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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-G/F
Order Number
13052732
Test Number
13052732.09

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 4π geometry method.
Absorption correction was employed for Sphere measurement



Luminaire Description: Formed White aluminum housing,frosted/specular 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: 6221 Lumens
Efficacy: 122.77 lm/w
CCT: 3448 K
CRI (Ra): 82.9

Distribution

Total Luminaire Output: 6001 Lumens
Luminaire Efficacy: 118.4 lm/w
Maximum Candela: 1367 Candela

Electrical Data at 120 VAC

Test Temperature: 25.4 °C
Voltage: 120.0 VAC
Current: 0.4253 A
Power: 50.67 W
Power Factor: 0.993
Frequency: 60 Hz
Current THD: 10.0 %



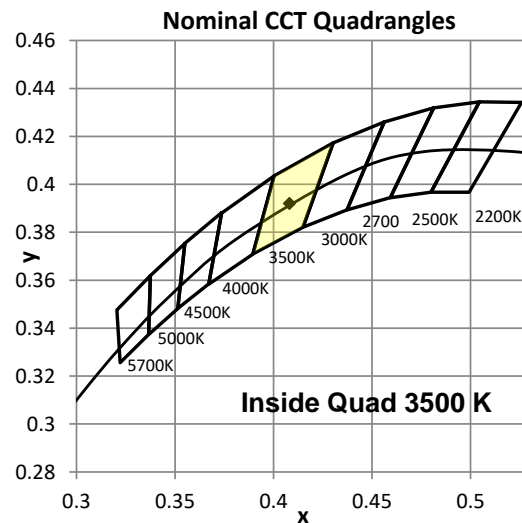
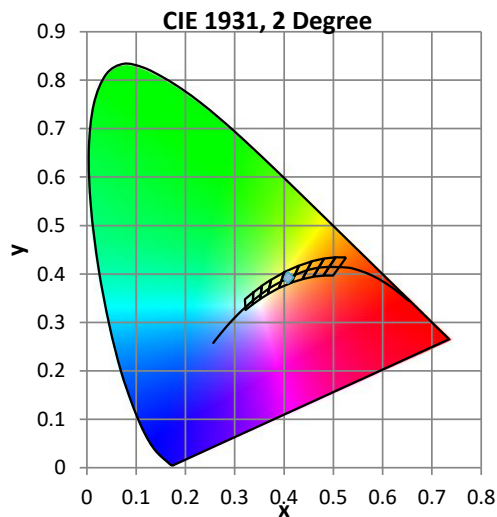
Color Quality - Integrating Sphere

Integrating Sphere Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.4 °C	120.0 VAC	0.4253 A	50.67 W	0.993	60 Hz	10.0 %

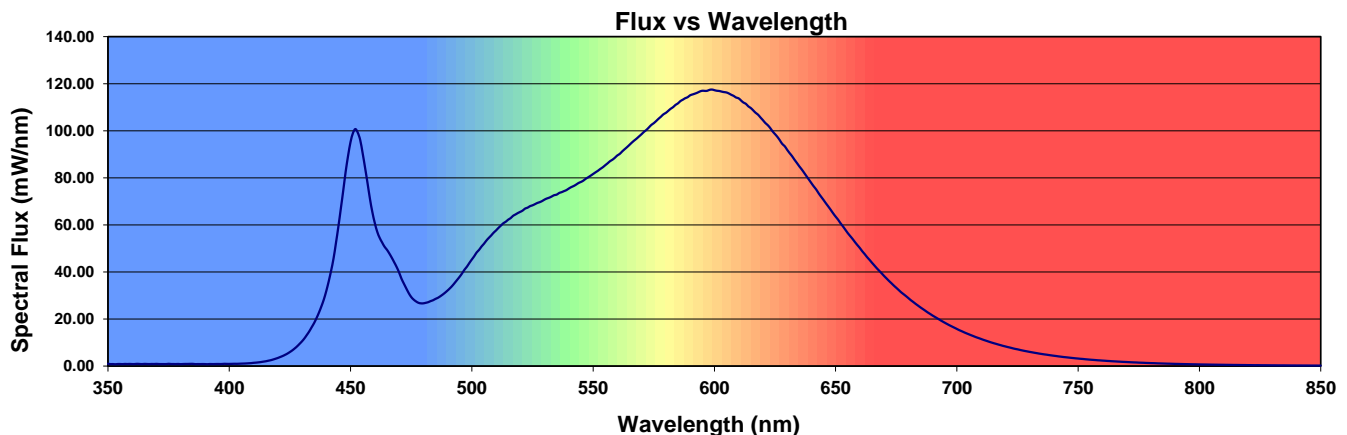
Summary of Results

Total Output:	6221 Lumens	Chromaticity (x):	0.4081
Efficacy:	122.8 lm/w	Chromaticity (y):	0.3921
CCT:	3448 K	Chromaticity (u'):	0.2370
CRI (Ra):	82.9	Chromaticity (v'):	0.5123
CRI (R9):	7.0	TM-30 Rf:	84.3
Peak Wavelength:	599 nm	TM-30 Rg:	95.2
Dominant Wavelength:	581 nm	Duv:	0.0003
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
82.9	81.2	90.4	96.3	81.1	81.3	87.3	84.1	61.2	7.0	77.6	80.3	65.2	83.6	98.4	74.1





Distribution - Goniophotometer

Distribution Test Conditions

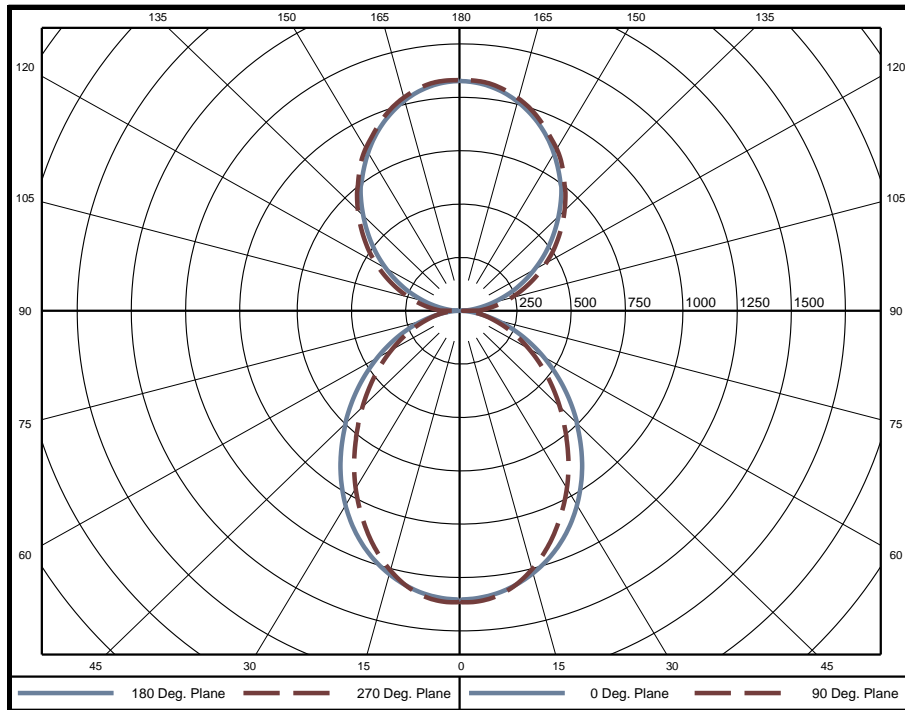
Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.4 °C	120.0 VAC	0.4251 A	50.66 W	0.993	60 Hz	10.0 %

Summary of Results

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

Total Lumen Output: 6001 Lumens
Luminaire Efficacy: 118.4 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	2.9%	120-125	212.2	3.5%
5-10	95.8	1.6%	65-70	138.0	2.3%	125-130	232.5	3.9%
10-15	153.9	2.6%	70-75	103.2	1.7%	130-135	246.9	4.1%
15-20	203.4	3.4%	75-80	70.2	1.2%	135-140	254.5	4.2%
20-25	242.0	4.0%	80-85	40.6	0.7%	140-145	253.4	4.2%
25-30	268.6	4.5%	85-90	16.0	0.3%	145-150	244.1	4.1%
30-35	282.3	4.7%	90-95	39.1	0.7%	150-155	225.9	3.8%
35-40	283.5	4.7%	95-100	64.2	1.1%	155-160	199.5	3.3%
40-45	274.6	4.6%	100-105	94.0	1.6%	160-165	165.1	2.8%
45-50	258.0	4.3%	105-110	126.0	2.1%	165-170	123.4	2.1%
50-55	234.1	3.9%	110-115	157.7	2.6%	170-175	76.2	1.3%
55-60	205.0	3.4%	115-120	186.8	3.1%	175-180	25.7	0.4%

Zone	Lumens	% of Luminaire
0-40	1562	26.0%
0-60	2534	42.2%
0-90	3074	51.2%
90-180	2927	48.8%



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	1344	1358	1352	1357	1359	1357	1352	1358	1344	1358	1352	1357	1359	1357	1352
	10	1317	1331	1322	1323	1321	1323	1322	1331	1317	1331	1322	1323	1321	1323	1322
	15	1272	1287	1269	1262	1254	1262	1269	1287	1272	1287	1269	1262	1254	1262	1269
	20	1213	1225	1197	1179	1167	1179	1197	1225	1213	1225	1197	1179	1167	1179	1197
	25	1138	1147	1110	1083	1067	1083	1110	1147	1138	1147	1110	1083	1067	1083	1110
	30	1049	1056	1012	978	961	978	1012	1056	1049	1056	1012	978	961	978	1012
	35	951	953	903	866	849	866	903	953	951	953	903	866	849	866	903
	40	845	844	793	755	738	755	793	844	845	844	793	755	738	755	793
	45	741	737	688	649	634	649	688	737	741	737	688	649	634	649	688
	50	636	632	585	549	536	549	585	632	636	632	585	549	536	549	585
	55	533	529	488	457	445	457	488	529	533	529	488	457	445	457	488
	60	434	430	396	370	360	370	396	430	434	430	396	370	360	370	396
	65	340	337	311	291	283	291	311	337	340	337	311	291	283	291	311
	70	253	251	233	219	212	219	233	251	253	251	233	219	212	219	233
	75	171	172	163	156	151	156	163	172	171	172	163	156	151	156	163
	80	100	103	102	100	100	100	102	103	100	103	102	100	100	100	102
	85	44	49	51	53	54	53	51	49	44	49	51	53	54	53	51
	90	6	9	11	12	14	12	11	9	6	9	11	12	14	12	11
	95	43	68	97	120	128	120	97	68	43	68	97	120	128	120	97
	100	97	120	150	173	181	173	150	120	97	120	150	173	181	173	150
	105	161	184	211	234	243	234	211	184	161	184	211	234	243	234	211
	110	233	256	279	299	307	299	279	256	233	256	279	299	307	299	279
	115	309	328	351	370	376	370	351	328	309	328	351	370	376	370	351
	120	385	404	425	442	447	442	425	404	385	404	425	442	447	442	425
	125	465	482	499	514	521	514	499	482	465	482	499	514	521	514	499
	130	544	561	577	588	592	588	577	561	544	561	577	588	592	588	577
	135	625	641	651	660	665	660	651	641	625	641	651	660	665	660	651
	140	707	723	726	734	736	734	726	723	707	723	726	734	736	734	726
	145	777	791	796	803	806	803	796	791	777	791	796	803	806	803	796
	150	845	860	864	869	873	869	864	860	845	860	864	869	873	869	864
	155	910	923	925	927	928	927	925	923	910	923	925	927	928	927	925
	160	965	978	980	985	984	985	980	978	965	978	980	985	984	985	980
	165	1012	1023	1024	1029	1028	1029	1024	1023	1012	1023	1024	1029	1028	1029	1024
	170	1047	1056	1055	1060	1060	1060	1055	1056	1047	1056	1055	1060	1060	1060	1055
	175	1069	1075	1071	1076	1079	1076	1071	1075	1069	1075	1071	1076	1079	1076	1071
	180	1079	1079	1079	1079	1079	1079	1079	1079	1079	1079	1079	1079	1079	1079	1079

Average Luminance (cd/m²)

Horizontal Angle (Degrees)

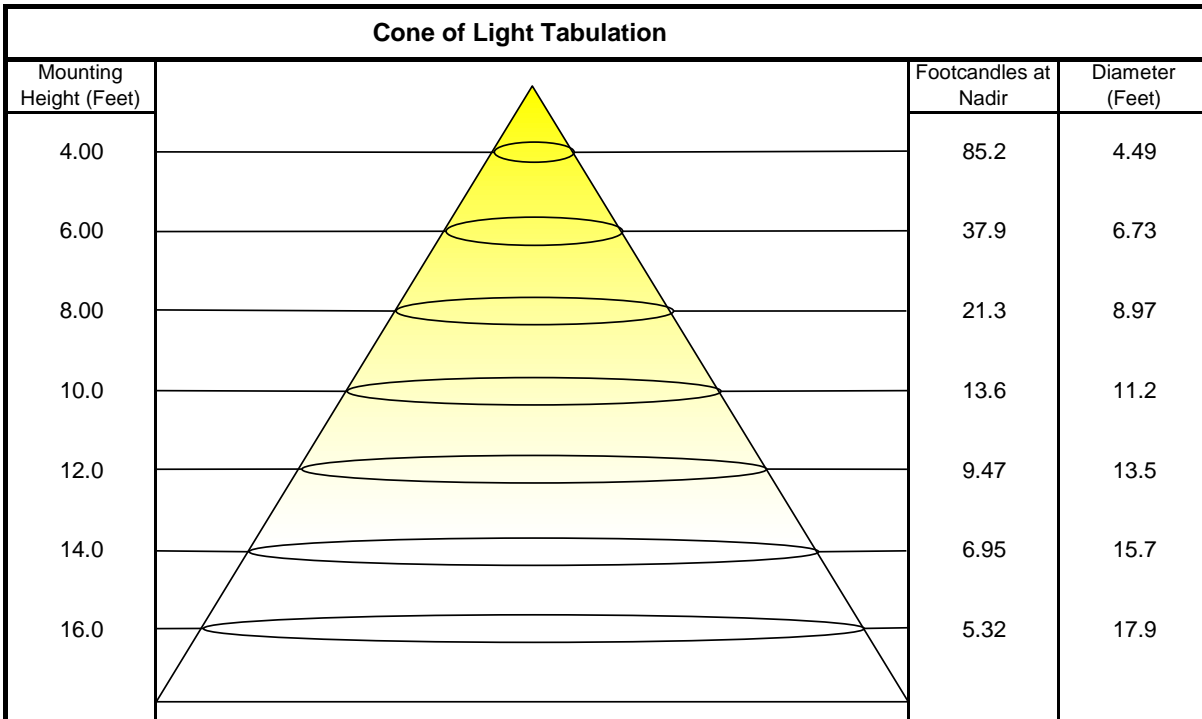
Vertical Angle (Degrees)	0	45	90
	0	22010	22010
	45	15610	6349
	55	13410	4425
	65	11020	2854
	75	8149	1560
	85	4153	532



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	84	84	84	70	70	70	57	57	57	51
1	98	94	90	87	91	87	84	81	74	72	69	62	60	59	51	50	49	44
2	90	82	76	71	83	76	71	67	65	61	58	55	52	49	45	43	41	37
3	82	73	65	60	76	67	61	56	58	53	49	49	45	42	40	38	36	32
4	75	65	57	51	69	60	53	48	51	46	42	44	40	36	36	33	31	27
5	69	58	50	44	64	54	47	41	46	41	36	39	35	32	33	30	27	24
6	64	52	44	38	59	48	41	36	42	36	32	36	31	28	30	27	24	21
7	59	47	39	34	54	44	37	32	38	32	28	32	28	25	27	24	21	19
8	55	43	35	30	51	40	33	28	35	29	25	30	25	22	25	22	19	17
9	51	39	32	27	47	37	30	25	32	26	23	27	23	20	23	20	18	15
10	48	36	29	24	44	34	27	23	29	24	21	25	21	18	22	18	16	14

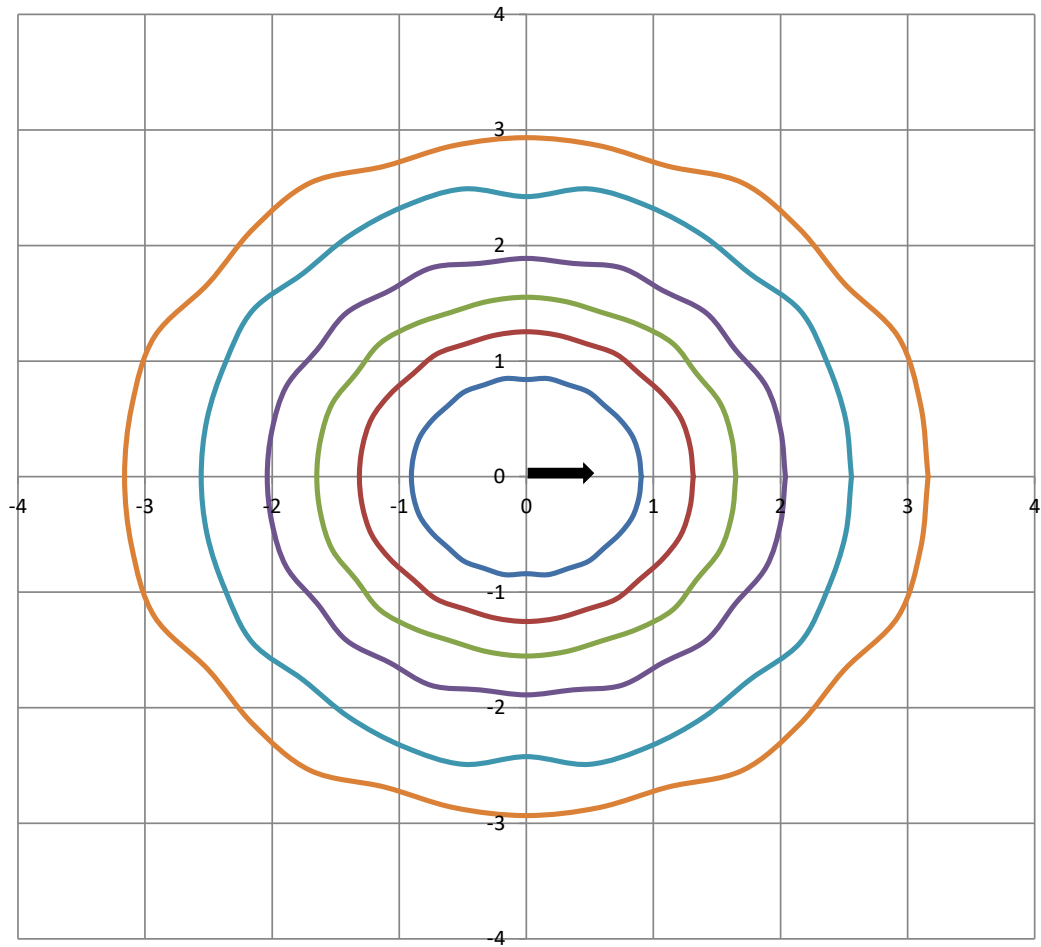
Beam and Field Information	
CIE Type:	Direct/Indirect
Center Beam Intensity:	1363 Candela
Central Cone Intensity:	1360 Candela
Beam Flux:	3326.6 Lumens
Beam Angle (0-180):	95.7 Degrees
Beam Angle (90-270):	85.4 Degrees
Field Angle (0-180):	154.7 Degrees
Field Angle (90-270):	152.9 Degrees





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