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www.lightlaboratory.com

Report No: L121605927R02



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Issue Date: 2/17/2017

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

Model Number: 121031-231

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: 1/3/17 - 1/9/17

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.

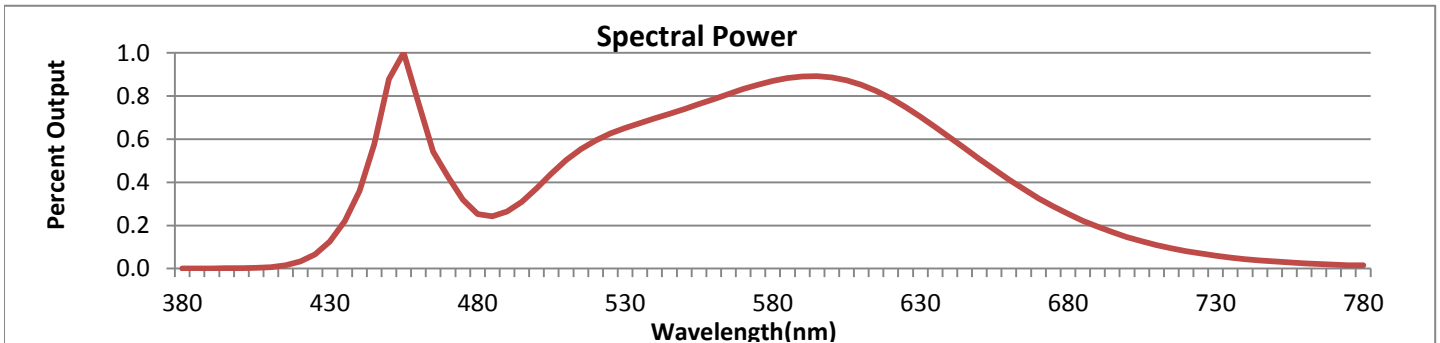
Test Summary

Manufacturer:	Revolution Lighting
Model Number:	121031-231
Driver Model Number:	MEAN WELL HBG-100-48B
Total Lumens:	13150.50
Input Voltage (VAC/60Hz):	120.00
Input Current (Amp):	0.81
Input Power (W):	96.74
Input Power Factor:	1.00
Current ATHD @ 120V(%):	9%
Current ATHD @ 277V(%):	N/A
Efficacy:	136
Color Rendering Index (CRI):	83
Correlated Color Temperature (K):	3953
Chromaticity Coordinate x:	0.3826
Chromaticity Coordinate y:	0.3783
Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	0:45
Total Operating Time (Hours):	1:10
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.



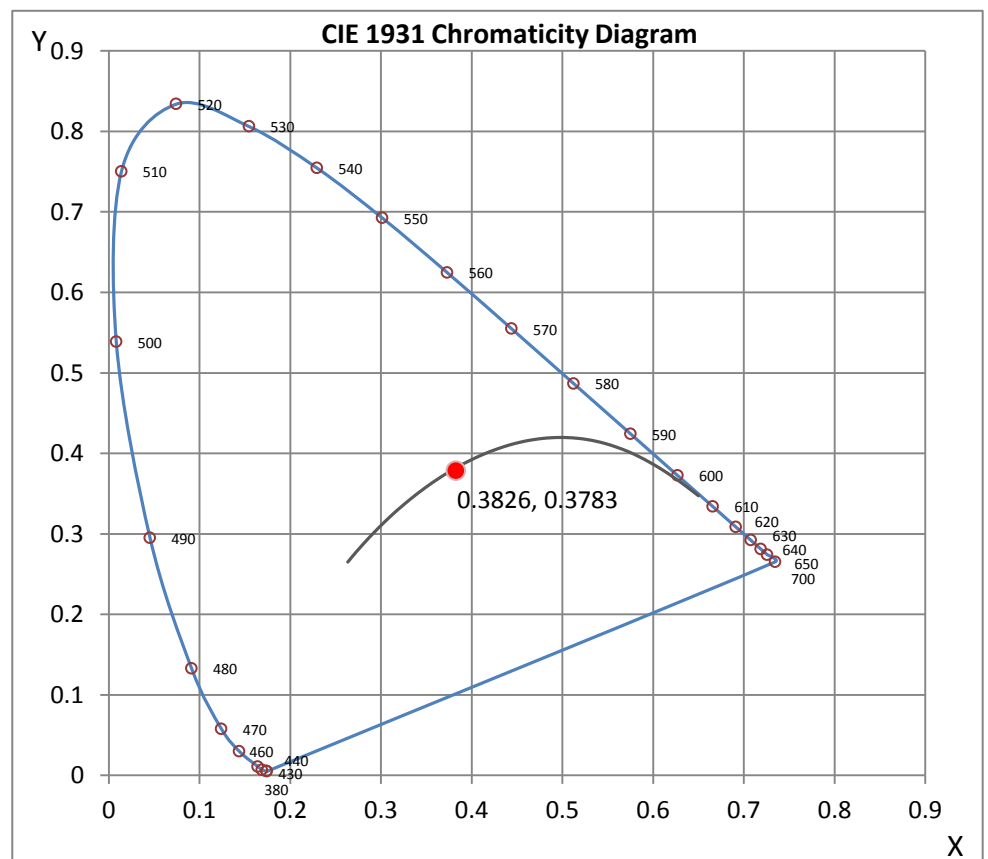
Wavelength	W/m ² nm	440	0.3591	510	0.5029	580	0.8705	650	0.5083	720	0.0811
380	0.0009	450	0.8791	520	0.5945	590	0.8913	660	0.4133	730	0.0598
390	0.0012	460	0.7685	530	0.6520	600	0.8864	670	0.3262	740	0.0443
400	0.0021	470	0.4252	540	0.6965	610	0.8527	680	0.2536	750	0.0326
410	0.0069	480	0.2535	550	0.7390	620	0.7906	690	0.1942	760	0.0242
420	0.0327	490	0.2654	560	0.7858	630	0.7042	700	0.1466	770	0.0181
430	0.1249	500	0.3720	570	0.8327	640	0.6074	710	0.1094	780	0.0156

CRI & CCT

x	0.3826
y	0.3783
u'	0.2259
v'	0.5026
CRI	83.10
CCT	3953
Duv	0.00010

R Values

R1	81.76
R2	89.14
R3	93.75
R4	81.38
R5	80.80
R6	83.80
R7	87.18
R8	67.20
R9	15.97
R10	73.08
R11	79.26
R12	57.90
R13	83.59
R14	96.25



*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 : L121605927R02.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] L121605927R02
[TESTLAB] LIGHT LABORATORY, INC.
[ISSUEDATE] 2/17/2017
[MANUFAC] Revolution Lighting
[LUMCAT] 121031-231
[LUMINAIRE] 100W Low-Pro Round Dimmable High Bay 4000K
[BALLASTCAT] MEANWELL HBG-100-48B
[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, 96.74W
[TEST PROCEDURE] IESNA:LM-79-08

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	13150
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	136
Total Luminaire Watts	96.74
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.30
Spacing Criterion (90-270)	1.30
Spacing Criterion (Diagonal)	1.40
Basic Luminous Shape	Circular
Luminous Length (0-180)	0.50 ft (Diameter)
Luminous Width (90-270)	0.50 ft (Diameter)
Luminous Height	0.00 ft

LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	252658	252658	252658
55	240340	240340	240340
65	201260	201260	201260
75	121888	121888	121888
85	30163	30163	30163

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L121605927R02.IES

CANDELA TABULATION

	<u>0</u>
0	4730
5	4707
10	4658
15	4573
20	4452
25	4292
30	4098
35	3869
40	3587
45	3262
50	2916
55	2517
60	2066
65	1553
70	1045
75	576
80	216
85	48
90	0

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L121605927R02.IES

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	1739.2	N.A.	13.20
0-30	3718.04	N.A.	28.30
0-40	6135.22	N.A.	46.70
0-60	10892.38	N.A.	82.80
0-80	13065.62	N.A.	99.40
0-90	13150.5	N.A.	100.00
10-90	12702.66	N.A.	96.60
20-40	4396.02	N.A.	33.40
20-50	6912.52	N.A.	52.60
40-70	6294.78	N.A.	47.90
60-80	2173.24	N.A.	16.50
70-80	635.62	N.A.	4.80
80-90	84.88	N.A.	0.60
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	13150.5	N.A.	100.00

Total Luminaire Efficiency = N.A.%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	447.83
10-20	1291.36
20-30	1978.85
30-40	2417.17
40-50	2516.5
50-60	2240.66
60-70	1537.62
70-80	635.62
80-90	84.88
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

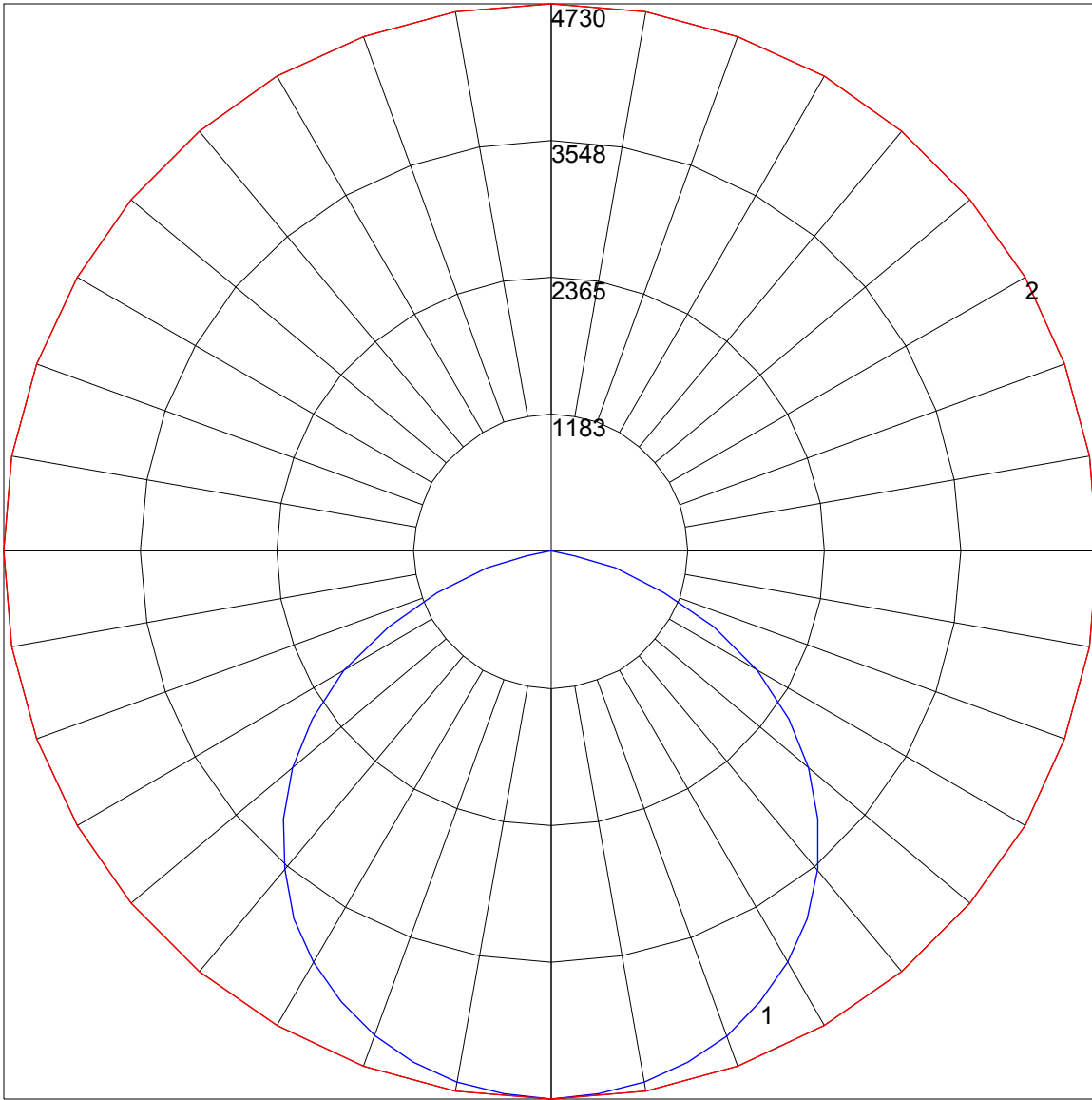
IES INDOOR REPORT
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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

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	110	105	101	98	107	103	99	96	99	96	93	95	92	90	91	89	87	85
2	100	92	86	80	97	90	84	79	87	82	77	83	79	76	80	77	74	72
3	91	81	73	67	89	80	72	66	77	70	65	74	69	64	71	67	63	61
4	84	72	63	57	81	71	63	56	68	61	56	66	60	55	64	58	54	52
5	77	64	55	49	75	63	55	49	61	54	48	59	53	48	57	52	47	45
6	71	58	49	43	69	57	49	42	55	48	42	53	47	42	52	46	41	39
7	66	52	44	38	64	52	43	38	50	43	37	49	42	37	47	41	37	35
8	61	48	39	34	60	47	39	33	46	38	33	45	38	33	43	37	33	31
9	57	44	36	30	56	43	35	30	42	35	30	41	34	30	40	34	30	28
10	54	40	33	27	52	40	32	27	39	32	27	38	32	27	37	31	27	25

POLAR GRAPH



Maximum Candela = 4730 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.)