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Photometric Test Report

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

Prepared For
LF Illumination LLC

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Chatsworth, CA 91311

Catalog Number
MF31CNT20L9030NTDLDUWW

Order Number
10804087
Test Number
1096475

Test Date

2015-06-08 - 2015-06-09

Prepared By

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Approved By

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The results contained in this report pertain only to the tested sample.
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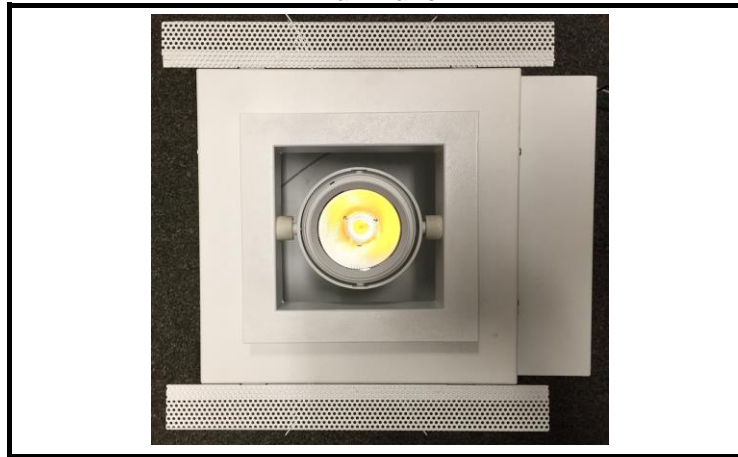
Laboratory results may not be representative of field performance
Ballast factors have not been applied

Testing was performed in a 2-meter integrating sphere using the 4π geometry method.
Absorption correction was employed for Sphere measurement



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

Integrating Sphere

Luminous Flux: 1229 Lumens
Efficacy: 67.8 lm/w
CCT: 3017 K
CRI (Ra): 92.0

Distribution

Total Luminaire Output: 1227 Lumens
Luminaire Efficacy: 67.5 lm/w
Maximum Candela: 9502 Candela

Electrical Data at 120 VAC

Test Temperature: 25.4 °C
Voltage: 120.0 VAC
Current: 0.1532 A
Power: 18.13 W
Power Factor: 0.986
Frequency: 60 Hz
Current THD: 12.8 %



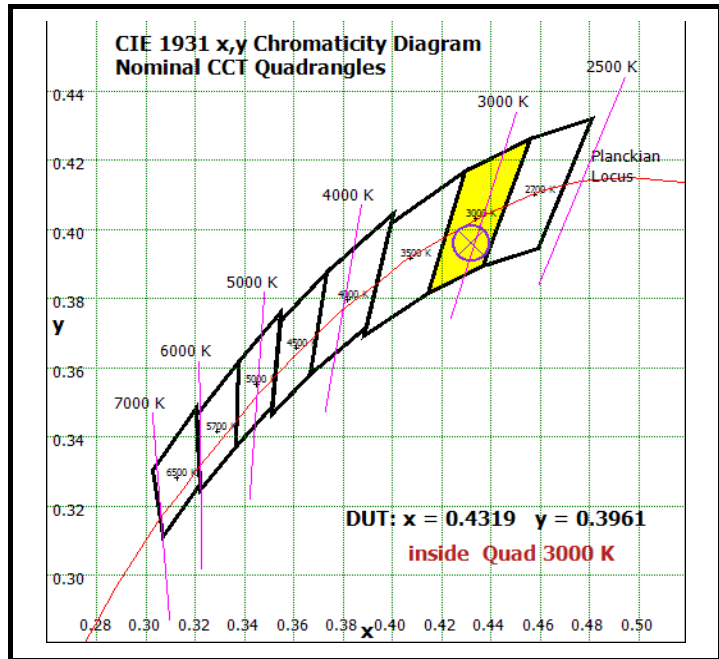
Color Quality - Integrating Sphere

Integrating Sphere Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.4 °C	120.0 VAC	0.1532 A	18.13 W	0.986	60 Hz	12.8 %

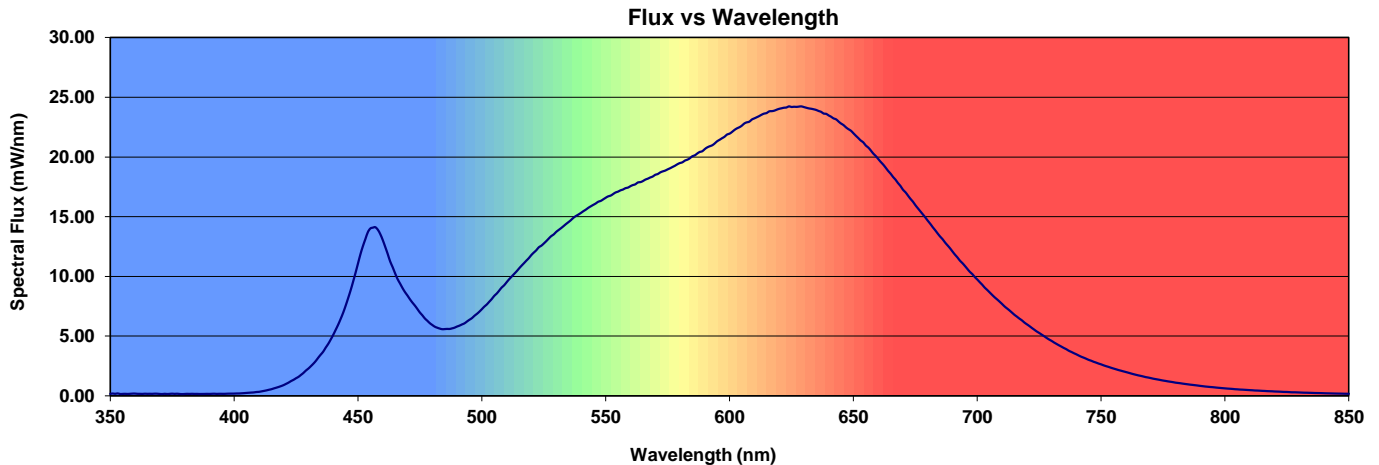
Summary of Results

Total Output:	1229 Lumens
Efficacy:	67.8 lm/w
CCT:	3017 K
CRI (Ra):	92.0
CRI (R9):	67.1
Chromaticity (x):	0.4319
Chromaticity (y):	0.3961
Chromaticity (u):	0.2508
Chromaticity (v):	0.3450
Chromaticity (u')	0.2508
Chromaticity (v')	0.5174
Duv:	-0.0026



Color Rendering Index Detail

Ra (CRI)	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14
92.0	92.7	95.5	94.9	90.6	91.1	92.4	93.3	85.4	67.1	86.6	88.7	75.9	93.4	96.2





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: 0.25
90-270: 0.25

Total Lumen Output:

1227 Lumens

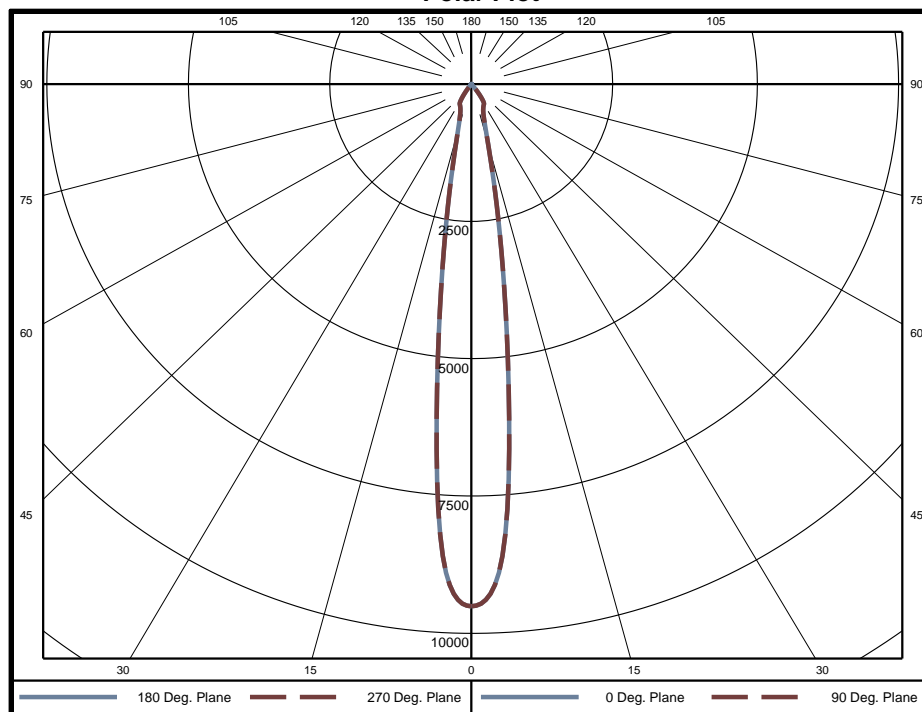
Luminaire Efficacy:

67.5 lm/w

Maximum Candela:

9502 Candela

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	204.0	16.6%	60-65	0.4	0.0%	120-125	0	0.0%
5-10	321.4	26.2%	65-70	0.1	0.0%	125-130	0	0.0%
10-15	199.5	16.3%	70-75	0.0	0.0%	130-135	0	0.0%
15-20	125.8	10.3%	75-80	0	0.0%	135-140	0	0.0%
20-25	109.9	9.0%	80-85	0	0.0%	140-145	0	0.0%
25-30	112.3	9.2%	85-90	0	0.0%	145-150	0	0.0%
30-35	107.1	8.7%	90-95	0	0.0%	150-155	0	0.0%
35-40	44.2	3.6%	95-100	0	0.0%	155-160	0	0.0%
40-45	2.0	0.2%	100-105	0	0.0%	160-165	0	0.0%
45-50	0.5	0.0%	105-110	0	0.0%	165-170	0	0.0%
50-55	0.2	0.0%	110-115	0	0.0%	170-175	0	0.0%
55-60	0.2	0.0%	115-120	0	0.0%	175-180	0	0.0%

Zone	Lumens	% of Luminaire
0-40	1224	99.8%
0-60	1227	100.0%
0-90	1228	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	9502	9502	9502	9502	9502	9502	9502	9502	9502	9502	9502	9502	9502	9502	9502	9502
	5	7230	7230	7230	7230	7230	7230	7230	7230	7230	7230	7230	7230	7230	7230	7230	7230
	10	2767	2767	2767	2767	2767	2767	2767	2767	2767	2767	2767	2767	2767	2767	2767	2767
	15	1047	1047	1047	1047	1047	1047	1047	1047	1047	1047	1047	1047	1047	1047	1047	1047
	20	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600
	25	474	474	474	474	474	474	474	474	474	474	474	474	474	474	474	474
	30	421	421	421	421	421	421	421	421	421	421	421	421	421	421	421	421
	35	267	267	267	267	267	267	267	267	267	267	267	267	267	267	267	267
	40	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24
	45	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
	50	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	60	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	65	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	70	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
85	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
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)	0	45	90	
	0	2084000	2084000	2084000
	45	682	682	682
	55	130	130	130
	65	122	122	122
	75	14	14	14
	85	0	0	0



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	1461	1461	1461	1461	1427	1427	1427	1427	1364	1364	1364	1306	1306	1306	1253	1253	1253	1227
1	1411	1385	1361	1340	1382	1359	1338	1319	1310	1294	1278	1265	1252	1241	1224	1214	1205	1184
2	1363	1318	1281	1249	1338	1298	1264	1236	1260	1233	1209	1224	1203	1184	1192	1175	1160	1142
3	1318	1260	1215	1179	1296	1244	1203	1170	1213	1179	1151	1185	1158	1134	1159	1137	1117	1101
4	1276	1208	1159	1121	1257	1195	1150	1115	1171	1133	1102	1148	1116	1090	1127	1100	1078	1063
5	1236	1162	1111	1073	1219	1152	1104	1068	1132	1091	1059	1114	1078	1050	1096	1066	1042	1028
6	1199	1121	1068	1031	1184	1112	1063	1027	1096	1053	1021	1081	1043	1015	1066	1034	1008	995
7	1164	1083	1031	994	1151	1076	1027	992	1063	1019	987	1050	1011	982	1038	1004	978	965
8	1132	1049	997	962	1120	1043	994	960	1032	988	956	1021	981	953	1011	976	949	937
9	1101	1018	967	932	1091	1013	964	931	1003	959	928	994	954	926	985	949	923	911
10	1073	989	939	906	1063	985	937	905	977	933	903	969	929	901	961	925	899	887

Cone of Light Tabulation

Mounting Height	Footcandles at Nadir	Diameter (Feet)
4.00	594	1.01
6.00	264	1.52
8.00	148	2.02
10.0	95.0	2.53
12.0	66.0	3.04
14.0	48.5	3.54
16.0	37.1	4.05

Cone of Light Plot

