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Report No: L101606203

Date: 11/4/2016



NVLAP LAB CODE 200927-0

Report No: L101606203

Report Prepared For: Revolution Lighting Technologies (RVLT)
 4139 Guardian Street, Simi Valley, CA 93063

Model Number: 151042-105

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 151042-105. Received in working and undamaged condition. No modifications were necessary.

Testing Condition: Fixture is tested with no special conditions.

Sample Arrival Date: 10/26/16

Date of Tests: 10/31/16 - 11/4/16

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.

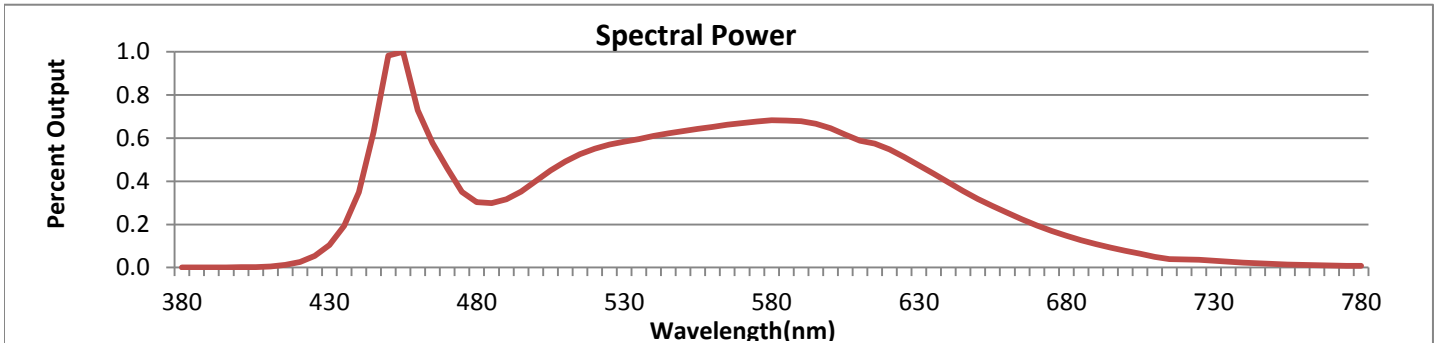
Test Summary

Manufacturer:	Revolution Lighting Technologies (RVL)
Model Number:	151042-105
Driver Model Number:	RVLT LED POWER SUPPLY 150000-D17
Total Lumens:	3034.36
Input Voltage (VAC/60Hz):	120.00
Input Current (Amp):	0.26
Input Power (W):	30.35
Input Power Factor:	98783.00
Current ATHD @ 120V(%):	13%
Current ATHD @ 277V(%):	N/A
Efficacy:	100
Color Rendering Index (CRI):	83
Correlated Color Temperature (K):	4937
Chromaticity Coordinate x:	0.3479
Chromaticity Coordinate y:	0.3630
Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	0:30
Total Operating Time (Hours):	1:05
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.



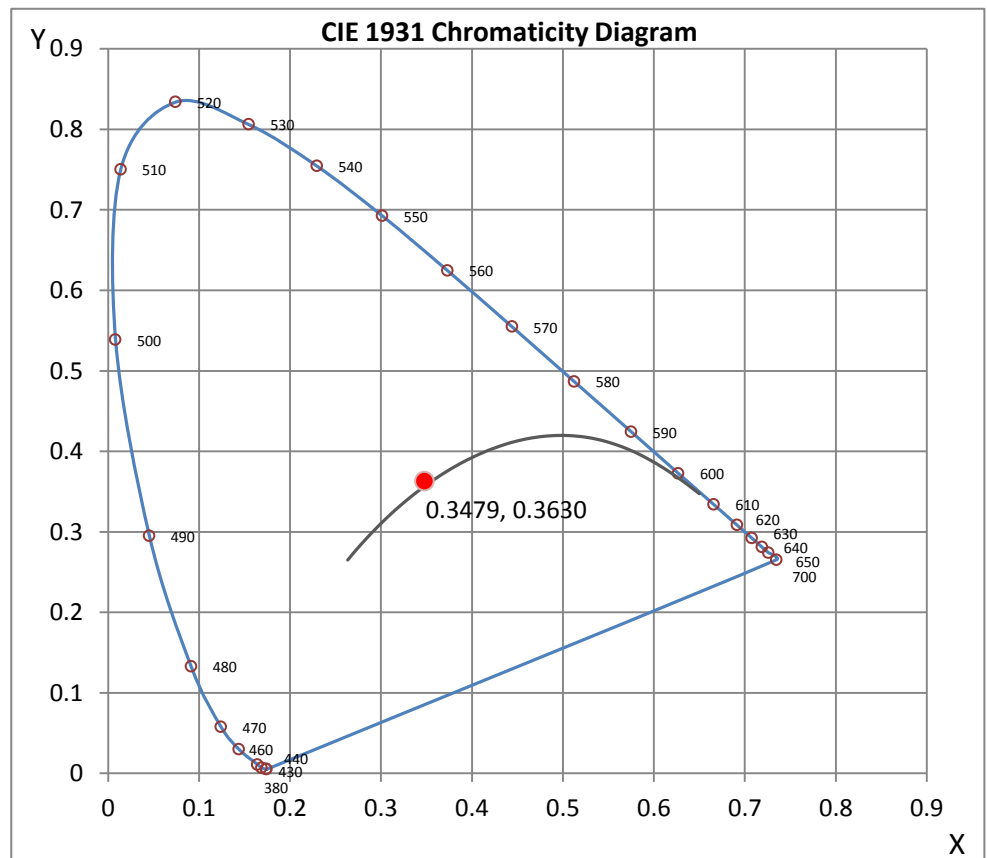
Wavelength	W/m ² nm	440	0.3495	510	0.4921	580	0.6828	650	0.3188	720	0.0371
380	0.0008	450	0.9829	520	0.5514	590	0.6785	660	0.2535	730	0.0314
390	0.0011	460	0.7292	530	0.5831	600	0.6464	670	0.1950	740	0.0231
400	0.0017	470	0.4609	540	0.6106	610	0.5882	680	0.1472	750	0.0165
410	0.0052	480	0.3027	550	0.6326	620	0.5477	690	0.1083	760	0.0120
420	0.0258	490	0.3161	560	0.6526	630	0.4732	700	0.0780	770	0.0094
430	0.1038	500	0.4014	570	0.6704	640	0.3946	710	0.0502	780	0.0083

CRI & CCT

x	0.3479
y	0.3630
u'	0.2089
v'	0.4905
CRI	82.50
CCT	4937
Duv	0.00454

R Values

R1	80.08
R2	88.89
R3	94.45
R4	79.61
R5	79.57
R6	83.46
R7	87.49
R8	66.38
R9	6.84
R10	72.99
R11	78.04
R12	54.12
R13	82.59
R14	96.77



*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 : L101606203.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
 [TEST] L101606203
 [TESTLAB] LIGHT LABORATORY, INC.
 [ISSUEDATE] 11/3/2016
 [MANUFAC] REVOLUTION LIGHTING TECHNOLOGIES (RVLT)
 [LUMCAT] 151042-105
 [LUMINAIRE] 30W 2X2 ECO THIN PANEL 5000K
 [BALLASTCAT] RVLT LED POWER SUPPLY 150000-D17
 [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, 30.35W
 [TEST PROCEDURE] IESNA:LM-79-08

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	3034
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	100
Total Luminaire Watts	30.35
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.26
Spacing Criterion (90-270)	1.22
Spacing Criterion (Diagonal)	1.36
Basic Luminous Shape	Rectangular
Luminous Length (0-180)	1.81 ft
Luminous Width (90-270)	1.81 ft
Luminous Height	0.00 ft

LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	3366	3263	3175
55	3199	3090	2999
65	3014	2897	2812
75	2575	2460	2359
85	1958	1808	1732

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L101606203.IES

CANDELA TABULATION

	<u>0.0</u>	<u>22.5</u>	<u>45.0</u>	<u>67.5</u>	<u>90.0</u>
0	1093	1093	1093	1093	1093
5	1089	1089	1088	1088	1088
10	1076	1074	1072	1070	1070
15	1052	1050	1046	1042	1040
20	1020	1017	1009	1003	1000
25	978	973	963	954	951
30	927	921	909	898	893
35	867	861	847	834	829
40	799	793	778	764	759
45	725	718	703	689	684
50	644	638	623	611	606
55	559	553	540	528	524
60	479	473	462	451	447
65	388	383	373	365	362
70	294	290	282	276	273
75	203	200	194	188	186
80	120	118	113	110	108
85	52	51	48	46	46
90	0	0	0	0	0

IES INDOOR REPORT
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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	398.45	N.A.	13.10
0-30	842.46	N.A.	27.80
0-40	1372.48	N.A.	45.20
0-60	2400.32	N.A.	79.10
0-80	2976.99	N.A.	98.10
0-90	3034.36	N.A.	100.00
10-90	2930.99	N.A.	96.60
20-40	974.03	N.A.	32.10
20-50	1516.78	N.A.	50.00
40-70	1397.46	N.A.	46.10
60-80	576.68	N.A.	19.00
70-80	207.06	N.A.	6.80
80-90	57.37	N.A.	1.90
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	3034.36	N.A.	100.00

Total Luminaire Efficiency = N.A.%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	103.37
10-20	295.08
20-30	444.02
30-40	530.02
40-50	542.74
50-60	485.09
60-70	369.62
70-80	207.06
80-90	57.37
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

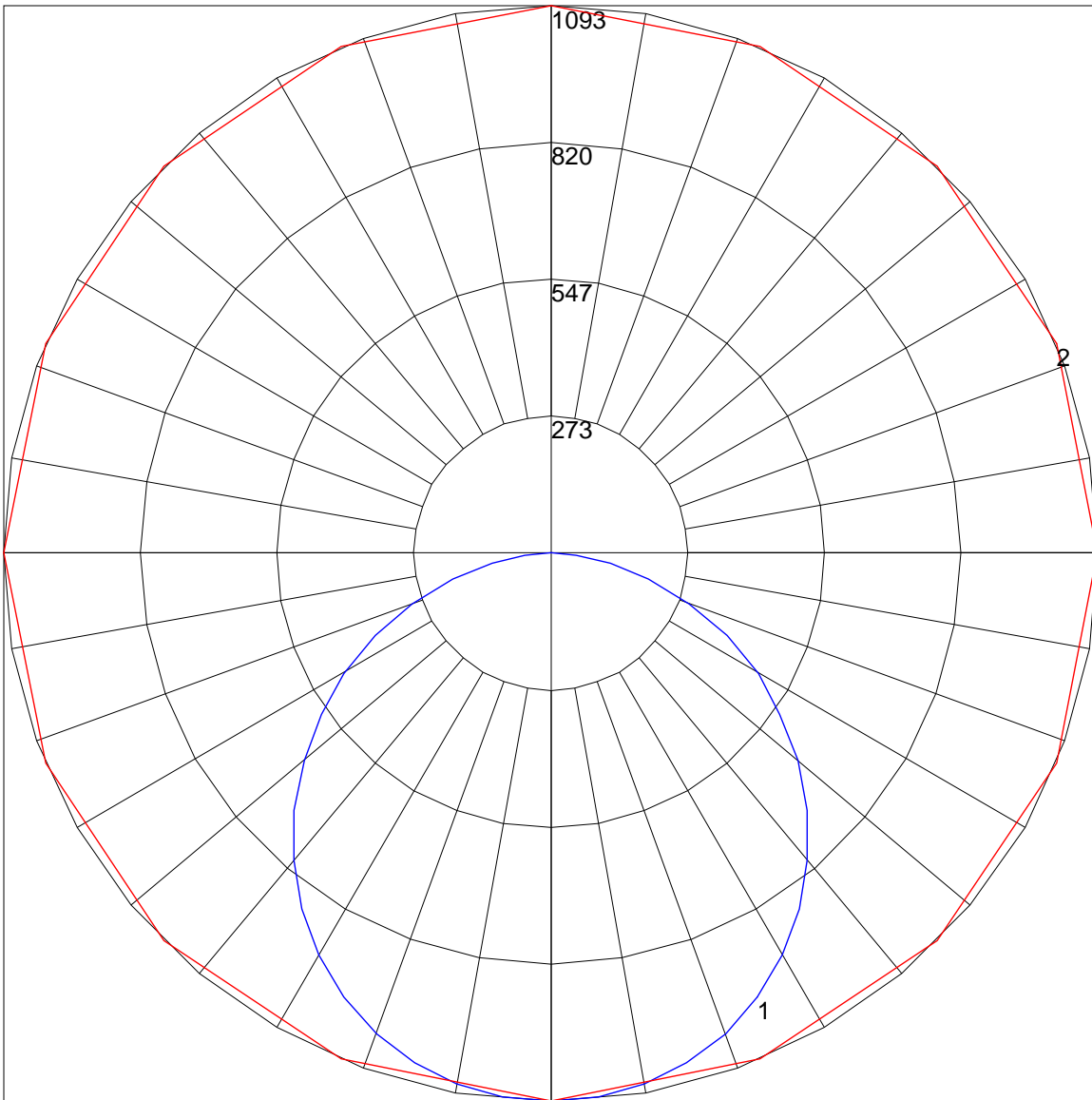
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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

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	109	104	100	96	106	102	98	94	97	94	91	94	91	88	90	88	86	84
2	99	91	84	78	96	89	82	77	85	80	75	82	77	74	79	75	72	70
3	90	80	71	65	88	78	70	64	75	69	63	72	67	62	70	65	61	59
4	83	71	62	55	80	69	61	55	67	60	54	64	58	53	62	57	52	50
5	76	63	54	47	74	62	53	47	60	52	47	58	51	46	56	50	46	43
6	70	57	48	41	68	56	47	41	54	46	41	52	46	40	51	45	40	38
7	65	51	43	37	63	51	42	36	49	42	36	48	41	36	46	40	36	34
8	61	47	38	33	59	46	38	32	45	38	32	44	37	32	43	36	32	30
9	57	43	35	29	55	43	35	29	41	34	29	40	34	29	39	33	29	27
10	53	40	32	27	52	39	32	27	38	31	26	37	31	26	36	30	26	24

POLAR GRAPH



Maximum Candela = 1093 Located At Horizontal Angle = 0, Vertical Angle = 0
1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (0) (Through Max. Cd.)