



UL Verification Services Inc.  
7036 Snowdrift Road  
Allentown, PA 18106  
610-774-1300



## 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  
**MF31CNT20L9030MTDLDUWW**  
Order Number  
10804087  
Test Number  
1096476

Test Date

2015-06-09

Prepared By

Derek Smarr, Technician

Approved By

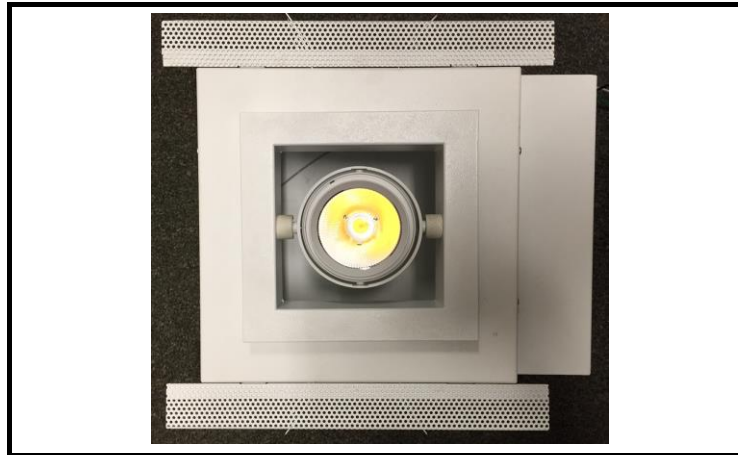
Eric Gaudreau, Engineering Project Handler

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**Luminaire Description:** Aluminum housing, faceted specular 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:	1222 Lumens
Luminaire Efficacy:	67.3 lm/w
Maximum Candela:	2714 Candela

**Electrical Data**

Test Temperature:	25.2 °C
Voltage:	120.0 VAC
Current:	0.1533 A
Power:	18.15 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
25.2 °C	120.0 VAC	0.1533 A	18.15 W	0.986	60 Hz	12.8 %

### Summary of Results

#### Spacing Criteria

0-180: 0.61

90-270: 0.61

#### Total Lumen Output:

1222 Lumens

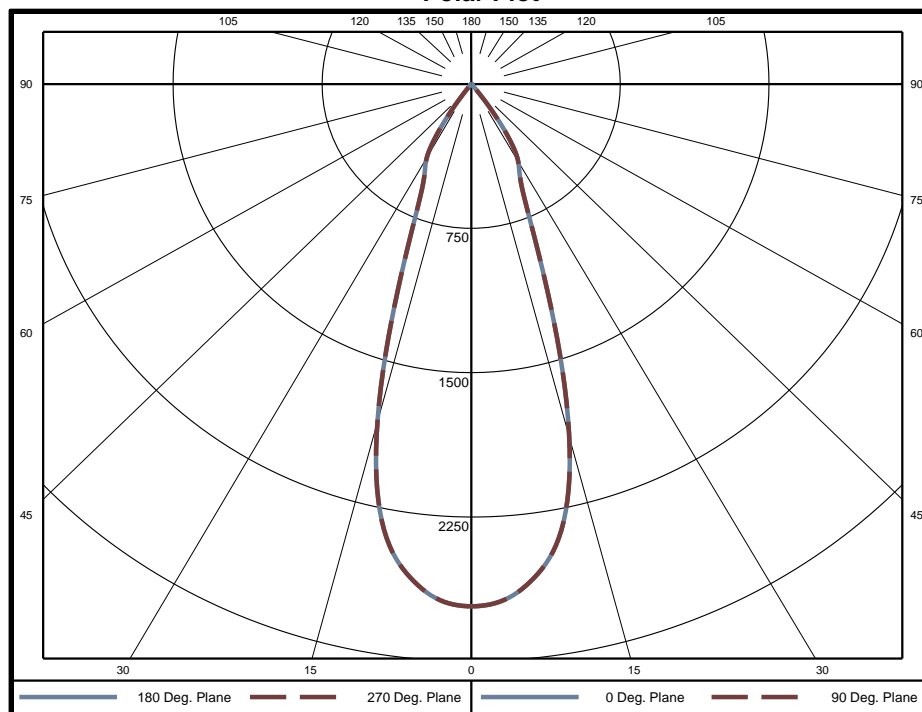
#### Luminaire Efficacy:

67.3 lm/w

#### Maximum Candela:

2714 Candela

### Polar Plot



### Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	64.2	5.3%	60-65	2.5	0.2%	120-125	0	0.0%
5-10	182.2	14.9%	65-70	2.1	0.2%	125-130	0	0.0%
10-15	258.7	21.2%	70-75	1.8	0.1%	130-135	0	0.0%
15-20	239.0	19.6%	75-80	1.7	0.1%	135-140	0	0.0%
20-25	163.6	13.4%	80-85	1.2	0.1%	140-145	0	0.0%
25-30	132.6	10.9%	85-90	0.2	0.0%	145-150	0	0.0%
30-35	113.1	9.3%	90-95	0	0.0%	150-155	0	0.0%
35-40	45.1	3.7%	95-100	0	0.0%	155-160	0	0.0%
40-45	5.1	0.4%	100-105	0	0.0%	160-165	0	0.0%
45-50	3.2	0.3%	105-110	0	0.0%	165-170	0	0.0%
50-55	2.9	0.2%	110-115	0	0.0%	170-175	0	0.0%
55-60	2.9	0.2%	115-120	0	0.0%	175-180	0	0.0%

Zone	Lumens	% of Luminaire
0-40	1199	98.1%
0-60	1213	99.2%
0-90	1222	100.0%
90-180	0	0.0%



**Candela Tabulation**  
Horizontal Angle (Degrees)

Vertical 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	2714	2714	2714	2714	2714	2714	2714	2714	2714	2714	2714	2714	2714	2714	2714	2714
	5	2652	2652	2652	2652	2652	2652	2652	2652	2652	2652	2652	2652	2652	2652	2652	2652
	10	2434	2434	2434	2434	2434	2434	2434	2434	2434	2434	2434	2434	2434	2434	2434	2434
	15	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
	20	1059	1059	1059	1059	1059	1059	1059	1059	1059	1059	1059	1059	1059	1059	1059	1059
	25	602	602	602	602	602	602	602	602	602	602	602	602	602	602	602	602
	30	470	470	470	470	470	470	470	470	470	470	470	470	470	470	470	470
	35	271	271	271	271	271	271	271	271	271	271	271	271	271	271	271	271
	40	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34
	45	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
	50	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
	55	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
	60	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
	65	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	70	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
	75	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
80	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
85	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
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)	0	45	90	
	0	595200	595200	595200
	45	2799	2799	2799
	55	2471	2471	2471
	65	2370	2370	2370
	75	2833	2833	2833
	85	1831	1831	1831



### 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	1455	1455	1455	1455	1421	1421	1421	1421	1358	1358	1358	1300	1300	1300	1247	1247	1247	1222
1	1396	1366	1339	1315	1366	1340	1316	1294	1291	1272	1254	1246	1231	1217	1204	1193	1182	1161
2	1339	1287	1244	1208	1313	1267	1228	1195	1228	1196	1169	1192	1167	1144	1159	1139	1121	1102
3	1285	1217	1165	1124	1262	1201	1153	1115	1170	1130	1097	1141	1108	1080	1115	1087	1064	1047
4	1233	1155	1098	1054	1213	1142	1089	1047	1116	1071	1035	1093	1055	1024	1071	1039	1012	996
5	1185	1099	1038	994	1167	1088	1031	989	1067	1018	981	1048	1006	973	1030	994	964	949
6	1139	1047	986	942	1123	1038	980	938	1021	970	932	1005	960	926	990	951	920	905
7	1096	1000	939	895	1081	993	934	893	978	926	888	965	918	884	952	911	880	865
8	1055	957	896	854	1042	951	893	852	939	886	849	927	880	845	916	874	842	828
9	1017	918	857	816	1005	912	854	815	902	849	812	892	844	810	882	839	807	793
10	981	881	821	782	970	876	819	781	867	815	779	859	811	777	850	807	775	762

### Cone of Light Tabulation

Mounting Height	Footcandles at Nadir	Diameter (Feet)
4.00	170	2.45
6.00	75.4	3.67
8.00	42.4	4.90
10.0	27.1	6.12
12.0	18.8	7.35
14.0	13.8	8.57
16.0	10.6	9.79

### Cone of Light Plot

