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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/F**  
Order Number  
13052732  
Test Number  
13052732.06A

Revision of Test Number 13052732.06 on:  
2020-04-17  
Test Date

2019-10-11 - 2019-10-14

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  $4\pi$  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: 6307 Lumens  
Efficacy: 124.47 lm/w  
CCT: 3459 K  
CRI (Ra): 82.9

**Distribution**

Total Luminaire Output: 6117 Lumens  
Luminaire Efficacy: 120.7 lm/w  
Maximum Candela: 1367 Candela

**Electrical Data at 120 VAC**

Test Temperature: 26.0 °C  
Voltage: 120.1 VAC  
Current: 0.4250 A  
Power: 50.67 W  
Power Factor: 0.993  
Frequency: 60 Hz  
Current THD: 10.0 %



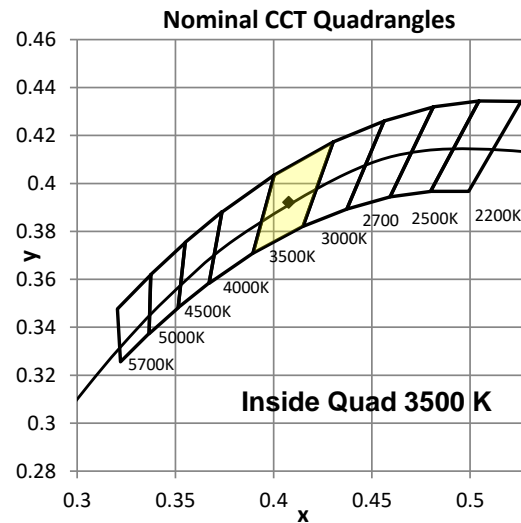
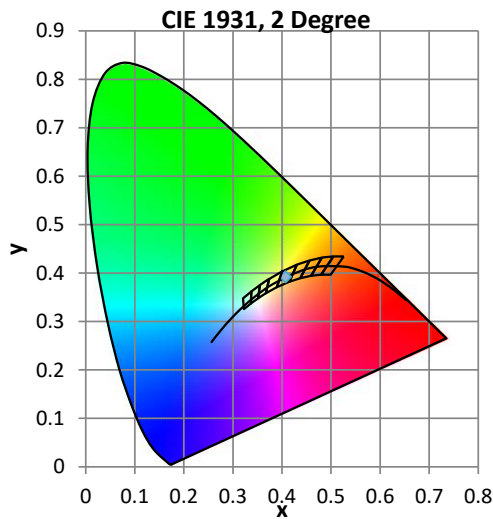
## Color Quality - Integrating Sphere

### Integrating Sphere Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
26.0 °C	120.1 VAC	0.4250 A	50.67 W	0.993	60 Hz	10.0 %

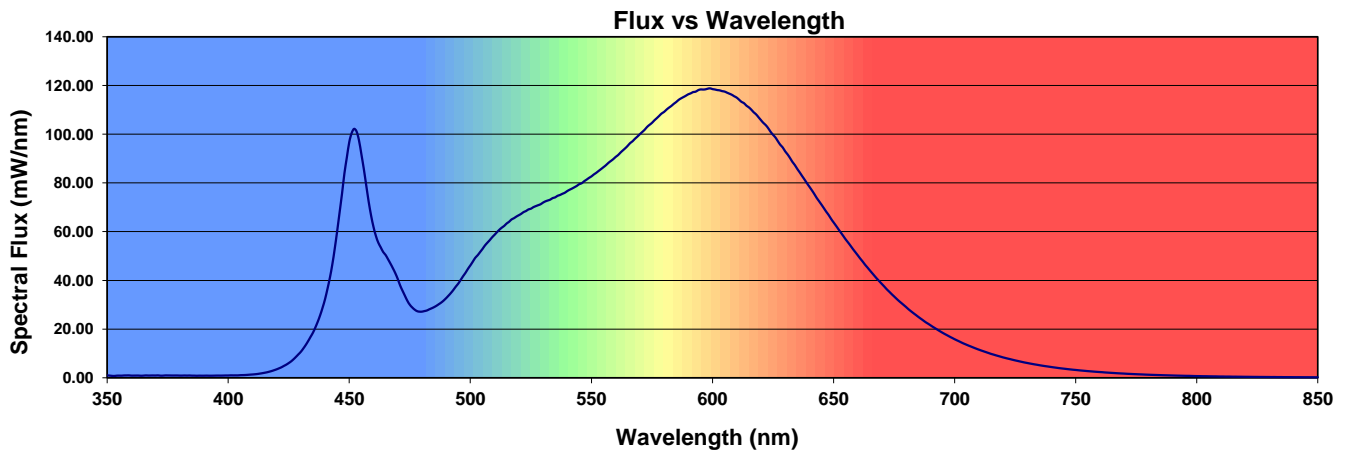
### Summary of Results

<b>Total Output:</b>	6307 Lumens	<b>Chromaticity (x):</b>	0.4076
<b>Efficacy:</b>	124.5 lm/w	<b>Chromaticity (y):</b>	0.3921
<b>CCT:</b>	3459 K	<b>Chromaticity (u'):</b>	0.2366
<b>CRI (Ra):</b>	82.9	<b>Chromaticity (v'):</b>	0.5122
<b>CRI (R9):</b>	6.8	<b>TM-30 Rf:</b>	84.3
<b>Peak Wavelength:</b>	599 nm	<b>TM-30 Rg:</b>	95.2
<b>Dominant Wavelength:</b>	581 nm	<b>Duv:</b>	0.0002
<b>S/P Ratio:</b>	1.52		



### Color Rendering Index Detail

Ra (CRI)	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
82.9	81.2	90.4	96.3	81.1	81.3	87.3	84.2	61.2	6.8	77.5	80.4	65.2	83.5	98.4	74.4





## Distribution - Goniophotometer

### Distribution Test Conditions

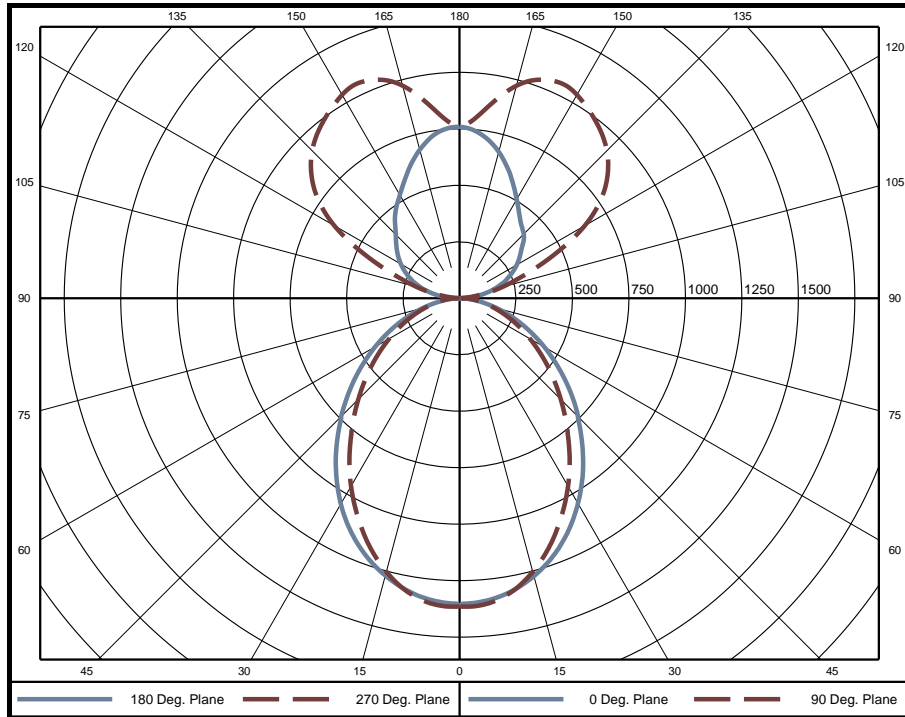
Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.0 °C	120.0 VAC	0.4251 A	50.66 W	0.993	60 Hz	10.0 %

### Summary of Results

**Spacing Criteria**  
 0-180: 1.15  
 90-270: 1.08

**Total Lumen Output:** 6117 Lumens  
**Luminaire Efficacy:** 120.7 lm/w  
**Maximum Candela:** 1367 Candela

### Polar Plot



### Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	32.5	0.5%	60-65	172.3	2.8%	120-125	265.1	4.3%
5-10	95.8	1.6%	65-70	138.0	2.3%	125-130	283.2	4.6%
10-15	153.9	2.5%	70-75	103.2	1.7%	130-135	289.1	4.7%
15-20	203.4	3.3%	75-80	70.2	1.1%	135-140	283.6	4.6%
20-25	242.0	4.0%	80-85	40.6	0.7%	140-145	269.0	4.4%
25-30	268.6	4.4%	85-90	16.0	0.3%	145-150	247.1	4.0%
30-35	282.3	4.6%	90-95	11.5	0.2%	150-155	218.0	3.6%
35-40	283.5	4.6%	95-100	43.6	0.7%	155-160	181.8	3.0%
40-45	274.6	4.5%	100-105	86.7	1.4%	160-165	140.9	2.3%
45-50	258.0	4.2%	105-110	133.7	2.2%	165-170	98.1	1.6%
50-55	234.1	3.8%	110-115	184.6	3.0%	170-175	56.6	0.9%
55-60	205.0	3.4%	115-120	231.6	3.8%	175-180	18.4	0.3%

Zone	Lumens	% of Luminaire
0-40	1562	25.5%
0-60	2534	41.4%
0-90	3074	50.3%
90-180	3043	49.7%



### 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	1363	1363	1363	1363	1363	1363	1363	1363	1363	1363	1363	1363	1363	1363	1363
	5	1345	1355	1348	1353	1359	1361	1355	1361	1343	1361	1355	1361	1359	1353	1348
	10	1318	1327	1315	1316	1321	1329	1329	1335	1316	1335	1329	1329	1321	1316	1315
	15	1273	1281	1262	1254	1254	1269	1277	1292	1271	1292	1277	1269	1254	1254	1262
	20	1213	1220	1189	1172	1167	1185	1204	1231	1212	1231	1204	1185	1167	1172	1189
	25	1138	1141	1103	1077	1067	1088	1116	1154	1139	1154	1116	1088	1067	1077	1103
	30	1048	1046	1002	973	961	983	1021	1065	1051	1065	1021	983	961	973	1002
	35	951	941	892	860	849	871	914	965	952	965	914	871	849	860	892
	40	845	832	783	750	738	759	803	856	846	856	803	759	738	750	783
	45	740	727	680	646	634	652	696	747	741	747	696	652	634	646	680
	50	638	623	579	546	536	552	591	641	635	641	591	552	536	546	579
	55	534	520	482	454	445	459	494	538	532	538	494	459	445	454	482
	60	435	422	390	367	360	372	401	438	433	438	401	372	360	367	390
	65	341	329	305	288	283	294	316	345	339	345	316	294	283	288	305
	70	254	243	228	217	212	222	238	258	252	258	238	222	212	217	228
	75	173	165	158	153	151	158	167	179	170	179	167	158	151	153	158
	80	101	98	99	98	100	103	105	108	99	108	105	103	100	98	99
	85	45	44	49	51	54	55	53	53	43	53	53	55	54	51	49
	90	5	7	8	12	14	13	13	11	6	11	13	13	14	12	8
	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/m<sup>2</sup>)

Horizontal Angle (Degrees)

Vertical Angle (Degrees)	0	45	90
	0	22010	22010
	45	15610	6277
	55	13430	4368
	65	11050	2805
	75	8213	1519
	85	4256	510



### 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	99	99	99	99	83	83	83	69	69	69	56	56	56	50
1	98	94	90	87	90	87	83	80	73	71	69	61	60	58	50	49	48	43
2	89	82	76	71	82	76	71	66	65	61	57	54	51	49	44	42	41	36
3	82	72	65	60	75	67	61	56	57	53	49	48	45	42	40	37	35	31
4	75	64	57	51	69	60	53	48	51	46	42	43	39	36	36	33	30	27
5	69	57	49	44	63	53	46	41	46	40	36	39	35	31	32	29	27	23
6	64	52	44	38	59	48	41	36	41	36	32	35	31	28	29	26	24	21
7	59	47	39	33	54	44	37	32	38	32	28	32	28	25	27	24	21	19
8	55	43	35	30	50	40	33	28	34	29	25	29	25	22	25	21	19	17
9	51	39	31	26	47	36	30	25	32	26	22	27	23	20	23	20	17	15
10	48	36	29	24	44	33	27	23	29	24	20	25	21	18	21	18	16	14

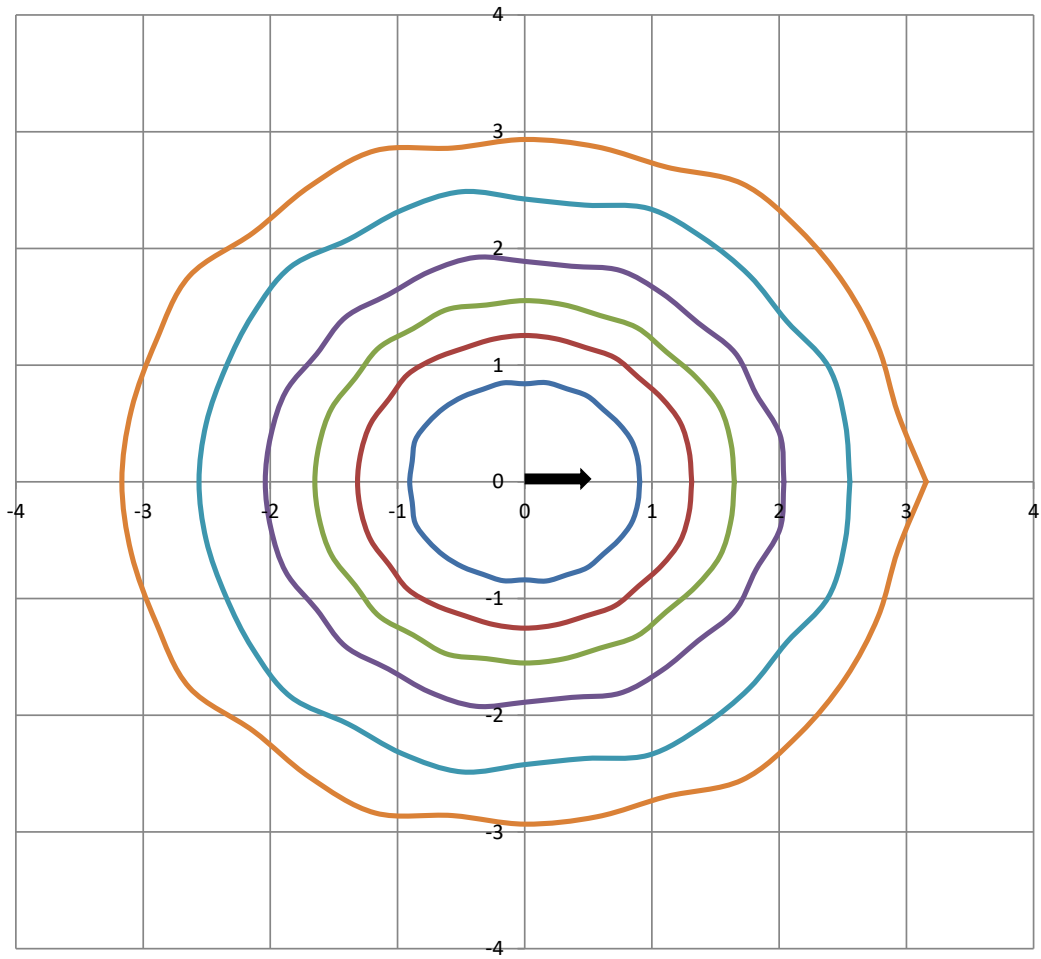
Beam and Field Information	
CIE Type:	Direct/Indirect
Center Beam Intensity:	1363 Candela
Central Cone Intensity:	1360 Candela
Beam Flux:	3649.9 Lumens
Beam Angle (0-180):	95.7 Degrees
Beam Angle (90-270):	85.4 Degrees
Field Angle (0-180):	154.7 Degrees
Field Angle (90-270):	152.9 Degrees

Cone of Light Tabulation			
Mounting Height (Feet)		Footcandles at Nadir	Diameter (Feet)
4.00		85.2	4.49
6.00		37.9	6.73
8.00		21.3	8.97
10.0		13.6	11.2
12.0		9.47	13.5
14.0		6.95	15.7
16.0		5.32	17.9



## ISOFootcandle Plot

Mounting Height - 8 Feet



Grid Lines in Units of Mounting Height

