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

NVLAP TESTING
NVLAP LAB CODE 200927-0

Report No: L121706522 **Issue Date: 1/22/2018**

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

Model Number: 804/M2-R-WD-25/WH/DIM1-8-1000-WD with FR-P-1-WH trim

Test: Photometric/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: 1/18/18 - 1/22/18

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.

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Test Summary	
Manufacturer:	Number Eight Lighting Company
Model Number:	804/M2-R-WD-25/WH/DIM1-8-1000-WD with FR-P-1-WH trim
Driver Model Number:	IntuitiveSystems ISD-701-350-15-D
Total Lumens:	474.02
Input Voltage (VAC/60Hz):	120.00
Input Current (Amp):	0.13
Input Power (W):	14.74
Input Power Factor:	0.98
Current ATHD @ 120V(%):	7%
Current ATHD @ 277V(%):	N/A
Efficacy:	32
Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	0:40
Total Operating Time (Hours):	1:15

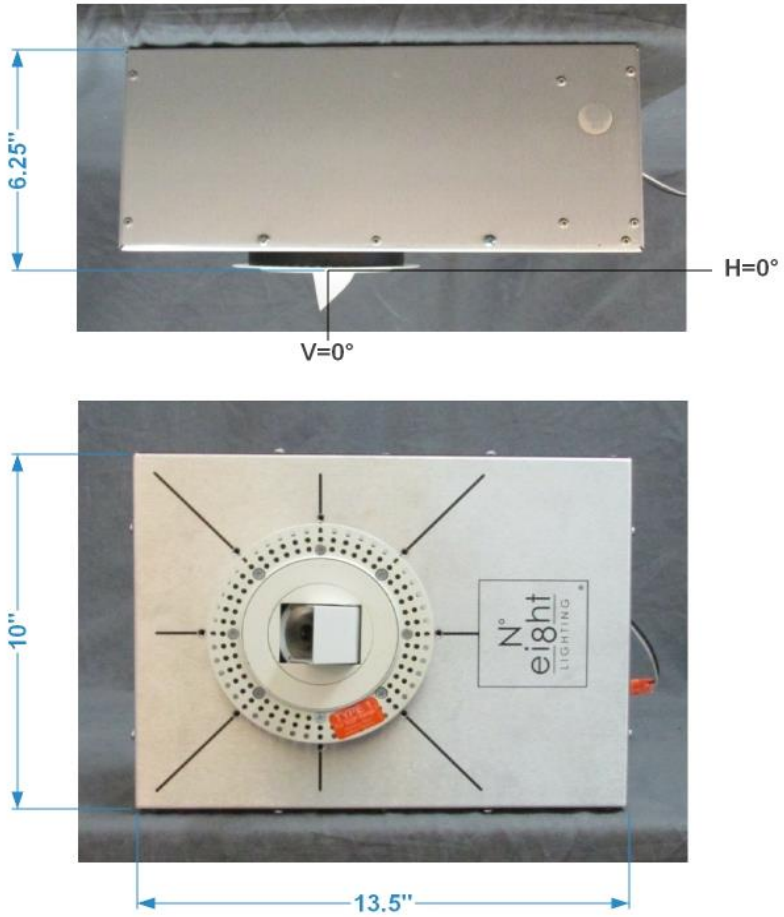

FIG. 1 LUMINAIRE

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

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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*

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

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Photometric Test Report

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L121706522.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] L121706522
[TESTLAB] LIGHT LABORATORY, INC. (www.lightlaboratory.com)
[ISSUEDATE] 1/22/2018
[MANUFAC] Number Eight Lighting Company
[LUMCAT] 804/M2-R-WD-25/WH/DIM1-8-1000-WD with FR-P-1-WH trim
[LUMINAIRE] LED Recessed Downlight, 25° Beam Spread, 45° Aiming Angle,
[MORE] Mirror Lens Accessory
[BALLASTCAT] IntuitiveSystems ISD-701-350-15-D
[OTHER] INDICATING THE CANDELA VALUES ARE ABSOLUTE AND
[MORE] SHOULD NOT BE FACTORED FOR DIFFERENT LAMP RATINGS.
[INPUT] 120VAC, 14.74W
[TEST PROCEDURE] IESNA:LM-79-08

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	474
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	32
Total Luminaire Watts	14.74
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	0.74
Spacing Criterion (90-270)	0.90
Spacing Criterion (Diagonal)	1.00
Basic Luminous Shape	Rectangular
Luminous Length (0-180)	0.06 ft
Luminous Width (90-270)	0.15 ft
Luminous Height	0.00 ft

LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	0	10139	25347
55	0	7291	23957
65	0	8482	22618
75	0	0	18466
85	0	0	13710

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L121706522.IES

CANDELA TABULATION

	0	5	10	15	20	25	30	35	40	45
0.0	58	58	58	58	58	58	58	58	58	58
5.0	79	79	78	78	77	77	76	75	74	72
10.0	100	100	100	100	99	98	96	94	91	88
15.0	56	56	58	61	66	72	78	84	87	87
20.0	34	34	34	35	37	39	41	44	48	55
22.5	20	20	21	22	24	28	33	36	39	42
25.0	9	9	9	11	13	17	22	28	32	33
27.5	6	6	6	7	7	9	14	20	24	27
30.0	5	5	6	6	6	7	10	15	19	21
32.0	5	5	5	5	6	6	9	12	15	17
34.0	5	5	5	5	5	6	7	9	12	14
36.0	0	0	0	5	5	5	6	8	9	11
38.0	0	0	0	0	3	5	5	7	8	9
40.0	0	0	0	0	0	3	4	6	7	8
41.0	0	0	0	0	0	3	4	5	6	7
42.0	0	0	0	0	0	0	3	4	6	7
43.0	0	0	0	0	0	0	3	4	5	7
44.0	0	0	0	0	0	0	3	4	5	6
45.0	0	0	0	0	0	0	3	3	4	6
46.0	0	0	0	0	0	0	3	3	4	5
47.0	0	0	0	0	0	0	3	3	4	5
48.0	0	0	0	0	0	0	3	3	4	5
49.0	0	0	0	0	0	0	0	3	3	4
50.0	0	0	0	0	0	0	0	3	4	4
52.0	0	0	0	0	0	0	0	3	3	4
54.0	0	0	0	0	0	0	0	3	3	4
56.0	0	0	0	0	0	0	0	0	3	3
58.0	0	0	0	0	0	0	0	0	3	3
60.0	0	0	0	0	0	0	0	0	3	3
62.5	0	0	0	0	0	0	0	0	0	3
65.0	0	0	0	0	0	0	0	0	0	3
67.5	0	0	0	0	0	0	0	0	0	0
70.0	0	0	0	0	0	0	0	0	0	0
75.0	0	0	0	0	0	0	0	0	0	0
80.0	0	0	0	0	0	0	0	0	0	0
85.0	0	0	0	0	0	0	0	0	0	0
90.0	0	0	0	0	0	0	0	0	0	0

Vert. Angles **Horizontal Angles**

	50	55	60	65	70	75	80	85	90	95
0.0	58	58	58	58	58	58	58	58	58	58
5.0	71	69	68	66	65	63	62	61	60	58
10.0	84	80	76	72	68	64	61	59	56	54
15.0	85	81	77	72	67	62	58	55	51	49
20.0	65	70	67	62	58	54	50	47	44	42
22.5	47	56	60	57	52	49	45	42	40	39
25.0	35	41	49	50	47	43	40	38	36	35
27.5	28	31	38	42	41	38	35	33	32	32
30.0	22	24	28	33	33	31	29	28	28	29
32.0	18	19	23	26	28	26	25	24	25	26
34.0	15	16	19	21	23	22	21	21	22	23
36.0	12	13	15	17	19	18	18	19	19	21
38.0	10	11	13	14	15	15	16	16	18	20

IES INDOOR REPORT
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CANDELA TABULATION - (Cont.)

40.0	9	10	11	12	13	13	14	15	17	19
41.0	8	9	10	11	12	12	13	14	16	19
42.0	8	8	9	10	11	11	12	14	16	18
43.0	7	8	8	9	10	10	11	13	15	18
44.0	7	8	8	8	9	9	10	12	15	18
45.0	7	7	8	8	8	9	10	12	15	18
46.0	6	7	7	8	8	8	9	12	14	17
47.0	6	7	7	7	7	8	9	11	14	17
48.0	6	6	7	7	7	8	9	11	14	17
49.0	5	6	6	7	7	7	8	10	13	17
50.0	5	6	6	6	7	7	8	10	13	16
52.0	4	5	6	6	6	6	7	9	13	16
54.0	4	5	5	5	6	6	7	9	12	15
56.0	4	5	5	5	5	6	6	8	11	15
58.0	4	4	5	5	5	5	6	8	11	14
60.0	3	4	4	5	5	5	5	7	10	13
62.5	3	4	4	4	4	4	5	6	9	12
65.0	3	3	4	4	4	4	4	5	8	11
67.5	3	3	4	4	4	3	3	4	7	9
70.0	3	3	3	3	3	3	3	3	5	8
75.0	2	3	3	3	3	2	2	2	4	6
80.0	0	2	2	3	2	2	2	2	2	5
85.0	0	0	0	0	0	0	0	0	1	3
90.0	0	0	0	0	0	0	0	0	0	2

Vert. Angles	**Horizontal Angles**									
	100	**105**	**110**	**115**	**120**	**125**	**130**	**135**	**140**	**145**
0.0	58	58	58	58	58	58	58	58	58	58
5.0	57	55	54	53	52	51	50	49	48	48
10.0	52	50	48	46	45	44	43	43	42	41
15.0	46	44	43	42	41	39	38	38	37	36
20.0	41	40	39	38	37	36	35	35	34	34
22.5	38	37	37	36	35	35	34	34	34	36
25.0	35	35	35	35	34	34	33	33	36	42
27.5	32	33	34	33	33	33	33	34	39	50
30.0	30	31	32	32	33	33	33	36	45	61
32.0	27	29	31	32	33	34	35	37	48	70
34.0	25	28	30	31	33	34	35	39	52	82
36.0	24	27	29	31	33	35	36	41	58	99
38.0	23	26	28	31	34	36	38	43	59	103
40.0	22	25	28	31	34	37	39	45	61	105
41.0	22	25	28	31	34	37	40	47	64	109
42.0	22	25	28	31	34	38	41	47	62	103
43.0	21	25	28	30	34	38	42	48	63	103
44.0	21	25	28	31	34	39	43	48	62	100
45.0	21	25	28	31	35	39	43	48	61	98
46.0	21	25	28	31	34	40	44	49	60	96
47.0	20	24	28	31	35	40	44	48	59	90
48.0	21	24	28	31	35	40	44	48	58	87
49.0	20	24	28	31	35	40	44	48	58	87
50.0	20	24	27	31	35	40	44	48	56	80
52.0	20	23	27	31	35	40	44	47	53	74
54.0	19	23	27	30	35	39	43	46	51	68
56.0	19	23	27	30	34	38	41	45	49	60
58.0	18	22	26	29	32	36	40	43	46	53

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CANDELA TABULATION - (Cont.)

60.0	17	21	25	28	31	35	39	42	43	48
62.5	16	20	23	27	30	33	37	40	40	42
65.0	14	18	22	25	28	32	35	37	37	38
67.5	13	17	21	23	26	30	33	35	35	35
70.0	12	15	19	22	25	28	31	33	33	33
75.0	9	13	16	19	22	25	28	29	29	29
80.0	8	11	14	17	19	22	25	26	26	26
85.0	6	9	12	14	16	19	21	23	23	23
90.0	4	6	9	11	13	16	18	19	19	19

Vert. Angles	**Horizontal Angles**						
	150	**155**	**160**	**165**	**170**	**175**	**180**
0.0	58	58	58	58	58	58	58
5.0	47	47	46	46	46	46	46
10.0	41	40	40	39	39	39	39
15.0	36	36	35	35	34	34	34
20.0	35	37	39	42	45	47	47
22.5	40	48	59	71	82	90	92
25.0	54	74	103	136	167	183	188
27.5	69	105	166	241	311	356	370
30.0	95	157	264	399	539	631	656
32.0	114	212	379	573	752	883	919
34.0	143	265	504	728	967	1124	1173
36.0	183	344	610	876	1176	1400	1457
38.0	197	400	705	1024	1368	1663	1748
40.0	207	414	776	1135	1559	1880	1989
41.0	218	441	796	1175	1623	1985	2087
42.0	204	443	808	1205	1641	2040	2159
43.0	201	419	816	1222	1706	2087	2216
44.0	199	442	823	1230	1725	2137	2249
45.0	193	409	783	1206	1704	2131	2254
46.0	187	397	787	1211	1706	2121	2233
47.0	174	395	761	1183	1634	2055	2180
48.0	173	371	724	1140	1579	1979	2103
49.0	166	354	693	1118	1538	1888	2005
50.0	147	313	651	1031	1450	1773	1882
52.0	131	275	549	879	1209	1496	1600
54.0	110	233	463	731	1005	1231	1304
56.0	88	162	329	559	800	979	1038
58.0	73	124	225	409	588	736	781
60.0	63	91	155	280	407	503	535
62.5	51	65	97	166	247	295	307
65.0	41	51	67	101	139	161	167
67.5	36	40	49	64	78	86	88
70.0	33	34	37	41	45	47	48
75.0	29	29	30	30	30	30	30
80.0	26	26	26	26	26	26	26
85.0	23	24	24	24	24	24	24
90.0	19	19	19	18	18	17	17

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L121706522.IES

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	21.03	N.A.	4.40
0-30	47.12	N.A.	9.90
0-40	143.60	N.A.	30.30
0-60	420.25	N.A.	88.70
0-80	464.25	N.A.	97.90
0-90	474.02	N.A.	100.00
10-90	468.14	N.A.	98.80
20-40	122.58	N.A.	25.90
20-50	290.54	N.A.	61.30
40-70	307.31	N.A.	64.80
60-80	44.00	N.A.	9.30
70-80	13.34	N.A.	2.80
80-90	9.77	N.A.	2.10
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	474.02	N.A.	100.00

Total Luminaire Efficiency = N.A.%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	5.88
10-20	15.15
20-30	26.09
30-40	96.49
40-50	167.96
50-60	108.69
60-70	30.66
70-80	13.34
80-90	9.77
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 : L121706522.IES

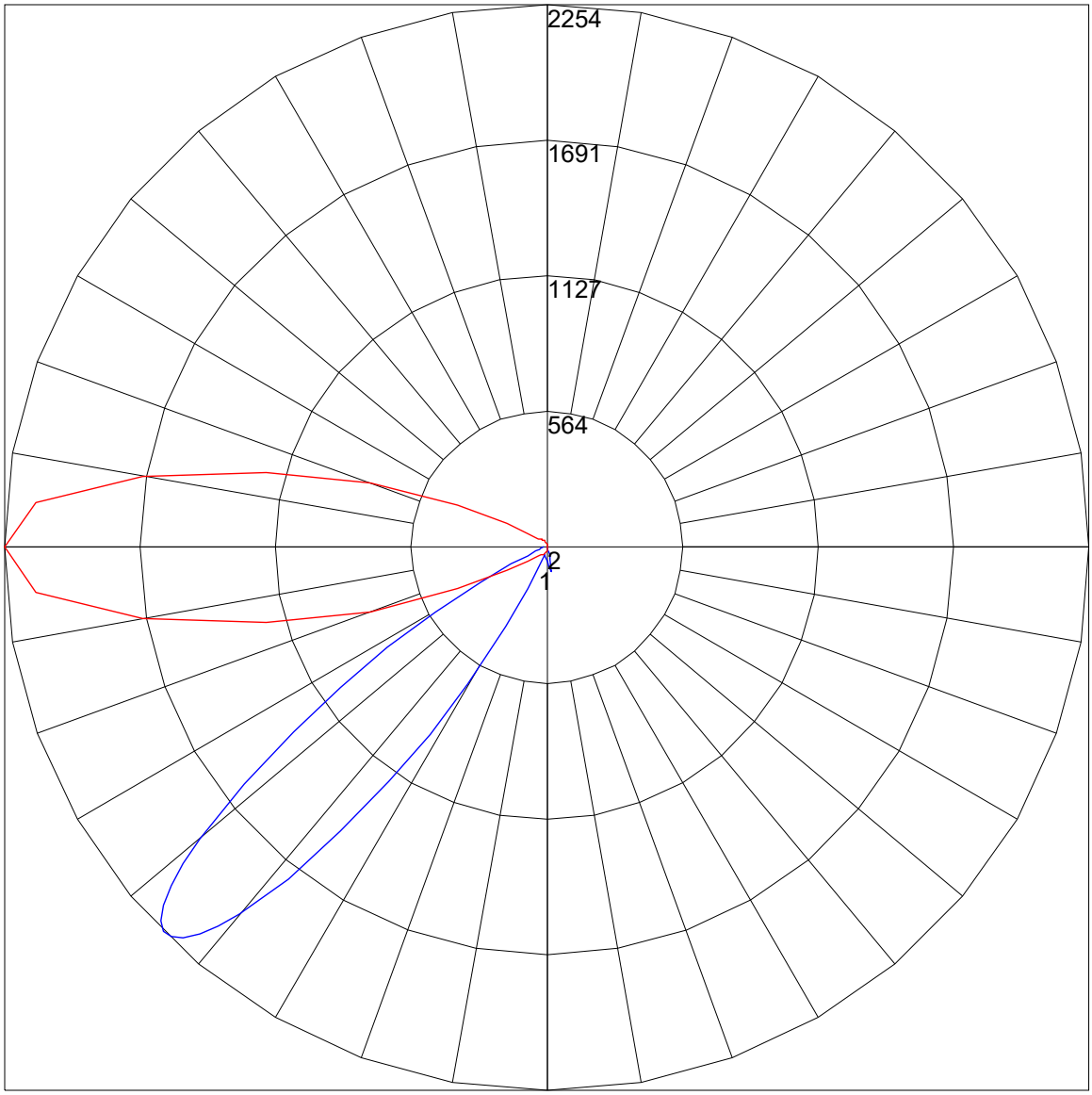
COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

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
1	109	104	100	96	106	102	98	95	98	95	92	94	91	89	90	88	86	84
2	99	91	84	78	96	89	82	77	85	80	75	82	77	74	79	75	72	70
3	90	79	70	64	87	77	69	63	74	68	62	71	66	61	69	64	60	58
4	81	69	59	52	79	67	59	52	65	57	51	62	56	51	60	55	50	48
5	74	60	51	44	71	59	50	43	57	49	43	55	48	42	53	47	42	40
6	67	53	43	36	65	52	43	36	50	42	36	48	41	36	47	40	35	33
7	61	47	37	31	59	46	37	31	44	36	30	43	36	30	41	35	30	28
8	56	42	32	26	54	41	32	26	39	32	26	38	31	26	37	30	26	23
9	52	37	28	22	50	37	28	22	35	28	22	34	27	22	33	27	22	20
10	48	34	25	19	46	33	25	19	32	24	19	31	24	19	30	24	19	17

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L121706522.IES

POLAR GRAPH



Maximum Candela = 2254 Located At Horizontal Angle = 180, Vertical Angle = 45
1 - Vertical Plane Through Horizontal Angles (180 - 0) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (45) (Through Max. Cd.)