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Report No: L061603503

Date: 6/15/2016



NVLAP LAB CODE 200927-0

Report No: L061603503

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

Model Number: 400-HI-25/DIM1-4(PR1-4, DIM2-4, PR2-4)-1000/FLS(FS)-4-WH(OB)

Test: Electrical and Photometric tests

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. Catalog number is 400-HI-25/DIM1-4(PR1-4, DIM2-4, PR2-4)-1000/FLS(FS)-4-WH(OB). Received in working and undamaged condition. No modifications were necessary.

Testing Condition: Fixture is tested with no special conditions.

Sample Arrival Date: 6/10/16

Date of Tests: 6/13/16 - 6/15/16

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-S1	11/18/16
Xitron Power Analyzer	2503AH	MT-EL01	11/30/16
ITECH DC Power Supply	IT6122	PSDC-03-S1	11/17/16
Fluke Digital Thermometer	52k/J	MT-TP02-GC	11/24/16
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

*All Results in accordance to IESNA LM-79-2008: Approved Method for the Electrical and Photometric Testing of Solid-State Lighting.

Test Summary

Manufacturer:	Number Eight Lighting Company
Model Number:	400-HI-25/DIM1-4(PR1-4, DIM2-4, PR2-4)-1000/FLS(FS)-4-WH(OB)
Driver Model Number:	INTUITIVE SYSTEMS ISD-601-1050-15-D
Total Lumens:	794.41
Input Voltage (VAC/60Hz):	120.00
Input Current (Amp):	0.13
Input Power (W):	14.69
Input Power Factor:	0.97
Current ATHD @ 120V(%):	14%
Current ATHD @ 277V(%):	N/A
Efficacy:	54
Color Rendering Index (CRI):	92
Correlated Color Temperature (K):	2890
Chromaticity Coordinate x:	0.4471
Chromaticity Coordinate y:	0.4109
Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	0:30
Total Operating Time (Hours):	1:10
Off State Power(W):	0.00

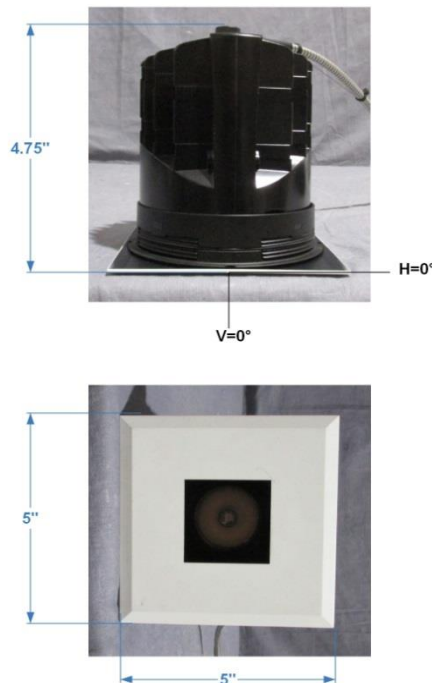
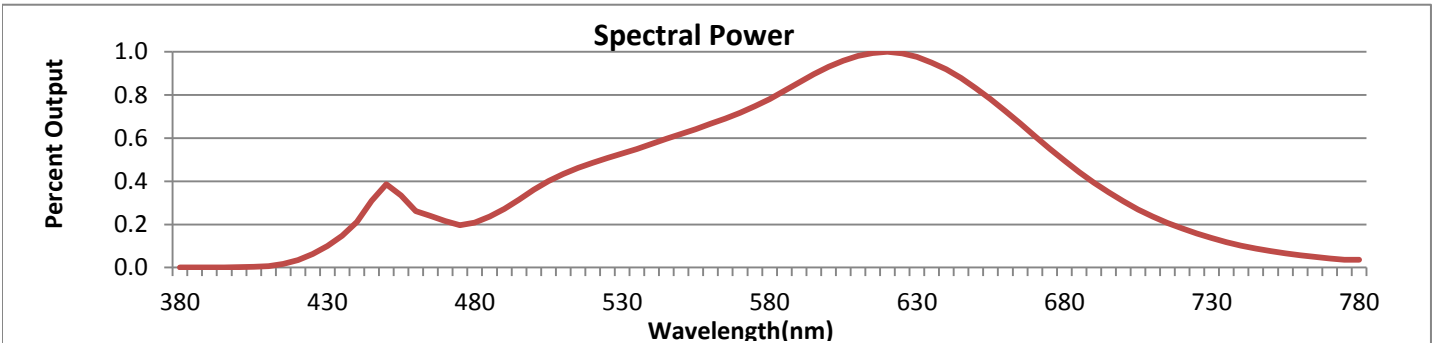


FIG. 1 LUMINAIRE

*All Results in accordance to IESNA LM-79-2008: Approved Method for the Electrical and Photometric Testing of Solid-State Lighting.



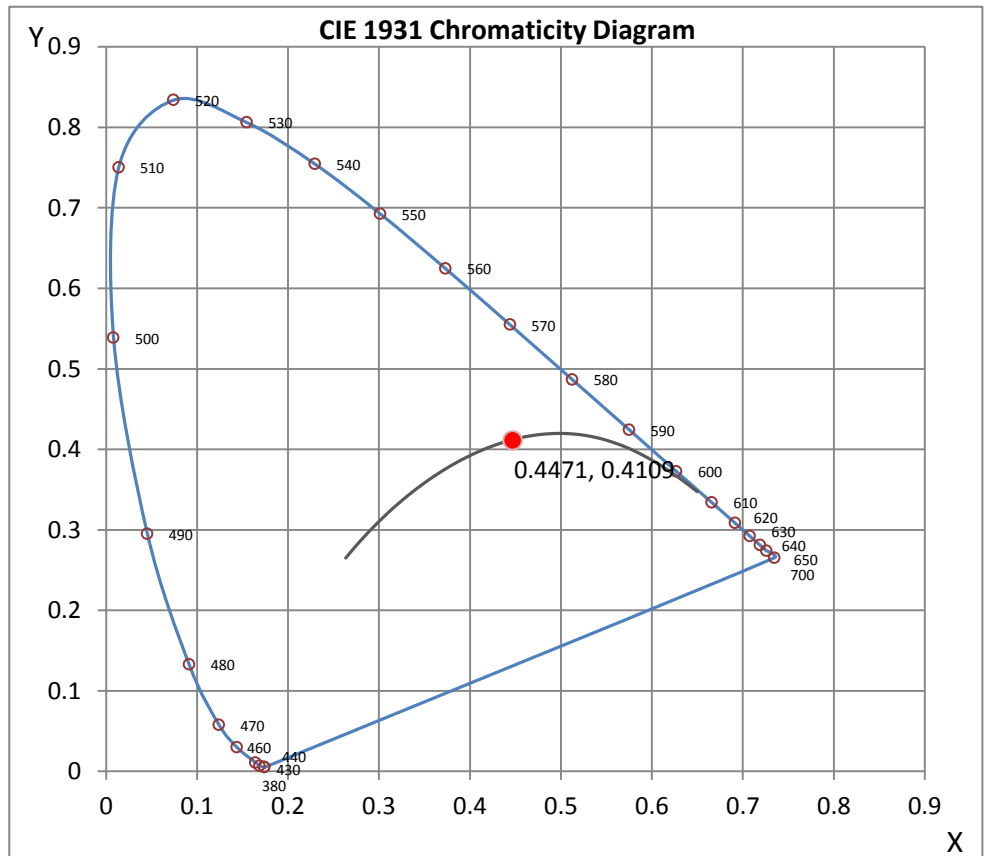
Wavelength	W/m ² nm	440	0.2106	510	0.4336	580	0.7818	650	0.8322	720	0.1812
380	0.0008	450	0.3862	520	0.4864	590	0.8577	660	0.7262	730	0.1366
390	0.0009	460	0.2612	530	0.5289	600	0.9306	670	0.6085	740	0.1018
400	0.0015	470	0.2151	540	0.5729	610	0.9818	680	0.4967	750	0.0764
410	0.0072	480	0.2084	550	0.6193	620	1.0000	690	0.3944	760	0.0571
420	0.0341	490	0.2717	560	0.6661	630	0.9763	700	0.3073	770	0.0424
430	0.0999	500	0.3609	570	0.7176	640	0.9195	710	0.2358	780	0.0364

CRI & CCT

x	0.4471
y	0.4109
u'	0.2542
v'	0.5256
CRI	92.20
CCT	2890
Duv	0.00138

R Values

R1	91.91
R2	95.37
R3	98.12
R4	92.93
R5	91.77
R6	95.02
R7	92.06
R8	80.12
R9	54.74
R10	88.76
R11	94.11
R12	84.18
R13	92.73
R14	98.25



*All Results in accordance to IESNA LM-79-2008: Approved Method for the Electrical and Photometric Testing of Solid-State Lighting.

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 Released by:



Jeff Ahn
Engineering Manager

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 : L061603503.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
 [TEST] L061603503
 [TESTLAB] LIGHT LABORATORY, INC.
 [ISSUEDATE] 6/15/2016
 [MANUFAC] NUMBER EIGHT LIGHTING COMPANY
 [LUMCAT] 400-HI-25/DIM1-4(PR1-4, DIM2-4, PR2-4)-1000/FLS(FS)-4-WH(OB)
 [LUMINAIRE] LED RECESSED ADJUSTABLE DOWNLIGHT, 90+ CRI
 [MORE] 25° BEAM SPREAD, 0° AIMING ANGLE, 2"X2" APERTURE TRIM
 [BALLASTCAT] INTUITIVE SYSTEMS ISD-601-1050-15-D
 [LAMPPOSITION] 0,0
 [LAMPCAT] N/A
 [OTHER] INDICATING THE CANDELA VALUES ARE ABSOLUTE AND
 [MORE] SHOULD NOT BE FACTORED FOR DIFFERENT LAMP RATINGS.
 [INPUT] 120VAC, 14.69W
 [TEST PROCEDURE] IESNA:LM-79-08

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	794
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	54
Total Luminaire Watts	14.69
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	0.48
Spacing Criterion (90-270)	0.48
Spacing Criterion (Diagonal)	0.50
Basic Luminous Shape	Rectangular
Luminous Length (0-180)	0.17 ft
Luminous Width (90-270)	0.17 ft
Luminous Height	0.00 ft

LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	2894	4736	2631
55	1297	1946	1297
65	880	880	880
75	1438	1438	1438
85	4269	4269	4269

**IES INDOOR REPORT
PHOTOMETRIC FILENAME : L061603503.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	2784	2784	2784	2784	2784	2784	2784	2784	2784	2784
1.0	2782	2782	2781	2780	2779	2778	2777	2776	2776	2776
3.0	2715	2715	2715	2714	2712	2711	2710	2710	2709	2709
5.0	2578	2578	2577	2576	2575	2573	2573	2573	2573	2573
7.0	2377	2377	2377	2376	2375	2375	2375	2376	2376	2377
9.0	2122	2123	2123	2124	2124	2125	2126	2126	2128	2129
11.0	1840	1839	1840	1841	1843	1845	1848	1851	1854	1855
13.0	1556	1556	1558	1560	1563	1568	1572	1576	1580	1583
15.0	1282	1282	1284	1288	1291	1296	1301	1307	1312	1316
17.0	1025	1025	1027	1031	1034	1040	1045	1050	1055	1058
19.5	738	739	741	743	746	749	753	757	760	762
22.5	470	470	470	472	473	474	475	477	479	480
25.5	299	300	300	301	302	303	304	305	306	306
29.0	151	152	157	163	171	178	183	185	185	185
33.0	57	58	60	64	70	80	92	101	108	110
37.5	21	21	22	23	24	27	31	39	50	56
42.5	8	8	8	8	9	10	11	12	13	13
47.5	3	3	3	4	4	4	5	5	5	5
55.0	2	2	2	2	2	2	2	2	3	3
65.0	1	1	1	1	1	1	1	1	1	1
75.0	1	1	1	1	1	1	1	1	1	1
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>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>
0.0	2784	2784	2784	2784	2784	2784	2784	2784	2784
1.0	2775	2775	2774	2774	2773	2773	2773	2773	2772
3.0	2709	2709	2708	2707	2707	2706	2707	2706	2706
5.0	2573	2573	2573	2573	2572	2573	2572	2572	2572
7.0	2377	2377	2378	2379	2379	2378	2379	2379	2380
9.0	2130	2131	2132	2133	2133	2133	2133	2133	2134
11.0	1857	1858	1859	1859	1859	1858	1858	1858	1858
13.0	1585	1585	1585	1583	1582	1580	1580	1580	1580
15.0	1317	1317	1315	1313	1310	1309	1307	1305	1305
17.0	1059	1059	1056	1054	1051	1048	1046	1045	1044
19.5	763	762	761	759	758	757	756	754	755
22.5	481	481	481	481	481	481	482	482	482
25.5	307	307	306	305	305	304	303	302	302
29.0	185	184	183	178	173	166	159	155	153
33.0	108	102	92	80	70	63	58	55	55
37.5	51	40	31	26	24	22	21	21	20
42.5	13	12	11	9	9	8	8	7	7
47.5	5	5	5	4	4	4	4	3	3
55.0	3	2	2	2	2	2	2	2	2
65.0	1	1	1	1	1	1	1	1	1
75.0	1	1	1	1	1	1	1	1	1
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 : L061603503.IES

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	568.07	N.A.	71.50
0-30	734.69	N.A.	92.50
0-40	778.69	N.A.	98.00
0-60	790.53	N.A.	99.50
0-80	793.06	N.A.	99.80
0-90	794.41	N.A.	100.00
10-90	604.83	N.A.	76.10
20-40	210.62	N.A.	26.50
20-50	220.43	N.A.	27.70
40-70	13.34	N.A.	1.70
60-80	2.53	N.A.	0.30
70-80	1.03	N.A.	0.10
80-90	1.35	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	794.41	N.A.	100.00

Total Luminaire Efficiency = N.A.%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	189.58
10-20	378.49
20-30	166.62
30-40	44.00
40-50	9.81
50-60	2.03
60-70	1.50
70-80	1.03
80-90	1.35
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

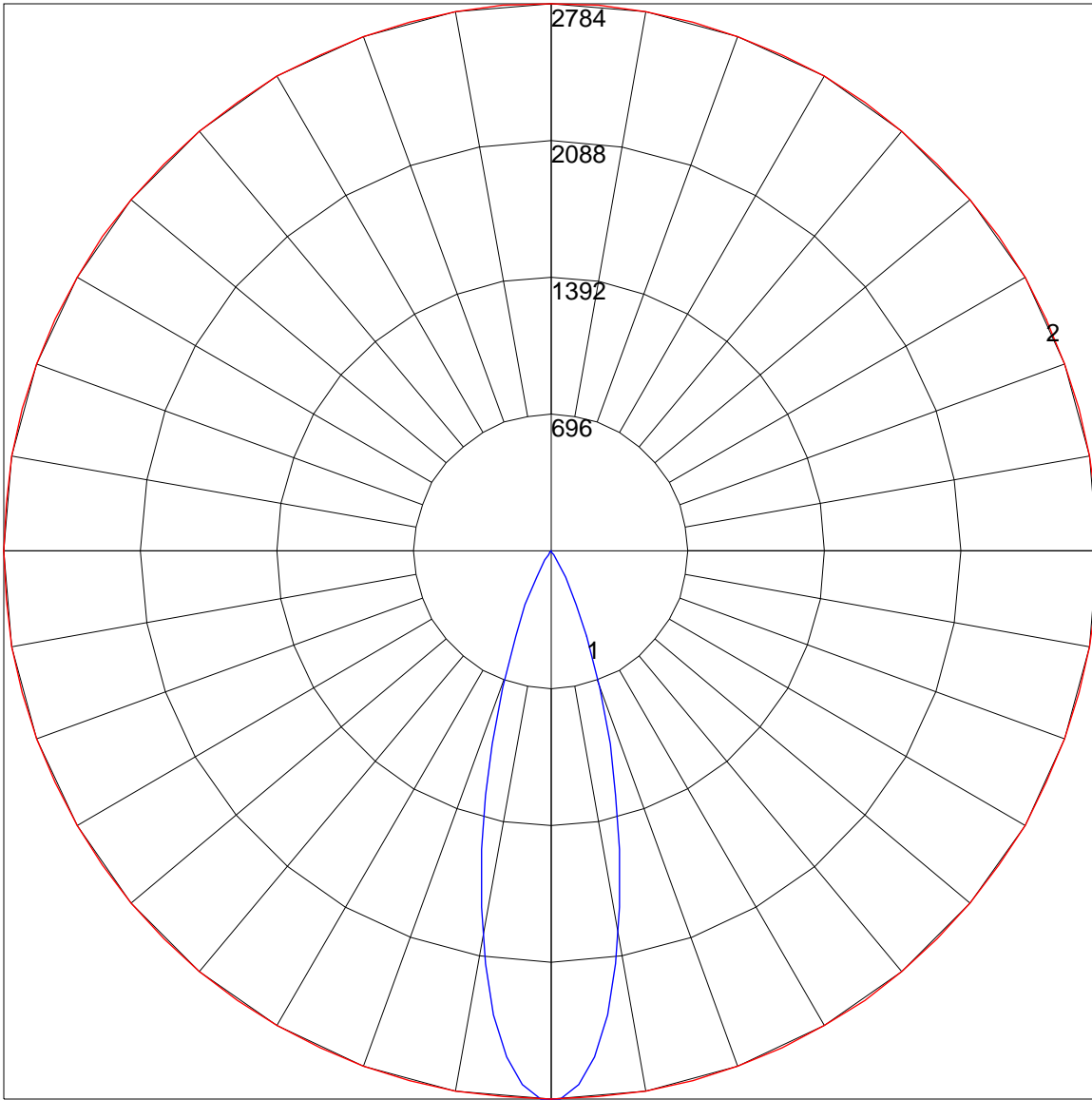
IES INDOOR REPORT
PHOTOMETRIC FILENAME : L061603503.IES

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	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	115	112	110	108	112	110	108	107	106	105	103	102	101	100	99	98	97	96
2	110	106	103	100	108	105	102	99	102	99	97	99	97	95	96	95	93	92
3	106	101	97	94	105	100	96	93	97	94	92	95	93	91	93	91	89	88
4	103	97	92	89	101	96	92	88	94	90	87	92	89	86	90	88	86	84
5	99	93	88	85	98	92	87	84	90	86	84	88	85	83	87	84	82	81
6	96	89	84	81	94	88	84	81	87	83	80	85	82	79	84	81	79	78
7	92	85	81	77	91	85	80	77	84	80	77	82	79	76	81	78	76	75
8	89	82	77	74	88	82	77	74	81	77	74	80	76	74	79	76	73	72
9	87	79	75	71	86	79	74	71	78	74	71	77	74	71	76	73	71	70
10	84	76	72	69	83	76	72	69	75	71	69	75	71	69	74	71	68	67

POLAR GRAPH



Maximum Candela = 2784 Located At Horizontal Angle = 0, Vertical Angle = 0
1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (0) (Through Max. Cd.)

SAMPLE Illuminance cone diagram

Mounting Height = 12 ft.

