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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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Catalog Number
MF31DNT45L8030NTDLDUWW

Order Number
10804087
Test Number
1096484

Test Date

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, specular plastic reflector, no enclosure
Lamp: One white LED
Mounting: Recessed
Ballast/Driver: GE Lightech GELD60DMV1400PU

Luminaire



Luminaire Characteristics
Luminous Diameter: 4.00 in.

Summary of Results

Integrating Sphere

Luminous Flux: 3329 Lumens
Efficacy: 73.8 lm/w
CCT: 3090 K
CRI (Ra): 82.1

Distribution

Total Luminaire Output: 3330 Lumens
Luminaire Efficacy: 74.2 lm/w
Maximum Candela: 30546 Candela

Electrical Data at 120 VAC

Test Temperature: 25.7 °C
Voltage: 120.0 VAC
Current: 0.3790 A
Power: 45.11 W
Power Factor: 0.994
Frequency: 60 Hz
Current THD: 8.09 %



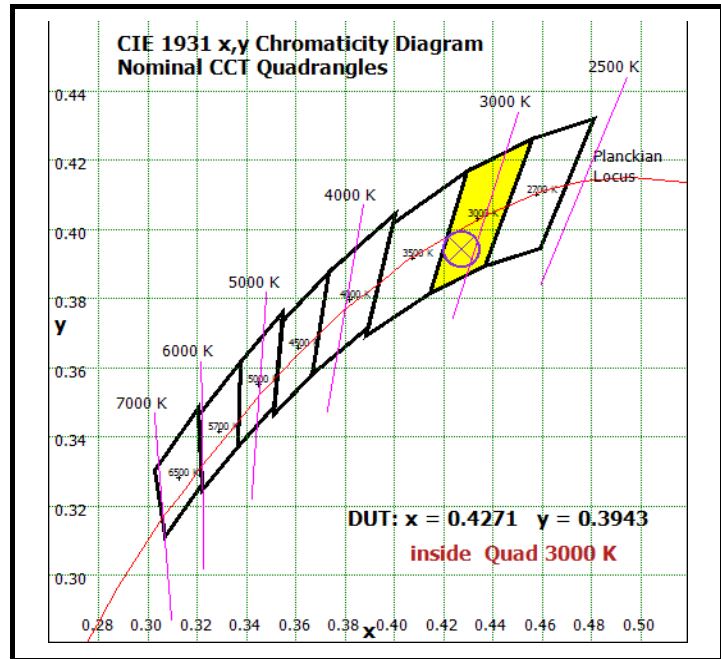
Color Quality - Integrating Sphere

Integrating Sphere Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.7 °C	120.0 VAC	0.3790 A	45.11 W	0.994	60 Hz	8.09 %

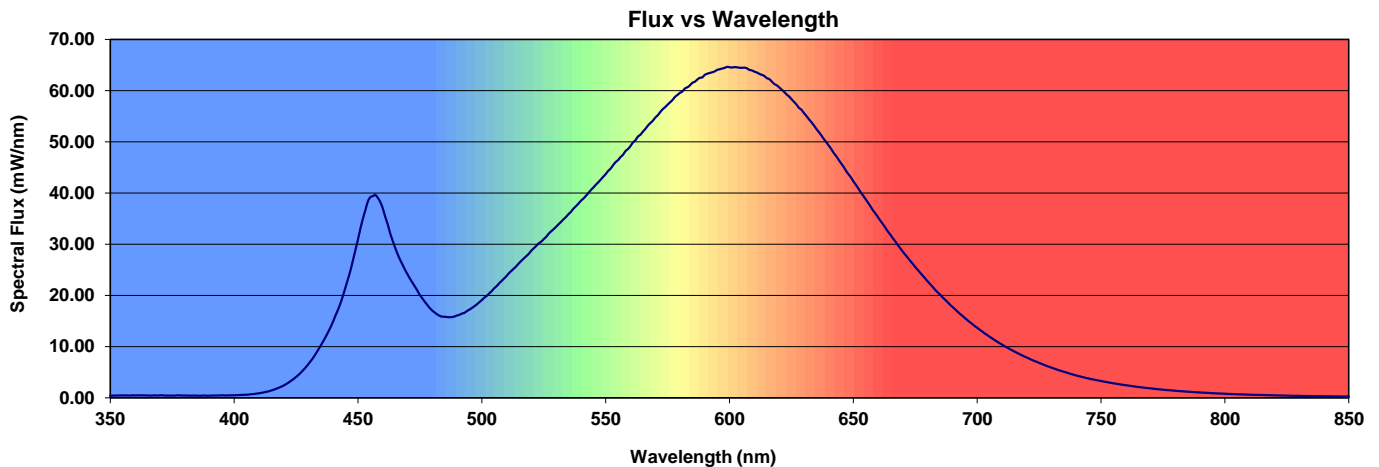
Summary of Results

Total Output:	3329 Lumens
Efficacy:	73.8 lm/w
CCT:	3090 K
CRI (Ra):	82.1
CRI (R9):	14.7
Chromaticity (x):	0.4271
Chromaticity (y):	0.3943
Chromaticity (u):	0.2484
Chromaticity (v):	0.3440
Chromaticity (u'):	0.2484
Chromaticity (v'):	0.5160
Duv:	-0.0031



Color Rendering Index Detail

Ra (CRI)	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14
82.1	80.5	91.3	95.7	77.2	80.0	87.5	83.1	61.7	14.7	78.5	73.4	68.6	83.1	98.3





Distribution - Goniophotometer

Distribution Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.2 °C	120.0 VAC	0.3764 A	44.90 W	0.994	60 Hz	7.79 %

Summary of Results

Spacing Criteria

0-180: 0.22
90-270: 0.22

Total Lumen Output:

3330 Lumens

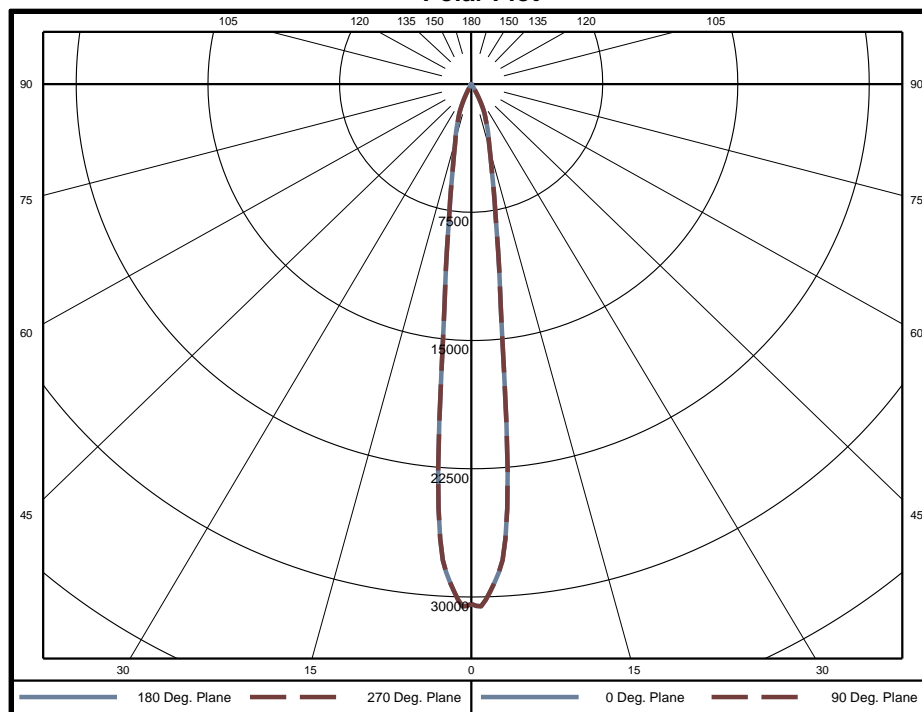
Luminaire Efficacy:

74.2 lm/w

Maximum Candela:

30546 Candela

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	656.4	19.7%	60-65	7.6	0.2%	120-125	0	0.0%
5-10	872.1	26.2%	65-70	9.0	0.3%	125-130	0	0.0%
10-15	617.9	18.6%	70-75	9.0	0.3%	130-135	0	0.0%
15-20	500.6	15.0%	75-80	6.0	0.2%	135-140	0	0.0%
20-25	388.4	11.7%	80-85	4.3	0.1%	140-145	0	0.0%
25-30	182.1	5.5%	85-90	0.9	0.0%	145-150	0	0.0%
30-35	31.6	0.9%	90-95	0	0.0%	150-155	0	0.0%
35-40	9.5	0.3%	95-100	0	0.0%	155-160	0	0.0%
40-45	8.3	0.2%	100-105	0	0.0%	160-165	0	0.0%
45-50	10.2	0.3%	105-110	0	0.0%	165-170	0	0.0%
50-55	8.2	0.2%	110-115	0	0.0%	170-175	0	0.0%
55-60	7.4	0.2%	115-120	0	0.0%	175-180	0	0.0%

Zone	Lumens	% of Luminaire
0-40	3259	97.9%
0-60	3293	98.9%
0-90	3330	100.0%
90-180	0	0.0%



Candela Tabulation

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	30400	30400	30400	30400	30400	30400	30400	30400	30400	30400	30400	30400	30400	30400	30400	30400
5	22700	22700	22700	22700	22700	22700	22700	22700	22700	22700	22700	22700	22700	22700	22700	22700
10	7477	7477	7477	7477	7477	7477	7477	7477	7477	7477	7477	7477	7477	7477	7477	7477
15	3815	3815	3815	3815	3815	3815	3815	3815	3815	3815	3815	3815	3815	3815	3815	3815
20	2385	2385	2385	2385	2385	2385	2385	2385	2385	2385	2385	2385	2385	2385	2385	2385
25	1313	1313	1313	1313	1313	1313	1313	1313	1313	1313	1313	1313	1313	1313	1313	1313
30	244	244	244	244	244	244	244	244	244	244	244	244	244	244	244	244
35	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46
40	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22
45	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26
50	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21
55	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17
60	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
65	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
70	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19
75	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14
80	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
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)

	0	45	90
0	3750000	3750000	3750000
45	4576	4576	4576
55	3680	3680	3680
65	4787	4787	4787
75	6538	6538	6538
85	5868	5868	5868



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	3964	3964	3964	3964	3872	3872	3872	3872	3700	3700	3700	3542	3542	3542	3398	3398	3398	3330
1	3832	3762	3699	3643	3753	3691	3636	3585	3559	3516	3476	3437	3404	3373	3325	3300	3277	3221
2	3711	3594	3496	3414	3643	3539	3451	3377	3435	3365	3304	3340	3284	3235	3252	3208	3169	3122
3	3601	3451	3335	3242	3542	3407	3302	3217	3326	3239	3167	3250	3179	3120	3180	3123	3074	3031
4	3499	3327	3202	3105	3448	3293	3177	3088	3228	3130	3053	3167	3086	3020	3111	3043	2987	2948
5	3405	3218	3088	2992	3360	3191	3070	2980	3138	3034	2955	3089	3000	2931	3043	2968	2907	2872
6	3317	3121	2990	2896	3278	3099	2976	2887	3056	2949	2869	3015	2922	2851	2978	2897	2834	2800
7	3235	3034	2903	2812	3201	3015	2892	2805	2979	2871	2792	2946	2850	2779	2914	2830	2766	2734
8	3159	2954	2825	2737	3128	2938	2816	2732	2908	2799	2722	2880	2783	2712	2854	2767	2702	2672
9	3087	2881	2754	2669	3059	2867	2747	2665	2842	2734	2658	2818	2720	2650	2796	2707	2643	2614
10	3019	2813	2689	2607	2995	2801	2684	2604	2780	2673	2598	2759	2662	2593	2740	2651	2587	2559

Cone of Light Tabulation

Mounting Height	Footcandles at Nadir	Diameter (Feet)
4.00	1900	0.892
6.00	845	1.34
8.00	475	1.78
10.0	304	2.23
12.0	211	2.68
14.0	155	3.12
16.0	119	3.57

Cone of Light Plot

