



8165 E Kaiser Blvd. Anaheim, CA 92808
p. 714.282.2270
f. 714.676.5558

Report No: L021508903

Date: 3/5/2015



NVLAP LAB CODE 200927-0

Report No: L021508903

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

Model Number: R1-LED35-MO-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-MO-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

Manufacturer:	Prudential Ltg.
Model Number:	R1-LED35-MO-04-SAL
Driver Model Number:	OSRAM OPTPTRONIC OT30W/PRG1050C/UNV/DIM/L
Total Lumens:	2479.84
Input Voltage (VAC/60Hz):	120.00
Input Current (Amp):	0.18
Input Power (W):	21.77
Input Power Factor:	0.99
Current ATHD @ 120V(%):	5%
Current ATHD @ 277V(%):	N/A
Efficacy:	114
Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	0:30
Total Operating Time (Hours):	2:10
Off State Power(W):	0.00

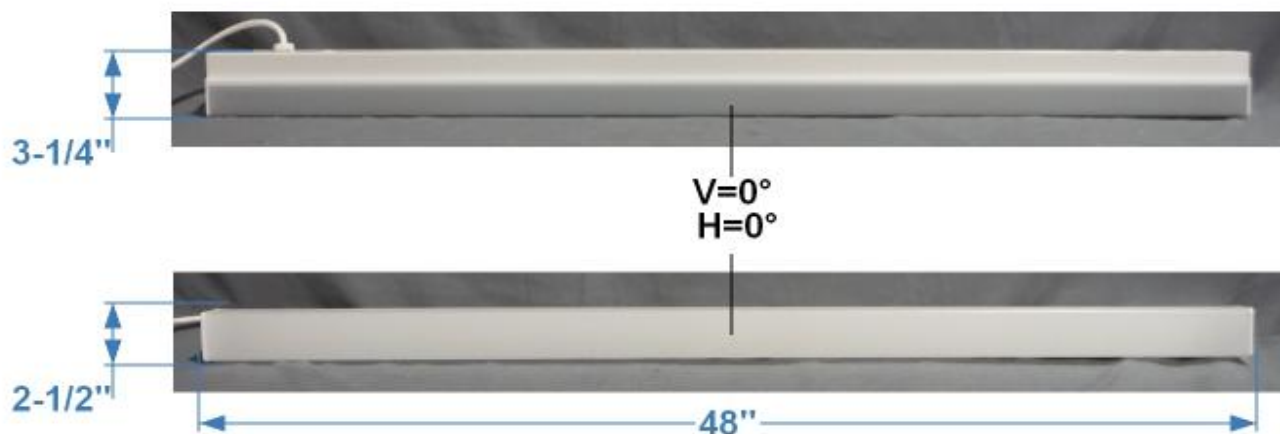


FIG.1 LUMINAIRE



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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 : L021508903.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] L021508903
[TESTLAB] LIGHT LABORATORY, INC.
[ISSUEDATE] 3/5/2015
[MANUFAC] PRUDENTIAL LTG.
[LUMCAT] R1-LED35-MO-04-SAL
[LUMINAIRE] 2-1/2"L. X 48"W. X 3-1/4"H. LINEAR DIRECT LUMIANIRE
[MORE] DIFFUSED LENS
[BALLASTCAT] OSRAM OPTPTRONIC OT30W/PRG1050C/UNV/DIM/L
[BALLAST] INPUT: 120-277VAC, 0.31-0.15A, 50/60Hz OUTPUT: 10-55VDC, 350-1050mA, 30W
[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, 21.77W
[TEST PROCEDURE] IESNA:LM-79-08

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	2480
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	114
Total Luminaire Watts	21.77
Ballast Factor	1.00
CIE Type	Semi-Direct
Spacing Criterion (0-180)	1.32
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 : L021508903.IES

LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	5389	5373	6292
55	5009	4831	5637
65	4648	4311	4886
75	4275	3803	3900
85	3922	3382	2365

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L021508903.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	632.15	632.15	632.15	632.15	632.15	632.15	632.15	632.15	632.15	632.15
5	633.00	632.91	632.79	632.74	632.53	632.28	632.03	631.56	631.10	630.81
10	629.37	629.33	629.08	628.74	628.23	627.52	626.80	625.83	624.86	623.68
15	619.68	619.59	619.13	618.54	617.65	616.52	615.21	613.69	611.88	609.90
20	604.08	603.91	603.41	602.40	601.09	599.45	597.51	595.15	592.79	590.22
25	583.68	583.47	582.67	581.45	579.59	577.44	574.96	572.09	568.42	564.55
30	560.08	559.74	558.73	557.09	554.68	551.99	548.78	544.36	539.76	535.13
35	534.28	533.86	532.43	530.24	527.41	523.91	519.24	514.18	508.78	502.50
40	507.22	506.72	505.16	502.42	498.58	493.95	488.43	481.98	474.90	467.48
45	479.49	478.73	476.67	473.29	468.53	462.92	456.81	448.38	440.04	431.36
50	450.74	449.94	447.50	443.45	438.01	431.06	423.68	414.24	404.51	394.52
55	420.73	419.72	417.07	412.43	406.23	398.31	389.63	379.26	368.26	357.09
60	388.95	387.94	384.78	379.85	373.02	364.38	354.81	343.73	331.84	319.58
65	355.32	354.18	350.98	345.71	338.46	329.61	319.32	307.52	294.67	281.56
70	319.91	318.77	315.49	310.13	302.80	293.40	282.70	270.72	257.70	243.75
75	284.68	283.58	280.29	275.07	267.73	258.42	247.80	235.45	221.96	208.09
80	248.34	247.29	244.30	239.32	232.03	223.14	212.81	200.71	187.48	173.66
85	214.54	213.57	210.75	205.98	199.32	190.98	181.16	169.69	156.92	143.56
90	185.63	184.78	182.17	177.87	171.84	164.09	155.07	144.57	132.39	119.79
95	168.77	167.97	165.65	161.90	156.50	149.71	141.71	132.18	121.26	109.80
100	154.60	153.97	151.95	148.62	143.81	137.74	130.58	122.06	112.16	101.71
105	141.71	141.16	139.35	136.40	132.14	126.74	120.25	112.67	103.69	94.20
110	129.99	129.48	127.88	125.18	121.43	116.54	110.77	103.81	95.72	87.04
115	119.11	118.69	117.22	114.81	111.36	106.98	101.71	95.43	88.05	80.21
120	109.08	108.62	107.35	105.12	101.96	97.96	93.11	87.33	80.76	73.59
125	99.56	99.09	97.91	95.85	92.98	89.31	84.93	79.66	73.68	67.19
130	90.20	89.82	88.64	86.87	84.21	80.84	76.88	72.12	66.64	60.48
135	80.93	80.59	79.58	77.93	75.49	72.41	68.87	64.49	58.29	51.93
140	71.57	71.32	70.43	68.96	66.81	64.07	60.48	54.79	49.44	44.21
145	62.30	62.04	61.16	59.85	57.96	54.92	50.20	45.73	41.35	37.26
150	52.77	52.52	51.84	50.66	48.51	44.38	40.84	37.47	34.44	31.65
155	43.16	42.91	42.36	41.26	37.72	34.90	32.33	30.52	28.62	26.34
160	33.64	33.55	33.05	30.43	28.16	26.30	25.33	24.15	22.51	20.36
165	24.11	24.03	22.42	20.65	19.52	19.22	18.67	17.75	16.23	15.05
170	15.60	15.13	13.49	12.90	13.02	13.07	12.90	12.48	12.10	11.63
175	9.19	8.18	8.35	8.77	9.02	9.10	9.06	8.98	8.73	8.51
180	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>
0	632.15	632.15	632.15	632.15	632.15	632.15	632.15	632.15	632.15
5	630.22	629.75	629.25	628.74	628.19	627.85	627.35	627.18	627.18
10	622.50	621.36	620.14	618.92	617.65	616.47	615.46	614.87	614.62
15	607.96	605.90	603.91	601.81	599.91	597.80	596.03	594.68	594.14
20	587.35	584.19	580.86	577.61	574.41	571.46	568.68	566.49	565.56
25	560.42	556.20	552.20	548.28	544.48	539.97	536.05	532.85	531.42
30	530.36	524.42	518.90	513.34	508.02	502.88	498.25	494.33	492.30
35	495.89	489.27	482.44	475.70	468.95	462.55	456.86	452.13	449.48
40	459.76	451.63	443.41	435.19	427.18	419.60	412.85	407.12	403.71
45	422.08	412.47	403.12	393.38	384.23	375.42	367.50	361.09	357.09
50	383.94	373.06	361.98	351.36	340.95	330.96	321.94	314.64	310.13
55	345.29	333.36	321.18	309.16	297.36	286.11	276.16	267.94	263.01
60	306.34	293.40	280.12	266.97	254.33	241.98	230.85	222.13	216.73

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CANDELA TABULATION - (Cont.)

65	267.69	253.65	239.62	225.50	211.80	198.90	186.72	177.41	171.72
70	229.21	214.67	199.87	184.91	170.66	157.13	144.49	134.67	128.39
75	192.96	178.08	162.91	147.52	132.69	118.23	105.08	94.67	88.01
80	158.73	143.64	128.18	112.71	97.58	82.57	69.25	58.59	51.51
85	128.98	114.14	99.18	83.54	68.45	53.28	40.13	29.21	22.00
90	106.05	91.80	77.34	62.17	47.54	32.71	19.77	8.89	0.67
95	97.15	84.00	70.64	56.56	42.99	29.25	17.32	7.59	0.00
100	90.16	78.06	65.71	52.64	39.96	27.14	16.19	7.25	0.00
105	83.62	72.45	61.07	48.98	37.22	25.37	15.26	6.83	0.00
110	77.34	67.14	56.65	45.48	34.60	23.77	14.42	6.49	0.00
115	71.36	62.04	52.39	42.07	32.16	22.21	13.70	6.11	0.00
120	65.63	56.94	48.13	38.74	29.76	20.74	12.94	5.77	0.00
125	59.77	51.97	43.71	34.86	26.55	18.76	11.59	5.44	0.00
130	52.90	45.35	37.81	30.43	23.31	16.61	10.24	5.40	0.00
135	45.52	39.07	32.83	26.51	20.57	14.63	9.27	5.27	0.00
140	38.90	33.64	28.62	23.01	17.83	12.77	8.43	5.18	0.00
145	33.30	29.46	24.32	19.64	15.22	11.09	7.92	5.10	0.00
150	28.62	24.74	20.49	16.78	13.11	10.12	7.71	0.00	0.00
155	23.22	19.98	16.94	14.12	11.55	9.57	7.50	0.00	0.00
160	18.08	15.85	13.91	12.06	10.54	8.98	7.25	0.00	0.00
165	13.87	12.69	11.63	10.50	9.44	8.22	7.04	0.00	0.00
170	11.13	10.50	9.82	9.06	8.39	7.67	7.12	0.00	0.00
175	8.35	8.09	7.84	7.55	7.38	7.21	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 : L021508903.IES

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	231.61	N.A.	9.30
0-30	490.55	N.A.	19.80
0-40	802.54	N.A.	32.40
0-60	1446.7	N.A.	58.30
0-80	1930.63	N.A.	77.90
0-90	2078.29	N.A.	83.80
10-90	2018.36	N.A.	81.40
20-40	570.93	N.A.	23.00
20-50	900.38	N.A.	36.30
40-70	916.57	N.A.	37.00
60-80	483.93	N.A.	19.50
70-80	211.52	N.A.	8.50
80-90	147.66	N.A.	6.00
90-110	199.46	N.A.	8.00
90-120	271.07	N.A.	10.90
90-130	325.09	N.A.	13.10
90-150	385.08	N.A.	15.50
90-180	401.54	N.A.	16.20
110-180	202.09	N.A.	8.10
0-180	2479.84	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	59.93
10-20	171.68
20-30	258.94
30-40	311.99
40-50	329.45
50-60	314.71
60-70	272.41
70-80	211.52
80-90	147.66
90-100	109.46
100-110	90.00
110-120	71.61
120-130	54.02
130-140	37.27
140-150	22.72
150-160	11.50
160-170	4.25
170-180	0.72

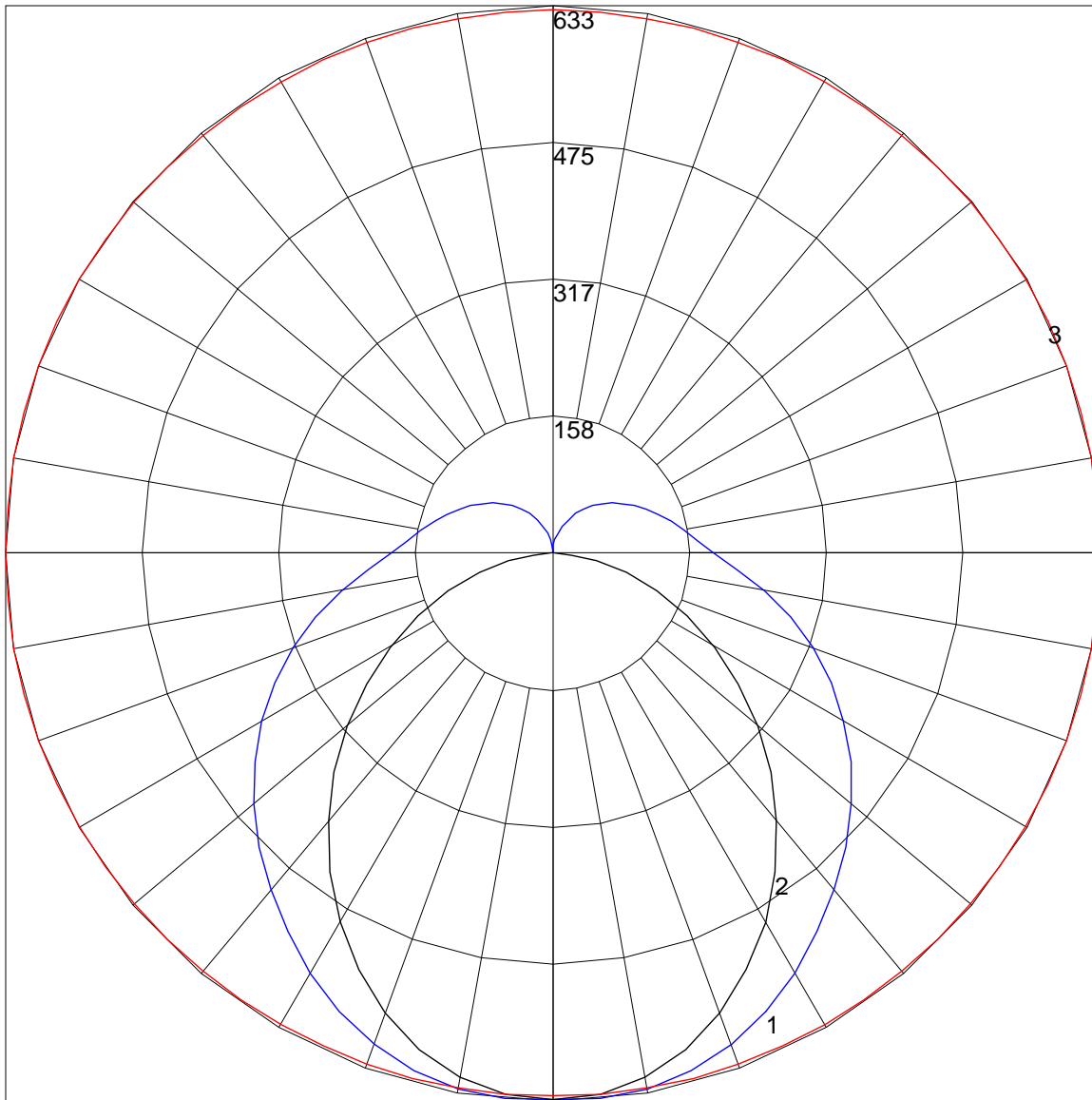
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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

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	66
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	29	23	19	18

POLAR GRAPH



Maximum Candela = 633 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.)