



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

Report No: L081910654



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Issue Date: 9/10/2019

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

Model Number: 202-S-BV-HI-3000-40/DIM1-2-SO/FLS-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 - 9/10/19

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

Photometric & Electrical Test Results

Total Lumens:	1073.23
Efficacy:	76.77
Input Voltage (VAC/60Hz):	119.98
Input Current (Amp):	0.1175
Input Power (W):	13.98
Input Power Factor:	0.9914
Current ATHD (%):	7.6%

Test Condition

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

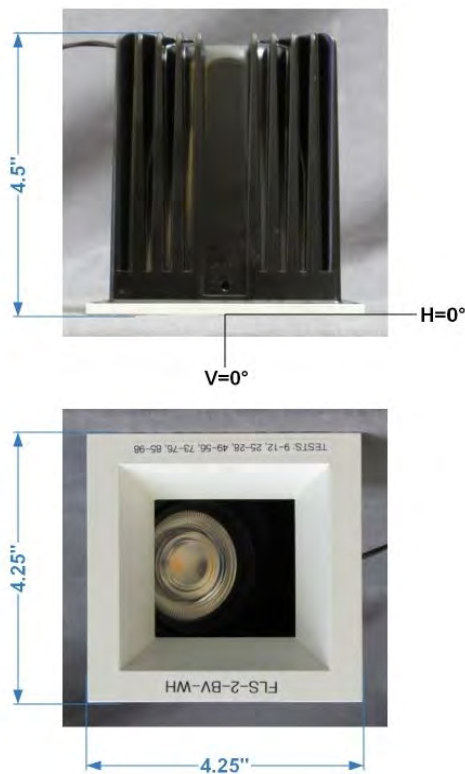


FIG. 1 LUMINAIRE

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 : L081910654.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] L081910654
[TESTLAB] LIGHT LABORATORY, INC. (www.lightlaboratory.com)
[ISSUEDATE] 9/10/2019
[MANUFAC] Number Eight Lighting Company
[LUMCAT] 202-S-BV-HI-3000-40/DIM1-2-SO/FLS-2-BV-WH
[LUMINAIRE] LED Recessed Adjustable Downlight, 30° Aiming Angle, 3000K 90+ CRI, 40° Beam Spread,
[MORE] Standard Output 1% Dimming Driver, Square Flanged Bevel Trim, 2.25" x 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] 119.98VAC, 13.98W
[TEST PROCEDURE] IESNA:LM-79-08

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	1073
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	77
Total Luminaire Watts	13.98
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	2.54
Spacing Criterion (90-270)	0.70
Spacing Criterion (Diagonal)	1.26
Basic Luminous Shape	Rectangular
Luminous Length (0-180)	0.27 ft
Luminous Width (90-270)	0.27 ft
Luminous Height	0.00 ft

LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	370713	37760	2503
55	57095	5401	1543
65	698	1047	1745
75	570	1140	1710
85	0	1693	1693

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L081910654.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	261	261	261	261	261	261	261	261	261	261
2.5	333	333	332	330	328	325	321	317	312	306
5.0	499	499	494	486	475	465	449	432	413	391
7.5	757	753	741	723	699	665	630	591	544	502
10.0	1100	1090	1069	1034	984	922	856	781	697	626
12.5	1490	1478	1443	1397	1324	1217	1109	989	870	758
15.0	1867	1853	1809	1738	1638	1507	1352	1191	1025	868
17.0	2135	2117	2056	1976	1860	1715	1537	1347	1150	950
19.0	2344	2305	2258	2178	2056	1883	1693	1474	1237	1008
21.0	2427	2424	2392	2319	2197	2028	1816	1566	1306	1039
23.0	2498	2489	2475	2416	2304	2134	1903	1627	1329	1039
25.0	2543	2538	2532	2470	2371	2207	1956	1653	1337	1024
27.0	2555	2557	2546	2513	2412	2237	1971	1643	1293	963
29.0	2553	2563	2569	2523	2426	2240	1939	1605	1239	899
31.0	2585	2594	2595	2542	2422	2206	1900	1526	1136	800
33.0	2632	2632	2607	2530	2386	2132	1801	1412	1027	705
35.0	2645	2630	2589	2490	2313	2042	1677	1266	883	591
37.0	2584	2563	2498	2377	2203	1880	1489	1098	753	479
39.0	2509	2479	2388	2236	2011	1669	1299	917	608	397
41.0	2353	2317	2198	2052	1780	1419	1063	741	456	317
43.0	2125	2083	1976	1795	1521	1179	859	579	373	247
45.0	1777	1745	1652	1474	1223	926	653	425	288	181
50.0	708	692	617	521	428	339	270	204	104	54
55.0	222	210	179	139	104	77	61	46	32	21
60.0	16	16	15	15	14	14	13	11	8	6
65.0	2	2	2	3	3	4	4	3	3	3
70.0	2	2	2	2	2	2	2	2	2	2
75.0	1	1	1	1	1	1	2	2	2	2
80.0	1	1	1	1	1	1	1	1	1	1
85.0	0	0	0	0	0	0	0	0	1	1
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	261	261	261	261	261	261	261	261	261	261
2.5	301	295	290	284	279	273	268	263	258	253
5.0	372	353	335	319	303	289	274	262	250	240
7.5	460	420	384	351	322	295	273	254	237	223
10.0	558	490	429	375	331	295	266	243	222	206
12.5	645	549	464	390	333	288	253	227	206	189
15.0	720	589	483	388	324	275	238	211	188	169
17.0	773	613	483	374	310	258	222	194	172	154
19.0	793	611	471	363	290	240	205	179	157	138
21.0	801	601	446	337	267	220	188	162	141	124
23.0	775	566	403	311	243	201	170	147	126	110
25.0	745	529	375	277	219	181	153	131	113	98
27.0	680	457	333	249	198	163	137	117	100	88
29.0	618	409	292	219	176	145	121	103	89	79
31.0	536	359	256	196	158	129	107	91	80	72
33.0	437	310	222	172	137	111	92	80	71	65
35.0	391	260	192	149	119	96	80	70	63	58
37.0	320	221	164	126	97	78	62	54	50	47
39.0	257	184	135	94	65	46	36	31	30	30

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L081910654.IES

CANDELA TABULATION - (Cont.)

41.0	213	144	89	52	34	25	21	19	18	18
43.0	157	89	49	30	23	19	17	16	15	15
45.0	99	52	32	22	18	15	13	12	12	12
50.0	34	22	15	10	8	7	7	7	8	8
55.0	12	7	6	5	4	5	5	6	6	7
60.0	4	4	4	4	4	4	4	5	6	6
65.0	3	3	3	4	4	4	4	4	5	6
70.0	3	3	3	3	3	3	3	4	4	5
75.0	2	2	2	2	2	2	2	3	3	3
80.0	1	1	1	1	1	1	2	2	2	2
85.0	1	1	1	1	1	1	1	1	1	1
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	261	261	261	261	261	261	261	261	261	261
2.5	249	245	242	238	235	232	229	226	224	221
5.0	231	223	215	209	202	197	192	187	183	179
7.5	211	200	189	182	173	166	159	152	147	142
10.0	192	179	167	157	148	138	131	124	119	114
12.5	172	158	146	135	125	117	110	104	99	95
15.0	154	140	126	116	107	99	93	89	85	83
17.0	139	125	112	102	94	88	84	80	77	74
19.0	123	110	99	91	84	80	76	73	70	68
21.0	110	98	89	82	77	72	69	66	63	60
23.0	98	88	81	74	69	66	63	60	56	53
25.0	87	80	73	67	62	59	56	53	48	43
27.0	79	72	65	61	57	54	51	46	40	35
29.0	72	65	59	55	52	49	45	39	33	28
31.0	65	59	54	51	48	44	38	32	27	24
33.0	59	53	49	46	43	39	32	26	23	21
35.0	53	48	45	42	39	34	27	22	20	19
37.0	45	43	41	39	35	29	22	20	19	18
39.0	32	34	35	35	31	24	20	18	17	15
41.0	19	21	25	29	26	20	18	16	14	14
43.0	15	16	17	19	19	17	16	14	13	13
45.0	12	13	14	15	16	15	14	13	13	13
50.0	9	9	10	10	11	11	11	12	12	13
55.0	8	8	9	9	10	10	11	12	12	13
60.0	7	8	8	9	9	10	11	11	12	12
65.0	6	7	7	8	9	9	10	10	11	12
70.0	5	6	6	7	7	8	9	9	10	11
75.0	4	4	5	5	6	6	7	7	8	9
80.0	2	3	3	3	4	4	4	5	5	6
85.0	1	1	1	2	2	2	2	3	3	3
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	261	261	261	261	261	261	261
2.5	219	218	217	216	215	214	216
5.0	175	173	171	168	167	166	167
7.5	138	134	132	129	128	127	128
10.0	110	107	105	103	102	101	101

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L081910654.IES

CANDELA TABULATION - (Cont.)

12.5	92	90	88	86	85	85	85
15.0	79	77	75	74	73	73	73
17.0	72	70	68	66	65	64	64
19.0	64	62	60	58	57	56	55
21.0	57	54	50	47	45	44	43
23.0	47	43	40	37	35	34	34
25.0	38	34	31	29	28	27	27
27.0	30	27	26	25	24	24	24
29.0	25	24	23	22	22	21	21
31.0	22	21	21	20	20	20	20
33.0	20	20	19	18	18	17	17
35.0	18	18	16	16	15	15	15
37.0	16	15	15	14	14	14	14
39.0	14	14	14	14	14	14	14
41.0	14	14	14	14	14	14	14
43.0	13	13	14	14	14	14	14
45.0	13	13	14	14	14	14	14
50.0	13	13	14	14	14	14	14
55.0	13	13	14	14	14	14	15
60.0	13	13	13	14	14	16	16
65.0	12	13	13	13	14	16	18
70.0	11	12	12	13	13	13	14
75.0	10	10	10	11	11	11	11
80.0	6	7	7	7	7	7	8
85.0	3	4	4	4	4	4	4
90.0	0	0	0	0	0	0	0

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L081910654.IES

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	160.01	N.A.	14.90
0-30	440.73	N.A.	41.10
0-40	777.90	N.A.	72.50
0-60	1059.49	N.A.	98.70
0-80	1071.55	N.A.	99.80
0-90	1073.23	N.A.	100.00
10-90	1042.17	N.A.	97.10
20-40	617.88	N.A.	57.60
20-50	858.24	N.A.	80.00
40-70	288.88	N.A.	26.90
60-80	12.06	N.A.	1.10
70-80	4.78	N.A.	0.40
80-90	1.68	N.A.	0.20
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	1073.23	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	31.06
10-20	128.95
20-30	280.72
30-40	337.17
40-50	240.36
50-60	41.24
60-70	7.28
70-80	4.78
80-90	1.68
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

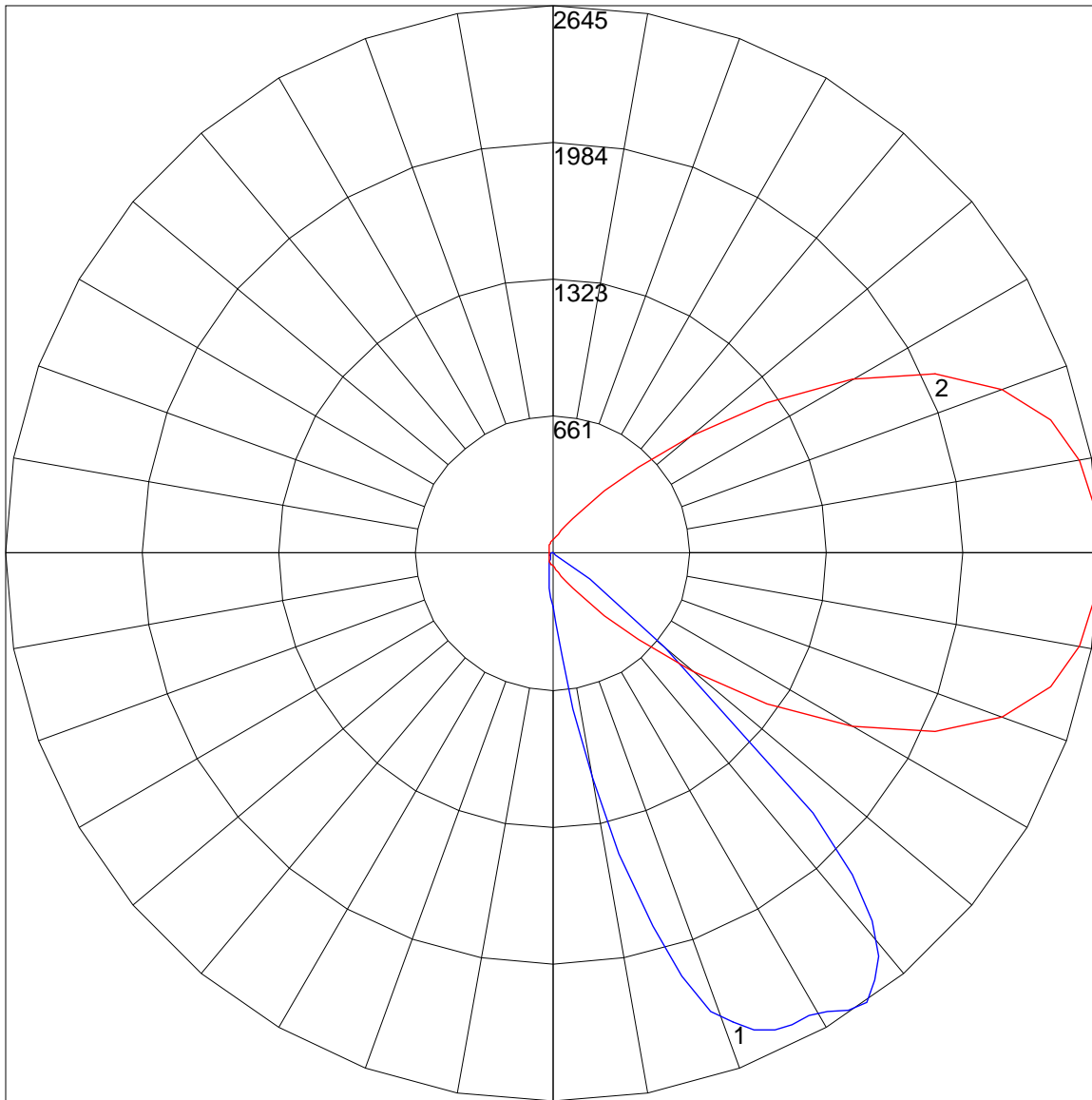
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PHOTOMETRIC FILENAME : L081910654.IES

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	101	103	100	98	99	97	95	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	76	81	77	74	73
4	91	82	75	70	89	81	74	69	78	73	68	76	71	68	74	70	67	65
5	85	75	67	62	83	74	67	62	72	66	61	70	65	60	68	64	60	58
6	79	68	61	55	77	67	60	55	66	59	55	64	58	54	63	58	54	52
7	74	62	55	50	72	62	54	49	60	54	49	59	53	49	58	52	49	47
8	69	57	50	45	67	56	49	45	55	49	44	54	48	44	53	48	44	42
9	64	53	45	40	63	52	45	40	51	45	40	50	44	40	49	44	40	38
10	60	48	41	37	59	48	41	37	47	41	36	46	40	36	45	40	36	35

POLAR GRAPH



Maximum Candela = 2645 Located At Horizontal Angle = 0, Vertical Angle = 35
1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (35) (Through Max. Cd.)