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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**  
**MX2D-4-L8/835-G**  
Order Number  
13052732  
Test Number  
13052732.15

Test Date

2019-10-10 - 2019-10-16

Prepared By

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Approved By

Alexa Lambert, Project Handler

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:** 144 White LEDs  
**Mounting:** Pendant  
**Ballast/Driver:** One Philips XI040C110V054BST1 Driver

**Luminaire**



**Luminaire Characteristics**

Luminous Length: 48.00 in.  
Luminous Width: 2.000 in.  
Luminous Height: 0.25 in.

**Summary of Results**

**Integrating Sphere**

Luminous Flux: 2944 Lumens  
Efficacy: 109.84 lm/w  
CCT: 3429 K  
CRI (Ra): 83.0

**Distribution**

Total Luminaire Output: 2823 Lumens  
Luminaire Efficacy: 105.2 lm/w  
Maximum Candela: 1081 Candela

**Electrical Data at 120 VAC**

Test Temperature: 25.3 °C  
Voltage: 120.2 VAC  
Current: 0.2245 A  
Power: 26.80 W  
Power Factor: 0.994  
Frequency: 60 Hz  
Current THD: 9.30 %



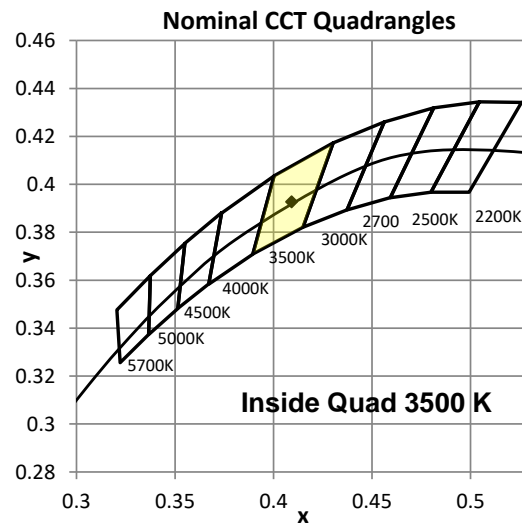
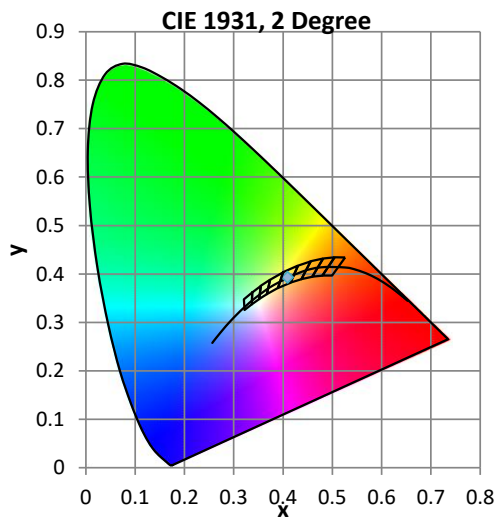
## Color Quality - Integrating Sphere

### Integrating Sphere Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.3 °C	120.2 VAC	0.2245 A	26.80 W	0.994	60 Hz	9.30 %

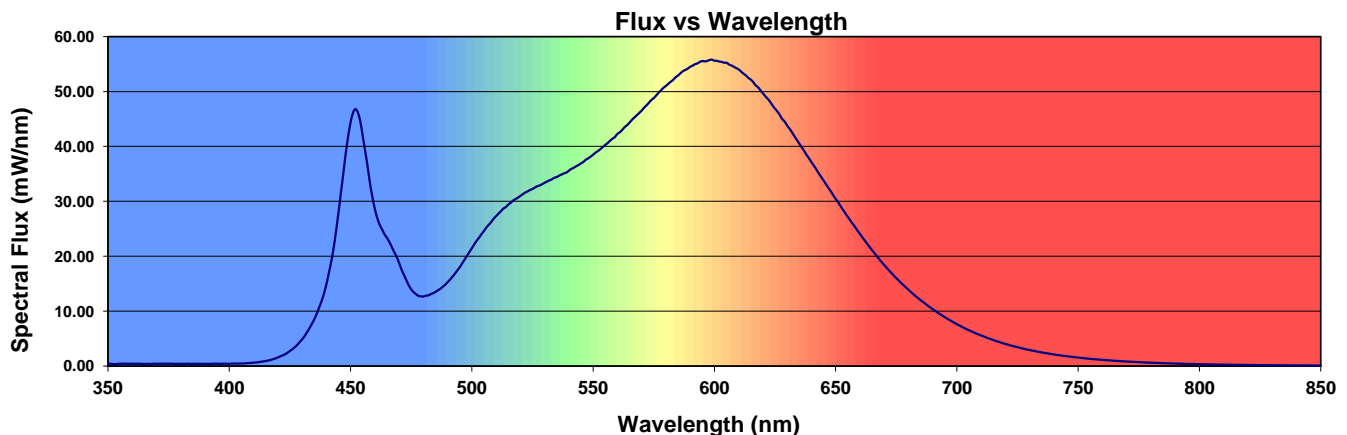
### Summary of Results

<b>Total Output:</b>	2944 Lumens	<b>Chromaticity (x):</b>	0.4092
<b>Efficacy:</b>	109.8 lm/w	<b>Chromaticity (y):</b>	0.3927
<b>CCT:</b>	3429 K	<b>Chromaticity (u'):</b>	0.2375
<b>CRI (Ra):</b>	83.0	<b>Chromaticity (v'):</b>	0.5127
<b>CRI (R9):</b>	7.7	<b>TM-30 Rf:</b>	84.5
<b>Peak Wavelength:</b>	599 nm	<b>TM-30 Rg:</b>	95.6
<b>Dominant Wavelength:</b>	581 nm	<b>Duv:</b>	0.0004
<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
83.0	81.5	90.6	96.3	81.2	81.5	87.6	84.2	61.4	7.7	78.0	80.6	65.7	83.8	98.5	74.3





## Distribution - Goniophotometer

### Distribution Test Conditions

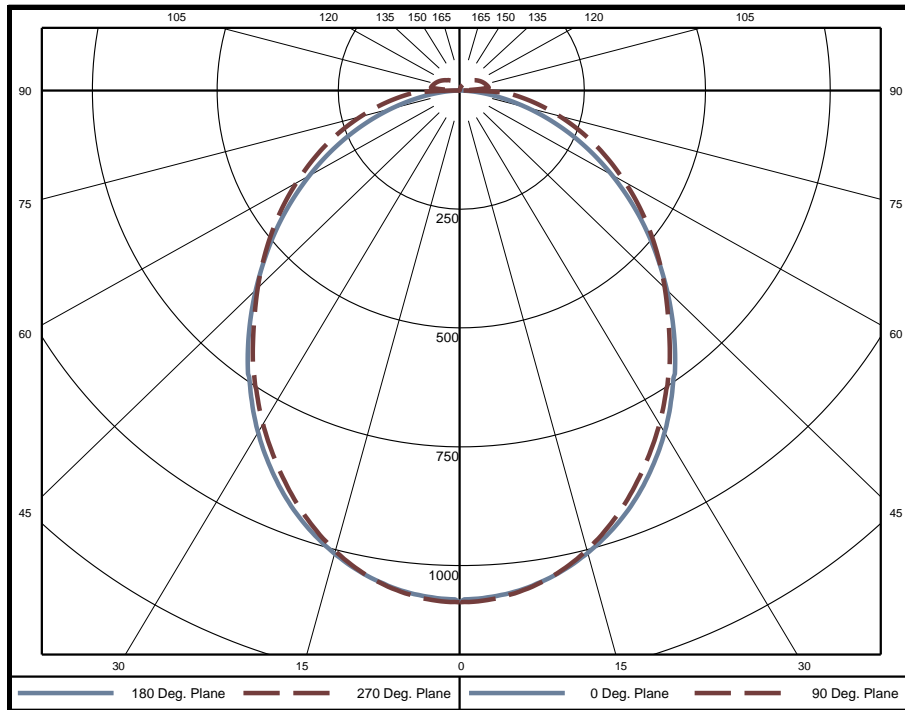
Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.0 °C	120.1 VAC	0.2249 A	26.84 W	0.994	60 Hz	9.29 %

### Summary of Results

**Spacing Criteria**  
 0-180: 1.15  
 90-270: 1.13

**Total Lumen Output:** 2823 Lumens  
**Luminaire Efficacy:** 105.2 lm/w  
**Maximum Candela:** 1081 Candela

### Polar Plot



### Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	25.7	0.9%	60-65	165.6	5.9%	120-125	10.7	0.4%
5-10	75.6	2.7%	65-70	139.2	4.9%	125-130	8.9	0.3%
10-15	121.7	4.3%	70-75	110.8	3.9%	130-135	7.4	0.3%
15-20	161.5	5.7%	75-80	82.1	2.9%	135-140	5.9	0.2%
20-25	193.5	6.9%	80-85	55.3	2.0%	140-145	4.4	0.2%
25-30	216.7	7.7%	85-90	26.8	0.9%	145-150	3.0	0.1%
30-35	230.5	8.2%	90-95	6.6	0.2%	150-155	1.8	0.1%
35-40	236.1	8.4%	95-100	17.6	0.6%	155-160	1.0	0.0%
40-45	233.0	8.3%	100-105	17.0	0.6%	160-165	0.5	0.0%
45-50	223.6	7.9%	105-110	15.7	0.6%	165-170	0.1	0.0%
50-55	208.9	7.4%	110-115	14.1	0.5%	170-175	0.0	0.0%
55-60	189.2	6.7%	115-120	12.4	0.4%	175-180	0	0.0%

Zone	Lumens	% of Luminaire
0-40	1261	44.7%
0-60	2116	75.0%
0-90	2696	95.5%
90-180	127	4.5%



### 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	1077	1077	1077	1077	1077	1077	1077	1077	1077	1077	1077	1077	1077	1077	1077
	5	1064	1074	1067	1069	1068	1069	1067	1074	1064	1074	1067	1069	1068	1069	1067
	10	1042	1051	1043	1044	1042	1044	1043	1051	1042	1051	1043	1044	1042	1044	1043
	15	1005	1015	1005	1003	1000	1003	1005	1015	1005	1015	1005	1003	1000	1003	1005
	20	957	966	952	948	943	948	952	966	957	966	952	948	943	948	952
	25	897	905	891	883	877	883	891	905	897	905	891	883	877	883	891
	30	827	835	821	812	806	812	821	835	827	835	821	812	806	812	821
	35	749	758	745	738	733	738	745	758	749	758	745	738	733	738	745
	40	671	681	669	662	656	662	669	681	671	681	669	662	656	662	669
	45	589	599	592	587	584	587	592	599	589	599	592	587	584	587	592
	50	508	521	518	518	515	518	518	521	508	521	518	518	515	518	521
	55	429	444	447	450	449	450	447	444	429	444	447	450	449	450	447
	60	353	369	377	384	384	384	377	369	353	369	377	384	384	384	377
	65	279	297	310	321	323	321	310	297	279	297	310	321	323	321	310
	70	208	228	247	261	265	261	247	228	208	228	247	261	265	261	247
	75	142	163	186	203	208	203	186	163	142	163	186	203	208	203	186
	80	82	105	131	150	157	150	131	105	82	105	131	150	157	150	131
	85	34	56	83	103	111	103	83	56	34	56	83	103	111	103	83
	90	0	5	10	13	15	13	10	5	0	5	10	13	15	13	10
	95	0	15	33	46	51	46	33	15	0	15	33	46	51	46	33
	100	0	17	34	50	57	50	34	17	0	17	34	50	57	50	34
	105	0	16	33	48	54	48	33	16	0	16	33	48	54	48	33
	110	0	15	31	45	50	45	31	15	0	15	31	45	50	45	31
	115	0	13	29	42	46	42	29	13	0	13	29	42	46	42	29
	120	0	12	27	38	42	38	27	12	0	12	27	38	42	38	27
	125	0	10	25	34	38	34	25	10	0	10	25	34	38	34	25
	130	0	8	22	31	34	31	22	8	0	8	22	31	34	31	22
	135	0	6	19	28	31	28	19	6	0	6	19	28	31	28	19
	140	0	5	16	24	27	24	16	5	0	5	16	24	27	24	16
	145	0	3	12	20	22	20	12	3	0	3	12	20	22	20	12
	150	0	2	9	15	18	15	9	2	0	2	9	15	18	15	9
	155	0	1	6	11	13	11	6	1	0	1	6	11	13	11	6
	160	0	0	3	7	8	7	3	0	0	0	3	7	8	7	3
	165	0	0	1	3	5	3	1	0	0	0	1	3	5	3	1
	170	0	0	0	1	1	1	0	0	0	0	0	1	1	1	0
	175	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	180	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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

Horizontal Angle (Degrees)

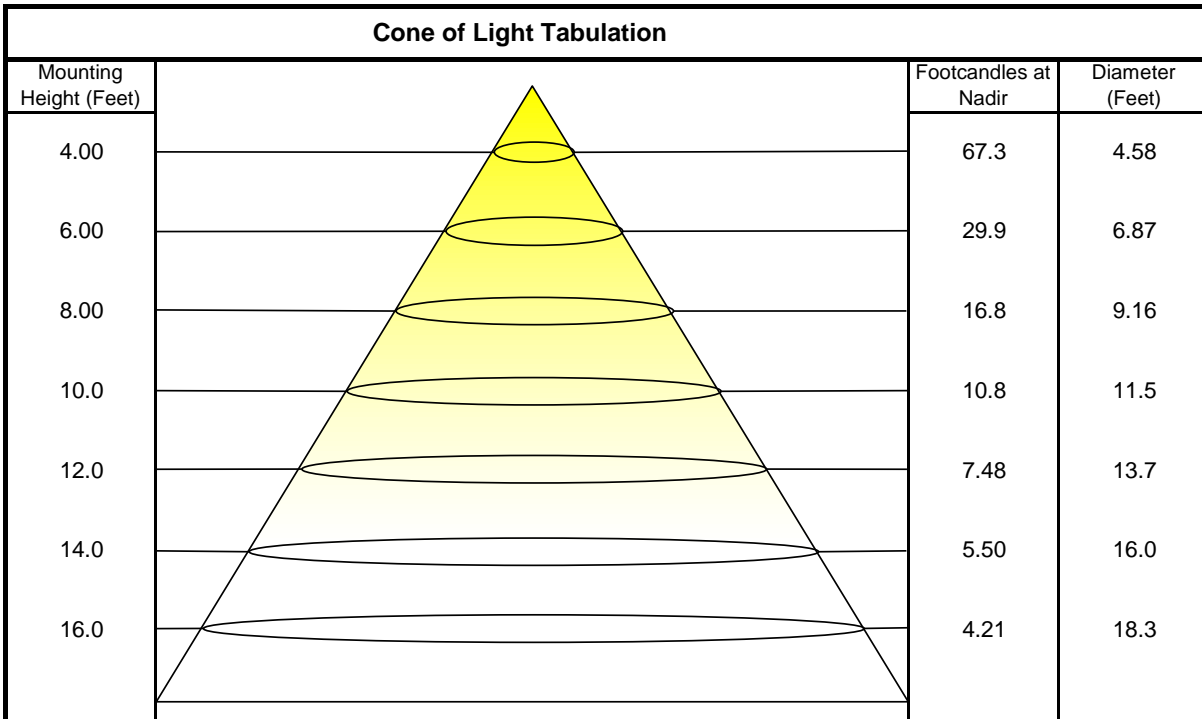
Vertical Angle (Degrees)	0	45	90
	0	17390	17390
	45	13380	12370
	55	12000	11110
	65	10550	9901
	75	8677	8630
	85	5921	7470



### 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	118	118	118	118	115	115	115	115	109	109	109	103	103	103	98	98	98	95
1	107	103	98	94	104	100	96	92	95	92	89	90	87	85	86	84	82	79
2	98	90	83	77	95	87	81	76	83	78	73	79	75	71	75	72	69	66
3	89	79	71	64	86	77	69	63	73	67	62	70	65	60	67	62	59	56
4	82	70	61	55	79	68	60	54	65	58	53	63	57	52	60	55	51	48
5	75	63	54	47	73	61	53	47	59	52	46	56	50	45	54	49	44	42
6	70	57	48	42	68	56	47	41	53	46	40	51	45	40	49	44	39	37
7	65	52	43	37	63	51	42	37	49	41	36	47	40	35	45	39	35	33
8	60	47	39	33	59	46	38	33	45	37	32	43	37	32	41	36	31	29
9	57	43	35	30	55	43	35	30	41	34	29	40	33	29	38	33	28	27
10	53	40	32	27	52	39	32	27	38	31	27	37	31	26	36	30	26	24

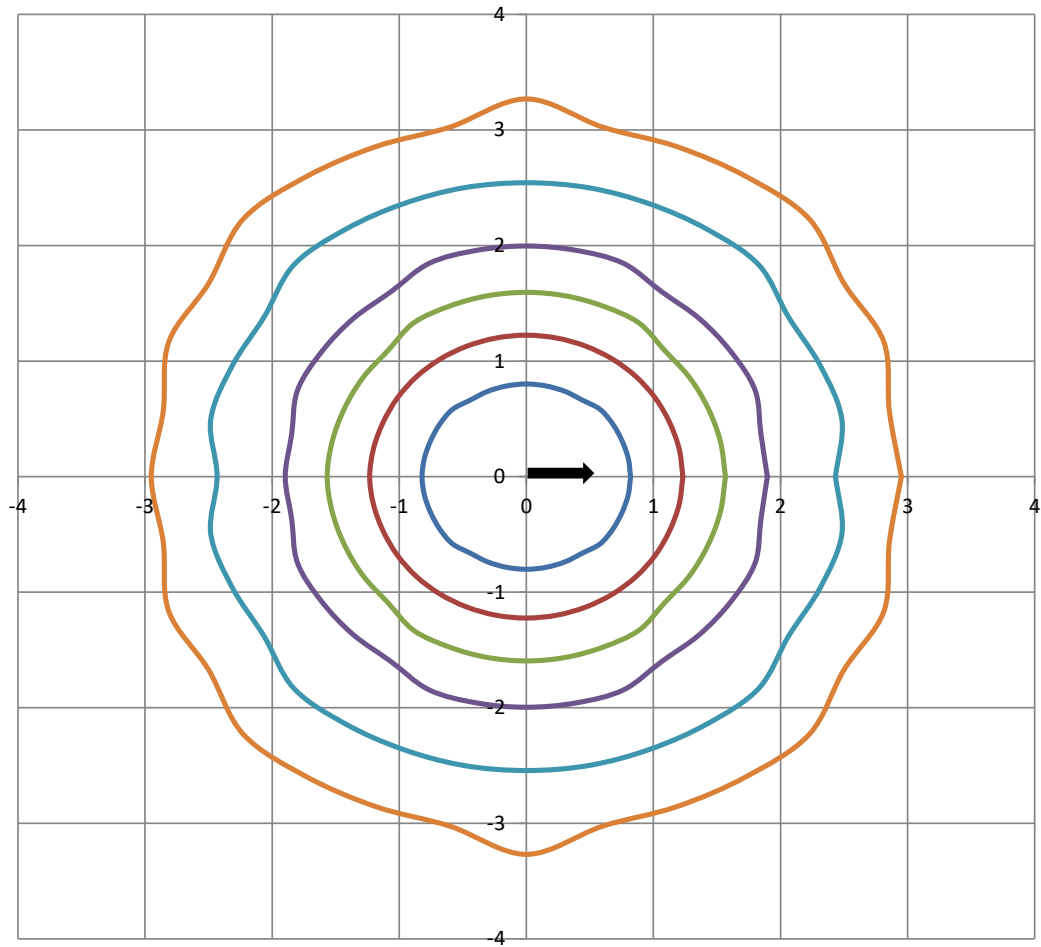
Beam and Field Information	
CIE Type:	Direct
Center Beam Intensity:	1077 Candela
Central Cone Intensity:	1074 Candela
Beam Flux:	1652.1 Lumens
Beam Angle (0-180):	96.1 Degrees
Beam Angle (90-270):	96.6 Degrees
Field Angle (0-180):	155.5 Degrees
Field Angle (90-270):	170.9 Degrees





## 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