

Report No: L121605919**Issue Date:** 2/8/2017**Report Prepared For:** Revolution Lighting
4139 Guardian St. Simi Valley CA 93063**Model Number:** 131435-203**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. Received in working and undamaged condition. No modifications were necessary.

Testing Condition: Fixture is tested with no special conditions.

Sample Arrival Date: 12/21/16

Date of Tests: 12/23/16 - 1/5/17

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

Test Summary

Manufacturer:	Revolution Lighting
Model Number:	131435-203
Driver Model Number:	N/A
Total Lumens:	4630.31
Input Voltage (VAC/60Hz):	120.00
Input Current (Amp):	0.30
Input Power (W):	35.25
Input Power Factor:	0.99
Current ATHD @ 120V(%):	11%
Current ATHD @ 277V(%):	N/A
Efficacy:	131
Color Rendering Index (CRI):	84
Correlated Color Temperature (K):	4014
Chromaticity Coordinate x:	0.3800
Chromaticity Coordinate y:	0.3770
Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	0:35
Total Operating Time (Hours):	1:05
Off State Power(W):	0.00

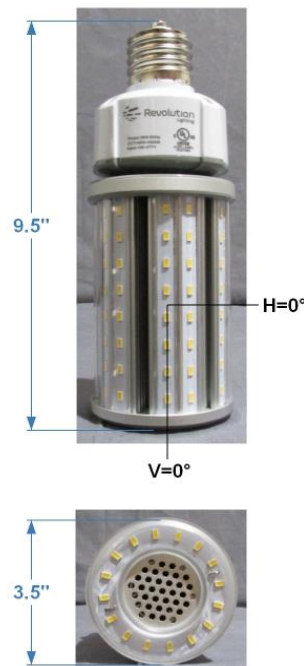
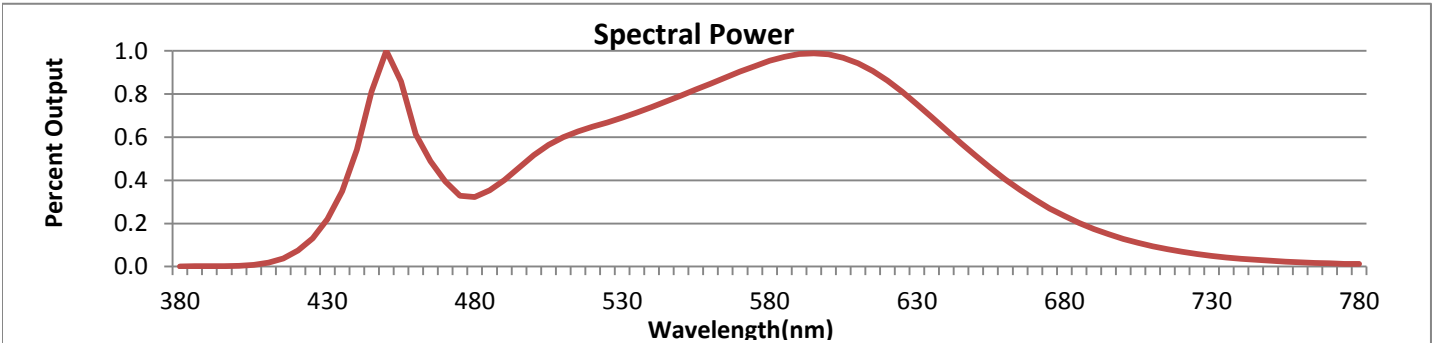


FIG. 1 LUMINAIRE

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



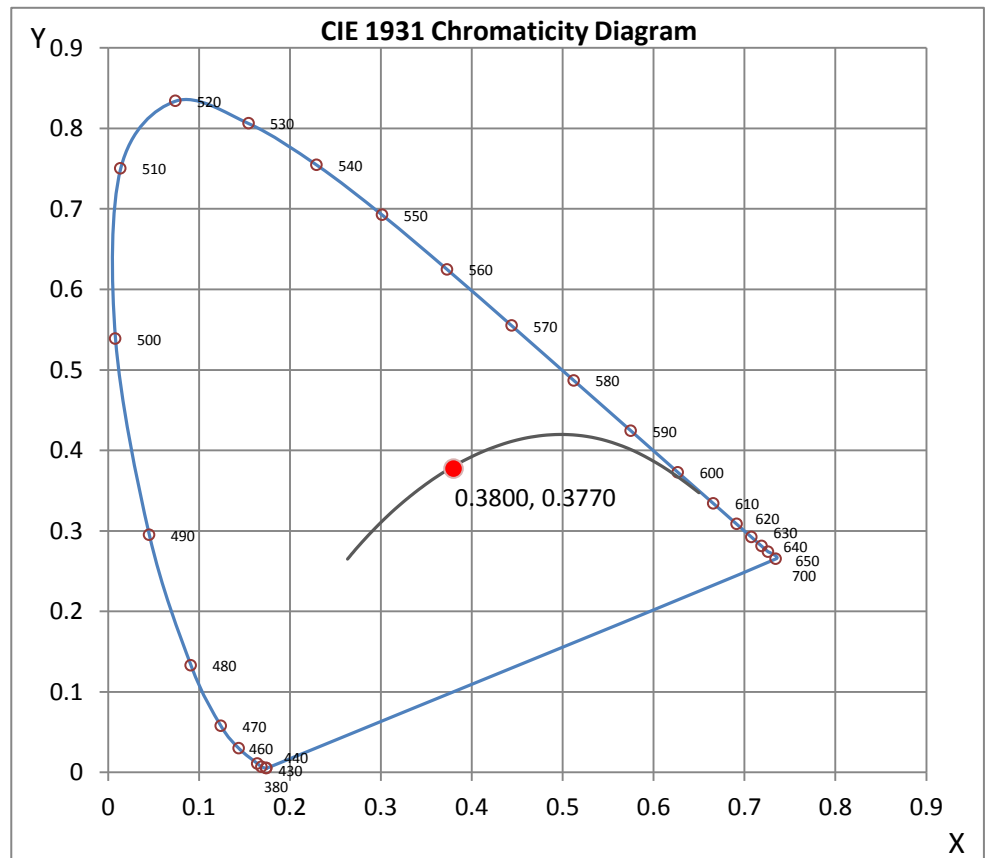
Wavelength	W/m ² nm	440	0.5417	510	0.6004	580	0.9542	650	0.5135	720	0.0684
380	0.0012	450	1.0000	520	0.6486	590	0.9859	660	0.4043	730	0.0497
390	0.0016	460	0.6131	530	0.6901	600	0.9843	670	0.3101	740	0.0366
400	0.0039	470	0.3958	540	0.7389	610	0.9427	680	0.2343	750	0.0269
410	0.0176	480	0.3222	550	0.7932	620	0.8629	690	0.1741	760	0.0198
420	0.0744	490	0.4008	560	0.8485	630	0.7536	700	0.1283	770	0.0147
430	0.2196	500	0.5164	570	0.9047	640	0.6334	710	0.0940	780	0.0128

CRI & CCT

x	0.3800
y	0.3770
u'	0.2247
v'	0.5016
CRI	84.00
CCT	4014
Duv	0.00025

R Values

R1	82.19
R2	90.08
R3	95.68
R4	82.99
R5	82.55
R6	86.32
R7	86.31
R8	65.51
R9	11.49
R10	76.60
R11	82.17
R12	67.45
R13	84.12
R14	97.56



*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
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Test Report Reviewed by:



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



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Photometric Test Report

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L121605919.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] L121605919
[TESTLAB] LIGHT LABORATORY, INC.
[ISSUEDATE] 1/5/2017
[MANUFAC] REVOLUTION LIGHTING
[LUMCAT] 131435-203
[LUMINAIRE] 36W 4000K EX39 OMNIDIRECTIONAL UTILITY LAMP
[BALLASTCAT] N/A
[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, 35.25W
[TEST PROCEDURE] IESNA:LM-79-08

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	4630
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	131
Total Luminaire Watts	35.25
Ballast Factor	1.00
CIE Type	General Diffuse
Spacing Criterion (0-180)	N.A.
Spacing Criterion (90-270)	N.A.
Spacing Criterion (Diagonal)	N.A.
Basic Luminous Shape	Circular w/ Sides
Luminous Length (0-180)	0.29 ft (Diameter)
Luminous Width (90-270)	0.29 ft (Diameter)
Luminous Height	0.42 ft

LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	36282	36282	36282
55	36557	36557	36557
65	35411	35411	35411
75	34231	34231	34231
85	35978	35978	35978

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L121605919.IES

CANDELA TABULATION

	<u>0</u>
0	257.93
5	259.95
10	271.15
15	293.15
20	319.14
25	348.11
30	380.81
35	407.94
40	430.54
45	448.15
50	461.17
55	467.96
60	466.89
65	455.42
70	439.07
75	428.91
80	425.38
85	425.20
90	424.08
95	421.47
100	415.81
105	406.50
110	393.79
115	377.66
120	357.58
125	333.16
130	306.90
135	274.70
140	237.96
145	196.62
150	154.76
155	116.73
160	82.13
165	47.25
170	19.33
175	3.78
180	0.00

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L121605919.IES

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	109.13	N.A.	2.40
0-30	271.35	N.A.	5.90
0-40	527.40	N.A.	11.40
0-60	1291.95	N.A.	27.90
0-80	2198.11	N.A.	47.50
0-90	2661.77	N.A.	57.50
10-90	2636.58	N.A.	56.90
20-40	418.27	N.A.	9.00
20-50	764.71	N.A.	16.50
40-70	1215.26	N.A.	26.20
60-80	906.17	N.A.	19.60
70-80	455.46	N.A.	9.80
80-90	463.66	N.A.	10.00
90-110	888.24	N.A.	19.20
90-120	1262.31	N.A.	27.30
90-130	1561.14	N.A.	33.70
90-150	1897.84	N.A.	41.00
90-180	1968.54	N.A.	42.50
110-180	1080.3	N.A.	23.30
0-180	4630.31	N.A.	100.00

Total Luminaire Efficiency = N.A.%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	25.19
10-20	83.94
20-30	162.23
30-40	256.04
40-50	346.44
50-60	418.11
60-70	450.71
70-80	455.46
80-90	463.66
90-100	459.03
100-110	429.21
110-120	374.07
120-130	298.83
130-140	212.44
140-150	124.25
150-160	55.21
160-170	14.61
170-180	0.87

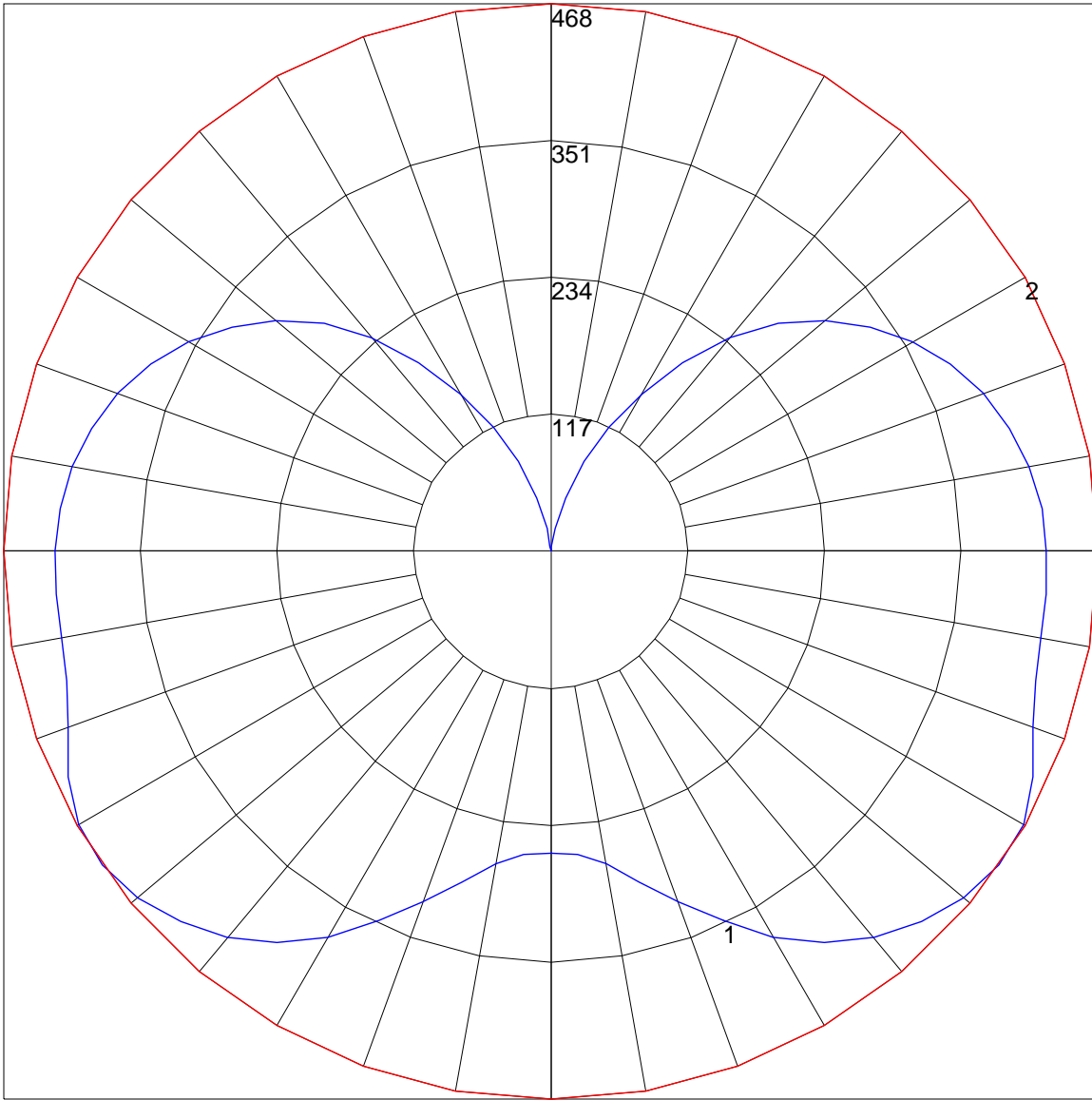
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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

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	109	109	109	109	101	101	101	101	87	87	87	75	75	75	63	63	63	57
1	94	88	82	77	87	81	76	72	69	65	61	58	55	52	48	45	43	38
2	84	74	66	59	77	68	61	55	58	52	47	48	44	40	39	36	33	28
3	75	63	54	47	69	59	50	43	49	43	37	41	36	31	33	29	26	21
4	68	55	45	38	63	51	42	35	43	36	30	35	30	25	29	24	21	17
5	62	48	39	32	57	45	36	29	38	31	25	31	26	21	25	21	17	14
6	57	43	33	27	52	40	31	25	34	27	21	28	22	18	22	18	14	11
7	52	38	29	23	48	35	27	21	30	23	18	25	19	15	20	16	12	10
8	48	35	26	20	44	32	24	18	27	21	16	23	17	13	18	14	11	8
9	45	31	23	17	41	29	21	16	25	18	14	21	15	12	17	13	9	7
10	42	29	21	15	39	27	19	14	23	17	12	19	14	10	16	11	8	6

POLAR GRAPH



Maximum Candela = 467.96 Located At Horizontal Angle = 0, Vertical Angle = 55
1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (55) (Through Max. Cd.)