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Indoor Distribution Test Report

Relevant Standards
IES LM-79-2008
ANSI C82.77-2002

Prepared For
Renova Lighting Systems Inc.

Rick Edwards
20 Middlesex Rd.
Mansfield, MA 02048

Catalog Number
RAD2-C02-L073-UNV-DM-C50-CFG-FAS-SM-C6E

Order Number
11168807
Test Number
1212871

Test Date

2016-02-24

Prepared By

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Approved By

Carissa Samonte-cam, Project Handler

The results contained in this report pertain only to the tested sample.
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Luminaire Description: Cast and extruded aluminum housing, frosted and linear prismatic plastic enclosure
Lamp: 48 white LEDs
Mounting: Surface
Ballast/Driver: Two Mean Well HLG-60H-48A

Luminaire



Luminaire Characteristics

Luminous Length: 28.00 in.
Luminous Width: 9.000 in.
Luminous Height: 6.75 in.

Summary of Results

Total Luminaire Output: 7311 Lumens
Luminaire Efficacy: 68.9 lm/w
Maximum Candela: 1155 Candela

Electrical Data

Test Temperature: 24.7 °C
Voltage: 120.0 VAC
Current: 0.8876 A
Power: 106.2 W
Power Factor: 0.997
Frequency: 60 Hz
Current THD: 5.59 %

Laboratory results may not be representative of field performance
Ballast factors have not been applied



Distribution - Goniophotometer

Distribution Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.7 °C	120.0 VAC	0.8876 A	106.2 W	0.997	60 Hz	5.59 %

Summary of Results

Spacing Criteria

0-180: 1.20
90-270: 1.20

Total Lumen Output:

7311 Lumens

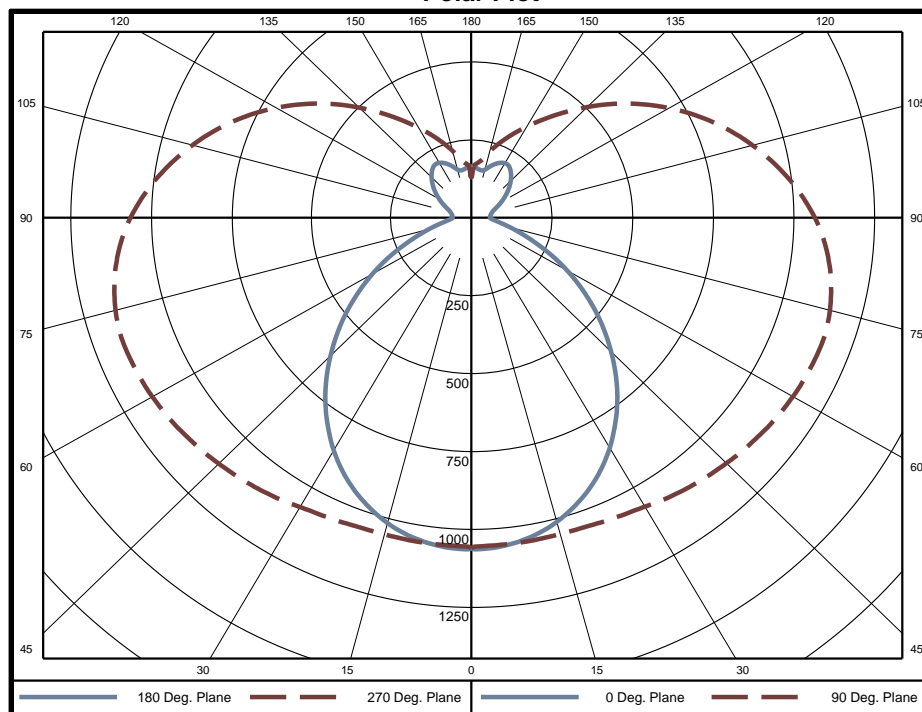
Luminaire Efficacy:

68.9 lm/w

Maximum Candela:

1155 Candela

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	25.3	0.3%	60-65	353.3	4.8%	120-125	176.8	2.4%
5-10	75.3	1.0%	65-70	352.0	4.8%	125-130	155.7	2.1%
10-15	123.4	1.7%	70-75	349.4	4.8%	130-135	135.0	1.8%
15-20	168.5	2.3%	75-80	343.5	4.7%	135-140	115.3	1.6%
20-25	209.8	2.9%	80-85	334.7	4.6%	140-145	96.6	1.3%
25-30	246.6	3.4%	85-90	322.4	4.4%	145-150	79.0	1.1%
30-35	278.4	3.8%	90-95	306.1	4.2%	150-155	62.3	0.9%
35-40	304.8	4.2%	95-100	286.6	3.9%	155-160	47.1	0.6%
40-45	325.3	4.4%	100-105	264.8	3.6%	160-165	33.1	0.5%
45-50	339.9	4.6%	105-110	242.0	3.3%	165-170	21.5	0.3%
50-55	349.0	4.8%	110-115	219.9	3.0%	170-175	12.1	0.2%
55-60	353.0	4.8%	115-120	198.3	2.7%	175-180	4.0	0.1%

Zone	Lumens	% of Luminaire
0-40	1432	19.6%
0-60	2799	38.3%
0-90	4855	66.4%
90-180	2456	33.6%



Candela Tabulation

Horizontal Angle (Degrees)

	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5
0	1060	1060	1060	1060	1060	1060	1060	1060	1060	1060	1060	1060	1060	1060	1060	1060
5	1058	1060	1057	1054	1053	1054	1057	1060	1058	1060	1057	1054	1053	1054	1057	1060
10	1042	1046	1048	1051	1052	1051	1048	1046	1042	1046	1048	1051	1052	1051	1048	1046
15	1013	1020	1032	1045	1051	1045	1032	1020	1013	1020	1032	1045	1051	1045	1032	1020
20	972	984	1011	1041	1052	1041	1011	984	972	984	1011	1041	1052	1041	1011	984
25	921	940	986	1038	1059	1038	986	940	921	940	986	1038	1059	1038	986	940
30	858	885	957	1037	1070	1037	957	885	858	885	957	1037	1070	1037	957	885
35	785	822	925	1039	1086	1039	925	822	785	822	925	1039	1086	1039	925	822
40	704	754	891	1041	1101	1041	891	754	704	754	891	1041	1101	1041	891	754
45	617	680	856	1040	1113	1040	856	680	617	680	856	1040	1113	1040	856	680
50	529	604	819	1039	1126	1039	819	604	529	604	819	1039	1126	1039	819	604
55	438	527	782	1036	1138	1036	782	527	438	527	782	1036	1138	1036	782	527
60	350	451	747	1033	1147	1033	747	451	350	451	747	1033	1147	1033	747	451
65	264	384	717	1030	1152	1030	717	384	264	384	717	1030	1152	1030	717	384
70	188	333	696	1026	1155	1026	696	333	188	333	696	1026	1155	1026	696	333
75	131	293	675	1014	1146	1014	675	293	131	293	675	1014	1146	1014	675	293
80	91	264	651	993	1127	993	651	264	91	264	651	993	1127	993	651	264
85	67	239	624	964	1099	964	624	239	67	239	624	964	1099	964	624	239
90	58	219	592	927	1061	927	592	219	58	219	592	927	1061	927	592	219
95	59	200	557	882	1012	882	557	200	59	200	557	882	1012	882	557	200
100	62	184	519	831	957	831	519	184	62	184	519	831	957	831	519	184
105	67	173	479	779	898	779	479	173	67	173	479	779	898	779	479	173
110	76	168	443	725	837	725	443	168	76	168	443	725	837	725	443	168
115	93	171	411	669	771	669	411	171	93	171	411	669	771	669	411	171
120	113	177	383	611	704	611	383	177	113	177	383	611	704	611	383	177
125	133	184	358	554	635	554	358	184	133	184	358	554	635	554	358	184
130	155	190	335	498	568	498	335	190	155	190	335	498	568	498	335	190
135	174	194	314	444	501	444	314	194	174	194	314	444	501	444	314	194
140	191	196	294	395	440	395	294	196	191	196	294	395	440	395	294	196
145	203	196	275	351	384	351	275	196	203	196	275	351	384	351	275	196
150	203	192	255	312	335	312	255	192	203	192	255	312	335	312	255	192
155	193	188	233	276	293	276	233	188	193	188	233	276	293	276	233	188
160	177	182	210	242	255	242	210	182	177	182	210	242	255	242	210	182
165	159	173	183	209	221	209	183	173	159	173	183	209	221	209	183	173
170	156	169	168	184	189	184	168	169	156	169	168	184	189	184	168	169
175	161	174	164	160	174	160	164	174	161	174	164	160	174	160	164	174
180	161	161	161	161	161	161	161	161	161	161	161	161	161	161	161	161

Vertical Angle (Degrees)

Average Luminance (cd/m²)

Horizontal Angle (Degrees)

	0	45	90
0	6519	6519	6519
45	4325	4375	5534
55	3495	4192	5890
65	2534	4171	6427
75	1644	4434	7169
85	1266	4885	8101

Vertical Angle (Degrees)



Utilization of Lumens - Zonal Cavity Method

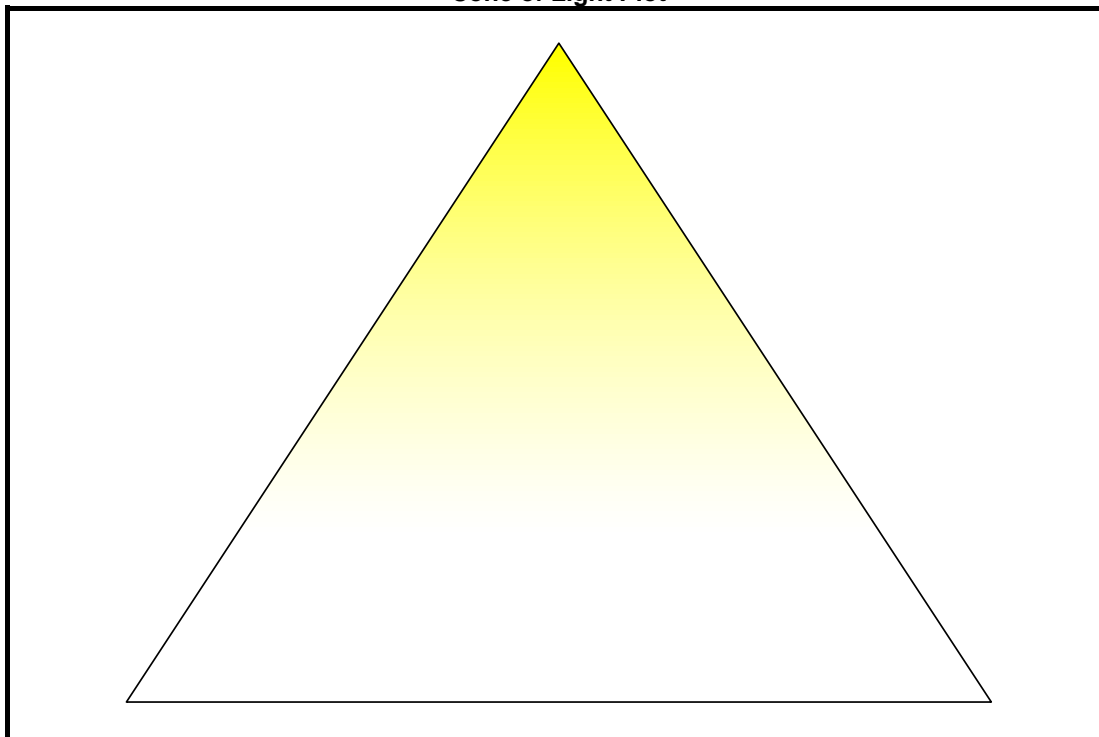
Effective Floor Cavity Reflectance 20%

Ceiling Cavity Reflectance	80				70				50			30			10			0
Wall Reflectance	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
Room Cavity Ratio (RCR)	** Values are expressed as Lumens delivered to the task surface **																	
0	8119	8119	8119	8119	7644	7644	7644	7644	6759	6759	6759	5948	5948	5948	5204	5204	5204	4855
1	7110	6653	6244	5876	6647	6243	5878	5548	5474	5187	4923	4768	4544	4337	4118	3946	3786	3456
2	6362	5654	5069	4576	5928	5301	4776	4331	4638	4219	3858	4026	3696	3406	3461	3204	2975	2673
3	5742	4885	4221	3692	5342	4580	3982	3500	4006	3524	3126	3475	3090	2765	2983	2678	2417	2143
4	5220	4276	3584	3056	4854	4012	3385	2901	3514	3002	2597	3051	2638	2303	2621	2290	2016	1767
5	4773	3782	3089	2578	4439	3552	2922	2451	3118	2598	2200	2714	2288	1955	2336	1992	1715	1489
6	4387	3376	2697	2210	4082	3175	2555	2104	2794	2278	1893	2438	2012	1686	2105	1756	1483	1277
7	4051	3037	2381	1920	3773	2860	2258	1830	2524	2018	1650	2209	1788	1473	1913	1565	1299	1111
8	3756	2752	2120	1686	3503	2595	2013	1608	2296	1804	1453	2016	1603	1301	1752	1408	1151	978
9	3497	2509	1903	1494	3265	2369	1809	1427	2103	1626	1293	1852	1449	1160	1615	1277	1029	871
10	3267	2299	1720	1335	3055	2175	1637	1276	1936	1476	1158	1710	1319	1043	1497	1166	928	782

Cone of Light Tabulation

Mounting Height	Footcandles at Nadir	Diameter (Feet)
4.00	66.2	5.43
6.00	29.4	8.15
8.00	16.6	10.9
10.0	10.6	13.6
12.0	7.36	16.3
14.0	5.41	19.0
16.0	4.14	21.7

Cone of Light Plot





ISOFootcandle Plot

Mounting Height - 10 Feet

