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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-FW/G
Order Number
13052732
Test Number
13052732.07A

Revision of Test Number 13052732.07 on:
2020-04-17
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: 5954 Lumens
Efficacy: 117.62 lm/w
CCT: 3446 K
CRI (Ra): 82.8

Distribution

Total Luminaire Output: 5779 Lumens
Luminaire Efficacy: 113.8 lm/w
Maximum Candela: 1107 Candela

Electrical Data at 120 VAC

Test Temperature: 25.7 °C
Voltage: 120.0 VAC
Current: 0.4249 A
Power: 50.62 W
Power Factor: 0.993
Frequency: 60 Hz
Current THD: 10.0 %



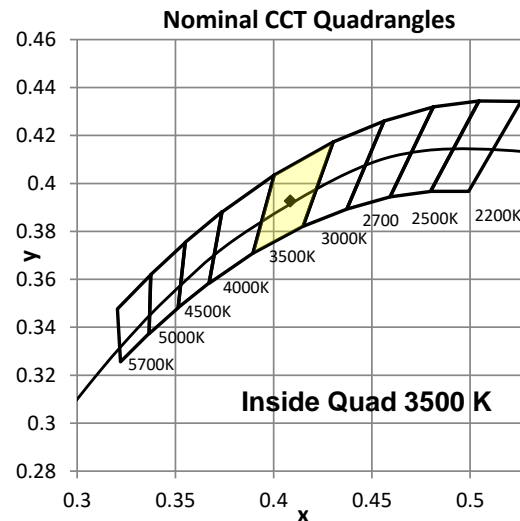
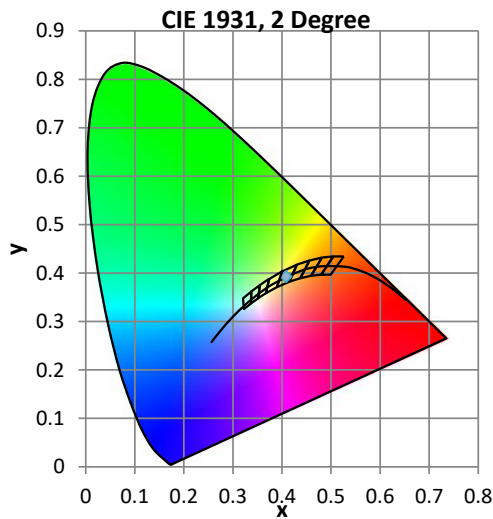
Color Quality - Integrating Sphere

Integrating Sphere Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.7 °C	120.0 VAC	0.4249 A	50.62 W	0.993	60 Hz	10.0 %

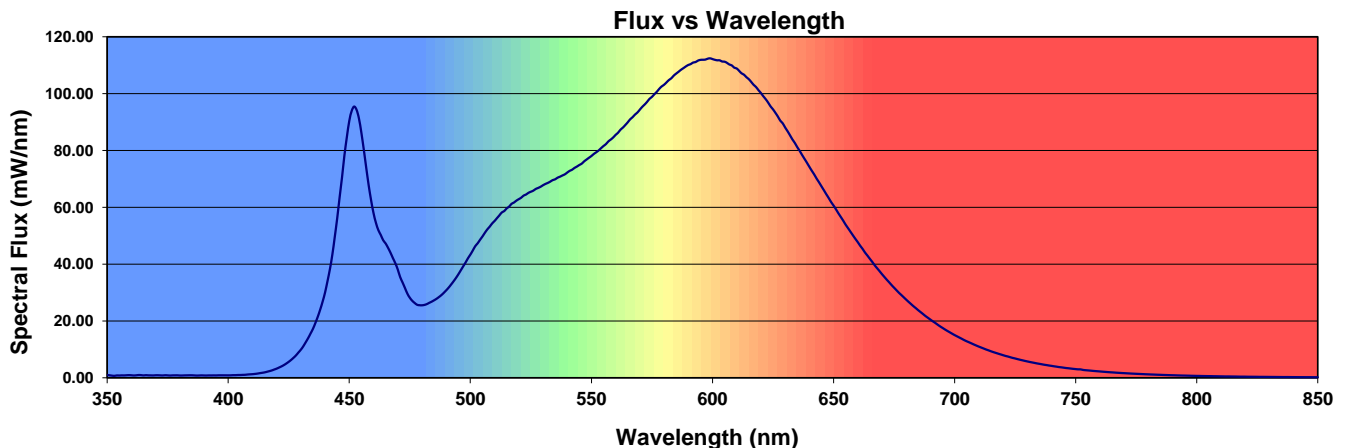
Summary of Results

Total Output:	5954 Lumens	Chromaticity (x):	0.4085
Efficacy:	117.6 lm/w	Chromaticity (y):	0.3927
CCT:	3446 K	Chromaticity (u'):	0.2369
CRI (Ra):	82.8	Chromaticity (v'):	0.5126
CRI (R9):	6.7	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	81.2	90.4	96.3	81.0	81.3	87.3	84.1	61.1	6.7	77.5	80.3	65.1	83.5	98.4	74.2





Distribution - Goniophotometer

Distribution Test Conditions

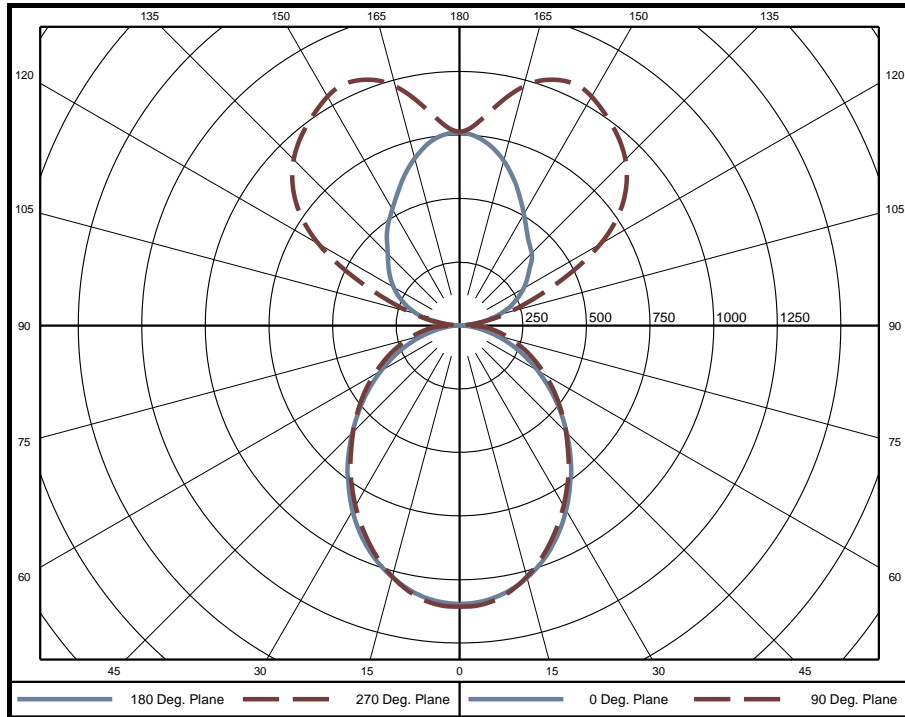
Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.0 °C	119.9 VAC	0.4265 A	50.80 W	0.993	60 Hz	10.0 %

Summary of Results

Spacing Criteria
 0-180: 1.14
 90-270: 1.12

Total Lumen Output: 5779 Lumens
Luminaire Efficacy: 113.8 lm/w
Maximum Candela: 1107 Candela

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	26.3	0.5%	60-65	167.1	2.9%	120-125	265.1	4.6%
5-10	77.5	1.3%	65-70	140.5	2.4%	125-130	283.2	4.9%
10-15	124.5	2.2%	70-75	112.0	1.9%	130-135	289.1	5.0%
15-20	165.0	2.9%	75-80	83.4	1.4%	135-140	283.6	4.9%
20-25	197.3	3.4%	80-85	56.7	1.0%	140-145	269.0	4.7%
25-30	220.6	3.8%	85-90	26.9	0.5%	145-150	247.1	4.3%
30-35	234.3	4.1%	90-95	11.5	0.2%	150-155	218.0	3.8%
35-40	239.6	4.1%	95-100	43.6	0.8%	155-160	181.8	3.1%
40-45	236.1	4.1%	100-105	86.7	1.5%	160-165	140.9	2.4%
45-50	226.3	3.9%	105-110	133.7	2.3%	165-170	98.1	1.7%
50-55	211.2	3.7%	110-115	184.6	3.2%	170-175	56.6	1.0%
55-60	191.1	3.3%	115-120	231.6	4.0%	175-180	18.4	0.3%

Zone	Lumens	% of Luminaire
0-40	1285	22.2%
0-60	2150	37.2%
0-90	2736	47.4%
90-180	3043	52.6%



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	1095	1089	1093	1101	1101	1097	1100	1088	1100	1097	1101	1101	1093	1089
	10	1066	1070	1062	1065	1072	1078	1074	1078	1064	1078	1074	1078	1072	1065	1062
	15	1027	1031	1020	1021	1023	1035	1035	1042	1024	1042	1035	1035	1023	1021	1020
	20	976	980	966	962	962	974	979	991	975	991	979	974	962	962	966
	25	911	916	902	896	892	905	914	929	914	929	914	905	892	896	902
	30	839	842	828	823	819	832	843	859	841	859	843	832	819	823	828
	35	759	760	749	745	744	753	766	781	762	781	766	753	744	745	749
	40	679	680	671	667	666	675	689	701	682	701	689	675	666	667	671
	45	596	599	592	592	592	598	606	617	596	617	606	598	592	592	592
	50	514	519	518	521	522	525	529	535	513	535	529	525	522	521	518
	55	433	441	446	452	455	457	457	456	434	456	457	457	455	452	446
	60	355	366	376	385	389	390	386	380	356	380	386	390	389	385	376
	65	281	294	308	321	326	326	318	307	283	307	318	326	326	321	308
	70	211	225	244	260	268	265	254	238	211	238	254	265	268	260	244
	75	144	160	184	203	210	208	193	172	144	172	193	208	210	203	184
	80	84	103	129	150	160	154	138	113	85	113	138	154	160	150	129
	85	38	56	82	103	113	106	88	64	37	64	88	106	113	103	82
	90	4	8	7	10	16	18	17	14	5	14	17	18	16	10	7
	95	48	61	51	45	35	37	41	44	65	44	41	37	35	45	51
	100	105	135	135	121	107	110	115	116	121	116	115	110	107	121	135
	105	158	210	248	217	203	204	222	185	172	185	222	204	203	217	248
	110	210	280	382	345	316	328	353	254	220	254	353	328	316	345	382
	115	251	350	508	501	472	486	478	323	261	323	478	486	472	501	508
	120	291	418	621	652	638	634	584	390	299	390	584	634	638	652	621
	125	326	485	714	759	766	742	676	453	333	453	676	742	766	759	714
	130	363	551	783	842	856	823	757	510	365	510	757	823	856	842	783
	135	402	596	845	906	923	888	824	563	400	563	824	888	923	906	845
	140	425	634	888	953	970	938	869	616	445	616	869	938	970	953	888
	145	459	670	918	989	1007	979	901	655	489	655	901	979	1007	989	918
	150	506	701	937	1020	1040	1010	917	681	529	681	917	1010	1040	1020	937
	155	560	723	933	1029	1052	1016	914	701	576	701	914	1016	1052	1029	933
	160	617	739	909	1003	1029	994	893	720	630	720	893	994	1029	1003	909
	165	671	749	866	945	974	939	854	734	681	734	854	939	974	945	866
	170	715	755	816	866	886	862	809	745	725	745	809	862	886	866	816
	175	746	759	777	793	800	790	774	754	752	754	774	790	800	793	777
	180	761	761	761	761	761	761	761	761	761	761	761	761	761	761	761

Average Luminance (cd/m²)

Horizontal Angle (Degrees)

Vertical Angle (Degrees)	0	45	90
	0	17810	17810
	45	12550	5467
	55	10880	4043
	65	9098	2832
	75	6845	1765
	85	3595	851



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	107	107	107	107	98	98	98	98	82	82	82	67	67	67	54	54	54	47
1	97	93	89	85	89	85	82	79	71	69	67	59	57	55	47	46	45	39
2	88	81	75	69	81	74	69	64	62	59	55	52	49	46	41	39	38	33
3	80	71	64	58	74	65	59	54	55	50	46	46	42	39	37	34	32	28
4	74	63	55	49	67	58	51	46	49	44	40	41	37	34	33	30	28	24
5	68	56	48	42	62	52	45	39	44	38	34	36	32	29	30	27	24	21
6	62	50	42	36	57	47	39	34	40	34	30	33	29	26	27	24	21	18
7	58	45	37	32	53	42	35	30	36	30	26	30	26	23	25	21	19	16
8	53	41	33	28	49	38	31	27	33	27	23	28	23	20	23	19	17	15
9	50	38	30	25	46	35	28	24	30	25	21	25	21	18	21	18	15	13
10	47	35	27	23	43	32	26	21	28	22	19	23	19	16	19	16	14	12

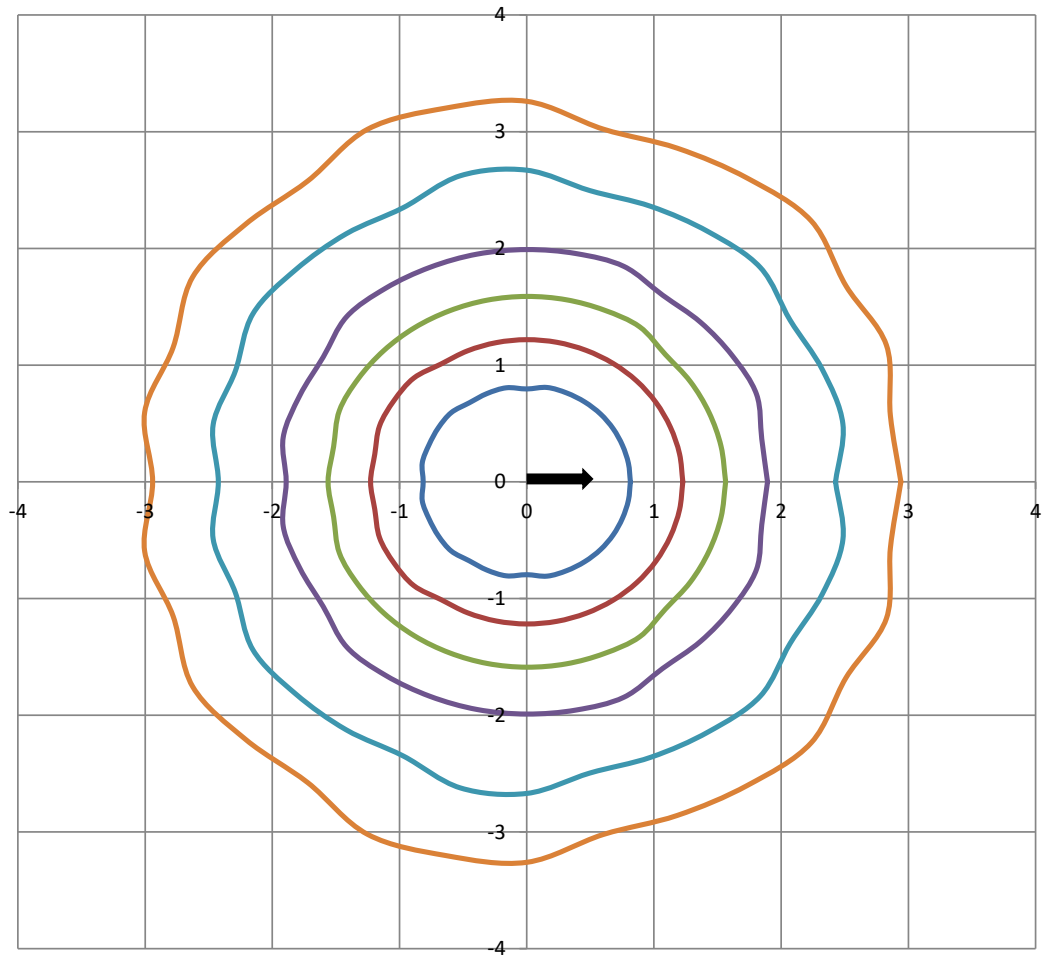
Beam and Field Information	
CIE Type:	Direct/Indirect
Center Beam Intensity:	1103 Candela
Central Cone Intensity:	1101 Candela
Beam Flux:	3860.4 Lumens
Beam Angle (0-180):	95.3 Degrees
Beam Angle (90-270):	95.7 Degrees
Field Angle (0-180):	155.4 Degrees
Field Angle (90-270):	170.5 Degrees

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

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