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Report No: L111602301

Date: 11/14/2016



NVLAP LAB CODE 200927-0

Report No: L111602301

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

Model Number: 128010-123

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 128010-123. 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:	128010-123
Driver Model Number:	LETRON LP0240-1450
Total Lumens:	9343.38
Input Voltage (VAC/60Hz):	277.00
Input Current (Amp):	0.26
Input Power (W):	65.33
Input Power Factor:	0.91
Current ATHD @ 120V(%):	N/A
Current ATHD @ 277V(%):	19%
Efficacy:	143
Color Rendering Index (CRI):	83
Correlated Color Temperature (K):	4051
Chromaticity Coordinate x:	0.3808
Chromaticity Coordinate y:	0.3852
Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	0:30
Total Operating Time (Hours):	1:00
Off State Power(W):	0.00

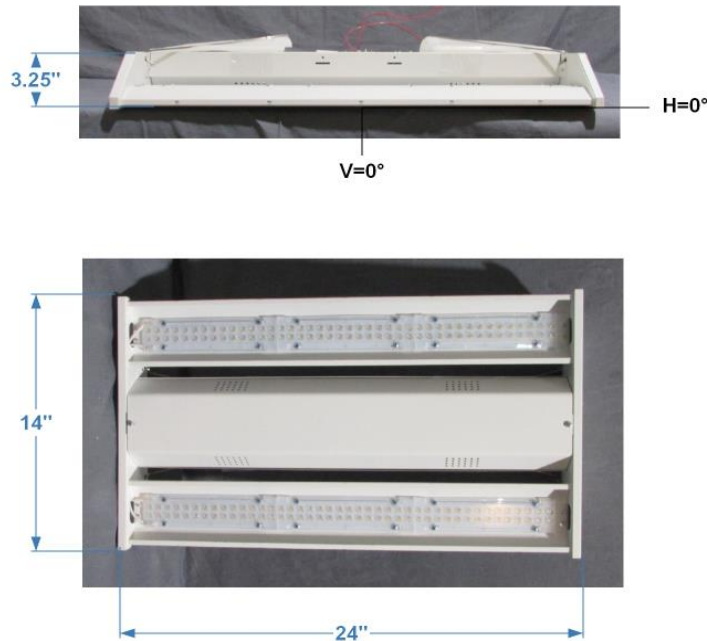
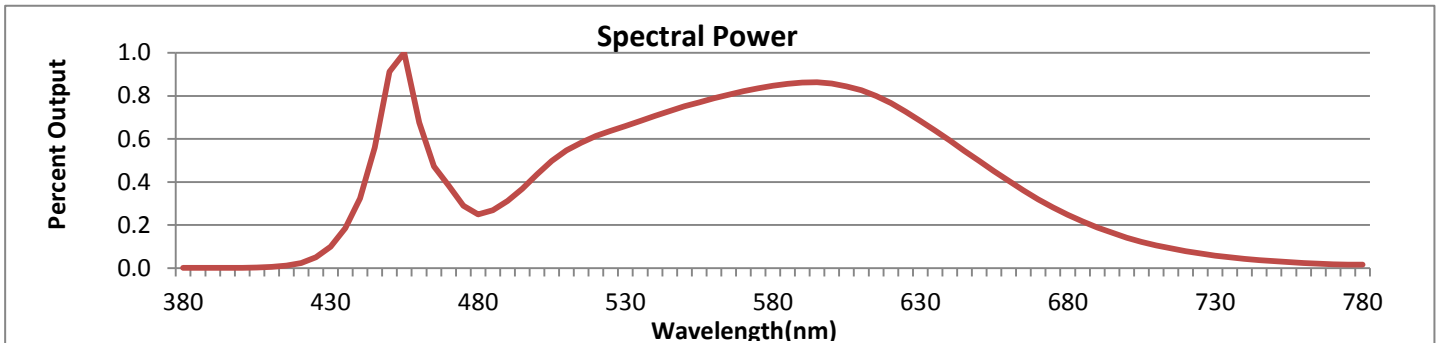


FIG. 1 LUMINAIRE

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



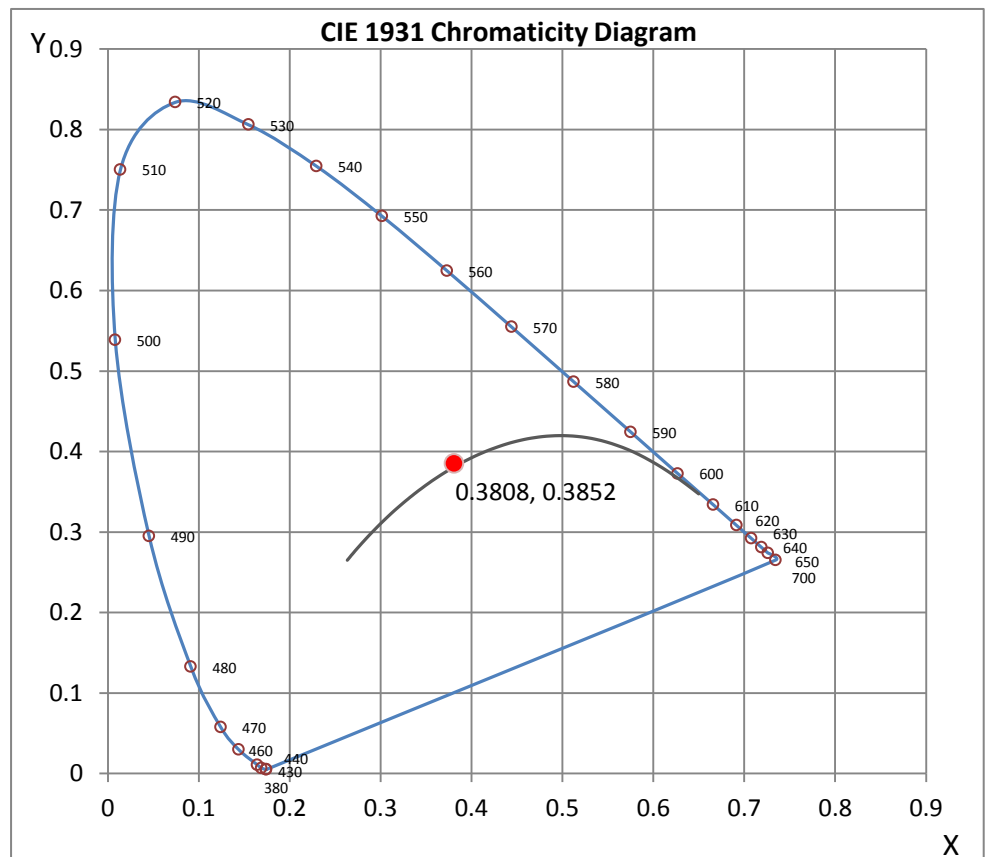
Wavelength	W/m ² nm	440	0.3241	510	0.5464	580	0.8476	650	0.4976	720	0.0788
380	0.0010	450	0.9132	520	0.6132	590	0.8623	660	0.4049	730	0.0581
390	0.0011	460	0.6758	530	0.6603	600	0.8575	670	0.3196	740	0.0431
400	0.0017	470	0.3837	540	0.7074	610	0.8268	680	0.2475	750	0.0322
410	0.0050	480	0.2494	550	0.7513	620	0.7671	690	0.1881	760	0.0240
420	0.0241	490	0.3114	560	0.7895	630	0.6842	700	0.1415	770	0.0180
430	0.0994	500	0.4348	570	0.8217	640	0.5925	710	0.1058	780	0.0157

CRI & CCT

x	0.3808
y	0.3852
u'	0.2220
v'	0.5053
CRI	83.40
CCT	4051
Duv	0.00381

R Values

R1	81.37
R2	88.65
R3	94.31
R4	82.00
R5	80.64
R6	83.70
R7	88.38
R8	67.80
R9	15.43
R10	72.82
R11	80.36
R12	56.81
R13	83.06
R14	96.61



*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 : L111602301.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
 [TEST] L111602301
 [TESTLAB] LIGHT LABORATORY, INC.
 [ISSUEDATE] 11/14/2016
 [MANUFAC] REVOLUTION LIGHTING TECHNOLOGIES
 [LUMCAT] 128010-123
 [LUMINAIRE] 64W ECO LINEAR HIGH BAY 4000K MEDIUM OPTIC
 [BALLASTCAT] LETRON LP0240-1450
 [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, 65.33W
 [TEST PROCEDURE] IESNA:LM-79-08

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	9343
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	143
Total Luminaire Watts	65.33
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.10
Spacing Criterion (90-270)	1.06
Spacing Criterion (Diagonal)	1.18
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	13779	18069	13750
55	5896	8558	5408
65	3238	3613	2288
75	2450	1776	1205
85	2971	2728	2728

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L111602301.IES

CANDELA TABULATION

	<u>0.0</u>	<u>22.5</u>	<u>45.0</u>	<u>67.5</u>	<u>90.0</u>
0	5797	5797	5797	5797	5797
5	5898	5889	5866	5858	5835
10	5968	5979	5939	5879	5827
15	5831	5864	5829	5696	5607
20	5363	5462	5474	5244	5105
25	4722	4880	4970	4675	4499
30	4033	4236	4420	4091	3890
35	3352	3578	3822	3497	3298
40	2627	2868	3167	2849	2644
45	1844	2090	2418	2088	1840
50	1130	1334	1610	1298	1075
55	640	758	929	710	587
60	406	443	522	404	355
65	259	270	289	221	183
70	172	183	168	109	98
75	120	121	87	62	59
80	79	71	52	52	52
85	49	44	45	45	45
90	0	0	0	0	0

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L111602301.IES

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	2172.75	N.A.	23.30
0-30	4369.99	N.A.	46.80
0-40	6582.37	N.A.	70.40
0-60	8931.66	N.A.	95.60
0-80	9302.36	N.A.	99.60
0-90	9343.38	N.A.	100.00
10-90	8782.02	N.A.	94.00
20-40	4409.62	N.A.	47.20
20-50	6029.68	N.A.	64.50
40-70	2617.48	N.A.	28.00
60-80	370.70	N.A.	4.00
70-80	102.51	N.A.	1.10
80-90	41.02	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	9343.38	N.A.	100.00

Total Luminaire Efficiency = N.A.%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	561.36
10-20	1611.38
20-30	2197.25
30-40	2212.38
40-50	1620.06
50-60	729.23
60-70	268.19
70-80	102.51
80-90	41.02
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

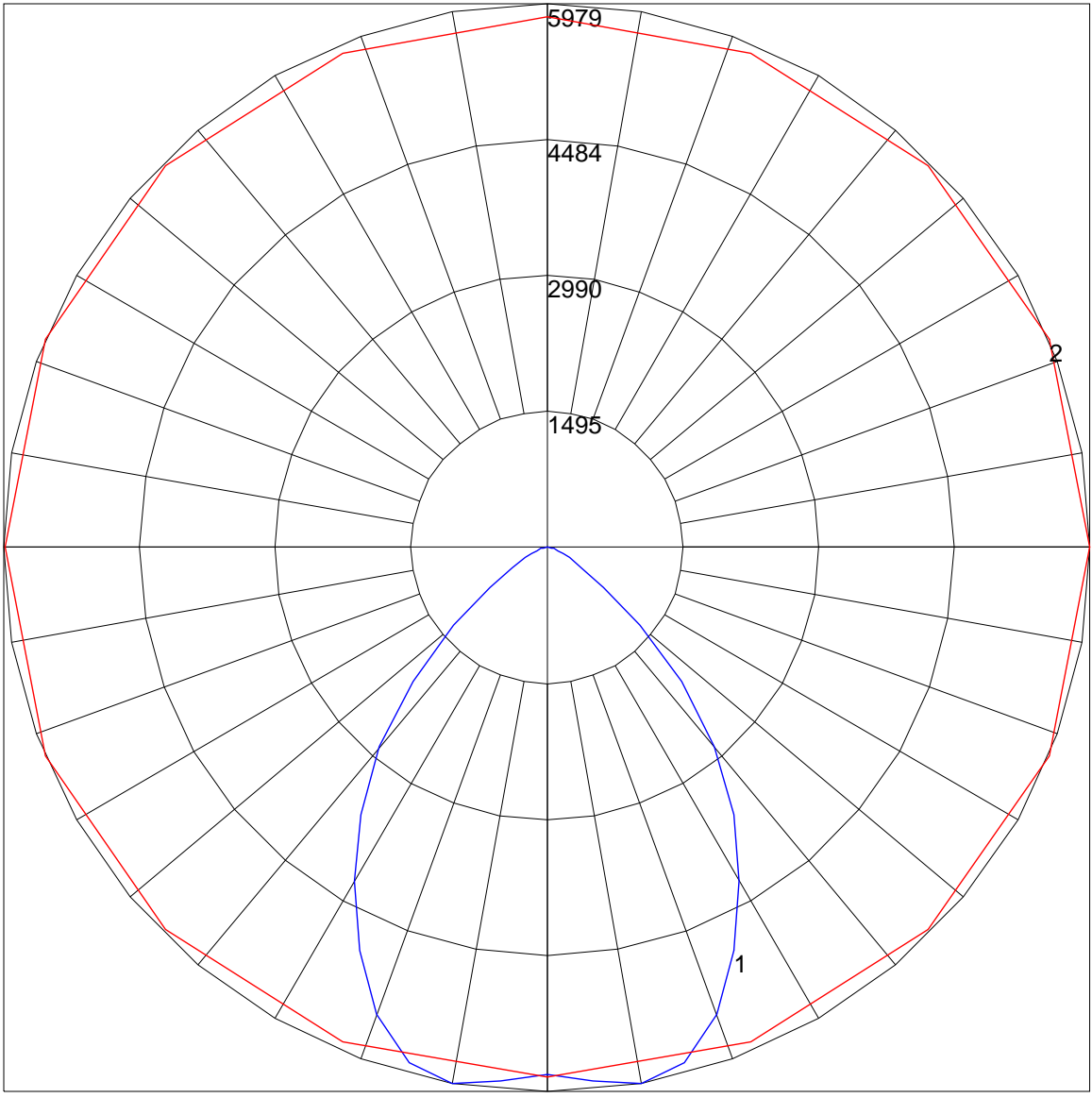
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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

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	99	93	89	102	97	92	88	93	90	86	90	87	84	87	85	83	81
3	98	90	83	78	95	88	82	78	85	80	76	83	79	75	80	77	74	72
4	91	82	75	70	89	81	74	69	78	73	68	76	71	67	74	70	67	65
5	85	75	68	62	83	74	67	62	72	66	61	70	65	61	68	64	60	59
6	80	69	61	56	78	68	61	56	66	60	56	65	59	55	63	59	55	53
7	75	63	56	51	73	63	56	51	61	55	51	60	54	50	59	54	50	48
8	70	59	52	47	69	58	51	46	57	51	46	56	50	46	55	50	46	44
9	66	55	48	43	65	54	47	43	53	47	43	52	46	42	51	46	42	41
10	62	51	44	39	61	50	44	39	49	43	39	49	43	39	48	43	39	37

POLAR GRAPH



Maximum Candela = 5979 Located At Horizontal Angle = 22.5, Vertical Angle = 10
1 - Vertical Plane Through Horizontal Angles (22.5 - 202.5) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (10) (Through Max. Cd.)