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Photometric Test Report

Relevant Standards
IES LM-79-2008
ANSI C82.77-2002
UL1598-2008

Prepared For
Mercury Lighting
Stephen Bambush
20 Audrey Pl.
Fairfield, NJ 07004-3416

Catalog Number
LW3-4-4800-30K-HTA-1%-UNI
Order Number
10626167
Test Number
856722

Test Date

2015-01-05

Prepared By

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Approved By

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Table of Contents

Summary of Results	Page 3
Integrating Sphere Results	Page 4
Distribution Results	Page 5
Conditions / Summary of Results / Polar Plot / Zonal / Luminance	Page 5
Candela Tabulation	Page 6
Coefficients of Utilization	Page 7
In-Situ Results	Page 8

DLC Results Summary

Technical Requirements v2.1

Linear Ambient Luminaires: Direct		
Requirement Category	Requirement	Test Results
Minimum Light Output	≥337.5 Lumens/ft	4547
Minimum Lamp Output	N/A	N/A
Spacing Criteria (0-180°)	N/A	N/A
Spacing Criteria (90-270°)	N/A	N/A
Zonal Lumen Requirement (0-60°)	≥37%	77.9%
Zonal Lumen Requirement 2	N/A	N/A
Minimum Luminaire Efficacy	≥82.45 lm/w	79.4 lm/w
Minimum Lamp Efficacy	N/A	N/A
Allowable CCTs*	≤5000K	3076 K
Minimum CRI	≥78	82.9
L70 Lumen maintenance	50000 Hours	TM-21 must be completed
Minimum Luminaire Warranty	5 Years	N/A
Power Factor 120 / 277	≥0.87	0.997
Total Harmonic Distortion (A-%)	≤25%	7.595%

*Defined by ANSI C78.377-2011†

†ANSI C78.377-2011 also referred to for Duv and (x,y) chromaticity coordinates tolerances for indoor categories

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 white enamel steel housing, white enamel steel reflector, frosted plastic lens enclosure
Lamp: 120 white LEDs
Mounting: Surface
Ballast/Driver: One Osram Optotronic OT50W/PRG1400C/UNV/DIM/L

Luminaire



Luminaire Characteristics

Luminous Length: 45.00 in.
Luminous Width: 2.750 in.

Summary of Results

Integrating Sphere

Luminous Flux: 4547 Lumens
Efficacy: 82.0 lm/w
CCT: 3076 K
CRI (Ra): 82.9

Distribution

Total Luminaire Output: 4410 Lumens
Luminaire Efficacy: 79.4 lm/w
Maximum Candela: 1544 Candela

Electrical Data at 120 VAC

Test Temperature: 24.9 °C
Voltage: 120.0 VAC
Current: 0.4638 A
Power: 55.46 W
Power Factor: 0.997
Frequency: 60 Hz
Current THD: 7.68 %

In-Situ

LED Temperature: 81.6 °C
Driver Temperature: 75.6 °C
Maximum LED Current: 0.1312 A

Temperatures are offset to an ambient temperature of 25°C
as described in UL1598-2008



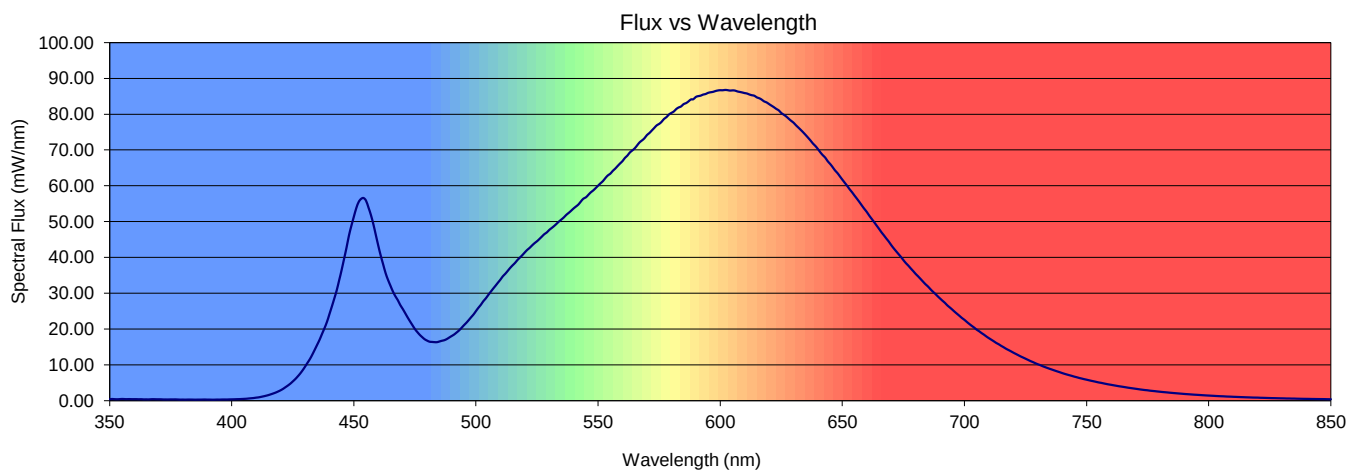
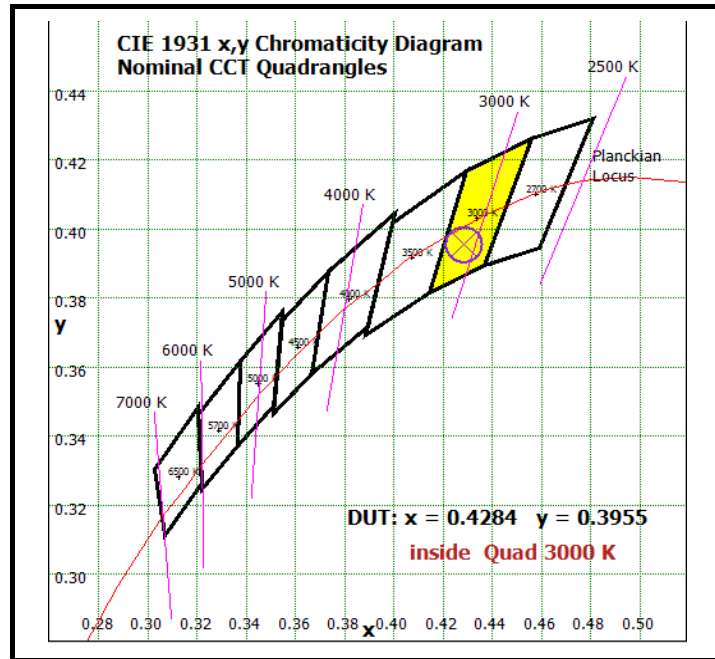
Color Quality - Integrating Sphere

Integrating Sphere Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.9 °C	120.0 VAC	0.4638 A	55.46 W	0.997	60 Hz	7.68 %

Summary of Results

Luminous Flux	4547 Lumens
Efficacy:	82.0 lm/w
CCT:	3076 K
CRI (Ra):	82.9
CRI (R9):	21.4
Chromaticity (x)	0.4284
Chromaticity (y)	0.3955
Chromaticity (u)	0.2487
Chromaticity (v)	0.3444
Chromaticity (u')	0.2487
Chromaticity (v')	0.5167
Duv:	-0.0023





Distribution - Goniophotometer

Distribution Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.0 °C	120.0 VAC	0.4641 A	55.51 W	0.997	60 Hz	7.60 %

Summary of Results

Spacing Criteria

0-180: 1.20

90-270: 1.30

Total Lumen Output:

4410 Lumens

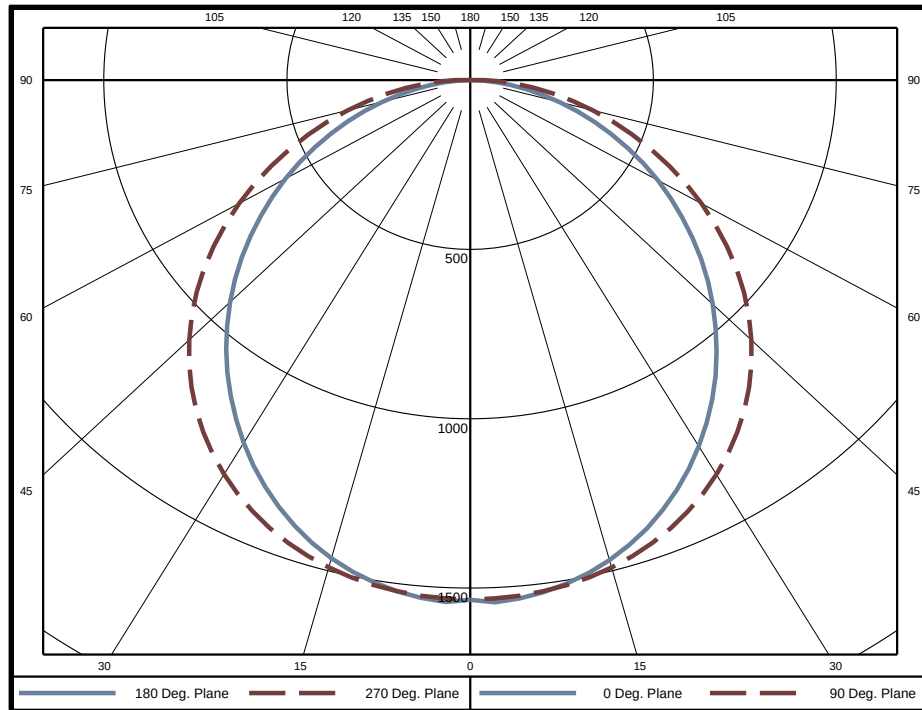
Luminaire Efficacy:

79.4 lm/w

Maximum Candela:

1544 Candela

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	38.9	0.88%	60-65	292.7	6.64%	120-125	0.0	0.00%
5-10	108.6	2.46%	65-70	242.9	5.51%	125-130	0.0	0.00%
10-15	176.9	4.01%	70-75	188.9	4.28%	130-135	0.0	0.00%
15-20	239.2	5.42%	75-80	133.6	3.03%	135-140	0.0	0.00%
20-25	293.2	6.65%	80-85	80.5	1.82%	140-145	0.0	0.00%
25-30	337.1	7.64%	85-90	33.0	0.75%	145-150	0.0	0.00%
30-35	369.2	8.37%	90-95	3.2	0.07%	150-155	0.0	0.00%
35-40	388.7	8.81%	95-100	0.0	0.00%	155-160	0.0	0.00%
40-45	394.8	8.95%	100-105	0.0	0.00%	160-165	0.0	0.00%
45-50	387.4	8.78%	105-110	0.0	0.00%	165-170	0.0	0.00%
50-55	366.7	8.32%	110-115	0.0	0.00%	170-175	0.0	0.00%
55-60	334.7	7.59%	115-120	0.0	0.00%	175-180	0.0	0.00%



Candela Tabulation
Horizontal Angle (Degrees)

Vertical Angle (Degrees)	0	22.5	45	67.5	90	113	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5
	0	1535	1535	1535	1535	1535	1535	1535	1535	1535	1535	1535	1535	1535	1535	1535
	5	1537	1529	1523	1531	1529	1531	1523	1529	1535	1529	1523	1531	1529	1531	1523
	10	1510	1504	1505	1515	1515	1515	1505	1504	1507	1504	1505	1515	1515	1515	1505
	15	1468	1464	1473	1488	1490	1488	1473	1464	1462	1464	1473	1488	1490	1488	1473
	20	1410	1409	1429	1449	1454	1449	1429	1409	1401	1409	1429	1449	1454	1449	1429
	25	1335	1339	1372	1398	1405	1398	1372	1339	1325	1339	1372	1398	1405	1398	1372
	30	1248	1257	1302	1334	1344	1334	1302	1257	1237	1257	1302	1334	1344	1334	1302
	35	1152	1165	1222	1257	1270	1257	1222	1165	1139	1165	1222	1257	1270	1257	1222
	40	1046	1063	1130	1169	1184	1169	1130	1063	1036	1063	1130	1169	1184	1169	1130
	45	936	955	1029	1069	1085	1069	1029	955	927	955	1029	1069	1085	1069	1029
	50	823	841	918	958	975	958	918	841	814	841	918	958	975	958	918
	55	706	725	800	838	855	838	800	725	697	725	800	838	855	838	800
	60	591	608	678	714	729	714	678	608	583	608	678	714	729	714	678
	65	474	492	553	585	599	585	553	492	466	492	553	585	599	585	553
	70	361	376	430	459	471	459	430	376	355	376	430	459	471	459	430
	75	254	268	313	337	348	337	313	268	248	268	313	337	348	337	313
	80	156	169	204	223	231	223	204	169	151	169	204	223	231	223	204
	85	72	83	106	119	126	119	106	83	68	83	106	119	126	119	106
	90	2	11	26	35	40	35	26	11	1	11	26	35	40	35	26
	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)	Horizontal Angle (Degrees)			
	0	45	90	
	45	16590	18230	19220
	55	15420	17460	18670
	65	14060	16390	17740
	75	12280	15160	16820
	85	10400	15210	18040



Utilization of Lumens - Zonal Cavity Method

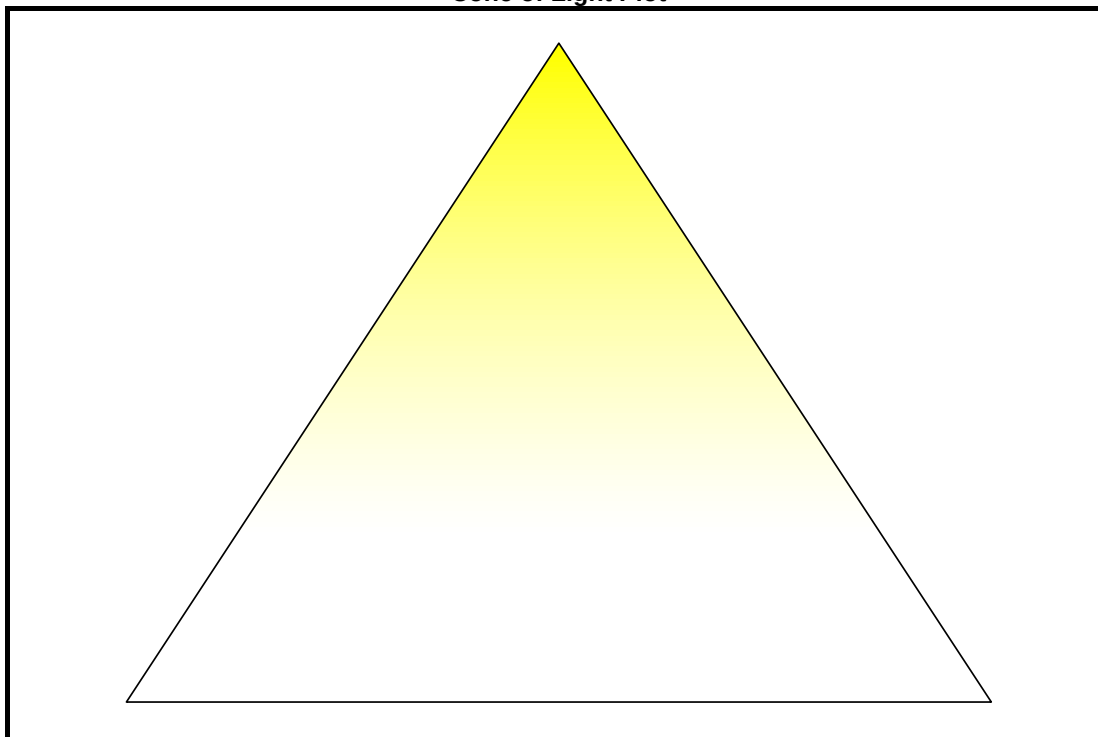
Effective Floor Cavity Reflectance 20%

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	5250	5250	5250	5250	5128	5128	5128	5128	4900	4900	4900	4692	4692	4692	4500	4500	4500	4410
1	4781	4563	4369	4193	4660	4463	4285	4124	4274	4128	3993	4101	3981	3871	3941	3845	3755	3662
2	4342	3970	3663	3404	4225	3886	3603	3363	3729	3490	3284	3583	3384	3208	3449	3284	3136	3039
3	3955	3482	3116	2824	3845	3412	3072	2799	3279	2988	2748	3157	2908	2700	3043	2833	2653	2555
4	3620	3083	2690	2390	3517	3024	2657	2373	2912	2593	2340	2809	2532	2307	2712	2473	2276	2178
5	3328	2754	2352	2056	3234	2704	2326	2044	2609	2277	2021	2521	2229	1999	2439	2183	1977	1882
6	3072	2478	2080	1794	2987	2436	2059	1785	2356	2020	1769	2281	1982	1753	2211	1945	1737	1645
7	2848	2247	1857	1583	2771	2211	1840	1577	2142	1808	1565	2078	1777	1553	2018	1748	1541	1453
8	2651	2050	1671	1412	2582	2019	1658	1407	1960	1632	1398	1905	1607	1389	1853	1582	1380	1295
9	2477	1881	1516	1270	2414	1855	1505	1266	1804	1484	1259	1756	1463	1252	1711	1442	1245	1164
10	2323	1736	1385	1151	2265	1713	1375	1148	1668	1357	1143	1627	1340	1137	1587	1323	1132	1054

Cone of Light Tabulation

Mounting Height	Footcandles at Nadir	Diameter (Feet)
4.00	95.9	5.02
6.00	42.6	7.53
8.00	24.0	10.0
10.0	15.3	12.5
12.0	10.7	15.1
14.0	7.83	17.6
16.0	6.00	20.1

Cone of Light Plot





In-Situ Test

In-Situ Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
23.0 °C	120.2 VAC	N / A	N / A	N / A	60 Hz	N / A

Summary of Results

LED Temperature: 81.6 °C
Driver Temperature: 75.6 °C
Maximum LED Current: 0.1312 A

Temperatures are offset to an ambient temperature of 25°C as described in UL1598-2008

LED Temperature Location



Driver Temperature Location

