



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

Report No: L081910640



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Issue Date: 9/6/2019

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

Model Number: 202-S-HI-3000-60/DIM1-2-SO/FLS-2-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: 8/28/19 - 9/6/19

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-S-HI-3000-60/DIM1-2-SO/FLS-2-WH
Driver Model Number:	INTUITIVE SYSTEMS ISD-701-350-15-D

Photometric & Electrical Test Results

Total Lumens:	942.73
Efficacy:	67.54
Input Voltage (VAC/60Hz):	120.03
Input Current (Amp):	0.1171
Input Power (W):	13.96
Input Power Factor:	0.9928
Current ATHD (%):	7.6%

Test Condition

Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	1:00
Total Operating Time (Hours):	2:20

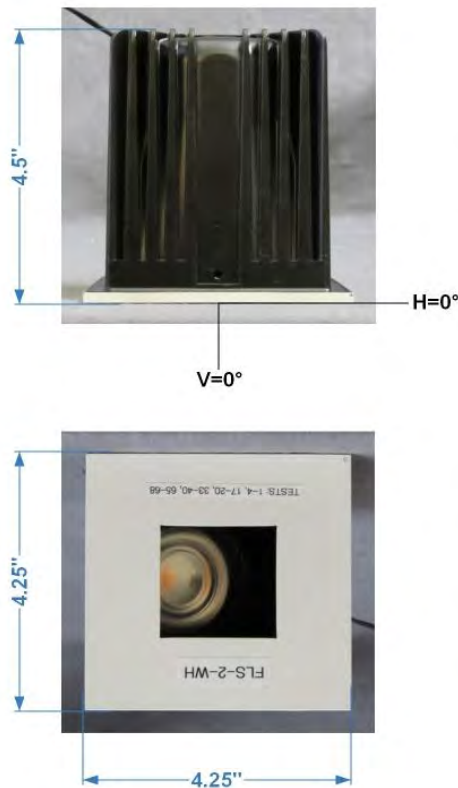


FIG. 1 LUMINAIRE

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 : L081910640.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] L081910640
[TESTLAB] LIGHT LABORATORY, INC. (www.lightlaboratory.com)
[ISSUEDATE] 9/6/2019
[MANUFAC] Number Eight Lighting Company
[LUMCAT] 202-S-HI-3000-60/DIM1-2-SO/FLS-2-WH
[LUMINAIRE] LED Recessed Adjustable Downlight, 30° Aiming Angle, 3000K 90+ CRI, 60° Beam Spread
[MORE] Standard Output 1% Dimming Driver, Square Flanged Trim, 1.875" x 1.875" 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] 120.03VAC, 13.96W
[TEST PROCEDURE] IESNA:LM-79-08

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	943
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	68
Total Luminaire Watts	13.96
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	2.40
Spacing Criterion (90-270)	0.68
Spacing Criterion (Diagonal)	1.26
Basic Luminous Shape	Rectangular
Luminous Length (0-180)	0.15 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	819892	203452	8787
55	345810	72495	833
65	127794	10178	0
75	0	0	0
85	0	0	0

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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	411	411	411	411	411	411	411	411	411	411
2.5	543	543	541	538	535	532	524	517	510	502
5.0	735	737	733	728	715	705	691	672	656	635
7.5	914	911	904	896	884	864	845	821	790	761
10.0	1038	1035	1029	1022	1010	989	968	937	906	864
12.5	1126	1125	1119	1110	1094	1075	1048	1017	982	944
15.0	1201	1202	1191	1179	1166	1143	1117	1077	1036	991
17.0	1248	1246	1241	1230	1214	1191	1157	1121	1074	1021
19.0	1279	1278	1271	1264	1245	1223	1192	1154	1101	1048
21.0	1306	1301	1298	1288	1272	1250	1218	1178	1125	1064
23.0	1317	1320	1315	1311	1295	1270	1235	1195	1142	1073
25.0	1341	1337	1336	1331	1307	1286	1249	1205	1144	1070
27.0	1353	1353	1353	1344	1331	1295	1263	1209	1140	1060
29.0	1357	1359	1363	1357	1334	1312	1267	1210	1132	1044
31.0	1365	1369	1371	1364	1344	1314	1264	1198	1116	1008
33.0	1352	1362	1366	1366	1345	1310	1252	1187	1090	951
35.0	1355	1362	1363	1359	1334	1295	1239	1153	1026	862
37.0	1362	1362	1366	1351	1319	1272	1207	1104	946	759
39.0	1357	1357	1352	1331	1302	1242	1169	1023	827	636
41.0	1340	1339	1329	1305	1268	1210	1106	921	718	523
43.0	1298	1301	1291	1269	1224	1161	1021	803	588	402
45.0	1213	1214	1210	1195	1165	1087	902	676	472	301
50.0	772	778	788	801	808	721	551	320	233	163
55.0	415	412	398	380	362	320	241	169	121	87
60.0	260	256	238	209	177	141	108	79	56	39
65.0	113	108	95	81	66	51	39	28	18	9
70.0	18	17	16	13	11	10	7	5	3	1
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**

	<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	411	411	411	411	411	411	411	411	411	411
2.5	495	485	476	464	454	442	431	422	410	399
5.0	611	587	561	536	510	480	454	427	403	377
7.5	723	684	642	599	555	513	467	426	386	347
10.0	818	768	713	656	597	532	474	417	362	314
12.5	892	836	767	693	621	543	466	394	324	277
15.0	933	873	803	718	631	541	450	368	298	237
17.0	960	892	812	726	629	525	428	328	266	208
19.0	980	898	811	715	613	506	398	305	234	178
21.0	989	901	802	695	586	469	350	273	204	153
23.0	988	892	783	666	548	428	318	234	174	129
25.0	984	876	754	624	497	374	275	201	147	109
27.0	961	843	706	566	434	311	229	166	121	89
29.0	930	791	642	488	360	258	186	136	98	73
31.0	868	712	553	406	291	206	147	108	80	58
33.0	787	616	458	308	225	158	114	89	62	47
35.0	682	506	362	249	171	121	91	65	49	36
37.0	574	406	276	183	127	93	66	50	37	28
39.0	457	297	202	138	97	70	51	39	29	22

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CANDELA TABULATION - (Cont.)

41.0	335	230	153	105	74	53	39	29	22	17
43.0	262	174	119	86	58	42	31	23	17	13
45.0	203	138	94	64	45	32	23	17	13	9
50.0	112	82	51	33	22	15	10	7	5	4
55.0	56	38	23	14	8	5	3	2	1	1
60.0	22	12	6	4	2	2	1	1	0	0
65.0	6	3	1	1	1	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									
	<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	411	411	411	411	411	411	411	411	411	411
2.5	389	378	368	361	350	342	335	328	322	317
5.0	352	330	311	292	276	260	246	234	224	213
7.5	313	282	256	232	211	192	177	163	152	142
10.0	272	237	206	181	159	141	126	115	106	99
12.5	233	194	163	139	119	104	93	85	77	71
15.0	192	155	128	106	90	79	69	62	56	52
17.0	165	131	105	87	73	63	55	49	44	41
19.0	139	108	87	71	59	51	44	39	35	32
21.0	118	91	71	58	48	41	36	32	29	26
23.0	98	75	59	47	39	33	29	26	23	21
25.0	85	62	48	39	32	27	24	21	18	16
27.0	67	50	39	32	26	22	19	17	14	13
29.0	55	41	32	26	21	18	15	13	11	10
31.0	44	33	25	21	17	15	12	10	8	7
33.0	35	26	21	17	14	11	9	7	6	4
35.0	27	21	17	14	11	9	7	5	4	3
37.0	22	17	14	11	9	6	5	3	2	2
39.0	17	14	11	9	6	4	3	2	1	1
41.0	14	11	9	7	4	3	2	1	1	1
43.0	10	8	7	5	3	2	1	1	0	0
45.0	8	6	5	3	2	1	1	0	0	0
50.0	2	2	1	1	0	0	0	0	0	0
55.0	1	0	0	0	0	0	0	0	0	0
60.0	0	0	0	0	0	0	0	0	0	0
65.0	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						
	<u>150</u>	<u>155</u>	<u>160</u>	<u>165</u>	<u>170</u>	<u>175</u>	<u>180</u>
0.0	411	411	411	411	411	411	411
2.5	312	308	306	303	301	301	298
5.0	206	200	195	190	187	186	186
7.5	135	129	125	121	119	118	117
10.0	93	89	85	83	81	80	79

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CANDELA TABULATION - (Cont.)

12.5	67	63	60	58	57	56	56
15.0	48	45	43	42	41	40	40
17.0	38	36	34	33	32	32	31
19.0	30	29	27	26	25	25	25
21.0	24	23	22	20	19	19	19
23.0	19	17	16	16	15	15	15
25.0	15	14	13	12	11	11	11
27.0	11	10	9	8	8	7	7
29.0	8	7	6	5	5	4	4
31.0	5	4	4	3	3	3	3
33.0	3	3	2	2	2	2	2
35.0	2	2	2	1	1	1	1
37.0	1	1	1	0	0	0	0
39.0	1	1	0	0	0	0	0
41.0	0	0	0	0	0	0	0
43.0	0	0	0	0	0	0	0
45.0	0	0	0	0	0	0	0
50.0	0	0	0	0	0	0	0
55.0	0	0	0	0	0	0	0
60.0	0	0	0	0	0	0	0
65.0	0	0	0	0	0	0	0
70.0	0	0	0	0	0	0	0
75.0	0	0	0	0	0	0	0
80.0	0	0	0	0	0	0	0
85.0	0	0	0	0	0	0	0
90.0	0	0	0	0	0	0	0

IES INDOOR REPORT
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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	164.26	N.A.	17.40
0-30	377.51	N.A.	40.00
0-40	622.41	N.A.	66.00
0-60	923.63	N.A.	98.00
0-80	942.73	N.A.	100.00
0-90	942.73	N.A.	100.00
10-90	899.98	N.A.	95.50
20-40	458.15	N.A.	48.60
20-50	678.73	N.A.	72.00
40-70	319.65	N.A.	33.90
60-80	19.10	N.A.	2.00
70-80	0.67	N.A.	0.10
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	942.73	N.A.	100.00

Total Luminaire Efficiency = N.A.%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	42.75
10-20	121.51
20-30	213.25
30-40	244.90
40-50	220.58
50-60	80.64
60-70	18.43
70-80	0.67
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

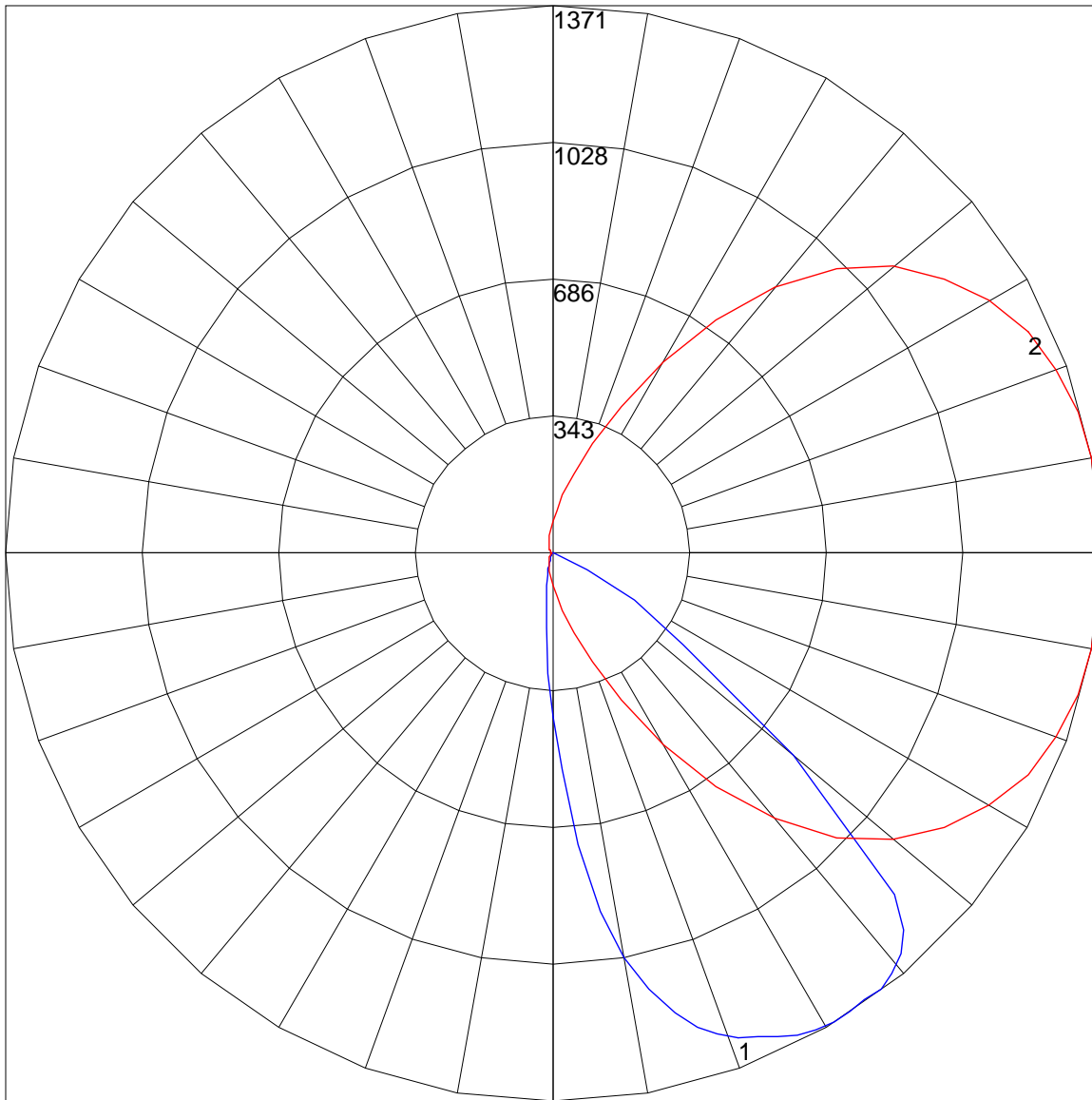
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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

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
1	112	109	106	103	109	106	104	101	102	100	98	99	97	95	95	94	92	90
2	105	98	93	89	102	97	92	88	93	89	86	90	87	84	87	85	82	81
3	97	89	83	78	95	88	82	77	85	80	76	82	78	75	80	76	73	72
4	90	81	74	68	88	80	73	68	77	72	67	75	70	66	73	69	65	64
5	84	73	66	61	82	72	65	60	70	64	60	69	63	59	67	62	58	57
6	78	67	59	54	77	66	59	54	64	58	53	63	57	53	61	56	53	51
7	73	61	54	48	71	61	53	48	59	53	48	58	52	48	57	51	47	46
8	68	56	49	44	67	56	49	44	54	48	43	53	47	43	52	47	43	41
9	64	52	45	40	63	51	44	40	50	44	39	49	43	39	48	43	39	37
10	60	48	41	36	59	48	41	36	47	40	36	46	40	36	45	40	36	34

POLAR GRAPH



Maximum Candela = 1371 Located At Horizontal Angle = 10, Vertical Angle = 31
1 - Vertical Plane Through Horizontal Angles (10 - 190) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (31) (Through Max. Cd.)