



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

Report No: L021705601



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Issue Date: 2/22/2017

Prepared For: Airey-Thompson Co.
5310 N. Irwindale Ave. Irwindale, CA 91706

Model Number: 61LH35K12-0

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.

Testing Condition: Fixture is tested with no special conditions.

Sample Arrival Date: 2/21/17

Date of Tests: 2/21/17 - 2/22/17

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	11/28/17
ITECH	IT6122	PS-DC03-S1	11/28/17
Fluke Digital Thermometer	52k/J	MT-TP02-GC	11/28/17
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:	Airey-Thompson Co.
Model Number:	61LH35K12-0
Driver Model Number:	OSRAM OPTOTRONIC OT13W/250C/UNV/PC
Total Lumens:	652.04
Input Voltage (VAC/60Hz):	120.00
Input Current (Amp):	0.06
Input Power (W):	7.46
Input Power Factor:	0.97
Current ATHD @ 120V(%):	19%
Current ATHD @ 277V(%):	N/A
Efficacy:	87
Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	0:45
Total Operating Time (Hours):	2:05

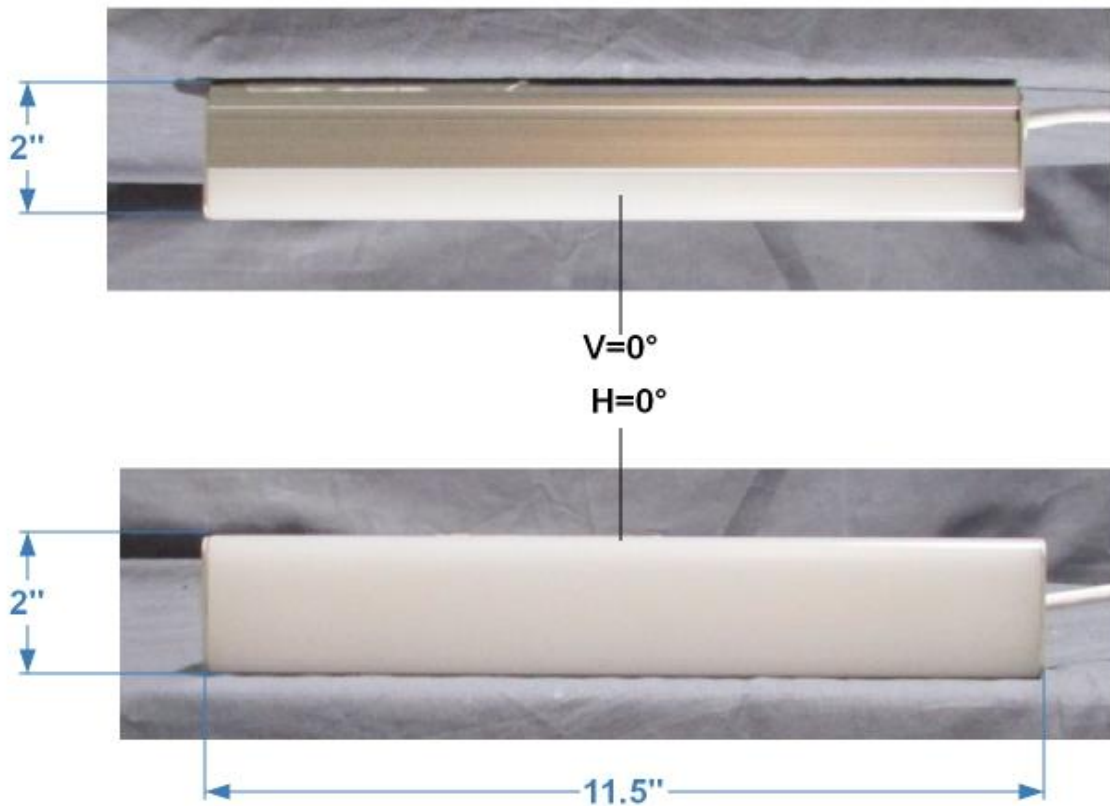


FIG.1 LUMINAIRE

*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: 9*



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Photometric Test Report

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L021705601.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] L021705601
[TESTLAB] LIGHT LABORATORY, INC.
[ISSUEDATE] 2/22/2017
[MANUFAC] AIREY-THOMPSON CO.
[LUMCAT] 61LH35K12-0
[LUMINAIRE] DIRECT LINEAR AMBIENT LUMINAIRE
[BALLASTCAT] OSRAM OPTOTRONIC OT13W/250C/UNV/PC
[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, 7.46W
[TEST PROCEDURE] IESNA:LM-79-08

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	652
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	87
Total Luminaire Watts	7.46
Ballast Factor	1.00
CIE Type	Semi-Direct
Spacing Criterion (0-180)	1.24
Spacing Criterion (90-270)	1.18
Spacing Criterion (Diagonal)	1.34
Basic Luminous Shape	Rectangular w/Sides
Luminous Length (0-180)	0.17 ft
Luminous Width (90-270)	0.94 ft
Luminous Height	0.06 ft

LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	9433	9238	10385
55	8641	8245	9411
65	7850	7199	8293
75	6988	5994	6697
85	6164	4703	3893

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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	200.30	200.30	200.30	200.30	200.30	200.30	200.30	200.30	200.30	200.30
5	200.04	199.99	199.91	199.99	199.91	199.91	199.87	199.91	199.99	199.91
10	197.38	197.34	197.34	197.13	197.30	197.17	197.17	197.05	197.01	196.96
15	192.31	192.27	192.35	192.23	192.19	192.06	191.94	191.77	191.61	191.40
20	185.42	185.30	185.38	185.17	184.96	184.76	184.55	184.26	183.93	183.72
25	176.79	176.58	176.66	176.25	176.25	175.71	175.50	174.96	174.50	174.05
30	166.90	166.86	166.61	166.53	165.91	165.53	164.95	164.37	163.62	163.00
35	156.36	156.23	156.03	155.69	155.15	154.45	153.66	152.83	152.00	151.00
40	145.31	145.36	144.90	144.53	143.78	142.99	141.87	140.87	139.71	138.51
45	134.10	133.94	133.61	132.94	132.11	131.12	129.95	128.54	127.13	125.68
50	122.48	122.40	121.90	121.19	120.24	118.99	117.58	116.09	114.47	112.72
55	110.77	110.69	110.07	109.36	108.07	106.70	105.08	103.42	101.60	99.85
60	98.81	98.65	98.11	97.07	95.91	94.25	92.59	90.68	88.77	86.73
65	86.61	86.44	85.82	84.82	83.45	81.83	79.96	78.01	75.85	73.78
70	74.32	74.24	73.45	72.49	71.04	69.34	67.43	65.35	63.15	60.91
75	62.28	61.99	61.32	60.20	58.83	57.05	55.18	52.98	50.69	48.41
80	50.65	50.45	49.82	48.70	47.25	45.55	43.59	41.31	39.03	36.74
85	40.19	40.02	39.40	38.45	36.95	35.29	33.34	31.22	28.90	26.61
90	32.47	32.34	31.72	30.85	29.44	27.86	25.99	23.92	21.71	19.47
95	29.73	29.56	29.02	28.07	26.78	25.16	23.42	21.38	19.31	17.19
100	28.07	27.82	27.24	26.36	25.12	23.62	21.96	19.97	17.98	16.03
105	26.16	25.95	25.45	24.58	23.50	22.05	20.47	18.64	16.86	14.91
110	24.25	24.04	23.54	22.71	21.67	20.39	18.93	17.36	15.65	13.87
115	22.09	21.96	21.55	20.80	19.89	18.68	17.40	15.94	14.37	12.75
120	20.01	19.89	19.51	18.89	18.02	17.02	15.86	14.57	13.16	11.63
125	17.94	17.77	17.44	16.90	16.23	15.36	14.37	13.12	11.87	10.59
130	15.94	15.82	15.49	14.99	14.45	13.66	12.75	11.75	10.63	9.51
135	13.95	13.87	13.58	13.20	12.71	12.00	11.25	10.38	9.43	8.39
140	12.12	12.00	11.79	11.46	11.00	10.42	9.76	9.01	8.18	7.35
145	10.30	10.13	9.96	9.76	9.30	8.89	8.30	7.68	6.98	6.23
150	8.55	8.43	8.30	8.10	7.76	7.39	6.89	6.35	5.77	5.07
155	6.89	6.81	6.73	6.52	6.23	5.77	5.40	4.98	4.53	4.07
160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
165	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
170	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
175	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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	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	200.30	200.30	200.30	200.30	200.30	200.30	200.30	200.30	200.30
5	199.95	199.83	199.95	199.79	199.87	199.79	199.91	199.83	199.87
10	196.88	196.80	196.59	196.63	196.47	196.51	196.34	196.47	196.30
15	191.28	191.03	190.86	190.69	190.53	190.40	190.32	190.20	190.15
20	183.30	183.14	182.72	182.39	182.10	181.89	181.68	181.56	181.52
25	173.42	173.13	172.51	172.09	171.60	171.26	170.85	170.85	170.56
30	162.25	161.51	160.80	160.18	159.56	158.97	158.56	158.23	158.10
35	149.96	149.05	148.14	147.31	146.39	145.77	145.11	144.73	144.48
40	137.30	136.06	134.89	133.86	132.82	131.90	131.12	130.62	130.37
45	124.26	122.77	121.40	120.07	118.99	117.87	117.04	116.33	116.09
50	111.06	109.40	107.91	106.37	105.04	103.84	102.76	102.09	101.72
55	97.90	96.12	94.37	92.71	91.17	89.80	88.68	87.85	87.52
60	84.82	82.87	80.92	79.09	77.52	75.98	74.61	73.74	73.24

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CANDELA TABULATION - (Cont.)

65	71.66	69.59	67.59	65.64	63.86	62.11	60.74	59.70	59.21
70	58.67	56.55	54.43	52.31	50.40	48.58	47.04	45.88	45.42
75	46.09	43.84	41.68	39.48	37.45	35.46	33.71	32.47	31.89
80	34.38	32.01	29.73	27.49	25.24	23.25	21.38	19.93	19.27
85	24.21	21.88	19.56	17.19	14.99	12.83	10.92	9.38	8.72
90	17.15	14.91	12.62	10.30	8.22	6.10	4.24	2.78	2.08
95	14.91	12.71	10.46	8.26	6.06	4.07	2.28	0.83	0.25
100	13.83	11.71	9.59	7.56	5.52	3.65	1.99	0.83	0.25
105	12.87	10.92	8.93	6.98	5.11	3.32	1.87	0.79	0.25
110	11.92	10.13	8.26	6.44	4.69	3.16	1.74	0.75	0.42
115	11.04	9.34	7.64	5.98	4.40	2.91	1.66	0.75	0.42
120	10.09	8.59	7.02	5.52	4.07	2.74	1.58	0.75	0.42
125	9.18	7.85	6.39	5.07	3.78	2.53	1.45	0.75	0.50
130	8.26	7.02	5.81	4.57	3.45	2.33	1.41	0.75	0.58
135	7.35	6.27	5.19	4.03	2.99	2.08	1.29	0.75	0.58
140	6.39	5.44	4.48	3.53	2.66	1.91	1.25	0.71	0.66
145	5.40	4.57	3.82	3.03	2.33	1.70	1.16	0.75	0.66
150	4.44	3.82	3.24	2.57	2.03	1.50	1.08	0.75	0.66
155	3.61	3.11	2.57	2.20	1.62	1.29	0.96	0.75	0.66
160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
165	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
170	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
175	0.00	0.00	0.00	0.00	0.00	0.00	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 : L021705601.IES

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	72.91	N.A.	11.20
0-30	153.00	N.A.	23.50
0-40	247.40	N.A.	37.90
0-60	433.50	N.A.	66.50
0-80	557.30	N.A.	85.50
0-90	586.36	N.A.	89.90
10-90	567.38	N.A.	87.00
20-40	174.49	N.A.	26.80
20-50	271.43	N.A.	41.60
40-70	259.00	N.A.	39.70
60-80	123.80	N.A.	19.00
70-80	50.91	N.A.	7.80
80-90	29.06	N.A.	4.50
90-110	33.27	N.A.	5.10
90-120	45.32	N.A.	7.00
90-130	54.31	N.A.	8.30
90-150	64.15	N.A.	9.80
90-180	65.68	N.A.	10.10
110-180	32.41	N.A.	5.00
0-180	652.04	N.A.	100.00

Total Luminaire Efficiency = N.A.%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	18.98
10-20	53.93
20-30	80.09
30-40	94.40
40-50	96.94
50-60	89.16
60-70	72.89
70-80	50.91
80-90	29.06
90-100	18.20
100-110	15.07
110-120	12.05
120-130	8.98
130-140	6.13
140-150	3.71
150-160	1.53
160-170	0.00
170-180	0.00

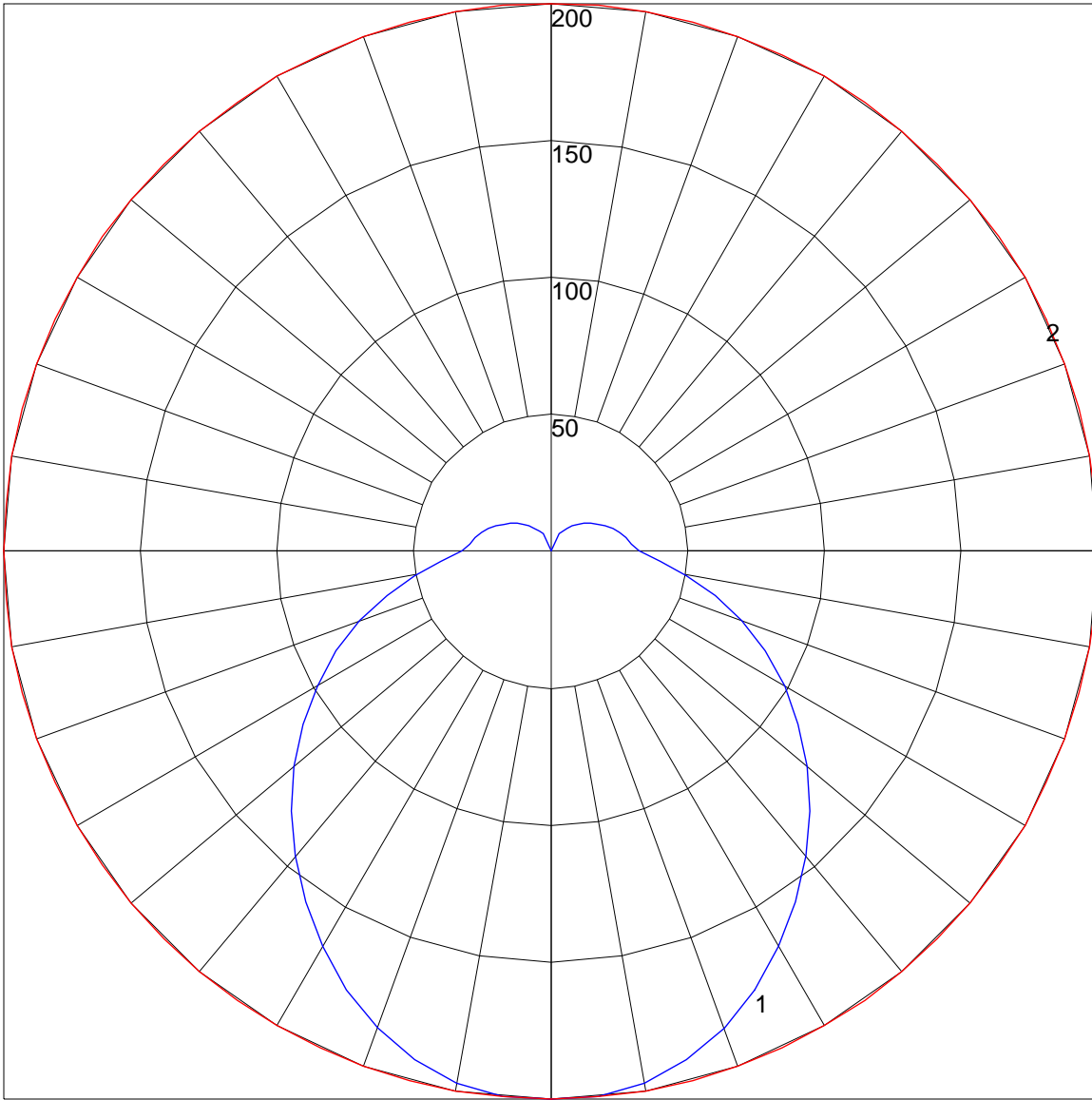
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PHOTOMETRIC FILENAME : L021705601.IES

COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

Effective Floor Cavity Reflectance 0.20

RC RW	80				70				50			30			10			0
	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
0	117	117	117	117	113	113	113	113	106	106	106	99	99	99	93	93	93	90
1	105	100	95	91	101	97	92	88	90	87	84	85	82	79	80	77	75	73
2	95	86	79	73	92	84	77	72	78	73	68	74	69	65	69	66	62	60
3	87	76	67	60	83	73	66	59	69	62	57	65	59	55	61	56	53	50
4	79	67	58	51	76	65	57	50	61	54	48	58	52	47	54	49	45	42
5	73	60	51	44	70	58	49	43	55	47	42	52	45	40	49	43	39	37
6	67	54	45	38	65	52	44	38	49	42	36	47	40	35	44	39	34	32
7	62	49	40	34	60	47	39	33	45	38	32	43	36	31	40	35	30	28
8	58	44	36	30	56	43	35	30	41	34	29	39	33	28	37	31	27	25
9	54	41	32	27	52	40	32	27	38	31	26	36	30	25	34	29	25	23
10	51	38	30	24	49	37	29	24	35	28	24	33	27	23	32	26	22	21

POLAR GRAPH



Maximum Candela = 200.3 Located At Horizontal Angle = 0, Vertical Angle = 0
1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (0) (Through Max. Cd.)