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Report No: L031601810R02

Date: 5/6/2016



NVLAP LAB CODE 200927-0

**Report No:** L031601810R02

**Prepared For:** Suxess Inc., dba LUX Dynamics  
 1350 Capital Blvd, Reno, NV 89502

**Model Number:** LED-GYM-12-UNV - 850 HO LADC

**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. Catalog number is LED-GYM-12-UNV - 850 HO LADC. Received in working and undamaged condition. No modifications were necessary.

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

**Sample Arrival Date:** 2/16/16

**Date of Tests:** 3/24/16 - 3/25/16

**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	11/18/16
Xitron Power Analyzer	2503AH	MT-EL01	11/30/16
ITECH DC Power Supply	IT6122	PSDC-03-S1	11/17/16
Fluke Digital Thermometer	52k/J	MT-TP02-GC	11/24/16
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>	Suxess Inc., dba LUX Dynamics
<b>Model Number:</b>	LED-GYM-12-UNV - 850 HO LADC
<b>Driver Model Number:</b>	OSRAM OPTOTRONIC OTi 85/120-277/2A6 DIMLT2 L (12 DRIVERS)
<b>Total Lumens:</b>	111566.30
<b>Input Voltage (VAC/60Hz):</b>	120.00
<b>Input Current (Amp):</b>	9.04
<b>Input Power (W):</b>	1085.00
<b>Input Power Factor:</b>	1.00
<b>Current ATHD @ 120V(%):</b>	3%
<b>Current ATHD @ 277V(%):</b>	N/A
<b>Efficacy:</b>	103
<b>Ambient Temperature (°C):</b>	25.0
<b>Stabilization Time (Hours):</b>	0:45
<b>Total Operating Time (Hours):</b>	2:25
<b>Off State Power(W):</b>	0.00

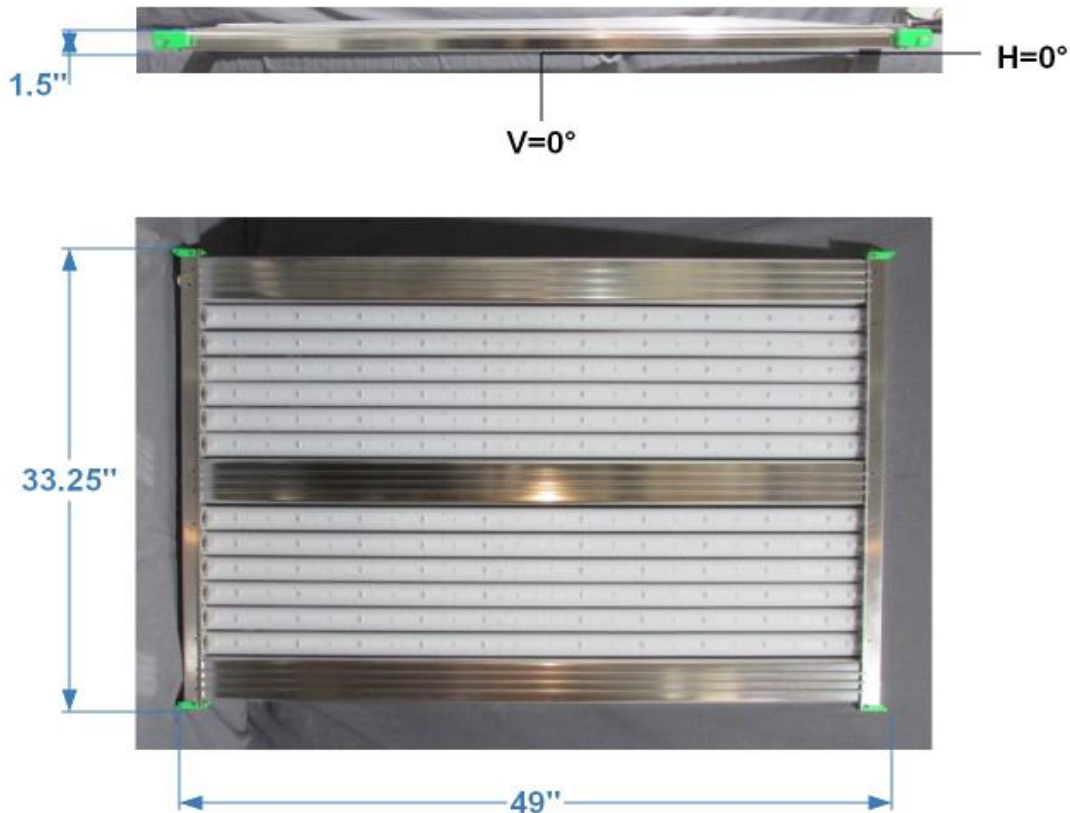


FIG.1 LUMINAIRE

\*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: 9*



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# Photometric Test Report

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : L031601810R02.IES**

**DESCRIPTION INFORMATION (From Photometric File)**

IESNA:LM-63-2002  
 [TEST] L031601810R02  
 [TESTLAB] LIGHT LABORATORY, INC.  
 [ISSUEDATE] 5/6/2016  
 [MANUFAC] Suxess Inc., dba LUX Dynamics  
 [LUMCAT] LED-GYM-12-UNV - 850 HO LADC  
 [LUMINAIRE] 49"L. X 33.25"W. X 1.5"H. LED HIGH BAY  
 [BALLASTCAT] OSRAM OPTOTRONIC OTi 85/120-277/2A6 DIMLT2 L (12 DRIVERS)  
 [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, 1085.00W  
 [\_TEST PROCEDURE] IESNA:LM-79-08

**CHARACTERISTICS**

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	111566
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	103
Total Luminaire Watts	1085
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.22
Spacing Criterion (90-270)	1.34
Spacing Criterion (Diagonal)	1.42
Basic Luminous Shape	Rectangular w/Sides
Luminous Length (0-180)	3.83 ft
Luminous Width (90-270)	2.10 ft
Luminous Height	0.06 ft

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

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	42560	49604	51027
55	35724	47406	47613
65	27790	43690	47002
75	17946	39274	37359
85	10799	27279	20885

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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>
<b>0</b>	38399	38399	38399	38399	38399	38399	38399	38399	38399	38399
<b>5</b>	38132	38144	38123	38099	38096	38070	38082	38107	38157	38224
<b>10</b>	37491	37495	37488	37491	37575	37665	37779	37843	37961	38095
<b>15</b>	36468	36480	36500	36619	36807	36958	37158	37285	37289	37156
<b>20</b>	35083	35091	35203	35465	35714	35876	35822	35660	35596	35615
<b>25</b>	33281	33355	33598	33964	34107	34027	33951	33992	34129	34166
<b>30</b>	31216	31263	31646	31937	31952	31964	32134	32217	32244	32453
<b>35</b>	28769	28874	29282	29451	29616	29851	30004	30122	30519	31076
<b>40</b>	25972	26116	26412	26787	27175	27450	27639	28212	28859	29408
<b>45</b>	22861	22934	23292	23920	24377	24784	25386	26137	26715	27054
<b>50</b>	19318	19393	19879	20661	21304	21926	22621	23291	23775	24397
<b>55</b>	15668	15885	16452	17276	18027	18778	19543	20331	20948	21245
<b>60</b>	12487	12708	13291	14060	14970	15764	16661	17448	17968	18096
<b>65</b>	9079	9235	9752	10530	11443	12406	13345	14093	14507	14736
<b>70</b>	5986	6126	6564	7273	8230	9229	10157	10856	11350	11774
<b>75</b>	3677	3799	4148	4748	5588	6503	7324	7973	8451	8490
<b>80</b>	2006	2110	2386	2864	3580	4258	4673	4686	4344	4262
<b>85</b>	830	914	1103	1419	1764	1768	1532	1590	1918	2414
<b>90</b>	335	337	340	342	343	345	349	355	361	364
<b>95</b>	0	329	325	324	323	322	322	322	323	324
<b>100</b>	0	0	0	0	320	322	323	323	321	319
<b>105</b>	0	0	0	0	0	319	320	321	324	325
<b>110</b>	0	0	0	0	0	0	0	317	318	320
<b>115</b>	0	0	0	0	0	0	0	0	0	0
<b>120</b>	0	0	0	0	0	0	0	0	0	0
<b>125</b>	0	0	0	0	0	0	0	0	0	0
<b>130</b>	0	0	0	0	0	0	0	0	0	0
<b>135</b>	0	0	0	0	0	0	0	0	0	0
<b>140</b>	0	0	0	0	0	0	0	0	0	0
<b>145</b>	0	0	0	0	0	0	0	0	0	0
<b>150</b>	0	0	0	0	0	0	0	0	0	0
<b>155</b>	0	0	0	0	0	0	0	0	0	0
<b>160</b>	0	0	0	0	0	0	0	0	0	0
<b>165</b>	0	0	0	0	0	0	0	0	0	0
<b>170</b>	0	0	0	0	0	0	0	0	0	0
<b>175</b>	0	0	0	0	0	0	0	0	0	0
<b>180</b>	0	0	0	0	0	0	0	0	0	0

**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>	38399	38399	38399	38399	38399	38399	38399	38399	38399
<b>5</b>	38291	38356	38407	38440	38469	38476	38481	38477	38464
<b>10</b>	38217	38296	38355	38391	38394	38376	38357	38336	38322
<b>15</b>	37023	36986	36948	36908	36897	36910	36925	36932	36906
<b>20</b>	35661	35725	35789	35784	35763	35760	35769	35783	35769
<b>25</b>	34158	34236	34414	34575	34717	34870	35015	35096	35119
<b>30</b>	32787	33187	33562	33782	33931	34023	34070	34125	34144
<b>35</b>	31571	31868	32144	32376	32542	32648	32679	32688	32702
<b>40</b>	29775	30030	30228	30455	30533	30578	30617	30653	30645
<b>45</b>	27312	27705	27914	27928	27860	27807	27781	27765	27757
<b>50</b>	24703	24744	24717	24564	24408	24312	24197	24168	24140
<b>55</b>	21279	21053	21006	21118	21180	21223	21241	21256	21259
<b>60</b>	18101	18189	18357	18455	18513	18571	18636	18672	18684

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**CANDELA TABULATION - (Cont.)**

<b>65</b>	15015	15223	15256	15279	15387	15548	15689	15757	15767
<b>70</b>	11941	11991	12099	12254	12261	12132	11988	11897	11868
<b>75</b>	8294	8053	7960	7886	7913	7953	7987	7998	8003
<b>80</b>	4644	5177	5587	5827	5911	5869	5781	5706	5682
<b>85</b>	2923	3157	3091	2802	2455	2154	1961	1844	1806
<b>90</b>	360	354	350	348	346	345	344	343	343
<b>95</b>	325	326	327	327	328	329	329	329	329
<b>100</b>	318	318	318	319	320	320	320	320	320
<b>105</b>	326	326	326	326	325	324	324	324	324
<b>110</b>	322	324	326	327	328	329	329	330	330
<b>115</b>	321	322	324	326	328	329	330	331	331
<b>120</b>	0	0	323	324	325	325	326	327	328
<b>125</b>	0	0	0	0	0	0	0	0	0
<b>130</b>	0	0	0	0	0	0	0	0	0
<b>135</b>	0	0	0	0	0	0	0	0	0
<b>140</b>	0	0	0	0	0	0	0	0	0
<b>145</b>	0	0	0	0	0	0	0	0	0
<b>150</b>	0	0	0	0	0	0	0	0	0
<b>155</b>	0	0	0	0	0	0	0	0	0
<b>160</b>	0	0	0	0	0	0	0	0	0
<b>165</b>	0	0	0	0	0	0	0	0	0
<b>170</b>	0	0	0	0	0	0	0	0	0
<b>175</b>	0	0	0	0	0	0	0	0	0
<b>180</b>	0	0	0	0	0	0	0	0	0

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**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	14068.27	N.A.	12.60
0-30	29881.36	N.A.	26.80
0-40	49258.47	N.A.	44.20
0-60	87203.79	N.A.	78.20
0-80	108371.1	N.A.	97.10
0-90	110791.7	N.A.	99.30
10-90	107146.9	N.A.	96.00
20-40	35190.19	N.A.	31.50
20-50	55341.09	N.A.	49.60
40-70	51455.4	N.A.	46.10
60-80	21167.29	N.A.	19.00
70-80	7657.22	N.A.	6.90
80-90	2420.65	N.A.	2.20
90-110	589.77	N.A.	0.50
90-120	747.42	N.A.	0.70
90-130	774.56	N.A.	0.70
90-150	774.56	N.A.	0.70
90-180	774.56	N.A.	0.70
110-180	184.79	N.A.	0.20
0-180	111566.3	N.A.	100.00

Total Luminaire Efficiency = N.A.%

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	3644.85
10-20	10423.43
20-30	15813.09
30-40	19377.11
40-50	20150.91
50-60	17794.41
60-70	13510.07
70-80	7657.22
80-90	2420.65
90-100	338.07
100-110	251.70
110-120	157.65
120-130	27.15
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

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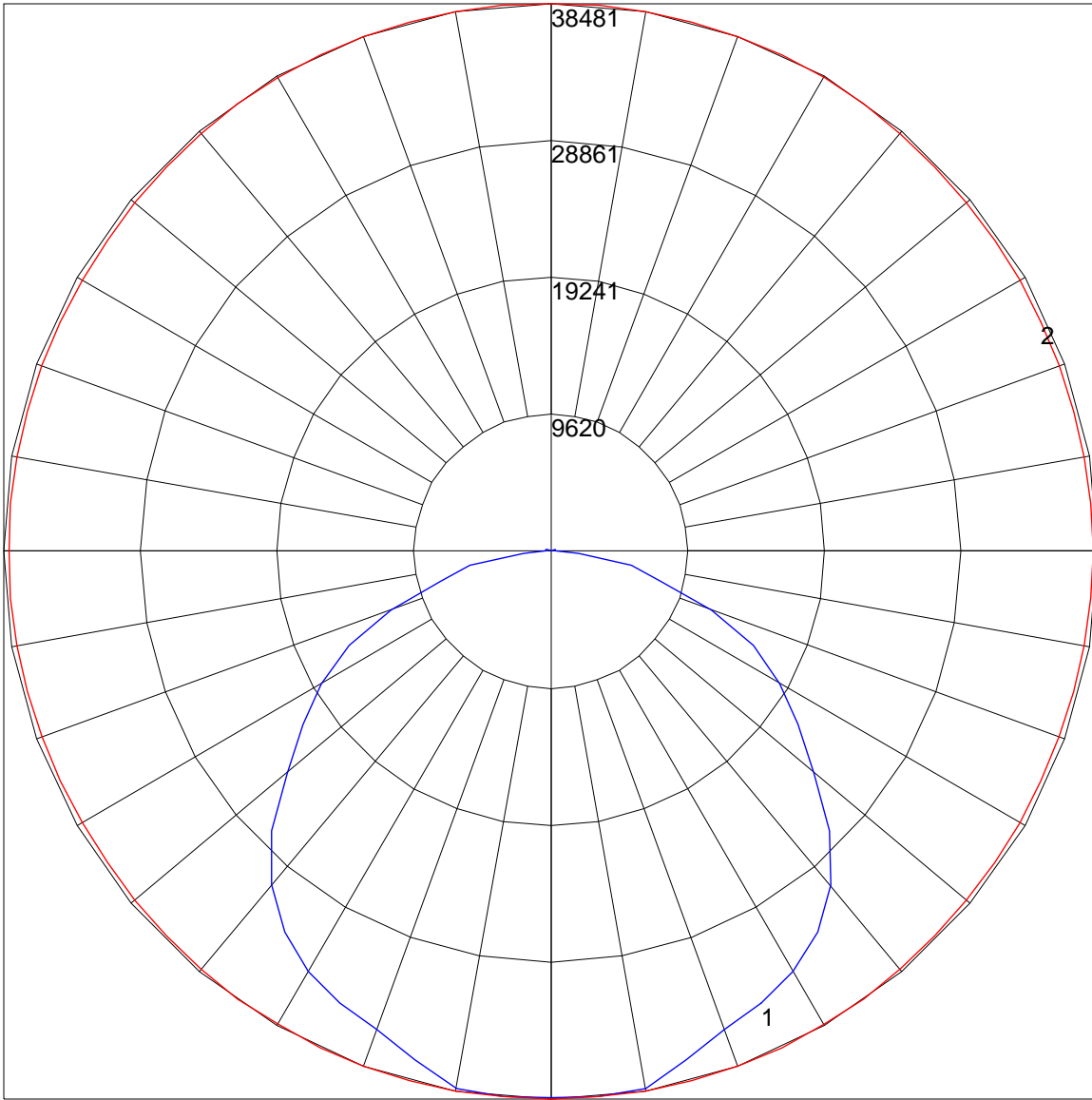
**COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD**

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	119	119	119	119	116	116	116	116	111	111	111	106	106	106	101	101	101	99
1	108	104	99	95	106	101	97	94	97	94	91	93	90	88	89	87	85	83
2	99	90	83	78	96	88	82	77	85	79	75	81	77	73	78	74	71	69
3	90	79	71	64	87	78	70	64	74	68	62	72	66	61	69	64	60	58
4	82	70	61	54	80	69	60	54	66	59	53	64	57	52	61	56	52	49
5	76	63	54	47	73	61	53	47	59	52	46	57	51	45	55	49	45	43
6	70	56	47	41	68	55	47	41	53	46	40	52	45	40	50	44	39	37
7	65	51	42	36	63	50	42	36	49	41	36	47	40	35	46	40	35	33
8	60	47	38	32	58	46	38	32	44	37	32	43	36	31	42	36	31	29
9	56	43	34	29	55	42	34	29	41	34	29	40	33	28	39	33	28	26
10	53	39	31	26	51	39	31	26	38	31	26	37	30	26	36	30	26	24



POLAR GRAPH



Maximum Candela = 38481 Located At Horizontal Angle = 80, Vertical Angle = 5  
# 1 - Vertical Plane Through Horizontal Angles (80 - 260) (Through Max. Cd.)  
# 2 - Horizontal Cone Through Vertical Angle (5) (Through Max. Cd.)