



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

Report No: L081910660



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Issue Date: 9/9/2019

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

Model Number: 202-R-BV-HI-3000-25/DIM1-2-SO/FLR-2-BV-WH

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.

Special Test Condition: Fixture is tested with no special conditions.

Sample Arrival Date: 8/16/19

Date of Tests: 9/3/19 - 9/9/19

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	1/9/21
BK PRECISION	1747	PS-DC04	1/10/21
Fluke Digital Thermometer	52K/J	MT-TP05	1/10/21
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

General Information

Manufacturer:	Number Eight Lighting Company
Model Number:	202-R-BV-HI-3000-25/DIM1-2-SO/FLR-2-BV-WH
Driver Model Number:	INTUITIVE SYSTEMS ISD-701-350-15-D

Photometric & Electrical Test Results

Total Lumens:	890.69
Efficacy:	63.76
Input Voltage (VAC/60Hz):	119.99
Input Current (Amp):	0.1174
Input Power (W):	13.97
Input Power Factor:	0.9913
Current ATHD (%):	7.7%

Test Condition

Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	0:45
Total Operating Time (Hours):	2:00

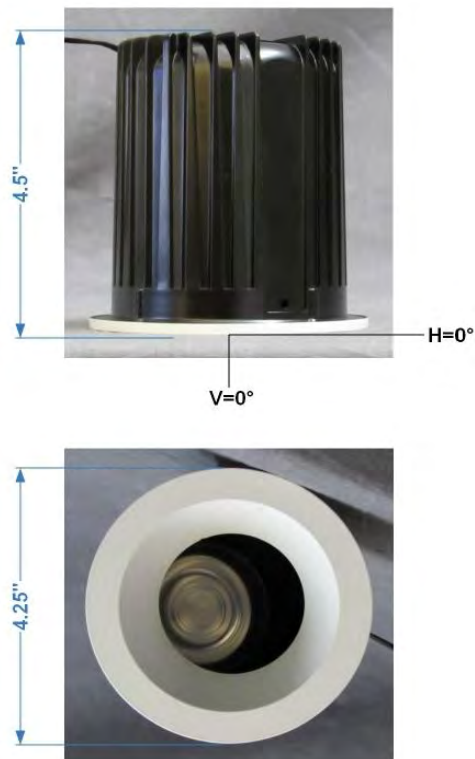


FIG. 1 LUMINAIRE

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 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 : L081910660.IES

DESCRIPTION INFORMATION (From Photometric File)

[IESNA:LM-63-2002]
[TEST] L081910660
[TESTLAB] LIGHT LABORATORY, INC. (www.lightlaboratory.com)
[ISSUEDATE] 9/9/2019
[MANUFAC] Number Eight Lighting Company
[LUMCAT] 202-R-BV-HI-3000-25/DIM1-2-SO/FLR-2-BV-WH
[LUMINAIRE] LED Recessed Adjustable Downlight, 30° Aiming Angle, 3000K 90+ CRI, 25° Beam Spread,
[MORE] Standard Output 1% Dimming Driver, Round Flanged Bevel Trim, 2.25" Aperture
[BALLASTCAT] INTUITIVE SYSTEMS ISD-701-350-15-D
[OTHER] INDICATING THE CANDELA VALUES ARE ABSOLUTE AND
[MORE] SHOULD NOT BE FACTORED FOR DIFFERENT LAMP RATINGS.
[INPUT] 119.99VAC, 13.97W
[TEST PROCEDURE] IESNA:LM-79-08

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	891
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	64
Total Luminaire Watts	13.97
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	2.54
Spacing Criterion (90-270)	0.72
Spacing Criterion (Diagonal)	1.22
Basic Luminous Shape	Circular
Luminous Length (0-180)	0.27 ft (Diameter)
Luminous Width (90-270)	0.27 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	398164	29218	3187
55	42897	4912	2292
65	1333	1333	2667
75	0	1451	2177
85	0	0	0

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L081910660.IES

CANDELA TABULATION

	<u>0</u>	<u>5</u>	<u>10</u>	<u>15</u>	<u>20</u>	<u>25</u>	<u>30</u>	<u>35</u>	<u>40</u>	<u>45</u>
0.0	191	191	191	191	191	191	191	191	191	191
2.5	225	225	224	223	222	221	220	218	216	214
5.0	293	293	291	287	283	278	272	265	258	250
7.5	397	396	391	382	371	357	343	326	310	293
10.0	572	568	556	535	508	476	444	410	377	346
12.5	857	848	821	773	716	653	585	519	457	402
15.0	1289	1270	1213	1126	1020	899	779	661	555	467
17.0	1687	1657	1577	1460	1307	1135	958	785	638	514
19.0	2098	2062	1959	1805	1596	1356	1128	900	699	547
21.0	2474	2430	2305	2119	1871	1582	1291	1008	768	574
23.0	2780	2732	2593	2390	2102	1763	1417	1088	802	587
25.0	3035	2967	2825	2592	2277	1894	1498	1133	825	583
27.0	3205	3152	2995	2736	2383	1978	1554	1141	805	562
29.0	3314	3254	3088	2801	2433	1990	1552	1136	767	527
31.0	3345	3282	3109	2813	2418	1960	1481	1113	708	479
33.0	3303	3244	3057	2753	2338	1848	1367	938	614	411
35.0	3185	3113	2915	2596	2171	1671	1200	815	538	365
37.0	2926	2857	2662	2352	1926	1466	1034	687	444	292
39.0	2655	2584	2385	2053	1642	1221	833	550	365	255
41.0	2307	2237	2043	1745	1361	977	663	434	267	201
43.0	1923	1848	1656	1369	1041	738	496	323	220	151
45.0	1499	1437	1271	1018	759	522	349	231	152	110
50.0	539	512	437	344	251	173	119	81	56	40
55.0	131	126	111	91	70	51	38	27	20	15
60.0	33	32	29	25	20	16	12	9	7	6
65.0	3	3	3	2	2	2	2	2	3	3
70.0	2	2	2	2	2	2	2	2	2	2
75.0	0	0	0	0	0	0	0	0	0	2
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									
	<u>50</u>	<u>55</u>	<u>60</u>	<u>65</u>	<u>70</u>	<u>75</u>	<u>80</u>	<u>85</u>	<u>90</u>	<u>95</u>
0.0	191	191	191	191	191	191	191	191	191	191
2.5	211	208	206	203	200	197	194	192	189	187
5.0	242	234	226	218	211	204	196	190	184	180
7.5	277	261	246	231	218	206	195	186	176	168
10.0	315	288	263	241	221	205	190	177	165	154
12.5	353	313	278	248	223	202	184	169	155	141
15.0	396	335	287	251	220	195	175	158	142	127
17.0	418	346	284	246	213	187	165	147	131	116
19.0	432	344	279	237	203	175	154	135	119	106
21.0	436	342	273	225	191	164	143	123	108	98
23.0	437	329	261	215	180	153	131	112	101	90
25.0	420	317	248	201	168	142	119	104	92	82
27.0	401	277	232	189	157	131	110	96	86	76
29.0	369	267	216	174	145	119	104	89	78	68
31.0	333	247	193	156	127	108	91	80	68	60
33.0	272	220	172	138	112	94	80	67	57	48
35.0	258	195	151	119	97	81	66	55	45	35
37.0	220	165	128	102	81	65	51	40	31	25
39.0	183	136	104	79	61	46	34	27	22	20

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L081910660.IES

CANDELA TABULATION - (Cont.)

41.0	144	112	78	57	42	31	24	21	19	17
43.0	113	75	53	38	28	23	20	17	15	14
45.0	70	49	36	27	22	19	16	14	12	11
50.0	29	22	16	13	11	10	9	8	8	8
55.0	12	9	8	7	6	6	6	6	7	7
60.0	5	4	4	4	4	5	5	6	6	7
65.0	3	3	3	4	4	4	5	5	6	6
70.0	2	3	3	3	3	3	4	4	5	5
75.0	2	2	2	2	2	2	3	3	3	4
80.0	0	0	0	0	0	0	2	2	2	2
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									
	<u>100</u>	<u>105</u>	<u>110</u>	<u>115</u>	<u>120</u>	<u>125</u>	<u>130</u>	<u>135</u>	<u>140</u>	<u>145</u>
0.0	191	191	191	191	191	191	191	191	191	191
2.5	184	182	179	177	175	173	171	169	168	167
5.0	174	169	164	159	154	150	146	143	140	137
7.5	160	151	144	137	131	126	121	118	114	112
10.0	144	134	126	118	113	108	104	100	97	95
12.5	129	120	111	105	99	95	92	89	86	84
15.0	115	106	99	94	89	84	81	77	74	70
17.0	106	98	91	86	81	77	72	68	65	64
19.0	99	90	84	80	73	68	64	62	59	56
21.0	89	82	76	69	64	61	57	53	50	48
23.0	82	75	67	62	58	53	49	46	43	40
25.0	74	66	61	56	50	46	42	39	36	34
27.0	67	61	54	49	44	39	36	33	31	29
29.0	61	53	47	42	37	33	30	27	25	23
31.0	52	45	38	33	29	25	23	21	21	20
33.0	40	33	28	24	22	20	19	19	18	18
35.0	29	24	21	20	19	18	17	17	16	15
37.0	21	20	18	17	17	16	15	14	14	14
39.0	18	17	16	15	14	13	13	13	13	13
41.0	15	14	13	12	12	12	12	12	12	12
43.0	12	12	11	11	11	11	11	11	12	12
45.0	11	10	10	10	11	11	11	11	12	12
50.0	8	9	9	9	10	10	11	11	12	12
55.0	8	8	9	9	10	10	11	11	11	12
60.0	7	8	8	9	9	10	10	11	11	12
65.0	7	7	8	9	9	10	10	11	11	11
70.0	6	6	7	7	8	8	9	9	9	10
75.0	4	4	5	5	5	6	6	7	7	7
80.0	2	3	3	3	3	4	4	4	5	5
85.0	0	0	0	2	2	2	2	2	2	3
90.0	0	0	0	0	0	0	0	0	0	0

Vert. Angles	Horizontal Angles						
	<u>150</u>	<u>155</u>	<u>160</u>	<u>165</u>	<u>170</u>	<u>175</u>	<u>180</u>
0.0	191	191	191	191	191	191	191
2.5	165	164	164	163	162	162	162
5.0	134	133	131	130	129	128	128
7.5	110	108	107	105	104	104	104
10.0	93	91	90	89	88	88	87

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L081910660.IES

CANDELA TABULATION - (Cont.)

12.5	81	79	78	76	75	74	74
15.0	68	66	65	64	64	63	63
17.0	62	60	59	57	56	55	55
19.0	53	51	50	50	49	48	48
21.0	45	43	42	41	40	39	39
23.0	38	36	35	34	33	33	33
25.0	32	31	30	29	28	28	28
27.0	27	26	25	25	24	24	24
29.0	22	22	21	21	21	20	20
31.0	19	19	19	19	18	18	18
33.0	17	17	17	16	16	16	16
35.0	15	14	14	14	14	14	14
37.0	13	13	13	13	13	13	14
39.0	13	13	13	13	13	13	13
41.0	12	12	13	13	13	13	13
43.0	12	12	13	13	13	13	13
45.0	12	12	13	13	13	13	13
50.0	12	12	13	13	13	13	13
55.0	12	12	13	13	13	13	13
60.0	12	12	12	13	13	13	13
65.0	12	12	12	13	13	13	13
70.0	10	11	11	11	11	11	11
75.0	8	8	8	8	8	9	9
80.0	5	5	6	6	6	6	6
85.0	3	3	3	3	3	3	3
90.0	0	0	0	0	0	0	0

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L081910660.IES

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	104.87	N.A.	11.80
0-30	351.10	N.A.	39.40
0-40	665.67	N.A.	74.70
0-60	878.02	N.A.	98.60
0-80	889.56	N.A.	99.90
0-90	890.69	N.A.	100.00
10-90	870.75	N.A.	97.80
20-40	560.80	N.A.	63.00
20-50	744.05	N.A.	83.50
40-70	219.80	N.A.	24.70
60-80	11.53	N.A.	1.30
70-80	4.09	N.A.	0.50
80-90	1.13	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	890.69	N.A.	100.00

Total Luminaire Efficiency = N.A.%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	19.95
10-20	84.93
20-30	246.23
30-40	314.57
40-50	183.25
50-60	29.11
60-70	7.45
70-80	4.09
80-90	1.13
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

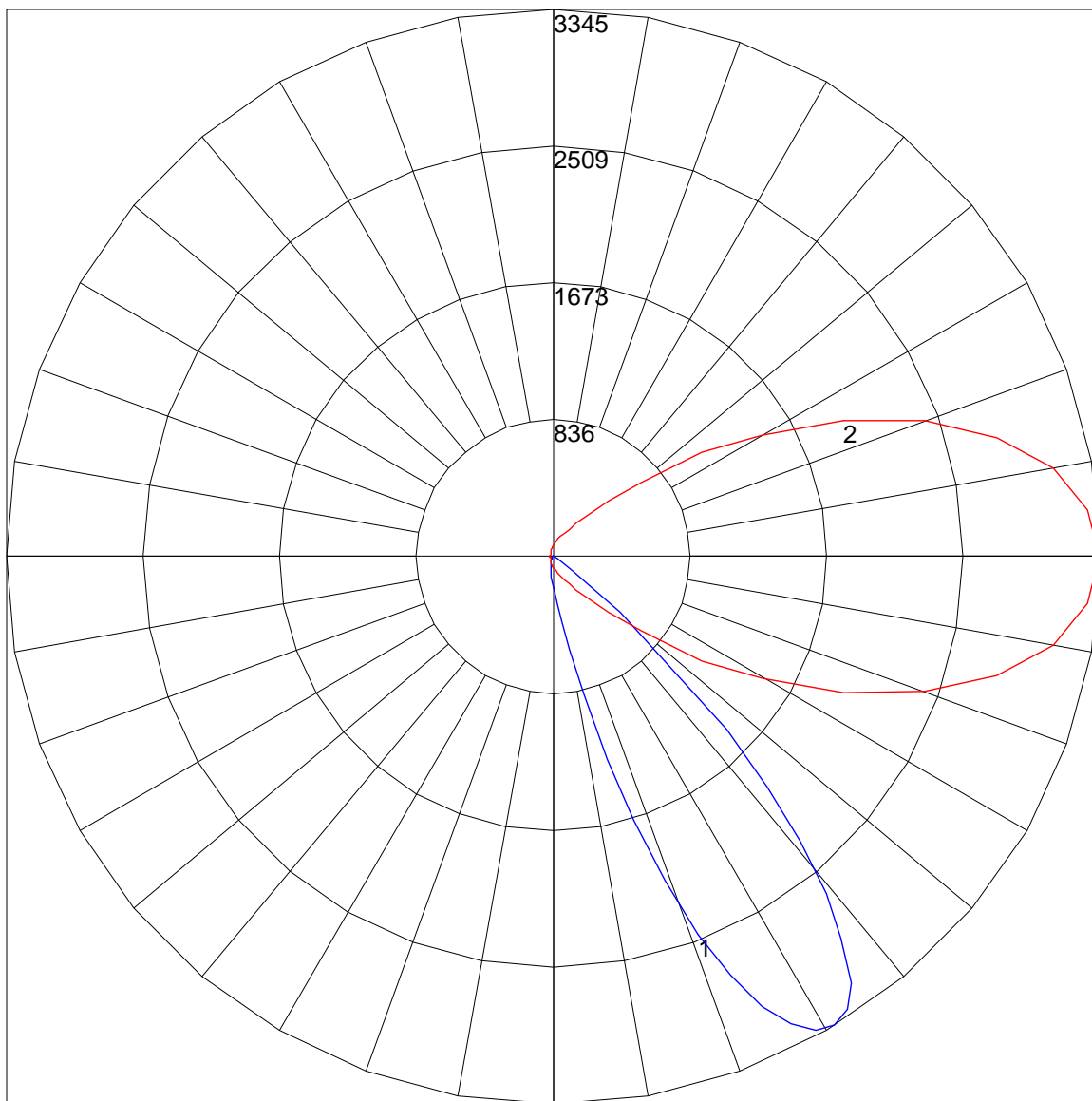
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PHOTOMETRIC FILENAME : L081910660.IES

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	112	109	106	103	110	107	104	101	102	100	98	99	97	95	95	94	92	91
2	105	99	94	90	102	97	92	89	94	90	87	91	87	85	88	85	83	81
3	98	90	84	79	96	88	83	78	85	81	77	83	79	75	81	77	74	72
4	91	82	75	69	89	80	74	69	78	72	68	76	71	67	74	70	66	65
5	85	74	67	61	83	73	66	61	71	65	61	69	64	60	68	63	59	58
6	79	68	60	55	77	67	60	55	65	59	54	64	58	54	62	57	53	52
7	73	62	54	49	72	61	54	49	60	53	48	58	52	48	57	52	48	46
8	68	57	49	44	67	56	49	44	55	48	44	53	48	43	52	47	43	41
9	64	52	45	40	63	51	44	39	50	44	39	49	43	39	48	43	39	37
10	60	48	41	36	59	47	40	36	46	40	36	45	40	35	45	39	35	34

POLAR GRAPH



Maximum Candela = 3345 Located At Horizontal Angle = 0, Vertical Angle = 31
1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (31) (Through Max. Cd.)