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Photometric Test Report

Relevant Standards
IES LM-79-2008
ANSI C82.77-2002

Prepared For
Encore Lighting Mfg LLC dba Nano Meter

Diane Paquet
57-10 49th Place
Maspeth, NY 11378
United States

Catalog Number
12x12-27K-SO

Order Number
10980032
Test Number
1166415

Test Date

2015-10-16

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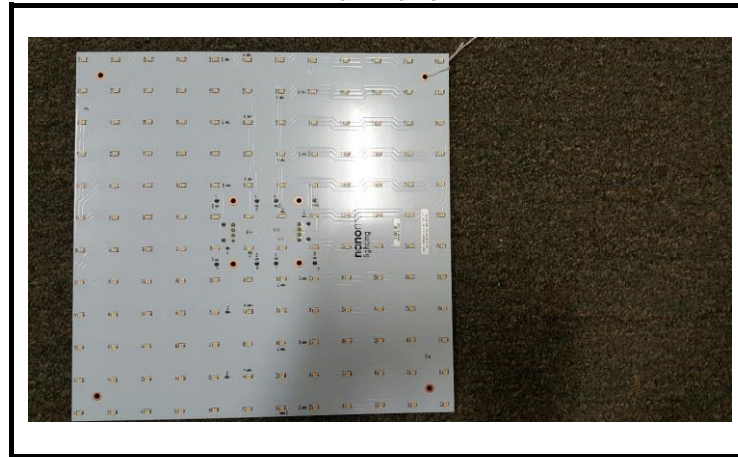
Laboratory results may not be representative of field performance
Ballast factors have not been applied

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



Luminaire Description: LED board
Lamp: 144 white LEDs
Mounting: Surface
Ballast/Driver: One Mean Well HLG-80H-24A

Luminaire



Luminaire Characteristics

Luminous Length: 11.50 in.
Luminous Width: 11.50 in.

Summary of Results

Integrating Sphere

Luminous Flux: 518 Lumens
Efficacy: 73.9 lm/w
CCT: 2798 K
CRI (Ra): 82.6

Distribution

Total Luminaire Output: 504.3 Lumens
Luminaire Efficacy: 72 lm/w
Maximum Candela: 175 Candela

Electrical Data at 120 VAC

Test Temperature: 24.9 °C
Voltage: 120.0 VAC
Current: 0.1294 A
Power: 7.010 W
Power Factor: 0.451
Frequency: 60 Hz
Current THD: 187 %



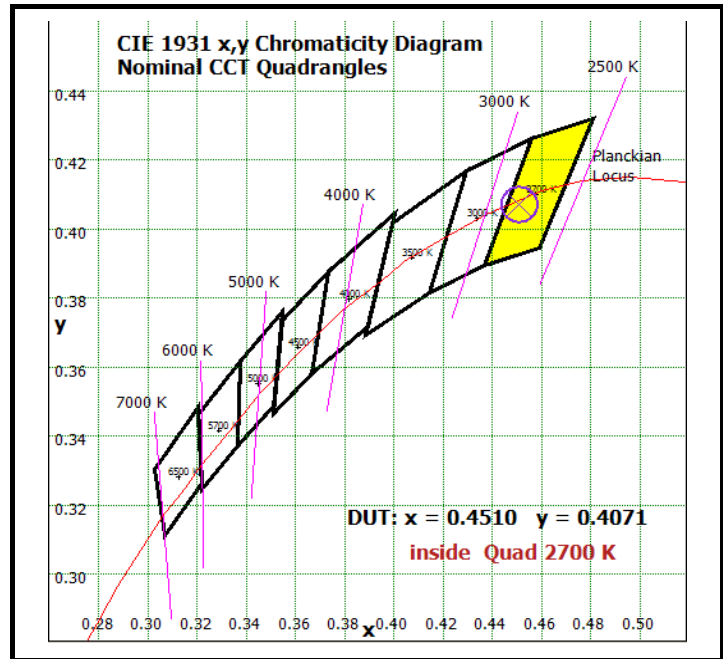
Color Quality - Integrating Sphere

Integrating Sphere Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.9 °C	120.0 VAC	0.1294 A	7.010 W	0.451	60 Hz	187 %

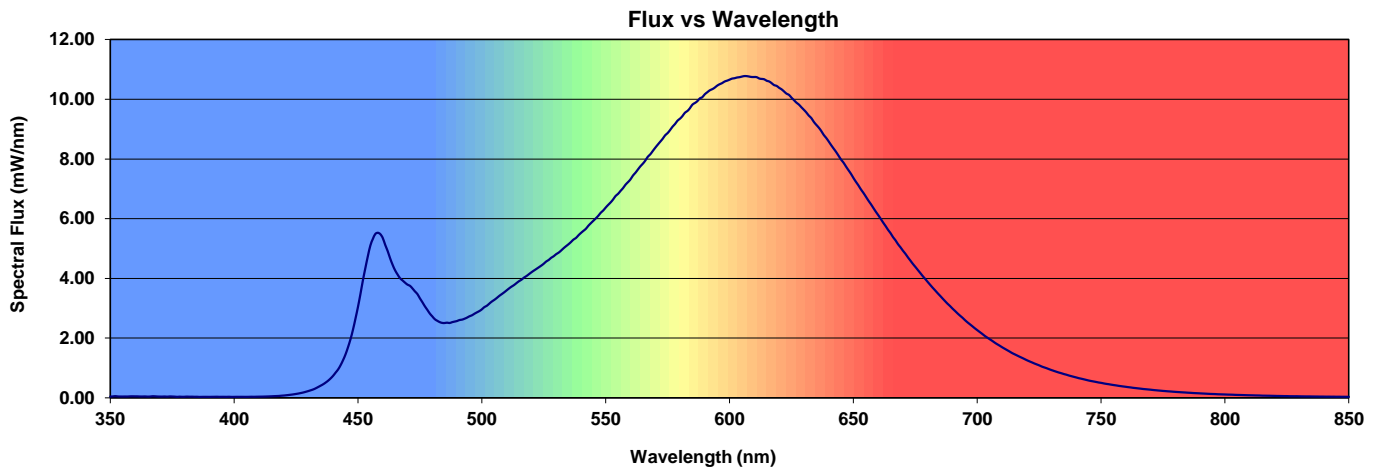
Summary of Results

Total Output:	518 Lumens
Efficacy:	73.9 lm/w
CCT:	2798 K
CRI (Ra):	82.6
CRI (R9):	16.4
Chromaticity (x):	0.4510
Chromaticity (y):	0.4071
Chromaticity (u):	0.2584
Chromaticity (v):	0.3498
Chromaticity (u')	0.2584
Chromaticity (v')	0.5247
Duv:	-0.0006



Color Rendering Index Detail

Ra (CRI)	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14
82.6	81.7	93.6	93.8	77.2	81.3	91.8	81.5	60.3	16.4	84.6	74.6	71.7	84.6	97.4





Distribution - Goniophotometer

Distribution Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.9 °C	120.0 VAC	0.1246 A	7.001 W	0.468	60 Hz	181 %

Summary of Results

Spacing Criteria

0-180: 1.28
90-270: 1.28

Total Lumen Output:

504.3 Lumens

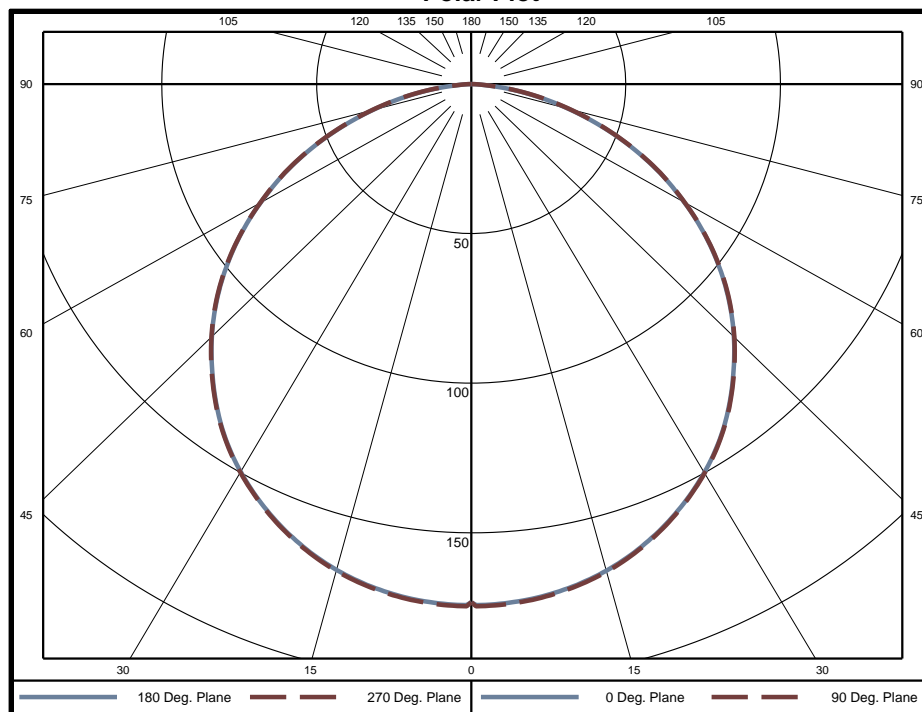
Luminaire Efficacy:

72.0 lm/w

Maximum Candela:

175 Candela

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	4.14	0.8%	60-65	34.76	6.9%	120-125	0	0.0%
5-10	12.28	2.4%	65-70	28.47	5.6%	125-130	0	0.0%
10-15	20.06	4.0%	70-75	21.22	4.2%	130-135	0	0.0%
15-20	27.20	5.4%	75-80	13.74	2.7%	135-140	0	0.0%
20-25	33.45	6.6%	80-85	6.53	1.3%	140-145	0	0.0%
25-30	38.65	7.7%	85-90	1.32	0.3%	145-150	0	0.0%
30-35	42.61	8.4%	90-95	0	0.0%	150-155	0	0.0%
35-40	45.07	8.9%	95-100	0	0.0%	155-160	0	0.0%
40-45	46.01	9.1%	100-105	0	0.0%	160-165	0	0.0%
45-50	45.52	9.0%	105-110	0	0.0%	165-170	0	0.0%
50-55	43.46	8.6%	110-115	0	0.0%	170-175	0	0.0%
55-60	39.79	7.9%	115-120	0	0.0%	175-180	0	0.0%

Zone	Lumens	% of Luminaire
0-40	223	44.3%
0-60	398	79.0%
0-90	504	100.0%
90-180	0	0.0%



Candela Tabulation
Horizontal Angle (Degrees)

Vertical Angle (Degrees)	Horizontal 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	173.2	173.2	173.2	173.2	173.2	173.2	173.2	173.2	173.2	173.2	173.2	173.2	173.2	173.2	173.2	173.2
5	173.6	172.4	172.0	172.3	174.0	172.3	172.0	172.4	173.6	172.4	172.0	172.3	174.0	172.3	172.0	172.4
10	171.6	170.5	170.1	170.4	172.0	170.4	170.1	170.5	171.6	170.5	170.1	170.4	172.0	170.4	170.1	170.5
15	168.3	167.2	166.8	167.1	168.7	167.1	166.8	167.2	168.3	167.2	166.8	167.1	168.7	167.1	166.8	167.2
20	163.5	162.4	162.0	162.3	163.8	162.3	162.0	162.4	163.5	162.4	162.0	162.3	163.8	162.3	162.0	162.4
25	157.3	156.2	155.8	156.1	157.6	156.1	155.8	156.2	157.3	156.2	155.8	156.1	157.6	156.1	155.8	156.2
30	149.9	148.8	148.5	148.8	150.1	148.8	148.5	148.8	149.9	148.8	148.5	148.8	150.1	148.8	148.5	148.8
35	141.2	140.0	139.7	140.0	141.3	140.0	139.7	140.0	141.2	140.0	139.7	140.0	141.3	140.0	139.7	140.0
40	130.8	129.6	129.4	129.6	130.9	129.6	129.4	129.6	130.8	129.6	129.4	129.6	130.9	129.6	129.4	129.6
45	119.5	118.4	118.3	118.5	119.6	118.5	118.3	118.4	119.5	118.4	118.3	118.5	119.6	118.5	118.3	118.4
50	107.2	106.3	106.2	106.4	107.4	106.4	106.2	106.3	107.2	106.3	106.2	106.4	107.4	106.4	106.2	106.3
55	93.8	93.1	92.9	93.1	93.9	93.1	92.9	93.1	93.8	93.1	92.9	93.1	93.9	93.1	92.9	93.1
60	79.2	78.7	78.7	78.8	79.3	78.8	78.7	78.7	79.2	78.7	78.7	78.8	79.3	78.8	78.7	78.7
65	64.4	63.9	63.9	64.0	64.5	64.0	63.9	63.9	64.4	63.9	63.9	64.0	64.5	64.0	63.9	63.9
70	48.6	48.2	48.3	48.4	48.8	48.4	48.3	48.2	48.6	48.2	48.3	48.4	48.8	48.4	48.3	48.2
75	33.0	32.8	32.8	33.0	33.3	33.0	32.8	32.8	33.0	32.8	32.8	33.0	33.3	33.0	32.8	32.8
80	18.7	18.5	18.6	18.8	19.0	18.8	18.6	18.5	18.7	18.5	18.6	18.8	19.0	18.8	18.6	18.5
85	5.5	5.6	5.6	5.7	5.9	5.7	5.6	5.6	5.5	5.6	5.6	5.7	5.9	5.7	5.6	5.6
90	0.1	0.2	0.3	0.4	0.4	0.4	0.3	0.2	0.1	0.2	0.3	0.4	0.4	0.4	0.3	0.2
95	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	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	0.0	0.0	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	0.0	0.0	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	0.0	0.0	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	0.0	0.0	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	0.0	0.0	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	0.0	0.0	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	0.0	0.0	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	0.0	0.0	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	0.0	0.0	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	0.0	0.0	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	0.0	0.0	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	0.0	0.0	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	0.0	0.0	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	0.0	0.0	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	0.0	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Average Luminance (cd/m²)
Horizontal Angle (Degrees)

Vertical Angle (Degrees)	Horizontal Angle (Degrees)		
	0	45	90
0	2030	2030	2030
45	1981	1961	1983
55	1917	1899	1919
65	1785	1772	1789
75	1495	1487	1508
85	744	759	793



Utilization of Lumens - 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 Lumens delivered to the task surface **																	
0	600	600	600	600	586	586	586	586	560	560	560	536	536	536	515	515	515	504
1	549	525	503	484	535	513	493	476	492	475	461	472	459	446	454	443	433	423
2	498	457	422	393	485	447	415	388	429	402	379	413	390	370	397	379	362	351
3	454	400	359	326	441	392	354	323	377	344	317	363	335	312	350	326	306	295
4	415	354	310	275	403	347	306	273	335	298	270	323	291	266	312	285	262	251
5	381	316	270	237	371	310	267	235	300	262	233	290	256	230	280	251	228	217
6	352	284	239	206	342	279	236	205	270	232	203	262	228	201	254	223	200	189
7	326	257	213	182	317	253	211	181	245	207	180	238	204	178	231	200	177	167
8	303	235	191	162	295	231	190	161	224	187	160	218	184	159	212	181	158	149
9	283	215	174	145	276	212	172	145	206	170	144	201	167	143	196	165	143	133
10	266	199	158	132	259	196	157	131	191	155	131	186	153	130	182	151	129	121

Cone of Light Tabulation

Mounting Height	Footcandles at Nadir	Diameter (Feet)
4.00	10.8	5.11
6.00	4.81	7.67
8.00	2.71	10.2
10.0	1.73	12.8
12.0	1.20	15.3
14.0	0.884	17.9
16.0	0.677	20.4

Cone of Light Plot

