



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
MF31BNT23L8030MTDLDUWW

Order Number
10804087
Test Number
1096473

Test Date

2015-06-11

Prepared By

Derek Smarr, Technician

Approved By

Eric Gaudreau, Engineering Project Handler

The results contained in this report pertain only to the tested sample.
This report shall not be reproduced, except in full, without written approval of Underwriters Laboratories.
This report must not be used by the client to claim product certification, approval, or endorsement by
NVLAP, NIST, or any agency of the Federal Government.



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: 2.00 in.

Summary of Results

Total Luminaire Output:	1597 Lumens
Luminaire Efficacy:	66.7 lm/w
Maximum Candela:	4737 Candela

Electrical Data

Test Temperature:	24.8 °C
Voltage:	120.0 VAC
Current:	0.2023 A
Power:	23.93 W
Power Factor:	0.986
Frequency:	60 Hz
Current THD:	12.2 %

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	0.2023 A	23.93 W	0.986	60 Hz	12.2 %

Summary of Results

Spacing Criteria

0-180: 0.46
90-270: 0.46

Total Lumen Output:

1597 Lumens

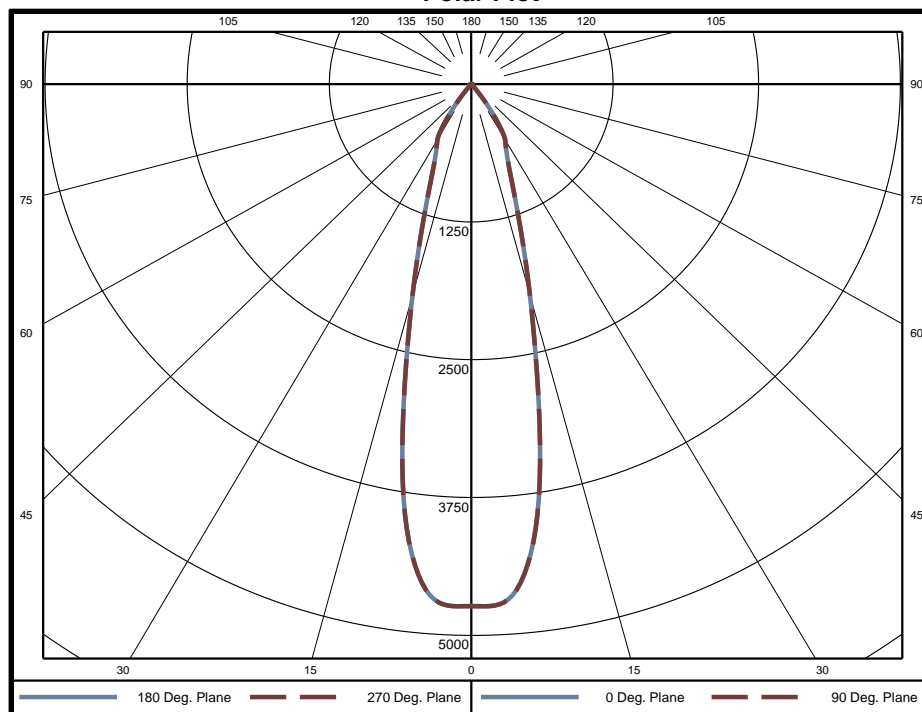
Luminaire Efficacy:

66.7 lm/w

Maximum Candela:

4737 Candela

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	112.3	7.0%	60-65	7.4	0.5%	120-125	0	0.0%
5-10	292.2	18.3%	65-70	7.4	0.5%	125-130	0	0.0%
10-15	314.4	19.7%	70-75	6.6	0.4%	130-135	0	0.0%
15-20	249.6	15.6%	75-80	5.5	0.3%	135-140	0	0.0%
20-25	193.1	12.1%	80-85	3.4	0.2%	140-145	0	0.0%
25-30	168.9	10.6%	85-90	1.0	0.1%	145-150	0	0.0%
30-35	144.3	9.0%	90-95	0	0.0%	150-155	0	0.0%
35-40	62.1	3.9%	95-100	0	0.0%	155-160	0	0.0%
40-45	8.5	0.5%	100-105	0	0.0%	160-165	0	0.0%
45-50	6.6	0.4%	105-110	0	0.0%	165-170	0	0.0%
50-55	6.6	0.4%	110-115	0	0.0%	170-175	0	0.0%
55-60	6.8	0.4%	115-120	0	0.0%	175-180	0	0.0%

Zone	Lumens	% of Luminaire
0-40	1537	96.2%
0-60	1565	98.0%
0-90	1597	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	4734	4734	4734	4734	4734	4734	4734	4734	4734	4734	4734	4734	4734	4734	4734	4734
5	4601	4601	4601	4601	4601	4601	4601	4601	4601	4601	4601	4601	4601	4601	4601	4601
10	3492	3492	3492	3492	3492	3492	3492	3492	3492	3492	3492	3492	3492	3492	3492	3492
15	2006	2006	2006	2006	2006	2006	2006	2006	2006	2006	2006	2006	2006	2006	2006	2006
20	1154	1154	1154	1154	1154	1154	1154	1154	1154	1154	1154	1154	1154	1154	1154	1154
25	760	760	760	760	760	760	760	760	760	760	760	760	760	760	760	760
30	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600
35	344	344	344	344	344	344	344	344	344	344	344	344	344	344	344	344
40	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54
45	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17
50	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
55	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
60	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
65	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
70	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14
75	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
80	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
85	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
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/m²)
Horizontal Angle (Degrees)

Vertical Angle (Degrees)	Horizontal Angle (Degrees)		
	0	45	90
0	2336000	2336000	2336000
45	11950	11950	11950
55	12790	12790	12790
65	17820	17820	17820
75	21950	21950	21950
85	21210	21210	21210



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	1901	1901	1901	1901	1857	1857	1857	1857	1774	1774	1774	1699	1699	1699	1629	1629	1629	1597
1	1822	1782	1746	1713	1783	1747	1715	1686	1683	1658	1634	1624	1604	1586	1570	1554	1540	1512
2	1746	1678	1620	1572	1712	1651	1599	1555	1600	1558	1521	1553	1519	1489	1510	1483	1458	1433
3	1676	1587	1518	1463	1645	1565	1502	1451	1524	1472	1428	1487	1443	1406	1452	1416	1385	1362
4	1609	1506	1431	1373	1583	1489	1419	1365	1456	1396	1349	1425	1375	1334	1397	1354	1319	1297
5	1547	1434	1355	1297	1524	1420	1347	1291	1393	1329	1280	1368	1313	1270	1344	1297	1259	1238
6	1489	1370	1289	1232	1468	1358	1282	1228	1335	1269	1220	1314	1256	1212	1295	1244	1204	1184
7	1435	1311	1231	1174	1416	1301	1225	1171	1282	1215	1165	1264	1204	1160	1248	1194	1154	1135
8	1384	1257	1178	1123	1366	1249	1173	1121	1233	1165	1116	1218	1157	1112	1204	1149	1108	1089
9	1336	1208	1130	1077	1320	1201	1126	1075	1187	1119	1072	1174	1113	1068	1162	1106	1065	1047
10	1291	1163	1086	1035	1277	1157	1083	1034	1145	1077	1031	1134	1072	1028	1123	1067	1026	1009

Cone of Light Tabulation

Mounting Height	Footcandles at Nadir	Diameter (Feet)
4.00	296	1.83
6.00	131	2.74
8.00	74.0	3.66
10.0	47.3	4.57
12.0	32.9	5.49
14.0	24.2	6.40
16.0	18.5	7.32

Cone of Light Plot

