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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/D
Order Number
13052732
Test Number
13052732.11

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 4π 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: 5885 Lumens
Efficacy: 116.24 lm/w
CCT: 3446 K
CRI (Ra): 82.9

Distribution

Total Luminaire Output: 5695 Lumens
Luminaire Efficacy: 112.3 lm/w
Maximum Candela: 1088 Candela

Electrical Data at 120 VAC

Test Temperature: 26.0 °C
Voltage: 120.0 VAC
Current: 0.4250 A
Power: 50.63 W
Power Factor: 0.993
Frequency: 60 Hz
Current THD: 10.0 %



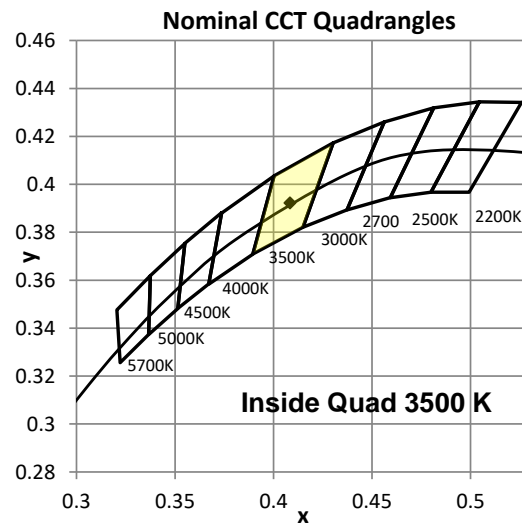
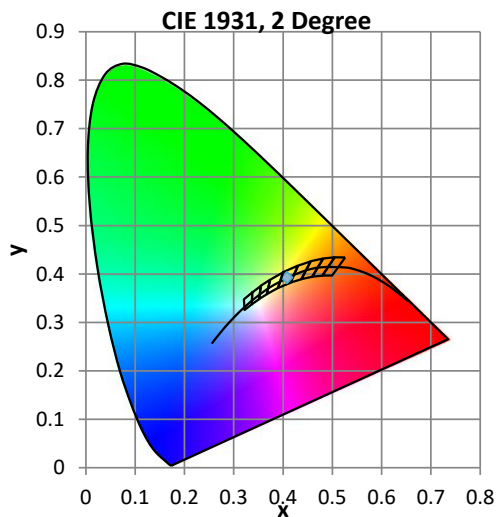
Color Quality - Integrating Sphere

Integrating Sphere Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
26.0 °C	120.0 VAC	0.4250 A	50.63 W	0.993	60 Hz	10.0 %

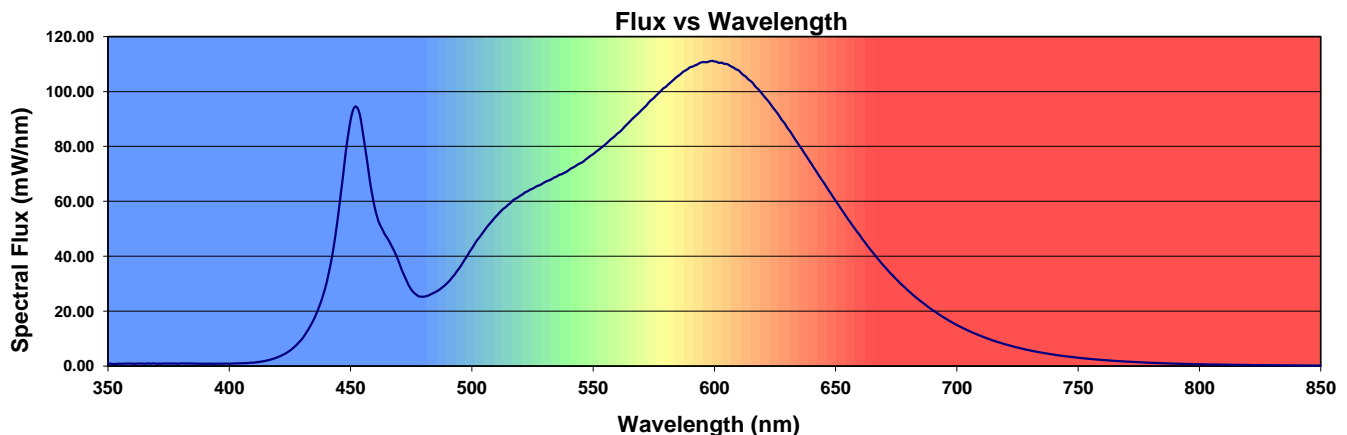
Summary of Results

Total Output:	5885 Lumens	Chromaticity (x):	0.4083
Efficacy:	116.2 lm/w	Chromaticity (y):	0.3923
CCT:	3446 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	81.3	90.4	96.3	81.0	81.3	87.3	84.1	61.2	7.0	77.6	80.3	65.2	83.6	98.4	74.2





Distribution - Goniophotometer

Distribution Test Conditions

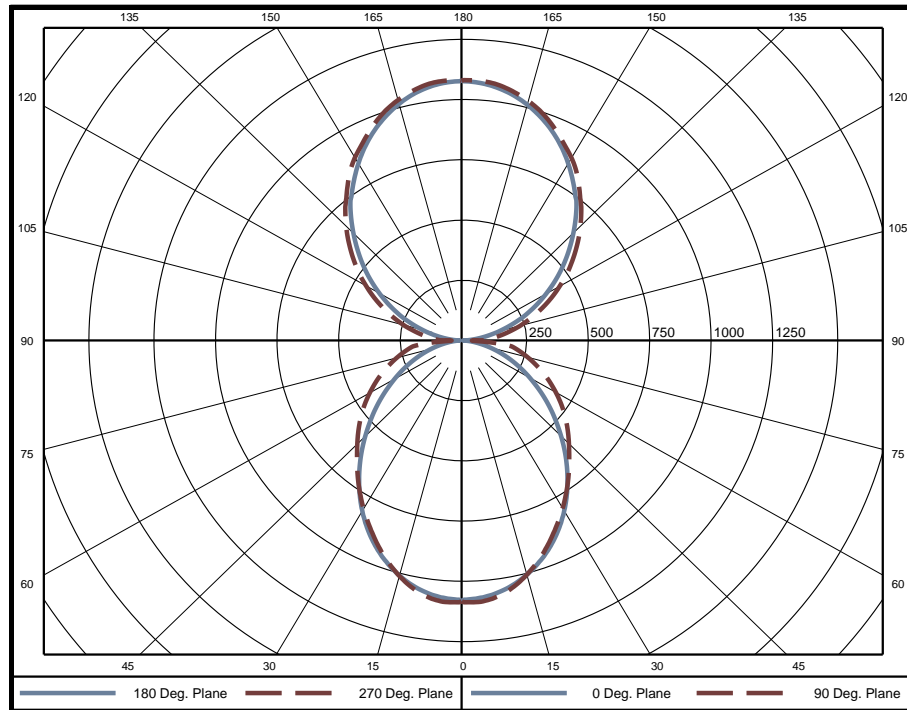
Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.0 °C	120.0 VAC	0.4255 A	50.71 W	0.993	60 Hz	10.0 %

Summary of Results

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

Total Lumen Output: 5695 Lumens
Luminaire Efficacy: 112.3 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	0.5%	60-65	172.4	3.0%	120-125	212.2	3.7%
5-10	76.3	1.3%	65-70	149.7	2.6%	125-130	232.5	4.1%
10-15	122.4	2.1%	70-75	125.2	2.2%	130-135	246.9	4.3%
15-20	161.8	2.8%	75-80	100.7	1.8%	135-140	254.5	4.5%
20-25	192.9	3.4%	80-85	76.8	1.3%	140-145	253.4	4.4%
25-30	215.2	3.8%	85-90	32.6	0.6%	145-150	244.1	4.3%
30-35	228.3	4.0%	90-95	39.1	0.7%	150-155	225.9	4.0%
35-40	232.8	4.1%	95-100	64.2	1.1%	155-160	199.5	3.5%
40-45	230.0	4.0%	100-105	94.0	1.7%	160-165	165.1	2.9%
45-50	222.0	3.9%	105-110	126.0	2.2%	165-170	123.4	2.2%
50-55	209.6	3.7%	110-115	157.7	2.8%	170-175	76.2	1.3%
55-60	192.8	3.4%	115-120	186.8	3.3%	175-180	25.7	0.5%

Zone	Lumens	% of Luminaire
0-40	1256	22.0%
0-60	2110	37.1%
0-90	2767	48.6%
90-180	2927	51.4%



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	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)

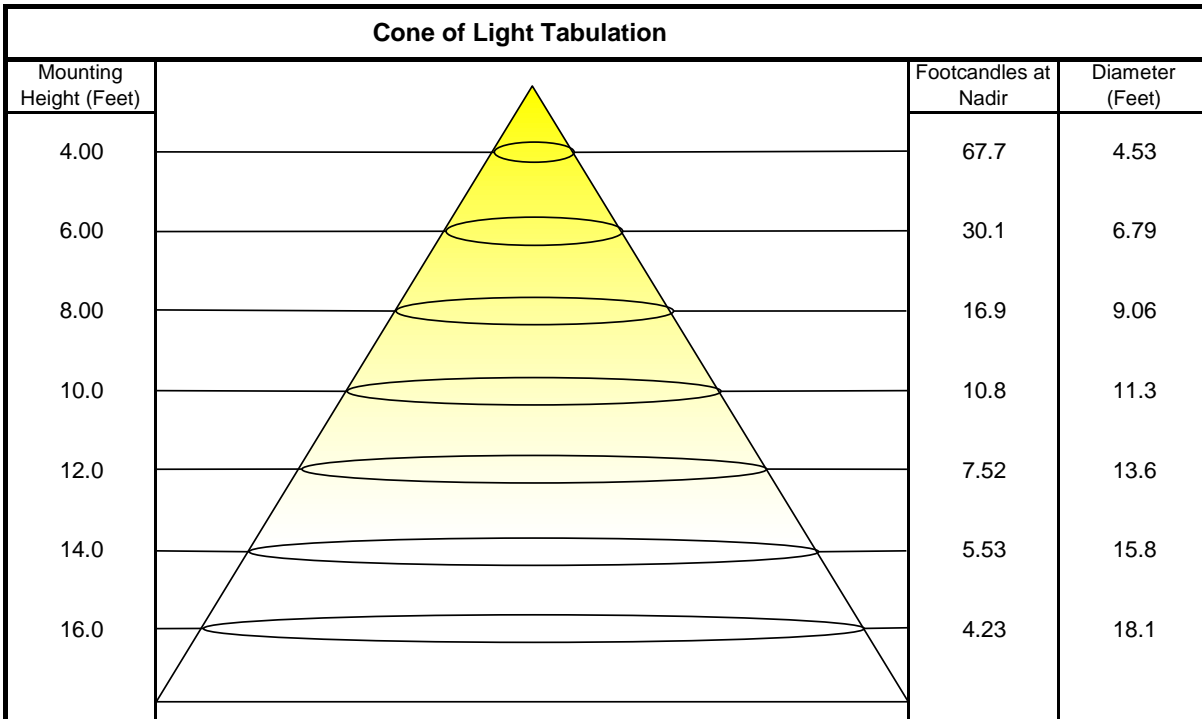
Vertical Angle (Degrees)	0	45	90
	0	17490	17490
	45	11700	5404
	55	9815	4123
	65	7928	3071
	75	5788	2159
	85	2990	1343



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	83	83	83	68	68	68	55	55	55	49
1	97	92	88	85	89	85	82	78	72	69	67	59	57	56	48	46	45	40
2	88	80	74	69	81	74	69	64	62	58	55	52	49	46	42	40	38	33
3	80	71	63	57	74	65	59	53	55	50	46	46	42	39	37	34	32	28
4	73	62	54	48	67	58	51	45	49	43	39	41	37	33	33	30	28	24
5	67	56	47	41	62	52	44	39	44	38	34	36	32	29	30	27	24	21
6	62	50	42	36	57	46	39	34	39	34	29	33	29	25	27	24	21	18
7	57	45	37	31	53	42	35	30	36	30	26	30	26	22	25	21	19	16
8	53	41	33	28	49	38	31	26	33	27	23	28	23	20	23	19	17	15
9	50	37	30	25	46	35	28	23	30	25	21	25	21	18	21	18	15	13
10	46	34	27	22	43	32	25	21	28	22	19	23	19	16	19	16	14	12

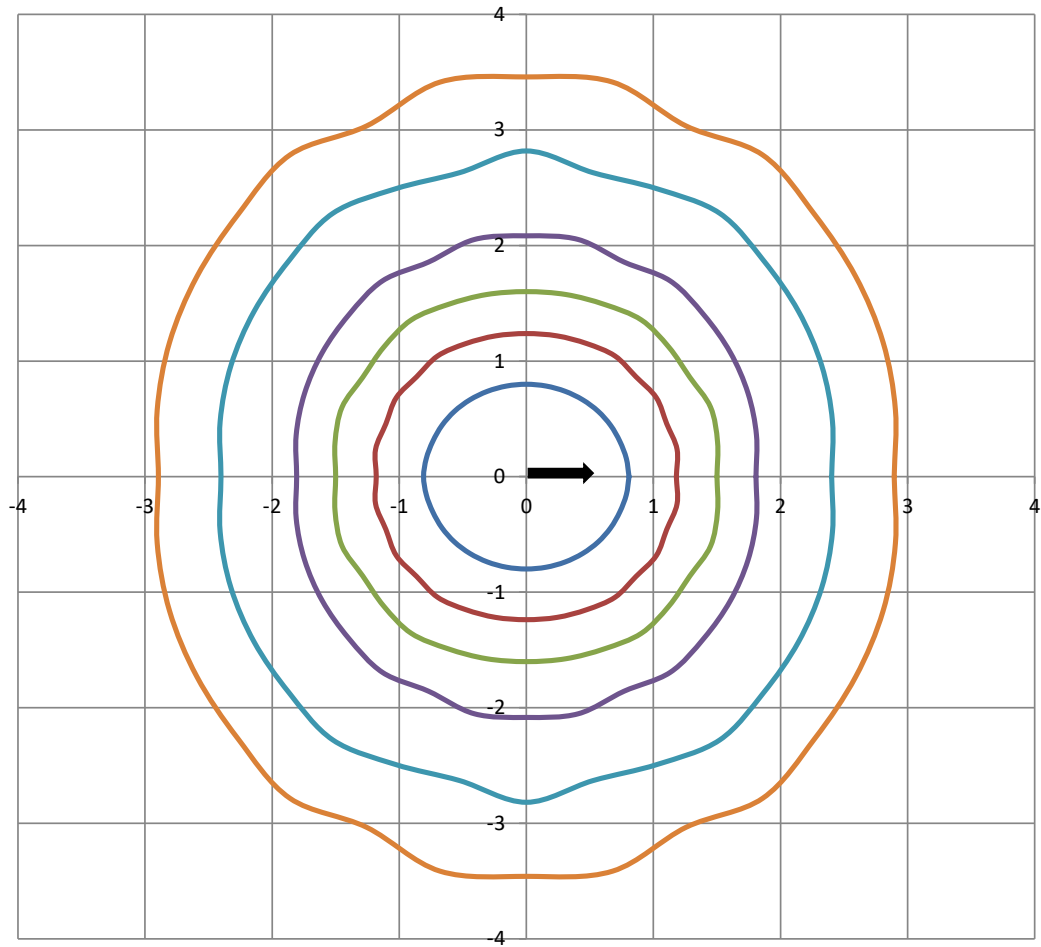
Beam and Field Information	
CIE Type:	Direct/Indirect
Center Beam Intensity:	1083 Candela
Central Cone Intensity:	1082 Candela
Beam Flux:	3550.6 Lumens
Beam Angle (0-180):	91.6 Degrees
Beam Angle (90-270):	100.5 Degrees
Field Angle (0-180):	152.4 Degrees
Field Angle (90-270):	172.5 Degrees





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