



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

Report No: L081910633



**Report No:** L081910633

**Issue Date:** 9/6/2019

**Report Prepared For:** Number Eight Lighting Company  
526 Portal Street, Cotati, CA 94931

**Model Number:** 202-S-HI-3000-15/DIM1-2-SO/FLS-2-WH

**Test:** Photometric/Colorimetric/Electrical Test

**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.

**Special Test Condition:** Fixture is tested with no special conditions.

**Sample Arrival Date:** 8/16/19

**Date of Tests:** 8/28/19 - 9/6/19

**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-S4	1/9/21
BK PRECISION	1747	PS-DC04	1/10/21
Fluke Digital Thermometer	52K/J	MT-TP05	1/10/21
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

### General Information

<b>Manufacturer:</b>	Number Eight Lighting Company
<b>Model Number:</b>	202-S-HI-3000-15/DIM1-2-SO/FLS-2-WH
<b>Driver Model Number:</b>	INTUITIVE SYSTEMS ISD-701-350-15-D

### Test Summary

<b>Total Lumens:</b>	932.04
<b>Efficacy:</b>	66.95
<b>Color Redering Index:</b>	91.7
<b>Correlated Color Temperature:</b>	2990
<b>Input Voltage (VAC/60Hz):</b>	120.00
<b>Input Current (Amp):</b>	0.1171
<b>Input Power (W):</b>	13.92
<b>Input Power Factor:</b>	0.9913
<b>Current ATHD (%):</b>	7.6%

### Test Condition

<b>Ambient Temperature (°C):</b>	25.0
<b>Stabilization Time (Hours):</b>	1:00
<b>Total Operating Time (Hours):</b>	2:00

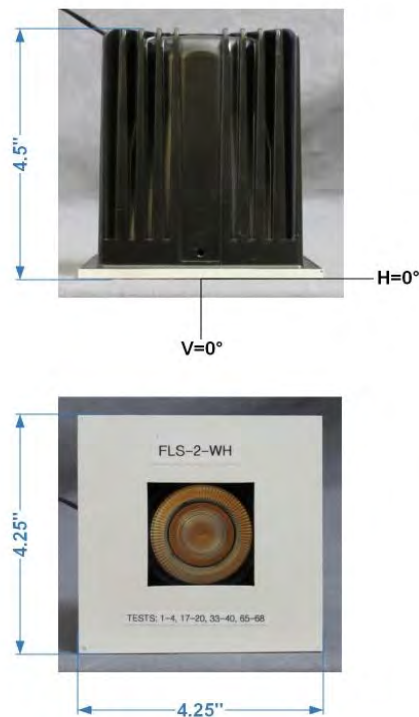
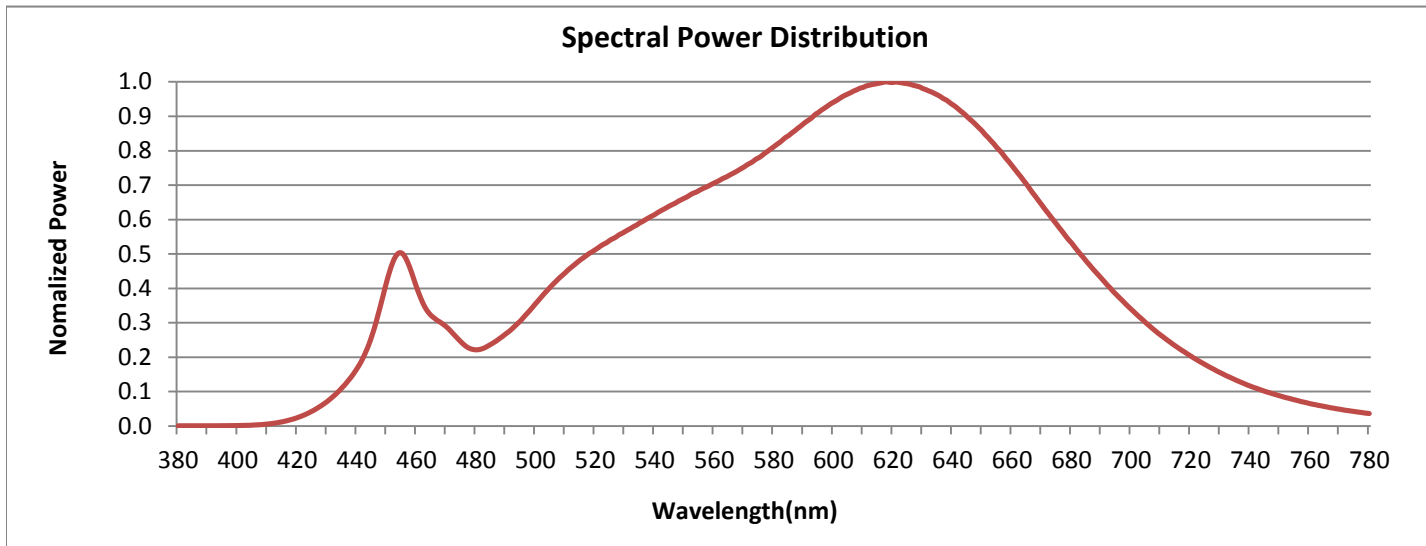


FIG. 1 LUMINAIRE

## Colorimetry Test Results

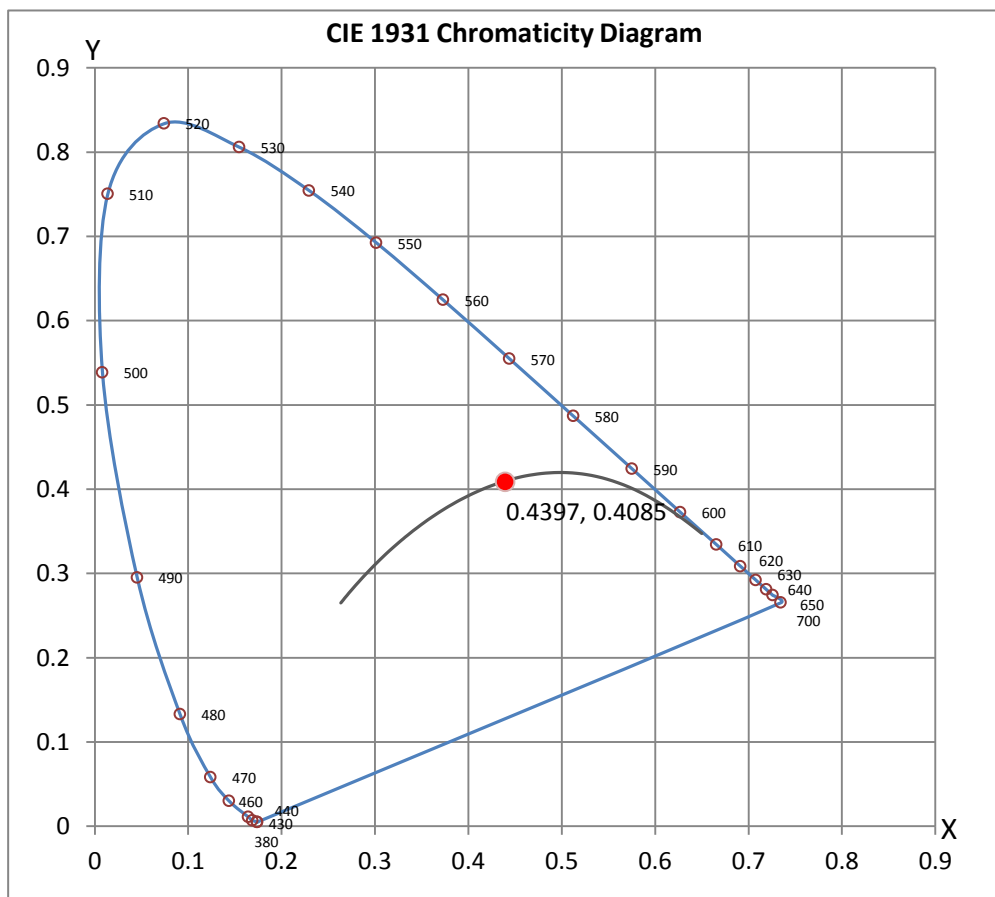


### CRI & CCT

x	0.4397
y	0.4085
u'	0.2504
v'	0.5235
CRI	91.70
CCT	2990
Duv	0.00137

### R Values

R1	91.49
R2	94.97
R3	97.13
R4	91.80
R5	90.92
R6	93.81
R7	92.52
R8	81.24
R9	57.07
R10	87.24
R11	91.91
R12	77.36
R13	92.30
R14	97.64
R15	87.59





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## 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 Reviewed by:

Steve Kang  
Quality Assurance

*\*Attached are photometric data reports. Total number of pages: 10*



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## Photometric Test Report

### IES INDOOR REPORT

PHOTOMETRIC FILENAME : L081910633.IES

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002  
[TEST] L081910633  
[TESTLAB] LIGHT LABORATORY, INC. (www.lightlaboratory.com)  
[ISSUE DATE] 9/6/2019  
[MANUFAC] Number Eight Lighting Company  
[LUMCAT] 202-S-HI-3000-15/DIM1-2-SO/FLS-2-WH  
[LUMINAIRE] LED Recessed Adjustable Downlight, 0° Aiming Angle, 3000K 90+ CRI, 15° Beam Spread,  
[MORE] Standard Output 1% Dimming Driver, Square Flanged Trim, 1.875" x 1.875" Aperture  
[BALLASTCAT] INTUITIVE SYSTEMS ISD-701-350-15-D  
[OTHER] INDICATING THE CANDELA VALUES ARE ABSOLUTE AND  
[MORE] SHOULD NOT BE FACTORED FOR DIFFERENT LAMP RATINGS.  
[INPUT] 120.0VAC, 13.92W  
[TEST PROCEDURE] IESNA:LM-79-08

### CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	932
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	67
Total Luminaire Watts	13.92
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	0.32
Spacing Criterion (90-270)	0.32
Spacing Criterion (Diagonal)	0.32
Basic Luminous Shape	Rectangular
Luminous Length (0-180)	0.15 ft
Luminous Width (90-270)	0.15 ft
Luminous Height	0.00 ft

### LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	4056	7773	4056
55	833	833	833
65	0	0	0
75	0	0	0
85	0	0	0

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : L081910633.IES**

**CANDELA TABULATION**

	<u>0</u>	<u>5</u>	<u>10</u>	<u>15</u>	<u>20</u>	<u>25</u>	<u>30</u>	<u>35</u>	<u>40</u>	<u>45</u>
0.0	7503	7503	7503	7503	7503	7503	7503	7503	7503	7503
1.0	7534	7532	7531	7534	7532	7532	7533	7532	7532	7534
3.0	6988	6984	6987	6985	6984	6985	6991	6988	6993	6998
5.0	5964	5965	5962	5961	5959	5955	5951	5947	5945	5944
7.0	4931	4931	4930	4923	4922	4918	4915	4910	4908	4906
9.0	3777	3770	3756	3736	3714	3688	3666	3645	3635	3630
11.0	2671	2663	2639	2608	2573	2535	2505	2478	2460	2456
13.0	1840	1833	1812	1785	1756	1730	1707	1689	1677	1674
15.0	1212	1206	1192	1175	1156	1140	1127	1116	1110	1110
17.0	747	744	735	725	716	708	703	697	694	695
19.5	388	386	383	379	376	375	373	372	372	372
22.5	206	206	206	207	210	212	213	214	217	218
25.5	126	126	127	129	132	137	141	146	148	148
29.0	73	73	74	77	81	86	92	98	102	105
33.0	38	38	39	40	43	48	55	62	69	71
37.5	20	20	20	20	21	22	25	31	39	44
42.5	9	9	9	10	10	11	11	12	13	16
47.5	3	3	3	3	3	4	5	6	7	7
55.0	1	1	1	1	1	1	1	1	1	1
65.0	0	0	0	0	0	0	0	0	0	0
75.0	0	0	0	0	0	0	0	0	0	0
85.0	0	0	0	0	0	0	0	0	0	0
90.0	0	0	0	0	0	0	0	0	0	0

**Vert. Angles**      **Horizontal Angles**

	<u>50</u>	<u>55</u>	<u>60</u>	<u>65</u>	<u>70</u>	<u>75</u>	<u>80</u>	<u>85</u>	<u>90</u>
0.0	7503	7503	7503	7503	7503	7503	7503	7503	7503
1.0	7531	7530	7530	7535	7528	7532	7531	7529	7525
3.0	7004	7008	7015	7017	7022	7029	7034	7035	7036
5.0	5946	5940	5942	5941	5940	5941	5944	5945	5946
7.0	4904	4905	4909	4916	4918	4922	4928	4937	4943
9.0	3641	3654	3674	3694	3717	3741	3761	3778	3782
11.0	2464	2483	2514	2552	2591	2628	2661	2679	2690
13.0	1682	1696	1718	1746	1779	1815	1845	1868	1878
15.0	1116	1123	1135	1155	1178	1201	1223	1239	1246
17.0	699	703	708	717	727	738	748	756	759
19.5	371	371	372	372	373	374	375	376	377
22.5	217	215	213	212	211	209	208	208	208
25.5	148	146	141	136	132	130	127	126	126
29.0	102	97	91	86	80	76	73	72	72
33.0	68	61	54	47	42	39	37	36	36
37.5	39	31	25	22	20	20	20	19	19
42.5	13	11	11	10	10	9	9	9	9
47.5	7	6	5	4	3	3	3	3	3
55.0	1	1	1	1	1	1	1	1	1
65.0	0	0	0	0	0	0	0	0	0
75.0	0	0	0	0	0	0	0	0	0
85.0	0	0	0	0	0	0	0	0	0
90.0	0	0	0	0	0	0	0	0	0

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : L081910633.IES**

**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	817.52	N.A.	87.70
0-30	894.76	N.A.	96.00
0-40	920.59	N.A.	98.80
0-60	931.56	N.A.	99.90
0-80	932.04	N.A.	100.00
0-90	932.04	N.A.	100.00
10-90	513.96	N.A.	55.10
20-40	103.07	N.A.	11.10
20-50	112.33	N.A.	12.10
40-70	11.45	N.A.	1.20
60-80	0.47	N.A.	0.10
70-80	0.00	N.A.	0.00
80-90	0.00	N.A.	0.00
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	932.04	N.A.	100.00

Total Luminaire Efficiency = N.A.%

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	418.07
10-20	399.44
20-30	77.24
30-40	25.83
40-50	9.26
50-60	1.71
60-70	0.47
70-80	0.00
80-90	0.00
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**  
**PHOTOMETRIC FILENAME : L081910633.IES**

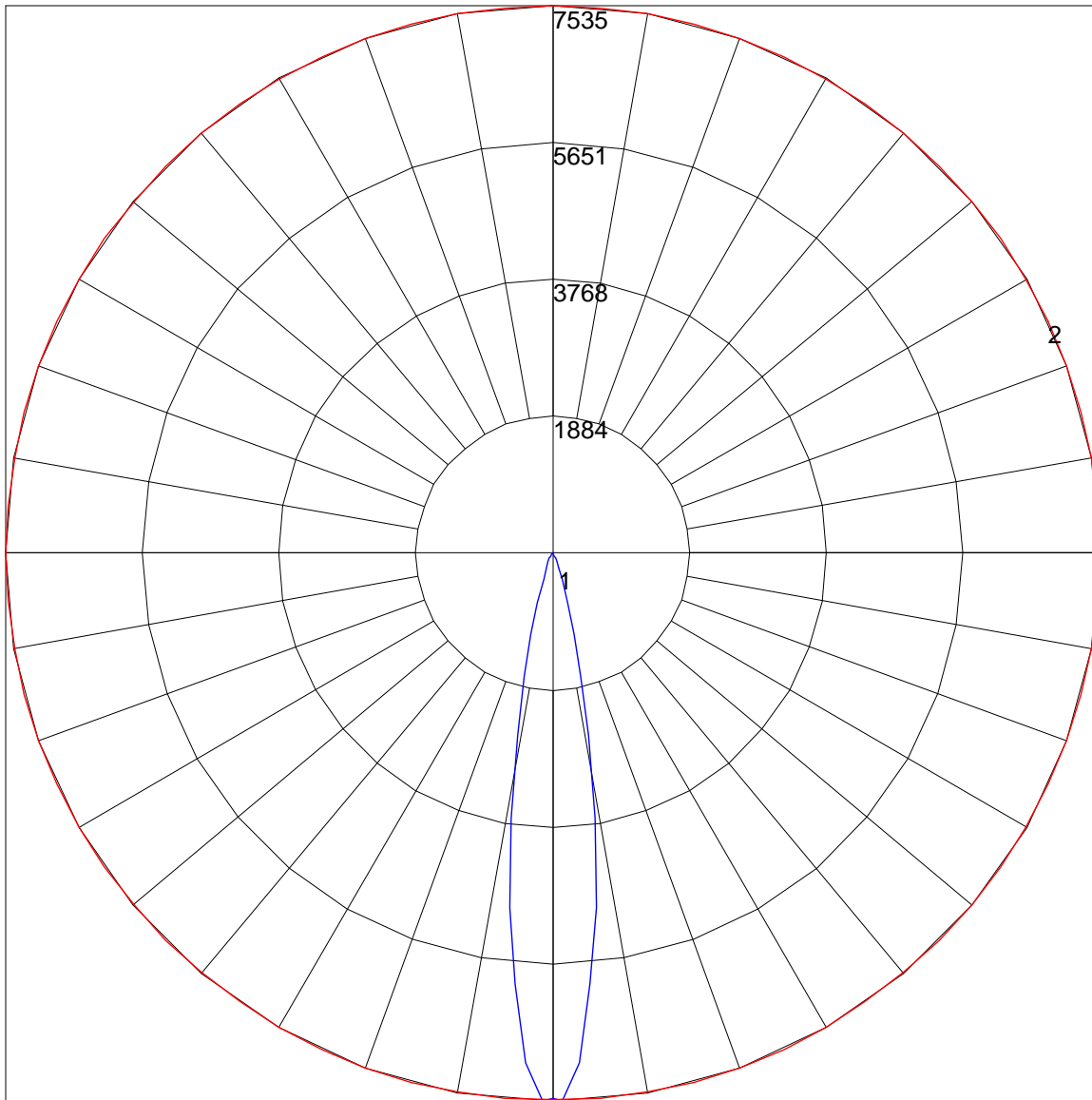
**COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD**

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	115	113	112	110	113	111	110	108	107	106	105	104	103	102	100	100	99	97
2	112	109	106	103	110	107	104	102	104	102	100	101	99	98	98	97	96	95
3	109	104	101	99	107	103	100	98	101	98	96	99	97	95	96	95	93	92
4	106	101	97	95	104	100	97	94	98	95	93	96	94	92	94	93	91	90
5	103	98	94	91	102	97	93	91	95	92	90	94	91	89	93	90	89	88
6	101	95	91	88	99	94	91	88	93	90	88	92	89	87	91	88	87	86
7	98	92	89	86	97	92	88	86	91	88	85	90	87	85	89	86	85	84
8	96	90	86	84	95	90	86	84	89	86	83	88	85	83	87	85	83	82
9	94	88	84	82	93	87	84	82	87	84	81	86	83	81	85	83	81	80
10	92	86	82	80	91	86	82	80	85	82	80	84	81	79	84	81	79	78



POLAR GRAPH



Maximum Candela = 7535 Located At Horizontal Angle = 65, Vertical Angle = 1  
# 1 - Vertical Plane Through Horizontal Angles (65 - 245) (Through Max. Cd.)  
# 2 - Horizontal Cone Through Vertical Angle (1) (Through Max. Cd.)

ILLUMINANCE CONE DIAGRAM: BEAM (50%)  
 MOUNT HEIGHT(Ft): 12

