



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

Report No: L101805119



Report No: L101805119

Issue Date: 11/7/2018

Report Prepared For: LumenArt Ltd
3333 W. 47th Street Chicago, IL 60632

Model Number: AWL.63.2

Test: Photometric/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: 10/30/18

Date of Tests: 11/5/18 - 11/6/18

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

General Information

Manufacturer:	LumenArt Ltd
Model Number:	AWL.63.2
Driver Model Number:	ERP ESS101W-0250-42

Photometric & Electrical Test Results

Total Lumens:	715.85
Efficacy:	60.59
Input Voltage (VAC/60Hz):	119.95
Input Current (Amp):	0.0994
Input Power (W):	11.82
Input Power Factor:	0.9901
Current ATHD (%):	12.0%

Test Condition

Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	1:30
Total Operating Time (Hours):	2:05

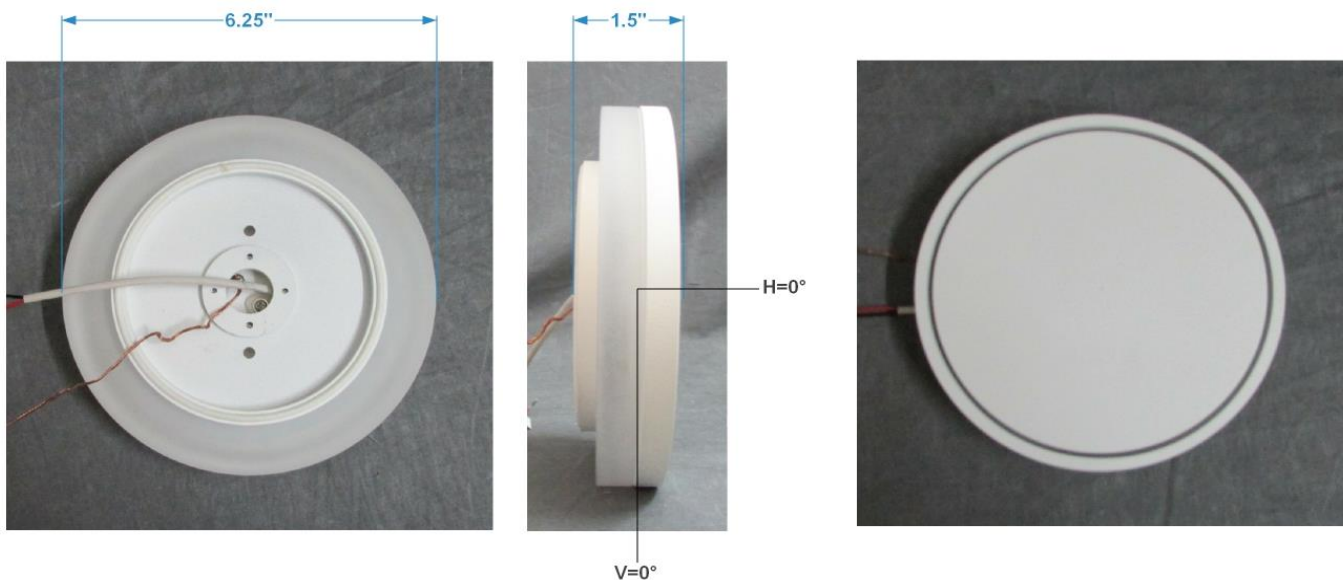


FIG. 1 LUMINAIRE



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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 : Joseph Shin

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*



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Photometric Test Report

IES INDOOR REPORT

PHOTOMETRIC FILENAME : L101805119.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] L101805119
[TESTLAB] LIGHT LABORATORY, INC. (www.lightlaboratory.com)
[ISSUE DATE] 11/7/2018
[MANUFAC] LUMENART LTD
[LUMCAT] AWL.63.2
[LUMINAIRE] WALL SCONCE
[BALLASTCAT] ERP ESS101W-0250-42
[OTHER] INDICATING THE CANDELA VALUES ARE ABSOLUTE AND
[MORE] SHOULD NOT BE FACTORED FOR DIFFERENT LAMP RATINGS.
[INPUT] 119.95VAC, 11.82W
[TEST PROCEDURE] IESNA:LM-79-08

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	716
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	61
Total Luminaire Watts	11.82
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	Hor. Cylinder Along Length
Luminous Length (0-180)	0.08 ft
Luminous Width (90-270)	0.52 ft (Diameter)
Luminous Height	0.52 ft (Diameter)

LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	1695	2460	9529
55	1204	2017	9529
65	904	1702	9529
75	693	1517	9529
85	554	1429	9529

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L101805119.IES

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	36.86	36.86	36.86	36.86	36.86	36.86	36.86	36.86	36.86	36.86
5	35.80	35.80	35.82	35.84	35.86	35.90	35.94	35.99	36.05	36.11
10	35.26	35.26	35.28	35.30	35.33	35.36	35.41	35.46	35.51	35.58
15	34.27	34.28	34.32	34.37	34.45	34.55	34.68	34.82	34.98	35.15
20	33.34	33.35	33.40	33.47	33.57	33.70	33.86	34.03	34.23	34.47
25	32.52	32.54	32.59	32.67	32.78	32.93	33.10	33.30	33.55	33.83
30	31.02	31.06	31.17	31.36	31.61	31.94	32.32	32.65	32.93	33.22
35	28.80	28.87	29.07	29.40	29.86	30.43	31.08	31.61	32.20	32.70
40	26.12	26.22	26.51	26.99	27.64	28.46	29.32	30.23	31.17	31.91
45	23.67	23.78	24.09	24.61	25.32	26.20	27.32	28.59	29.78	31.02
50	21.52	21.63	21.96	22.50	23.22	24.18	25.36	26.73	28.30	29.78
55	19.48	19.61	19.98	20.58	21.38	22.41	23.59	25.07	26.73	28.59
60	17.72	17.85	18.24	18.86	19.70	20.82	22.13	23.59	25.36	27.32
65	16.18	16.32	16.74	17.38	18.29	19.40	20.82	22.41	24.18	26.20
70	14.63	14.81	15.33	16.12	17.10	18.29	19.70	21.38	23.22	25.32
75	13.21	13.44	14.05	14.97	16.12	17.38	18.86	20.58	22.50	24.61
80	11.89	12.20	12.97	14.05	15.33	16.74	18.24	19.98	21.96	24.09
85	10.90	11.31	12.20	13.44	14.81	16.32	17.85	19.61	21.63	23.78
90	10.00	10.90	11.89	13.21	14.63	16.18	17.72	19.48	21.52	23.67
95	10.90	11.31	12.20	13.44	14.81	16.32	17.85	19.61	21.63	23.78
100	11.89	12.20	12.97	14.05	15.33	16.74	18.24	19.98	21.96	24.09
105	13.21	13.44	14.05	14.97	16.12	17.38	18.86	20.58	22.50	24.61
110	14.63	14.81	15.33	16.12	17.10	18.29	19.70	21.38	23.22	25.32
115	16.18	16.32	16.74	17.38	18.29	19.40	20.82	22.41	24.18	26.20
120	17.72	17.85	18.24	18.86	19.70	20.82	22.13	23.59	25.36	27.32
125	19.48	19.61	19.98	20.58	21.38	22.41	23.59	25.07	26.73	28.59
130	21.52	21.63	21.96	22.50	23.22	24.18	25.36	26.73	28.30	29.78
135	23.67	23.78	24.09	24.61	25.32	26.20	27.32	28.59	29.78	31.02
140	26.12	26.22	26.51	26.99	27.64	28.46	29.32	30.23	31.17	31.91
145	28.80	28.87	29.07	29.40	29.86	30.43	31.08	31.61	32.20	32.70
150	31.02	31.06	31.17	31.36	31.61	31.94	32.32	32.65	32.93	33.22
155	32.52	32.54	32.59	32.67	32.78	32.93	33.10	33.30	33.55	33.83
160	33.34	33.35	33.40	33.47	33.57	33.70	33.86	34.03	34.23	34.47
165	34.27	34.28	34.32	34.37	34.45	34.55	34.68	34.82	34.98	35.15
170	35.26	35.26	35.28	35.30	35.33	35.36	35.41	35.46	35.51	35.58
175	35.80	35.80	35.82	35.84	35.86	35.90	35.94	35.99	36.05	36.11
180	36.86	36.86	36.86	36.86	36.86	36.86	36.86	36.86	36.86	36.86

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	36.86	36.86	36.86	36.86	36.86	36.86	36.86	36.86	36.86	36.86
5	36.18	36.25	36.33	36.41	36.50	36.59	36.68	36.77	36.86	37.44
10	35.65	35.72	35.80	35.97	36.14	36.31	36.49	36.68	36.86	38.01
15	35.31	35.42	35.54	35.66	35.80	36.05	36.31	36.59	36.86	38.57
20	34.73	35.00	35.28	35.44	35.61	35.80	36.14	36.50	36.86	39.12
25	34.13	34.46	34.82	35.20	35.44	35.66	35.97	36.41	36.86	39.65
30	33.57	33.96	34.37	34.82	35.28	35.54	35.80	36.33	36.86	40.17
35	33.07	33.49	33.96	34.46	35.00	35.42	35.72	36.25	36.86	40.65
40	32.62	33.07	33.57	34.13	34.73	35.31	35.65	36.18	36.86	41.11
45	31.91	32.70	33.22	33.83	34.47	35.15	35.58	36.11	36.86	41.54
50	31.17	32.20	32.93	33.55	34.23	34.98	35.51	36.05	36.86	41.93
55	30.23	31.61	32.65	33.30	34.03	34.82	35.46	35.99	36.86	42.28
60	29.32	31.08	32.32	33.10	33.86	34.68	35.41	35.94	36.86	42.59

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CANDELA TABULATION - (Cont.)

65	28.46	30.43	31.94	32.93	33.70	34.55	35.36	35.90	36.86	42.86
70	27.64	29.86	31.61	32.78	33.57	34.45	35.33	35.86	36.86	43.08
75	26.99	29.40	31.36	32.67	33.47	34.37	35.30	35.84	36.86	43.25
80	26.51	29.07	31.17	32.59	33.40	34.32	35.28	35.82	36.86	43.48
85	26.22	28.87	31.06	32.54	33.35	34.28	35.26	35.80	36.86	43.48
90	26.12	28.80	31.02	32.52	33.34	34.27	35.26	35.80	36.86	43.48
95	26.22	28.87	31.06	32.54	33.35	34.28	35.26	35.80	36.86	43.48
100	26.51	29.07	31.17	32.59	33.40	34.32	35.28	35.82	36.86	43.48
105	26.99	29.40	31.36	32.67	33.47	34.37	35.30	35.84	36.86	43.25
110	27.64	29.86	31.61	32.78	33.57	34.45	35.33	35.86	36.86	43.08
115	28.46	30.43	31.94	32.93	33.70	34.55	35.36	35.90	36.86	42.86
120	29.32	31.08	32.32	33.10	33.86	34.68	35.41	35.94	36.86	42.59
125	30.23	31.61	32.65	33.30	34.03	34.82	35.46	35.99	36.86	42.28
130	31.17	32.20	32.93	33.55	34.23	34.98	35.51	36.05	36.86	41.93
135	31.91	32.70	33.22	33.83	34.47	35.15	35.58	36.11	36.86	41.54
140	32.62	33.07	33.57	34.13	34.73	35.31	35.65	36.18	36.86	41.11
145	33.07	33.49	33.96	34.46	35.00	35.42	35.72	36.25	36.86	40.65
150	33.57	33.96	34.37	34.82	35.28	35.54	35.80	36.33	36.86	40.17
155	34.13	34.46	34.82	35.20	35.44	35.66	35.97	36.41	36.86	39.65
160	34.73	35.00	35.28	35.44	35.61	35.80	36.14	36.50	36.86	39.12
165	35.31	35.42	35.54	35.66	35.80	36.05	36.31	36.59	36.86	38.57
170	35.65	35.72	35.80	35.97	36.14	36.31	36.49	36.68	36.86	38.01
175	36.18	36.25	36.33	36.41	36.50	36.59	36.68	36.77	36.86	37.44
180	36.86	36.86	36.86	36.86	36.86	36.86	36.86	36.86	36.86	36.86

Vert. Angles	Horizontal Angles									
	100	105	110	115	120	125	130	135	140	145
0	36.86	36.86	36.86	36.86	36.86	36.86	36.86	36.86	36.86	36.86
5	38.01	38.57	39.12	39.65	40.17	40.65	41.11	41.54	41.93	42.28
10	39.15	40.27	41.37	42.43	43.48	44.56	45.61	46.58	47.47	48.28
15	40.27	41.95	43.60	45.41	47.16	48.82	50.39	51.81	53.08	54.23
20	41.37	43.60	46.07	48.48	50.80	52.91	54.89	56.74	58.44	59.95
25	42.43	45.41	48.48	51.44	54.17	56.79	59.24	61.50	63.59	65.49
30	43.48	47.16	50.80	54.17	57.43	60.50	63.40	66.10	68.58	70.85
35	44.56	48.82	52.91	56.79	60.50	64.04	67.37	70.50	73.49	76.28
40	45.61	50.39	54.89	59.24	63.40	67.37	71.16	74.87	78.39	81.90
45	46.58	51.81	56.74	61.50	66.10	70.50	74.87	79.10	83.53	87.71
50	47.47	53.08	58.44	63.59	68.58	73.49	78.39	83.53	88.66	93.85
55	48.28	54.23	59.95	65.49	70.85	76.28	81.90	87.71	93.85	99.81
60	48.99	55.25	61.28	67.15	72.91	78.79	85.15	91.89	98.73	105.42
65	49.60	56.13	62.44	68.58	74.75	81.19	88.13	95.59	103.18	110.45
70	50.11	56.86	63.40	69.78	76.28	83.24	90.83	98.88	106.98	114.82
75	50.51	57.43	64.15	70.73	77.50	84.86	92.99	101.53	110.06	118.42
80	50.80	57.85	64.70	71.42	78.39	86.05	94.57	103.49	112.34	121.11
85	51.03	58.18	65.14	71.83	78.92	86.77	95.53	104.68	113.75	122.77
90	51.03	58.18	65.14	71.97	79.10	87.01	95.85	105.08	114.22	123.34
95	51.03	58.18	65.14	71.83	78.92	86.77	95.53	104.68	113.75	122.77
100	50.80	57.85	64.70	71.42	78.39	86.05	94.57	103.49	112.34	121.11
105	50.51	57.43	64.15	70.73	77.50	84.86	92.99	101.53	110.06	118.42
110	50.11	56.86	63.40	69.78	76.28	83.24	90.83	98.88	106.98	114.82
115	49.60	56.13	62.44	68.58	74.75	81.19	88.13	95.59	103.18	110.45
120	48.99	55.25	61.28	67.15	72.91	78.79	85.15	91.89	98.73	105.42
125	48.28	54.23	59.95	65.49	70.85	76.28	81.90	87.71	93.85	99.81
130	47.47	53.08	58.44	63.59	68.58	73.49	78.39	83.53	88.66	93.85
135	46.58	51.81	56.74	61.50	66.10	70.50	74.87	79.10	83.53	87.71

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CANDELA TABULATION - (Cont.)

140	45.61	50.39	54.89	59.24	63.40	67.37	71.16	74.87	78.39	81.90
145	44.56	48.82	52.91	56.79	60.50	64.04	67.37	70.50	73.49	76.28
150	43.48	47.16	50.80	54.17	57.43	60.50	63.40	66.10	68.58	70.85
155	42.43	45.41	48.48	51.44	54.17	56.79	59.24	61.50	63.59	65.49
160	41.37	43.60	46.07	48.48	50.80	52.91	54.89	56.74	58.44	59.95
165	40.27	41.95	43.60	45.41	47.16	48.82	50.39	51.81	53.08	54.23
170	39.15	40.27	41.37	42.43	43.48	44.56	45.61	46.58	47.47	48.28
175	38.01	38.57	39.12	39.65	40.17	40.65	41.11	41.54	41.93	42.28
180	36.86	36.86	36.86	36.86	36.86	36.86	36.86	36.86	36.86	36.86

Vert. Angles **Horizontal Angles**

	<u>150</u>	<u>155</u>	<u>160</u>	<u>165</u>	<u>170</u>	<u>175</u>	<u>180</u>
0	36.86	36.86	36.86	36.86	36.86	36.86	36.86
5	42.59	42.86	43.08	43.25	43.48	43.48	43.48
10	48.99	49.60	50.11	50.51	50.80	51.03	51.03
15	55.25	56.13	56.86	57.43	57.85	58.18	58.18
20	61.28	62.44	63.40	64.15	64.70	65.14	65.14
25	67.15	68.58	69.78	70.73	71.42	71.83	71.97
30	72.91	74.75	76.28	77.50	78.39	78.92	79.10
35	78.79	81.19	83.24	84.86	86.05	86.77	87.01
40	85.15	88.13	90.83	92.99	94.57	95.53	95.85
45	91.89	95.59	98.88	101.53	103.49	104.68	105.08
50	98.73	103.18	106.98	110.06	112.34	113.75	114.22
55	105.42	110.45	114.82	118.42	121.11	122.77	123.34
60	111.64	117.34	122.37	126.41	129.45	131.35	132.00
65	117.34	123.73	129.21	133.69	136.94	139.01	139.73
70	122.37	129.21	135.11	139.99	143.50	145.81	146.63
75	126.41	133.69	139.99	145.13	149.18	151.89	152.88
80	129.45	136.94	143.50	149.18	153.82	156.93	158.16
85	131.35	139.01	145.81	151.89	156.93	160.14	161.54
90	132.00	139.73	146.63	152.88	158.16	161.54	160.14
95	131.35	139.01	145.81	151.89	156.93	160.14	161.54
100	129.45	136.94	143.50	149.18	153.82	156.93	158.16
105	126.41	133.69	139.99	145.13	149.18	151.89	152.88
110	122.37	129.21	135.11	139.99	143.50	145.81	146.63
115	117.34	123.73	129.21	133.69	136.94	139.01	139.73
120	111.64	117.34	122.37	126.41	129.45	131.35	132.00
125	105.42	110.45	114.82	118.42	121.11	122.77	123.34
130	98.73	103.18	106.98	110.06	112.34	113.75	114.22
135	91.89	95.59	98.88	101.53	103.49	104.68	105.08
140	85.15	88.13	90.83	92.99	94.57	95.53	95.85
145	78.79	81.19	83.24	84.86	86.05	86.77	87.01
150	72.91	74.75	76.28	77.50	78.39	78.92	79.10
155	67.15	68.58	69.78	70.73	71.42	71.83	71.97
160	61.28	62.44	63.40	64.15	64.70	65.14	65.14
165	55.25	56.13	56.86	57.43	57.85	58.18	58.18
170	48.99	49.60	50.11	50.51	50.80	51.03	51.03
175	42.59	42.86	43.08	43.25	43.48	43.48	43.48
180	36.86	36.86	36.86	36.86	36.86	36.86	36.86

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L101805119.IES

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	15.89	N.A.	2.20
0-30	37.48	N.A.	5.20
0-40	68.99	N.A.	9.60
0-60	161.85	N.A.	22.60
0-80	288.06	N.A.	40.20
0-90	357.92	N.A.	50.00
10-90	354.18	N.A.	49.50
20-40	53.10	N.A.	7.40
20-50	94.67	N.A.	13.20
40-70	152.73	N.A.	21.30
60-80	126.21	N.A.	17.60
70-80	66.34	N.A.	9.30
80-90	69.86	N.A.	9.80
90-110	136.20	N.A.	19.00
90-120	196.07	N.A.	27.40
90-130	247.36	N.A.	34.60
90-150	320.45	N.A.	44.80
90-180	357.92	N.A.	50.00
110-180	221.73	N.A.	31.00
0-180	715.85	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	3.74
10-20	12.15
20-30	21.58
30-40	31.52
40-50	41.57
50-60	51.29
60-70	59.87
70-80	66.34
80-90	69.86
90-100	69.86
100-110	66.34
110-120	59.87
120-130	51.29
130-140	41.57
140-150	31.52
150-160	21.58
160-170	12.15
170-180	3.74

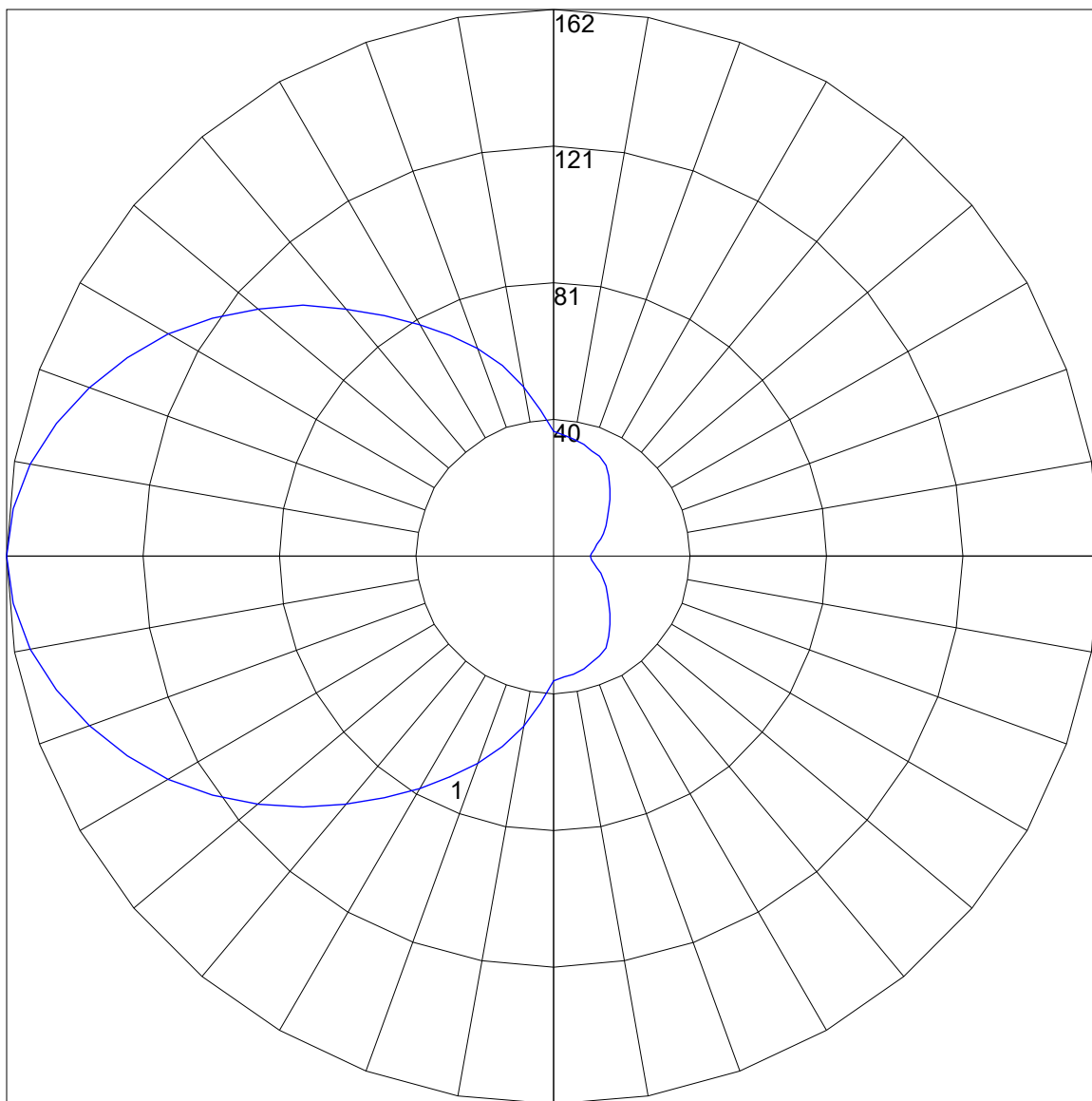
IES INDOOR REPORT
 PHOTOMETRIC FILENAME : L101805119.IES

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	107	107	107	107	99	99	99	99	83	83	83	69	69	69	56	56	56	50
1	93	87	81	76	85	79	74	70	66	62	58	53	50	48	42	40	38	32
2	83	73	65	58	75	67	60	54	55	49	45	44	40	36	34	31	28	23
3	74	63	54	46	68	57	49	43	47	41	36	38	33	29	29	25	22	18
4	67	55	45	38	61	50	41	35	41	34	29	33	28	23	25	21	18	14
5	61	48	39	32	56	44	35	29	36	29	24	29	24	20	22	18	15	11
6	56	43	33	27	51	39	31	25	32	26	21	26	21	17	20	16	13	9
7	52	38	29	23	47	35	27	21	29	22	18	23	18	14	18	14	11	8
8	48	34	26	20	44	32	24	18	26	20	15	21	16	12	16	12	9	7
9	45	31	23	18	41	29	21	16	24	18	14	19	14	11	15	11	8	6
10	42	29	21	16	38	26	19	14	22	16	12	18	13	10	14	10	7	5

POLAR GRAPH



Maximum Candela = 161.54 Located At Horizontal Angle = 175, Vertical Angle = 90
1 - Vertical Plane Through Horizontal Angles (175 - 355) (Through Max. Cd.)