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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/D**  
Order Number  
13052732  
Test Number  
13052732.08A

Revision of Test Number 13052732.08 on:  
2020-04-17  
Test Date

2019-10-11 - 2019-10-15

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: 5715 Lumens  
Efficacy: 112.86 lm/w  
CCT: 3457 K  
CRI (Ra): 82.9

**Distribution**

Total Luminaire Output: 5810 Lumens  
Luminaire Efficacy: 114.6 lm/w  
Maximum Candela: 1088 Candela

**Electrical Data at 120 VAC**

Test Temperature: 25.9 °C  
Voltage: 120.0 VAC  
Current: 0.4251 A  
Power: 50.64 W  
Power Factor: 0.993  
Frequency: 60 Hz  
Current THD: 10.0 %



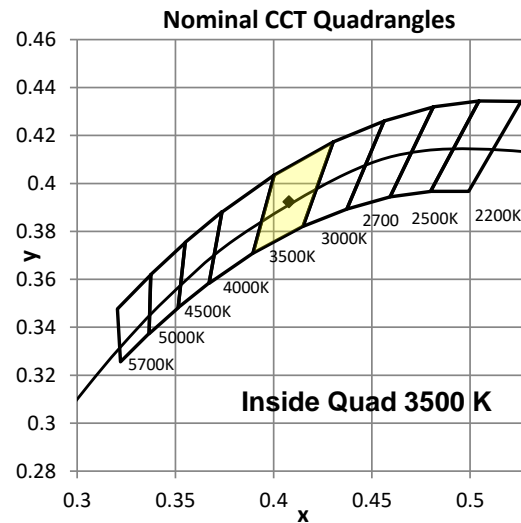
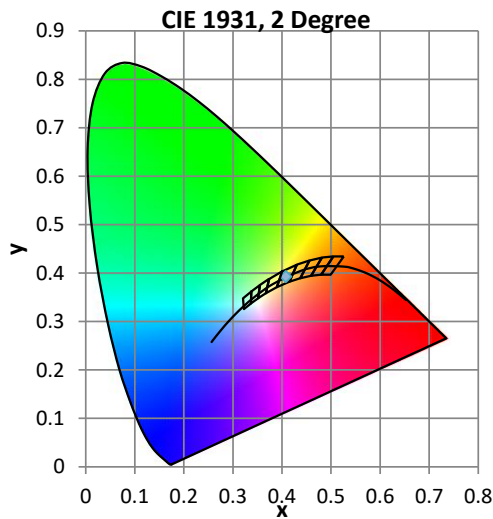
## Color Quality - Integrating Sphere

### Integrating Sphere Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.9 °C	120.0 VAC	0.4251 A	50.64 W	0.993	60 Hz	10.0 %

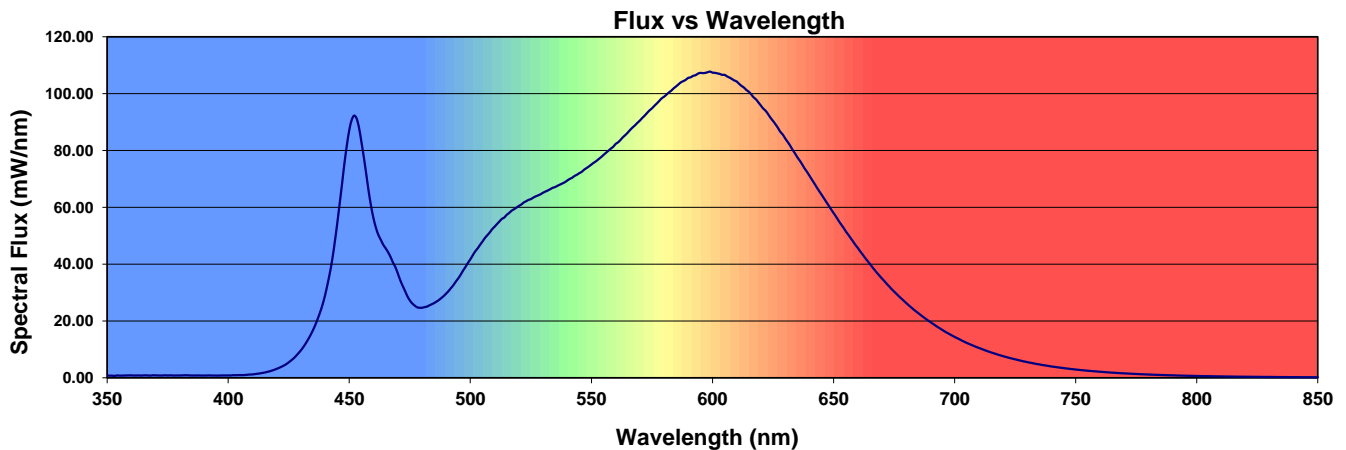
### Summary of Results

<b>Total Output:</b>	5715 Lumens	<b>Chromaticity (x):</b>	0.4078
<b>Efficacy:</b>	112.9 lm/w	<b>Chromaticity (y):</b>	0.3923
<b>CCT:</b>	3457 K	<b>Chromaticity (u'):</b>	0.2367
<b>CRI (Ra):</b>	82.9	<b>Chromaticity (v'):</b>	0.5123
<b>CRI (R9):</b>	6.8	<b>TM-30 Rf:</b>	84.3
<b>Peak Wavelength:</b>	599 nm	<b>TM-30 Rg:</b>	95.1
<b>Dominant Wavelength:</b>	581 nm	<b>Duv:</b>	0.0001
<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	80.3	65.1	83.5	98.4	74.0





## Distribution - Goniophotometer

### Distribution Test Conditions

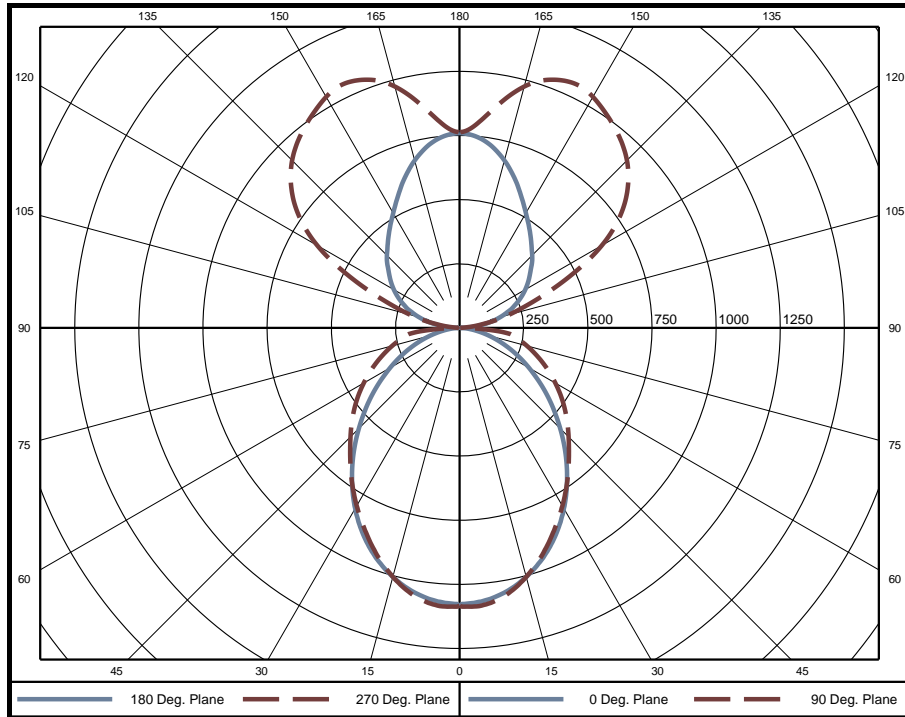
Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.8 °C	120.0 VAC	0.4255 A	50.71 W	0.993	60 Hz	10.0 %

### Summary of Results

**Spacing Criteria**  
 0-180: 1.13  
 90-270: 1.12

**Total Lumen Output:** 5810 Lumens  
**Luminaire Efficacy:** 114.6 lm/w  
**Maximum Candela:** 1088 Candela

### Polar Plot



### Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	25.9	0.4%	60-65	172.4	3.0%	120-125	265.1	4.6%
5-10	76.3	1.3%	65-70	149.7	2.6%	125-130	283.2	4.9%
10-15	122.4	2.1%	70-75	125.2	2.2%	130-135	289.1	5.0%
15-20	161.8	2.8%	75-80	100.7	1.7%	135-140	283.6	4.9%
20-25	192.9	3.3%	80-85	76.8	1.3%	140-145	269.0	4.6%
25-30	215.2	3.7%	85-90	32.6	0.6%	145-150	247.1	4.3%
30-35	228.3	3.9%	90-95	11.5	0.2%	150-155	218.0	3.8%
35-40	232.8	4.0%	95-100	43.6	0.8%	155-160	181.8	3.1%
40-45	230.0	4.0%	100-105	86.7	1.5%	160-165	140.9	2.4%
45-50	222.0	3.8%	105-110	133.7	2.3%	165-170	98.1	1.7%
50-55	209.6	3.6%	110-115	184.6	3.2%	170-175	56.6	1.0%
55-60	192.8	3.3%	115-120	231.6	4.0%	175-180	18.4	0.3%

Zone	Lumens	% of Luminaire
0-40	1256	21.6%
0-60	2110	36.3%
0-90	2767	47.6%
90-180	3043	52.4%



### 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	1083	1083	1083	1083	1083	1083	1083	1083	1083	1083	1083	1083	1083	1083	1083
	5	1068	1079	1075	1081	1084	1081	1075	1079	1068	1079	1075	1081	1084	1081	1075
	10	1044	1056	1051	1055	1056	1055	1051	1056	1044	1056	1051	1055	1056	1055	1051
	15	1005	1019	1010	1009	1005	1009	1010	1019	1005	1019	1010	1009	1005	1009	1010
	20	953	967	953	947	942	947	953	967	953	967	953	947	942	947	953
	25	889	903	887	878	871	878	887	903	889	903	887	878	871	878	887
	30	813	829	814	807	801	807	814	829	813	829	814	807	801	807	814
	35	731	748	737	733	732	733	737	748	731	748	737	733	732	733	737
	40	644	663	660	662	663	662	660	663	644	663	660	662	663	662	660
	45	555	580	585	596	601	596	585	580	555	580	585	596	601	596	585
	50	471	501	518	537	544	537	518	501	471	501	518	537	544	537	518
	55	390	425	455	480	488	480	455	425	390	425	455	480	488	480	455
	60	314	354	393	422	431	422	393	354	314	354	393	422	431	422	393
	65	245	289	334	366	376	366	334	289	245	289	334	366	376	366	334
	70	180	227	279	312	322	312	279	227	180	227	279	312	322	312	279
	75	122	170	225	260	272	260	225	170	122	170	225	260	272	260	225
	80	70	120	177	213	226	213	177	120	70	120	177	213	226	213	177
	85	32	77	129	150	153	150	129	77	32	77	129	150	153	150	129
	90	7	22	32	38	41	38	32	22	7	22	32	38	41	38	32
	95	56	52	46	41	35	41	46	52	56	52	46	41	35	41	46
	100	113	125	125	115	107	115	125	125	113	125	125	115	107	115	125
	105	165	197	235	211	203	211	235	197	165	197	235	211	203	211	235
	110	215	267	367	336	316	336	367	267	215	267	367	336	316	336	367
	115	256	337	493	494	472	494	493	337	256	337	493	494	472	494	493
	120	295	404	602	643	638	643	602	404	295	404	602	643	638	643	602
	125	330	469	695	750	766	750	695	469	330	469	695	750	766	750	695
	130	364	530	770	833	856	833	770	530	364	530	770	833	856	833	770
	135	401	579	834	897	923	897	834	579	401	579	834	897	923	897	834
	140	435	625	879	945	970	945	879	625	435	625	879	945	970	945	879
	145	474	663	909	984	1007	984	909	663	474	663	909	984	1007	984	909
	150	517	691	927	1015	1040	1015	927	691	517	691	927	1015	1040	1015	927
	155	568	712	923	1022	1052	1022	923	712	568	712	923	1022	1052	1022	923
	160	624	729	901	999	1029	999	901	729	624	729	901	999	1029	999	901
	165	676	741	860	942	974	942	860	741	676	741	860	942	974	942	860
	170	720	750	813	864	886	864	813	750	720	750	813	864	886	864	813
	175	749	757	775	791	800	791	775	757	749	757	775	791	800	791	775
	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	17490	17490
	45	11700	5404
	55	9815	4123
	65	7928	3071
	75	5788	2159
	85	2990	1343



### 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	48
1	97	92	88	84	89	85	81	78	71	69	66	58	57	55	47	46	44	39
2	88	80	74	69	81	74	68	64	62	58	55	51	48	46	41	39	37	32
3	80	70	63	57	73	65	58	53	55	50	46	45	42	39	36	34	32	27
4	73	62	54	48	67	58	51	45	49	43	39	40	36	33	32	30	27	23
5	67	56	47	41	62	51	44	39	43	38	34	36	32	29	29	26	24	20
6	62	50	42	36	57	46	39	34	39	34	29	33	28	25	27	23	21	18
7	57	45	37	31	53	42	35	30	36	30	26	30	25	22	24	21	19	16
8	53	41	33	28	49	38	31	26	32	27	23	27	23	20	22	19	17	14
9	50	37	30	25	46	35	28	23	30	24	21	25	21	18	21	17	15	13
10	46	34	27	22	43	32	25	21	27	22	19	23	19	16	19	16	14	12

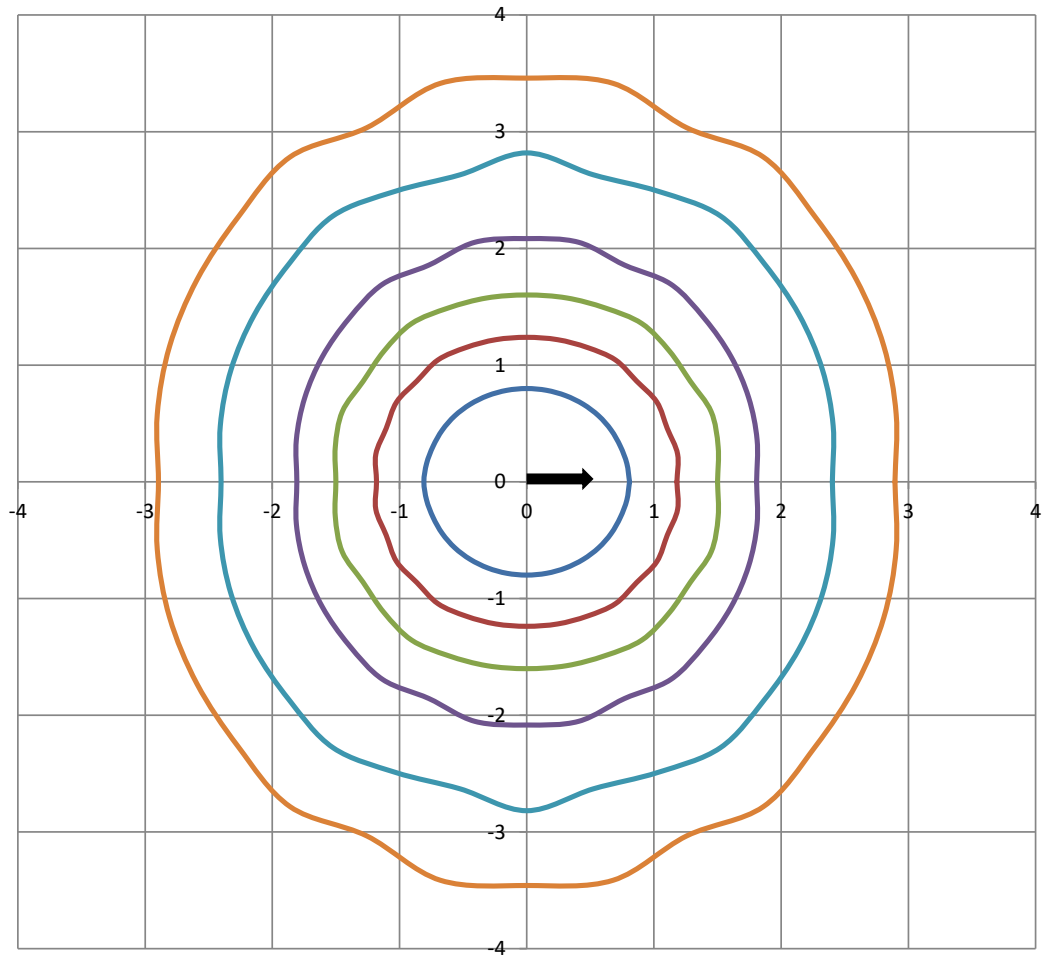
Beam and Field Information	
CIE Type:	Direct/Indirect
Center Beam Intensity:	1083 Candela
Central Cone Intensity:	1082 Candela
Beam Flux:	3858.5 Lumens
Beam Angle (0-180):	91.6 Degrees
Beam Angle (90-270):	100.5 Degrees
Field Angle (0-180):	152.4 Degrees
Field Angle (90-270):	172.5 Degrees

Cone of Light Tabulation			
Mounting Height (Feet)		Footcandles at Nadir	Diameter (Feet)
4.00		67.7	4.53
6.00		30.1	6.79
8.00		16.9	9.06
10.0		10.8	11.3
12.0		7.52	13.6
14.0		5.53	15.8
16.0		4.23	18.1



## ISOFootcandle Plot

Mounting Height - 8 Feet



Grid Lines in Units of Mounting Height

