

Report No: L121706548 **Issue Date:** 1/23/2018
Report Prepared For: Number Eight Lighting Company
 526 Portal Street, Cotati, CA 94931
Model Number: MPT2-HI-R-6-BK/15/DIM1-M-1400
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: 1/20/18 - 1/23/18

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:	MPT2-HI-R-6-BK/15/DIM1-M-1400
Driver Model Number:	IntuitiveSystems ISD-701-1400-20-D
Total Lumens:	1107.94
Input Voltage (VAC/60Hz):	120.00
Input Current (Amp):	0.17
Input Power (W):	20.68
Input Power Factor:	0.99
Current ATHD @ 120V(%):	8%
Current ATHD @ 277V(%):	N/A
Efficacy:	54
Color Rendering Index (CRI):	93
Correlated Color Temperature (K):	2966
Chromaticity Coordinate x:	0.4407
Chromaticity Coordinate y:	0.4075
Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	0:40
Total Operating Time (Hours):	1:25

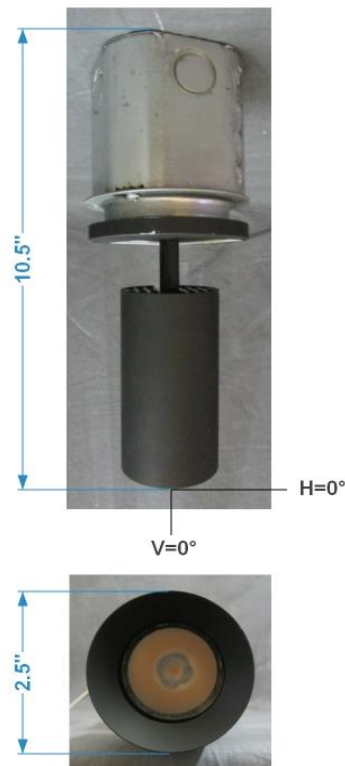
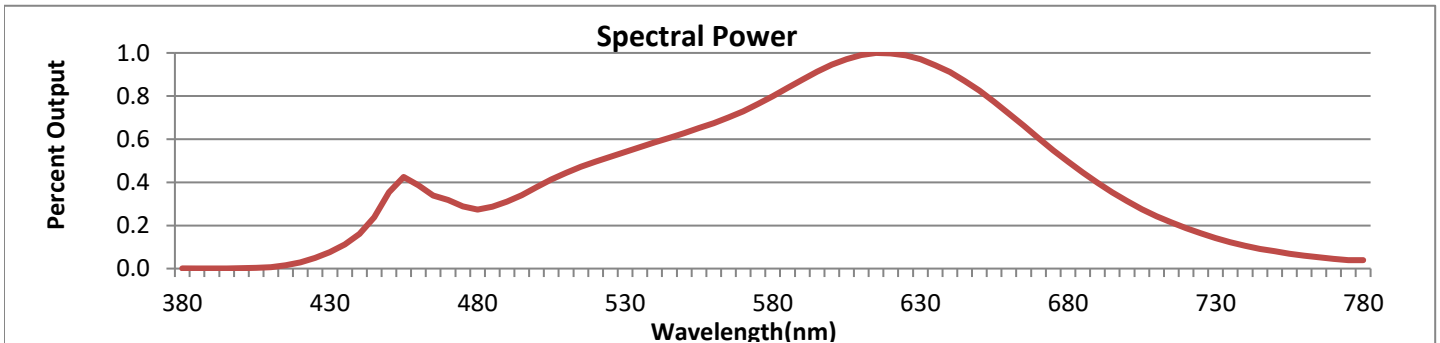


FIG. 1 LUMINAIRE



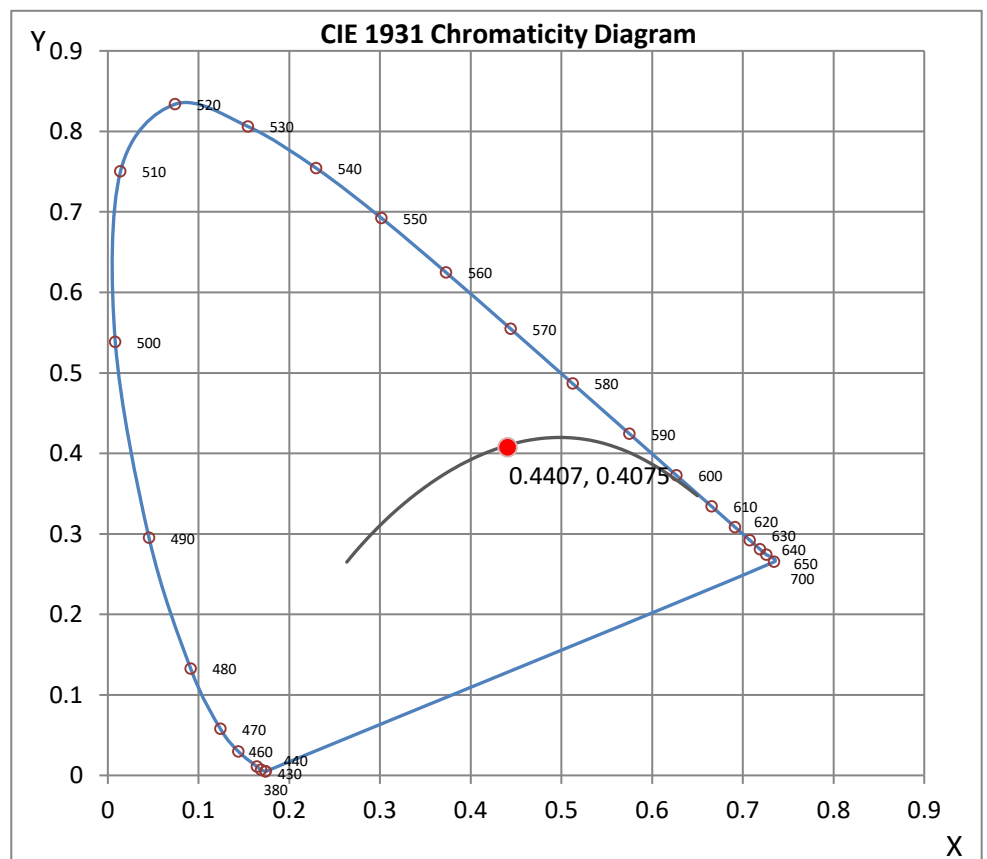
Wavelength	W/m ² nm	440	0.1605	510	0.4448	580	0.7983	650	0.8250	720	0.1872
380	0.0009	450	0.3533	520	0.4957	590	0.8762	660	0.7184	730	0.1418
390	0.0009	460	0.3865	530	0.5408	600	0.9451	670	0.6038	740	0.1060
400	0.0015	470	0.3174	540	0.5845	610	0.9896	680	0.4965	750	0.0801
410	0.0071	480	0.2733	550	0.6283	620	0.9984	690	0.3978	760	0.0604
420	0.0288	490	0.3101	560	0.6745	630	0.9709	700	0.3134	770	0.0450
430	0.0768	500	0.3771	570	0.7290	640	0.9114	710	0.2421	780	0.0389

CRI & CCT

x	0.4407
y	0.4075
u'	0.2515
v'	0.5233
CRI	92.60
CCT	2966
Duv	0.00085

R Values

R1	92.71
R2	97.24
R3	98.67
R4	91.96
R5	92.52
R6	96.89
R7	90.83
R8	79.79
R9	55.73
R10	92.72
R11	93.08
R12	83.44
R13	94.08
R14	99.77



*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.

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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 : L121706548.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
 [TEST] L121706548
 [TESTLAB] LIGHT LABORATORY, INC. (www.lightlaboratory.com)
 [ISSUEDATE] 1/23/2018
 [MANUFAC] Number Eight Lighting Company
 [LUMCAT] MPT2-HI-R-6-BK/15/DIM1-M-1400
 [LUMINAIRE] LED Recessed Downlight, 15° Beam Spread, 0° Aiming Angle,
 [BALLASTCAT] IntuitiveSystems ISD-701-1400-20-D
 [OTHER] INDICATING THE CANDELA VALUES ARE ABSOLUTE AND
 [MORE] SHOULD NOT BE FACTORED FOR DIFFERENT LAMP RATINGS.
 [INPUT] 120VAC, 20.68W
 [TEST PROCEDURE] IESNA:LM-79-08

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	1108
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	54
Total Luminaire Watts	20.68
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	0.30
Spacing Criterion (90-270)	0.30
Spacing Criterion (Diagonal)	0.34
Basic Luminous Shape	Circular
Luminous Length (0-180)	0.21 ft (Diameter)
Luminous Width (90-270)	0.21 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	6586	6586	6586
55	1624	1624	1624
65	735	735	735
75	0	0	0
85	0	0	0

CANDELA TABULATION

	<u>0</u>
0.0	7240
1.0	7157
2.0	6933
3.0	6582
4.0	6132
5.0	5615
6.0	5060
7.0	4499
8.0	3953
9.0	3447
10.0	2992
12.0	2239
14.0	1674
16.0	1258
18.0	944
20.0	711
22.5	491
25.0	335
27.5	235
30.0	167
35.0	85
40.0	40
45.0	15
50.0	6
55.0	3
60.0	1
65.0	1
70.0	0
75.0	0
80.0	0
85.0	0
90.0	0

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L121706548.IES

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	865.56	N.A.	78.10
0-30	1031.93	N.A.	93.10
0-40	1089.9	N.A.	98.40
0-60	1107.21	N.A.	99.90
0-80	1107.94	N.A.	100.00
0-90	1107.94	N.A.	100.00
10-90	661.25	N.A.	59.70
20-40	224.33	N.A.	20.20
20-50	238.76	N.A.	21.50
40-70	18.05	N.A.	1.60
60-80	0.74	N.A.	0.10
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	1107.94	N.A.	100.00

Total Luminaire Efficiency = N.A.%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	446.69
10-20	418.87
20-30	166.37
30-40	57.96
40-50	14.43
50-60	2.88
60-70	0.74
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

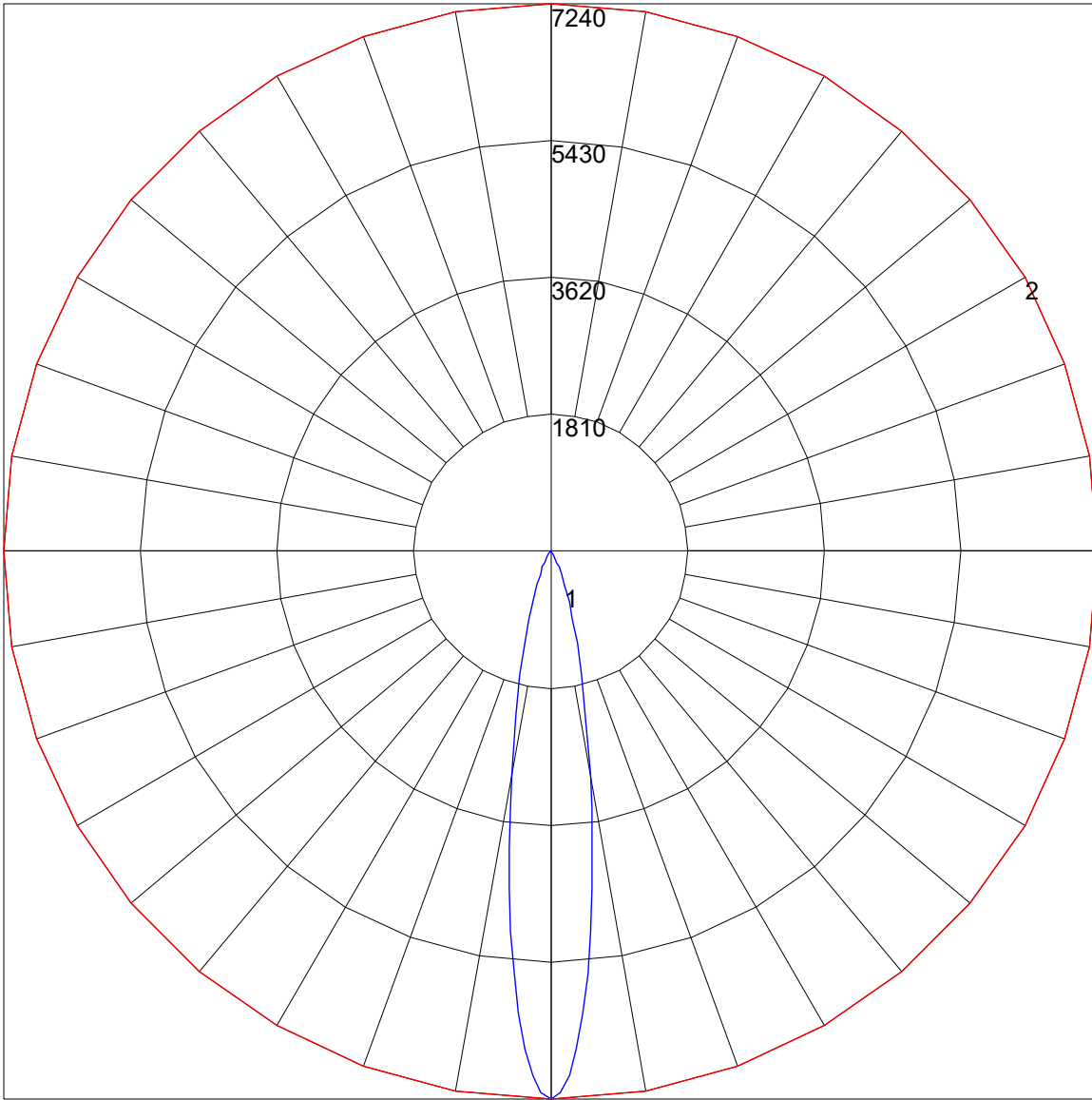
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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

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	113	111	109	113	111	109	108	107	106	104	103	102	101	100	99	98	97	0
2	111	108	105	102	109	106	103	101	103	101	99	100	98	97	98	96	95	94	0
3	108	103	100	97	106	102	99	96	99	97	95	97	95	93	95	93	92	91	0
4	105	99	95	92	103	98	95	92	96	93	91	94	92	90	93	91	89	88	0
5	102	96	92	89	100	95	91	88	93	90	88	92	89	87	90	88	86	85	0
6	99	93	88	85	97	92	88	85	91	87	85	89	86	84	88	86	84	83	0
7	96	90	86	83	95	89	85	82	88	85	82	87	84	82	86	83	81	80	0
8	93	87	83	80	92	87	83	80	86	82	80	85	82	79	84	81	79	78	0
9	91	85	81	78	90	84	80	78	83	80	78	83	80	77	82	79	77	76	0
10	89	82	78	76	88	82	78	76	81	78	76	81	78	75	80	77	75	74	0

POLAR GRAPH



Maximum Candela = 7240 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

