



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

Report No: L081910648



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Issue Date: 9/5/2019

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

Model Number: 202-R-HI-3000-60/DIM1-2-SO/FLR-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: 8/15/19

Date of Tests: 8/28/19 - 9/5/19

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

Photometric & Electrical Test Results

Total Lumens:	854.09
Efficacy:	61.53
Input Voltage (VAC/60Hz):	120.05
Input Current (Amp):	0.1167
Input Power (W):	13.88
Input Power Factor:	0.9912
Current ATHD (%):	7.7%

Test Condition

Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	1:00
Total Operating Time (Hours):	2:10

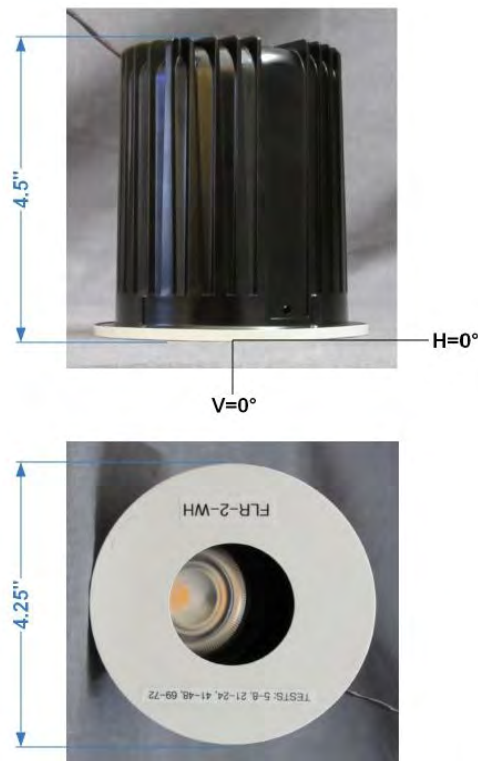


FIG. 1 LUMINAIRE

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 : Dennis Malonzo

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 : L081910648.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] L081910648
[TESTLAB] LIGHT LABORATORY, INC. (www.lightlaboratory.com)
[ISSUE DATE] 9/5/2019
[MANUFAC] Number Eight Lighting Company
[LUMCAT] 202-R-HI-3000-60/DIM1-2-SO/FLR-2-WH
[LUMINAIRE] LED Recessed Adjustable Downlight, 30° Aiming Angle, 3000K 90+ CRI, 60° Beam Spread,
[MORE] Standard Output 1% Dimming Driver, Round Flanged Trim, 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] 120.05VAC, 13.88W
[TEST PROCEDURE] IESNA:LM-79-08

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	854
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	62
Total Luminaire Watts	13.88
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	2.10
Spacing Criterion (90-270)	0.58
Spacing Criterion (Diagonal)	1.12
Basic Luminous Shape	Circular
Luminous Length (0-180)	0.16 ft (Diameter)
Luminous Width (90-270)	0.16 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	754126	189855	7564
55	307720	60612	0
65	59482	6328	1266
75	0	0	0
85	0	0	0

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CANDELA TABULATION

	0	5	10	15	20	25	30	35	40	45
0.0	582	582	582	582	582	582	582	582	582	582
2.5	720	718	717	714	707	705	699	691	683	677
5.0	888	887	885	878	870	860	849	833	815	795
7.5	994	993	991	985	976	965	951	935	917	891
10.0	1075	1072	1067	1062	1051	1037	1022	1003	980	952
12.5	1144	1144	1137	1130	1118	1098	1083	1056	1028	997
15.0	1190	1187	1183	1174	1164	1148	1128	1099	1064	1029
17.0	1213	1211	1206	1199	1191	1174	1154	1126	1086	1045
19.0	1233	1228	1225	1216	1209	1194	1173	1143	1105	1055
21.0	1250	1247	1242	1232	1222	1206	1186	1157	1118	1064
23.0	1277	1274	1267	1251	1235	1217	1195	1164	1120	1061
25.0	1285	1284	1284	1272	1251	1225	1200	1169	1118	1050
27.0	1286	1292	1291	1283	1257	1229	1203	1168	1107	1036
29.0	1296	1299	1296	1279	1257	1233	1201	1154	1089	1007
31.0	1286	1286	1283	1272	1257	1232	1193	1135	1062	963
33.0	1287	1283	1279	1275	1254	1219	1170	1107	1019	895
35.0	1290	1289	1285	1269	1240	1197	1144	1063	944	792
37.0	1279	1276	1265	1245	1213	1165	1091	985	844	683
39.0	1257	1253	1240	1216	1174	1107	1008	874	717	563
41.0	1222	1214	1195	1156	1091	999	876	741	596	437
43.0	1142	1133	1098	1044	961	859	742	603	442	334
45.0	997	984	949	891	809	705	589	466	344	251
50.0	559	549	518	473	417	361	303	243	186	135
55.0	330	325	310	286	253	211	167	127	92	65
60.0	177	173	160	142	119	94	70	49	33	21
65.0	47	45	40	35	28	20	14	10	7	5
70.0	9	9	8	8	6	4	2	1	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	582	582	582	582	582	582	582	582	582	582
2.5	666	658	645	636	624	613	599	588	575	565
5.0	775	751	726	698	671	641	613	585	554	528
7.5	861	825	787	744	701	656	609	564	519	478
10.0	921	882	831	775	716	652	589	530	472	416
12.5	958	912	857	787	711	634	556	483	412	350
15.0	986	934	869	783	692	596	505	422	347	285
17.0	998	940	866	765	662	557	456	367	294	233
19.0	1003	936	850	739	620	504	398	315	243	188
21.0	1002	927	823	695	568	430	341	260	196	148
23.0	995	904	782	641	507	385	288	212	155	120
25.0	974	868	726	575	427	325	231	166	124	97
27.0	944	813	658	502	372	264	185	134	101	78
29.0	891	741	575	423	305	211	145	107	82	63
31.0	823	649	464	355	244	163	117	88	71	51
33.0	725	560	405	278	187	129	93	72	53	41
35.0	620	447	322	216	147	104	76	57	43	33
37.0	520	369	245	164	116	83	60	45	34	26
39.0	409	277	187	131	93	71	49	36	27	20

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CANDELA TABULATION - (Cont.)

41.0	311	212	146	103	73	52	38	28	20	15
43.0	232	164	115	81	58	42	30	21	15	10
45.0	181	128	90	68	45	31	22	16	10	7
50.0	97	70	45	31	21	13	8	5	3	2
55.0	44	29	18	11	6	4	2	1	0	0
60.0	13	8	5	3	2	1	0	0	0	0
65.0	3	1	1	0	0	0	1	1	1	1
70.0	0	0	0	0	0	1	1	1	1	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>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	582	582	582	582	582	582	582	582	582	582
2.5	551	540	529	520	509	499	490	481	475	468
5.0	501	473	450	427	406	387	368	351	337	325
7.5	439	400	366	335	307	284	264	246	231	218
10.0	368	323	286	255	226	202	182	166	153	142
12.5	298	255	216	186	161	142	128	115	106	99
15.0	235	192	159	135	116	103	92	83	76	70
17.0	186	150	125	106	92	80	72	64	58	54
19.0	149	120	100	85	73	63	56	50	45	41
21.0	118	96	80	68	57	50	44	39	36	33
23.0	95	78	64	54	46	39	35	31	28	26
25.0	77	62	51	43	37	32	28	25	22	20
27.0	63	50	41	35	29	25	22	19	16	15
29.0	50	40	33	28	23	19	16	14	13	11
31.0	41	33	27	22	18	15	13	10	8	7
33.0	33	26	20	17	13	11	8	7	5	4
35.0	26	20	16	12	9	7	5	4	3	2
37.0	20	15	11	8	6	4	3	2	2	1
39.0	15	11	8	5	3	2	2	1	1	1
41.0	11	7	5	3	2	1	1	1	0	0
43.0	7	4	3	2	1	1	0	0	0	0
45.0	4	2	2	1	1	0	0	0	0	0
50.0	1	0	0	0	0	0	0	0	0	0
55.0	0	0	0	0	0	0	0	0	0	0
60.0	0	0	0	0	0	0	0	0	1	1
65.0	1	1	1	1	1	1	1	1	1	1
70.0	1	1	1	1	1	1	1	1	1	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>150</u>	<u>155</u>	<u>160</u>	<u>165</u>	<u>170</u>	<u>175</u>	<u>180</u>
0.0	582	582	582	582	582	582	582
2.5	462	456	452	449	448	445	446
5.0	315	307	300	294	291	289	287
7.5	206	197	190	185	181	179	178
10.0	133	127	122	118	116	114	114

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CANDELA TABULATION - (Cont.)

12.5	92	88	84	81	80	78	78
15.0	65	62	59	57	55	54	54
17.0	50	47	45	43	42	41	41
19.0	38	36	34	33	32	32	32
21.0	30	28	27	26	25	25	25
23.0	24	22	21	20	19	18	18
25.0	18	16	15	15	14	14	14
27.0	13	12	11	11	10	10	10
29.0	9	8	7	7	6	6	6
31.0	6	5	5	4	4	3	3
33.0	3	3	2	2	2	2	2
35.0	2	2	1	1	1	1	1
37.0	1	1	1	0	0	0	0
39.0	0	0	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	1	1	1	1	1	1	1
65.0	1	1	1	1	1	1	1
70.0	1	1	1	1	1	1	1
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

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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	182.67	N.A.	21.40
0-30	388.56	N.A.	45.50
0-40	614.48	N.A.	71.90
0-60	843.00	N.A.	98.70
0-80	854.09	N.A.	100.00
0-90	854.09	N.A.	100.00
10-90	800.33	N.A.	93.70
20-40	431.82	N.A.	50.60
20-50	604.90	N.A.	70.80
40-70	239.14	N.A.	28.00
60-80	11.09	N.A.	1.30
70-80	0.46	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	854.09	N.A.	100.00

Total Luminaire Efficiency = N.A.%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	53.76
10-20	128.90
20-30	205.90
30-40	225.92
40-50	173.09
50-60	55.44
60-70	10.62
70-80	0.46
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

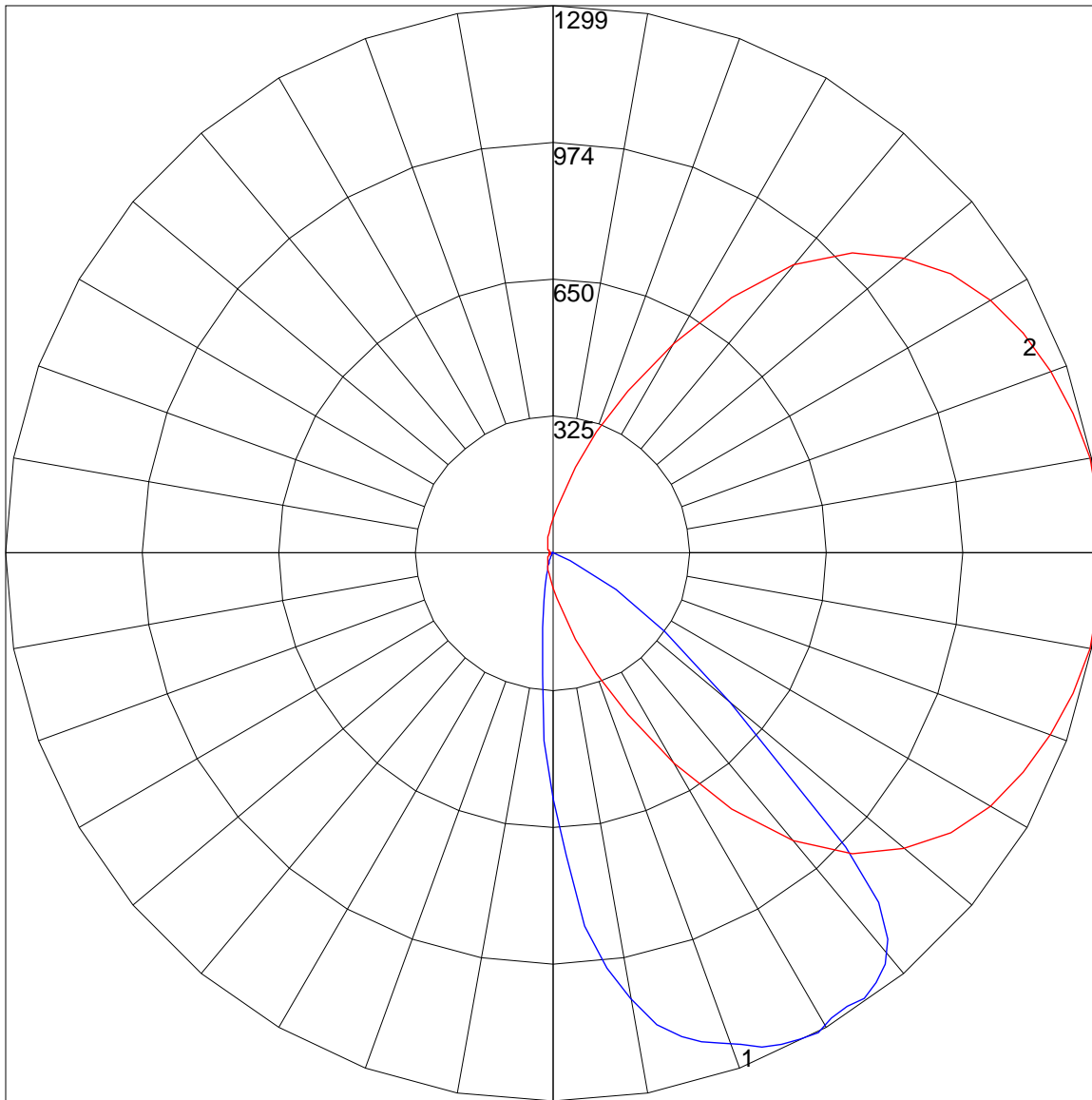
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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

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	104	110	107	104	102	103	101	99	99	97	96	96	94	93	91
2	105	99	95	91	103	98	93	90	94	91	88	91	88	86	88	86	84	82
3	98	91	85	80	96	89	84	79	87	82	78	84	80	77	82	78	75	74
4	92	83	76	71	90	82	75	71	79	74	70	77	73	69	75	71	68	66
5	86	76	69	64	84	75	68	63	73	67	63	71	66	62	69	65	61	60
6	80	70	62	57	79	69	62	57	67	61	57	66	60	56	64	59	56	54
7	75	64	57	52	74	63	56	52	62	56	51	61	55	51	59	54	51	49
8	71	59	52	47	69	59	52	47	57	51	47	56	51	47	55	50	46	45
9	66	55	48	43	65	54	48	43	53	47	43	52	47	43	51	46	43	41
10	63	51	44	40	61	51	44	40	50	44	39	49	43	39	48	43	39	38

POLAR GRAPH



Maximum Candela = 1299 Located At Horizontal Angle = 5, Vertical Angle = 29
1 - Vertical Plane Through Horizontal Angles (5 - 185) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (29) (Through Max. Cd.)