



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

Report No: L061911301



**Report No:** L061911301

**Issue Date:** 6/13/2019

**Report Prepared For:** Cerno LLC  
1751 McGaw Ave, Irvine, CA, 92614

**Model Number:** 03-220-16BDD-27P1

**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:** 6/10/19

**Date of Tests:** 6/11/19 - 6/13/19

**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

<b>Manufacturer:</b>	Cerno LLC
<b>Model Number:</b>	03-220-16BDD-27P1
<b>Driver Model Number:</b>	L.T.F. TECHNOLOGY DA12W24VD010-0000

### Test Summary

<b>Total Lumens:</b>	435.75
<b>Efficacy:</b>	50.86
<b>Color Redering Index:</b>	96.7
<b>Correlated Color Temperature:</b>	2624
<b>Input Voltage (VAC/60Hz):</b>	120.02
<b>Input Current (Amp):</b>	0.0792
<b>Input Power (W):</b>	8.57
<b>Input Power Factor:</b>	0.9013
<b>Current ATHD (%):</b>	22.2%

### Test Condition

<b>Ambient Temperature (°C):</b>	25.0
<b>Stabilization Time (Hours):</b>	0:50
<b>Total Operating Time (Hours):</b>	1:20

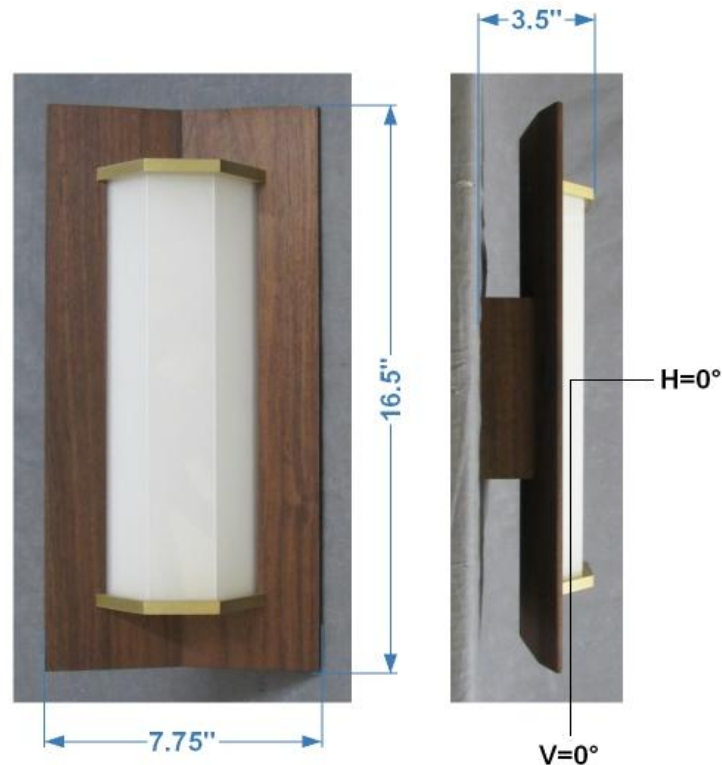
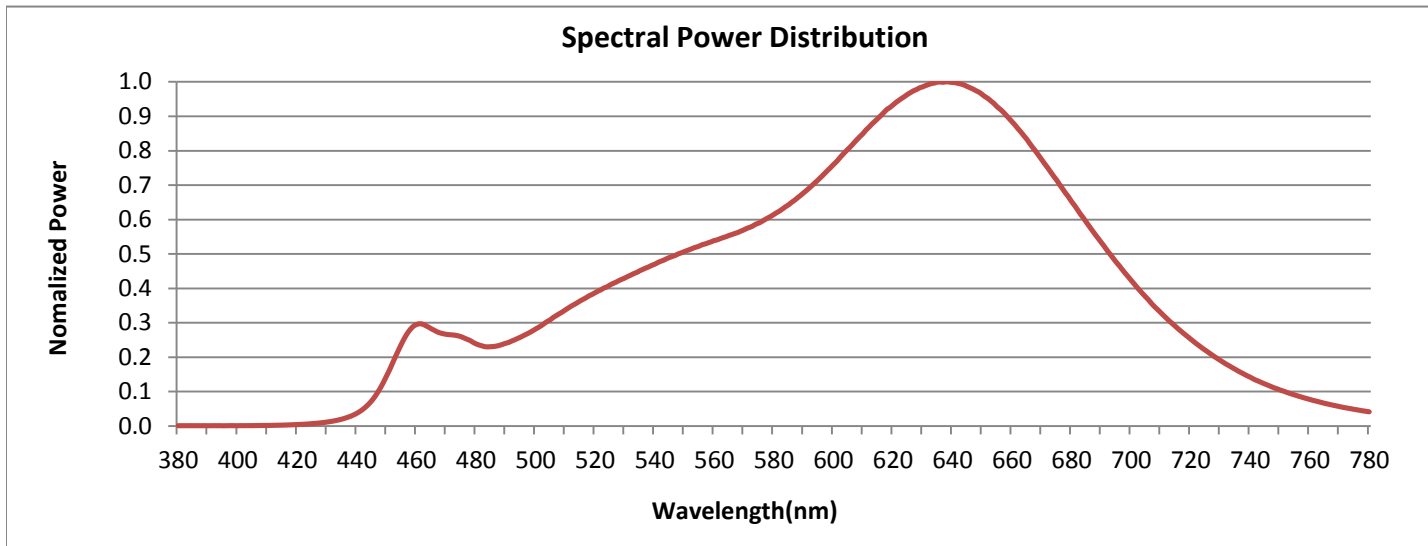


FIG. 1 LUMINAIRE

## Colorimetry Test Results

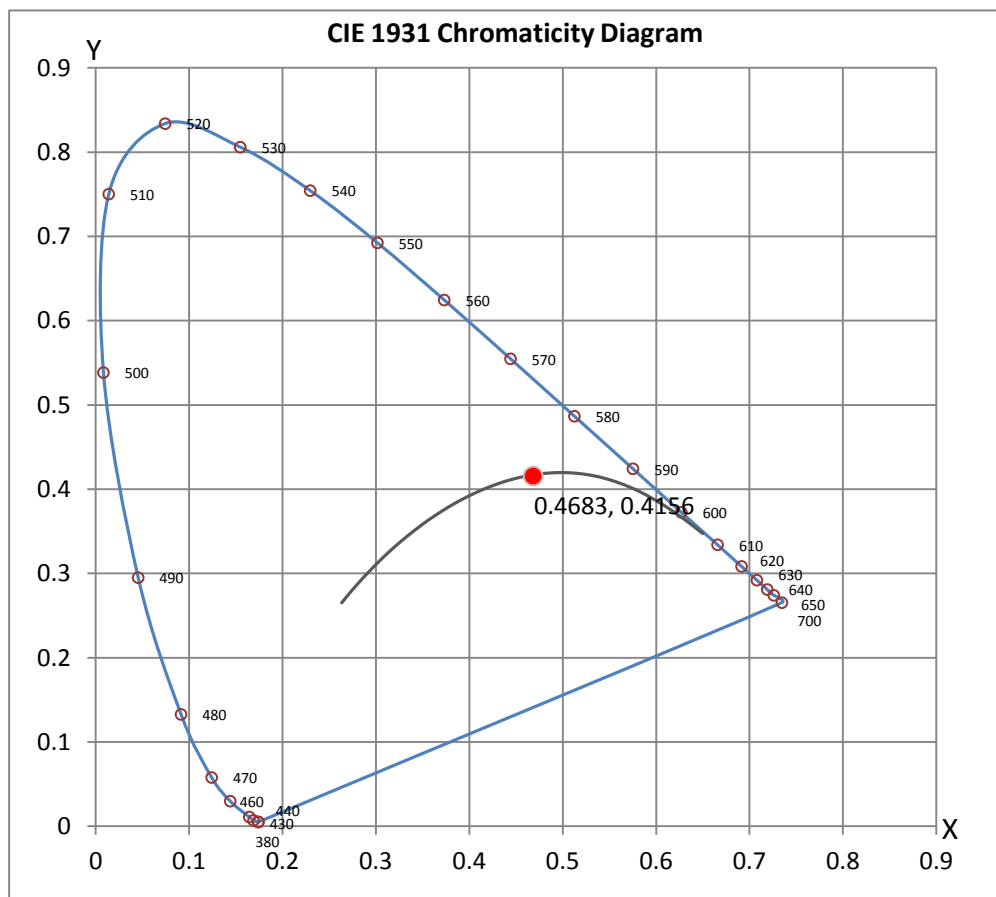


### CRI & CCT

x	0.4683
y	0.4156
u'	0.2657
v'	0.5305
CRI	96.70
CCT	2624
Duv	0.00119

### R Values

R1	98.03
R2	98.03
R3	98.98
R4	96.28
R5	96.98
R6	95.20
R7	94.99
R8	95.10
R9	92.67
R10	97.48
R11	96.42
R12	85.38
R13	97.67
R14	98.25
R15	97.76



## 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 : Dennis Malonzo

Test Report Reviewed by:



Steve Kang  
Quality Assurance

*\*Attached are photometric data reports. Total number of pages: 11*



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## Photometric Test Report

### IES INDOOR REPORT

PHOTOMETRIC FILENAME : L061911301.IES

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002  
[TEST] L061911301  
[TESTLAB] LIGHT LABORATORY, INC. (www.lightlaboratory.com)  
[ISSUEDATE] 6/13/2019  
[MANUFAC] Cerno LLC  
[LUMCAT] 03-220-16BDD-27P1  
[LUMINAIRE] Penna 16 LED Sconce, 2700K, P1 Driver  
[BALLASTCAT] L.T.F. TECHNOLOGY DA12W24VD010-0000  
[OTHER] INDICATING THE CANDELA VALUES ARE ABSOLUTE AND  
[MORE] SHOULD NOT BE FACTORED FOR DIFFERENT LAMP RATINGS.  
[INPUT] 120.02VAC, 8.57W  
[TEST PROCEDURE] IESNA:LM-79-08

### CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	436
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	51
Total Luminaire Watts	8.57
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)	0.06 ft
Luminous Width (90-270)	0.33 ft
Luminous Height	1.00 ft

### LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	3731	3076	2531
55	4019	3334	2968
65	4254	3538	3321
75	4444	3703	3635
85	4591	3811	3915

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : L061911301.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>
<b>0</b>	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
<b>5</b>	3.08	3.14	3.20	3.17	3.16	3.13	3.08	3.00	2.91	2.80
<b>10</b>	10.06	10.15	10.03	9.86	9.59	9.22	8.75	8.32	7.79	7.15
<b>15</b>	19.71	19.78	19.41	18.94	18.31	17.66	16.83	15.81	14.62	13.32
<b>20</b>	30.71	30.78	30.16	29.42	28.51	27.32	25.91	24.35	22.55	20.77
<b>25</b>	42.11	41.94	41.31	40.40	39.08	37.46	35.56	33.34	31.14	28.71
<b>30</b>	53.51	53.33	52.60	51.37	49.72	47.71	45.30	42.57	39.70	36.78
<b>35</b>	64.64	64.25	63.42	62.07	60.13	57.72	54.91	51.71	48.20	44.66
<b>40</b>	75.50	75.15	74.20	72.55	70.27	67.41	64.12	60.53	56.64	52.46
<b>45</b>	85.82	85.50	84.43	82.52	80.07	76.95	73.08	68.95	64.54	59.78
<b>50</b>	96.01	95.56	94.13	91.99	89.22	85.77	81.61	77.01	72.07	66.97
<b>55</b>	105.27	104.78	103.37	100.90	97.83	94.06	89.68	84.53	79.10	73.56
<b>60</b>	113.85	113.28	111.67	109.15	105.79	101.64	96.85	91.41	85.59	79.62
<b>65</b>	121.63	120.98	119.11	116.41	112.84	108.53	103.27	97.55	91.40	84.98
<b>70</b>	128.33	127.67	125.62	122.78	119.10	114.34	108.94	102.79	96.12	89.61
<b>75</b>	133.83	133.07	130.90	128.04	124.22	119.14	113.36	107.11	100.40	93.50
<b>80</b>	137.99	136.98	135.19	132.04	127.84	122.78	116.87	110.34	103.45	96.23
<b>85</b>	141.07	139.64	137.66	134.64	130.41	125.20	119.04	112.42	105.38	97.98
<b>90</b>	141.90	141.14	139.13	135.77	131.62	126.39	120.29	113.65	106.34	98.90
<b>95</b>	141.47	140.21	138.20	135.10	130.92	125.61	119.51	112.89	105.84	98.50
<b>100</b>	139.19	138.20	136.28	133.09	128.82	123.68	117.86	111.30	104.29	97.11
<b>105</b>	135.71	134.73	132.60	129.64	125.63	120.55	114.77	108.34	101.50	94.56
<b>110</b>	130.34	129.66	127.69	124.89	120.88	116.09	110.71	104.44	97.75	90.98
<b>115</b>	124.04	123.34	121.46	118.78	115.06	110.64	105.37	99.48	93.19	86.55
<b>120</b>	116.40	115.77	114.14	111.58	108.16	103.93	99.04	93.44	87.61	81.53
<b>125</b>	107.95	107.40	105.84	103.54	100.36	96.47	91.95	86.66	81.23	75.53
<b>130</b>	98.43	98.14	96.75	94.60	91.79	88.24	84.00	79.28	74.19	68.95
<b>135</b>	88.37	88.24	86.95	85.08	82.51	79.26	75.43	71.13	66.72	61.92
<b>140</b>	78.04	77.70	76.62	74.95	72.67	69.82	66.49	62.78	58.82	54.55
<b>145</b>	67.05	66.80	65.91	64.40	62.41	59.94	57.01	53.82	50.30	46.63
<b>150</b>	55.65	55.48	54.74	53.49	51.82	49.79	47.36	44.61	41.61	38.52
<b>155</b>	44.25	44.05	43.38	42.41	41.04	39.38	37.43	35.16	32.84	30.33
<b>160</b>	32.72	32.74	32.06	31.27	30.30	29.04	27.53	25.91	24.04	22.20
<b>165</b>	21.32	21.43	21.07	20.59	19.93	19.17	18.23	17.11	15.82	14.47
<b>170</b>	11.13	11.24	11.12	10.94	10.65	10.26	9.76	9.30	8.72	8.05
<b>175</b>	3.76	3.81	3.87	3.82	3.80	3.74	3.67	3.57	3.44	3.30
<b>180</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

**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>
<b>0</b>	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
<b>5</b>	2.66	2.51	2.34	2.16	1.96	1.75	1.53	1.31	1.07	1.03
<b>10</b>	6.42	5.61	4.74	4.36	3.93	3.46	2.96	2.43	1.88	1.67
<b>15</b>	12.06	10.89	9.60	8.20	6.70	5.87	5.02	4.11	3.15	2.50
<b>20</b>	18.89	16.86	14.70	12.89	10.95	8.89	7.55	6.17	4.69	3.36
<b>25</b>	26.04	23.38	20.67	17.75	15.25	12.70	10.34	8.38	6.30	4.00
<b>30</b>	33.64	30.24	26.69	23.18	19.50	16.44	13.25	10.64	7.91	4.49
<b>35</b>	41.03	37.11	32.87	28.55	24.30	20.28	16.42	12.97	9.59	4.81
<b>40</b>	48.18	43.67	38.85	33.85	28.91	23.91	19.43	15.32	11.53	5.22
<b>45</b>	55.13	50.04	44.59	39.05	33.33	27.57	22.42	17.64	13.28	6.18
<b>50</b>	61.73	56.21	50.29	44.07	37.53	31.18	25.21	19.74	14.95	7.22
<b>55</b>	67.89	61.95	55.52	48.77	41.65	34.60	27.99	22.09	16.70	8.53
<b>60</b>	73.54	67.19	60.15	52.91	45.38	37.75	30.45	23.91	18.17	10.08

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : L061911301.IES**

**CANDELA TABULATION - (Cont.)**

<b>65</b>	78.45	71.82	64.41	56.59	48.55	40.44	32.63	25.50	19.38	11.65
<b>70</b>	82.83	75.71	68.06	59.89	51.37	42.74	34.45	26.81	20.45	13.19
<b>75</b>	86.39	78.99	71.05	62.55	53.65	44.72	36.04	27.86	21.32	14.71
<b>80</b>	89.01	81.49	73.22	64.56	55.41	46.30	37.20	28.96	21.93	15.32
<b>85</b>	90.74	83.09	74.76	65.86	56.75	47.25	37.95	29.43	22.39	15.52
<b>90</b>	91.59	83.81	75.36	66.38	57.06	47.61	38.29	29.57	22.46	15.69
<b>95</b>	91.29	83.47	75.09	66.20	57.03	47.46	38.28	29.57	22.46	15.65
<b>100</b>	89.80	82.12	73.90	65.05	55.96	46.66	37.60	29.23	22.13	15.46
<b>105</b>	87.46	79.93	71.93	63.40	54.42	45.40	36.52	28.39	21.66	14.92
<b>110</b>	84.25	77.05	69.25	60.97	52.37	43.69	35.06	27.33	20.79	13.53
<b>115</b>	80.10	73.15	65.81	57.89	49.68	41.47	33.46	26.11	19.98	12.01
<b>120</b>	75.27	68.68	61.78	54.32	46.59	38.88	31.42	24.57	18.77	10.51
<b>125</b>	69.75	63.64	57.15	50.16	42.93	35.84	29.02	22.74	17.23	9.17
<b>130</b>	63.65	57.97	51.91	45.54	38.90	32.56	26.48	20.77	15.62	7.58
<b>135</b>	57.09	51.90	46.33	40.61	34.75	28.93	23.64	18.68	14.08	6.51
<b>140</b>	50.12	45.47	40.58	35.49	30.38	25.26	20.58	16.27	12.27	5.57
<b>145</b>	42.77	38.64	34.43	30.11	25.74	21.46	17.34	13.81	10.39	5.19
<b>150</b>	35.28	31.82	28.21	24.69	20.99	17.53	13.92	11.34	8.65	4.92
<b>155</b>	27.60	24.89	22.13	19.18	16.43	13.58	10.98	8.94	6.77	4.30
<b>160</b>	20.28	18.21	15.99	14.02	11.90	9.65	8.18	6.69	5.10	3.58
<b>165</b>	13.17	11.96	10.61	9.13	7.52	6.56	5.56	4.52	3.42	2.70
<b>170</b>	7.30	6.45	5.56	5.09	4.57	4.00	3.39	2.75	2.08	1.82
<b>175</b>	3.13	2.94	2.73	2.51	2.27	2.02	1.76	1.49	1.21	1.16
<b>180</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

**Vert. Angles**      **Horizontal Angles**

	<u><b>100</b></u>	<u><b>105</b></u>	<u><b>110</b></u>	<u><b>115</b></u>	<u><b>120</b></u>	<u><b>125</b></u>	<u><b>130</b></u>	<u><b>135</b></u>	<u><b>140</b></u>	<u><b>145</b></u>
<b>0</b>	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
<b>5</b>	0.99	0.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>10</b>	1.44	1.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>15</b>	1.85	1.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>20</b>	2.01	0.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>25</b>	1.71	0.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>30</b>	1.08	0.89	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>35</b>	1.18	0.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>40</b>	1.45	0.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>45</b>	2.31	1.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>50</b>	3.04	1.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>55</b>	3.94	1.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>60</b>	4.88	1.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>65</b>	5.72	1.89	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>70</b>	6.32	1.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>75</b>	7.13	1.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>80</b>	7.34	1.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>85</b>	7.44	0.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>90</b>	7.38	0.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>95</b>	7.50	0.89	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>100</b>	7.41	1.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>105</b>	7.27	1.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>110</b>	6.65	1.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>115</b>	5.95	1.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>120</b>	5.14	1.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>125</b>	4.26	1.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>130</b>	3.21	1.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>135</b>	2.29	0.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : L061911301.IES**

**CANDELA TABULATION - (Cont.)**

<b>140</b>	1.56	0.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>145</b>	1.25	0.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>150</b>	1.22	0.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>155</b>	1.83	0.84	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>160</b>	2.05	0.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>165</b>	1.97	1.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>170</b>	1.55	1.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>175</b>	1.11	1.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>180</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

**Vert. Horizontal Angles**  
**Angles**

	<b><u>150</u></b>	<b><u>155</u></b>	<b><u>160</u></b>	<b><u>165</u></b>	<b><u>170</u></b>	<b><u>175</u></b>	<b><u>180</u></b>
<b>0</b>	0.67	0.67	0.67	0.67	0.67	0.67	0.67
<b>5</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>10</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>15</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>20</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>25</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>30</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>35</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>40</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>45</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>50</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>55</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>60</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>65</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>70</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>75</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>80</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>85</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>90</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>95</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>100</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>105</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>110</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>115</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>120</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>125</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>130</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>135</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>140</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>145</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>150</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>155</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>160</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>165</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>170</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>175</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>180</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00



**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : L061911301.IES**

**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	2.17	N.A.	0.50
0-30	8.65	N.A.	2.00
0-40	22.13	N.A.	5.10
0-60	76.02	N.A.	17.40
0-80	164.12	N.A.	37.70
0-90	215.67	N.A.	49.50
10-90	215.47	N.A.	49.40
20-40	19.97	N.A.	4.60
20-50	42.18	N.A.	9.70
40-70	94.43	N.A.	21.70
60-80	88.10	N.A.	20.20
70-80	47.56	N.A.	10.90
80-90	51.55	N.A.	11.80
90-110	99.92	N.A.	22.90
90-120	141.30	N.A.	32.40
90-130	173.83	N.A.	39.90
90-150	210.88	N.A.	48.40
90-180	220.08	N.A.	50.50
110-180	120.16	N.A.	27.60
0-180	435.75	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	0.20
10-20	1.97
20-30	6.48
30-40	13.49
40-50	22.22
50-60	31.67
60-70	40.55
70-80	47.56
80-90	51.55
90-100	51.76
100-110	48.16
110-120	41.38
120-130	32.53
130-140	22.98
140-150	14.07
150-160	6.85
160-170	2.13
170-180	0.22

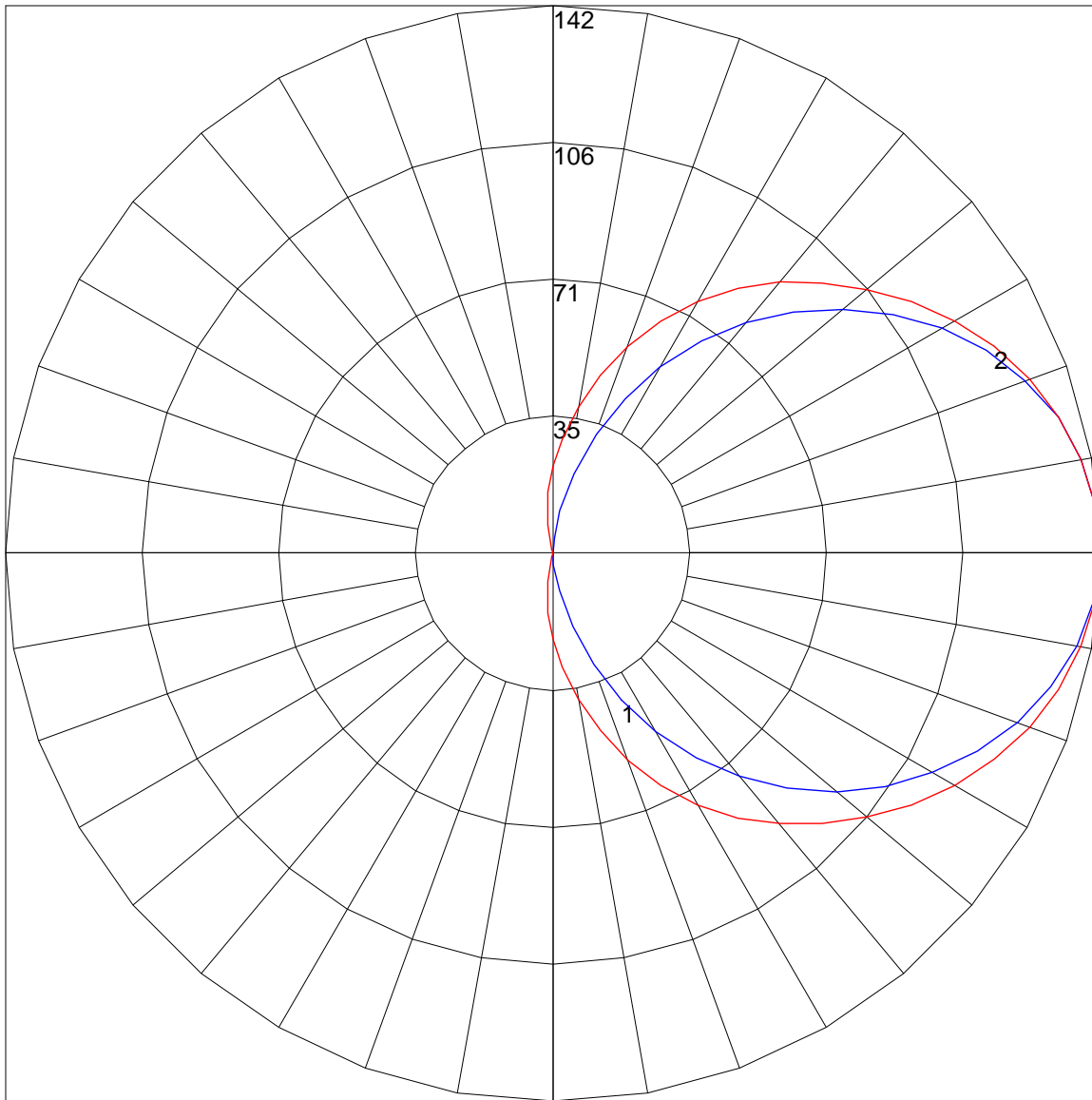
**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : L061911301.IES**

**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	49
1	92	85	78	73	83	77	72	67	64	59	55	51	48	45	40	37	35	29
2	81	71	62	55	73	64	57	50	52	46	41	41	37	33	31	28	25	20
3	72	60	50	43	65	55	46	39	44	38	32	35	30	25	26	22	19	14
4	65	52	42	34	59	47	38	31	38	31	26	30	24	20	22	18	14	10
5	59	45	36	28	54	41	32	26	33	26	21	26	21	16	19	15	12	8
6	54	40	31	24	49	36	28	22	30	23	18	23	18	13	17	13	9	6
7	50	36	27	20	45	33	24	18	26	20	15	21	15	11	15	11	8	5
8	46	32	23	17	42	29	21	16	24	17	13	19	13	10	14	10	7	4
9	43	29	21	15	39	27	19	14	22	15	11	17	12	8	13	9	6	3
10	40	26	18	13	36	24	17	12	20	14	10	16	11	7	12	8	5	3

POLAR GRAPH



Maximum Candela = 141.9 Located At Horizontal Angle = 0, Vertical Angle = 90  
# 1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)  
# 2 - Horizontal Cone Through Vertical Angle (90) (Through Max. Cd.)