



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

Report No: L081910664



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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-3000-60/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-3000-60/DIM1-2-SO/FLR-2-BV-WH
Driver Model Number:	INTUITIVE SYSTEMS ISD-701-350-15-D

Photometric & Electrical Test Results

Total Lumens:	1023.47
Efficacy:	73.75
Input Voltage (VAC/60Hz):	120.00
Input Current (Amp):	0.1165
Input Power (W):	13.88
Input Power Factor:	0.9927
Current ATHD (%):	7.7%

Test Condition

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

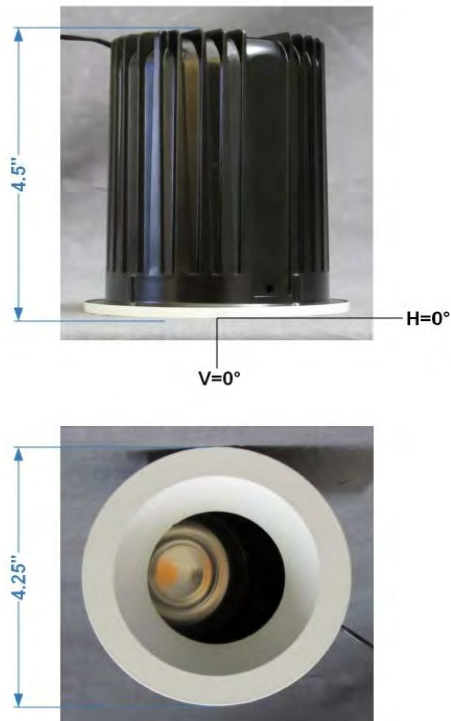


FIG. 1 LUMINAIRE

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 : L081910664.IES

DESCRIPTION INFORMATION (From Photometric File)

[IESNA:LM-63-2002

[TEST] L081910664

[TESTLAB] LIGHT LABORATORY, INC. (www.lightlaboratory.com)

[ISSUEDATE] 9/9/2019

[MANUFAC] Number Eight Lighting Company

[LUMCAT] 202-R-BV-HI-3000-60/DIM1-2-SO/FLR-2-BV-WH

[LUMINAIRE] LED Recessed Adjustable Downlight, 30° Aiming Angle, 3000K 90+ CRI, 60° 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] 120.0VAC, 13.88W

[TEST PROCEDURE] IESNA:LM-79-08

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	1023
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	74
Total Luminaire Watts	13.88
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	2.12
Spacing Criterion (90-270)	0.62
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	297494	87389	7172
55	119194	16373	5239
65	2222	2667	5778
75	2177	2177	5805
85	2155	2155	4310

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PHOTOMETRIC FILENAME : L081910664.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	622	622	622	622	622	622	622	622	622	622
2.5	750	746	746	744	739	735	732	726	719	711
5.0	906	910	902	896	890	880	867	849	836	816
7.5	1050	1047	1042	1032	1017	1004	983	958	930	904
10.0	1167	1167	1158	1145	1129	1106	1079	1047	1012	973
12.5	1264	1260	1246	1233	1208	1182	1149	1110	1070	1022
15.0	1350	1342	1325	1299	1273	1237	1200	1157	1109	1061
17.0	1409	1398	1382	1347	1311	1270	1228	1182	1129	1075
19.0	1437	1432	1415	1384	1348	1306	1254	1208	1152	1094
21.0	1445	1437	1420	1401	1366	1329	1282	1230	1167	1096
23.0	1421	1423	1415	1397	1376	1340	1297	1244	1182	1108
25.0	1403	1399	1400	1392	1376	1352	1310	1258	1192	1105
27.0	1390	1385	1384	1380	1366	1352	1312	1262	1193	1105
29.0	1365	1369	1374	1371	1364	1343	1306	1251	1177	1086
31.0	1371	1369	1369	1369	1358	1334	1296	1239	1162	1061
33.0	1369	1370	1372	1367	1355	1329	1279	1213	1125	1016
35.0	1381	1376	1377	1364	1344	1311	1258	1182	1090	975
37.0	1363	1363	1359	1348	1322	1281	1224	1145	1037	911
39.0	1351	1350	1349	1327	1297	1247	1186	1094	973	822
41.0	1326	1320	1309	1291	1250	1190	1109	993	842	662
43.0	1273	1262	1244	1210	1149	1064	953	813	653	491
45.0	1120	1114	1083	1030	955	858	743	602	456	329
50.0	533	526	505	475	436	391	337	279	213	152
55.0	364	358	341	315	277	227	172	120	79	50
60.0	97	93	83	67	51	36	26	19	14	11
65.0	5	4	5	5	5	5	5	5	5	6
70.0	4	4	4	4	4	4	4	4	4	5
75.0	3	3	3	3	3	3	3	3	3	3
80.0	2	2	2	2	2	2	2	2	2	2
85.0	1	1	1	1	1	1	1	1	1	1
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	622	622	622	622	622	622	622	622	622	622
2.5	703	693	682	674	662	651	641	629	619	604
5.0	797	775	748	723	698	672	647	622	598	572
7.5	866	836	799	760	721	681	642	602	561	524
10.0	931	886	836	785	733	678	625	574	520	470
12.5	972	916	855	793	726	660	593	529	464	410
15.0	999	935	863	790	711	631	551	475	409	349
17.0	1009	936	861	778	689	600	510	431	362	300
19.0	1021	942	855	760	664	561	466	385	304	261
21.0	1026	938	843	742	634	524	425	341	274	222
23.0	1020	927	817	701	584	471	370	291	233	190
25.0	1016	906	790	668	540	423	315	253	198	157
27.0	1003	886	758	621	487	370	279	214	168	133
29.0	974	844	708	566	433	312	238	181	140	111
31.0	939	803	653	502	373	272	199	149	115	94
33.0	892	737	584	435	289	224	161	121	96	75
35.0	832	676	511	360	251	176	125	96	73	59
37.0	759	584	413	270	189	130	98	72	58	49
39.0	640	464	283	204	137	100	72	57	48	41

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PHOTOMETRIC FILENAME : L081910664.IES

CANDELA TABULATION - (Cont.)

41.0	489	331	216	140	100	72	56	46	39	35
43.0	339	225	150	103	74	57	45	38	33	29
45.0	228	154	107	77	58	44	36	31	27	25
50.0	107	72	50	36	28	22	19	18	18	18
55.0	32	21	17	15	13	13	14	14	16	17
60.0	9	8	9	9	10	11	12	13	15	16
65.0	6	7	8	8	9	10	11	12	13	15
70.0	5	6	6	7	7	8	9	10	11	12
75.0	4	4	4	5	5	6	6	7	8	9
80.0	2	2	3	3	3	3	4	4	5	5
85.0	1	1	1	1	1	2	2	2	2	3
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	622	622	622	622	622	622	622	622	622	622
2.5	594	584	574	566	555	547	540	532	526	520
5.0	547	525	502	481	465	448	430	415	403	391
7.5	489	455	424	395	373	350	329	312	298	285
10.0	426	385	348	317	290	267	249	233	219	209
12.5	361	318	281	252	227	208	192	177	166	157
15.0	300	257	225	200	179	161	148	136	128	120
17.0	257	220	190	167	149	134	122	113	105	99
19.0	218	185	158	138	122	110	101	93	88	83
21.0	184	156	133	116	104	93	87	79	74	70
23.0	156	131	112	98	88	79	73	67	64	61
25.0	129	109	92	82	73	67	62	58	55	53
27.0	110	93	79	70	63	58	54	51	49	48
29.0	93	78	67	60	54	51	48	46	45	44
31.0	76	64	56	51	47	44	43	41	41	40
33.0	62	54	48	44	42	40	39	38	38	37
35.0	51	45	42	39	38	36	35	35	34	34
37.0	43	40	37	35	34	33	32	31	31	31
39.0	37	34	32	31	30	29	29	29	30	30
41.0	32	30	28	27	27	27	28	28	29	29
43.0	27	26	25	25	25	26	27	27	28	29
45.0	23	23	23	24	24	25	26	27	28	29
50.0	19	20	21	23	24	25	26	27	28	29
55.0	18	19	21	22	23	24	26	27	28	29
60.0	17	18	20	21	22	24	25	26	27	28
65.0	16	17	19	20	21	22	24	25	26	27
70.0	13	15	16	17	18	20	21	22	23	24
75.0	9	10	11	12	13	14	15	16	17	18
80.0	6	6	7	8	8	9	10	10	11	12
85.0	3	3	3	4	4	4	5	5	6	6
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	622	622	622	622	622	622	622
2.5	516	513	508	506	504	504	504
5.0	382	373	367	363	359	357	355
7.5	276	267	260	255	251	249	248
10.0	199	192	187	182	179	177	176

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L081910664.IES

CANDELA TABULATION - (Cont.)

12.5	150	144	139	135	133	132	131
15.0	114	110	106	104	102	100	100
17.0	94	91	88	86	85	84	83
19.0	79	76	73	72	71	70	70
21.0	67	65	63	62	61	61	61
23.0	59	57	56	55	54	54	54
25.0	52	50	50	49	48	48	48
27.0	47	46	45	45	45	45	44
29.0	43	42	42	42	42	41	41
31.0	40	39	39	39	39	39	39
33.0	37	36	36	36	36	36	36
35.0	33	33	33	33	33	33	33
37.0	31	31	32	32	32	32	32
39.0	30	31	31	31	31	31	32
41.0	30	30	31	31	31	32	32
43.0	30	30	31	31	32	32	32
45.0	30	30	31	31	32	32	32
50.0	30	31	31	32	32	32	32
55.0	30	30	31	32	32	32	32
60.0	29	30	31	31	32	32	32
65.0	28	29	30	30	31	31	31
70.0	25	26	27	27	27	28	28
75.0	18	19	20	20	20	21	21
80.0	12	12	13	13	13	14	14
85.0	6	6	7	7	7	7	7
90.0	0	0	0	0	0	0	0

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L081910664.IES

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	201.61	N.A.	19.70
0-30	436.89	N.A.	42.70
0-40	707.29	N.A.	69.10
0-60	991.99	N.A.	96.90
0-80	1020.08	N.A.	99.70
0-90	1023.47	N.A.	100.00
10-90	965.30	N.A.	94.30
20-40	505.68	N.A.	49.40
20-50	723.32	N.A.	70.70
40-70	302.48	N.A.	29.60
60-80	28.09	N.A.	2.70
70-80	10.31	N.A.	1.00
80-90	3.39	N.A.	0.30
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	1023.47	N.A.	100.00

Total Luminaire Efficiency = N.A.%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	58.17
10-20	143.44
20-30	235.28
30-40	270.40
40-50	217.64
50-60	67.07
60-70	17.77
70-80	10.31
80-90	3.39
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

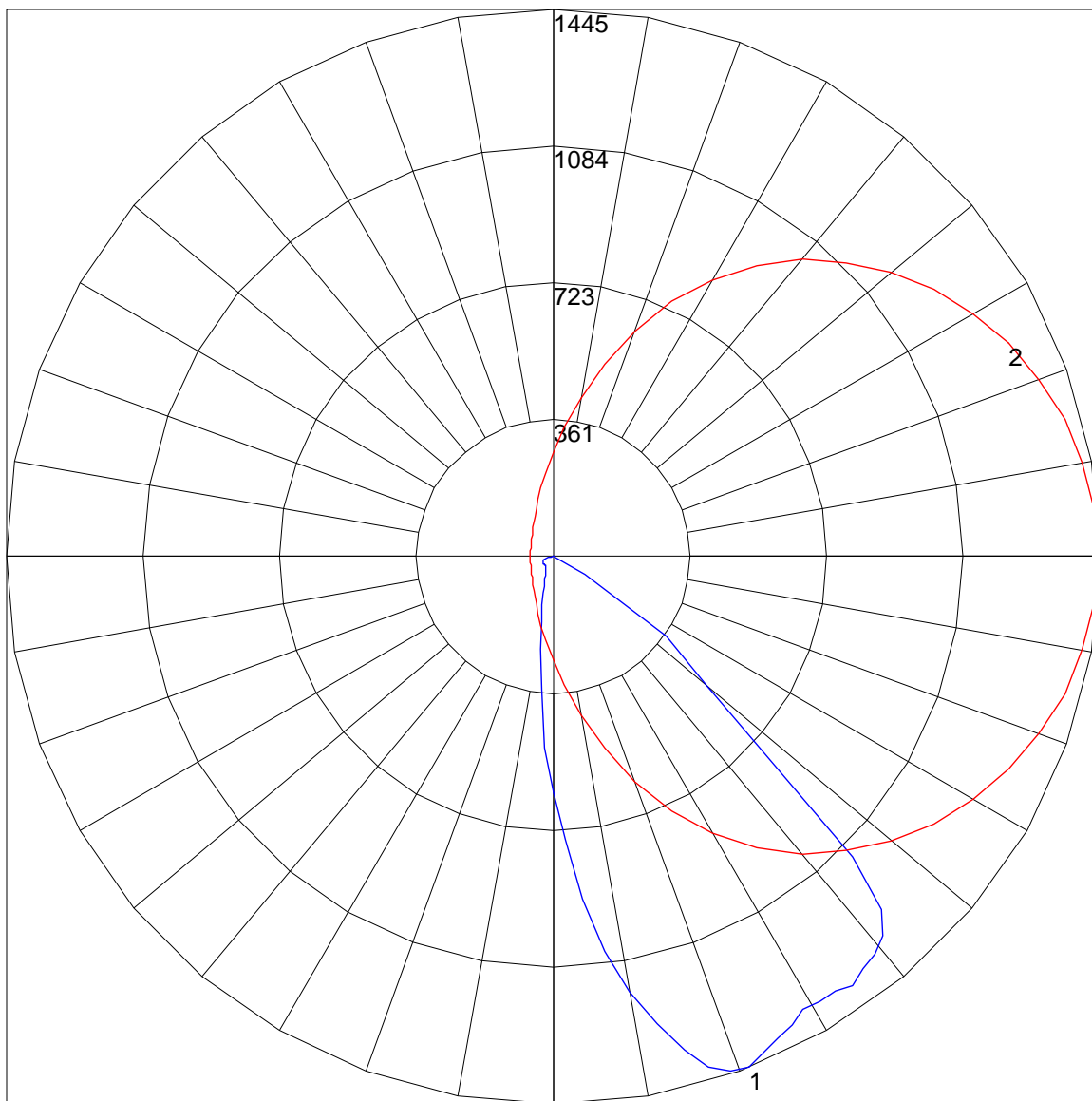
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PHOTOMETRIC FILENAME : L081910664.IES

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	105	103	109	106	104	101	102	100	98	98	97	95	95	94	92	90
2	105	99	93	89	102	97	92	88	93	90	86	90	87	84	87	85	83	81
3	98	90	83	78	95	88	82	78	85	80	76	83	79	75	80	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	62	83	73	67	61	71	65	61	70	64	60	68	63	60	58
6	79	68	61	55	78	67	60	55	66	59	55	64	59	54	63	58	54	52
7	74	63	55	50	73	62	55	50	60	54	50	59	53	49	58	53	49	47
8	69	58	50	45	68	57	50	45	56	50	45	55	49	45	54	48	45	43
9	65	53	46	41	64	53	46	41	52	46	41	51	45	41	50	45	41	39
10	61	50	43	38	60	49	42	38	48	42	38	47	42	38	47	41	37	36

POLAR GRAPH



Maximum Candela = 1445 Located At Horizontal Angle = 0, Vertical Angle = 21

1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)

2 - Horizontal Cone Through Vertical Angle (21) (Through Max. Cd.)