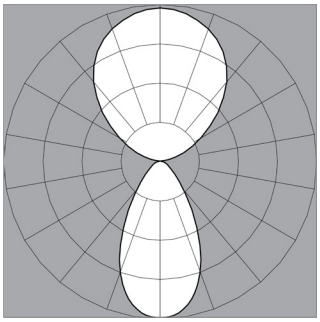
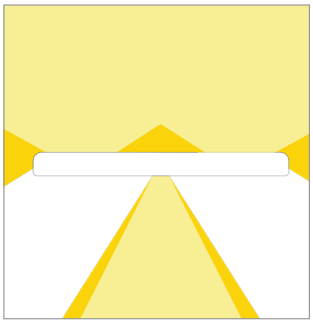




IES Report

ZipThree® | Ceiling Cable | 707 | Symmetric with EdgeGlow, up | 60° Symmetric, down | 90 CRI | SO

707-Z3-XX-4-48-CC-XX-XX-XX-X-0-Z-SO-359-U2S2-0-BL-X

	2700K	3000K	3500K	4000K
Efficacy - Lumens per Watt	83	85	87	90
Total Lumens, 4’ rail length (1219mm)	4208	4341	4430	4518
Lumens per foot (305mm)	1052	1085	1107	1130
Lumens per foot UP (305mm)	730	753	768	783
Lumens per foot DOWN (305mm)	322	333	339	346
Input Power (W), 4’ rail length (1219mm)	51.2	51.2	51.2	51.2
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.

* R9: ~74 @ 3500K

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

NVLAP TESTING
NVLAP LAB CODE 200927-0

Report No: L031805810 **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-U2S2-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.

Testing Condition: Fixture is tested with no special conditions.

Sample Arrival Date: 3/29/18

Date of Tests: 4/5/18 - 4/10/18

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.

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

NVLAP TESTING
NVLAP LAB CODE 200927-0

Test Summary	
Manufacturer:	Vode Lighting
Model Number:	707-Z3-CC-Z-SO-359-U2S2-BL
Driver Model Number:	MEAN WELL HLG-40H-36A(2 DRIVERS)
Total Lumens:	4429.53
Input Voltage (VAC/60Hz):	120.00
Input Current (Amp):	0.43
Input Power (W):	51.23
Input Power Factor:	0.99
Current ATHD @ 120V(%):	9%
Current ATHD @ 277V(%):	N/A
Efficacy:	86
Color Rendering Index (CRI):	96
Correlated Color Temperature (K):	3376
Chromaticity Coordinate x:	0.4121
Chromaticity Coordinate y:	0.3932
Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	0:35
Total Operating Time (Hours):	1:25

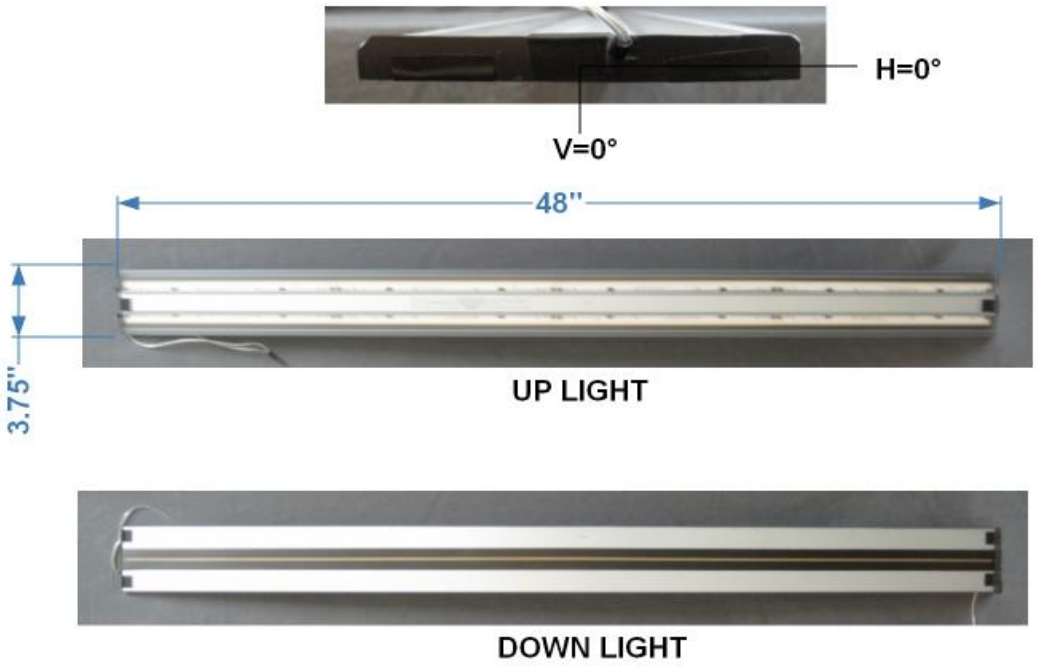


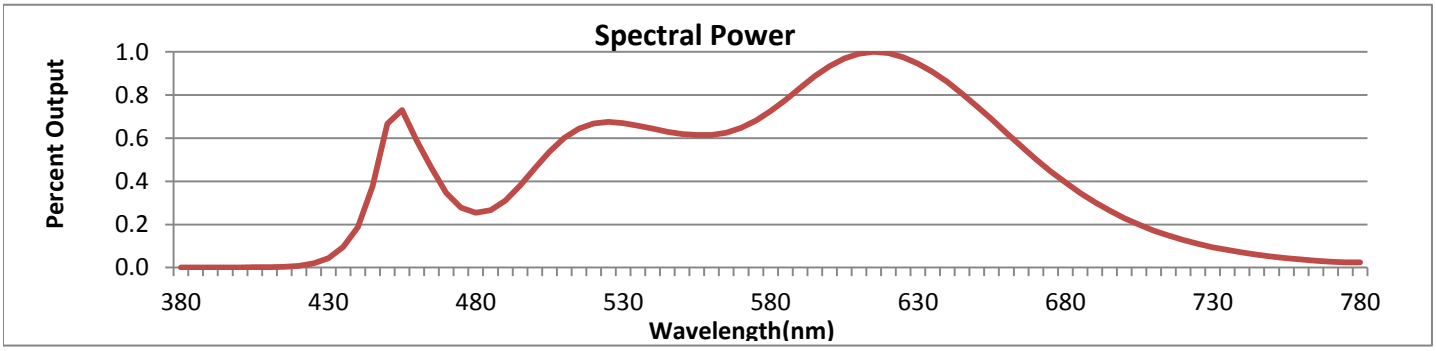
FIG. 1 LUMINAIRE

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

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

Report No: L031805810

NVLAP TESTING
NVLAP LAB CODE 200927-0



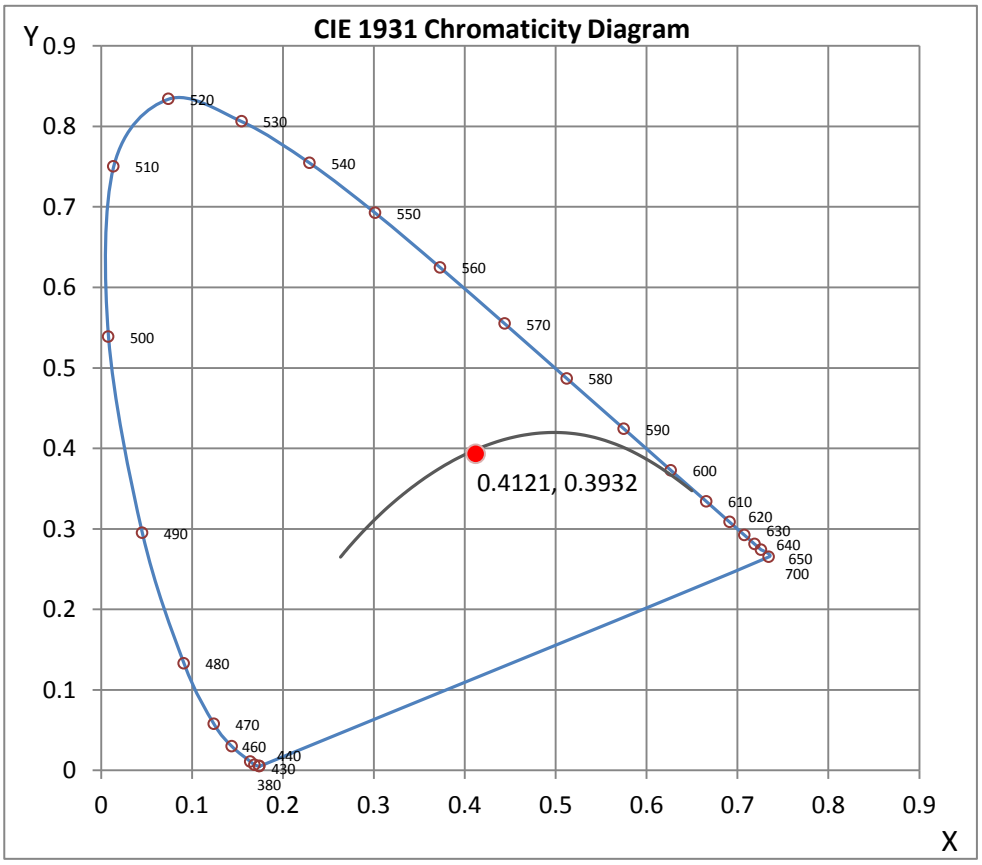
Wavelength	W/m²nm	440	0.1873	510	0.6008	580	0.7256	650	0.7490	720	0.1277
380	0.0010	450	0.6666	520	0.6681	590	0.8336	660	0.6253	730	0.0946
390	0.0009	460	0.5887	530	0.6692	600	0.9343	670	0.5022	740	0.0696
400	0.0011	470	0.3465	540	0.6445	610	0.9914	680	0.3948	750	0.0512
410	0.0021	480	0.2542	550	0.6193	620	0.9954	690	0.3026	760	0.0378
420	0.0085	490	0.3113	560	0.6151	630	0.9463	700	0.2293	770	0.0279
430	0.0442	500	0.4606	570	0.6478	640	0.8616	710	0.1719	780	0.0241

CRI & CCT

x	0.4121
y	0.3932
u'	0.2391
v'	0.5133
CRI	96.00
CCT	3376
Duv	-0.00035

R Values

R1	97.59
R2	98.80
R3	99.18
R4	96.73
R5	97.74
R6	94.53
R7	94.37
R8	89.20
R9	74.72
R10	98.24
R11	90.24
R12	81.31
R13	97.24
R14	98.57



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

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NVLAP TESTING
NVLAP LAB CODE 200927-0

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*

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

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

Photometric Test Report

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L031805810.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] L031805810
[TESTLAB] LIGHT LABORATORY, INC. (www.lightlaboratory.com)
[ISSUEDATE] 4/12/2018
[MANUFAC] Vode Lighting
[LUMCAT] 707-Z3-CC-Z-SO-359-U2S2-BL
[LUMINAIRE] ZipThree Suspended, 48", 3500K, 90 CRI, zipper board,
[MORE] symmetric lens with edgeglow up/60° symmetric lens down, standard output, black 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, 51.23W
[TEST PROCEDURE] IESNA:LM-79-08

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	4430
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	86
Total Luminaire Watts	51.23
Ballast Factor	1.00
CIE Type	Semi-Indirect
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	1628	3208	5931
55	744	1579	3218
65	393	816	1720
75	225	443	984
85	130	220	469

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L031805810.IES

CANDELA TABULATION

	0	5	10	15	20	25	30	35	40	45
0.0	1097	1097	1097	1097	1097	1097	1097	1097	1097	1097
1.0	1096	1096	1096	1096	1096	1096	1096	1096	1096	1096
3.0	1090	1090	1090	1090	1090	1091	1091	1091	1091	1092
5.0	1077	1077	1078	1078	1079	1080	1081	1082	1083	1084
7.0	1058	1058	1059	1060	1061	1063	1064	1066	1069	1071
9.0	1032	1033	1034	1035	1037	1040	1043	1047	1050	1054
11.0	999	999	1001	1003	1007	1011	1016	1021	1027	1032
13.0	958	959	961	965	970	976	982	990	998	1006
15.0	911	912	915	920	926	934	943	954	964	975
17.0	856	857	861	867	876	886	898	911	925	938
19.5	780	782	787	795	805	819	834	851	869	887
22.5	679	682	688	698	711	728	747	769	792	814
25.5	575	577	584	595	611	630	653	678	706	735
29.0	456	458	466	478	494	515	540	569	601	634
33.0	335	337	344	356	372	392	417	447	480	515
37.5	227	229	234	244	258	276	297	324	355	388
42.5	142	143	148	155	165	178	195	216	241	268
47.5	88	89	92	97	104	113	125	139	157	177
55.0	44	44	46	48	52	57	63	71	80	91
65.0	18	18	19	20	21	23	25	29	32	36
75.0	7	7	7	8	8	9	10	11	12	13
85.0	2	2	2	2	2	2	2	2	3	3
90.0	13	13	12	12	12	11	10	9	8	7
95.0	39	39	38	38	38	37	37	36	35	35
100.0	79	80	80	80	80	80	80	81	81	82
105.0	132	132	133	133	134	135	137	139	140	142
110.0	199	199	200	201	203	205	208	211	214	217
115.0	282	282	283	285	287	290	293	298	302	307
120.0	379	380	381	383	386	390	394	399	404	410
125.0	490	490	492	494	497	502	506	512	517	523
130.0	608	609	610	613	616	620	625	630	635	640
135.0	727	728	729	731	734	738	741	745	749	753
140.0	838	838	839	841	843	845	847	850	852	855
145.0	933	933	934	935	936	937	938	939	941	942
150.0	1011	1011	1011	1011	1012	1012	1013	1014	1014	1015
155.0	1072	1072	1072	1072	1073	1073	1073	1074	1075	1075
160.0	1121	1121	1121	1121	1122	1122	1122	1123	1123	1124
165.0	1159	1159	1159	1159	1159	1159	1160	1160	1160	1160
170.0	1185	1185	1185	1185	1185	1185	1185	1185	1185	1185
175.0	1199	1199	1199	1200	1199	1200	1200	1200	1200	1200
180.0	1205	1205	1205	1205	1205	1205	1205	1205	1205	1205

Vert. Angles	**Horizontal Angles**								
	50	**55**	**60**	**65**	**70**	**75**	**80**	**85**	**90**
0.0	1097	1097	1097	1097	1097	1097	1097	1097	1097
1.0	1096	1096	1096	1096	1096	1097	1096	1096	1097
3.0	1092	1093	1093	1094	1094	1094	1094	1094	1094
5.0	1085	1086	1087	1088	1088	1089	1090	1090	1090
7.0	1073	1075	1077	1079	1081	1082	1083	1084	1084
9.0	1058	1061	1065	1068	1070	1072	1074	1075	1075
11.0	1038	1043	1048	1053	1056	1060	1062	1063	1064
13.0	1014	1021	1028	1035	1040	1044	1047	1049	1050
15.0	986	996	1005	1013	1020	1026	1030	1032	1033

CANDELA TABULATION - (Cont.)

17.0	952	965	977	988	997	1004	1009	1012	1013
19.5	905	922	937	952	963	972	979	983	983
22.5	838	861	881	899	914	926	934	939	941
25.5	763	791	816	839	857	872	882	888	890
29.0	668	700	730	757	779	797	810	817	820
33.0	552	588	622	653	679	699	713	721	724
37.5	424	460	495	527	554	575	590	598	601
42.5	298	330	360	389	414	433	447	455	457
47.5	199	223	247	269	288	304	314	320	323
55.0	103	116	128	141	152	160	167	171	172
65.0	41	46	51	55	59	63	65	67	68
75.0	15	16	18	20	21	22	23	24	24
85.0	3	3	3	4	4	4	4	4	4
90.0	6	6	5	4	3	3	2	2	1
95.0	34	33	33	32	31	31	30	30	29
100.0	82	82	83	83	83	83	83	82	82
105.0	144	146	147	148	149	150	150	150	150
110.0	220	223	226	229	231	232	232	232	232
115.0	312	316	320	323	325	327	327	328	328
120.0	415	421	425	429	432	434	435	436	436
125.0	529	534	538	542	545	548	549	550	550
130.0	645	650	653	656	659	661	662	663	664
135.0	757	760	762	765	767	768	770	770	771
140.0	857	859	861	863	864	865	866	867	867
145.0	943	945	946	948	949	949	950	950	951
150.0	1016	1017	1019	1019	1020	1020	1021	1021	1021
155.0	1076	1077	1077	1078	1078	1078	1079	1079	1079
160.0	1124	1124	1124	1125	1125	1125	1125	1125	1125
165.0	1160	1160	1160	1160	1160	1160	1160	1160	1160
170.0	1185	1185	1185	1185	1185	1185	1185	1185	1185
175.0	1200	1200	1200	1200	1200	1200	1200	1200	1200
180.0	1205	1205	1205	1205	1205	1205	1205	1205	1205

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L031805810.IES

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	357.73	N.A.	8.10
0-30	681.62	N.A.	15.40
0-40	944.30	N.A.	21.30
0-60	1251.65	N.A.	28.30
0-80	1345.61	N.A.	30.40
0-90	1357.75	N.A.	30.70
10-90	1274.56	N.A.	28.80
20-40	586.58	N.A.	13.20
20-50	800.27	N.A.	18.10
40-70	373.51	N.A.	8.40
60-80	93.96	N.A.	2.10
70-80	27.80	N.A.	0.60
80-90	12.13	N.A.	0.30
90-110	196.28	N.A.	4.40
90-120	502.47	N.A.	11.30
90-130	969.67	N.A.	21.90
90-150	2135.27	N.A.	48.20
90-180	3071.78	N.A.	69.30
110-180	2875.5	N.A.	64.90
0-180	4429.53	N.A.	100.00

Total Luminaire Efficiency = N.A.%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	83.19
10-20	274.54
20-30	323.89
30-40	262.69
40-50	213.69
50-60	93.66
60-70	66.16
70-80	27.80
80-90	12.13
90-100	42.95
100-110	153.33
110-120	306.19
120-130	467.20
130-140	577.72
140-150	587.88
150-160	495.22
160-170	327.23
170-180	114.06

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L031805810.IES

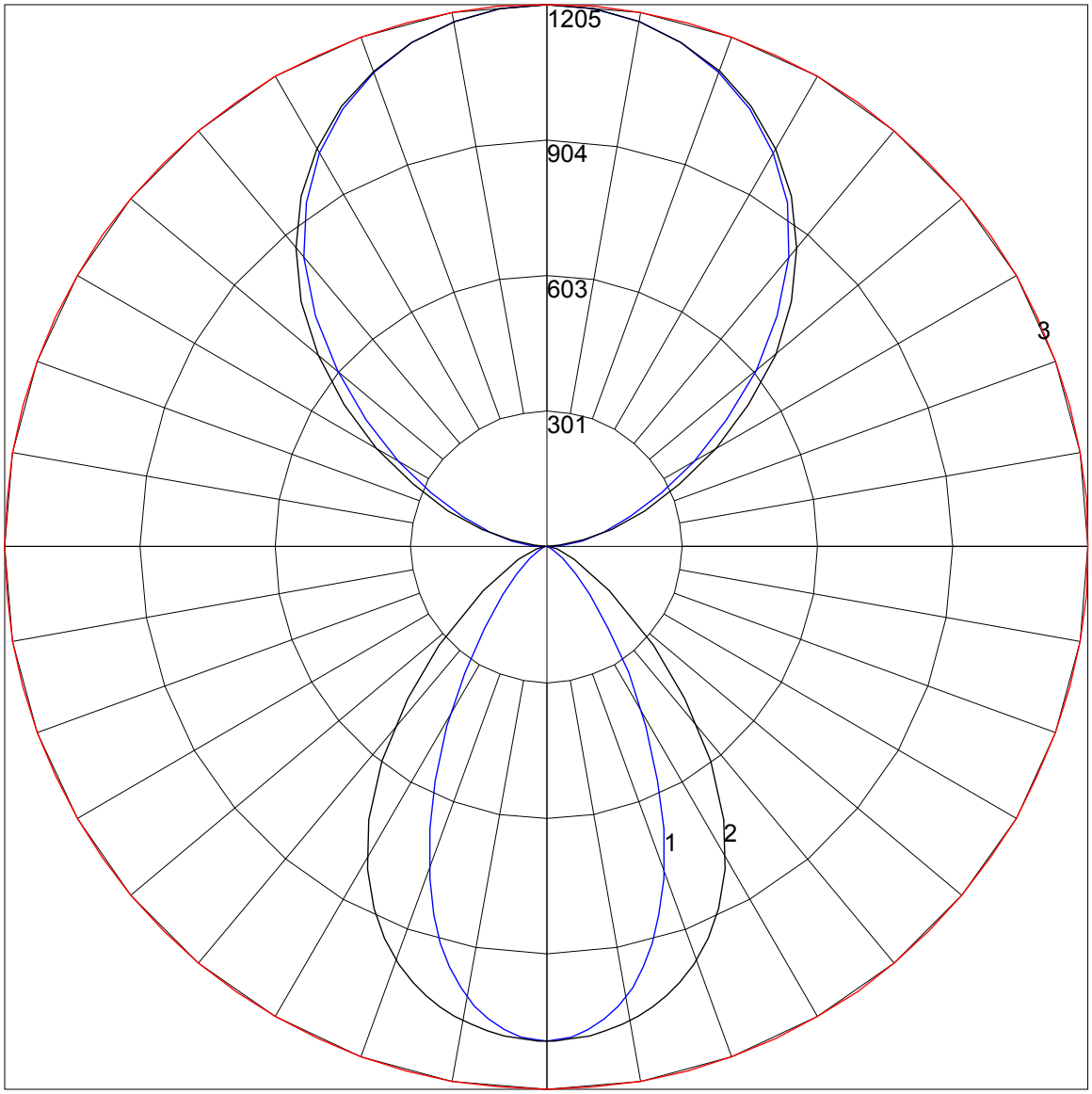
COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

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	103	103	103	103	92	92	92	92	73	73	73	55	55	55	38	38	38	31
1	94	90	87	84	85	81	79	76	65	63	61	49	48	47	35	34	34	27
2	87	80	74	70	78	72	68	64	58	55	52	44	42	41	32	31	30	24
3	80	71	65	59	71	64	59	54	52	48	45	40	38	36	29	28	27	22
4	73	63	56	51	66	58	52	47	47	42	39	36	34	31	27	25	24	20
5	68	57	50	44	61	52	46	41	42	38	34	33	30	28	25	23	21	18
6	62	51	44	39	56	47	41	36	38	34	30	30	27	25	23	21	19	16
7	58	47	39	34	52	43	36	32	35	30	27	28	25	22	21	19	18	15
8	54	43	36	31	49	39	33	29	32	28	24	26	23	20	20	18	16	14
9	50	39	32	28	45	36	30	26	30	25	22	24	21	18	18	16	15	13
10	47	36	29	25	43	33	27	23	27	23	20	22	19	17	17	15	14	12

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L031805810.IES

POLAR GRAPH



Maximum Candela = 1205 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.)