

**Report No:** L121605929R02

**Issue Date:** 2/17/2017

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

**Model Number:** 121032-231

**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**

<b>Manufacturer:</b>	Revolution Lighting
<b>Model Number:</b>	121032-231
<b>Driver Model Number:</b>	MEANWELL HBG-160-48B
<b>Total Lumens:</b>	20686.75
<b>Input Voltage (VAC/60Hz):</b>	120.00
<b>Input Current (Amp):</b>	1.29
<b>Input Power (W):</b>	154.23
<b>Input Power Factor:</b>	0.99
<b>Current ATHD @ 120V(%):</b>	8%
<b>Current ATHD @ 277V(%):</b>	N/A
<b>Efficacy:</b>	134
<b>Color Rendering Index (CRI):</b>	83
<b>Correlated Color Temperature (K):</b>	3928
<b>Chromaticity Coordinate x:</b>	0.3836
<b>Chromaticity Coordinate y:</b>	0.3784
<b>Ambient Temperature (°C):</b>	25.0
<b>Stabilization Time (Hours):</b>	0:45
<b>Total Operating Time (Hours):</b>	1:10
<b>Off State Power(W):</b>	0.00

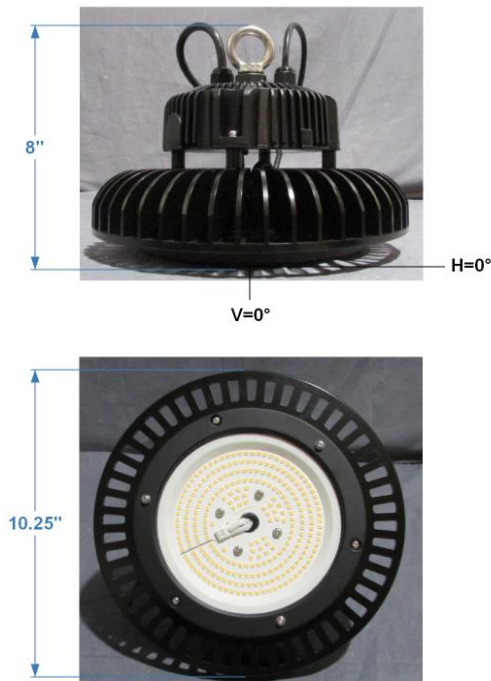
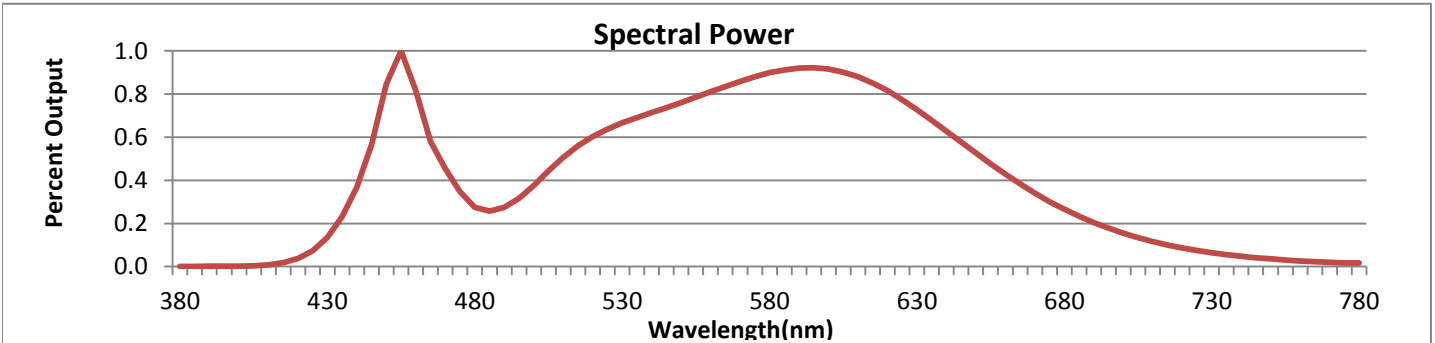


FIG. 1 LUMINAIRE

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



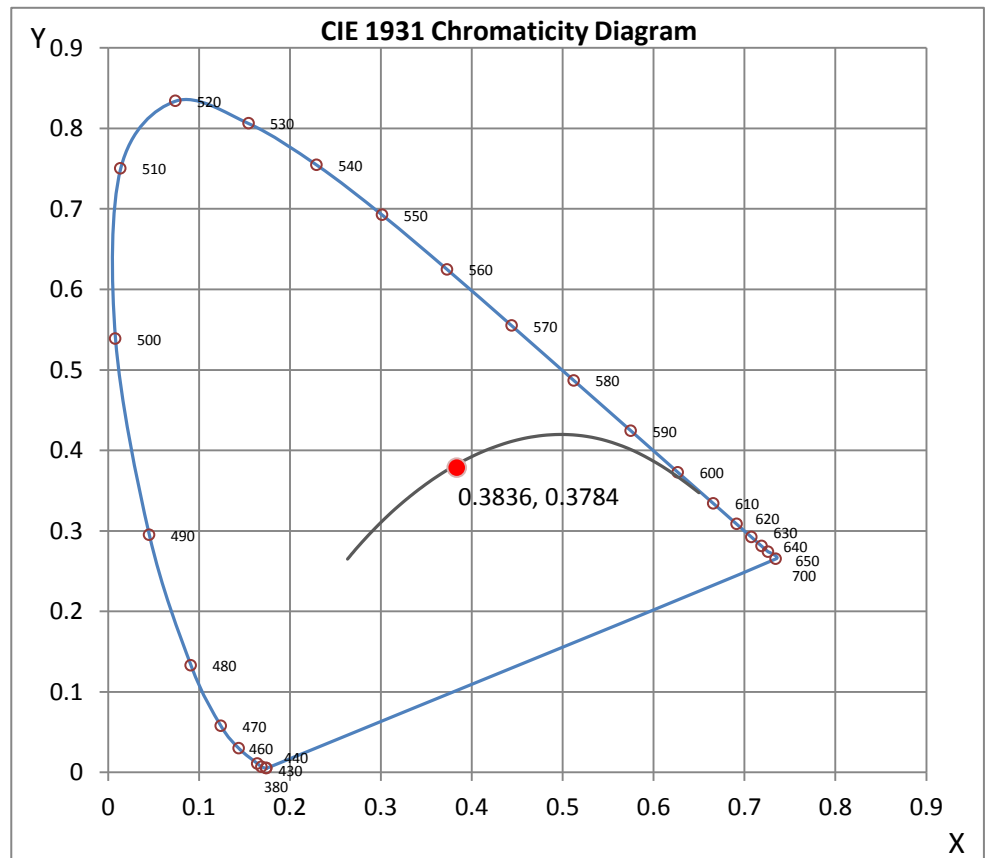
Wavelength	W/m <sup>2</sup> nm	440	0.3685	510	0.5072	580	0.8997	650	0.5266	720	0.0870
380	0.0010	450	0.8466	520	0.6032	590	0.9210	660	0.4297	730	0.0645
390	0.0013	460	0.8172	530	0.6661	600	0.9161	670	0.3398	740	0.0480
400	0.0024	470	0.4542	540	0.7139	610	0.8807	680	0.2657	750	0.0355
410	0.0083	480	0.2745	550	0.7605	620	0.8161	690	0.2040	760	0.0265
420	0.0373	490	0.2755	560	0.8102	630	0.7277	700	0.1549	770	0.0198
430	0.1348	500	0.3756	570	0.8587	640	0.6283	710	0.1161	780	0.0171

**CRI & CCT**

x	0.3836
y	0.3784
u'	0.2265
v'	0.5028
CRI	83.10
CCT	3928
Duv	-0.00013

**R Values**

R1	81.72
R2	89.39
R3	94.02
R4	80.99
R5	80.71
R6	84.06
R7	86.96
R8	66.94
R9	15.92
R10	73.50
R11	78.64
R12	58.53
R13	83.65
R14	96.40



\*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*



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

# Photometric Test Report

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : L121605929R02.IES**

**DESCRIPTION INFORMATION (From Photometric File)**

IESNA:LM-63-2002  
[TEST] L121605929R02  
[TESTLAB] LIGHT LABORATORY, INC.  
[ISSUEDATE] 2/17/2017  
[MANUFAC] Revolution Lighting  
[LUMCAT] 121032-231  
[LUMINAIRE] 150W Low-Pro Round Dimmable High Bay 4000K  
[BALLASTCAT] MEANWELL HBG-160-48B  
[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, 154.23W  
[TEST PROCEDURE] IESNA:LM-79-08

**CHARACTERISTICS**

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	20687
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	134
Total Luminaire Watts	154.23
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	395949	395949	395949
55	376790	376790	376790
65	319061	319061	319061
75	178176	178176	178176
85	49644	49644	49644

IES INDOOR REPORT  
PHOTOMETRIC FILENAME : L121605929R02.IES

CANDELA TABULATION

	<u>0</u>
0	7464
5	7427
10	7349
15	7204
20	7017
25	6749
30	6441
35	6069
40	5626
45	5112
50	4570
55	3946
60	3262
65	2462
70	1724
75	842
80	344
85	79
90	0

**IES INDOOR REPORT**  
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**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	2741.89	N.A.	13.30
0-30	5854.89	N.A.	28.30
0-40	9648.3	N.A.	46.60
0-60	17110.69	N.A.	82.70
0-80	20550.17	N.A.	99.30
0-90	20686.75	N.A.	100.00
10-90	19980.14	N.A.	96.60
20-40	6906.41	N.A.	33.40
20-50	10851.03	N.A.	52.50
40-70	9913.83	N.A.	47.90
60-80	3439.49	N.A.	16.60
70-80	988.05	N.A.	4.80
80-90	136.57	N.A.	0.70
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	20686.75	N.A.	100.00

Total Luminaire Efficiency = N.A.%

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	706.60
10-20	2035.28
20-30	3113.01
30-40	3793.41
40-50	3944.62
50-60	3517.77
60-70	2451.44
70-80	988.05
80-90	136.57
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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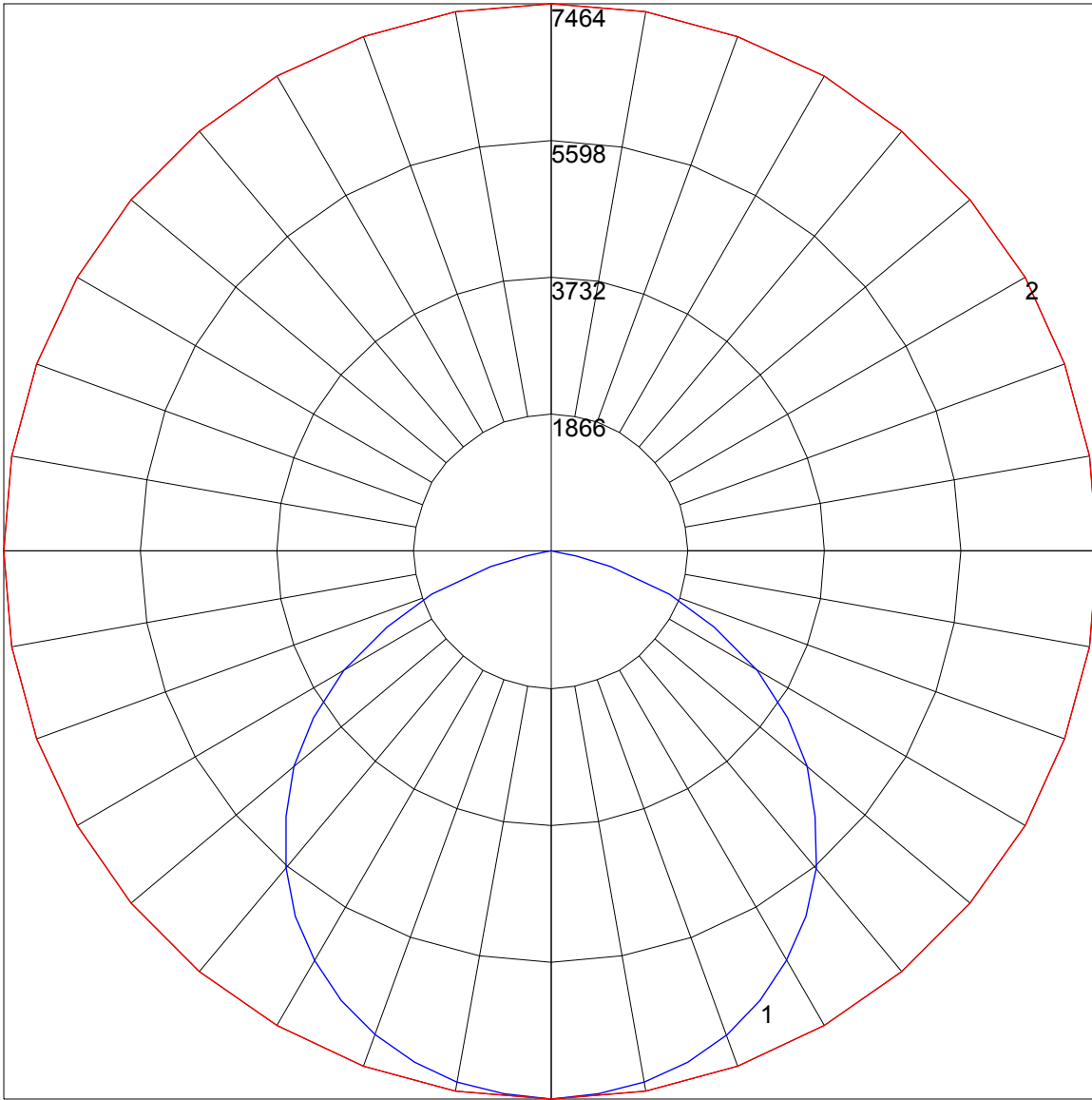
**COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD**

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	68	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	37	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 = 7464 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.)