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Report No: L061603501

Date: 6/15/2016



NVLAP LAB CODE 200927-0

Report No: L061603501

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/FLR(FR)-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/FLR(FR)-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/FLR(FR)-4-WH(OB)
Driver Model Number:	INTUITIVE SYSTEMS ISD-601-1050-15-D
Total Lumens:	772.64
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:	53
Color Rendering Index (CRI):	92
Correlated Color Temperature (K):	2886
Chromaticity Coordinate x:	0.4472
Chromaticity Coordinate y:	0.4106
Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	0:30
Total Operating Time (Hours):	1:15
Off State Power(W):	0.00

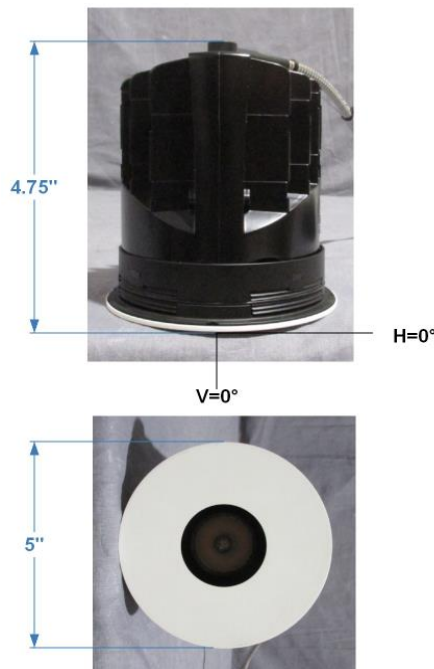
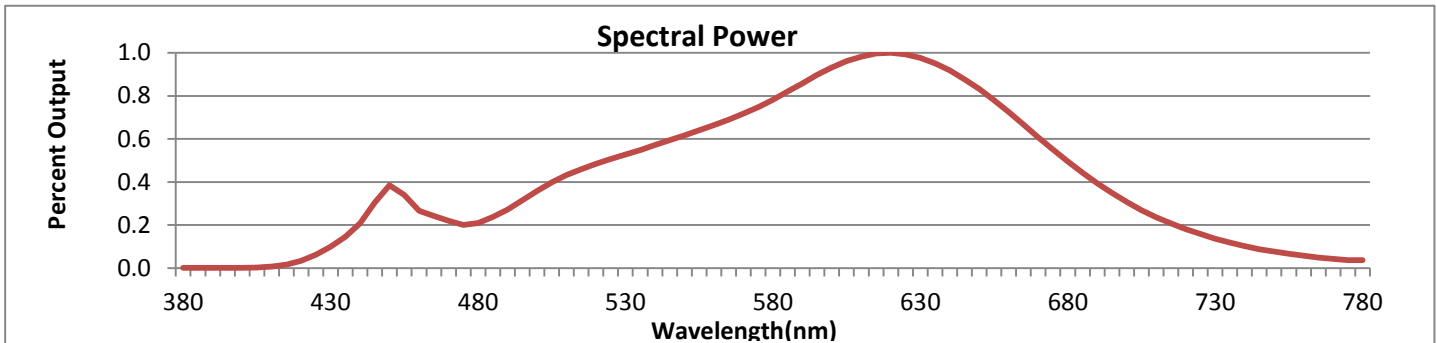


FIG. 1 LUMINAIRE

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



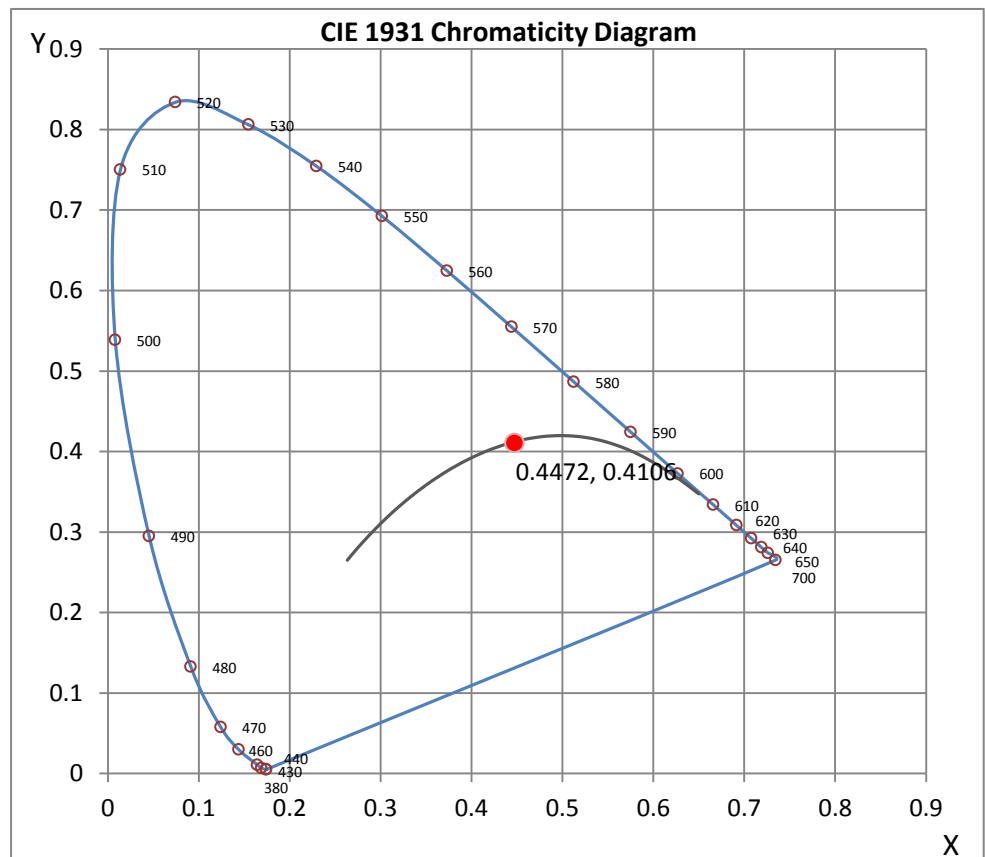
Wavelength	W/m ² nm	440	0.2079	510	0.4320	580	0.7817	650	0.8316	720	0.1812
380	0.0009	450	0.3840	520	0.4841	590	0.8582	660	0.7249	730	0.1371
390	0.0009	460	0.2659	530	0.5270	600	0.9323	670	0.6077	740	0.1019
400	0.0016	470	0.2191	540	0.5715	610	0.9826	680	0.4956	750	0.0769
410	0.0073	480	0.2096	550	0.6170	620	1.0000	690	0.3943	760	0.0574
420	0.0345	490	0.2714	560	0.6648	630	0.9760	700	0.3073	770	0.0427
430	0.0994	500	0.3585	570	0.7174	640	0.9188	710	0.2358	780	0.0368

CRI & CCT

x	0.4472
y	0.4106
u'	0.2544
v'	0.5255
CRI	92.20
CCT	2886
Duv	0.00126

R Values

R1	91.90
R2	95.45
R3	98.25
R4	92.84
R5	91.78
R6	95.13
R7	91.91
R8	79.95
R9	54.51
R10	88.94
R11	94.01
R12	84.30
R13	92.76
R14	98.33



*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 : L061603501.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
 [TEST] L061603501
 [TESTLAB] LIGHT LABORATORY, INC.
 [ISSUEDATE] 06/15/2016
 [MANUFAC] NUMBER EIGHT LIGHTING COMPANY
 [LUMCAT] 400-HI-25/DIM1-4(PR1-4, DIM2-4, PR2-4)-1000/FLR(FR)-4-WH(OB)
 [LUMINAIRE] LED RECESSED ADJUSTABLE DOWNLIGHT, 90+ CRI
 [MORE] 25° BEAM SPREAD, 0° AIMING ANGLE, ?2" 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	773
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	53
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	Circular
Luminous Length (0-180)	0.17 ft (Diameter)
Luminous Width (90-270)	0.17 ft (Diameter)
Luminous Height	0.00 ft

LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	3350	3350	3350
55	1652	1652	1652
65	1121	1121	1121
75	0	0	0
85	0	0	0

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L061603501.IES

CANDELA TABULATION

	<u>0</u>
0.0	2794
1.0	2786
3.0	2715
5.0	2580
7.0	2381
9.0	2130
11.0	1850
13.0	1568
15.0	1295
17.0	1037
19.5	747
22.5	473
25.5	299
29.0	150
33.0	52
37.5	19
42.5	7
47.5	3
55.0	2
65.0	1
75.0	0
85.0	0
90.0	0

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L061603501.IES

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	566.66	N.A.	73.30
0-30	729.66	N.A.	94.40
0-40	762.58	N.A.	98.70
0-60	770.70	N.A.	99.70
0-80	772.64	N.A.	100.00
0-90	772.64	N.A.	100.00
10-90	582.71	N.A.	75.40
20-40	195.92	N.A.	25.40
20-50	202.44	N.A.	26.20
40-70	9.54	N.A.	1.20
60-80	1.94	N.A.	0.30
70-80	0.51	N.A.	0.10
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	772.64	N.A.	100.00

Total Luminaire Efficiency = N.A.%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	189.93
10-20	376.73
20-30	163.00
30-40	32.92
40-50	6.52
50-60	1.60
60-70	1.42
70-80	0.51
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

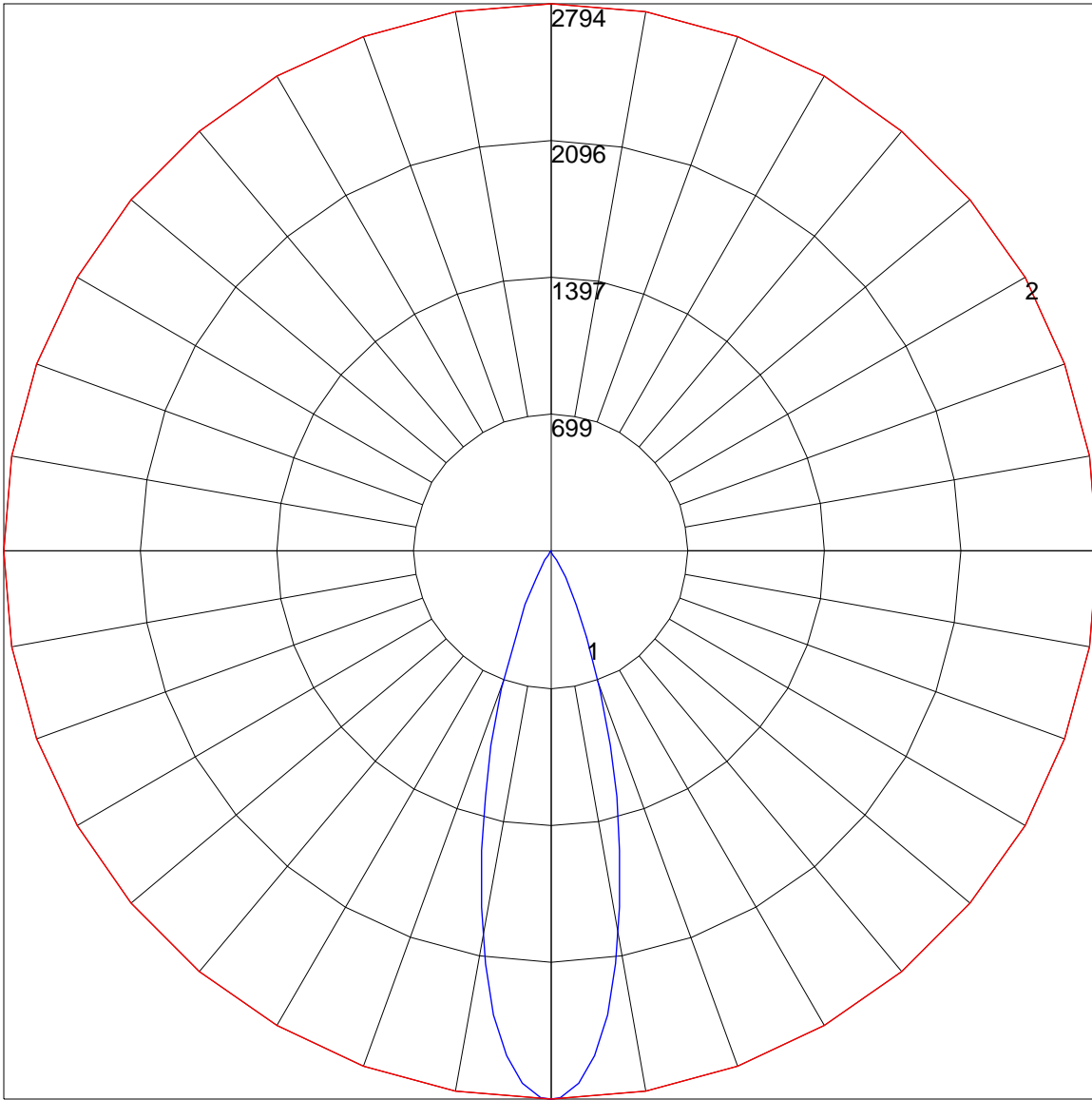
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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

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	0
1	115	112	110	109	112	110	108	107	106	105	104	103	102	101	99	98	98	96	0
2	111	107	103	101	108	105	102	100	102	100	98	99	97	95	96	95	94	92	0
3	107	102	98	95	105	100	97	94	98	95	92	96	93	91	93	91	90	88	0
4	103	97	93	90	101	96	92	89	94	91	88	92	89	87	90	88	86	85	0
5	99	93	89	85	98	92	88	85	91	87	84	89	86	84	88	85	83	82	0
6	96	89	85	82	95	89	84	81	87	84	81	86	83	80	85	82	80	79	0
7	93	86	81	78	92	85	81	78	84	80	78	83	80	77	82	79	77	76	0
8	90	83	78	75	89	82	78	75	81	78	75	81	77	75	80	77	74	73	0
9	87	80	76	73	86	80	75	72	79	75	72	78	74	72	77	74	72	71	0
10	85	77	73	70	84	77	73	70	76	72	70	76	72	70	75	72	69	68	0

POLAR GRAPH



Maximum Candela = 2794 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.

