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Report No: L111602303R01

Date: 11/15/2016



NVLAP LAB CODE 200927-0

Report No: L111602303R01

Report Prepared For: Revolution Lighting Technologies
 4139 Guardian St. Simi Valley, CA 93063

Model Number: 128011-123

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 128011-123. Received in working and undamaged condition. No modifications were necessary.

Testing Condition: Fixture is tested with no special conditions.

Sample Arrival Date: 11/9/16

Date of Tests: 11/10/16 - 11/14/16

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

Manufacturer:	Revolution Lighting Technologies
Model Number:	128011-123
Driver Model Number:	LETRON LP0237-1850
Total Lumens:	11169.34
Input Voltage (VAC/60Hz):	277.00
Input Current (Amp):	0.31
Input Power (W):	78.90
Input Power Factor:	0.90
Current ATHD @ 120V(%):	N/A
Current ATHD @ 277V(%):	15%
Efficacy:	142
Color Rendering Index (CRI):	83
Correlated Color Temperature (K):	4050
Chromaticity Coordinate x:	0.3809
Chromaticity Coordinate y:	0.3854
Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	0:30
Total Operating Time (Hours):	1:00
Off State Power(W):	0.00

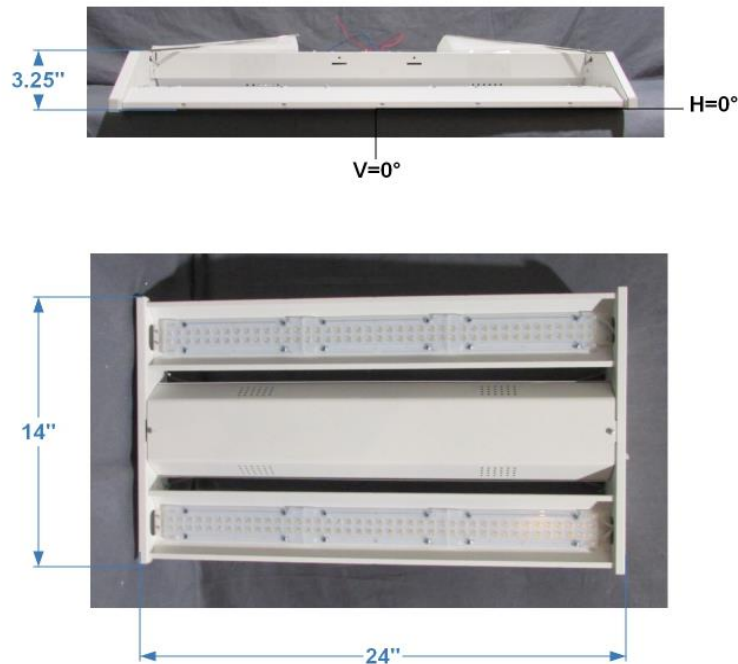
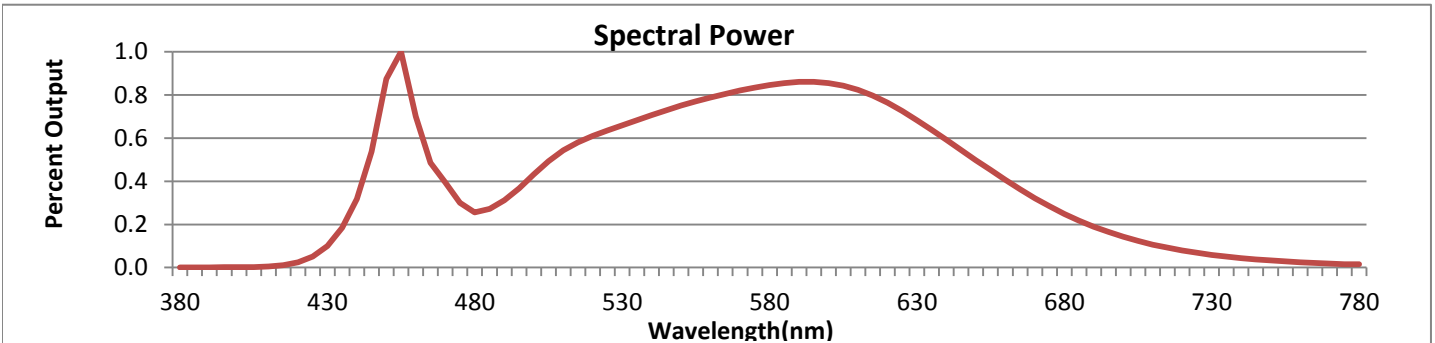


FIG. 1 LUMINAIRE

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



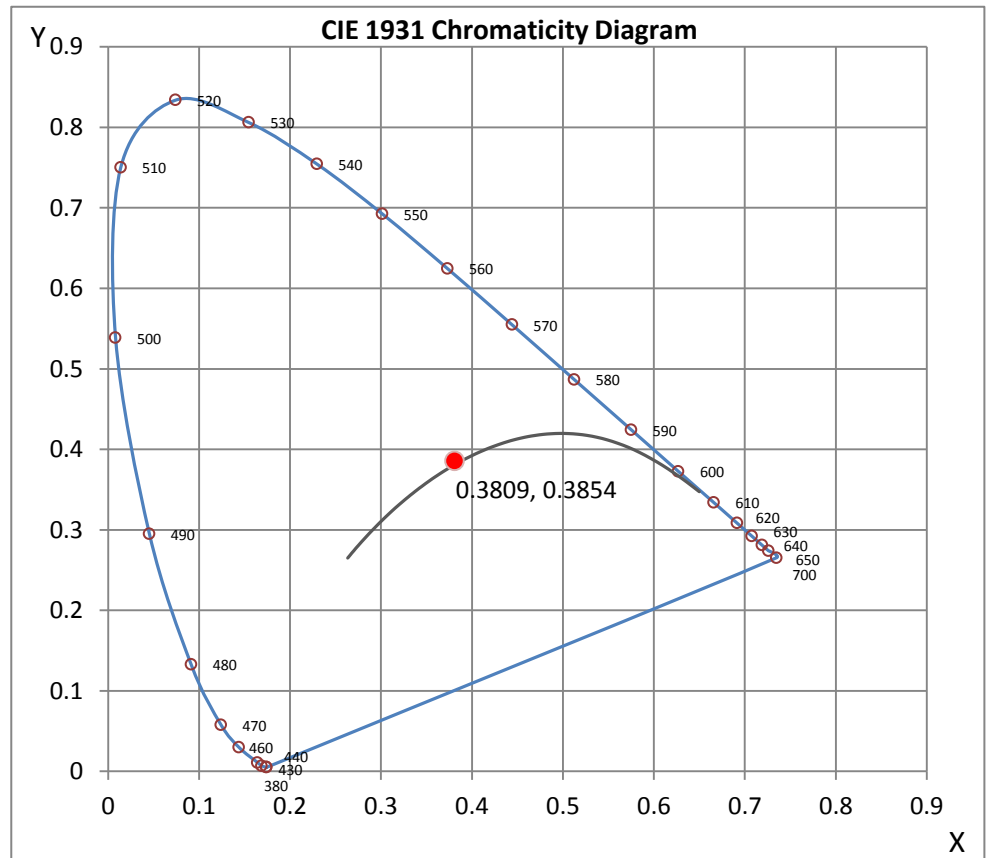
Wavelength	W/m ² nm	440	0.3180	510	0.5437	580	0.8466	650	0.4982	720	0.0795
380	0.0010	450	0.8750	520	0.6102	590	0.8613	660	0.4068	730	0.0590
390	0.0011	460	0.7007	530	0.6593	600	0.8559	670	0.3211	740	0.0439
400	0.0016	470	0.3948	540	0.7062	610	0.8248	680	0.2485	750	0.0328
410	0.0051	480	0.2555	550	0.7508	620	0.7654	690	0.1890	760	0.0246
420	0.0248	490	0.3127	560	0.7881	630	0.6834	700	0.1426	770	0.0185
430	0.0998	500	0.4324	570	0.8208	640	0.5924	710	0.1065	780	0.0160

CRI & CCT

x	0.3809
y	0.3854
u'	0.2220
v'	0.5054
CRI	83.40
CCT	4050
Duv	0.00387

R Values

R1	81.41
R2	88.81
R3	94.49
R4	81.85
R5	80.63
R6	83.88
R7	88.36
R8	67.81
R9	15.67
R10	73.12
R11	80.14
R12	56.88
R13	83.16
R14	96.71



*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.

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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 : L111602303R01.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
 [TEST] L111602303R01
 [TESTLAB] LIGHT LABORATORY, INC.
 [ISSUEDATE] 11/15/2016
 [MANUFAC] REVOLUTION LIGHTING TECHNOLOGIES
 [LUMCAT] 128011-123
 [LUMINAIRE] 83W ECO LINEAR HIGH BAY 4000K MEDIUM OPTIC
 [BALLASTCAT] LETRON LP0237-1850
 [LAMPPOSITION] 0,0
 [LAMPCAT] N/A
 [OTHER] INDICATING THE CANDELA VALUES ARE ABSOLUTE AND
 [MORE] SHOULD NOT BE FACTORED FOR DIFFERENT LAMP RATINGS.
 [INPUT] 277VAC, 78.90W
 [TEST PROCEDURE] IESNA:LM-79-08

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	11169
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	142
Total Luminaire Watts	78.9
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.18
Spacing Criterion (90-270)	1.14
Spacing Criterion (Diagonal)	1.24
Basic Luminous Shape	Rectangular
Luminous Length (0-180)	1.92 ft
Luminous Width (90-270)	1.06 ft
Luminous Height	0.00 ft

LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	17262	22276	17060
55	7176	10649	6587
65	3638	4201	2488
75	2736	1960	1307
85	3395	3092	3031

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L111602303R01.IES

CANDELA TABULATION

	<u>0.0</u>	<u>22.5</u>	<u>45.0</u>	<u>67.5</u>	<u>90.0</u>
0	6327	6327	6327	6327	6327
5	6444	6431	6401	6379	6352
10	6599	6594	6529	6446	6380
15	6621	6639	6573	6393	6287
20	6313	6414	6394	6093	5923
25	5734	5919	5980	5581	5357
30	4999	5242	5415	4967	4701
35	4181	4448	4707	4261	4012
40	3278	3570	3894	3489	3245
45	2310	2600	2981	2577	2283
50	1408	1666	1999	1616	1337
55	779	939	1156	872	715
60	458	525	628	479	403
65	291	308	336	253	199
70	193	202	191	120	108
75	134	133	96	66	64
80	89	79	57	58	58
85	56	50	51	51	50
90	0	0	0	0	0

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L111602303R01.IES

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	2439.53	N.A.	21.80
0-30	5075.5	N.A.	45.40
0-40	7797.3	N.A.	69.80
0-60	10700.81	N.A.	95.80
0-80	11123.21	N.A.	99.60
0-90	11169.34	N.A.	100.00
10-90	10555.09	N.A.	94.50
20-40	5357.77	N.A.	48.00
20-50	7363.91	N.A.	65.90
40-70	3212.56	N.A.	28.80
60-80	422.40	N.A.	3.80
70-80	113.35	N.A.	1.00
80-90	46.13	N.A.	0.40
90-110	0.00	N.A.	0.00
90-120	0.00	N.A.	0.00
90-130	0.00	N.A.	0.00
90-150	0.00	N.A.	0.00
90-180	0.00	N.A.	0.00
110-180	0.00	N.A.	0.00
0-180	11169.34	N.A.	100.00

Total Luminaire Efficiency = N.A.%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	614.25
10-20	1825.28
20-30	2635.97
30-40	2721.8
40-50	2006.15
50-60	897.37
60-70	309.05
70-80	113.35
80-90	46.13
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

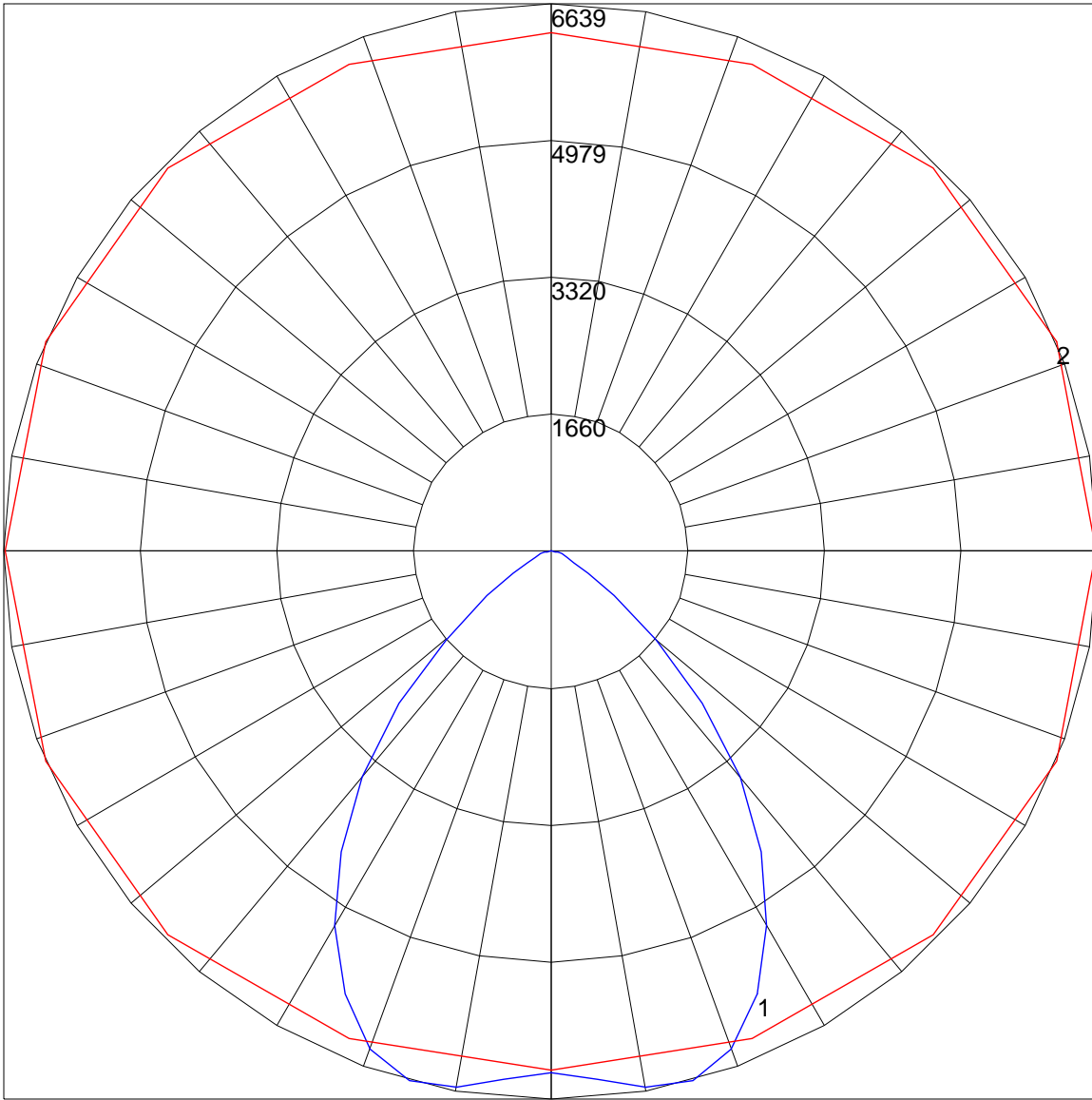
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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

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	102	102	102	100
1	112	108	105	103	109	106	103	101	102	100	98	98	97	95	95	93	92	90
2	105	98	93	89	102	97	92	88	93	89	86	90	87	84	87	85	82	81
3	97	89	83	78	95	88	82	77	85	80	76	83	78	75	80	77	74	72
4	91	81	75	69	89	80	74	69	78	72	68	76	71	67	74	70	66	64
5	85	74	67	62	83	73	67	62	72	66	61	70	64	60	68	63	60	58
6	79	68	61	56	78	67	60	55	66	60	55	64	59	55	63	58	54	52
7	74	63	56	50	73	62	55	50	61	54	50	59	54	50	58	53	49	48
8	70	58	51	46	68	58	51	46	56	50	46	55	49	45	54	49	45	43
9	66	54	47	42	64	53	47	42	52	46	42	51	46	42	50	45	41	40
10	62	50	43	39	61	50	43	39	49	43	38	48	42	38	47	42	38	37

POLAR GRAPH



Maximum Candela = 6639 Located At Horizontal Angle = 22.5, Vertical Angle = 15
1 - Vertical Plane Through Horizontal Angles (22.5 - 202.5) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (15) (Through Max. Cd.)