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Indoor Distribution 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
1x4-27K-HO
Order Number
10980032
Test Number
1166413

Test Date

2015-10-13

Prepared By

Derek Smarr, Technician

Approved By

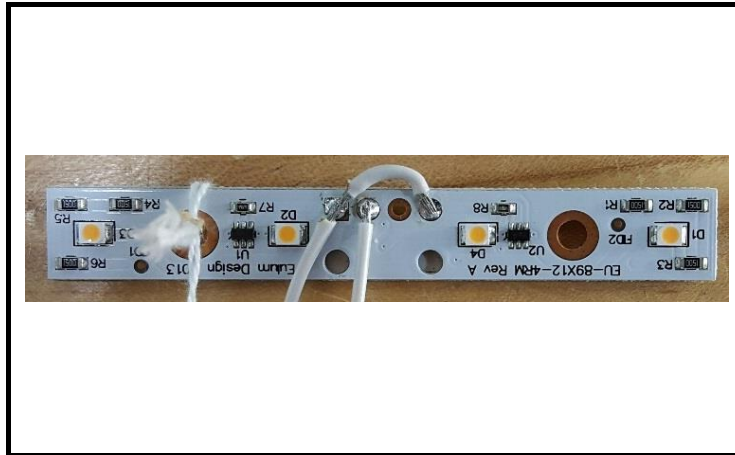
Jeffrey Lockner, Project Engineer

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Luminaire Description: LED board
Lamp: 4 white LEDs
Mounting: Surface
Ballast/Driver: One Mean Well HLG-80H-24A

Luminaire



Luminaire Characteristics

Luminous Length: 3.50 in.
Luminous Width: 0.5000 in.

Summary of Results

Total Luminaire Output:	36.49 Lumens
Luminaire Efficacy:	15.3 lm/w
Maximum Candela:	13 Candela

Electrical Data

Test Temperature:	25.0 °C
Voltage:	120.0 VAC
Current:	0.04930 A
Power:	2.381 W
Power Factor:	0.402
Frequency:	60 Hz
Current THD:	179 %

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



Distribution - Goniophotometer

Distribution Test Conditions

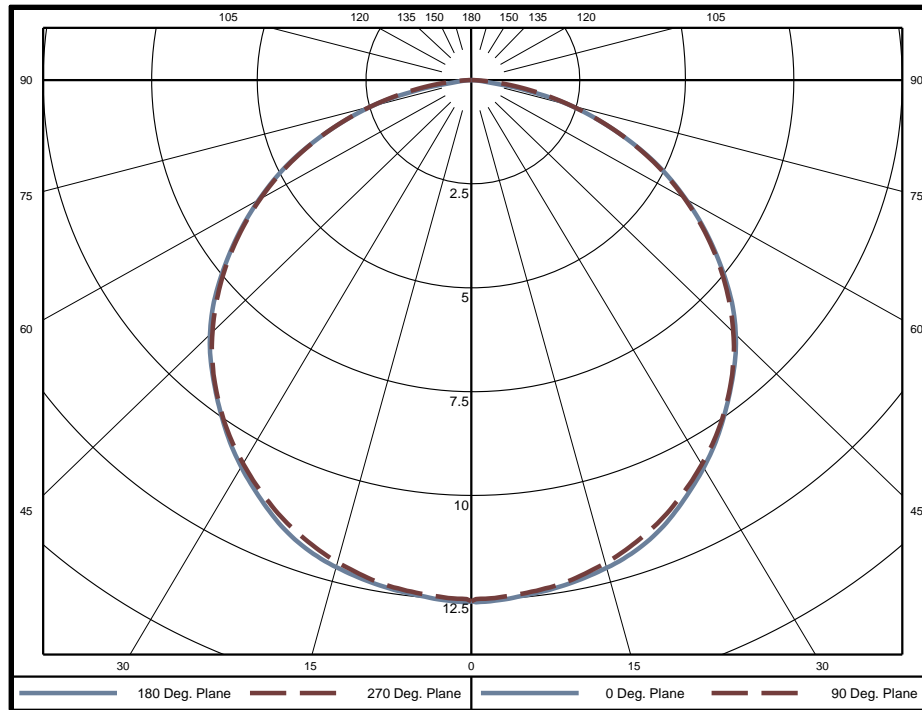
Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.0 °C	120.0 VAC	0.04930 A	2.381 W	0.402	60 Hz	179 %

Summary of Results

Spacing Criteria
 0-180: 1.27
 90-270: 1.27

Total Lumen Output: 36.49 Lumens
Luminaire Efficacy: 15.3 lm/w
Maximum Candela: 13 Candela

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	0.299	0.8%	60-65	2.534	6.9%	120-125	0	0.0%
5-10	0.887	2.4%	65-70	2.080	5.7%	125-130	0	0.0%
10-15	1.448	4.0%	70-75	1.555	4.3%	130-135	0	0.0%
15-20	1.964	5.4%	75-80	0.985	2.7%	135-140	0	0.0%
20-25	2.417	6.6%	80-85	0.450	1.2%	140-145	0	0.0%
25-30	2.787	7.6%	85-90	0.103	0.3%	145-150	0	0.0%
30-35	3.067	8.4%	90-95	0	0.0%	150-155	0	0.0%
35-40	3.248	8.9%	95-100	0	0.0%	155-160	0	0.0%
40-45	3.333	9.1%	100-105	0	0.0%	160-165	0	0.0%
45-50	3.298	9.0%	105-110	0	0.0%	165-170	0	0.0%
50-55	3.146	8.6%	110-115	0	0.0%	170-175	0	0.0%
55-60	2.889	7.9%	115-120	0	0.0%	175-180	0	0.0%

Zone	Lumens	% of Luminaire
0-40	16	44.2%
0-60	29	78.9%
0-90	36	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	12.54	12.54	12.54	12.54	12.54	12.54	12.54	12.54	12.54	12.54	12.54	12.54	12.54	12.54	12.54	12.54
5	12.48	12.45	12.49	12.46	12.42	12.46	12.49	12.45	12.48	12.45	12.49	12.46	12.42	12.46	12.49	12.45
10	12.35	12.34	12.36	12.31	12.29	12.31	12.36	12.34	12.35	12.34	12.36	12.31	12.29	12.31	12.36	12.34
15	12.15	12.10	12.10	12.05	12.03	12.05	12.10	12.10	12.15	12.10	12.10	12.05	12.03	12.05	12.10	12.10
20	11.84	11.76	11.76	11.71	11.67	11.71	11.76	11.76	11.84	11.76	11.76	11.71	11.67	11.71	11.76	11.76
25	11.35	11.30	11.31	11.27	11.22	11.27	11.31	11.30	11.35	11.30	11.31	11.27	11.22	11.27	11.31	11.30
30	10.77	10.73	10.77	10.71	10.68	10.71	10.77	10.73	10.77	10.73	10.77	10.71	10.68	10.71	10.77	10.73
35	10.11	10.10	10.11	10.07	10.08	10.07	10.11	10.10	10.11	10.10	10.11	10.07	10.08	10.07	10.11	10.10
40	9.41	9.41	9.39	9.35	9.38	9.35	9.39	9.41	9.41	9.41	9.39	9.35	9.38	9.35	9.39	9.41
45	8.66	8.64	8.59	8.57	8.58	8.57	8.59	8.64	8.66	8.64	8.59	8.57	8.58	8.57	8.59	8.64
50	7.76	7.74	7.70	7.70	7.69	7.70	7.70	7.74	7.76	7.74	7.70	7.70	7.69	7.70	7.70	7.74
55	6.76	6.77	6.78	6.74	6.72	6.74	6.78	6.77	6.76	6.77	6.78	6.74	6.72	6.74	6.78	6.77
60	5.74	5.76	5.76	5.73	5.71	5.73	5.76	5.76	5.74	5.76	5.76	5.73	5.71	5.73	5.76	5.76
65	4.69	4.67	4.68	4.66	4.66	4.66	4.68	4.67	4.69	4.67	4.68	4.66	4.66	4.66	4.68	4.67
70	3.54	3.55	3.55	3.54	3.55	3.54	3.55	3.55	3.54	3.55	3.55	3.54	3.55	3.54	3.55	3.55
75	2.40	2.41	2.42	2.42	2.42	2.42	2.42	2.41	2.40	2.41	2.42	2.42	2.42	2.42	2.42	2.41
80	1.07	1.27	1.31	1.37	1.37	1.37	1.31	1.27	1.07	1.27	1.31	1.37	1.37	1.37	1.31	1.27
85	0.20	0.45	0.46	0.47	0.49	0.47	0.46	0.45	0.20	0.45	0.46	0.47	0.49	0.47	0.46	0.45
90	0.01	0.03	0.04	0.05	0.05	0.05	0.04	0.03	0.01	0.03	0.04	0.05	0.05	0.05	0.04	0.03
95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
105	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
110	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
115	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
125	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
130	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
135	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
140	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
145	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
155	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
165	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
170	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
175	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
180	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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

Vertical Angle (Degrees)	Horizontal Angle (Degrees)		
	0	45	90
0	#DIV/0!	#DIV/0!	#DIV/0!
45	#DIV/0!	#DIV/0!	#DIV/0!
55	#DIV/0!	#DIV/0!	#DIV/0!
65	#DIV/0!	#DIV/0!	#DIV/0!
75	#DIV/0!	#DIV/0!	#DIV/0!
85	#DIV/0!	#DIV/0!	#DIV/0!



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	43	43	43	43	42	42	42	42	41	41	41	39	39	39	37	37	37	36
1	40	38	36	35	39	37	36	34	36	34	33	34	33	32	33	32	31	31
2	36	33	31	28	35	32	30	28	31	29	27	30	28	27	29	27	26	25
3	33	29	26	24	32	28	26	23	27	25	23	26	24	23	25	24	22	21
4	30	26	22	20	29	25	22	20	24	22	19	23	21	19	23	21	19	18
5	28	23	20	17	27	22	19	17	22	19	17	21	19	17	20	18	16	16
6	25	21	17	15	25	20	17	15	20	17	15	19	16	15	18	16	14	14
7	24	19	15	13	23	18	15	13	18	15	13	17	15	13	17	14	13	12
8	22	17	14	12	21	17	14	12	16	14	12	16	13	12	15	13	11	11
9	20	16	13	11	20	15	12	10	15	12	10	15	12	10	14	12	10	10
10	19	14	11	10	19	14	11	9	14	11	9	13	11	9	13	11	9	9

Cone of Light Tabulation

Mounting Height	Footcandles at Nadir	Diameter (Feet)
4.00	0.784	5.09
6.00	0.348	7.63
8.00	0.196	10.2
10.0	0.125	12.7
12.0	0.0871	15.3
14.0	0.0640	17.8
16.0	0.0490	20.3

Cone of Light Plot

