



8165 E Kaiser Blvd. Anaheim, CA 92808
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Report No: L111602308R01

Date: 11/15/2016



NVLAP LAB CODE 200927-0

Report No: L111602308R01

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

Model Number: 128013-125

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 128013-125 . 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: 11/11/16 - 11/15/16

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:	128013-125
Driver Model Number:	LETRON LP0237-1850(2 DRIVERS)
Total Lumens:	22180.63
Input Voltage (VAC/60Hz):	277.00
Input Current (Amp):	0.63
Input Power (W):	158.79
Input Power Factor:	0.91
Current ATHD @ 120V(%):	N/A
Current ATHD @ 277V(%):	15%
Efficacy:	140
Color Rendering Index (CRI):	84
Correlated Color Temperature (K):	5012
Chromaticity Coordinate x:	0.3448
Chromaticity Coordinate y:	0.3517
Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	0:30
Total Operating Time (Hours):	1:00
Off State Power(W):	0.00

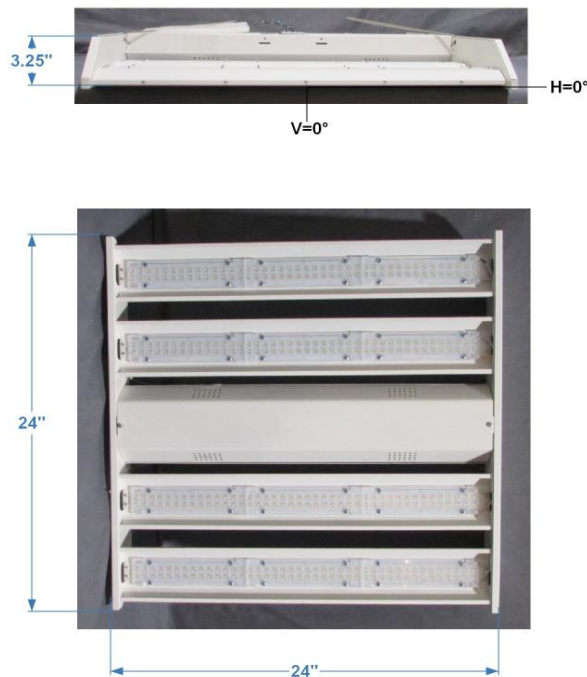
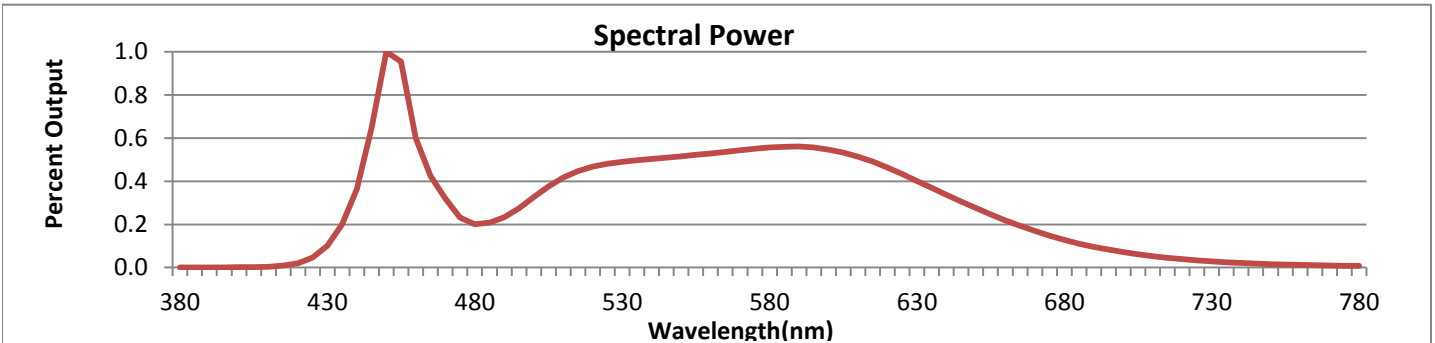


FIG. 1 LUMINAIRE

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



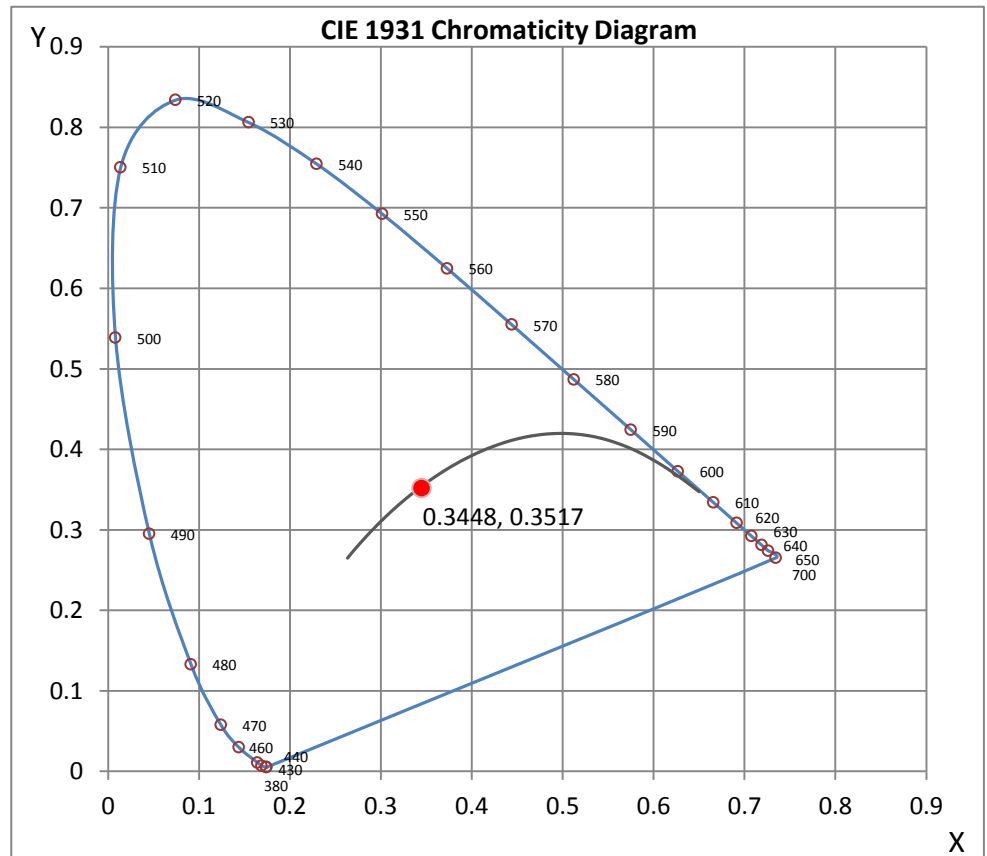
Wavelength	W/m ² nm	440	0.3646	510	0.4175	580	0.5576	650	0.2759	720	0.0389
380	0.0008	450	1.0000	520	0.4675	590	0.5614	660	0.2191	730	0.0287
390	0.0009	460	0.6005	530	0.4905	600	0.5470	670	0.1692	740	0.0213
400	0.0016	470	0.3211	540	0.5041	610	0.5145	680	0.1282	750	0.0160
410	0.0041	480	0.2011	550	0.5156	620	0.4640	690	0.0959	760	0.0119
420	0.0205	490	0.2339	560	0.5293	630	0.4019	700	0.0712	770	0.0090
430	0.1011	500	0.3265	570	0.5443	640	0.3374	710	0.0527	780	0.0079

CRI & CCT

x	0.3448
y	0.3517
u'	0.2112
v'	0.4847
CRI	84.30
CCT	5012
Duv	0.00018

R Values

R1	83.57
R2	89.08
R3	92.00
R4	84.65
R5	83.71
R6	83.78
R7	87.39
R8	69.89
R9	15.88
R10	73.25
R11	84.39
R12	60.59
R13	85.13
R14	95.47



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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:

Test Report Reviewed by:

Jeff Ahn
 Engineering Manager

Steve Kang
 Quality Assurance

**Attached are photometric data reports. Total number of pages: 9*

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



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Photometric Test Report

IES INDOOR REPORT

PHOTOMETRIC FILENAME : L111602308R01.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
 [TEST] L111602308R01
 [TESTLAB] LIGHT LABORATORY, INC.
 [ISSUEDATE] 11/15/2016
 [MANUFAC] REVOLUTION LIGHTING TECHNOLOGIES
 [LUMCAT] 128013-125
 [LUMINAIRE] 167W ECO LINEAR HIGH BAY 5000K MEDIUM OPTIC
 [BALLASTCAT] LETRON LP0237-1850(2 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] 277VAC, 158.79W
 [TEST PROCEDURE] IESNA:LM-79-08

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	22181
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	140
Total Luminaire Watts	158.79
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.20
Spacing Criterion (90-270)	1.18
Spacing Criterion (Diagonal)	1.28
Basic Luminous Shape	Rectangular
Luminous Length (0-180)	1.92 ft
Luminous Width (90-270)	1.88 ft
Luminous Height	0.00 ft

LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	19541	25419	20388
55	8061	12559	8202
65	3341	4350	2517
75	2026	1301	495
85	923	684	649

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L111602308R01.IES

CANDELA TABULATION

	<u>0.0</u>	<u>22.5</u>	<u>45.0</u>	<u>67.5</u>	<u>90.0</u>
0	12065	12065	12065	12065	12065
5	12325	12311	12257	12216	12236
10	12717	12701	12600	12447	12345
15	12875	12921	12808	12477	12241
20	12403	12620	12613	12044	11672
25	11317	11743	11961	11204	10785
30	9867	10462	10974	10098	9553
35	8263	8874	9583	8717	8181
40	6534	7114	7879	7157	6731
45	4638	5229	6033	5374	4839
50	2839	3379	4092	3491	2938
55	1552	1896	2418	1939	1579
60	829	965	1250	963	812
65	474	519	617	464	357
70	291	317	319	179	142
75	176	182	113	50	43
80	89	73	31	33	32
85	27	18	20	20	19
90	0	0	0	0	0

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L111602308R01.IES

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	4739.75	N.A.	21.40
0-30	9996.76	N.A.	45.10
0-40	15495.13	N.A.	69.90
0-60	21457.06	N.A.	96.70
0-80	22156.16	N.A.	99.90
0-90	22180.63	N.A.	100.00
10-90	21001.3	N.A.	94.70
20-40	10755.38	N.A.	48.50
20-50	14856.56	N.A.	67.00
40-70	6520.32	N.A.	29.40
60-80	699.10	N.A.	3.20
70-80	140.72	N.A.	0.60
80-90	24.46	N.A.	0.10
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	22180.63	N.A.	100.00

Total Luminaire Efficiency = N.A.%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	1179.33
10-20	3560.42
20-30	5257.01
30-40	5498.37
40-50	4101.18
50-60	1860.76
60-70	558.38
70-80	140.72
80-90	24.46
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

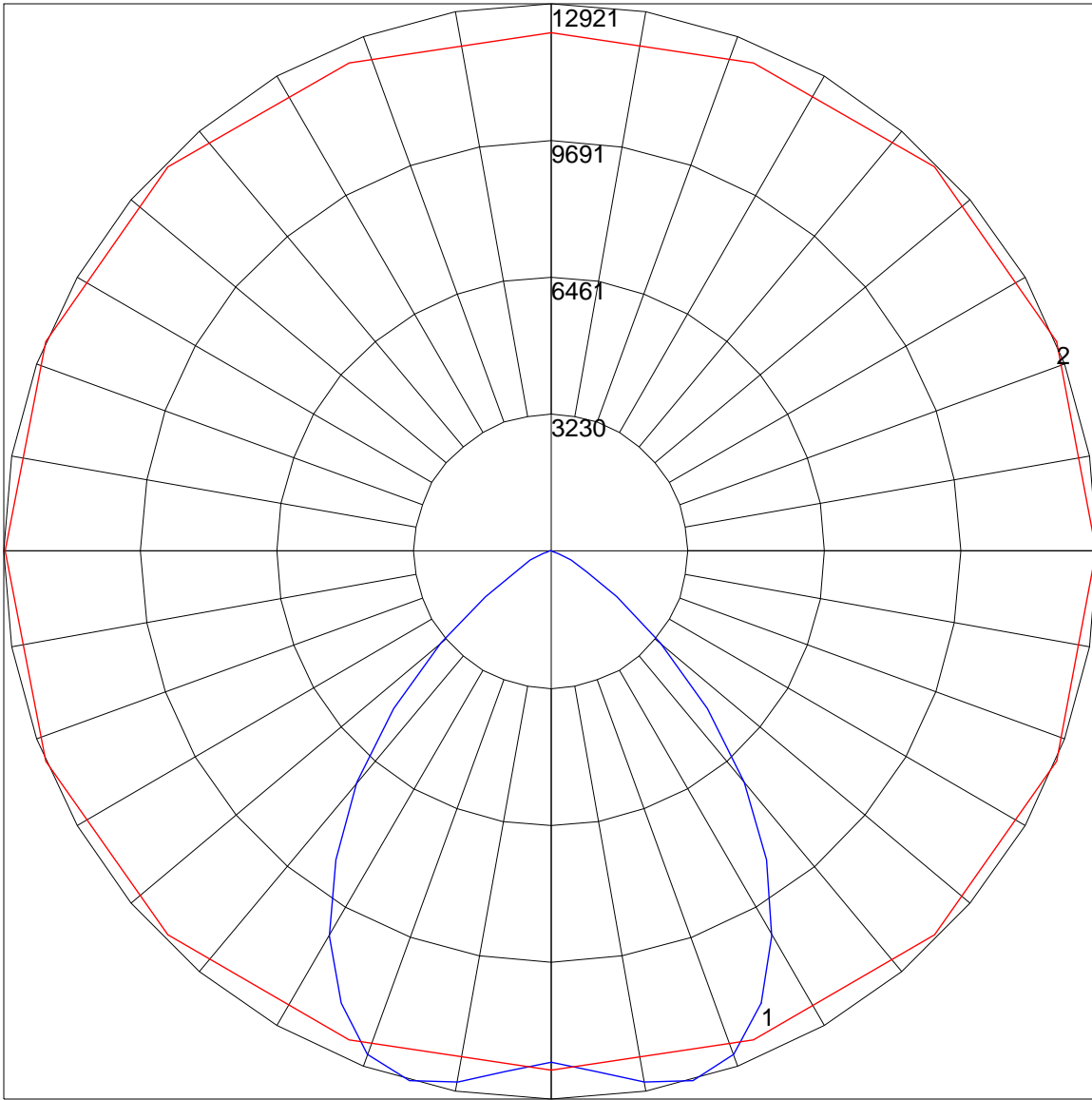
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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

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	109	106	103	110	106	104	101	102	100	98	99	97	95	95	94	92	91
2	105	99	94	89	102	97	92	88	94	90	86	90	87	85	88	85	83	81
3	98	90	83	78	95	88	82	78	85	81	77	83	79	75	80	77	74	72
4	91	82	75	69	89	80	74	69	78	73	68	76	71	67	74	70	66	65
5	85	75	67	62	83	74	67	62	72	66	61	70	65	60	68	64	60	58
6	79	68	61	56	78	68	61	55	66	60	55	64	59	55	63	58	54	53
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	57	51	46	56	50	45	55	49	45	54	49	45	43
9	65	54	47	42	64	53	46	42	52	46	42	51	46	41	50	45	41	40
10	62	50	43	39	61	50	43	38	49	43	38	48	42	38	47	42	38	36

POLAR GRAPH



Maximum Candela = 12921 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.)