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Report No: L011501402

Date: 1/14/2015



NVLAP LAB CODE 200927-0

Report No: L011501402

Report Prepared For: Primus Lighting Inc.
 3570 Lexington Ave. El Monte, CA. 91731

Model Number: ALX3-SQL-LED-M-35K-UNV-SM-SEK-S-4'

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 ALX3-SQL-LED-M-35K-UNV-SM-SEK-S-4'. Received in working and undamaged condition. No modifications were necessary.

Testing Condition: Fixture is tested with no special conditions.

Sample Arrival Date: 12/20/14

Date of Tests: 1/7/15 - 1/14/15

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:	Primus Lighting Inc.
Model Number:	ALX3-SQL-LED-M-35K-UNV-SM-SEK-S-4'
Driver Model Number:	OSRAM OPTOTRONIC OT50W/PRG1400C/UNV/DIM/L
Total Lumens:	3073.79
Input Voltage (VAC/60Hz):	120.00
Input Current (Amp):	0.26
Input Power (W):	30.90
Input Power Factor:	0.99
Current ATHD @ 120V(%):	8%
Current ATHD @ 277V(%):	N/A
Efficacy:	99
Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	0:30
Total Operating Time (Hours):	2:05
Off State Power(W):	0.00

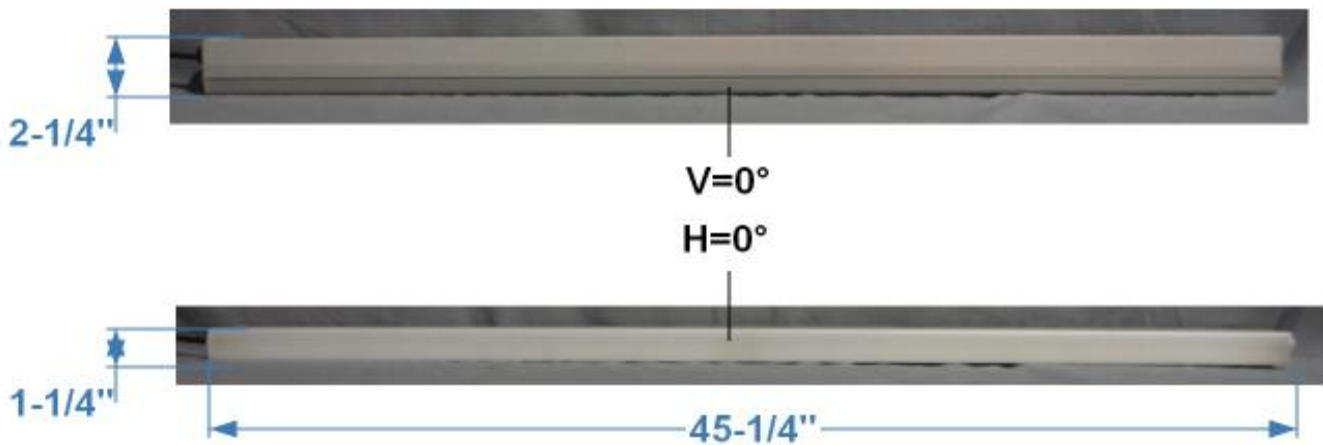


FIG.1 LUMINAIRE

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

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*



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Photometric Test Report

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L011501402.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
 [TEST] L011501402
 [TESTLAB] LIGHT LABORATORY, INC.
 [ISSUEDATE] 1/14/2015
 [MANUFAC] PRIMUS LIGHTING INC.
 [LUMCAT] ALX3-SQL-LED-M-35K-UNV-SM-SEK-S-4'
 [LUMINAIRE] 1-1/4"L. X 45-1/4"W. X 2-1/2"H. LED SUSPENDED LINEAR MOUNT FIXTURE
 [MORE] DIFFUSED LENS
 [BALLASTCAT] OSRAM OPTOTRONIC OT50W/PRG1400C/UNV/DIM/L
 [BALLAST] INPUT: 120-277VAC, 0.52-024A, 50/60HZ. OUTPUT: 400-1400mA, 10-55VDC, 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, 30.90W
 [TEST PROCEDURE] IESNA:LM-79-08

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	3074
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	99
Total Luminaire Watts	30.9
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.24
Spacing Criterion (90-270)	1.18
Spacing Criterion (Diagonal)	1.32
Basic Luminous Shape	Rectangular w/Sides
Luminous Length (0-180)	0.10 ft
Luminous Width (90-270)	3.75 ft
Luminous Height	0.06 ft

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LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	15994	17013	21311
55	13255	14245	18160
65	10855	11825	14981
75	9039	9968	11978
85	7996	8972	9074

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CANDELA TABULATION

	0	5	10	15	20	25	30	35	40	45
0	996.07	996.07	996.07	996.07	996.07	996.07	996.07	996.07	996.07	996.07
5	991.10	990.76	990.81	991.06	991.06	990.85	990.60	990.56	990.56	990.18
10	976.17	976.21	976.13	976.05	975.63	975.29	975.04	974.54	973.99	973.41
15	952.52	952.36	952.02	951.89	950.80	950.22	949.34	948.37	947.16	945.60
20	918.64	918.60	918.06	917.51	916.50	915.20	913.69	911.89	909.84	907.61
25	875.96	875.54	874.87	874.11	872.73	871.13	868.70	866.31	863.29	860.06
30	824.13	824.00	823.33	822.16	820.61	818.34	815.49	812.35	808.57	804.17
35	764.84	764.50	763.87	762.66	760.85	758.38	755.32	751.25	746.51	741.23
40	699.59	699.46	698.75	697.58	695.61	692.88	689.49	685.00	679.55	673.17
45	630.99	630.86	630.19	629.02	627.13	624.45	620.80	615.73	609.52	602.22
50	560.88	560.71	560.25	559.20	557.44	554.97	551.15	545.83	539.08	531.07
55	492.28	492.20	491.82	491.06	489.51	487.04	483.52	478.11	470.98	462.17
60	426.61	426.49	426.32	425.65	424.43	422.21	418.69	413.32	406.11	396.97
65	365.81	365.86	365.69	365.23	364.18	362.25	359.06	353.65	346.19	337.05
70	311.64	311.72	311.68	311.34	310.42	308.41	305.26	300.06	292.85	283.42
75	264.25	264.13	264.05	263.79	262.87	261.03	257.88	252.85	245.60	236.20
80	224.75	224.71	224.67	224.25	223.33	221.40	218.34	213.35	206.22	196.95
85	190.96	190.92	190.71	190.20	189.15	187.14	183.96	179.01	172.05	163.03
90	163.12	163.03	162.82	162.11	160.89	158.71	155.53	150.62	143.74	135.15
95	140.14	140.05	139.68	138.79	137.33	135.02	131.67	126.80	120.18	111.96
100	121.85	121.64	121.10	120.14	118.50	115.98	112.50	107.64	101.22	93.47
105	106.84	106.72	105.96	104.83	102.99	100.30	96.78	91.96	85.79	78.58
110	94.18	93.93	93.21	91.91	89.94	87.13	83.65	78.96	73.17	66.59
115	83.19	82.94	82.10	80.80	78.71	75.98	72.50	68.01	62.69	56.52
120	73.21	72.92	72.08	70.74	68.73	65.96	62.65	58.41	53.51	48.10
125	63.74	63.49	62.65	61.35	59.33	56.78	53.63	49.77	45.50	40.63
130	54.60	54.39	53.59	52.33	50.53	48.18	45.33	42.06	38.33	34.34
135	46.04	45.75	45.12	43.99	42.35	40.30	37.95	35.14	31.70	28.01
140	38.07	37.86	37.28	36.31	34.97	33.34	31.32	28.43	25.45	22.56
145	31.03	30.90	30.44	29.69	28.56	27.17	24.82	22.56	20.38	18.20
150	24.99	24.87	24.53	23.94	22.94	21.13	19.50	17.95	16.35	14.80
155	19.88	19.79	19.54	19.00	17.53	16.23	15.14	14.30	13.50	12.50
160	15.52	15.52	15.26	14.34	13.42	12.66	12.12	11.66	10.82	9.94
165	11.74	11.66	11.03	10.53	10.06	9.73	9.44	9.10	8.60	8.18
170	8.55	8.26	7.80	7.55	7.55	7.55	7.46	7.34	7.09	6.96
175	6.63	6.29	6.29	6.29	6.37	6.37	6.46	6.42	6.33	6.33
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**

	50	55	60	65	70	75	80	85	90
0	996.07	996.07	996.07	996.07	996.07	996.07	996.07	996.07	996.07
5	990.30	990.26	990.09	989.84	990.09	989.63	989.80	989.93	989.93
10	973.07	972.40	972.19	971.60	971.22	970.93	970.85	970.68	970.47
15	944.47	943.13	942.17	941.29	940.24	939.40	939.06	938.39	938.10
20	905.69	903.25	900.99	899.10	897.34	895.96	894.95	894.41	894.15
25	856.79	853.44	850.08	846.81	843.96	841.66	839.68	838.64	838.47
30	799.47	794.65	789.74	784.92	780.56	777.08	774.40	772.76	772.22
35	735.02	728.65	722.07	715.52	709.65	704.62	700.64	698.29	697.41
40	665.96	657.83	649.78	641.35	633.76	626.84	621.64	618.28	617.24
45	593.84	584.24	574.47	564.28	554.72	546.04	539.41	535.34	533.88
50	521.55	510.69	499.41	487.71	476.43	466.32	458.19	453.03	451.27
55	451.69	439.53	426.61	413.45	400.83	389.09	379.69	373.53	371.52
60	385.69	372.52	358.52	343.93	330.17	317.13	306.35	299.27	296.63

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CANDELA TABULATION - (Cont.)

65	325.43	311.85	296.50	281.07	265.72	251.47	239.51	231.30	228.36
70	271.17	257.42	241.82	225.30	208.70	193.14	180.06	170.91	167.48
75	223.92	210.08	194.23	177.20	160.26	143.32	128.82	118.75	114.56
80	184.84	170.96	155.06	137.70	120.05	102.31	86.63	75.14	70.19
85	151.42	137.83	122.27	105.25	87.43	69.73	53.04	39.46	32.62
90	123.91	111.16	96.28	80.51	63.57	46.67	30.23	15.22	1.93
95	101.64	89.78	76.27	61.77	46.80	31.91	18.16	6.88	1.01
100	83.95	72.92	61.10	48.18	35.60	23.44	12.75	5.03	0.00
105	69.90	60.26	49.61	38.75	28.18	18.28	10.15	4.19	0.00
110	58.62	50.23	40.97	31.95	23.06	15.14	8.72	3.73	0.00
115	49.65	42.14	34.38	26.63	19.54	13.04	7.67	3.56	0.00
120	41.85	35.52	28.98	22.60	16.82	11.36	6.79	3.61	0.00
125	35.35	30.02	24.57	19.21	14.43	9.94	6.08	3.65	0.00
130	29.65	24.91	20.38	16.10	12.16	8.51	5.66	3.69	0.00
135	24.07	20.51	16.94	13.42	10.32	7.59	5.45	3.86	0.00
140	19.67	16.90	14.01	11.41	8.93	6.84	5.20	4.07	0.00
145	16.14	14.09	11.91	9.60	7.88	6.37	5.07	4.28	0.00
150	13.59	11.70	9.90	8.47	7.09	6.00	5.12	4.53	0.00
155	11.03	9.69	8.68	7.55	6.63	5.91	5.28	4.82	0.00
160	9.23	8.47	7.67	7.00	6.46	5.87	5.41	5.12	0.00
165	7.72	7.34	6.96	6.54	6.25	5.83	5.58	5.28	0.00
170	6.88	6.67	6.46	6.29	6.00	5.83	5.66	5.37	0.00
175	6.25	6.21	6.12	5.95	5.95	5.75	5.54	5.28	0.00
180	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

IES INDOOR REPORT
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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	360.53	N.A.	11.70
0-30	755.76	N.A.	24.60
0-40	1216.04	N.A.	39.60
0-60	2074.86	N.A.	67.50
0-80	2619.74	N.A.	85.20
0-90	2774.63	N.A.	90.30
10-90	2680.62	N.A.	87.20
20-40	855.51	N.A.	27.80
20-50	1313.06	N.A.	42.70
40-70	1175.27	N.A.	38.20
60-80	544.88	N.A.	17.70
70-80	228.43	N.A.	7.40
80-90	154.88	N.A.	5.00
90-110	175.11	N.A.	5.70
90-120	224.98	N.A.	7.30
90-130	258.47	N.A.	8.40
90-150	290.58	N.A.	9.50
90-180	299.16	N.A.	9.70
110-180	124.05	N.A.	4.00
0-180	3073.79	N.A.	100.00

Total Luminaire Efficiency = N.A.%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	94.00
10-20	266.53
20-30	395.23
30-40	460.28
40-50	457.55
50-60	401.27
60-70	316.45
70-80	228.43
80-90	154.88
90-100	103.53
100-110	71.58
110-120	49.87
120-130	33.49
130-140	20.65
140-150	11.46
150-160	5.69
160-170	2.36
170-180	0.53

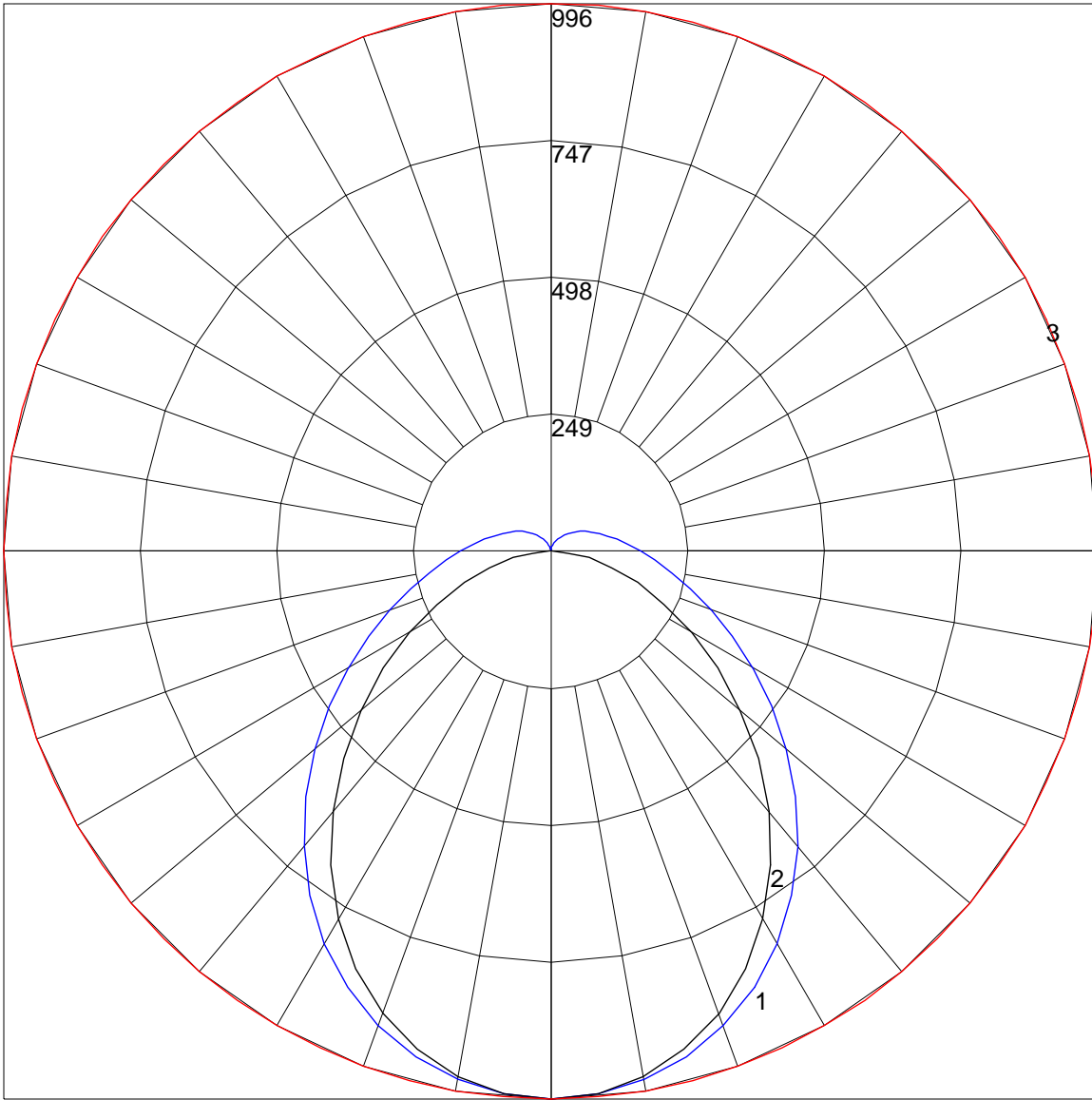
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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

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	117	117	117	117	117	113	113	113	113	106	106	106	99	99	99	93	93	93	90
1	105	100	95	91	91	101	97	92	89	91	87	84	85	82	80	80	78	76	73
2	95	87	80	74	92	84	77	72	79	73	69	74	70	66	70	66	63	60	60
3	87	76	68	61	84	74	66	60	69	63	58	65	60	55	62	57	53	51	51
4	80	67	59	52	77	66	57	51	62	55	49	58	52	47	55	50	46	43	43
5	73	60	51	45	70	59	50	44	55	48	43	52	46	41	50	44	40	38	38
6	68	54	45	39	65	53	45	38	50	43	37	48	41	36	45	40	35	33	33
7	63	49	41	34	60	48	40	34	46	38	33	43	37	32	41	36	31	29	29
8	59	45	37	31	56	44	36	30	42	35	30	40	33	29	38	32	28	26	26
9	55	41	33	28	53	40	33	27	39	32	27	37	31	26	35	30	25	24	24
10	51	38	30	25	50	37	30	25	36	29	24	34	28	24	33	27	23	21	21

POLAR GRAPH



Maximum Candela = 996.07 Located At Horizontal Angle = 0, Vertical Angle = 0
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 (0) (Through Max. Cd.)