



8165 E Kaiser Blvd. Anaheim, CA 92808  
p. 714.282.2270  
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Report No: L021508904

Date: 3/5/2015



NVLAP LAB CODE 200927-0

**Report No:** L021508904

**Report Prepared For:** Prudential Ltg.  
1774 E. 21st Street, Los Angeles, CA 90058

**Model Number:** R1-LED35-SO-04-SAL

**Test:** Electrical and Photometric tests

**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. Catalog number is R1-LED35-SO-04-SAL. Received in working and undamaged condition. No modifications were necessary.

**Testing Condition:** Fixture is tested with no special conditions.

**Sample Arrival Date:** 2/23/15

**Date of Tests:** 3/3/15 - 3/5/15

**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	11/10/15
Xitron Power Analysis System	2503AH	MT-EL01	10/20/15
BK Precision DC Power Supply	1747	PSDC-04	01/08/16
Fluke Digital Thermometer	52k/J	MT-TP02-GC	01/05/16
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

<b>Manufacturer:</b>	Prudential Ltg.
<b>Model Number:</b>	R1-LED35-SO-04-SAL
<b>Driver Model Number:</b>	OSRAM OPTPTRONIC OT50W/PRG1400C/UNV/DIM/L
<b>Total Lumens:</b>	3578.28
<b>Input Voltage (VAC/60Hz):</b>	120.00
<b>Input Current (Amp):</b>	0.29
<b>Input Power (W):</b>	34.88
<b>Input Power Factor:</b>	0.99
<b>Current ATHD @ 120V(%):</b>	8%
<b>Current ATHD @ 277V(%):</b>	N/A
<b>Efficacy:</b>	103
<b>Ambient Temperature (°C):</b>	25.0
<b>Stabilization Time (Hours):</b>	0:35
<b>Total Operating Time (Hours):</b>	2:10
<b>Off State Power(W):</b>	0.00

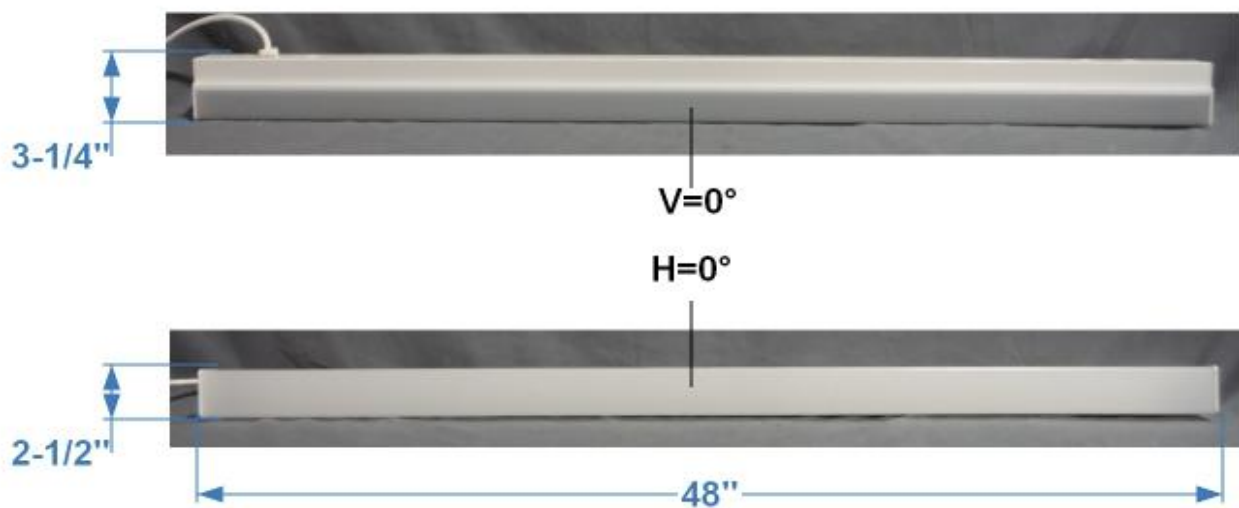


FIG.1 LUMINAIRE



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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 : 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.*



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## Photometric Test Report

### IES INDOOR REPORT

PHOTOMETRIC FILENAME : L021508904.IES

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002  
[TEST] L021508904  
[TESTLAB] LIGHT LABORATORY, INC.  
[ISSUE DATE] 3/5/2015  
[MANUFAC] PRUDENTIAL LTG.  
[LUMCAT] R1-LED35-SO-04-SAL  
[LUMINAIRE] 2-1/2"L. X 48"W. X 3-1/4"H. LINEAR DIRECT LUMINAIRE  
[MORE] DIFFUSED LENS  
[BALLASTCAT] OSRAM OPTPTRONIC OT50W/PRG1400C/UNV/DIM/L  
[BALLAST] INPUT: 120-277VAC, 0.52-0.24A, 50/60Hz OUTPUT: 10-55VDC, 400-1400mA, 50W  
[LAMPPOSITION] 0,0  
[LAMPCAT] N/A  
[OTHER] INDICATING THE CANDELA VALUES ARE ABSOLUTE AND  
[MORE] SHOULD NOT BE FACTORED FOR DIFFERENT LAMP RATINGS.  
[INPUT] 120VAC, 34.88W  
[TEST PROCEDURE] IESNA:LM-79-08

### CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	3578
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	103
Total Luminaire Watts	34.88
Ballast Factor	1.00
CIE Type	Semi-Direct
Spacing Criterion (0-180)	1.34
Spacing Criterion (90-270)	1.18
Spacing Criterion (Diagonal)	1.40
Basic Luminous Shape	Rectangular w/Sides
Luminous Length (0-180)	0.21 ft
Luminous Width (90-270)	3.98 ft
Luminous Height	0.13 ft

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : L021508904.IES**

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

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	7774	7757	9076
55	7233	6978	8130
65	6714	6229	7049
75	6146	5481	5611
85	5674	4899	3443

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : L021508904.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>	907.14	907.14	907.14	907.14	907.14	907.14	907.14	907.14	907.14	907.14
<b>5</b>	908.57	908.53	908.44	908.19	907.94	907.51	907.05	906.50	905.87	905.20
<b>10</b>	904.18	904.06	903.72	903.17	902.37	901.49	900.43	899.04	897.57	896.01
<b>15</b>	890.70	890.57	889.94	889.05	887.83	886.14	884.21	882.10	879.53	876.87
<b>20</b>	868.95	868.65	867.77	866.46	864.73	862.46	859.80	856.68	853.14	849.64
<b>25</b>	840.62	840.20	839.06	837.17	834.68	831.48	828.06	823.89	818.50	813.02
<b>30</b>	806.90	806.48	804.92	802.52	799.15	795.31	790.30	784.14	777.78	770.78
<b>35</b>	770.15	769.48	767.45	764.29	760.33	754.89	748.15	740.73	732.51	723.87
<b>40</b>	731.54	730.70	728.17	724.12	719.02	711.77	703.68	694.49	684.80	674.35
<b>45</b>	691.75	690.74	687.54	682.82	676.20	667.81	658.03	646.74	635.15	622.75
<b>50</b>	650.62	649.52	645.77	639.95	632.11	622.29	610.74	597.80	583.89	569.52
<b>55</b>	607.54	606.15	601.93	595.32	586.30	575.34	562.14	547.56	532.05	515.78
<b>60</b>	561.76	560.37	555.70	548.53	538.58	526.53	512.58	496.56	479.45	461.53
<b>65</b>	513.29	511.65	507.06	499.43	489.06	476.24	461.28	444.38	426.04	406.78
<b>70</b>	462.12	460.61	455.68	447.92	437.30	424.11	408.51	391.19	372.26	352.37
<b>75</b>	409.27	407.67	402.99	395.32	384.74	371.33	356.03	338.84	319.87	299.89
<b>80</b>	357.26	355.74	351.19	343.98	334.24	322.10	306.97	289.86	271.31	251.46
<b>85</b>	310.39	309.00	304.82	298.08	288.60	276.41	262.29	245.69	227.23	207.96
<b>90</b>	268.32	267.18	263.48	257.36	248.60	237.43	224.36	208.89	191.61	173.44
<b>95</b>	244.13	243.16	239.83	234.43	226.55	216.77	205.10	191.23	175.64	159.07
<b>100</b>	223.90	222.89	220.02	215.17	208.30	199.53	189.17	176.65	162.57	147.52
<b>105</b>	205.27	204.34	201.85	197.51	191.40	183.60	174.25	163.08	150.30	136.61
<b>110</b>	188.24	187.48	185.20	181.33	175.76	168.81	160.42	150.26	138.67	126.20
<b>115</b>	172.56	171.88	169.90	166.32	161.35	155.03	147.40	138.17	127.59	116.33
<b>120</b>	157.98	157.39	155.49	152.33	147.73	141.92	135.05	126.66	117.05	106.68
<b>125</b>	144.15	143.56	141.79	138.88	134.71	129.40	123.12	115.62	106.76	97.32
<b>130</b>	130.75	130.16	128.51	125.90	122.11	117.22	111.49	104.66	96.65	87.76
<b>135</b>	117.34	116.88	115.36	112.92	109.46	105.12	99.89	93.66	84.55	75.32
<b>140</b>	103.94	103.52	102.17	99.98	96.86	92.98	87.76	79.66	71.57	63.94
<b>145</b>	90.45	89.95	88.81	86.95	84.13	79.75	72.79	66.13	59.73	53.61
<b>150</b>	76.54	76.29	75.28	73.55	70.39	64.24	58.97	53.87	49.40	45.52
<b>155</b>	62.63	62.38	61.54	60.02	54.50	50.03	46.24	43.54	40.80	37.56
<b>160</b>	48.56	48.30	47.67	43.67	40.00	37.26	35.95	34.60	32.67	29.63
<b>165</b>	35.32	35.20	32.75	29.93	28.24	27.86	27.27	26.18	24.11	22.55
<b>170</b>	23.86	23.10	20.27	19.22	19.56	19.68	19.39	18.84	18.17	17.45
<b>175</b>	13.83	11.84	12.14	12.86	13.40	13.57	13.57	13.36	13.11	12.90
<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>
<b>0</b>	907.14	907.14	907.14	907.14	907.14	907.14	907.14	907.14	907.14
<b>5</b>	904.61	903.89	903.30	902.67	902.16	901.78	901.40	901.45	901.40
<b>10</b>	894.32	892.55	890.65	888.84	887.07	885.39	884.16	883.53	883.36
<b>15</b>	874.01	871.01	868.02	864.99	862.29	859.55	856.98	855.25	854.95
<b>20</b>	845.26	840.46	835.78	831.01	826.59	822.16	818.28	815.46	814.74
<b>25</b>	807.16	801.05	794.89	788.36	782.25	776.35	771.12	766.69	765.18
<b>30</b>	763.24	755.31	747.31	739.04	731.25	723.70	717.00	711.27	709.03
<b>35</b>	714.47	704.78	694.87	685.14	675.44	666.08	657.74	650.78	647.66
<b>40</b>	662.97	651.25	639.36	627.05	615.59	604.38	594.56	586.25	582.33
<b>45</b>	608.97	595.32	581.45	567.24	553.76	540.73	529.14	519.74	515.06
<b>50</b>	554.05	538.46	522.61	506.72	491.54	476.83	463.73	452.94	447.03
<b>55</b>	498.75	481.34	463.73	445.73	428.83	412.56	397.64	386.04	379.34
<b>60</b>	442.82	423.89	404.72	385.08	366.66	348.95	333.02	320.38	312.92

IES INDOOR REPORT  
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CANDELA TABULATION - (Cont.)

65	386.97	366.70	346.34	325.60	305.92	286.61	269.42	255.97	247.75
70	332.01	310.85	289.44	267.39	246.74	226.38	208.43	193.93	185.20
75	278.44	256.73	234.73	211.93	190.47	169.52	150.94	135.85	126.62
80	229.67	207.80	185.46	162.49	140.61	119.24	99.35	84.26	74.60
85	187.02	165.39	143.43	121.14	98.92	77.89	57.96	42.36	32.03
90	153.47	132.81	111.57	90.03	68.83	47.97	28.66	12.98	1.26
95	140.82	121.90	102.25	82.15	62.13	42.70	25.25	11.25	0.00
100	130.75	113.26	95.09	76.37	57.70	39.71	23.56	10.71	0.00
105	121.22	105.16	88.64	71.06	53.99	36.84	22.26	10.12	0.00
110	112.41	97.45	82.23	66.01	50.28	34.56	21.08	9.65	0.00
115	103.69	89.99	76.04	61.12	46.74	32.37	19.85	9.61	0.00
120	95.17	82.70	69.93	56.35	43.25	30.18	18.59	9.15	0.00
125	86.74	75.45	63.31	50.58	38.61	26.77	16.90	8.51	0.00
130	76.71	65.80	54.96	44.00	33.80	23.52	15.09	8.09	0.00
135	65.84	56.61	47.50	38.23	29.38	21.08	14.04	7.92	0.00
140	56.14	48.43	41.14	32.88	25.67	18.55	12.81	7.76	0.00
145	47.92	42.23	34.98	28.03	22.09	16.61	11.84	7.67	0.00
150	40.97	35.20	29.46	24.32	19.47	15.34	11.47	0.00	0.00
155	33.42	28.91	24.95	20.99	17.58	14.25	11.17	0.00	0.00
160	26.39	23.56	20.86	18.34	15.76	13.36	10.87	0.00	0.00
165	20.86	19.22	17.53	15.72	13.99	12.27	10.66	0.00	0.00
170	16.57	15.68	14.67	13.61	12.56	11.55	10.92	0.00	0.00
175	12.60	12.35	12.01	11.68	11.47	11.17	0.00	0.00	0.00
180	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : L021508904.IES**

**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	332.88	N.A.	9.30
0-30	705.63	N.A.	19.70
0-40	1155.11	N.A.	32.30
0-60	2084.4	N.A.	58.30
0-80	2782.71	N.A.	77.80
0-90	2996.23	N.A.	83.70
10-90	2910.17	N.A.	81.30
20-40	822.23	N.A.	23.00
20-50	1297.31	N.A.	36.30
40-70	1322.79	N.A.	37.00
60-80	698.31	N.A.	19.50
70-80	304.81	N.A.	8.50
80-90	213.52	N.A.	6.00
90-110	288.95	N.A.	8.10
90-120	392.79	N.A.	11.00
90-130	471.12	N.A.	13.20
90-150	558.07	N.A.	15.60
90-180	582.05	N.A.	16.30
110-180	293.10	N.A.	8.20
0-180	3578.28	N.A.	100.00

Total Luminaire Efficiency = N.A.%

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	86.06
10-20	246.82
20-30	372.75
30-40	449.48
40-50	475.09
50-60	454.20
60-70	393.50
70-80	304.81
80-90	213.52
90-100	158.52
100-110	130.43
110-120	103.84
120-130	78.33
130-140	54.04
140-150	32.91
150-160	16.65
160-170	6.24
170-180	1.08



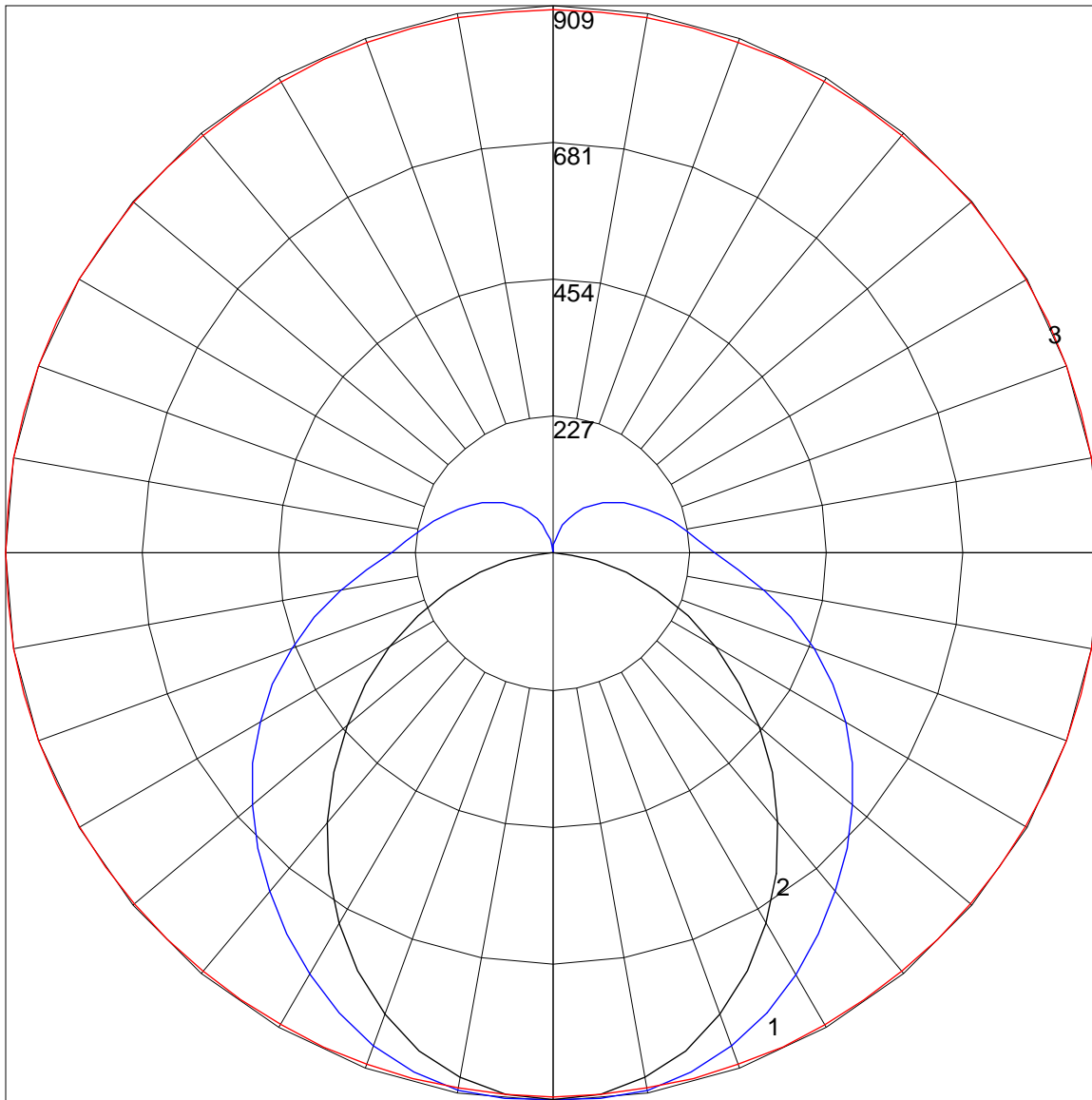
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**COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD**

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	115	115	115	115	111	111	111	111	102	102	102	94	94	94	87	87	87	84
1	103	97	92	88	98	93	89	85	86	82	79	79	76	74	73	71	69	65
2	93	84	76	70	89	80	74	68	74	69	64	68	64	60	63	59	56	53
3	84	73	64	57	80	70	62	56	65	58	53	60	54	50	55	51	47	44
4	77	64	55	48	73	62	53	47	57	50	44	53	47	42	49	44	40	37
5	70	57	48	41	67	55	46	40	51	44	38	47	41	36	44	39	34	32
6	65	51	42	36	62	49	41	35	46	39	33	43	36	32	40	34	30	28
7	60	46	37	31	57	45	36	31	42	34	29	39	33	28	36	31	27	24
8	56	42	34	28	53	41	33	27	38	31	26	36	29	25	33	28	24	22
9	52	39	30	25	50	37	30	24	35	28	23	33	27	22	31	25	21	19
10	49	36	28	22	47	34	27	22	32	26	21	30	24	20	28	23	19	18

POLAR GRAPH



Maximum Candela = 908.57 Located At Horizontal Angle = 0, Vertical Angle = 5

# 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 (5) (Through Max. Cd.)