



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

Report No: L121706536



Report No: L121706536

Issue Date: 1/18/2018

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

Model Number: 400-WD-R-15/DIM1-4-1000-WD with FLS-4-WH trim

Test: Photometric/Colorimetric/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.

Testing Condition: Fixture is tested with no special conditions.

Sample Arrival Date: 1/2/18

Date of Tests: 1/16/18 - 1/18/18

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	1/9/19
BK PRECISION	1747	PS-DC04	1/10/19
Fluke Digital Thermometer	52K/J	MT-TP05	1/10/19
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-WD-R-15/DIM1-4-1000-WD with FLS-4-WH trim
Driver Model Number:	Number Eight 400 Series DIM1-4-1000
Total Lumens:	833.75
Input Voltage (VAC/60Hz):	120.00
Input Current (Amp):	0.12
Input Power (W):	14.60
Input Power Factor:	0.98
Current ATHD @ 120V(%):	6%
Current ATHD @ 277V(%):	N/A
Efficacy:	57
Color Rendering Index (CRI):	98
Correlated Color Temperature (K):	2991
Chromaticity Coordinate x:	0.4348
Chromaticity Coordinate y:	0.3986
Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	0:40
Total Operating Time (Hours):	1:10

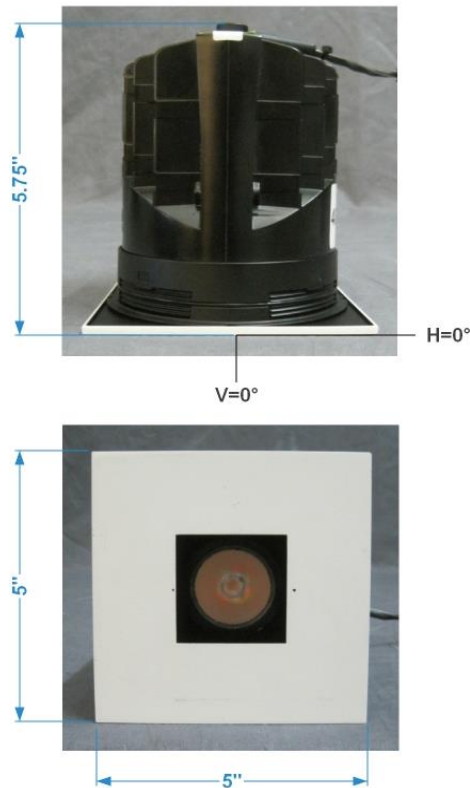
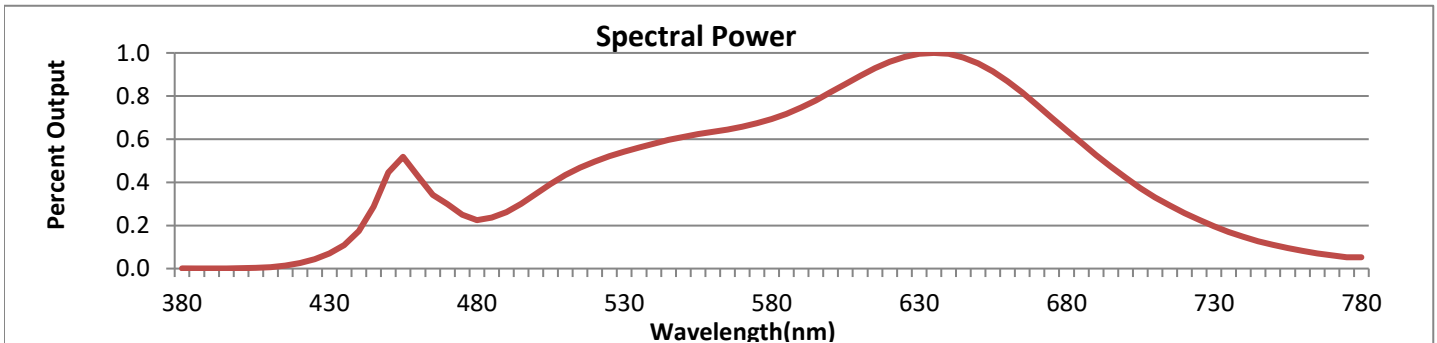


FIG. 1 LUMINAIRE

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



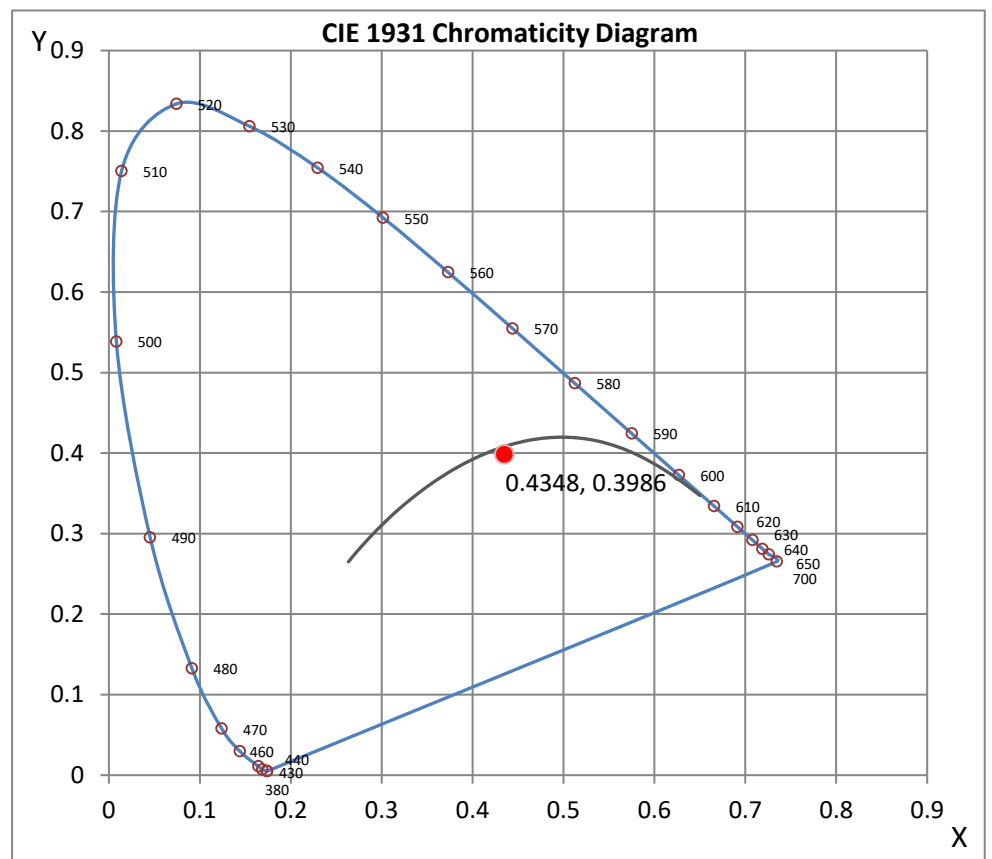
Wavelength	W/m ² nm	440	0.1743	510	0.4339	580	0.6931	650	0.9520	720	0.2577
380	0.0008	450	0.4452	520	0.4964	590	0.7471	660	0.8686	730	0.1959
390	0.0011	460	0.4271	530	0.5428	600	0.8176	670	0.7585	740	0.1469
400	0.0017	470	0.2981	540	0.5795	610	0.8934	680	0.6415	750	0.1107
410	0.0068	480	0.2251	550	0.6109	620	0.9586	690	0.5263	760	0.0824
420	0.0260	490	0.2623	560	0.6337	630	0.9961	700	0.4216	770	0.0610
430	0.0698	500	0.3458	570	0.6573	640	0.9957	710	0.3299	780	0.0522

CRI & CCT

x	0.4348
y	0.3986
u'	0.2516
v'	0.5189
CRI	98.00
CCT	2991
Duv	-0.00191

R Values

R1	98.98
R2	99.27
R3	95.88
R4	98.17
R5	99.39
R6	97.36
R7	98.00
R8	97.19
R9	93.08
R10	96.91
R11	96.07
R12	84.57
R13	99.10
R14	96.59



*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 : Joseph Shin

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
www.lightlaboratory.com

Photometric Test Report

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L121706536.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] L121706536
[TESTLAB] LIGHT LABORATORY, INC. (www.lightlaboratory.com)
[ISSUE DATE] 1/18/2018
[MANUFAC] Number Eight Lighting Company
[LUMCAT] 400-WD-R-15/DIM1-4-1000-WD with FLS-4-WH trim
[LUMINAIRE] LED Recessed Downlight, 15° Beam Spread, 0° Aiming Angle,
[MORE] 2" x 2" Aperture Trim
[BALLASTCAT] Number Eight 400 Series DIM1-4-1000
[OTHER] INDICATING THE CANDELA VALUES ARE ABSOLUTE AND
[MORE] SHOULD NOT BE FACTORED FOR DIFFERENT LAMP RATINGS.
[INPUT] 120VAC, 14.60W
[TEST PROCEDURE] IESNA:LM-79-08

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	834
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	57
Total Luminaire Watts	14.6
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	0.38
Spacing Criterion (90-270)	0.38
Spacing Criterion (Diagonal)	0.40
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	1052	1052	1052
55	0	0	0
65	0	0	0
75	0	0	0
85	0	0	0

CANDELA TABULATION

	<u>0</u>
0.0	4070
1.0	4048
2.0	3990
3.0	3894
4.0	3761
5.0	3584
6.0	3368
7.0	3122
8.0	2861
9.0	2591
10.0	2321
12.0	1818
14.0	1396
16.0	1066
18.0	810
20.0	616
22.5	438
25.0	310
27.5	215
30.0	142
35.0	41
40.0	9
45.0	2
50.0	1
55.0	0
60.0	0
65.0	0
70.0	0
75.0	0
80.0	0
85.0	0
90.0	0

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L121706536.IES

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	646.59	N.A.	77.60
0-30	795.60	N.A.	95.40
0-40	830.89	N.A.	99.70
0-60	833.75	N.A.	100.00
0-80	833.75	N.A.	100.00
0-90	833.75	N.A.	100.00
10-90	533.98	N.A.	64.00
20-40	184.31	N.A.	22.10
20-50	186.95	N.A.	22.40
40-70	2.86	N.A.	0.30
60-80	0.00	N.A.	0.00
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	833.75	N.A.	100.00

Total Luminaire Efficiency = N.A.%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	299.77
10-20	346.81
20-30	149.02
30-40	35.29
40-50	2.64
50-60	0.22
60-70	0.00
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

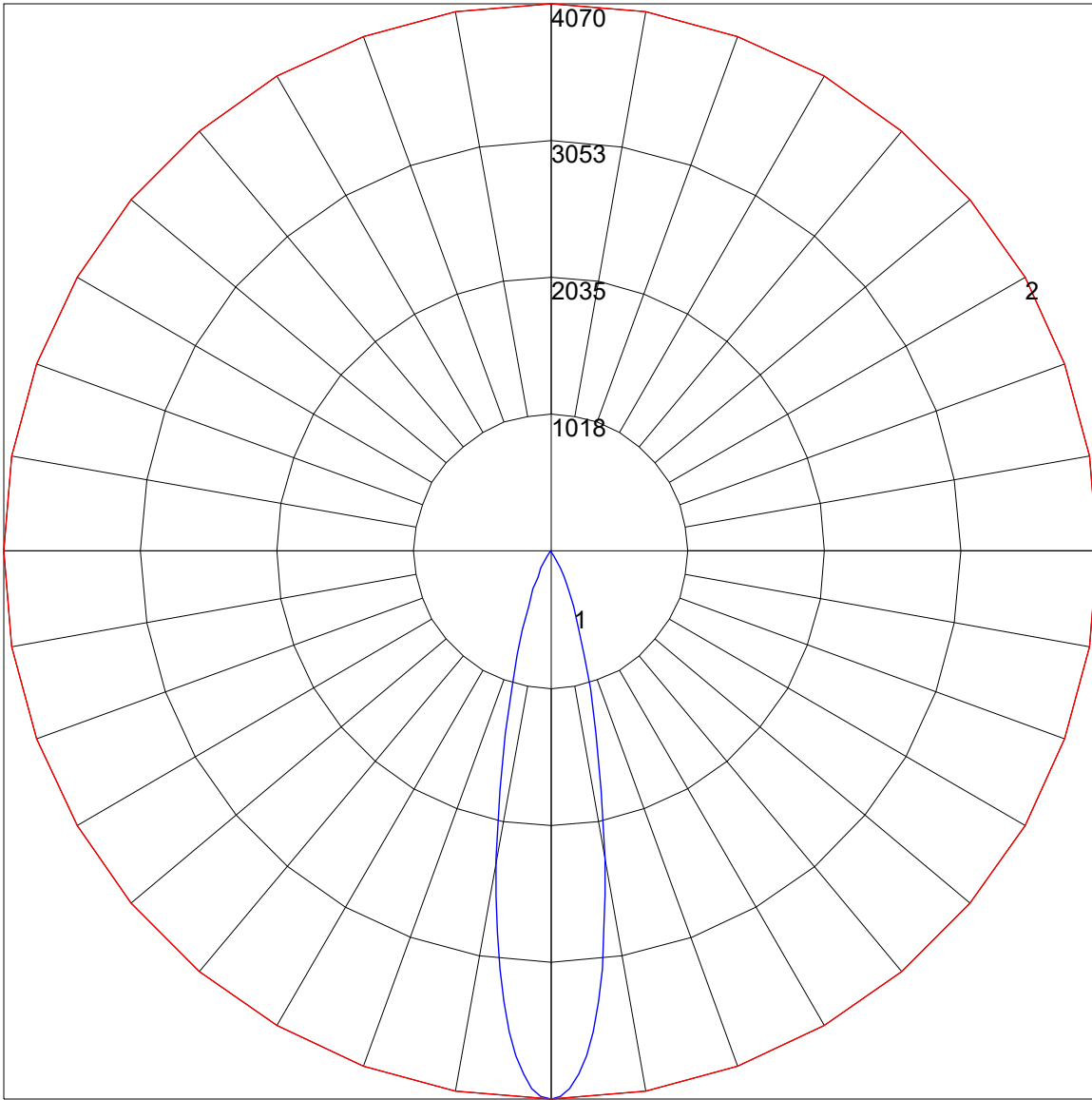
IES INDOOR REPORT
PHOTOMETRIC FILENAME : L121706536.IES

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	100
1	115	113	111	109	113	111	109	108	107	106	104	103	102	101	100	99	98	97	97
2	111	108	105	102	109	106	103	101	103	101	99	100	98	97	97	96	95	93	93
3	108	103	100	97	106	102	99	96	99	97	94	97	95	93	95	93	92	90	90
4	104	99	95	92	103	98	94	92	96	93	91	94	92	90	93	90	89	87	87
5	101	95	91	88	100	95	91	88	93	90	87	92	89	87	90	88	86	85	85
6	98	92	88	85	97	91	88	85	90	87	84	89	86	84	88	85	83	82	82
7	96	89	85	82	95	89	85	82	88	84	82	86	83	81	86	83	81	80	80
8	93	86	82	79	92	86	82	79	85	82	79	84	81	79	83	81	78	77	77
9	90	84	80	77	90	83	80	77	83	79	77	82	79	77	81	78	76	75	75
10	88	82	78	75	87	81	77	75	80	77	75	80	77	74	79	76	74	73	73

POLAR GRAPH



Maximum Candela = 4070 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.)

ILLUMINANCE CONE DIAGRAM: BEAM (50%)
MOUNT HEIGHT(Ft): 12

