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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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United States

Catalog Number  
**MX2UD-4-L8/835U/L8/835D-G/R**  
Order Number  
13052732  
Test Number  
13052732.20

Test Date

2019-10-07 - 2019-10-08

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 enclosure  
**Lamp:** 288 White LEDs  
**Mounting:** Pendant  
**Ballast/Driver:** Two Philips XI040C110V054BST1 Drivers

**Luminaire**



**Luminaire Characteristics**

Luminous Length: 48.00 in.  
Luminous Width: 2.000 in.  
Luminous Height: 5.00 in.

**Summary of Results**

**Integrating Sphere**

Luminous Flux: 5758 Lumens  
Efficacy: 113.35 lm/w  
CCT: 3449 K  
CRI (Ra): 82.9

**Distribution**

Total Luminaire Output: 5558 Lumens  
Luminaire Efficacy: 109.3 lm/w  
Maximum Candela: 1444 Candela

**Electrical Data at 120 VAC**

Test Temperature: 25.7 °C  
Voltage: 120.0 VAC  
Current: 0.4263 A  
Power: 50.80 W  
Power Factor: 0.993  
Frequency: 60 Hz  
Current THD: 9.92 %



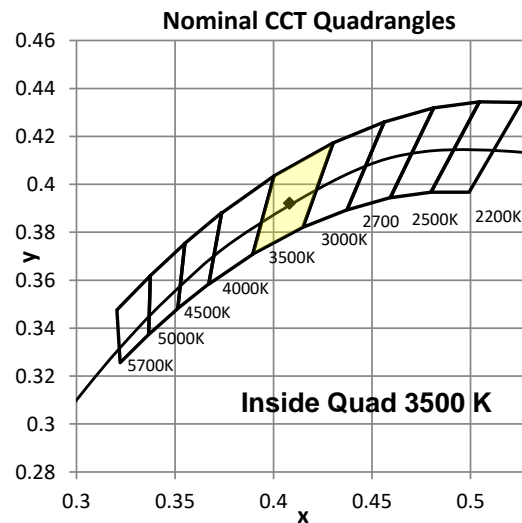
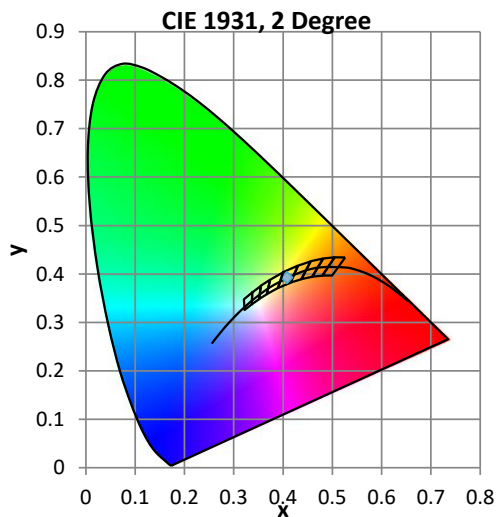
## Color Quality - Integrating Sphere

### Integrating Sphere Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.7 °C	120.0 VAC	0.4263 A	50.80 W	0.993	60 Hz	9.92 %

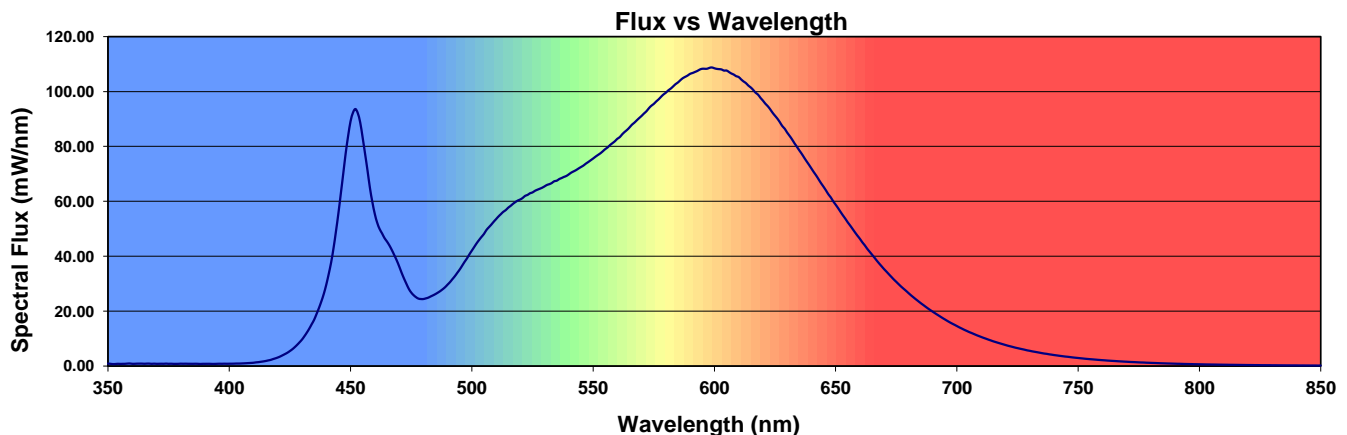
### Summary of Results

<b>Total Output:</b>	5758 Lumens	<b>Chromaticity (x):</b>	0.4081
<b>Efficacy:</b>	113.4 lm/w	<b>Chromaticity (y):</b>	0.3922
<b>CCT:</b>	3449 K	<b>Chromaticity (u'):</b>	0.2369
<b>CRI (Ra):</b>	82.9	<b>Chromaticity (v'):</b>	0.5123
<b>CRI (R9):</b>	6.9	<b>TM-30 Rf:</b>	84.3
<b>Peak Wavelength:</b>	599 nm	<b>TM-30 Rg:</b>	95.3
<b>Dominant Wavelength:</b>	581 nm	<b>Duv:</b>	0.0003
<b>S/P Ratio:</b>	1.51		



### 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	90.3	96.3	81.1	81.3	87.2	84.2	61.3	6.9	77.4	80.4	65.2	83.5	98.4	74.3





## Distribution - Goniophotometer

### Distribution Test Conditions

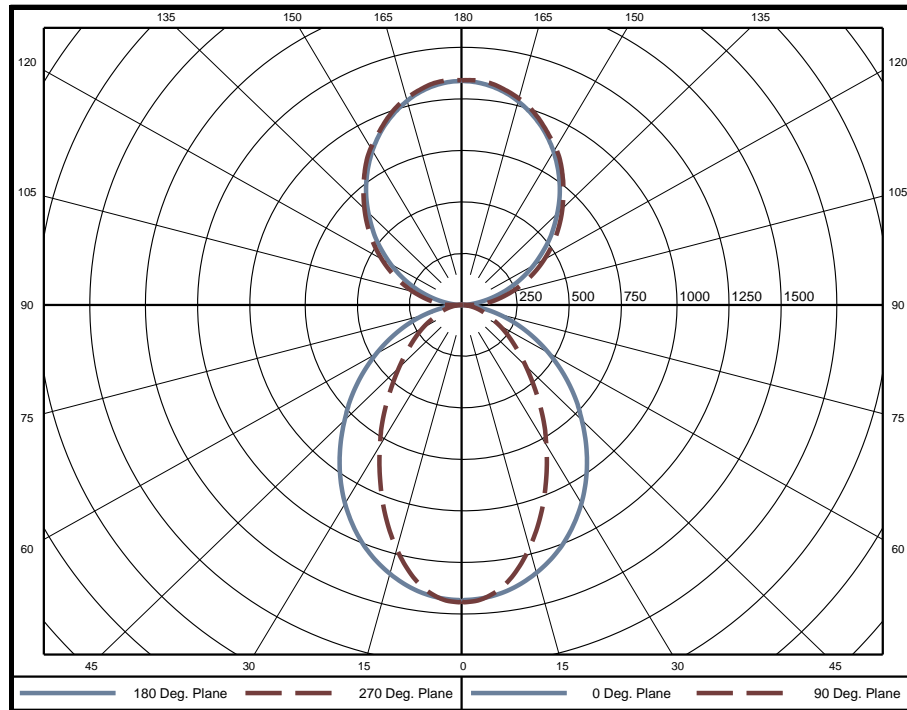
Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.9 °C	120.1 VAC	0.4267 A	50.86 W	0.993	60 Hz	9.91 %

### Summary of Results

**Spacing Criteria**  
 0-180: 1.16  
 90-270: 0.90

**Total Lumen Output:** 5558 Lumens  
**Luminaire Efficacy:** 109.3 lm/w  
**Maximum Candela:** 1444 Candela

### Polar Plot



### Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	34.3	0.6%	60-65	125.6	2.3%	120-125	211.4	3.8%
5-10	99.9	1.8%	65-70	95.6	1.7%	125-130	232.2	4.2%
10-15	157.4	2.8%	70-75	68.6	1.2%	130-135	246.4	4.4%
15-20	202.9	3.7%	75-80	44.4	0.8%	135-140	254.2	4.6%
20-25	234.4	4.2%	80-85	23.5	0.4%	140-145	254.5	4.6%
25-30	252.0	4.5%	85-90	6.6	0.1%	145-150	245.8	4.4%
30-35	256.4	4.6%	90-95	37.0	0.7%	150-155	227.5	4.1%
35-40	249.1	4.5%	95-100	62.2	1.1%	155-160	201.0	3.6%
40-45	232.5	4.2%	100-105	92.0	1.7%	160-165	166.3	3.0%
45-50	210.3	3.8%	105-110	124.5	2.2%	165-170	124.4	2.2%
50-55	184.3	3.3%	110-115	156.3	2.8%	170-175	76.9	1.4%
55-60	155.8	2.8%	115-120	185.8	3.3%	175-180	26.0	0.5%

Zone	Lumens	% of Luminaire
0-40	1486	26.7%
0-60	2269	40.8%
0-90	2634	47.4%
90-180	2924	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	1441	1441	1441	1441	1441	1441	1441	1441	1441	1441	1441	1441	1441	1441	1441
	5	1423	1433	1420	1420	1420	1420	1433	1423	1433	1420	1420	1420	1420	1420	1433
	10	1394	1395	1367	1350	1342	1350	1367	1395	1394	1395	1367	1350	1342	1350	1367
	15	1345	1336	1280	1240	1220	1240	1280	1336	1345	1336	1280	1240	1220	1240	1280
	20	1281	1258	1170	1106	1079	1106	1170	1258	1281	1258	1170	1106	1079	1106	1170
	25	1202	1161	1046	964	930	964	1046	1161	1202	1161	1046	964	930	964	1046
	30	1110	1051	916	823	788	823	916	1051	1110	1051	916	823	788	823	916
	35	1006	932	785	690	655	690	785	932	1006	932	785	690	655	690	785
	40	897	809	662	562	529	562	662	809	897	809	662	562	529	562	662
	45	785	694	543	452	423	452	543	694	785	694	543	452	423	452	543
	50	678	579	438	359	338	359	438	579	678	579	438	359	338	359	438
	55	569	471	345	283	268	283	345	471	569	471	345	283	268	283	345
	60	464	369	263	219	208	219	263	369	464	369	263	219	208	219	263
	65	364	277	193	160	150	160	193	277	364	277	193	160	150	160	193
	70	270	194	132	117	114	117	132	194	270	194	132	117	114	117	132
	75	181	122	89	83	81	83	89	122	181	122	89	83	81	83	89
	80	103	62	54	52	50	52	54	62	103	62	54	52	50	52	54
	85	41	26	24	23	23	23	24	26	41	26	24	23	23	23	24
	90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	95	41	65	94	116	123	116	94	65	41	65	94	116	123	116	94
	100	94	117	146	168	176	168	146	117	94	117	146	168	176	168	146
	105	158	181	208	230	237	230	208	181	158	181	208	230	237	230	208
	110	231	252	277	296	303	296	277	252	231	252	277	296	303	296	277
	115	307	326	349	366	373	366	349	326	307	326	349	366	373	366	349
	120	384	403	425	439	444	439	425	403	384	403	425	439	444	439	425
	125	463	482	498	513	518	513	498	482	463	482	498	513	518	513	498
	130	546	561	574	586	590	586	574	561	546	561	574	586	590	586	574
	135	625	641	650	660	663	660	650	641	625	641	650	660	663	660	650
	140	706	720	727	734	736	734	727	720	706	720	727	734	736	734	727
	145	782	796	802	809	810	809	802	796	782	796	802	809	810	809	802
	150	854	866	869	875	877	875	869	866	854	866	869	875	877	875	869
	155	919	929	931	934	933	934	931	929	919	929	931	934	933	934	931
	160	974	984	986	992	991	992	986	984	974	984	986	992	991	992	986
	165	1021	1030	1031	1037	1036	1037	1031	1030	1021	1030	1031	1037	1036	1037	1031
	170	1057	1064	1063	1070	1069	1070	1063	1064	1057	1064	1063	1070	1069	1070	1063
	175	1079	1084	1082	1088	1090	1088	1082	1084	1079	1084	1082	1088	1090	1088	1082
	180	1090	1090	1090	1090	1090	1090	1090	1090	1090	1090	1090	1090	1090	1090	1090

### Average Luminance (cd/m<sup>2</sup>)

Horizontal Angle (Degrees)

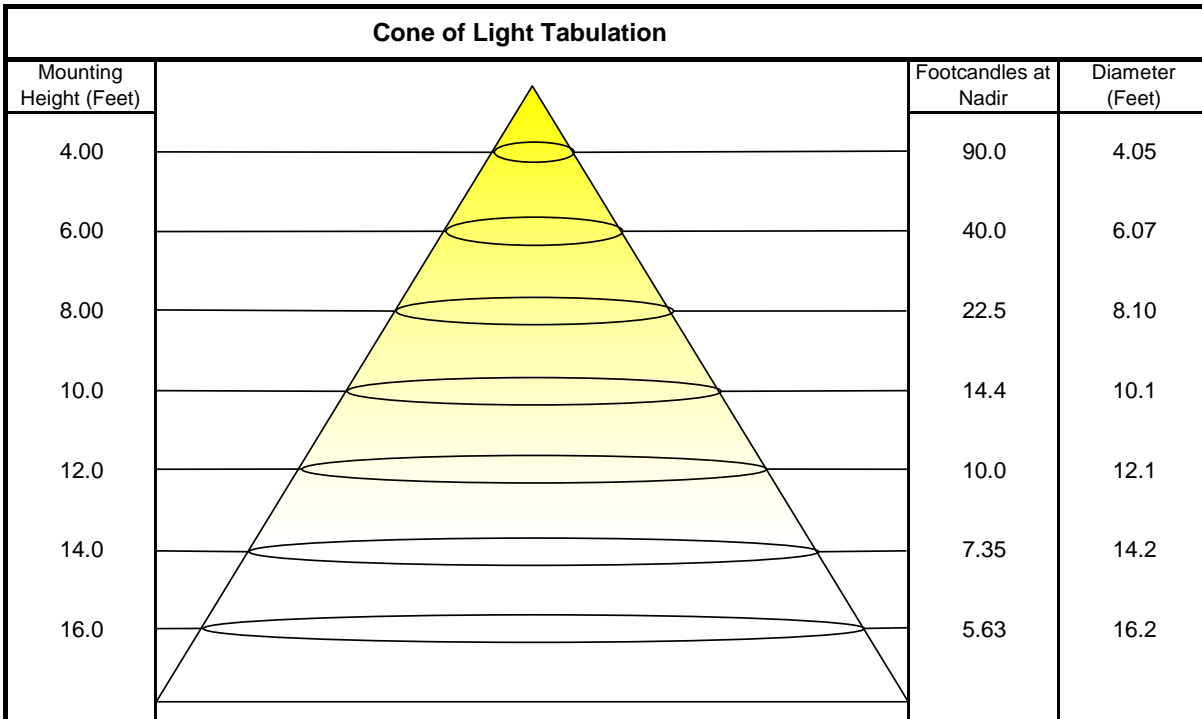
Vertical Angle (Degrees)	0	45	90
	0	23260	23260
	45	16220	4362
	55	13950	2672
	65	11350	1491
	75	8146	702
	85	3472	202



### 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	98	94	90	87	90	86	83	80	73	70	68	60	59	57	48	47	46	41
2	90	83	77	72	82	76	71	67	64	61	58	53	51	49	43	42	40	35
3	82	73	66	61	75	68	62	57	57	53	49	48	45	42	39	37	35	31
4	75	65	58	52	69	60	54	49	51	46	42	43	39	36	35	33	31	27
5	69	58	51	45	64	54	47	42	46	41	37	39	35	32	32	29	27	24
6	64	53	45	39	59	49	42	37	42	37	33	35	31	28	29	26	24	21
7	60	48	40	35	55	44	38	33	38	33	29	32	28	25	27	24	22	19
8	55	43	36	31	51	41	34	29	35	30	26	30	26	23	25	22	20	17
9	52	40	33	28	48	37	31	26	32	27	23	28	24	21	23	20	18	16
10	48	37	30	25	45	34	28	24	30	25	21	26	22	19	22	19	16	15

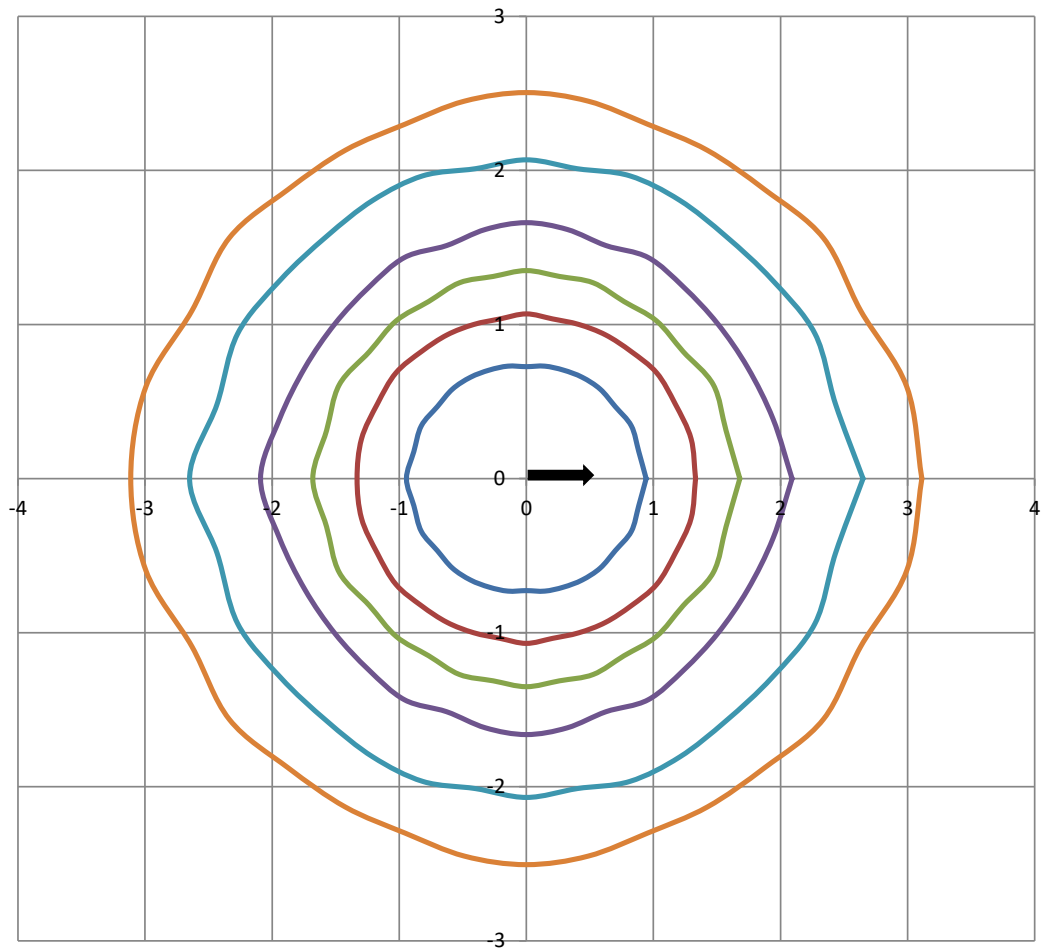
Beam and Field Information	
CIE Type:	Direct/Indirect
Center Beam Intensity:	1441 Candela
Central Cone Intensity:	1435 Candela
Beam Flux:	2812.4 Lumens
Beam Angle (0-180):	96.1 Degrees
Beam Angle (90-270):	65.2 Degrees
Field Angle (0-180):	154.6 Degrees
Field Angle (90-270):	131.2 Degrees





## 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