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

NVLAP TESTING
NVLAP LAB CODE 200927-0

Report No: L081910611 **Issue Date: 8/28/2019**

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

Model Number: 201-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: 8/23/19 - 8/28/19

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

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General Information	
Manufacturer:	Number Eight Lighting Company
Model Number:	201-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:	1133.72
Efficacy:	81.26
Input Voltage (VAC/60Hz):	120.02
Input Current (Amp):	0.1173
Input Power (W):	13.95
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):	1:45

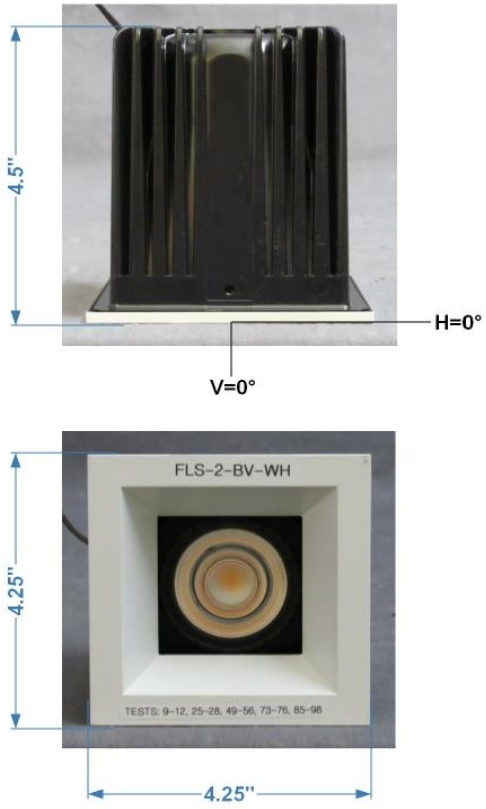

FIG. 1 LUMINAIRE

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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^{o}C and is measured from the center of the fixture, within 1ft from the outside of the fixture. Temperature is maintained at 25^{o}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^{o}C and is measured from the center of the fixture, within 1ft from the outside of the fixture. Temperature is maintained at 25^{o}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: 9*

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Photometric Test Report

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L081910611.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] L081910611
[TESTLAB] LIGHT LABORATORY, INC. (www.lightlaboratory.com)
[ISSUEDATE] 8/28/2019
[MANUFAC] Number Eight Lighting Company
[LUMCAT] 201-S-BV-HI-3000-40/DIM1-2-SO/FLS-2-BV-WH
[LUMINAIRE] LED Recessed Fixed Position Downlight, 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] 120.02VAC, 13.95W
[TEST PROCEDURE] IESNA:LM-79-08

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	1134
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	81
Total Luminaire Watts	13.95
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	0.62
Spacing Criterion (90-270)	0.62
Spacing Criterion (Diagonal)	0.56
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	3234	10744	3129
55	1029	1800	1029
65	1047	1047	1047
75	1140	1140	1140
85	1693	1693	1693

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L081910611.IES

CANDELA TABULATION

	0	5	10	15	20	25	30	35	40	45
0.0	2852	2852	2852	2852	2852	2852	2852	2852	2852	2852
1.0	2867	2857	2851	2849	2840	2843	2843	2843	2840	2842
3.0	2876	2877	2863	2838	2839	2836	2832	2834	2835	2839
5.0	2870	2869	2869	2860	2833	2832	2817	2815	2814	2821
7.0	2813	2814	2813	2803	2794	2765	2760	2761	2755	2759
9.0	2686	2688	2691	2691	2696	2655	2647	2648	2651	2644
11.0	2496	2496	2500	2501	2508	2502	2470	2469	2479	2480
13.0	2232	2235	2235	2235	2250	2254	2247	2219	2223	2227
15.0	1925	1928	1929	1931	1947	1937	1944	1945	1922	1928
17.0	1599	1595	1599	1602	1610	1604	1606	1609	1611	1599
19.5	1177	1179	1182	1185	1185	1178	1179	1184	1189	1192
22.5	737	738	742	743	742	740	735	740	744	749
25.5	435	435	435	435	435	434	433	433	434	439
29.0	248	247	248	247	249	249	248	247	246	247
33.0	150	150	151	153	157	159	157	157	156	156
37.5	71	73	79	85	92	95	97	100	101	101
42.5	20	21	21	22	24	30	44	59	65	67
47.5	11	11	12	12	13	14	15	16	23	36
55.0	4	4	4	4	4	5	5	5	6	7
65.0	3	3	3	3	3	3	3	3	3	3
75.0	2	2	2	2	2	2	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**

	50	55	60	65	70	75	80	85	90
0.0	2852	2852	2852	2852	2852	2852	2852	2852	2852
1.0	2843	2843	2847	2848	2854	2854	2854	2863	2855
3.0	2837	2840	2843	2848	2846	2846	2843	2850	2859
5.0	2820	2819	2818	2831	2834	2836	2837	2837	2824
7.0	2757	2760	2764	2762	2765	2764	2762	2767	2776
9.0	2643	2646	2645	2643	2643	2646	2645	2661	2665
11.0	2466	2466	2465	2465	2468	2466	2478	2478	2479
13.0	2221	2214	2210	2211	2209	2212	2218	2219	2218
15.0	1927	1920	1910	1909	1904	1909	1912	1912	1913
17.0	1599	1595	1592	1579	1583	1582	1581	1583	1584
19.5	1185	1183	1178	1169	1169	1164	1162	1159	1163
22.5	745	742	741	740	731	730	729	728	728
25.5	442	438	435	434	434	429	429	427	427
29.0	247	248	248	248	247	246	243	243	243
33.0	157	156	158	158	156	154	151	150	149
37.5	101	100	97	94	89	82	75	70	69
42.5	65	58	44	30	24	21	20	20	20
47.5	24	17	15	14	13	12	11	10	10
55.0	6	5	5	5	4	4	4	4	4
65.0	3	3	3	3	3	3	3	3	3
75.0	2	2	2	2	2	2	2	2	2
85.0	1	1	1	1	1	1	1	1	1
90.0	0	0	0	0	0	0	0	0	0

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L081910611.IES

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	755.77	N.A.	66.70
0-30	1006.94	N.A.	88.80
0-40	1087.00	N.A.	95.90
0-60	1125.6	N.A.	99.30
0-80	1131.83	N.A.	99.80
0-90	1133.72	N.A.	100.00
10-90	918.60	N.A.	81.00
20-40	331.22	N.A.	29.20
20-50	363.35	N.A.	32.00
40-70	42.26	N.A.	3.70
60-80	6.24	N.A.	0.60
70-80	2.57	N.A.	0.20
80-90	1.89	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	1133.72	N.A.	100.00

Total Luminaire Efficiency = N.A.%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	215.13
10-20	540.65
20-30	251.17
30-40	80.05
40-50	32.13
50-60	6.47
60-70	3.66
70-80	2.57
80-90	1.89
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 : L081910611.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	114	112	110	108	112	110	108	106	106	104	103	102	101	100	99	98	97	95
2	110	106	102	99	108	104	101	98	101	98	96	98	96	94	95	93	92	90
3	105	100	96	92	104	99	95	92	96	93	90	94	91	89	92	89	88	86
4	101	95	90	87	100	94	90	86	92	88	85	90	87	84	88	86	83	82
5	97	91	86	82	96	90	85	82	88	84	81	86	83	80	85	82	80	78
6	94	86	81	78	92	86	81	78	84	80	77	83	79	77	82	79	76	75
7	90	83	78	74	89	82	77	74	81	77	74	80	76	73	79	75	73	72
8	87	79	74	71	86	79	74	71	78	74	71	77	73	70	76	73	70	69
9	84	76	71	68	83	76	71	68	75	71	68	74	70	67	73	70	67	66
10	81	73	68	65	80	73	68	65	72	68	65	71	68	65	71	67	65	64

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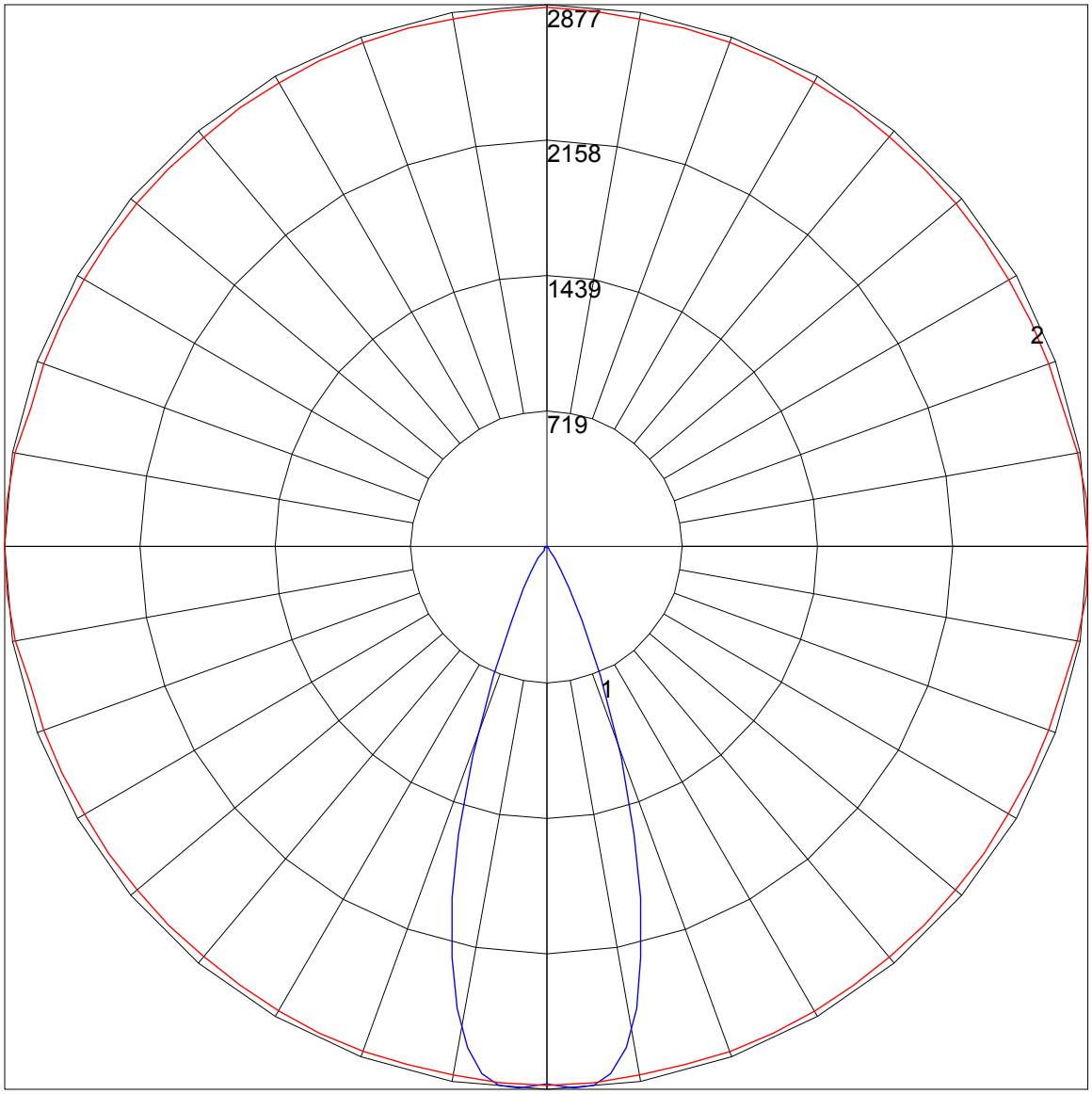
POLAR GRAPH



Maximum Candela = 2877 Located At Horizontal Angle = 5, Vertical Angle = 3
1 - Vertical Plane Through Horizontal Angles (5 - 185) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (3) (Through Max. Cd.)

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