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Photometric Test Report

Relevant Standards

IES LM-79-2008, ANSI C82.77-2002, CIE 13.3-1995
CIE 15-2004, ANSI C78.377-2015, IES TM-30-2015

Prepared For

Eureka Lighting, Inc

225 De Liege Ouest, #200
Montreal, Quebec H2P 1H4
Canada

Catalog Number

Focus 2047/4547

Order Number

11677517

Test Number

11677517.01

Test Date

2017-03-22 - 2017-03-27

Prepared By

Kevin Rodriguez, Technician

Approved By

Edward Bush, Project Handler

The results contained in this report pertain only to the tested sample.

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Table of Contents

Summary of Results	Page 3
Integrating Sphere Results	Page 4
Distribution Results	
Conditions / Summary of Results / Polar Plot / Zonal Lumens	Page 5
Candela Tabulation / Average Luminance	Page 6
Coefficients of Utilization / Cone of Light	Page 7
ISO Footcandle Plot	Page 8

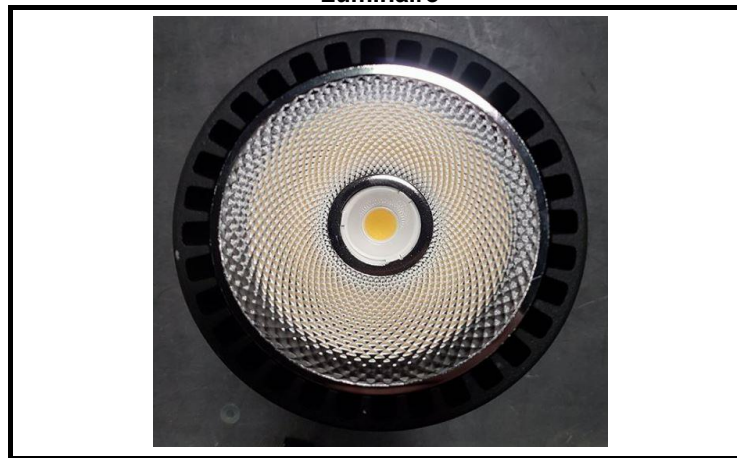
Laboratory results may not be representative of field performance
Ballast factors have not been applied

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



Luminaire Description: Formed black aluminum housing, patterned specular reflector, no lens enclosure
Lamp: One white LED
Mounting: Surface – Wall
Ballast/Driver: One ERP ESS030W-0700-42 driver

Luminaire



Luminaire Characteristics
Luminous Diameter: 3.25 in.

Summary of Results

Integrating Sphere

Luminous Flux: 2803 Lumens
Efficacy: 91.7 lm/w
CCT: 3995 K
CRI (Ra): 83.6

Distribution

Total Luminaire Output: 2896 Lumens
Luminaire Efficacy: 94.7 lm/w
Maximum Candela: 9649 Candela

Electrical Data at 119 VAC

Test Temperature: 25.0 °C
Voltage: 119.9 VAC
Current: 0.2571 A
Power: 30.57 W
Power Factor: 0.992
Frequency: 60 Hz
Current THD: 12.1 %



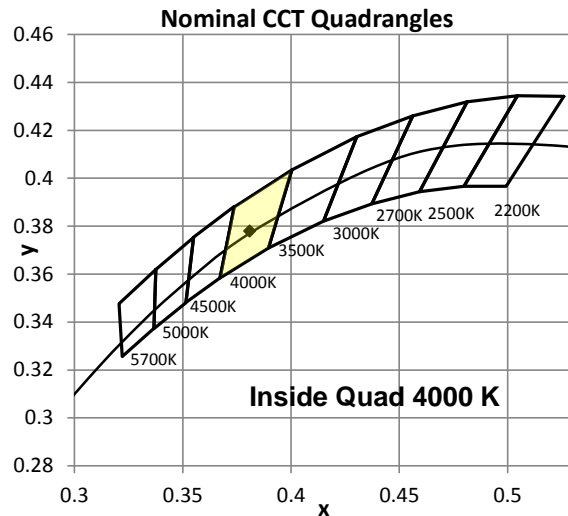
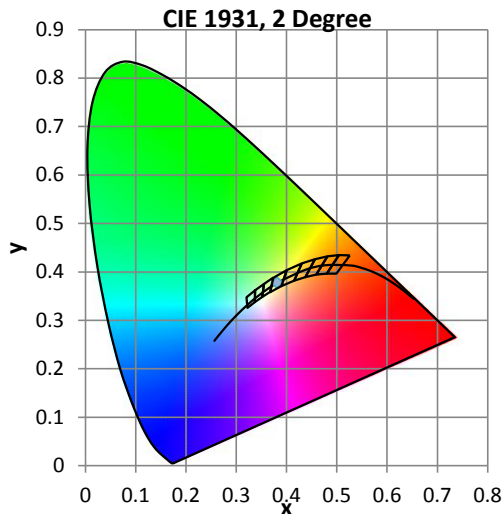
Color Quality - Integrating Sphere

Integrating Sphere Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.0 °C	119.9 VAC	0.2571 A	30.57 W	0.992	60 Hz	12.1 %

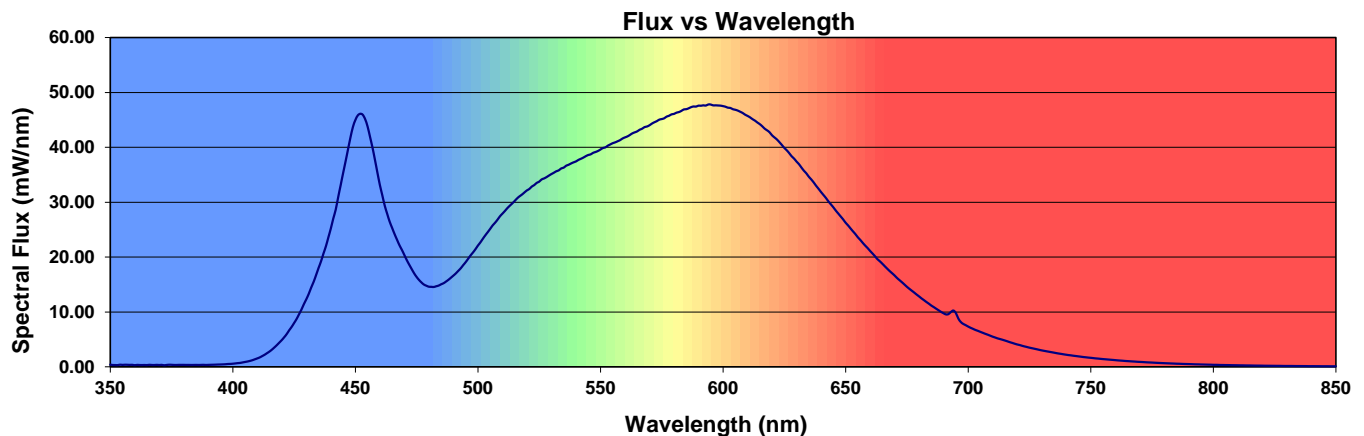
Summary of Results

Total Output:	2803 Lumens	Chromaticity (x):	0.3809
Efficacy:	91.7 lm/w	Chromaticity (y):	0.3779
CCT:	3995 K	Chromaticity (u'):	0.2249
CRI (Ra):	83.6	Chromaticity (v'):	0.5022
CRI (R9):	14.6	TM-30 R_f:	83.0
Peak Wavelength:	594.3 nm	TM-30 R_g:	96.2
Dominant Wavelength:	578.8 nm	Duv:	0.0004
S/P Ratio:	1.679		



Color Rendering Index Detail

Ra (CRI)	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14
83.6	82.0	88.9	93.8	82.7	81.9	84.5	87.2	67.2	14.6	73.2	81.2	64.2	83.6	96.5





Distribution - Goniophotometer

Distribution Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.0 °C	120.0 VAC	0.2571 A	30.58 W	0.992	60 Hz	12.1 %

Summary of Results

Spacing Criteria

0-180: 0.39

90-270: 0.39

Total Lumen Output:

2896 Lumens

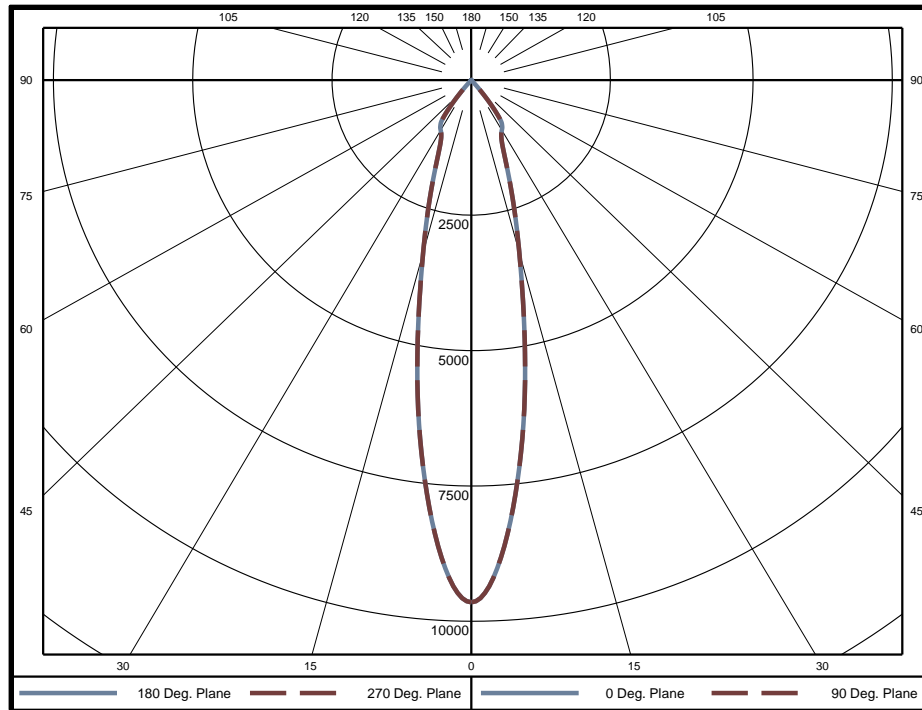
Luminaire Efficacy:

94.7 lm/w

Maximum Candela:

9649 Candela

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	212.0	7.3%	60-65	0.8	0.0%	120-125	0	0.0%
5-10	486.2	16.8%	65-70	0.5	0.0%	125-130	0	0.0%
10-15	519.4	17.9%	70-75	0.3	0.0%	130-135	0	0.0%
15-20	441.2	15.2%	75-80	0.2	0.0%	135-140	0	0.0%
20-25	348.9	12.0%	80-85	0.1	0.0%	140-145	0	0.0%
25-30	302.2	10.4%	85-90	0.1	0.0%	145-150	0	0.0%
30-35	306.6	10.6%	90-95	0	0.0%	150-155	0	0.0%
35-40	228.7	7.9%	95-100	0	0.0%	155-160	0	0.0%
40-45	40.7	1.4%	100-105	0	0.0%	160-165	0	0.0%
45-50	4.6	0.2%	105-110	0	0.0%	165-170	0	0.0%
50-55	2.1	0.1%	110-115	0	0.0%	170-175	0	0.0%
55-60	1.3	0.0%	115-120	0	0.0%	175-180	0	0.0%

Zone	Lumens	% of Luminaire
0-40	2845	98.2%
0-60	2894	99.9%
0-90	2896	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	9649	9649	9649	9649	9649	9649	9649	9649	9649	9649	9649	9649	9649	9649	9649
	5	8183	8183	8183	8183	8183	8183	8183	8183	8183	8183	8183	8183	8183	8183	8183
	10	5642	5642	5642	5642	5642	5642	5642	5642	5642	5642	5642	5642	5642	5642	5642
	15	3417	3417	3417	3417	3417	3417	3417	3417	3417	3417	3417	3417	3417	3417	3417
	20	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
	25	1351	1351	1351	1351	1351	1351	1351	1351	1351	1351	1351	1351	1351	1351	1351
	30	1102	1102	1102	1102	1102	1102	1102	1102	1102	1102	1102	1102	1102	1102	1102
	35	964	964	964	964	964	964	964	964	964	964	964	964	964	964	964
	40	346	346	346	346	346	346	346	346	346	346	346	346	346	346	346
	45	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24
	50	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
	55	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
	60	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
	65	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	70	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	75	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
	85	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
	95	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
	105	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
	115	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
	125	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
	135	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
	145	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
	155	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
	165	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
	175	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

Average Luminance (cd/m²)

Horizontal Angle (Degrees)

Vertical Angle (Degrees)	0	45	90
	0	1803000	1803000
	45	6363	6363
	55	1250	1250
	65	523	523
	75	233	233
	85	296	296



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	3448	3448	3448	3448	3367	3367	3367	3367	3218	3218	3218	3081	3081	3081	2955	2955	2955	2896
1	3310	3240	3177	3120	3240	3178	3122	3071	3062	3017	2977	2955	2921	2888	2857	2830	2805	2755
2	3175	3053	2952	2867	3114	3004	2913	2835	2913	2838	2774	2828	2768	2715	2750	2702	2659	2615
3	3045	2886	2763	2664	2991	2847	2734	2643	2773	2679	2602	2705	2627	2562	2642	2578	2523	2482
4	2922	2736	2599	2495	2873	2704	2578	2480	2644	2537	2452	2589	2498	2424	2537	2460	2397	2358
5	2805	2599	2456	2350	2762	2573	2440	2340	2524	2408	2320	2479	2378	2300	2436	2350	2281	2243
6	2694	2476	2329	2224	2656	2454	2316	2216	2413	2292	2202	2375	2269	2188	2339	2246	2174	2138
7	2590	2363	2216	2112	2555	2345	2206	2107	2310	2187	2096	2278	2168	2086	2248	2150	2075	2040
8	2493	2260	2113	2013	2461	2245	2106	2009	2215	2090	2001	2188	2075	1993	2162	2061	1985	1951
9	2401	2165	2021	1923	2373	2152	2014	1920	2127	2002	1914	2104	1990	1908	2081	1978	1902	1869
10	2316	2079	1937	1842	2290	2067	1932	1840	2046	1921	1835	2025	1911	1831	2006	1901	1826	1794

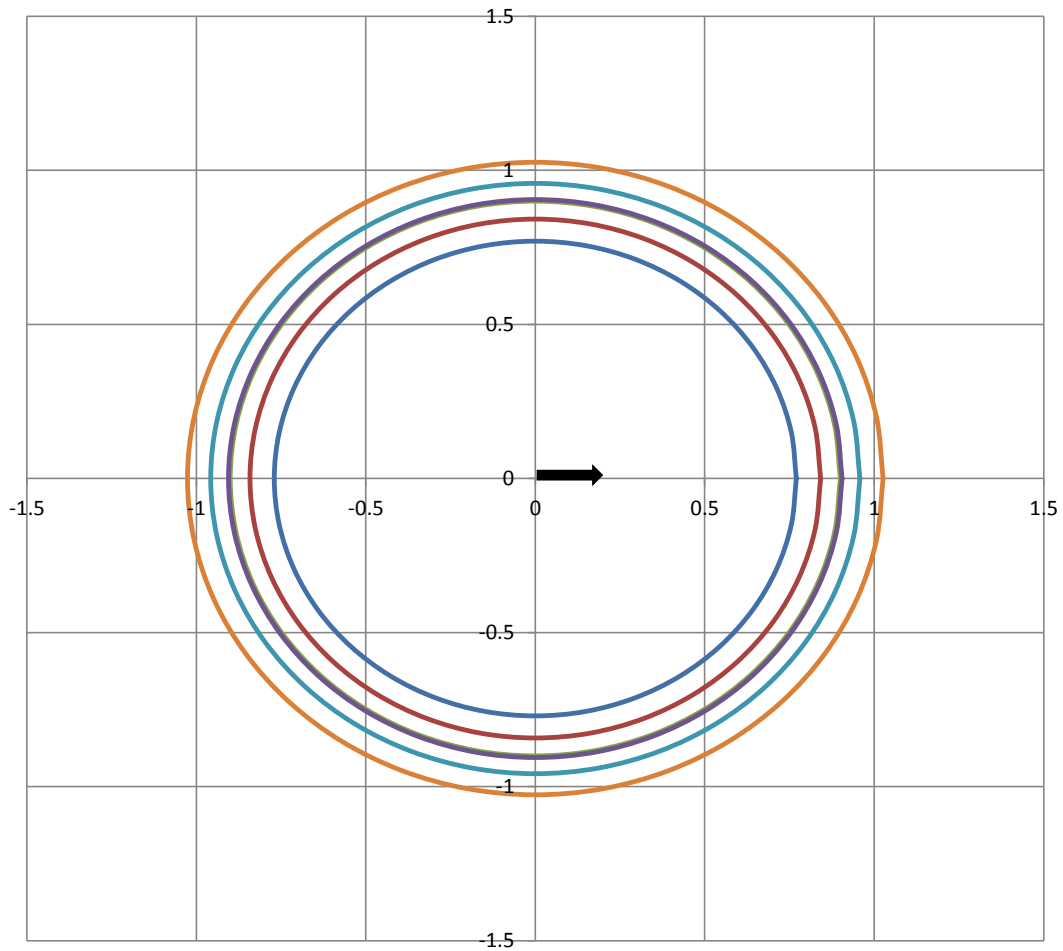
Beam and Field Information	
CIE Type:	Direct
Center Beam Intensity:	9649 Candela
Central Cone Intensity:	9091 Candela
Beam Flux:	874.5 Lumens
Beam Angle (0-180):	23.2 Degrees
Beam Angle (90-270):	23.2 Degrees
Field Angle (0-180):	70.0 Degrees
Field Angle (90-270):	70.0 Degrees

Cone of Light Tabulation			
Mounting Height (Feet)		Footcandles at Nadir	Diameter (Feet)
4.00		603	1.56
6.00		268	2.34
8.00		151	3.12
10.0		96.5	3.90
12.0		67.0	4.69
14.0		49.2	5.47
16.0		37.7	6.25



ISOFootcandle Plot

Mounting Height - 8 Feet



Grid Lines in Units of Mounting Height

5 fc 2 fc 1 fc 0.5 fc 0.2 fc 0.1 fc