



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

Report No: L081910642



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Issue Date: 9/5/2019

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

Model Number: 202-R-HI-3000-15/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

Manufacturer:	Number Eight Lighting Company
Model Number:	202-R-HI-3000-15/DIM1-2-SO/FLR-2-WH
Driver Model Number:	INTUITIVE SYSTEMS ISD-701-350-15-D

Photometric & Electrical Test Results

Total Lumens:	687.46
Efficacy:	49.40
Input Voltage (VAC/60Hz):	120.00
Input Current (Amp):	0.1170
Input Power (W):	13.92
Input Power Factor:	0.9913
Current ATHD (%):	7.7%

Test Condition

Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	1:00
Total Operating Time (Hours):	2:20

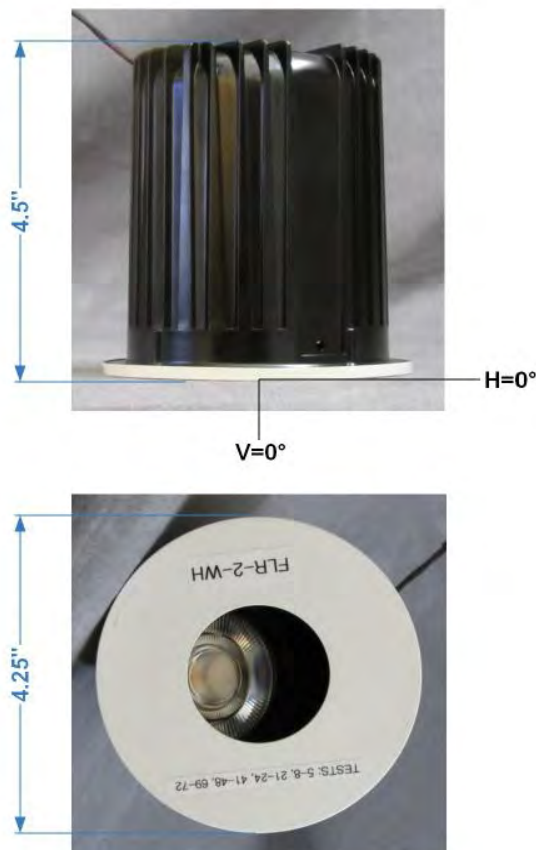


FIG. 1 LUMINAIRE



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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 : L081910642.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] L081910642

[TESTLAB] LIGHT LABORATORY, INC. (www.lightlaboratory.com)

[ISSUEDATE] 9/5/2019

[MANUFAC] Number Eight Lighting Company

[LUMCAT] 202-R-HI-3000-15/DIM1-2-SO/FLR-2-WH

[LUMINAIRE] LED Recessed Adjustable Downlight, 30° Aiming Angle, 3000K 90+ CRI, 15° 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] 120.04VAC, 13.92W

[TEST PROCEDURE] IESNA:LM-79-08

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	687
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	49
Total Luminaire Watts	13.92
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	2.68
Spacing Criterion (90-270)	0.70
Spacing Criterion (Diagonal)	1.22
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	833547	31012	1513
55	66206	11190	0
65	12656	1266	0
75	0	0	0
85	0	0	0

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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	68	68	68	68	68	68	68	68	68	68
2.5	86	86	85	85	84	84	83	82	81	79
5.0	112	112	111	109	107	105	103	101	98	95
7.5	159	158	156	153	148	143	136	129	121	113
10.0	211	210	207	201	193	184	175	163	151	138
12.5	323	318	305	285	261	238	217	198	178	160
15.0	638	621	571	502	424	332	287	241	207	178
17.0	1099	1064	971	833	664	508	380	289	232	193
19.0	1711	1646	1479	1248	987	723	502	329	258	206
21.0	2526	2412	2128	1750	1342	959	651	417	280	213
23.0	3425	3254	2858	2276	1682	1172	810	474	302	217
25.0	4347	4126	3560	2808	1991	1347	915	515	305	213
27.0	5257	4908	4114	3030	2190	1439	946	519	301	205
29.0	6037	5470	4371	3093	2219	1450	949	508	283	193
31.0	6034	5478	4322	3080	2172	1390	907	451	254	174
33.0	5475	4886	3933	2948	1989	1271	734	359	229	154
35.0	4485	4186	3525	2622	1750	1094	622	303	193	131
37.0	3829	3568	2903	2119	1459	949	489	259	163	112
39.0	2964	2750	2261	1701	1143	687	311	206	132	92
41.0	2180	2051	1714	1284	852	482	263	159	106	74
43.0	1589	1496	1245	916	581	299	191	121	88	55
45.0	1102	1027	834	593	350	217	135	92	61	41
50.0	307	282	225	166	116	78	54	37	26	22
55.0	71	67	58	49	38	29	22	19	16	12
60.0	20	19	17	15	14	13	12	8	5	3
65.0	10	9	8	7	5	4	4	2	2	1
70.0	2	2	2	2	2	1	4	1	1	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>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>
0.0	68	68	68	68	68	68	68	68	68	68
2.5	77	76	75	73	72	71	70	69	68	67
5.0	92	89	86	83	79	75	72	69	67	64
7.5	105	99	94	89	84	77	72	68	64	61
10.0	124	111	101	93	86	77	71	65	61	57
12.5	142	123	107	96	87	76	68	62	57	52
15.0	155	132	111	96	86	73	64	57	52	46
17.0	163	135	111	95	84	69	60	54	47	40
19.0	167	137	110	92	77	65	56	49	41	34
21.0	168	134	106	88	73	61	52	44	35	27
23.0	168	130	101	85	67	56	47	37	29	22
25.0	163	121	95	76	61	50	40	31	23	17
27.0	151	112	88	69	55	44	34	25	18	13
29.0	139	103	80	60	48	37	27	19	14	11
31.0	123	92	70	53	41	31	21	15	12	9
33.0	109	85	60	45	34	24	16	12	10	8
35.0	95	69	49	37	28	19	13	10	9	7
37.0	86	56	41	31	21	14	11	9	7	6
39.0	65	45	33	24	16	12	9	8	6	5

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CANDELA TABULATION - (Cont.)

41.0	50	35	27	18	13	10	8	6	5	3
43.0	38	28	21	14	11	8	6	5	3	2
45.0	29	23	16	12	9	7	5	3	2	1
50.0	18	12	9	6	4	2	2	1	1	1
55.0	7	5	3	2	1	1	1	1	0	0
60.0	2	2	1	1	1	1	0	0	0	0
65.0	1	1	1	1	0	0	0	0	0	0
70.0	0	1	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	68	68	68	68	68	68	68	68	68	68
2.5	66	65	64	63	62	62	61	60	60	59
5.0	62	60	58	57	56	54	53	52	51	50
7.5	58	56	53	51	48	46	43	40	38	36
10.0	53	50	46	42	38	35	32	29	26	25
12.5	48	42	37	33	28	25	22	20	18	16
15.0	40	34	28	24	20	18	15	14	12	11
17.0	33	27	22	18	16	13	12	11	10	9
19.0	27	21	17	14	12	10	9	9	8	8
21.0	21	17	13	11	10	9	8	8	7	7
23.0	17	13	11	10	9	8	7	7	6	6
25.0	13	11	9	8	8	7	6	6	5	5
27.0	11	9	8	7	7	6	5	5	4	3
29.0	9	8	7	6	6	5	4	3	3	2
31.0	8	7	6	5	4	3	3	2	2	1
33.0	7	6	5	4	3	2	2	1	1	1
35.0	6	5	4	3	2	1	1	1	1	1
37.0	5	3	2	2	1	1	1	1	1	1
39.0	3	2	2	1	1	1	1	1	0	0
41.0	2	1	1	1	1	1	0	0	0	0
43.0	1	1	1	1	1	0	0	0	0	0
45.0	1	1	1	1	0	0	0	0	0	0
50.0	1	0	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	68	68	68	68	68	68	68
2.5	59	59	58	58	58	58	58
5.0	49	48	47	46	46	46	45
7.5	35	33	32	32	31	31	31
10.0	23	22	21	20	20	19	19

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CANDELA TABULATION - (Cont.)

12.5	15	14	13	13	12	12	12
15.0	10	10	9	9	9	9	9
17.0	8	8	8	8	7	7	7
19.0	7	7	7	6	6	6	6
21.0	6	6	6	6	5	5	5
23.0	5	5	5	4	4	4	4
25.0	4	4	4	3	3	3	3
27.0	3	2	2	2	2	2	2
29.0	2	1	1	1	1	1	1
31.0	1	1	1	1	1	1	1
33.0	1	1	1	1	1	1	1
35.0	1	1	1	1	0	0	0
37.0	0	0	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

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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	44.71	N.A.	6.50
0-30	256.36	N.A.	37.30
0-40	555.98	N.A.	80.90
0-60	685.68	N.A.	99.70
0-80	687.46	N.A.	100.00
0-90	687.46	N.A.	100.00
10-90	680.08	N.A.	98.90
20-40	511.27	N.A.	74.40
20-50	628.26	N.A.	91.40
40-70	131.36	N.A.	19.10
60-80	1.78	N.A.	0.30
70-80	0.12	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	687.46	N.A.	100.00

Total Luminaire Efficiency = N.A.%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	7.38
10-20	37.33
20-30	211.65
30-40	299.62
40-50	116.99
50-60	12.71
60-70	1.66
70-80	0.12
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

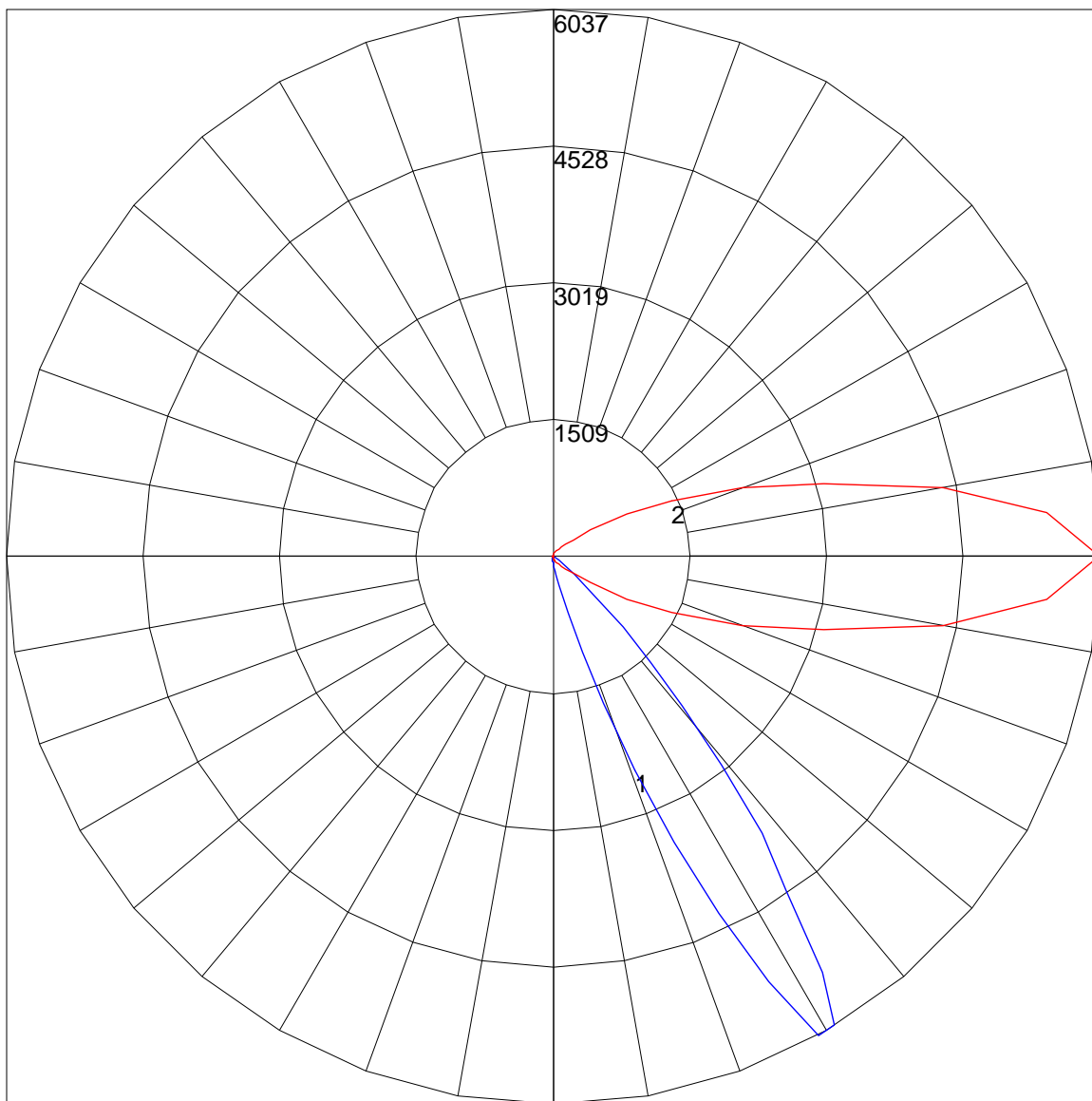
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PHOTOMETRIC FILENAME : L081910642.IES

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	112	109	106	103	110	107	104	102	103	101	99	99	97	96	96	94	93	91
2	105	99	94	90	103	97	93	89	94	90	87	91	88	85	88	86	84	82
3	98	90	84	79	96	89	83	79	86	81	77	83	79	76	81	78	75	73
4	91	82	75	70	89	81	74	69	78	73	68	76	71	68	74	70	67	65
5	85	74	67	62	83	73	67	61	71	65	61	70	64	60	68	63	60	58
6	79	68	60	55	77	67	60	55	65	59	54	64	58	54	62	57	53	52
7	73	62	54	49	72	61	54	49	59	53	48	58	52	48	57	52	48	46
8	68	56	49	44	67	56	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	38	35	33

POLAR GRAPH



Maximum Candela = 6037 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.)