



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

Report No: L011701902



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Issue Date: 2/8/2017

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

Model Number: 128017-125

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 128017-125. Received in working and undamaged condition. No modifications were necessary.

Testing Condition: Fixture is tested with no special conditions.

Sample Arrival Date: 1/10/17

Date of Tests: 1/12/17 - 1/13/17

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:	Revolution Lighting technologies
Model Number:	128017-125
Driver Model Number:	LETRON LP0237-1850(2 DRIVERS)
Total Lumens:	24743.24
Input Voltage (VAC/60Hz):	277.00
Input Current (Amp):	0.64
Input Power (W):	159.31
Input Power Factor:	0.90
Current ATHD @ 120V(%):	N/A
Current ATHD @ 277V(%):	16%
Efficacy:	155
Color Rendering Index (CRI):	85
Correlated Color Temperature (K):	4942
Chromaticity Coordinate x:	0.3469
Chromaticity Coordinate y:	0.3541
Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	0:30
Total Operating Time (Hours):	1:00
Off State Power(W):	0.00

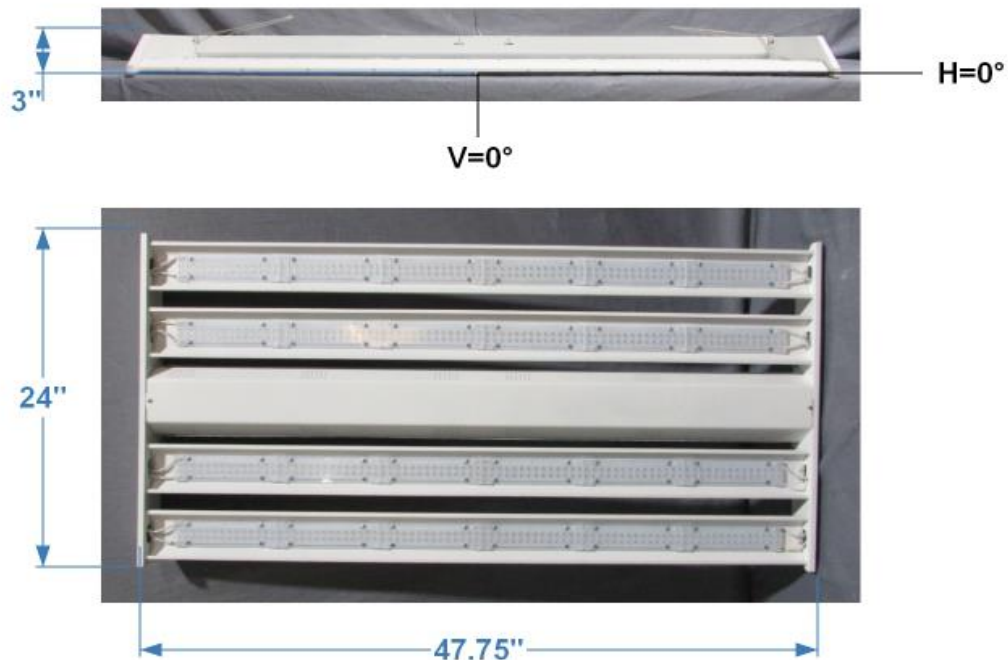
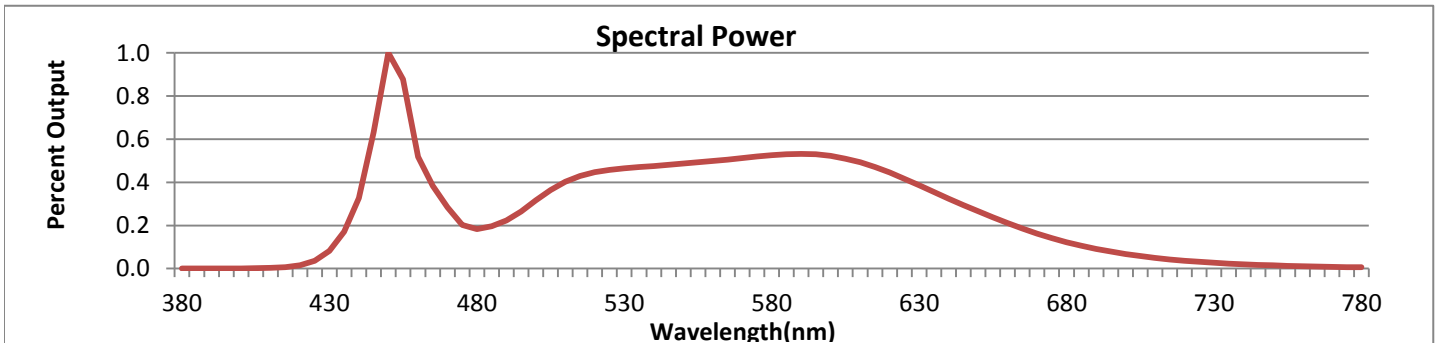


FIG. 1 LUMINAIRE

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



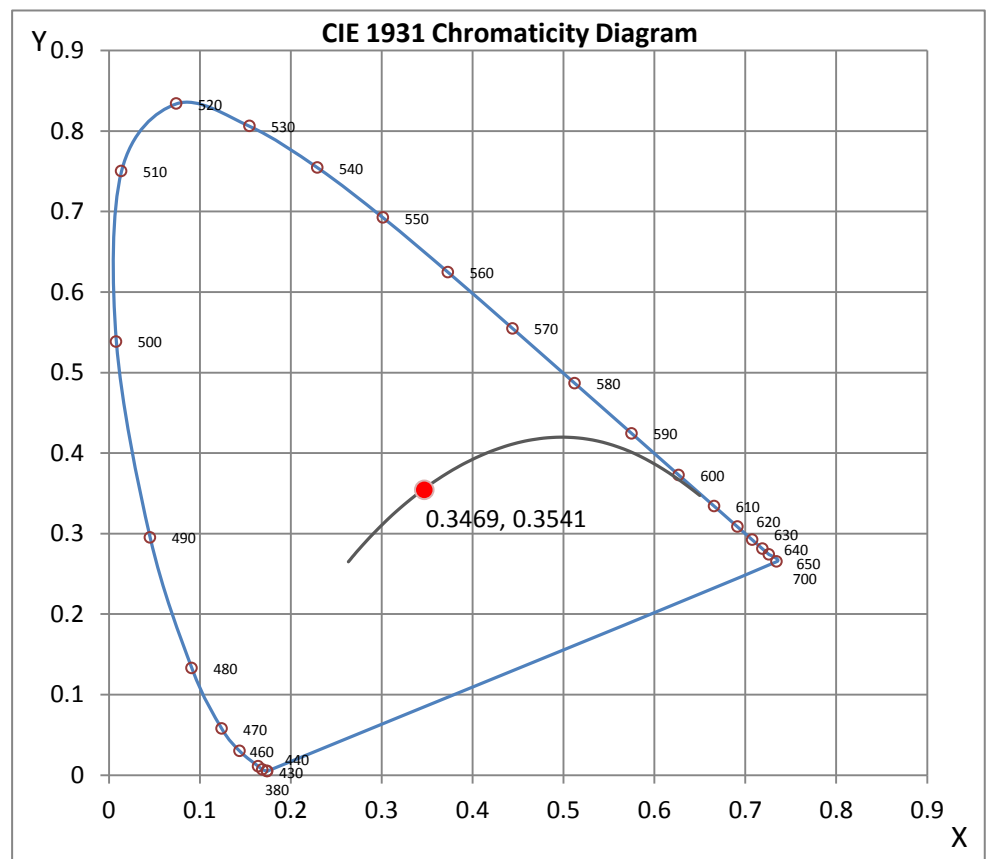
Wavelength	W/m ² nm	440	0.3266	510	0.4024	580	0.5264	650	0.2655	720	0.0368
380	0.0008	450	1.0000	520	0.4465	590	0.5318	660	0.2109	730	0.0270
390	0.0009	460	0.5184	530	0.4650	600	0.5224	670	0.1622	740	0.0199
400	0.0012	470	0.2838	540	0.4755	610	0.4930	680	0.1228	750	0.0149
410	0.0030	480	0.1837	550	0.4866	620	0.4454	690	0.0914	760	0.0110
420	0.0154	490	0.2228	560	0.4986	630	0.3858	700	0.0677	770	0.0083
430	0.0820	500	0.3166	570	0.5124	640	0.3243	710	0.0500	780	0.0071

CRI & CCT

x	0.3469
y	0.3541
u'	0.2117
v'	0.4861
CRI	84.60
CCT	4942
Duv	0.00054

R Values

R1	83.68
R2	89.32
R3	92.54
R4	84.56
R5	83.20
R6	83.75
R7	88.76
R8	70.93
R9	18.31
R10	73.77
R11	84.05
R12	55.46
R13	85.38
R14	95.66



*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 : L011701902.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] L011901902
[TESTLAB] LIGHT LABORATORY, INC.
[ISSUEDATE] 2/8/2017
[MANUFAC] REVOLUTION LIGHTING TECHNOLOGIES
[LUMCAT] 128017-125
[LUMINAIRE] 160W 2x4 Linear High Bay 5000K
[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, 159.31W
[TEST PROCEDURE] IESNA:LM-79-08

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	24743
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	155
Total Luminaire Watts	159.31
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.08
Spacing Criterion (90-270)	1.06
Spacing Criterion (Diagonal)	1.18
Basic Luminous Shape	Rectangular
Luminous Length (0-180)	3.90 ft
Luminous Width (90-270)	1.85 ft
Luminous Height	0.00 ft

LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	10466	13204	10257
55	4737	6559	4433
65	2645	2980	1936
75	1970	1486	979
85	2274	2035	2035

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L011701902.IES

CANDELA TABULATION

	<u>0.0</u>	<u>22.5</u>	<u>45.0</u>	<u>67.5</u>	<u>90.0</u>
0	15347	15347	15347	15347	15347
5	15482	15467	15456	15443	15411
10	15594	15594	15533	15432	15384
15	15225	15245	15171	14897	14745
20	14074	14255	14245	13741	13443
25	12449	12826	12988	12295	11882
30	10682	11182	11552	10760	10277
35	8889	9435	9952	9126	8625
40	6979	7566	8204	7363	6861
45	4965	5553	6264	5448	4866
50	3128	3623	4242	3514	3010
55	1823	2130	2524	2031	1706
60	1183	1302	1514	1197	1027
65	750	786	845	649	549
70	496	529	492	337	287
75	342	348	258	183	170
80	222	200	140	141	141
85	133	116	119	119	119
90	0	0	0	0	0

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L011701902.IES

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	5686.43	N.A.	23.00
0-30	11454.77	N.A.	46.30
0-40	17253.77	N.A.	69.70
0-60	23550.66	N.A.	95.20
0-80	24632.77	N.A.	99.60
0-90	24743.24	N.A.	100.00
10-90	23267.31	N.A.	94.00
20-40	11567.34	N.A.	46.70
20-50	15835.53	N.A.	64.00
40-70	7082.17	N.A.	28.60
60-80	1082.11	N.A.	4.40
70-80	296.83	N.A.	1.20
80-90	110.47	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	24743.24	N.A.	100.00

Total Luminaire Efficiency = N.A.%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	1475.93
10-20	4210.51
20-30	5768.34
30-40	5799.00
40-50	4268.2
50-60	2028.69
60-70	785.28
70-80	296.83
80-90	110.47
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

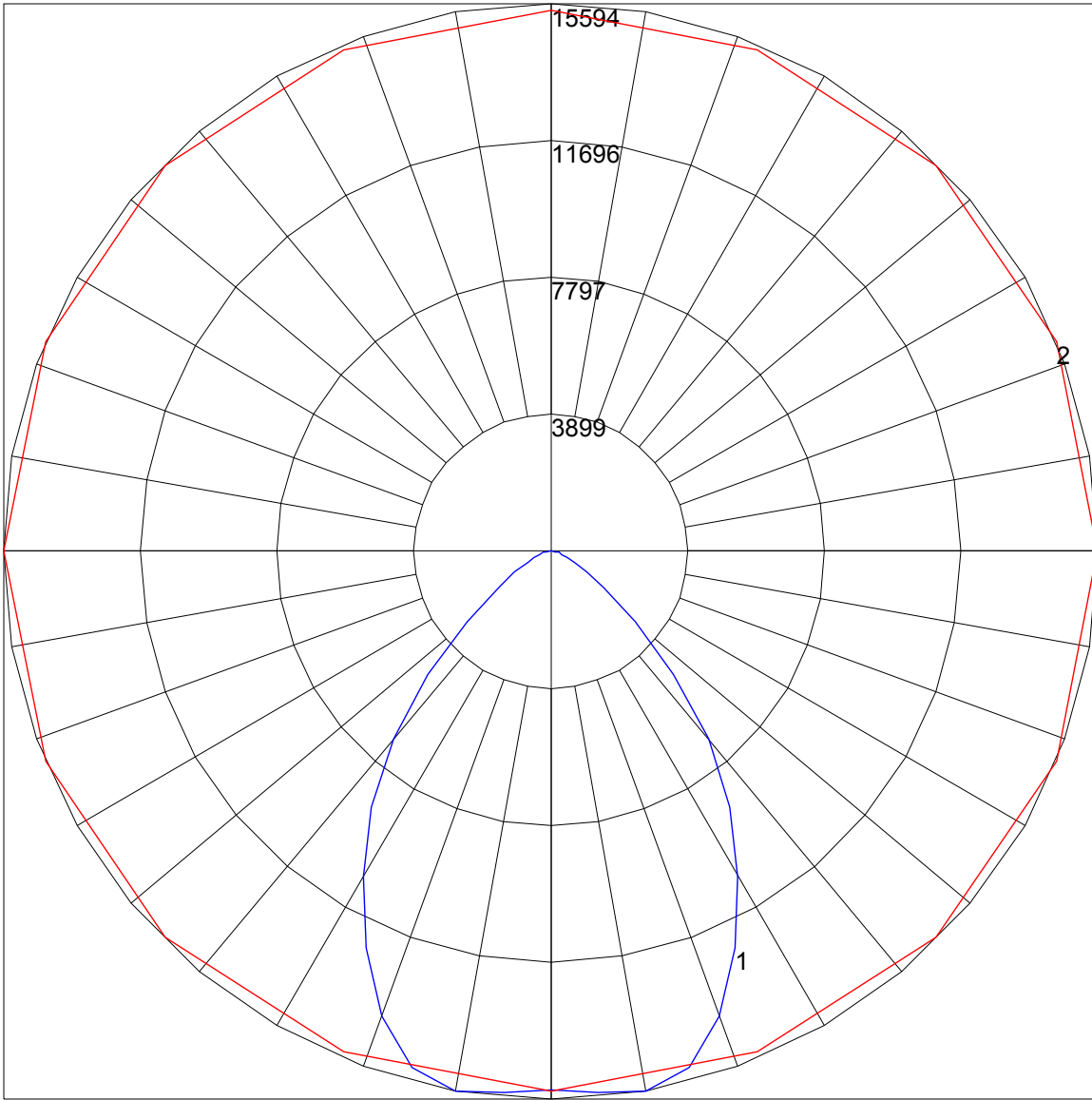
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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

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	102	109	106	103	101	102	100	98	98	96	95	95	93	92	90
2	104	98	93	89	102	97	92	88	93	89	86	90	87	84	87	85	82	80
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	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	56	66	60	55	64	59	55	63	58	54	53
7	74	63	56	51	73	62	55	50	61	55	50	60	54	50	58	53	50	48
8	70	58	51	46	69	58	51	46	57	50	46	55	50	46	54	49	45	44
9	66	54	47	42	65	54	47	42	53	46	42	52	46	42	51	46	42	40
10	62	51	44	39	61	50	43	39	49	43	39	48	43	39	48	42	39	37

POLAR GRAPH



Maximum Candela = 15594 Located At Horizontal Angle = 0, Vertical Angle = 10
1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (10) (Through Max. Cd.)