



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

Report No: L081910644



**Report No:** L081910644

**Issue Date:** 9/5/2019

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

**Model Number:** 202-R-HI-3000-25/DIM1-2-SO/FLR-2-WH

**Test:** Photometric/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:** 8/15/19

**Date of Tests:** 8/28/19 - 9/5/19

**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-R-HI-3000-25/DIM1-2-SO/FLR-2-WH
<b>Driver Model Number:</b>	INTUITIVE SYSTEMS ISD-701-350-15-D

### Photometric & Electrical Test Results

<b>Total Lumens:</b>	774.46
<b>Efficacy:</b>	55.75
<b>Input Voltage (VAC/60Hz):</b>	120.02
<b>Input Current (Amp):</b>	0.1166
<b>Input Power (W):</b>	13.89
<b>Input Power Factor:</b>	0.9927
<b>Current ATHD (%):</b>	7.7%

### Test Condition

<b>Ambient Temperature (°C):</b>	25.0
<b>Stabilization Time (Hours):</b>	1:00
<b>Total Operating Time (Hours):</b>	2:05

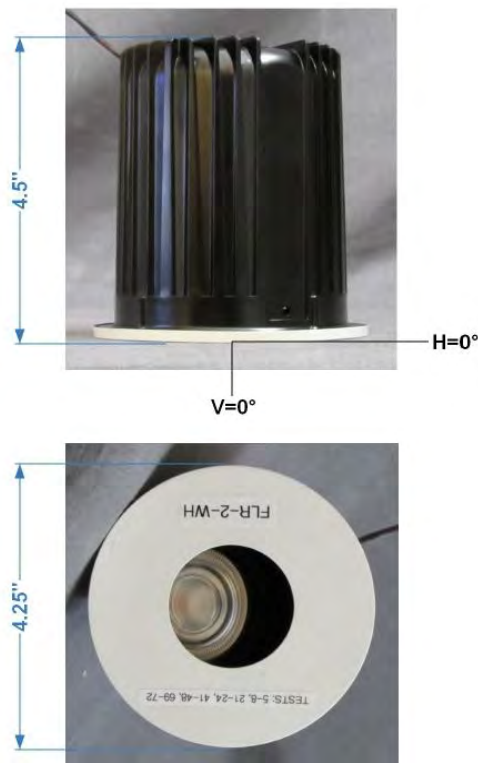


FIG. 1 LUMINAIRE



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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 : Dennis Malonzo

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 : L081910644.IES

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002  
[TEST] L081910644  
[TESTLAB] LIGHT LABORATORY, INC. (www.lightlaboratory.com)  
[ISSUE DATE] 9/5/2019  
[MANUFAC] Number Eight Lighting Company  
[LUMCAT] 202-R-HI-3000-25/DIM1-2-SO/FLR-2-WH  
[LUMINAIRE] LED Recessed Adjustable Downlight, 30° Aiming Angle, 3000K 90+ CRI, 25° Beam Spread,  
[MORE] Standard Output 1% Dimming Driver, Round Flanged Trim, 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] 120.05VAC, 13.89W  
[TEST PROCEDURE] IESNA:LM-79-08

### CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	774
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	56
Total Luminaire Watts	13.89
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	2.70
Spacing Criterion (90-270)	0.66
Spacing Criterion (Diagonal)	1.28
Basic Luminous Shape	Circular
Luminous Length (0-180)	0.16 ft (Diameter)
Luminous Width (90-270)	0.16 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	1054414	72614	3026
55	166915	18650	932
65	22780	3797	0
75	0	0	0
85	0	0	0

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : L081910644.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>
<b>0.0</b>	127	127	127	127	127	127	127	127	127	127
<b>2.5</b>	160	160	160	159	158	157	156	154	152	150
<b>5.0</b>	225	225	223	219	215	210	204	197	191	183
<b>7.5</b>	323	320	316	309	302	290	278	262	247	230
<b>10.0</b>	470	466	455	439	416	392	365	336	304	283
<b>12.5</b>	717	708	685	648	602	546	491	436	385	337
<b>15.0</b>	1090	1074	1028	959	866	763	660	561	470	395
<b>17.0</b>	1469	1441	1374	1264	1123	972	816	672	547	447
<b>19.0</b>	1862	1829	1738	1594	1406	1193	986	786	614	481
<b>21.0</b>	2230	2195	2070	1898	1656	1400	1139	889	680	512
<b>23.0</b>	2544	2506	2383	2171	1892	1581	1266	969	717	528
<b>25.0</b>	2829	2771	2612	2377	2056	1713	1358	1031	741	532
<b>27.0</b>	3021	2968	2800	2518	2196	1783	1397	1034	731	513
<b>29.0</b>	3100	3041	2873	2583	2232	1797	1396	1017	705	479
<b>31.0</b>	3074	3019	2840	2562	2199	1773	1347	961	649	432
<b>33.0</b>	2987	2929	2765	2496	2104	1682	1264	885	581	383
<b>35.0</b>	2879	2813	2644	2357	1984	1540	1132	772	508	325
<b>37.0</b>	2711	2635	2458	2170	1779	1362	976	653	415	243
<b>39.0</b>	2448	2375	2193	1909	1535	1144	795	526	340	223
<b>41.0</b>	2136	2068	1883	1609	1267	920	632	410	234	172
<b>43.0</b>	1786	1714	1536	1279	980	707	471	308	203	140
<b>45.0</b>	1394	1338	1188	974	736	516	347	224	151	96
<b>50.0</b>	575	550	480	386	288	203	144	95	63	42
<b>55.0</b>	179	171	153	128	100	74	55	39	28	20
<b>60.0</b>	57	56	51	44	36	28	21	16	11	8
<b>65.0</b>	18	18	17	15	12	10	8	6	5	3
<b>70.0</b>	6	6	6	5	4	4	4	2	1	0
<b>75.0</b>	0	0	0	0	0	0	0	0	0	0
<b>80.0</b>	0	0	0	0	0	0	0	0	0	0
<b>85.0</b>	0	0	0	0	0	0	0	0	0	0
<b>90.0</b>	0	0	0	0	0	0	0	0	0	0

<b>Vert. Angles</b>	<b>Horizontal Angles</b>									
	<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>	<u>95</u>
<b>0.0</b>	127	127	127	127	127	127	127	127	127	127
<b>2.5</b>	148	146	143	140	136	134	131	128	125	123
<b>5.0</b>	177	170	163	156	149	142	135	128	122	117
<b>7.5</b>	214	197	184	170	159	147	136	126	117	109
<b>10.0</b>	255	229	204	183	165	148	134	121	108	100
<b>12.5</b>	289	257	223	192	167	146	128	112	100	88
<b>15.0</b>	332	276	233	198	165	141	120	103	89	76
<b>17.0</b>	360	278	238	195	160	134	111	94	79	66
<b>19.0</b>	376	285	237	190	153	127	104	85	69	56
<b>21.0</b>	392	295	233	179	144	114	92	74	59	46
<b>23.0</b>	387	280	224	168	133	108	81	63	49	37
<b>25.0</b>	380	258	206	154	118	91	70	53	39	30
<b>27.0</b>	356	248	188	139	104	79	58	43	32	24
<b>29.0</b>	331	233	167	122	90	65	47	34	25	19
<b>31.0</b>	295	206	146	104	75	53	37	27	20	16
<b>33.0</b>	243	177	128	88	60	42	29	21	17	13
<b>35.0</b>	217	149	103	70	48	33	23	17	14	11
<b>37.0</b>	181	124	82	55	37	25	18	14	11	9
<b>39.0</b>	149	96	64	42	28	20	15	12	9	7

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CANDELA TABULATION - (Cont.)

41.0	114	73	48	32	22	16	12	9	7	5
43.0	86	55	36	24	17	13	10	7	5	4
45.0	63	41	27	19	14	10	7	5	4	3
50.0	29	20	14	10	7	5	3	2	2	1
55.0	14	9	7	4	3	2	2	1	1	0
60.0	6	4	3	2	1	1	1	0	0	0
65.0	3	3	1	0	0	0	0	0	0	0
70.0	0	0	0	0	0	0	0	0	0	0
75.0	0	0	0	0	0	0	0	0	0	0
80.0	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>100</u>	<u>105</u>	<u>110</u>	<u>115</u>	<u>120</u>	<u>125</u>	<u>130</u>	<u>135</u>	<u>140</u>	<u>145</u>
0.0	127	127	127	127	127	127	127	127	127	127
2.5	121	118	116	115	113	111	109	108	107	106
5.0	112	107	103	98	95	91	88	85	83	80
7.5	102	95	89	83	78	73	69	65	62	59
10.0	90	82	74	67	61	56	52	48	44	41
12.5	78	68	60	53	47	42	38	34	31	28
15.0	65	55	47	41	35	30	26	24	21	20
17.0	55	46	38	32	27	23	21	19	17	16
19.0	45	37	30	25	21	19	17	15	14	13
21.0	37	29	24	20	17	16	14	13	12	11
23.0	29	23	19	17	15	13	12	11	10	9
25.0	23	19	16	14	12	11	10	9	8	7
27.0	19	16	14	12	10	9	8	7	6	5
29.0	16	13	11	10	9	7	6	5	4	3
31.0	13	11	10	8	7	5	4	3	2	2
33.0	11	9	8	6	5	4	3	2	2	2
35.0	9	7	6	4	3	2	2	1	1	1
37.0	7	5	4	3	2	2	1	1	1	1
39.0	5	4	3	2	2	1	1	1	1	0
41.0	4	3	2	1	1	1	1	0	0	0
43.0	3	2	1	1	1	1	0	0	0	0
45.0	2	1	1	1	0	0	0	0	0	0
50.0	1	1	0	0	0	0	0	0	0	0
55.0	0	0	0	0	0	0	0	0	0	0
60.0	0	0	0	0	0	0	0	0	0	0
65.0	0	0	0	0	0	0	0	0	0	0
70.0	0	0	0	0	0	0	0	0	0	0
75.0	0	0	0	0	0	0	0	0	0	0
80.0	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>150</u>	<u>155</u>	<u>160</u>	<u>165</u>	<u>170</u>	<u>175</u>	<u>180</u>
0.0	127	127	127	127	127	127	127
2.5	105	104	103	102	102	102	102
5.0	78	77	75	74	73	73	73
7.5	56	54	53	51	51	50	50
10.0	39	37	36	34	34	33	33

IES INDOOR REPORT  
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CANDELA TABULATION - (Cont.)

12.5	26	24	23	22	22	21	21
15.0	18	17	17	16	16	16	16
17.0	15	14	14	13	13	13	13
19.0	12	12	11	11	11	11	11
21.0	10	10	9	9	9	9	9
23.0	9	8	8	7	7	7	7
25.0	7	6	6	5	5	5	5
27.0	5	4	3	3	3	3	3
29.0	3	2	2	2	2	2	2
31.0	2	2	1	1	1	1	1
33.0	1	1	1	1	1	1	1
35.0	1	1	1	1	1	1	1
37.0	1	1	0	0	0	0	0
39.0	0	0	0	0	0	0	0
41.0	0	0	0	0	0	0	0
43.0	0	0	0	0	0	0	0
45.0	0	0	0	0	0	0	0
50.0	0	0	0	0	0	0	0
55.0	0	0	0	0	0	0	0
60.0	0	0	0	0	0	0	0
65.0	0	0	0	0	0	0	0
70.0	0	0	0	0	0	0	0
75.0	0	0	0	0	0	0	0
80.0	0	0	0	0	0	0	0
85.0	0	0	0	0	0	0	0
90.0	0	0	0	0	0	0	0

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : L081910644.IES**

**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	80.91	N.A.	10.40
0-30	295.16	N.A.	38.10
0-40	573.75	N.A.	74.10
0-60	770.30	N.A.	99.50
0-80	774.46	N.A.	100.00
0-90	774.46	N.A.	100.00
10-90	760.37	N.A.	98.20
20-40	492.85	N.A.	63.60
20-50	660.22	N.A.	85.20
40-70	200.45	N.A.	25.90
60-80	4.16	N.A.	0.50
70-80	0.25	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	774.46	N.A.	100.00

Total Luminaire Efficiency = N.A.%

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	14.08
10-20	66.82
20-30	214.26
30-40	278.59
40-50	167.38
50-60	29.17
60-70	3.91
70-80	0.25
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



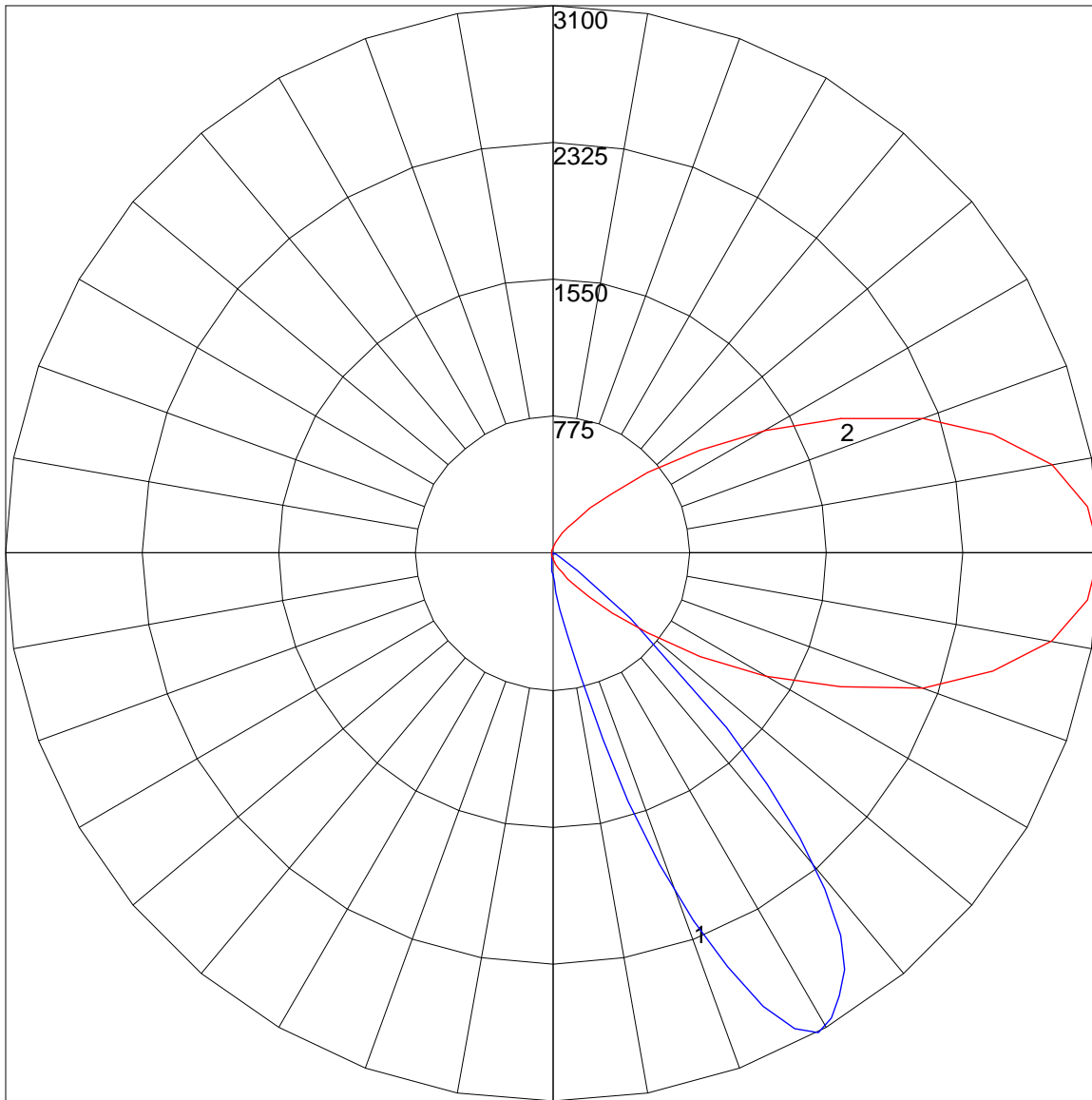
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**COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD**

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	112	109	106	103	110	107	104	102	103	100	98	99	97	96	95	94	93	91
2	105	99	94	90	103	97	93	89	94	90	87	91	88	85	88	85	83	81
3	98	90	84	79	96	88	83	78	86	81	77	83	79	75	81	77	74	72
4	91	81	75	69	89	80	74	69	78	72	68	76	71	67	74	70	66	64
5	85	74	67	61	83	73	66	61	71	65	60	69	64	60	68	63	59	57
6	79	67	60	54	77	66	59	54	65	58	54	63	58	53	62	57	53	51
7	73	61	54	49	72	61	53	48	59	53	48	58	52	48	57	51	47	46
8	68	56	49	43	67	55	48	43	54	48	43	53	47	43	52	47	43	41
9	63	51	44	39	62	51	44	39	50	43	39	49	43	39	48	42	38	37
10	59	47	40	35	58	47	40	35	46	39	35	45	39	35	44	39	35	33

POLAR GRAPH



Maximum Candela = 3100 Located At Horizontal Angle = 0, Vertical Angle = 29  
# 1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)  
# 2 - Horizontal Cone Through Vertical Angle (29) (Through Max. Cd.)