



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

Report No: L081910662



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Issue Date: 9/9/2019

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

Model Number: 202-R-BV-HI-3000-40/DIM1-2-SO/FLR-2-BV-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: 8/16/19

Date of Tests: 9/3/19 - 9/9/19

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-BV-HI-3000-40/DIM1-2-SO/FLR-2-BV-WH
Driver Model Number:	INTUITIVE SYSTEMS ISD-701-350-15-D

Photometric & Electrical Test Results

Total Lumens:	1046.16
Efficacy:	75.21
Input Voltage (VAC/60Hz):	120.00
Input Current (Amp):	0.1170
Input Power (W):	13.91
Input Power Factor:	0.9912
Current ATHD (%):	7.7%

Test Condition

Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	0:45
Total Operating Time (Hours):	2:00

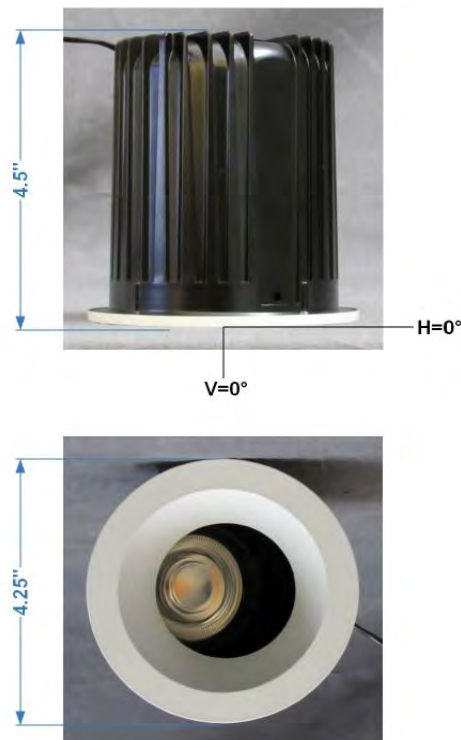


FIG. 1 LUMINAIRE

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 : L081910662.IES

DESCRIPTION INFORMATION (From Photometric File)

[TEST] L081910662
[TESTLAB] LIGHT LABORATORY, INC. (www.lightlaboratory.com)
[ISSUEDATE] 9/9/2019
[MANUFAC] Number Eight Lighting Company
[LUMCAT] 202-R-BV-HI-3000-40/DIM1-2-SO/FLR-2-BV-WH
[LUMINAIRE] LED Recessed Adjustable Downlight, 30° Aiming Angle, 3000K 90+ CRI, 40° Beam Spread,
[MORE] Standard Output 1% Dimming Driver, Round Flanged Bevel Trim, 2.25" 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, 13.91W
[TEST PROCEDURE] IESNA:LM-79-08

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	1046
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	75
Total Luminaire Watts	13.91
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.98
Spacing Criterion (90-270)	0.50
Spacing Criterion (Diagonal)	1.02
Basic Luminous Shape	Circular
Luminous Length (0-180)	0.27 ft (Diameter)
Luminous Width (90-270)	0.27 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	195762	20453	2656
55	9169	1965	1965
65	889	1333	2222
75	0	0	2177
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	606	606	606	606	606	606	606	606	606	606
2.5	849	827	820	816	808	793	783	772	759	740
5.0	1175	1186	1171	1153	1132	1097	1064	1031	990	945
7.5	1557	1566	1554	1514	1475	1417	1364	1296	1215	1140
10.0	1916	1908	1898	1859	1791	1709	1629	1523	1418	1311
12.5	2204	2188	2171	2119	2044	1954	1845	1719	1583	1441
15.0	2362	2360	2327	2289	2222	2137	2009	1867	1711	1536
17.0	2439	2430	2410	2370	2319	2242	2115	1959	1767	1565
19.0	2466	2463	2452	2417	2371	2305	2190	2025	1817	1587
21.0	2491	2489	2486	2465	2419	2359	2228	2042	1805	1553
23.0	2513	2523	2534	2512	2456	2365	2224	2011	1765	1492
25.0	2567	2569	2569	2541	2474	2360	2189	1942	1666	1378
27.0	2631	2629	2609	2561	2462	2335	2117	1849	1555	1244
29.0	2672	2648	2614	2546	2442	2253	2001	1706	1388	1085
31.0	2645	2627	2572	2483	2354	2122	1854	1532	1224	918
33.0	2565	2544	2475	2381	2186	1943	1658	1341	1023	754
35.0	2420	2396	2298	2188	1983	1719	1429	1120	825	593
37.0	2206	2172	2106	1954	1717	1457	1174	894	646	451
39.0	1922	1888	1811	1649	1430	1174	921	678	476	326
41.0	1593	1579	1477	1318	1109	875	656	459	308	207
43.0	1159	1143	1051	913	748	554	368	266	177	119
45.0	737	706	644	547	429	308	215	145	100	77
50.0	200	192	173	147	117	88	68	51	36	25
55.0	28	26	23	18	15	12	10	8	7	6
60.0	5	5	5	4	4	3	3	3	3	3
65.0	2	2	2	2	2	2	2	2	2	3
70.0	2	2	2	2	2	2	2	2	2	2
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	606	606	606	606	606	606	606	606	606	606
2.5	726	708	693	676	660	642	626	608	593	579
5.0	897	855	808	761	717	675	633	594	558	524
7.5	1061	981	901	825	749	682	618	558	505	457
10.0	1196	1078	964	854	751	656	575	502	438	386
12.5	1293	1141	989	847	721	611	516	436	367	319
15.0	1351	1163	979	813	670	547	445	366	306	262
17.0	1356	1139	944	764	615	490	388	316	262	225
19.0	1348	1110	886	695	544	422	332	268	226	195
21.0	1287	1029	805	620	475	354	284	231	196	170
23.0	1199	945	715	533	391	305	241	202	173	150
25.0	1094	824	616	456	341	261	214	181	154	131
27.0	955	712	516	365	283	225	186	157	133	114
29.0	813	585	405	307	236	189	158	132	111	97
31.0	663	472	336	249	197	160	132	109	92	81
33.0	539	371	270	205	165	133	109	90	76	63
35.0	403	295	217	169	135	108	85	67	50	37
37.0	315	227	171	133	100	73	52	37	27	22
39.0	226	165	120	85	57	39	28	22	19	18

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CANDELA TABULATION - (Cont.)

41.0	142	98	67	45	31	24	20	18	16	15
43.0	82	56	39	28	22	18	16	15	13	12
45.0	51	37	27	21	17	15	13	11	10	9
50.0	17	12	10	8	7	6	6	6	6	6
55.0	5	5	4	4	4	5	5	5	6	6
60.0	3	3	3	4	4	4	5	5	5	6
65.0	3	3	3	3	4	4	4	5	5	6
70.0	2	2	3	3	3	3	3	4	4	4
75.0	2	2	2	2	2	2	2	3	3	3
80.0	0	0	0	0	0	0	0	2	2	2
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	606	606	606	606	606	606	606	606	606	606
2.5	563	549	535	524	510	503	491	482	474	463
5.0	493	464	439	415	396	377	361	345	331	320
7.5	415	380	350	324	303	283	267	254	243	232
10.0	343	306	277	254	235	220	208	197	189	181
12.5	279	247	223	205	190	178	168	158	150	143
15.0	228	203	185	169	155	144	133	125	118	112
17.0	198	178	160	146	134	122	113	105	99	94
19.0	173	153	138	123	112	103	95	89	85	81
21.0	149	131	116	105	95	88	83	78	74	71
23.0	129	113	101	91	84	77	73	69	66	64
25.0	113	100	90	83	75	70	66	62	59	57
27.0	100	88	80	73	68	63	60	55	50	45
29.0	84	75	68	62	57	50	43	37	32	29
31.0	69	61	53	44	36	30	25	22	20	20
33.0	51	40	31	25	21	20	19	18	17	17
35.0	28	23	20	18	18	17	16	16	16	15
37.0	19	18	17	16	15	15	14	14	13	13
39.0	16	15	15	14	13	12	11	11	11	11
41.0	14	13	12	11	10	10	10	10	10	10
43.0	11	10	9	9	9	9	9	10	10	10
45.0	8	8	8	9	9	9	9	9	9	10
50.0	7	7	7	8	8	9	9	9	9	10
55.0	6	7	7	8	8	8	9	9	9	10
60.0	6	7	7	7	8	8	9	9	9	10
65.0	6	6	7	7	8	8	8	9	9	9
70.0	5	5	6	6	6	7	7	7	8	8
75.0	3	4	4	4	5	5	5	5	6	6
80.0	2	2	2	3	3	3	3	3	4	4
85.0	0	0	0	0	0	2	2	2	2	2
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	606	606	606	606	606	606	606
2.5	457	451	443	439	434	431	431
5.0	311	302	295	290	285	283	281
7.5	225	219	214	210	206	205	204
10.0	174	170	165	162	159	158	157

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CANDELA TABULATION - (Cont.)

12.5	138	133	129	125	123	122	122
15.0	107	104	100	98	96	96	96
17.0	90	87	85	83	82	81	82
19.0	78	76	74	72	71	70	71
21.0	68	67	65	64	63	62	62
23.0	61	59	58	56	56	55	55
25.0	54	51	49	47	45	44	44
27.0	41	38	36	34	33	33	32
29.0	26	24	22	22	21	21	21
31.0	19	19	18	18	18	18	18
33.0	17	17	16	16	16	16	16
35.0	15	15	14	14	14	14	14
37.0	12	12	12	12	12	11	11
39.0	11	11	11	11	11	11	11
41.0	10	11	11	11	11	11	11
43.0	10	10	10	10	11	11	11
45.0	10	10	10	10	11	11	11
50.0	10	10	10	10	11	11	11
55.0	10	10	10	10	11	11	11
60.0	10	10	10	10	10	11	11
65.0	10	10	10	10	10	10	11
70.0	8	9	9	9	9	9	9
75.0	6	6	6	7	7	7	7
80.0	4	4	4	4	4	5	5
85.0	2	2	2	2	2	2	2
90.0	0	0	0	0	0	0	0

IES INDOOR REPORT
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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	259.73	N.A.	24.80
0-30	586.77	N.A.	56.10
0-40	897.97	N.A.	85.80
0-60	1036.45	N.A.	99.10
0-80	1045.34	N.A.	99.90
0-90	1046.16	N.A.	100.00
10-90	981.13	N.A.	93.80
20-40	638.24	N.A.	61.00
20-50	763.66	N.A.	73.00
40-70	144.00	N.A.	13.80
60-80	8.89	N.A.	0.80
70-80	3.37	N.A.	0.30
80-90	0.82	N.A.	0.10
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	1046.16	N.A.	100.00

Total Luminaire Efficiency = N.A.%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	65.03
10-20	194.69
20-30	327.04
30-40	311.20
40-50	125.41
50-60	13.07
60-70	5.52
70-80	3.37
80-90	0.82
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

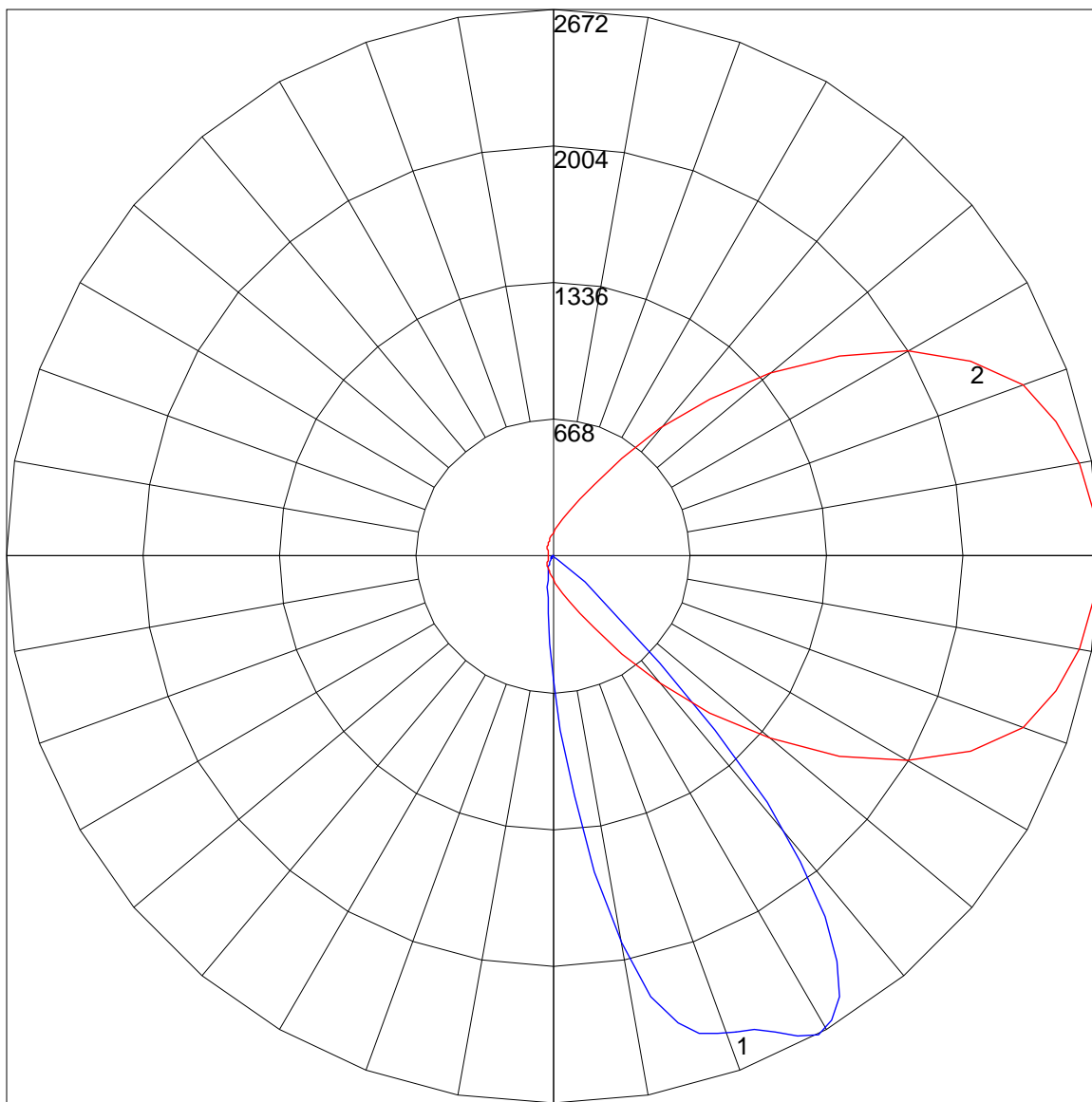
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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

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	113	110	107	105	110	108	105	103	104	102	100	100	98	97	96	95	94	92
2	107	101	97	93	104	99	95	92	96	93	90	93	90	88	90	88	86	84
3	100	93	88	83	98	92	87	83	89	85	81	87	83	80	84	81	79	77
4	94	86	80	75	93	85	79	75	83	78	74	81	76	73	79	75	72	70
5	89	80	73	68	87	79	72	68	77	71	67	75	70	67	73	69	66	64
6	84	74	67	62	82	73	67	62	71	66	62	70	65	61	68	64	61	59
7	79	68	62	57	77	68	61	57	66	61	56	65	60	56	64	59	56	54
8	74	64	57	52	73	63	57	52	62	56	52	61	56	52	60	55	52	50
9	70	59	53	48	69	59	52	48	58	52	48	57	52	48	56	51	48	46
10	66	55	49	45	65	55	49	45	54	48	44	53	48	44	52	48	44	43

POLAR GRAPH



Maximum Candela = 2672 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.)