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Indoor Distribution Test Report

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

Prepared For
LF Illumination LLC
Justin Weaver
9200 Deering Avenue
Chatsworth, CA 91311

Catalog Number
MF31CNT20L9030WTDLDUWW
Order Number
10804087
Test Number
1096477

Test Date

2015-06-09

Prepared By

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Approved By

Eric Gaudreau, Engineering Project Handler

The results contained in this report pertain only to the tested sample.
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Luminaire Description: Aluminum housing, faceted white plastic reflector, no enclosure
Lamp: One white LED
Mounting: Recessed
Ballast/Driver: ERP ESS030W-0500-42

Luminaire



Luminaire Characteristics

Luminous Diameter: 3.00 in.

Summary of Results

Total Luminaire Output:	1193 Lumens
Luminaire Efficacy:	65.7 lm/w
Maximum Candela:	859 Candela

Electrical Data

Test Temperature:	24.8 °C
Voltage:	120.0 VAC
Current:	0.1535 A
Power:	18.17 W
Power Factor:	0.986
Frequency:	60 Hz
Current THD:	12.8 %

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
24.8 °C	120.0 VAC	0.1535 A	18.17 W	0.986	60 Hz	12.8 %

Summary of Results

Spacing Criteria

0-180: 1.15
90-270: 1.15

Total Lumen Output:

1193 Lumens

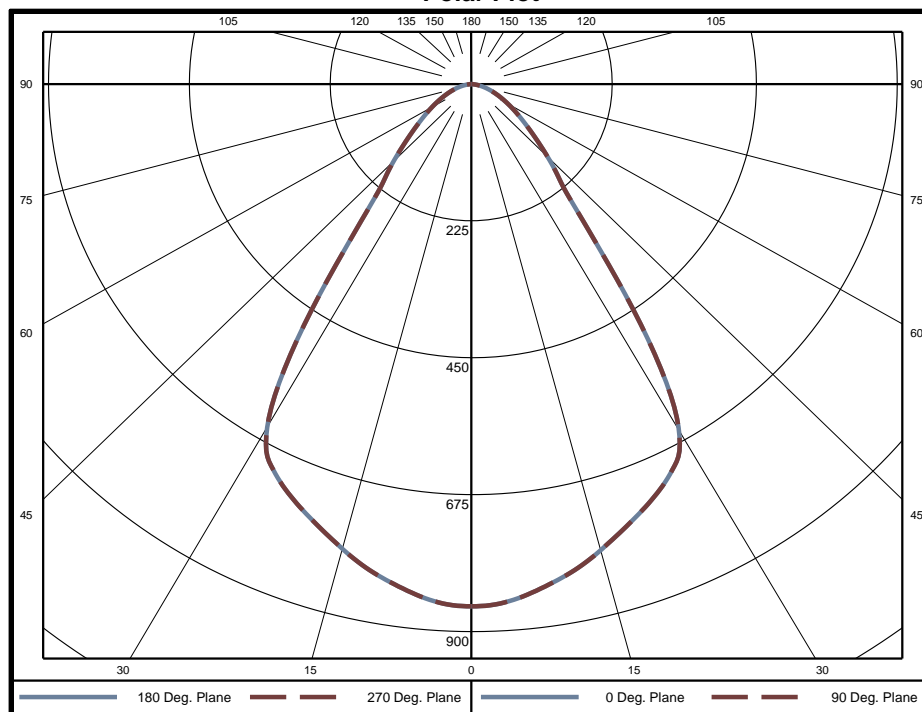
Luminaire Efficacy:

65.7 lm/w

Maximum Candela:

859 Candela

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	20.4	1.7%	60-65	28.6	2.4%	120-125	0	0.0%
5-10	59.7	5.0%	65-70	21.3	1.8%	125-130	0	0.0%
10-15	95.8	8.0%	70-75	14.9	1.2%	130-135	0	0.0%
15-20	127.5	10.7%	75-80	9.2	0.8%	135-140	0	0.0%
20-25	155.1	13.0%	80-85	4.1	0.3%	140-145	0	0.0%
25-30	175.7	14.7%	85-90	0.8	0.1%	145-150	0	0.0%
30-35	160.9	13.5%	90-95	0	0.0%	150-155	0	0.0%
35-40	103.2	8.7%	95-100	0	0.0%	155-160	0	0.0%
40-45	73.5	6.2%	100-105	0	0.0%	160-165	0	0.0%
45-50	58.8	4.9%	105-110	0	0.0%	165-170	0	0.0%
50-55	46.5	3.9%	110-115	0	0.0%	170-175	0	0.0%
55-60	36.9	3.1%	115-120	0	0.0%	175-180	0	0.0%

Zone	Lumens	% of Luminaire
0-40	898	75.3%
0-60	1114	93.4%
0-90	1193	100.0%
90-180	0	0.0%



Candela Tabulation
Horizontal Angle (Degrees)

Vertical Angle (Degrees)	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	858.5	858.5	858.5	858.5	858.5	858.5	858.5	858.5	858.5	858.5	858.5	858.5	858.5	858.5	858.5	858.5
	5	848.4	848.4	848.4	848.4	848.4	848.4	848.4	848.4	848.4	848.4	848.4	848.4	848.4	848.4	848.4	848.4
	10	823.6	823.6	823.6	823.6	823.6	823.6	823.6	823.6	823.6	823.6	823.6	823.6	823.6	823.6	823.6	823.6
	15	791.9	791.9	791.9	791.9	791.9	791.9	791.9	791.9	791.9	791.9	791.9	791.9	791.9	791.9	791.9	791.9
	20	757.1	757.1	757.1	757.1	757.1	757.1	757.1	757.1	757.1	757.1	757.1	757.1	757.1	757.1	757.1	757.1
	25	721.6	721.6	721.6	721.6	721.6	721.6	721.6	721.6	721.6	721.6	721.6	721.6	721.6	721.6	721.6	721.6
	30	651.8	651.8	651.8	651.8	651.8	651.8	651.8	651.8	651.8	651.8	651.8	651.8	651.8	651.8	651.8	651.8
	35	421.8	421.8	421.8	421.8	421.8	421.8	421.8	421.8	421.8	421.8	421.8	421.8	421.8	421.8	421.8	421.8
	40	232.0	232.0	232.0	232.0	232.0	232.0	232.0	232.0	232.0	232.0	232.0	232.0	232.0	232.0	232.0	232.0
	45	170.4	170.4	170.4	170.4	170.4	170.4	170.4	170.4	170.4	170.4	170.4	170.4	170.4	170.4	170.4	170.4
	50	124.0	124.0	124.0	124.0	124.0	124.0	124.0	124.0	124.0	124.0	124.0	124.0	124.0	124.0	124.0	124.0
	55	92.1	92.1	92.1	92.1	92.1	92.1	92.1	92.1	92.1	92.1	92.1	92.1	92.1	92.1	92.1	92.1
	60	68.6	68.6	68.6	68.6	68.6	68.6	68.6	68.6	68.6	68.6	68.6	68.6	68.6	68.6	68.6	68.6
	65	49.8	49.8	49.8	49.8	49.8	49.8	49.8	49.8	49.8	49.8	49.8	49.8	49.8	49.8	49.8	49.8
	70	34.8	34.8	34.8	34.8	34.8	34.8	34.8	34.8	34.8	34.8	34.8	34.8	34.8	34.8	34.8	34.8
75	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	
80	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3	
85	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	
90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
95	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
105	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
110	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
115	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
120	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
125	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
130	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
135	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
140	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
145	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
150	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
155	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
165	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
170	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
175	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
180	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	

Average Luminance (cd/m²)
Horizontal Angle (Degrees)

Vertical Angle (Degrees)	Horizontal Angle (Degrees)			
	0	45	90	
	0	188200	188200	188200
	45	52840	52840	52840
	55	35210	35210	35210
	65	25840	25840	25840
75	19050	19050	19050	
85	9194	9194	9194	



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	1420	1420	1420	1420	1387	1387	1387	1387	1326	1326	1326	1269	1269	1269	1217	1217	1217	1193
1	1335	1294	1257	1224	1304	1268	1234	1204	1218	1191	1167	1173	1152	1132	1132	1115	1099	1076
2	1249	1177	1117	1066	1221	1155	1100	1054	1115	1070	1030	1079	1041	1008	1045	1014	986	964
3	1168	1074	1000	942	1142	1056	989	934	1023	966	919	993	944	904	965	924	889	868
4	1094	984	903	842	1070	969	894	836	942	877	826	917	861	816	893	845	806	785
5	1026	906	821	759	1004	893	815	756	871	801	748	849	789	741	829	777	734	714
6	964	837	751	690	944	826	746	687	807	736	682	789	726	677	772	716	672	652
7	907	776	691	631	889	767	686	629	750	678	625	735	670	622	720	662	618	599
8	855	722	638	580	838	714	635	579	700	628	576	687	621	573	674	615	571	552
9	807	674	592	536	793	667	589	535	655	583	533	643	578	531	632	573	529	511
10	764	631	551	498	751	625	548	497	614	544	495	604	539	494	595	535	492	474

Cone of Light Tabulation

Mounting Height	Footcandles at Nadir	Diameter (Feet)
4.00	53.7	4.58
6.00	23.8	6.87
8.00	13.4	9.16
10.0	8.58	11.5
12.0	5.96	13.7
14.0	4.38	16.0
16.0	3.35	18.3

Cone of Light Plot

