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Photometric Test Report

Relevant Standards
IES LM-79-2008, ANSI C82.77-10-2014, UL 1598-2008
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
MX2RXX-4'00-L8/830-F-XX-DIM-UNV
Order Number
13012869
Test Number
13012869.02

Test Date

2019-09-03 - 2019-09-12

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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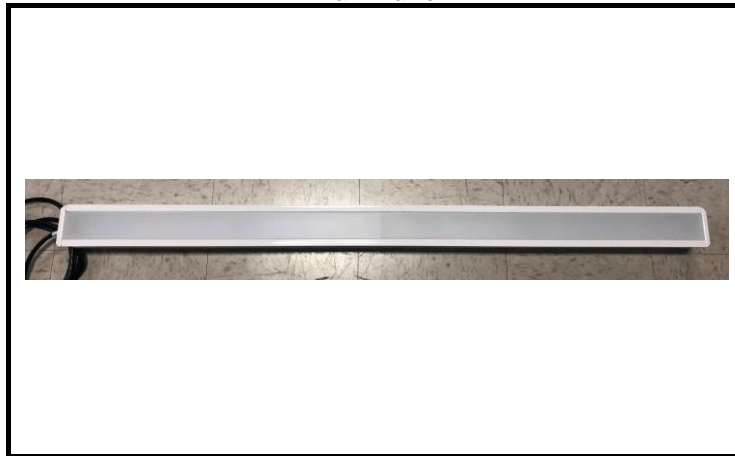
Laboratory results may not be representative of field performance
Ballast factors have not been applied

Testing was performed in a 2-meter integrating sphere using the 4π geometry method.
Absorption correction was employed for Sphere measurement



Luminaire Description: Formed White aluminum housing,frosted plastic lens
Lamp: 144 White LEDs
Mounting: Recessed
Ballast/Driver: One Philips Advance XI040C110V054BST1 Driver

Luminaire



Luminaire Characteristics

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

Summary of Results

Integrating Sphere

Luminous Flux: 3342 Lumens
Efficacy: 124.56 lm/w
CCT: 3071 K
CRI (Ra): 82.3

Distribution

Total Luminaire Output: 3222 Lumens
Luminaire Efficacy: 119.9 lm/w
Maximum Candela: 1404 Candela

Electrical Data at 277 VAC

Test Temperature: 25.8 °C
Voltage: 277.1 VAC
Current: 0.1020 A
Power: 27.16 W
Power Factor: 0.955
Frequency: 60 Hz
Current THD: 10.7 %

In-Situ

LED Temperature: 41.4 °C
Driver Temperature: 44.2 °C
Measured LED Current: 0.05800 A

Temperature is offset to an ambient temperature of 25°C as described in UL1598-2008.



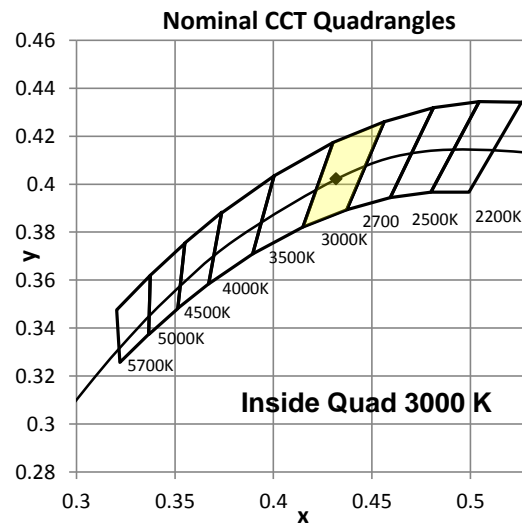
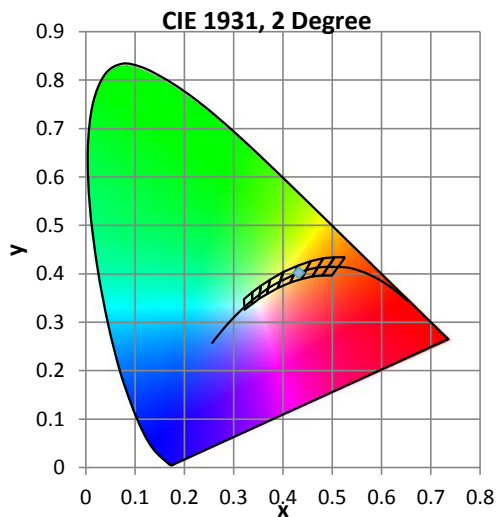
Color Quality - Integrating Sphere

Integrating Sphere Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.9 °C	120.0 VAC	0.2250 A	26.83 W	0.993	60 Hz	9.44 %

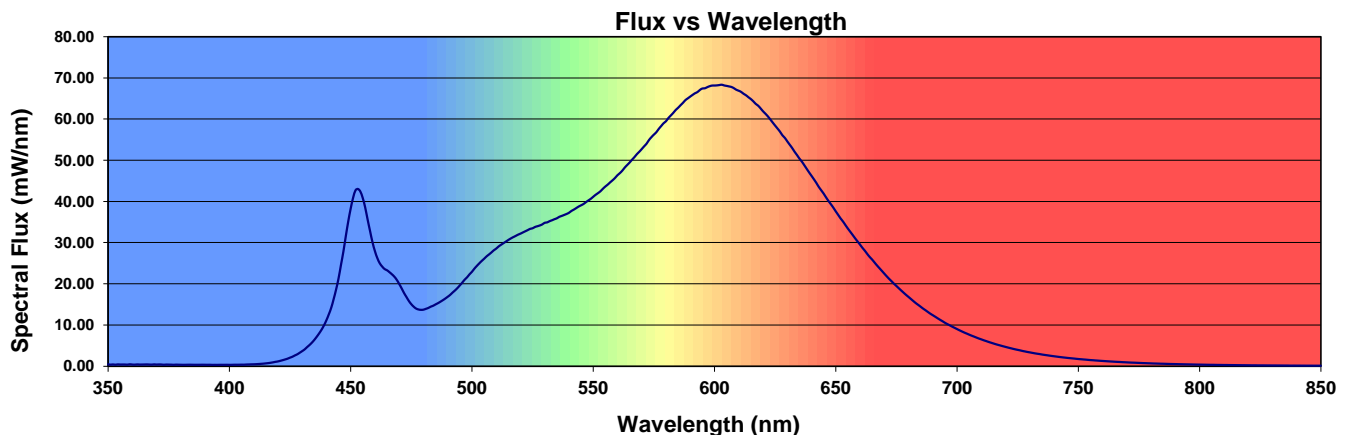
Summary of Results

Total Output:	3342 Lumens	Chromaticity (x):	0.4318
Efficacy:	124.6 lm/w	Chromaticity (y):	0.4023
CCT:	3071 K	Chromaticity (u'):	0.2480
CRI (Ra):	82.3	Chromaticity (v'):	0.5199
CRI (R9):	3.5	TM-30 Rf:	84.5
Peak Wavelength:	603 nm	TM-30 Rg:	94.7
Dominant Wavelength:	583 nm	Duv:	0.0000
S/P Ratio:	1.39		



Color Rendering Index Detail

Ra (CRI)	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
82.3	81.0	91.8	95.0	79.9	81.4	90.3	81.6	57.2	3.5	81.6	79.7	70.4	83.7	97.9	73.0





Distribution - Goniophotometer

Distribution Test Conditions

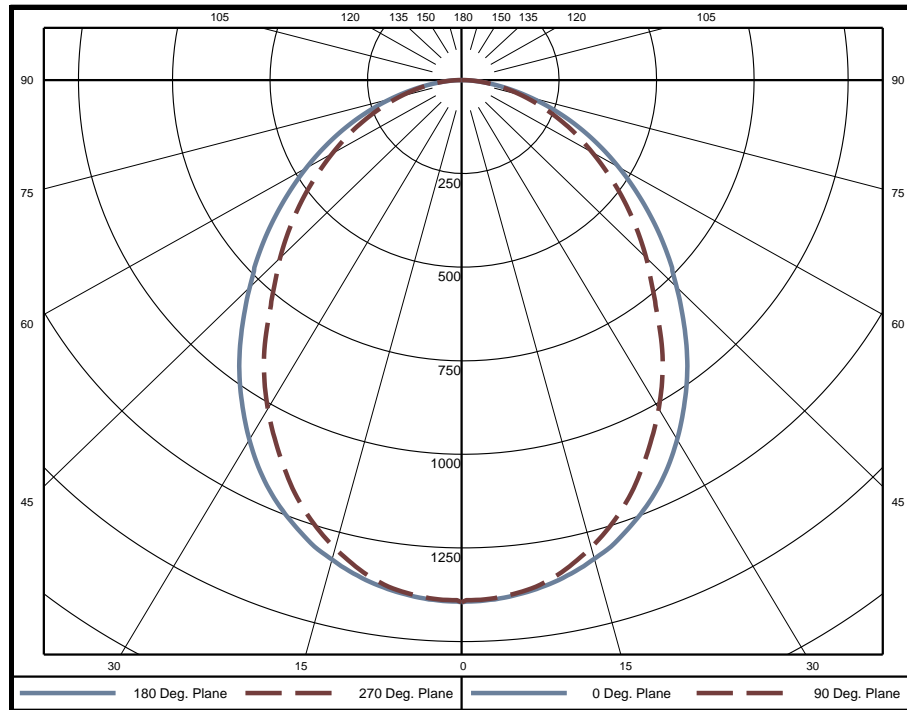
Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.4 °C	119.9 VAC	0.2255 A	26.87 W	0.994	60 Hz	9.41 %

Summary of Results

Spacing Criteria
 0-180: 1.18
 90-270: 1.10

Total Lumen Output: 3222 Lumens
Luminaire Efficacy: 119.9 lm/w
Maximum Candela: 1404 Candela

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	33.3	1.0%	60-65	184.3	5.7%	120-125	0	0.0%
5-10	98.3	3.1%	65-70	148.5	4.6%	125-130	0	0.0%
10-15	158.4	4.9%	70-75	110.8	3.4%	130-135	0	0.0%
15-20	210.6	6.5%	75-80	74.3	2.3%	135-140	0	0.0%
20-25	252.1	7.8%	80-85	41.4	1.3%	140-145	0	0.0%
25-30	281.0	8.7%	85-90	13.8	0.4%	145-150	0	0.0%
30-35	296.2	9.2%	90-95	0	0.0%	150-155	0	0.0%
35-40	297.1	9.2%	95-100	0	0.0%	155-160	0	0.0%
40-45	287.0	8.9%	100-105	0	0.0%	160-165	0	0.0%
45-50	270.9	8.4%	105-110	0	0.0%	165-170	0	0.0%
50-55	247.0	7.7%	110-115	0	0.0%	170-175	0	0.0%
55-60	217.4	6.7%	115-120	0	0.0%	175-180	0	0.0%

Zone	Lumens	% of Luminaire
0-40	1627	50.5%
0-60	2649	82.2%
0-90	3222	100.0%
90-180	0	0.0%



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	1395	1395	1395	1395	1395	1395	1395	1395	1395	1395	1395	1395	1395	1395	1395
	5	1386	1395	1383	1385	1382	1385	1383	1395	1386	1395	1383	1385	1382	1385	1383
	10	1362	1370	1357	1353	1350	1353	1357	1370	1362	1370	1357	1353	1350	1353	1357
	15	1322	1329	1310	1298	1291	1298	1310	1329	1322	1329	1310	1298	1291	1298	1310
	20	1266	1272	1241	1223	1213	1223	1241	1272	1266	1272	1241	1223	1213	1223	1241
	25	1194	1197	1159	1128	1115	1128	1159	1197	1194	1197	1159	1128	1115	1128	1159
	30	1103	1105	1059	1025	1011	1025	1059	1105	1103	1105	1059	1025	1011	1025	1059
	35	1000	996	947	911	897	911	947	996	1000	996	947	911	897	911	947
	40	888	881	829	788	771	788	829	881	888	881	829	788	771	788	829
	45	774	766	718	682	668	682	718	766	774	766	718	682	668	682	718
	50	669	660	616	583	569	583	616	660	669	660	616	583	569	583	616
	55	562	553	516	487	475	487	516	553	562	553	516	487	475	487	516
	60	461	454	421	397	386	397	421	454	461	454	421	397	386	397	421
	65	365	359	334	315	307	315	334	359	365	359	334	315	307	315	334
	70	273	268	250	237	231	237	250	268	273	268	250	237	231	237	250
	75	186	183	174	166	162	166	174	183	186	183	174	166	162	166	174
	80	109	109	106	103	102	103	106	109	109	109	106	103	102	103	106
	85	46	48	49	50	49	50	49	48	46	48	49	50	49	50	49
	90	1	3	6	8	8	8	6	3	1	3	6	8	8	8	6
	95	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	105	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	110	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	115	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	120	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	125	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	130	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	135	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	140	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	145	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	150	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	155	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	160	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	165	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	170	0	0	0	0	0	0	0	0	0	0	0	0	0	0	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/m²)

Horizontal Angle (Degrees)

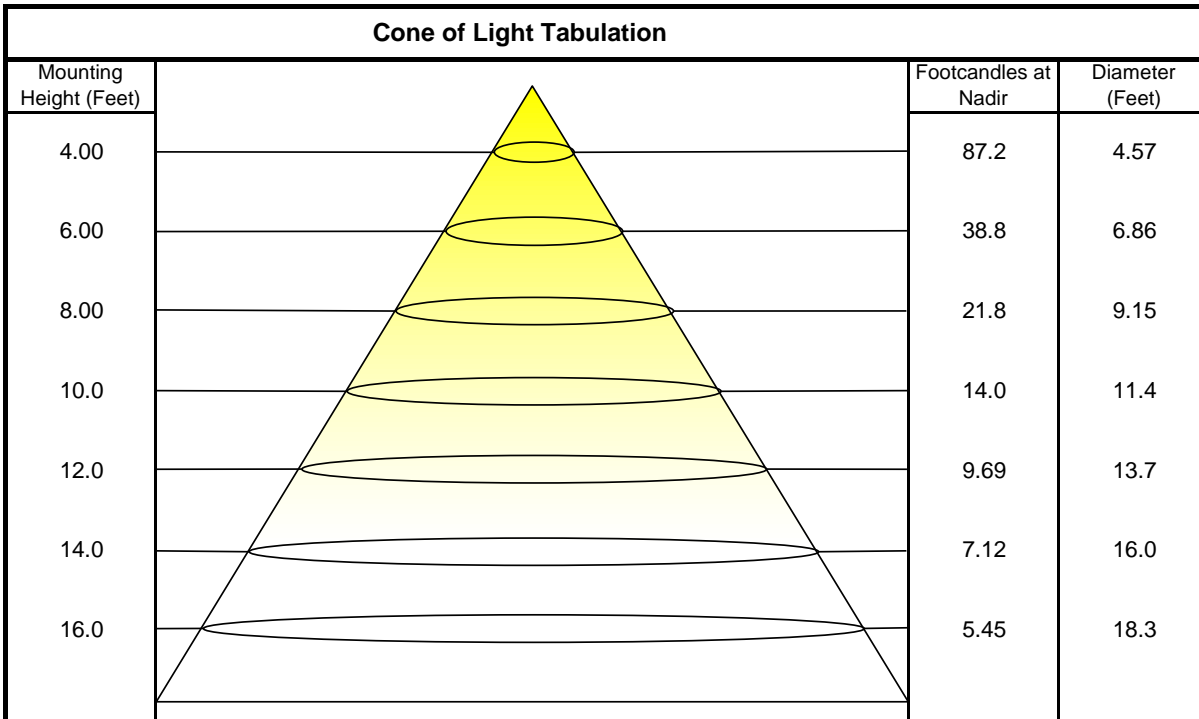
Vertical Angle (Degrees)	0	45	90
	0	22530	22530
	45	17670	15240
	55	15820	13360
	65	13940	11740
	75	11570	10090
	85	8514	9158



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	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	109	105	101	97	107	103	99	96	98	95	93	94	92	90	91	89	87	85
2	100	92	86	80	97	90	84	79	87	82	77	84	79	76	81	77	74	72
3	92	82	74	68	89	80	73	67	77	71	66	74	69	65	72	67	64	61
4	84	73	64	58	82	71	64	58	69	62	57	67	61	56	65	59	55	53
5	78	65	57	50	76	64	56	50	62	55	50	60	54	49	59	53	49	47
6	72	59	51	44	70	58	50	44	57	49	44	55	48	43	53	48	43	41
7	67	54	46	40	65	53	45	39	52	44	39	50	44	39	49	43	39	37
8	63	49	41	36	61	49	41	35	47	40	35	46	40	35	45	39	35	33
9	59	46	38	32	57	45	37	32	44	37	32	43	36	32	42	36	32	30
10	55	42	35	29	54	42	34	29	41	34	29	40	34	29	39	33	29	27

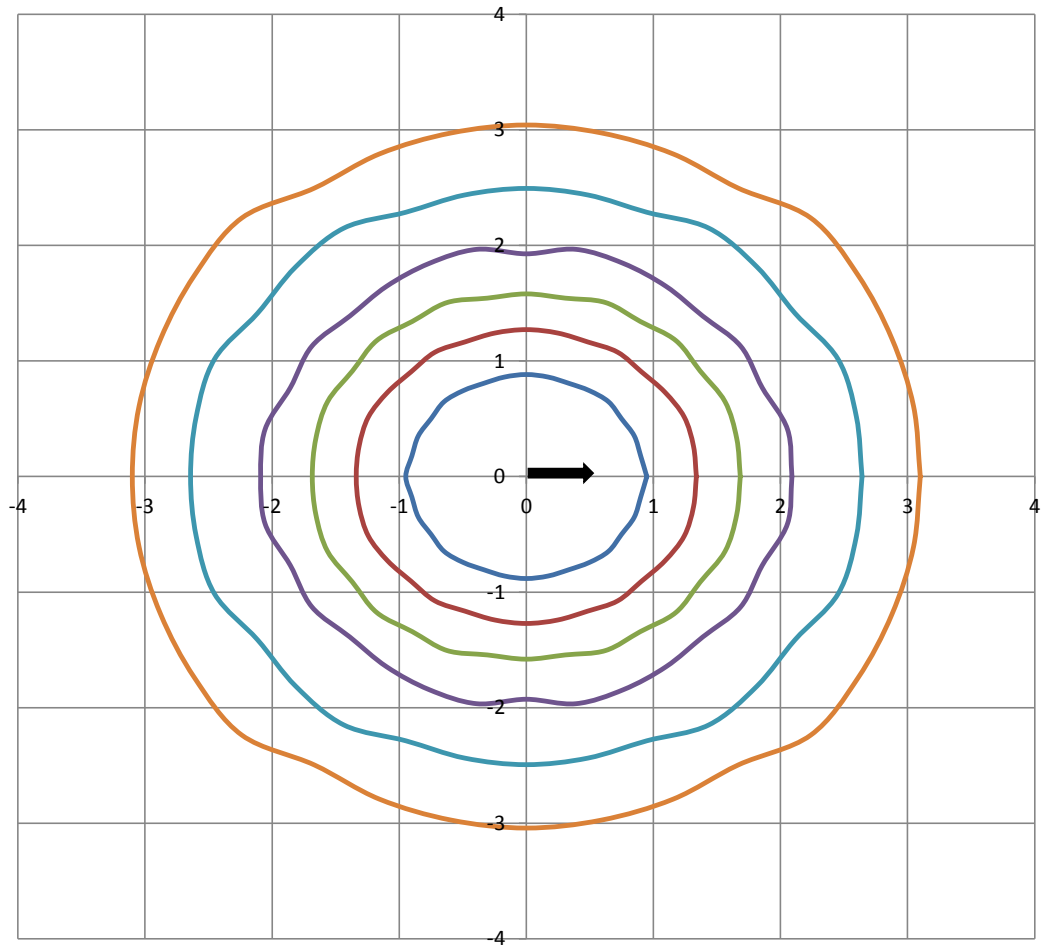
Beam and Field Information	
CIE Type:	Direct
Center Beam Intensity:	1395 Candela
Central Cone Intensity:	1392 Candela
Beam Flux:	1984.5 Lumens
Beam Angle (0-180):	97.3 Degrees
Beam Angle (90-270):	87.0 Degrees
Field Angle (0-180):	155.8 Degrees
Field Angle (90-270):	153.5 Degrees





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



In-Situ Test

In-Situ Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
22.6 °C	120.0 VAC	N/A	N/A	N/A	60 Hz	N/A

Summary of Results

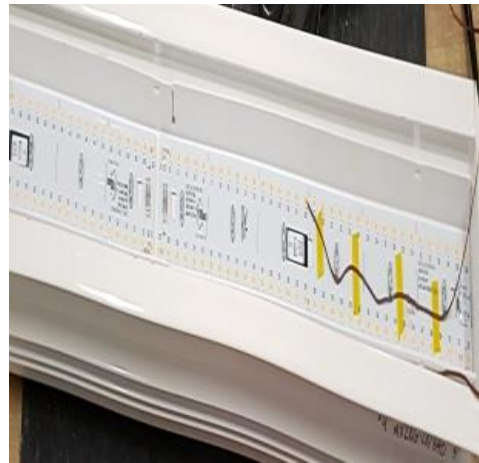
LED Temperature: 41.4 °C
Driver Temperature: 44.2 °C
Measured LED Current: 0.05800 A

Temperatures are offset to an ambient temperature of 25°C as described in UL1598-2008

LED Temperature Location



Thermocouple Reference



Driver Temperature Location

