



8165 E Kaiser Blvd. Anaheim, CA 92808
 p. 714.282.2270
 f. 714.676.5558

Report No: L041808807

Date: 5/17/2016



NVLAP LAB CODE 200927-0

Report No: L041608807

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

Model Number: 400-HI-40/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-40/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: 5/9/16

Date of Tests: 5/17/16 - 5/17/16

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-40/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:	831.88
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:	57
Color Rendering Index (CRI):	92
Correlated Color Temperature (K):	2892
Chromaticity Coordinate x:	0.4474
Chromaticity Coordinate y:	0.4117
Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	1:00
Total Operating Time (Hours):	1:35
Off State Power(W):	0.00

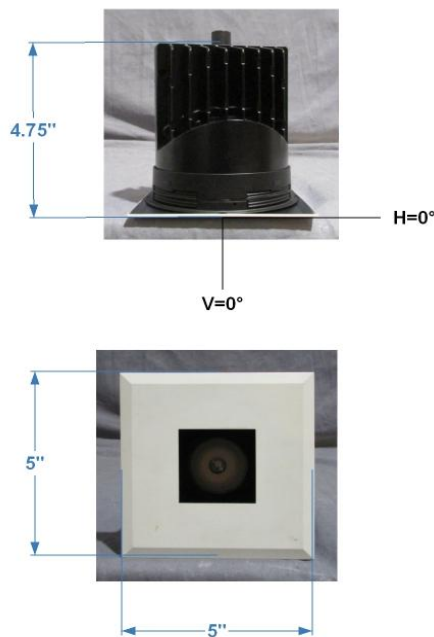
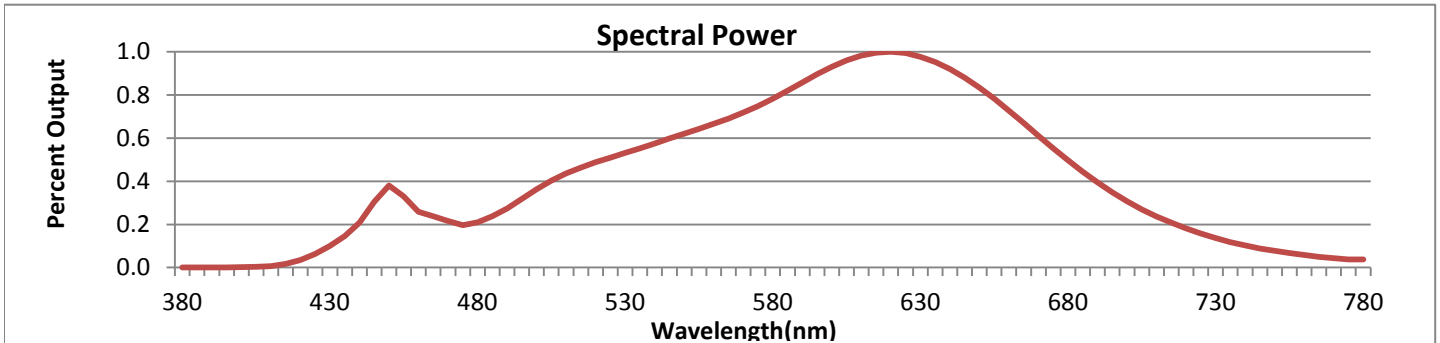


FIG. 1 LUMINAIRE

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



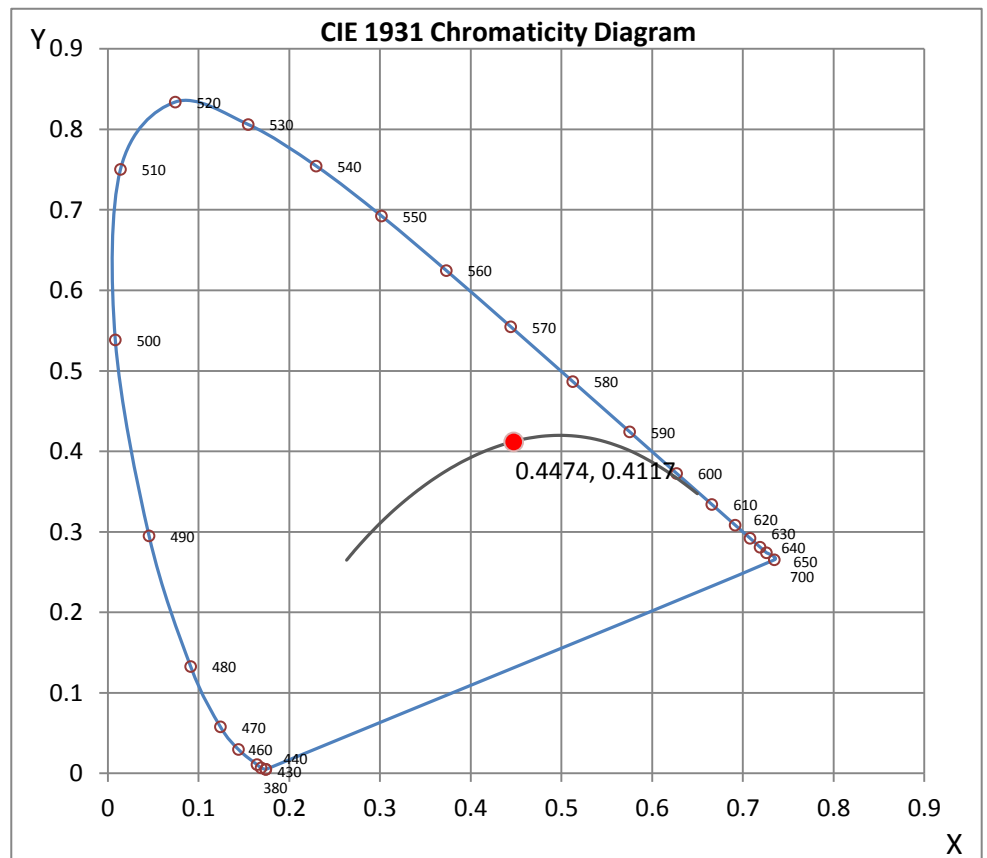
Wavelength	W/m ² nm	440	0.0022	510	0.0045	580	0.0081	650	0.0087	720	0.0019
380	0.0000	450	0.0039	520	0.0051	590	0.0089	660	0.0075	730	0.0014
390	0.0000	460	0.0027	530	0.0055	600	0.0097	670	0.0063	740	0.0011
400	0.0000	470	0.0022	540	0.0060	610	0.0102	680	0.0052	750	0.0008
410	0.0001	480	0.0022	550	0.0064	620	0.0104	690	0.0041	760	0.0006
420	0.0004	490	0.0028	560	0.0069	630	0.0101	700	0.0032	770	0.0004
430	0.0010	500	0.0038	570	0.0074	640	0.0096	710	0.0024	780	0.0004

CRI & CCT

x	0.4474
y	0.4117
u'	0.2540
v'	0.5259
CRI	92.20
CCT	2892
Duv	0.00165

R Values

R1	91.93
R2	95.33
R3	98.09
R4	93.05
R5	91.78
R6	95.02
R7	92.21
R8	80.27
R9	54.90
R10	88.69
R11	94.25
R12	84.11
R13	92.73
R14	98.22



*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 : Dennis Malonzo

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*



8165 E. Kaiser Blvd. Anaheim, CA 92808
 p. 714.282.2270
 f. 714.676.5558

Photometric Test Report

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L041608807.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
 [TEST] L041608807
 [TESTLAB] LIGHT LABORATORY, INC.
 [ISSUEDATE] 05/17/2016
 [MANUFAC] Number Eight Lighting Company
 [LUMCAT] 400-HI-40/DIM1-4(PR1-4, DIM2-4, PR2-4)-1000/FLS(FS)-4-WH(OB)
 [LUMINAIRE] "L. X "W. LED Recessed Adjustable Downlight, 90+ CRI, 40° Beam Spread,
 [MORE] 0° Aiming Angle, 2"x2" Aperture Trim LUMINAIRE
 [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	832
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	57
Total Luminaire Watts	14.69
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	0.68
Spacing Criterion (90-270)	0.68
Spacing Criterion (Diagonal)	0.68
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	23944	26312	25522
55	1297	3892	1946
65	880	880	880
75	1438	1438	1438
85	4269	4269	4269

**IES INDOOR REPORT
PHOTOMETRIC FILENAME : L041608807.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	1470	1470	1470	1470	1470	1470	1470	1470	1470	1470
1.0	1467	1467	1467	1467	1467	1467	1467	1467	1467	1467
3.0	1455	1455	1455	1455	1455	1455	1455	1455	1455	1455
5.0	1431	1431	1431	1431	1431	1431	1431	1431	1431	1431
7.0	1390	1390	1389	1390	1390	1390	1390	1389	1389	1389
9.0	1332	1332	1332	1332	1333	1333	1332	1332	1331	1331
11.0	1256	1257	1257	1258	1258	1259	1260	1260	1259	1258
13.0	1170	1171	1172	1173	1173	1174	1175	1175	1174	1173
15.0	1076	1077	1076	1077	1078	1078	1078	1078	1077	1075
17.0	962	962	963	964	965	967	968	968	967	965
19.5	811	810	810	811	812	813	813	813	813	813
22.5	631	631	632	632	634	635	636	637	637	637
25.5	486	486	487	487	489	490	491	493	492	492
29.0	348	350	351	354	358	361	363	364	364	362
33.0	215	216	218	221	226	231	237	241	243	241
37.5	120	120	121	123	126	128	132	135	138	137
42.5	63	63	64	65	66	68	69	69	69	68
47.5	28	28	29	30	31	32	32	33	33	32
55.0	2	2	2	3	3	4	5	6	6	6
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	1470	1470	1470	1470	1470	1470	1470	1470	1470
1.0	1467	1467	1467	1467	1467	1467	1467	1467	1467
3.0	1455	1455	1455	1456	1455	1455	1455	1455	1455
5.0	1430	1430	1430	1430	1430	1430	1430	1430	1430
7.0	1389	1389	1389	1389	1389	1389	1389	1389	1389
9.0	1331	1331	1330	1331	1331	1331	1332	1333	1332
11.0	1257	1256	1256	1257	1257	1258	1259	1259	1259
13.0	1172	1171	1171	1171	1171	1172	1172	1173	1173
15.0	1074	1073	1073	1073	1073	1073	1073	1073	1072
17.0	965	963	963	963	963	963	962	962	961
19.5	814	813	813	813	812	812	810	809	808
22.5	637	636	636	636	635	635	634	633	633
25.5	492	491	491	490	490	489	488	488	488
29.0	362	360	359	357	355	354	353	352	352
33.0	239	235	231	227	225	223	223	222	221
37.5	135	131	128	126	125	125	126	126	126
42.5	68	67	67	66	66	67	67	67	67
47.5	32	32	32	32	31	31	30	30	30
55.0	6	6	5	4	4	3	3	3	3
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 : L041608807.IES

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	410.73	N.A.	49.40
0-30	645.60	N.A.	77.60
0-40	762.56	N.A.	91.70
0-60	827.09	N.A.	99.40
0-80	830.53	N.A.	99.80
0-90	831.88	N.A.	100.00
10-90	723.37	N.A.	87.00
20-40	351.84	N.A.	42.30
20-50	405.10	N.A.	48.70
40-70	66.93	N.A.	8.00
60-80	3.44	N.A.	0.40
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	831.88	N.A.	100.00

Total Luminaire Efficiency = N.A.%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	108.51
10-20	302.22
20-30	234.88
30-40	116.96
40-50	53.26
50-60	11.26
60-70	2.41
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

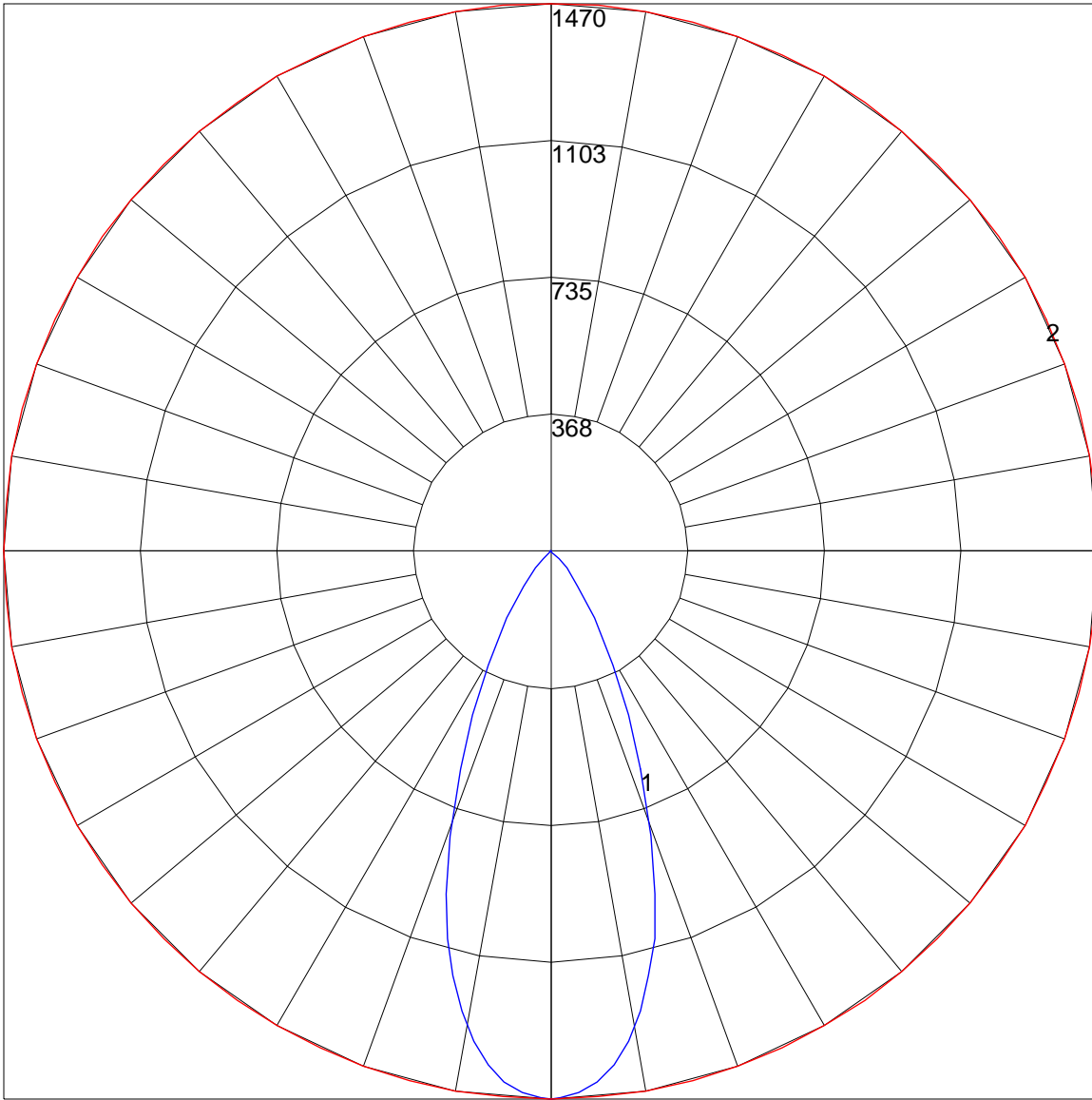
IES INDOOR REPORT
PHOTOMETRIC FILENAME : L041608807.IES

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	114	111	109	107	111	109	107	105	105	103	102	101	100	99	98	97	96	94
2	108	104	100	97	106	102	99	96	99	96	94	96	94	92	93	91	90	88
3	103	97	93	89	101	96	92	88	93	90	87	91	88	85	89	86	84	83
4	99	91	86	82	97	90	85	82	88	84	81	86	83	80	84	81	79	77
5	94	86	81	77	92	85	80	76	83	79	76	82	78	75	80	77	74	73
6	90	81	76	72	88	81	75	71	79	74	71	78	74	70	76	73	70	69
7	86	77	71	67	84	76	71	67	75	70	67	74	70	66	73	69	66	65
8	82	73	67	63	81	72	67	63	71	67	63	70	66	63	69	65	63	61
9	78	69	64	60	77	69	64	60	68	63	60	67	63	60	66	62	59	58
10	75	66	61	57	74	66	60	57	65	60	57	64	60	57	63	59	56	55

POLAR GRAPH



Maximum Candela = 1470 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.)

Addendum: Illuminance cone diagram

Mounting Height = 12 ft.

