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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  
**MF31DNT22L9030WTDLDUWW**

Order Number  
10804087  
Test Number  
1096483

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 specular plastic reflector, no enclosure  
**Lamp:** One white LED  
**Mounting:** Recessed  
**Ballast/Driver:** ERP ESS030W-0700-42

**Luminaire**



**Luminaire Characteristics**

Luminous Diameter: 4.00 in.

**Summary of Results**

Total Luminaire Output:	1776 Lumens
Luminaire Efficacy:	73.1 lm/w
Maximum Candela:	3493 Candela

**Electrical Data**

Test Temperature:	24.6 °C
Voltage:	120.0 VAC
Current:	0.2055 A
Power:	24.29 W
Power Factor:	0.985
Frequency:	60 Hz
Current THD:	11.3 %

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
24.6 °C	120.0 VAC	0.2055 A	24.29 W	0.985	60 Hz	11.3 %

### Summary of Results

#### Spacing Criteria

0-180: 0.79  
90-270: 0.79

#### Total Lumen Output:

1776 Lumens

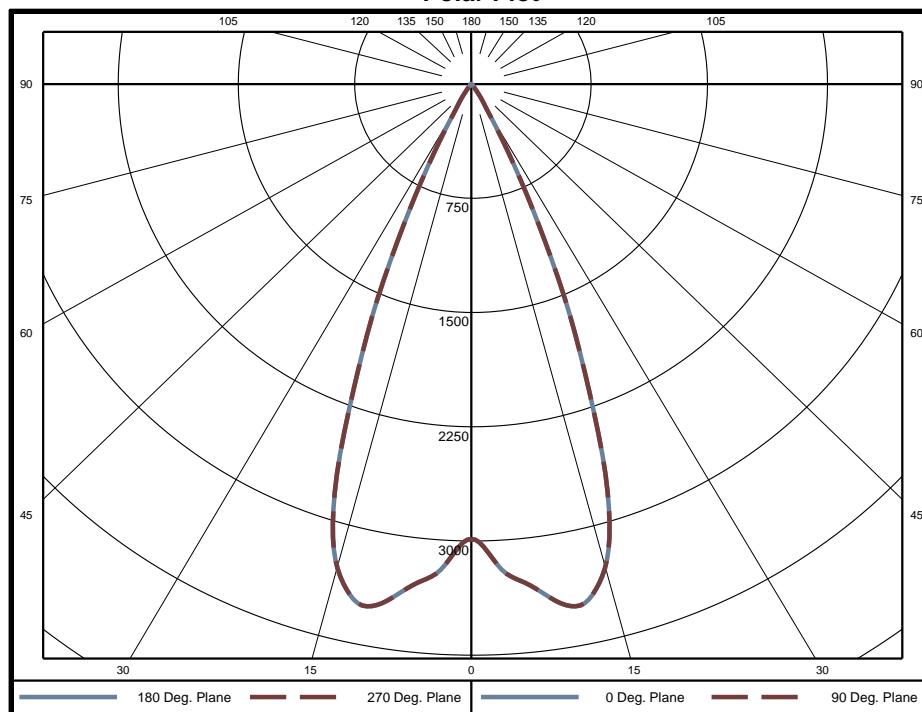
#### Luminaire Efficacy:

73.1 lm/w

#### Maximum Candela:

3493 Candela

### Polar Plot



### Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	75.8	4.3%	60-65	3.8	0.2%	120-125	0	0.0%
5-10	241.4	13.6%	65-70	3.9	0.2%	125-130	0	0.0%
10-15	407.3	22.9%	70-75	3.9	0.2%	130-135	0	0.0%
15-20	471.1	26.5%	75-80	3.7	0.2%	135-140	0	0.0%
20-25	340.8	19.2%	80-85	2.4	0.1%	140-145	0	0.0%
25-30	143.7	8.1%	85-90	0.7	0.0%	145-150	0	0.0%
30-35	43.5	2.4%	90-95	0	0.0%	150-155	0	0.0%
35-40	16.7	0.9%	95-100	0	0.0%	155-160	0	0.0%
40-45	5.9	0.3%	100-105	0	0.0%	160-165	0	0.0%
45-50	3.6	0.2%	105-110	0	0.0%	165-170	0	0.0%
50-55	3.7	0.2%	110-115	0	0.0%	170-175	0	0.0%
55-60	3.7	0.2%	115-120	0	0.0%	175-180	0	0.0%

Zone	Lumens	% of Luminaire
0-40	1740	98.0%
0-60	1757	98.9%
0-90	1776	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	2986	2986	2986	2986	2986	2986	2986	2986	2986	2986	2986	2986	2986	2986	2986	2986
5	3260	3260	3260	3260	3260	3260	3260	3260	3260	3260	3260	3260	3260	3260	3260	3260
10	3473	3473	3473	3473	3473	3473	3473	3473	3473	3473	3473	3473	3473	3473	3473	3473
15	3294	3294	3294	3294	3294	3294	3294	3294	3294	3294	3294	3294	3294	3294	3294	3294
20	2286	2286	2286	2286	2286	2286	2286	2286	2286	2286	2286	2286	2286	2286	2286	2286
25	1022	1022	1022	1022	1022	1022	1022	1022	1022	1022	1022	1022	1022	1022	1022	1022
30	249	249	249	249	249	249	249	249	249	249	249	249	249	249	249	249
35	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88
40	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29
45	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
50	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
55	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
60	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
65	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
70	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
75	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
80	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
85	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
90	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
100	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
110	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
120	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
130	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
140	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
150	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
160	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
170	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
180	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

**Average Luminance (cd/m<sup>2</sup>)**

Horizontal Angle (Degrees)

Vertical Angle (Degrees)	Horizontal Angle (Degrees)		
	0	45	90
0	368400	368400	368400
45	1608	1608	1608
55	1802	1802	1802
65	2266	2266	2266
75	3596	3596	3596
85	3508	3508	3508



### 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	2114	2114	2114	2114	2065	2065	2065	2065	1973	1973	1973	1889	1889	1889	1812	1812	1812	1776
1	2030	1988	1949	1915	1988	1950	1915	1884	1878	1851	1827	1813	1792	1772	1753	1737	1722	1691
2	1951	1878	1818	1767	1914	1849	1794	1747	1793	1748	1710	1741	1705	1674	1693	1665	1639	1612
3	1877	1782	1709	1651	1844	1759	1692	1638	1714	1658	1612	1672	1626	1588	1634	1596	1564	1539
4	1807	1697	1617	1555	1777	1678	1604	1546	1642	1579	1529	1608	1555	1511	1577	1532	1495	1471
5	1740	1620	1536	1474	1714	1604	1526	1467	1574	1507	1455	1547	1488	1442	1521	1471	1430	1408
6	1677	1549	1463	1402	1654	1536	1456	1397	1512	1441	1388	1489	1427	1379	1467	1413	1371	1350
7	1617	1484	1398	1338	1596	1473	1392	1335	1453	1381	1328	1433	1369	1321	1415	1358	1315	1295
8	1560	1424	1339	1280	1542	1415	1334	1278	1398	1325	1273	1381	1316	1268	1366	1307	1263	1243
9	1507	1369	1284	1227	1490	1361	1280	1225	1346	1273	1222	1332	1265	1218	1318	1258	1214	1195
10	1456	1317	1234	1178	1440	1310	1230	1177	1297	1224	1174	1285	1218	1171	1273	1212	1168	1150

### Cone of Light Tabulation

Mounting Height	Footcandles at Nadir	Diameter (Feet)
4.00	187	3.17
6.00	83.0	4.76
8.00	46.7	6.35
10.0	29.9	7.93
12.0	20.7	9.52
14.0	15.2	11.1
16.0	11.7	12.7

### Cone of Light Plot

