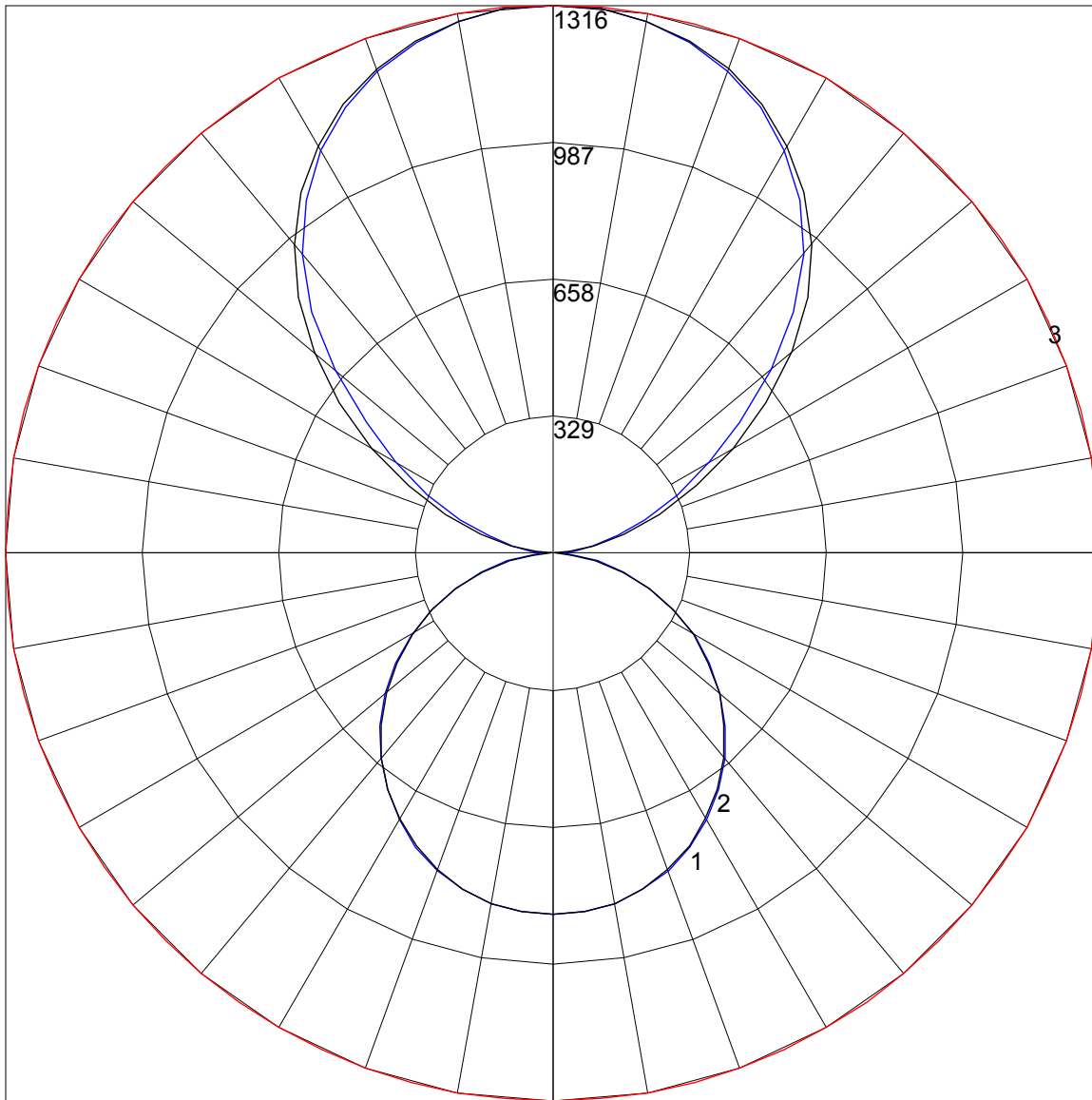
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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

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	105	105	105	105	96	96	96	96	79	79	79	63	63	63	49	49	49	42
1	96	91	88	84	87	84	80	77	69	67	64	55	54	52	43	42	41	35
2	87	80	73	68	79	73	68	63	60	56	53	48	46	43	38	36	34	29
3	79	70	62	57	72	64	58	52	53	48	44	43	39	36	33	31	29	24
4	72	62	54	48	66	56	50	44	47	42	38	38	34	31	29	27	25	21
5	66	55	47	41	60	50	43	38	42	36	32	34	30	27	26	24	21	18
6	61	49	41	35	55	45	38	33	38	32	28	30	26	23	24	21	19	16
7	56	44	36	31	51	41	34	29	34	28	24	28	24	20	22	19	17	14
8	52	40	32	27	48	37	30	25	31	25	22	25	21	18	20	17	15	12
9	49	36	29	24	44	34	27	22	28	23	19	23	19	16	18	15	13	11
10	45	33	26	21	41	31	24	20	26	21	17	21	17	15	17	14	12	10

POLAR GRAPH



Maximum Candela = 1316 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.)