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Photometric Test Report

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

Prepared For
Precision Architectural Lighting

Fred Compton
4830 Timber Creek Drive
Houston, TX 77017

Catalog Number
MLR5-HO-K40-4'-TT-LOH-UNIV

Order Number
10822132
Test Number
1094333

Test Date

2015-06-04

Prepared By

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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, white enamel aluminum reflector, frosted plastic lens
Lamp: 144 white LEDs
Mounting: Recessed
Ballast/Driver: Osram OT50W/PRG1400C/UNV/DIM/L

Luminaire



Luminaire Characteristics

Luminous Length: 47.00 in.
Luminous Width: 5.000 in.

Summary of Results

Integrating Sphere

Luminous Flux: 3667 Lumens
Efficacy: 89.8 lm/w
CCT: 3949 K
CRI (Ra): 83.7

Distribution

Total Luminaire Output: 3598 Lumens
Luminaire Efficacy: 88.2 lm/w
Maximum Candela: 1322 Candela

Electrical Data at 120 VAC

Test Temperature: 25.7 °C
Voltage: 120.0 VAC
Current: 0.3418 A
Power: 40.84 W
Power Factor: 0.996
Frequency: 60 Hz
Current THD: 7.97 %



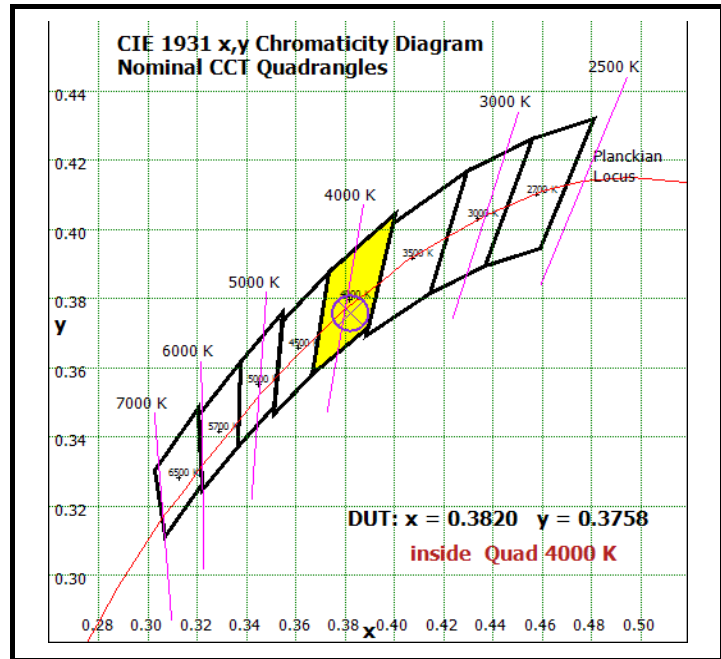
Color Quality - Integrating Sphere

Integrating Sphere Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.7 °C	120.0 VAC	0.3418 A	40.84 W	0.996	60 Hz	7.97 %

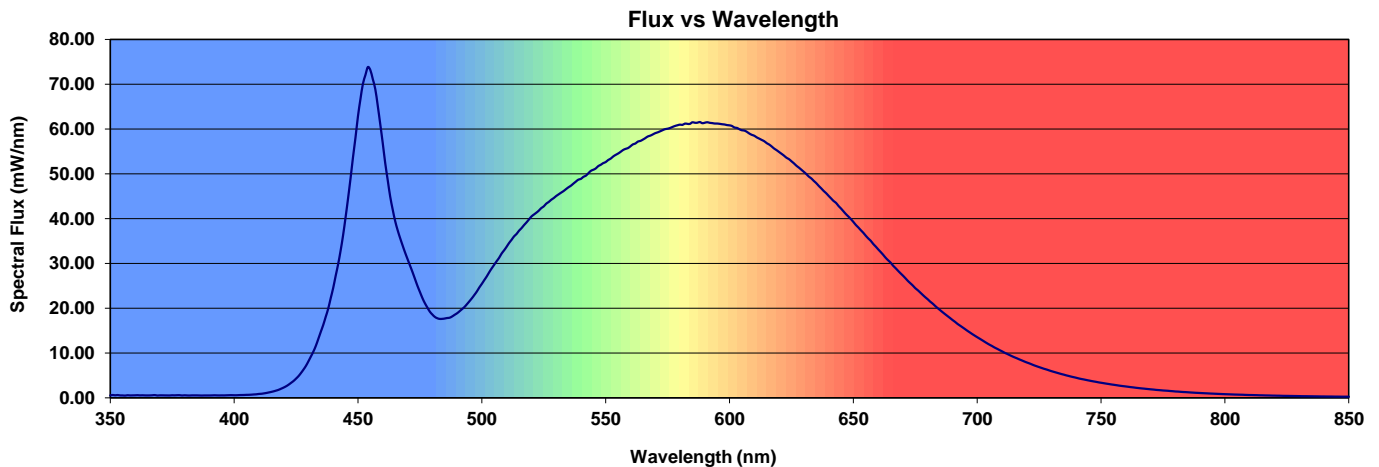
Summary of Results

Total Output:	3667 Lumens
Efficacy:	89.8 lm/w
CCT:	3949 K
CRI (Ra):	83.7
CRI (R9):	24.4
Chromaticity (x):	0.3820
Chromaticity (y):	0.3758
Chromaticity (u):	0.2265
Chromaticity (v):	0.3343
Chromaticity (u')	0.2265
Chromaticity (v')	0.5014
Duv:	-0.0009



Color Rendering Index Detail

Ra (CRI)	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14
83.7	82.3	89.5	93.3	81.1	81.3	83.6	88.1	70.2	24.4	73.4	78.2	57.6	84.1	96.1





Distribution - Goniophotometer

Distribution Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.9 °C	120.0 VAC	0.3414 A	40.80 W	0.995	60 Hz	8.11 %

Summary of Results

Spacing Criteria

0-180: 1.24
90-270: 1.24

Total Lumen Output:

3598 Lumens

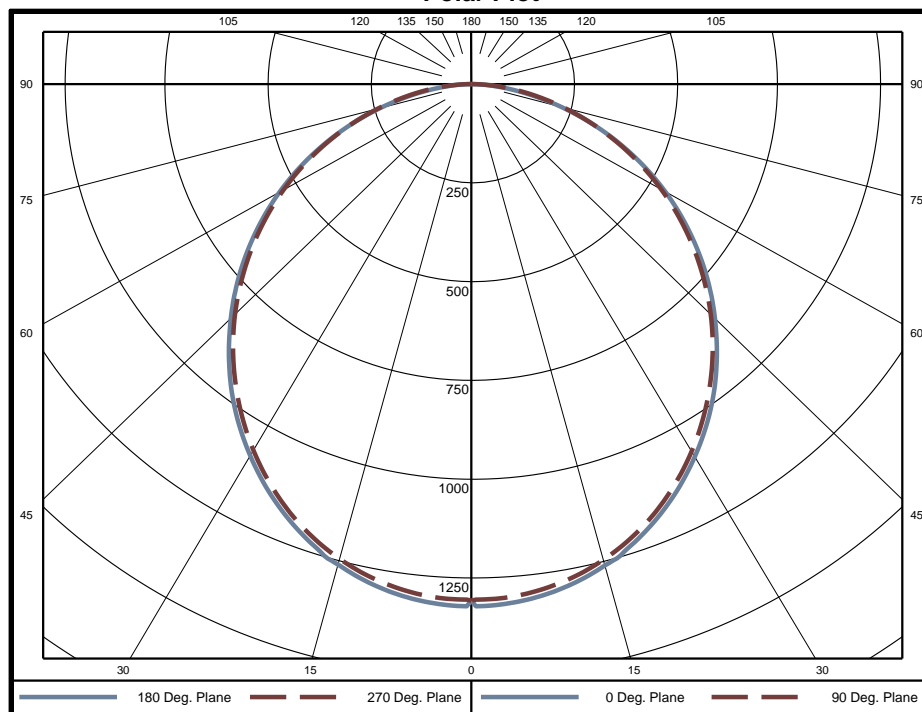
Luminaire Efficacy:

88.2 lm/w

Maximum Candela:

1322 Candela

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	31.2	0.9%	60-65	237.7	6.6%	120-125	0	0.0%
5-10	92.4	2.6%	65-70	195.7	5.4%	125-130	0	0.0%
10-15	150.1	4.2%	70-75	148.9	4.1%	130-135	0	0.0%
15-20	202.0	5.6%	75-80	100.5	2.8%	135-140	0	0.0%
20-25	246.3	6.8%	80-85	55.0	1.5%	140-145	0	0.0%
25-30	281.3	7.8%	85-90	16.7	0.5%	145-150	0	0.0%
30-35	306.3	8.5%	90-95	0	0.0%	150-155	0	0.0%
35-40	320.7	8.9%	95-100	0	0.0%	155-160	0	0.0%
40-45	324.2	9.0%	100-105	0	0.0%	160-165	0	0.0%
45-50	316.9	8.8%	105-110	0	0.0%	165-170	0	0.0%
50-55	299.6	8.3%	110-115	0	0.0%	170-175	0	0.0%
55-60	272.9	7.6%	115-120	0	0.0%	175-180	0	0.0%

Zone	Lumens	% of Luminaire
0-40	1630	45.3%
0-60	2563	79.0%
0-90	3598	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	1308	1308	1308	1308	1308	1308	1308	1308	1308	1308	1308	1308	1308	1308	1308	1308
5	1315	1299	1295	1302	1300	1302	1295	1299	1315	1299	1295	1302	1300	1302	1295	1299
10	1295	1279	1276	1282	1280	1282	1276	1279	1295	1279	1276	1282	1280	1282	1276	1279
15	1261	1246	1243	1249	1247	1249	1243	1246	1261	1246	1243	1249	1247	1249	1243	1246
20	1216	1201	1198	1204	1201	1204	1198	1201	1216	1201	1198	1204	1201	1204	1198	1201
25	1158	1143	1142	1146	1144	1146	1142	1143	1158	1143	1142	1146	1144	1146	1142	1143
30	1091	1076	1074	1078	1076	1078	1074	1076	1091	1076	1074	1078	1076	1078	1074	1076
35	1016	1001	999	1001	1000	1001	999	1001	1016	1001	999	1001	1000	1001	999	1001
40	932	919	918	921	917	921	918	919	932	919	918	921	917	921	918	919
45	842	831	829	830	828	830	829	831	842	831	829	830	828	830	829	831
50	748	737	736	736	734	736	736	737	748	737	736	736	734	736	736	737
55	650	641	639	639	638	639	639	641	650	641	639	639	638	639	639	641
60	549	540	539	539	538	539	539	540	549	540	539	539	538	539	539	540
65	444	437	437	438	437	438	437	437	444	437	437	438	437	438	437	437
70	337	334	335	337	337	337	335	334	337	334	335	337	337	337	335	334
75	233	232	235	239	239	239	235	232	233	232	235	239	239	239	235	232
80	136	138	143	147	148	147	143	138	136	138	143	147	148	147	143	138
85	57	59	64	66	68	66	64	59	57	59	64	66	68	66	64	59
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	8624	8624	8624
45	7851	7734	7727
55	7474	7347	7333
65	6928	6821	6825
75	5926	6000	6099
85	4280	4807	5122



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	4284	4284	4284	4284	4184	4184	4184	4184	3998	3998	3998	3828	3828	3828	3672	3672	3672	3598
1	3912	3739	3584	3445	3814	3657	3516	3389	3504	3388	3281	3363	3268	3181	3233	3157	3086	3010
2	3557	3259	3013	2806	3462	3191	2965	2772	3063	2872	2707	2945	2785	2645	2836	2704	2586	2508
3	3243	2863	2568	2334	3154	2806	2532	2312	2698	2464	2271	2598	2399	2231	2506	2337	2193	2114
4	2970	2537	2220	1978	2887	2489	2193	1964	2399	2141	1937	2314	2091	1910	2236	2044	1884	1806
5	2732	2268	1944	1705	2656	2227	1923	1695	2151	1882	1676	2079	1843	1658	2013	1806	1640	1563
6	2523	2043	1720	1489	2454	2009	1704	1482	1943	1671	1469	1882	1640	1455	1826	1611	1442	1368
7	2340	1853	1537	1316	2278	1824	1524	1311	1768	1498	1301	1716	1473	1291	1667	1448	1282	1210
8	2179	1692	1385	1175	2122	1667	1374	1171	1619	1353	1163	1574	1332	1156	1531	1312	1149	1080
9	2036	1553	1257	1058	1985	1532	1248	1055	1490	1231	1049	1451	1214	1043	1415	1197	1038	972
10	1910	1434	1149	959	1863	1415	1142	957	1379	1127	953	1345	1113	948	1313	1099	944	881

Cone of Light Tabulation

Mounting Height	Footcandles at Nadir	Diameter (Feet)
4.00	81.7	4.91
6.00	36.3	7.36
8.00	20.4	9.82
10.0	13.1	12.3
12.0	9.08	14.7
14.0	6.67	17.2
16.0	5.11	19.6

Cone of Light Plot

