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

NVLAP TESTING
NVLAP LAB CODE 200927-0

Report No: L081910603 **Issue Date: 8/21/2019**

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

Model Number: 201-S-HI-3000-40/DIM1-2-SO/FLS-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: 8/16/19

Date of Tests: 8/19/19 - 8/21/19

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

Photometric & Electrical Test Results	
Total Lumens:	1096.62
Efficacy:	77.11
Input Voltage (VAC/60Hz):	119.95
Input Current (Amp):	0.1194
Input Power (W):	14.22
Input Power Factor:	0.9932
Current ATHD (%):	5.5%

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

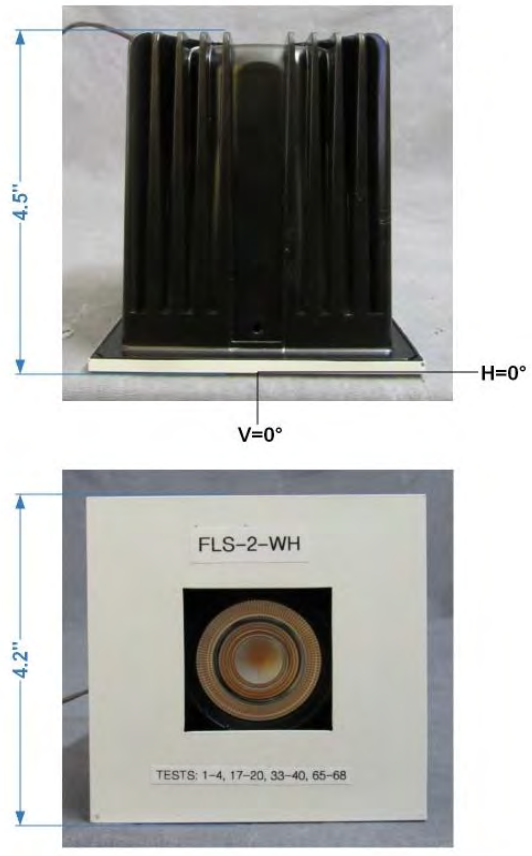

FIG. 1 LUMINAIRE

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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 : L081910603.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] L081910603
[TESTLAB] LIGHT LABORATORY, INC. (www.lightlaboratory.com)
[ISSUEDATE] 8/21/2019
[MANUFAC] Number Eight Lighting Company
[LUMCAT] 201-S-HI-3000-40/DIM1-2-SO/FLS-2-WH
[LUMINAIRE] LED Recessed Fixed Position Downlight, 3000K 90+ CRI, 40° Beam Spread,
[MORE] Standard Output 1% Dimming Driver, Square Flanged Trim, 1.875" x 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] 119.95VAC, 14.22W
[TEST PROCEDURE] IESNA:LM-79-08

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	1097
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	77
Total Luminaire Watts	14.22
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)	0.15 ft
Luminous Width (90-270)	0.15 ft
Luminous Height	0.00 ft

LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	8449	20278	8449
55	1667	4166	1667
65	0	0	0
75	0	0	0
85	0	0	0

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L081910603.IES

CANDELA TABULATION

	0	5	10	15	20	25	30	35	40	45
0.0	2844	2844	2844	2844	2844	2844	2844	2844	2844	2844
1.0	2839	2840	2834	2832	2831	2836	2834	2849	2850	2845
3.0	2832	2831	2828	2829	2844	2845	2862	2860	2870	2868
5.0	2816	2813	2812	2841	2842	2858	2856	2861	2864	2857
7.0	2755	2752	2785	2786	2804	2802	2801	2809	2806	2793
9.0	2635	2637	2670	2671	2689	2688	2696	2689	2687	2683
11.0	2468	2493	2493	2505	2505	2503	2503	2495	2495	2497
13.0	2264	2240	2238	2243	2238	2236	2238	2230	2232	2235
15.0	1961	1938	1938	1936	1930	1925	1920	1919	1917	1926
17.0	1622	1626	1606	1602	1597	1589	1590	1585	1585	1588
19.5	1199	1198	1188	1175	1170	1167	1167	1165	1163	1165
22.5	736	738	733	730	728	725	726	726	726	725
25.5	416	415	415	417	415	415	417	418	419	419
29.0	222	222	224	227	228	230	231	233	234	235
33.0	111	112	115	121	128	133	137	141	144	145
37.5	38	38	40	44	51	60	70	79	84	85
42.5	16	16	16	16	17	18	22	30	42	46
47.5	9	9	9	9	10	10	10	11	12	14
55.0	2	2	2	2	2	2	3	4	5	5
65.0	0	0	0	0	0	0	0	0	0	0
75.0	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**

	50	55	60	65	70	75	80	85	90
0.0	2844	2844	2844	2844	2844	2844	2844	2844	2844
1.0	2842	2842	2844	2843	2845	2846	2846	2845	2839
3.0	2863	2859	2860	2859	2858	2863	2864	2860	2868
5.0	2857	2855	2850	2853	2851	2858	2859	2861	2869
7.0	2792	2791	2791	2794	2792	2797	2801	2808	2810
9.0	2673	2670	2671	2676	2676	2680	2690	2690	2689
11.0	2489	2489	2488	2489	2490	2500	2500	2501	2500
13.0	2227	2227	2229	2227	2231	2237	2240	2241	2239
15.0	1921	1922	1925	1922	1928	1928	1932	1933	1935
17.0	1587	1587	1592	1590	1591	1592	1595	1595	1597
19.5	1165	1165	1165	1165	1163	1164	1165	1165	1165
22.5	725	724	725	720	718	717	717	717	719
25.5	419	419	419	417	415	413	413	412	412
29.0	234	233	231	229	226	224	223	221	221
33.0	144	141	138	132	127	122	118	116	115
37.5	83	77	70	60	52	47	43	42	41
42.5	40	31	23	19	17	16	16	16	16
47.5	13	11	10	10	10	9	9	9	9
55.0	4	4	3	3	2	2	2	2	2
65.0	0	0	0	0	0	0	0	0	0
75.0	0	0	0	0	0	0	0	0	0
85.0	0	0	0	0	0	0	0	0	0
90.0	0	0	0	0	0	0	0	0	0

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L081910603.IES

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	758.31	N.A.	69.20
0-30	1002.93	N.A.	91.50
0-40	1070.12	N.A.	97.60
0-60	1095.27	N.A.	99.90
0-80	1096.62	N.A.	100.00
0-90	1096.62	N.A.	100.00
10-90	880.29	N.A.	80.30
20-40	311.81	N.A.	28.40
20-50	332.78	N.A.	30.30
40-70	26.50	N.A.	2.40
60-80	1.34	N.A.	0.10
70-80	0.00	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	1096.62	N.A.	100.00

Total Luminaire Efficiency = N.A.%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	216.33
10-20	541.98
20-30	244.62
30-40	67.19
40-50	20.97
50-60	4.18
60-70	1.34
70-80	0.00
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

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L081910603.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	105	103	102	101	100	99	98	97	96
2	110	106	103	100	108	104	101	99	101	99	97	98	96	95	96	94	93	91
3	106	101	97	93	104	99	96	93	97	94	91	95	92	90	92	90	89	87
4	102	96	91	88	100	95	91	88	93	89	87	91	88	86	89	87	85	83
5	98	92	87	83	97	91	86	83	89	85	82	87	84	82	86	83	81	80
6	95	88	83	79	93	87	82	79	85	82	79	84	81	78	83	80	78	76
7	91	84	79	76	90	83	79	76	82	78	75	81	77	75	80	77	74	73
8	88	81	76	72	87	80	76	72	79	75	72	78	74	72	77	74	72	70
9	85	77	73	70	84	77	73	69	76	72	69	75	72	69	75	71	69	68
10	82	75	70	67	81	74	70	67	73	69	67	73	69	66	72	69	66	65

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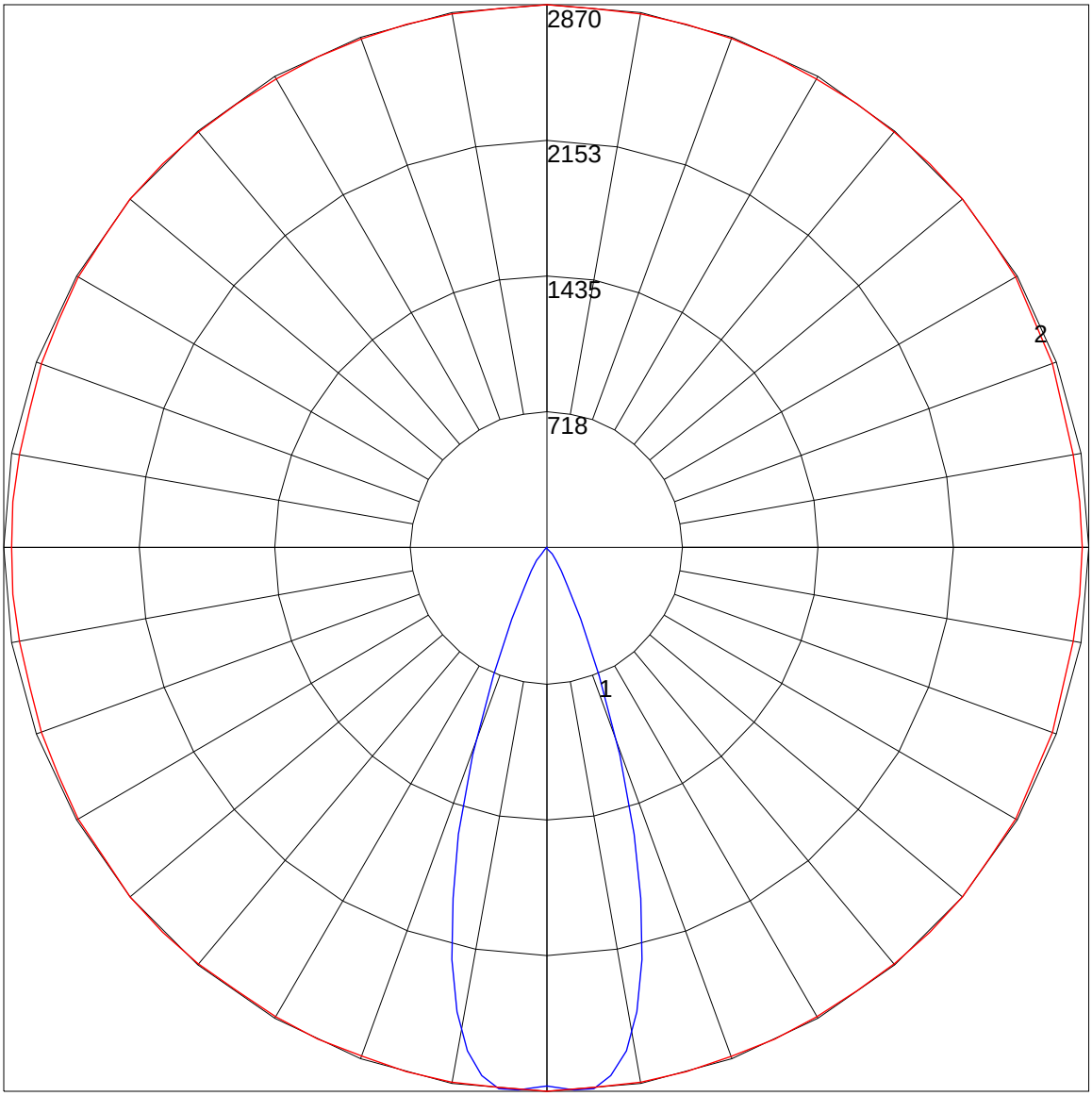
POLAR GRAPH



Maximum Candela = 2870 Located At Horizontal Angle = 40, Vertical Angle = 3
1 - Vertical Plane Through Horizontal Angles (40 - 220) (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