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Photometric Test Report

Relevant Standards
IES LM-79-2008, ANSI C82.77-10-2014, CIE 13.3-1995
CIE 15-2004, ANSI C78.377-2017, IES TM-30-2018

Prepared For
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Catalog Number
MX2UD-4-L8/835U/L8/835D-FA/G
Order Number
13052732
Test Number
13052732.04A

Revision of Test Number 13052732.04 on:
2019-10-30
Test Date

2019-10-11 - 2019-10-16

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: Formed White aluminum housing,frosted lens enclosures
Lamp: 288 White LEDs
Mounting: Pendant
Ballast/Driver: Two Philips XI040C110V054BST1 Driver

Luminaire



Luminaire Characteristics

Luminous Length: 48.00 in.
Luminous Width: 2.000 in.
Luminous Height: 4.00 in.

Summary of Results

Integrating Sphere

Luminous Flux: 5963 Lumens
Efficacy: 117.71 lm/w
CCT: 3444 K
CRI (Ra): 82.8

Distribution

Total Luminaire Output: 5853 Lumens
Luminaire Efficacy: 115.2 lm/w
Maximum Candela: 1206 Candela

Electrical Data at 120 VAC

Test Temperature: 25.6 °C
Voltage: 120.0 VAC
Current: 0.4252 A
Power: 50.66 W
Power Factor: 0.993
Frequency: 60 Hz
Current THD: 10.0 %



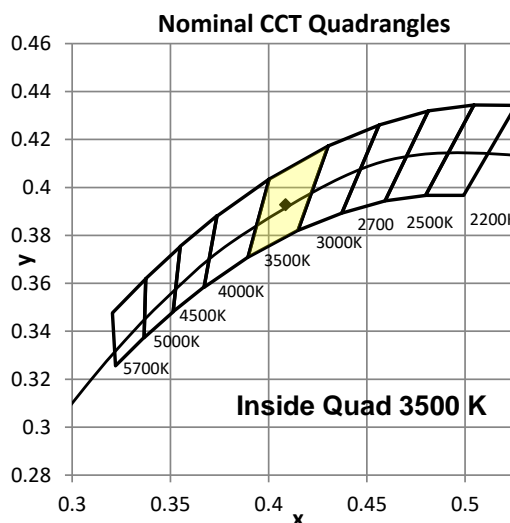
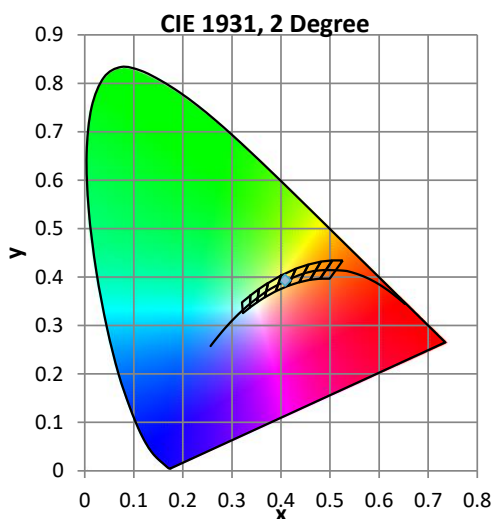
Color Quality - Integrating Sphere

Integrating Sphere Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.6 °C	120.0 VAC	0.4252 A	50.66 W	0.993	60 Hz	10.0 %

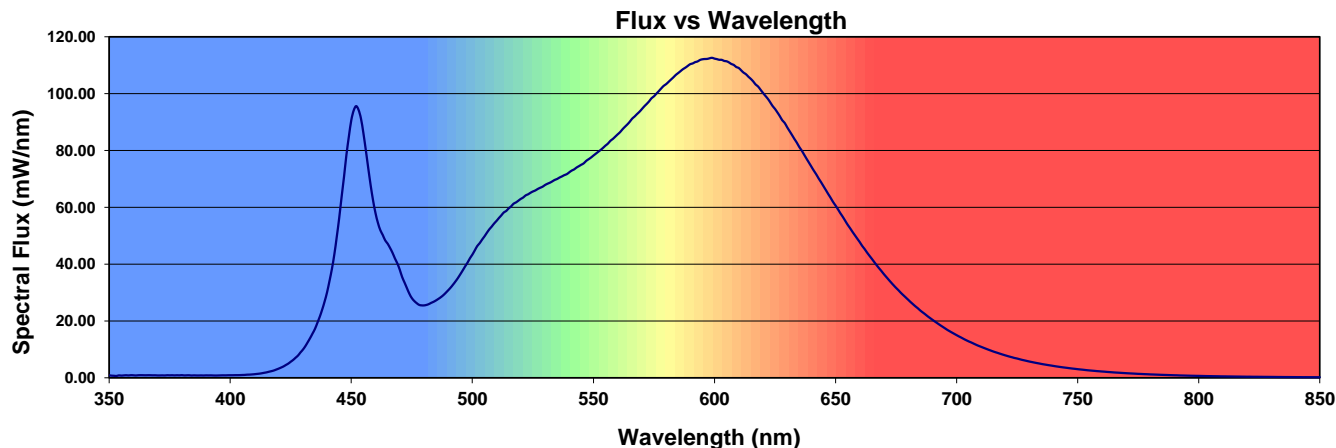
Summary of Results

Total Output:	5963 Lumens	Chromaticity (x):	0.4086
Efficacy:	117.7 lm/w	Chromaticity (y):	0.3928
CCT:	3444 K	Chromaticity (u'):	0.2370
CRI (Ra):	82.8	Chromaticity (v'):	0.5126
CRI (R9):	6.4	TM-30 Rf:	84.3
Peak Wavelength:	599 nm	TM-30 Rg:	95.1
Dominant Wavelength:	581 nm	Duv:	0.0001
S/P Ratio:	1.51		



Color Rendering Index Detail

Ra (CRI)	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
82.8	81.1	90.3	96.3	81.0	81.2	87.2	84.1	61.0	6.4	77.4	80.2	65.1	83.4	98.4	73.9





Distribution - Goniophotometer

Distribution Test Conditions

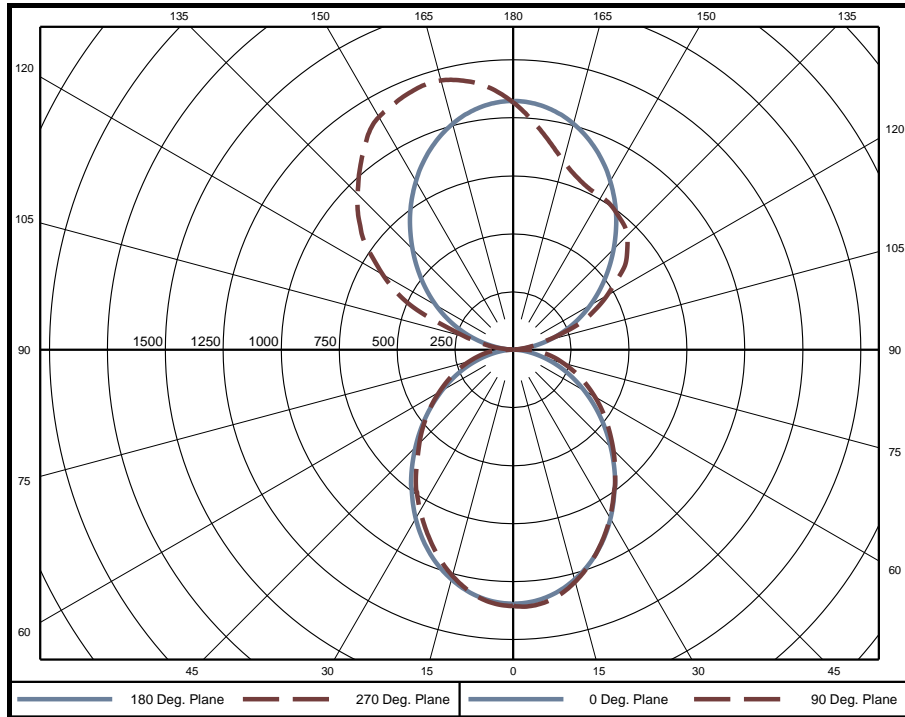
Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.4 °C	119.9 VAC	0.4265 A	50.80 W	0.993	60 Hz	10.0 %

Summary of Results

Spacing Criteria
 0-180: 1.14
 90-270: 1.14

Total Lumen Output: 5853 Lumens
Luminaire Efficacy: 115.2 lm/w
Maximum Candela: 1206 Candela

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	26.3	0.4%	60-65	167.1	2.9%	120-125	254.3	4.3%
5-10	77.5	1.3%	65-70	140.5	2.4%	125-130	277.4	4.7%
10-15	124.5	2.1%	70-75	112.0	1.9%	130-135	287.3	4.9%
15-20	165.0	2.8%	75-80	83.4	1.4%	135-140	287.6	4.9%
20-25	197.3	3.4%	80-85	56.7	1.0%	140-145	278.6	4.8%
25-30	220.6	3.8%	85-90	26.9	0.5%	145-150	260.5	4.5%
30-35	234.3	4.0%	90-95	9.8	0.2%	150-155	233.7	4.0%
35-40	239.6	4.1%	95-100	35.0	0.6%	155-160	201.4	3.4%
40-45	236.1	4.0%	100-105	75.9	1.3%	160-165	164.2	2.8%
45-50	226.3	3.9%	105-110	127.6	2.2%	165-170	121.8	2.1%
50-55	211.2	3.6%	110-115	179.5	3.1%	170-175	75.1	1.3%
55-60	191.1	3.3%	115-120	221.5	3.8%	175-180	25.4	0.4%

Zone	Lumens	% of Luminaire
0-40	1285	22.0%
0-60	2150	36.7%
0-90	2736	46.8%
90-180	3117	53.2%



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	1103	1103	1103	1103	1103	1103	1103	1103	1103	1103	1103	1103	1103	1103	1103
	5	1088	1102	1098	1103	1107	1103	1098	1102	1088	1094	1088	1092	1095	1092	1088
	10	1065	1081	1077	1081	1081	1081	1077	1081	1065	1067	1059	1061	1062	1061	1059
	15	1026	1045	1039	1040	1036	1040	1039	1045	1026	1027	1016	1015	1010	1015	1016
	20	975	997	985	982	977	982	985	997	975	974	960	954	947	954	960
	25	912	934	921	916	909	916	921	934	912	912	894	884	875	884	894
	30	840	862	849	842	836	842	849	862	840	839	822	812	802	812	822
	35	760	782	769	762	757	762	769	782	760	759	746	735	730	735	746
	40	681	702	693	689	684	689	693	702	681	679	666	654	647	654	666
	45	596	621	614	613	611	613	614	621	596	595	584	577	572	577	584
	50	514	539	538	540	540	540	538	539	514	514	509	506	504	506	509
	55	433	460	465	472	474	472	465	460	433	437	437	438	436	438	437
	60	356	384	395	405	408	405	395	384	356	362	366	371	369	371	366
	65	282	312	327	339	344	339	327	312	282	289	299	308	309	308	299
	70	211	242	262	278	283	278	262	242	211	221	236	248	252	248	236
	75	144	176	201	219	224	219	201	176	144	156	176	191	196	191	176
	80	85	116	144	165	172	165	144	116	85	100	123	140	147	140	123
	85	37	67	93	113	121	113	93	67	37	53	77	95	104	95	77
	90	5	14	19	22	26	22	19	14	5	8	6	6	5	6	8
	95	33	31	26	21	20	21	26	31	33	43	45	37	35	37	45
	100	90	97	82	78	76	78	82	97	90	114	115	114	116	114	115
	105	160	178	186	157	147	157	186	178	160	204	246	213	212	213	246
	110	235	266	277	280	268	280	277	266	235	299	365	378	347	378	365
	115	310	343	368	376	377	376	368	343	310	394	483	520	529	520	483
	120	385	417	468	466	468	466	468	417	385	494	606	638	650	638	606
	125	460	487	541	567	563	567	541	487	460	593	702	764	770	764	702
	130	536	547	599	635	641	635	599	547	536	689	799	854	867	854	799
	135	613	598	647	682	696	682	647	598	613	779	887	936	948	936	887
	140	691	646	687	713	727	713	687	646	691	864	967	1016	1027	1016	967
	145	767	693	712	740	749	740	712	693	767	935	1035	1089	1103	1089	1035
	150	838	743	730	754	761	754	730	743	838	994	1086	1140	1158	1140	1086
	155	905	801	764	766	769	766	764	801	905	1041	1121	1166	1183	1166	1121
	160	962	864	812	799	795	799	812	864	962	1070	1141	1188	1201	1188	1141
	165	1008	929	873	851	841	851	873	929	1008	1090	1146	1189	1202	1189	1146
	170	1044	987	938	916	909	916	938	987	1044	1096	1133	1167	1176	1167	1133
	175	1066	1035	1003	990	989	990	1003	1035	1066	1089	1105	1125	1133	1125	1105
	180	1066	1066	1066	1066	1066	1066	1066	1066	1066	1066	1066	1066	1066	1066	1066

Average Luminance (cd/m²)

Horizontal Angle (Degrees)

Vertical Angle (Degrees)	0	45	90
	0	17810	17810
	45	12550	5664
	55	10900	4221
	65	9127	3003
	75	6840	1926
	85	3549	970



Coefficients of Utilization - 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 percent of total lumen output delivered to the task surface **																	
0	106	106	106	106	98	98	98	98	82	82	82	67	67	67	53	53	53	47
1	97	92	88	85	89	85	82	78	71	69	66	58	57	55	47	45	44	39
2	88	81	74	69	81	74	69	64	62	58	55	51	48	46	41	39	37	32
3	80	71	64	58	73	65	59	54	55	50	46	45	42	39	36	34	32	28
4	74	63	55	49	67	58	51	46	49	44	39	40	36	33	32	30	27	24
5	68	56	48	42	62	52	45	39	44	38	34	36	32	29	29	26	24	21
6	62	50	42	36	57	46	39	34	39	34	30	33	29	25	27	24	21	18
7	58	45	37	32	53	42	35	30	36	30	26	30	26	22	24	21	19	16
8	53	41	33	28	49	38	31	26	33	27	23	27	23	20	22	19	17	14
9	50	38	30	25	46	35	28	24	30	25	21	25	21	18	21	18	15	13
10	46	34	27	22	43	32	26	21	28	22	19	23	19	16	19	16	14	12

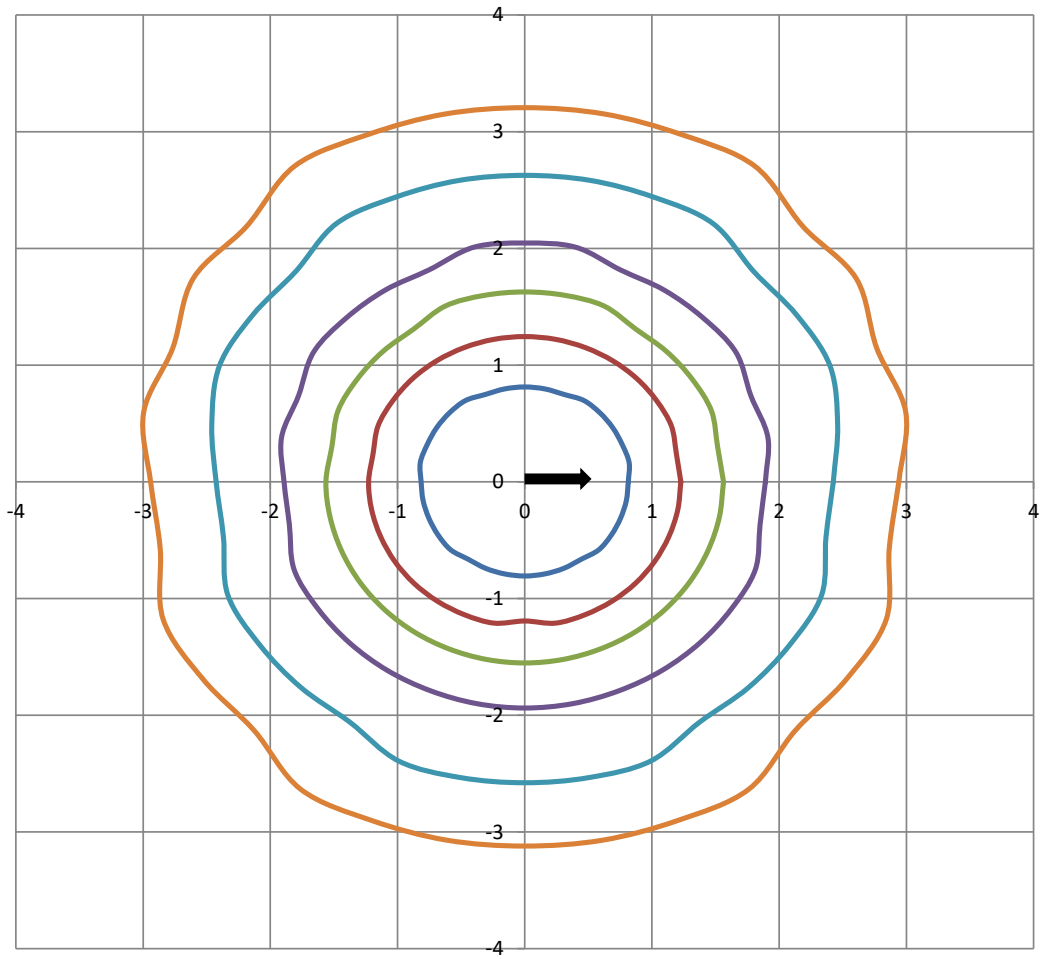
Beam and Field Information	
CIE Type:	Direct/Indirect
Center Beam Intensity:	1103 Candela
Central Cone Intensity:	1101 Candela
Beam Flux:	3984.6 Lumens
Beam Angle (0-180):	95.3 Degrees
Beam Angle (90-270):	95.7 Degrees
Field Angle (0-180):	155.4 Degrees
Field Angle (90-270):	170.4 Degrees

Cone of Light Tabulation			
Mounting Height (Feet)		Footcandles at Nadir	Diameter (Feet)
4.00		68.9	4.56
6.00		30.6	6.83
8.00		17.2	9.11
10.0		11.0	11.4
12.0		7.66	13.7
14.0		5.63	15.9
16.0		4.31	18.2



ISOFootcandle Plot

Mounting Height - 8 Feet



Grid Lines in Units of Mounting Height

