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Report No: L041608801

Date: 5/13/2016



NVLAP LAB CODE 200927-0

Report No: L041608801

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/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-40/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: 5/9/16

Date of Tests: 5/11/16 - 5/11/16

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/FLR(FR)-4-WH(OB)
Driver Model Number:	INTUITIVE SYSTEMS ISD-601-1050-15-D
Total Lumens:	813.30
Input Voltage (VAC/60Hz):	120.00
Input Current (Amp):	0.13
Input Power (W):	14.68
Input Power Factor:	0.97
Current ATHD @ 120V(%):	14%
Current ATHD @ 277V(%):	N/A
Efficacy:	55
Color Rendering Index (CRI):	92
Correlated Color Temperature (K):	2883
Chromaticity Coordinate x:	0.4479
Chromaticity Coordinate y:	0.4115
Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	0:50
Total Operating Time (Hours):	1:30
Off State Power(W):	0.00

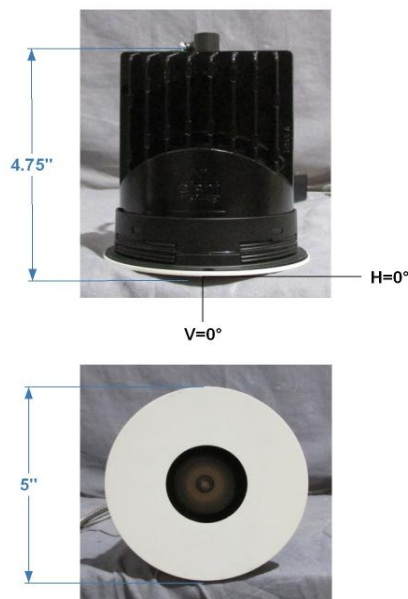
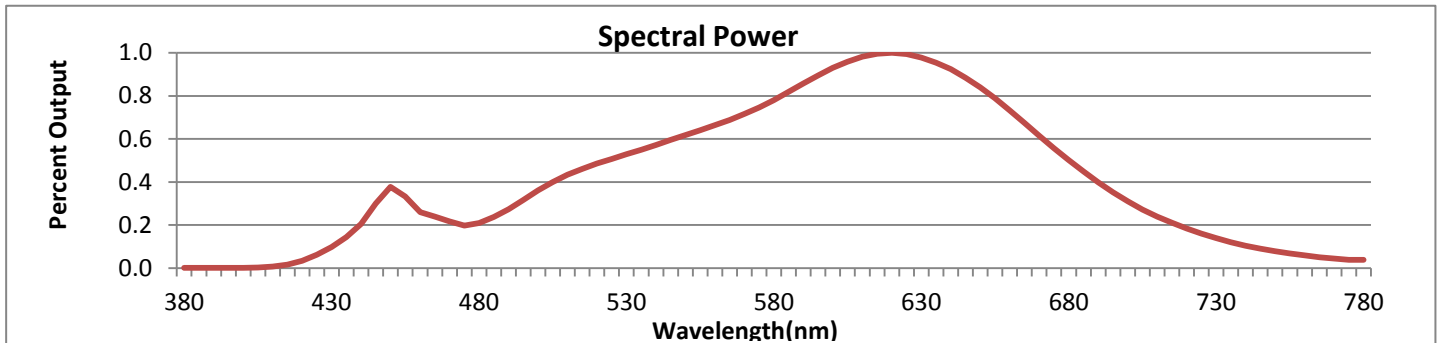


FIG. 1 LUMINAIRE

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



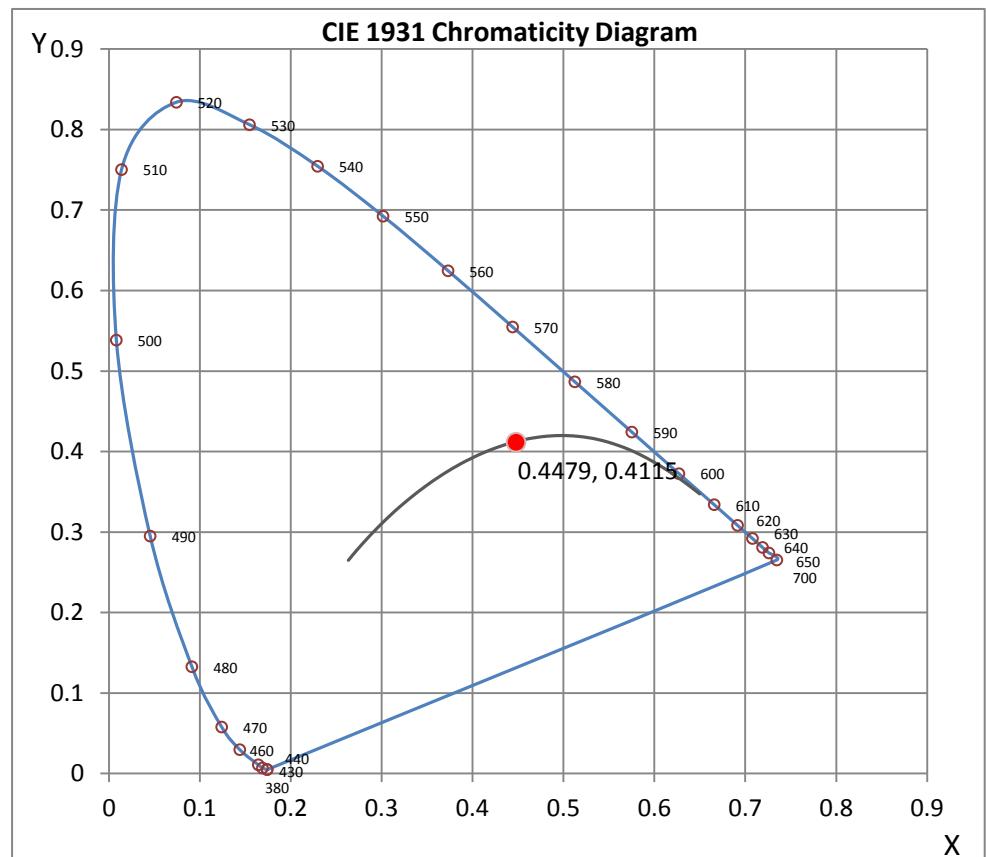
Wavelength	W/m ² nm	440	0.0020	510	0.0042	580	0.0076	650	0.0082	720	0.0018
380	0.0000	450	0.0037	520	0.0047	590	0.0083	660	0.0071	730	0.0014
390	0.0000	460	0.0025	530	0.0051	600	0.0091	670	0.0060	740	0.0010
400	0.0000	470	0.0021	540	0.0056	610	0.0096	680	0.0049	750	0.0008
410	0.0001	480	0.0020	550	0.0060	620	0.0097	690	0.0039	760	0.0006
420	0.0003	490	0.0027	560	0.0065	630	0.0095	700	0.0030	770	0.0004
430	0.0010	500	0.0035	570	0.0070	640	0.0090	710	0.0023	780	0.0004

CRI & CCT

x	0.4479
y	0.4115
u'	0.2544
v'	0.5259
CRI	92.30
CCT	2883
Duv	0.00152

R Values

R1	92.07
R2	95.46
R3	98.18
R4	93.12
R5	91.93
R6	95.18
R7	92.21
R8	80.43
R9	55.43
R10	88.99
R11	94.34
R12	84.37
R13	92.88
R14	98.27



*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*



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Photometric Test Report

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L041608801.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
 [TEST] L041608801
 [TESTLAB] LIGHT LABORATORY, INC.
 [ISSUE DATE] 05/13/2016
 [MANUFAC] Number Eight Lighting Company
 [LUMCAT] 400-HI-40/DIM1-4(PR1-4, DIM2-4, PR2-4)-1000/FLR(FR)-4-WH(OB)
 [LUMINAIRE] 5"DI. X 4.75"H. LED Recessed Adjustable Downlight, 90+ CRI,
 [MORE] 40° Beam Spread, 0° Aiming Angle, 2" 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, 14.68W
 [TEST PROCEDURE] IESNA:LM-79-08

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	813
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	55
Total Luminaire Watts	14.68
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	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	28141	28141	28141
55	1652	1652	1652
65	1121	1121	1121
75	1831	1831	1831
85	0	0	0

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L041608801.IES

CANDELA TABULATION

	<u>0</u>
0.0	1495
1.0	1492
3.0	1480
5.0	1455
7.0	1411
9.0	1349
11.0	1271
13.0	1181
15.0	1084
17.0	969
19.5	814
22.5	632
25.5	482
29.0	341
33.0	206
37.5	117
42.5	60
47.5	24
55.0	2
65.0	1
75.0	1
85.0	0
90.0	0

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L041608801.IES

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	414.69	N.A.	51.00
0-30	646.75	N.A.	79.50
0-40	754.51	N.A.	92.80
0-60	810.31	N.A.	99.60
0-80	812.76	N.A.	99.90
0-90	813.30	N.A.	100.00
10-90	703.07	N.A.	86.40
20-40	339.82	N.A.	41.80
20-50	387.28	N.A.	47.60
40-70	57.22	N.A.	7.00
60-80	2.45	N.A.	0.30
70-80	1.03	N.A.	0.10
80-90	0.54	N.A.	0.10
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	813.30	N.A.	100.00

Total Luminaire Efficiency = N.A.%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	110.23
10-20	304.47
20-30	232.06
30-40	107.76
40-50	47.46
50-60	8.33
60-70	1.42
70-80	1.03
80-90	0.54
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

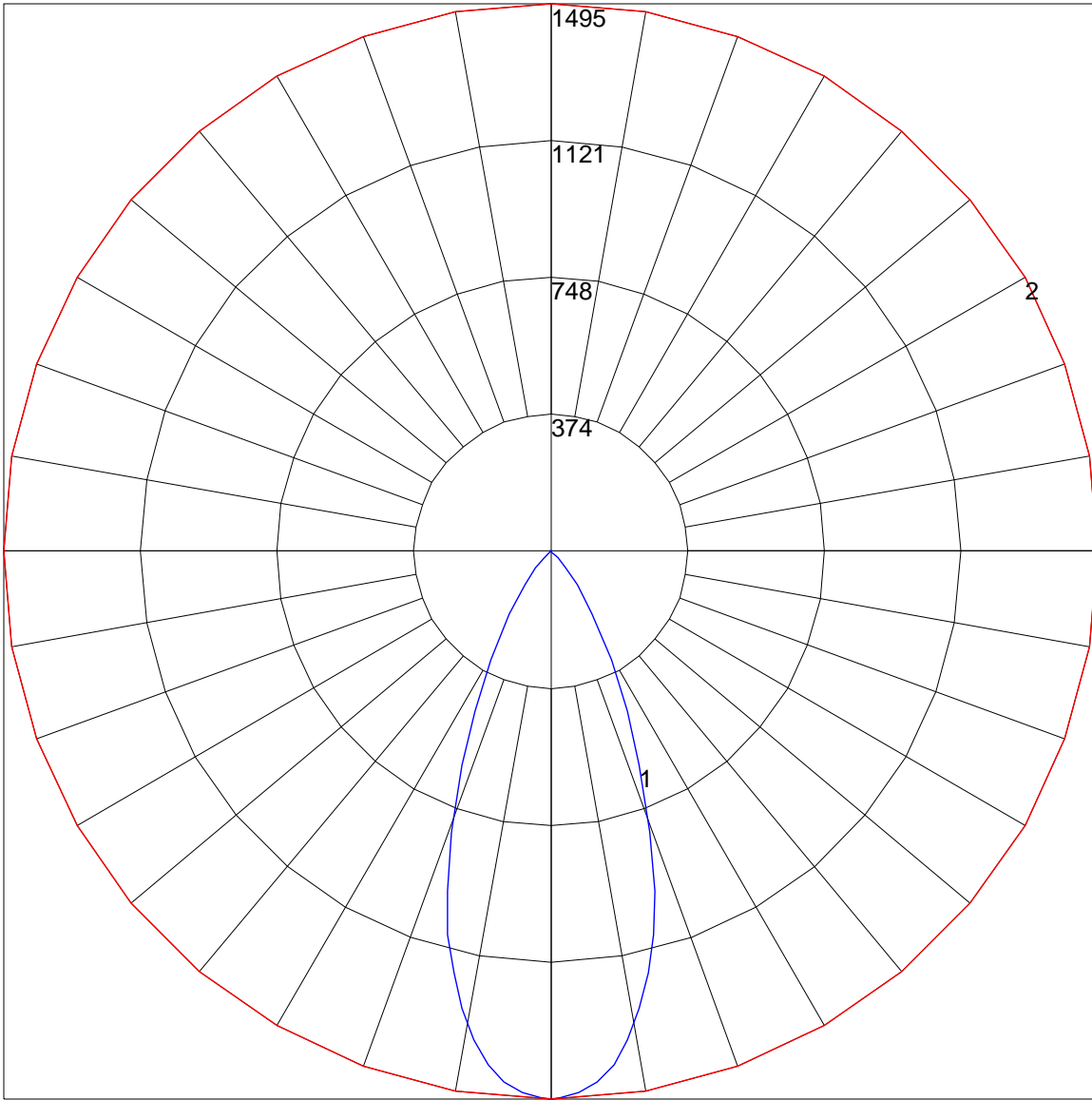
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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

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	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	109	104	100	97	107	102	99	96	99	96	94	96	94	92	94	92	90	89
3	104	98	93	89	102	96	92	89	94	90	87	91	88	86	89	87	85	83
4	99	92	87	83	97	91	86	82	89	85	82	87	83	81	85	82	80	78
5	95	87	81	77	93	86	81	77	84	80	76	83	79	76	81	78	75	74
6	90	82	77	73	89	81	76	72	80	75	72	79	74	71	77	74	71	70
7	86	78	72	68	85	77	72	68	76	71	68	75	71	67	74	70	67	66
8	83	74	68	65	81	73	68	64	72	68	64	71	67	64	70	66	64	62
9	79	70	65	61	78	70	65	61	69	64	61	68	64	61	67	63	60	59
10	76	67	62	58	75	67	61	58	66	61	58	65	61	58	64	60	57	56

POLAR GRAPH



Maximum Candela = 1495 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.

