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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
4x4-27K-HO
Order Number
10980032
Test Number
1166412

Test Date

2015-10-14

Prepared By

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Approved By

Jeffrey Lockner, Project Engineer

The results contained in this report pertain only to the tested sample.
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Luminaire Description: LED board
Lamp: 16 white LEDs
Mounting: Surface
Ballast/Driver: One Mean Well HLG-80H-24A

Luminaire



Luminaire Characteristics

Luminous Length: 3.50 in.
Luminous Width: 3.500 in.

Summary of Results

Total Luminaire Output: 135.9 Lumens
Luminaire Efficacy: 38.7 lm/w
Maximum Candela: 47 Candela

Electrical Data

Test Temperature: 24.7 °C
Voltage: 120.0 VAC
Current: 0.06900 A
Power: 3.513 W
Power Factor: 0.425
Frequency: 60 Hz
Current THD: 187 %

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



Distribution - Goniophotometer

Distribution Test Conditions

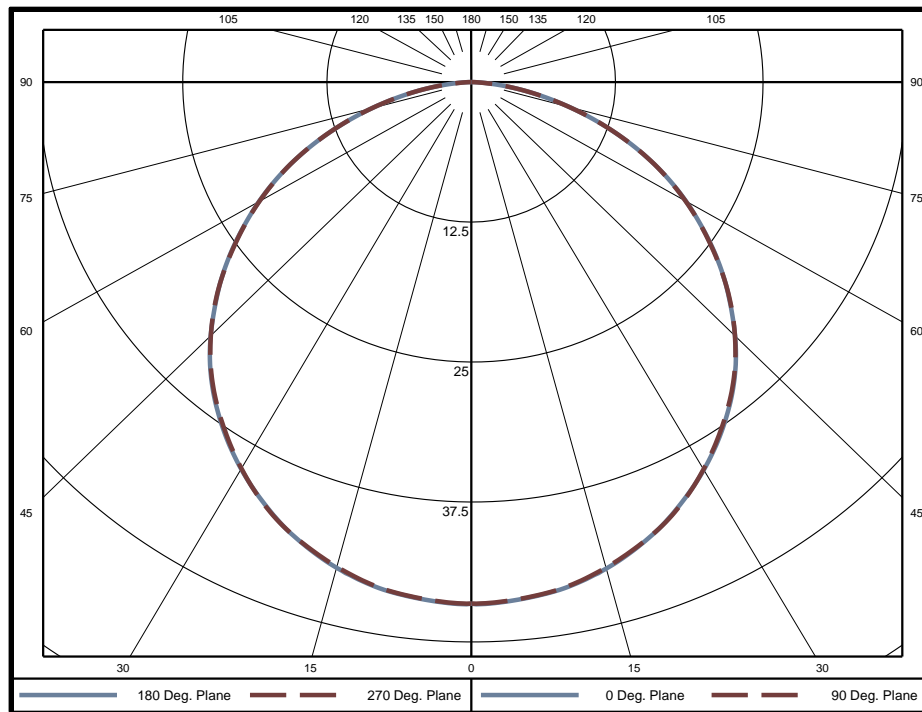
Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.7 °C	120.0 VAC	0.06900 A	3.513 W	0.425	60 Hz	187 %

Summary of Results

Spacing Criteria
 0-180: 1.28
 90-270: 1.28

Total Lumen Output: 135.9 Lumens
Luminaire Efficacy: 38.7 lm/w
Maximum Candela: 47 Candela

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	1.11	0.8%	60-65	9.42	6.9%	120-125	0	0.0%
5-10	3.30	2.4%	65-70	7.71	5.7%	125-130	0	0.0%
10-15	5.38	4.0%	70-75	5.75	4.2%	130-135	0	0.0%
15-20	7.29	5.4%	75-80	3.70	2.7%	135-140	0	0.0%
20-25	8.98	6.6%	80-85	1.80	1.3%	140-145	0	0.0%
25-30	10.36	7.6%	85-90	0.39	0.3%	145-150	0	0.0%
30-35	11.43	8.4%	90-95	0	0.0%	150-155	0	0.0%
35-40	12.12	8.9%	95-100	0	0.0%	155-160	0	0.0%
40-45	12.41	9.1%	100-105	0	0.0%	160-165	0	0.0%
45-50	12.27	9.0%	105-110	0	0.0%	165-170	0	0.0%
50-55	11.72	8.6%	110-115	0	0.0%	170-175	0	0.0%
55-60	10.75	7.9%	115-120	0	0.0%	175-180	0	0.0%

Zone	Lumens	% of Luminaire
0-40	60	44.1%
0-60	107	78.8%
0-90	136	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	46.59	46.59	46.59	46.59	46.59	46.59	46.59	46.59	46.59	46.59	46.59	46.59	46.59	46.59	46.59	46.59
5	46.41	46.30	46.32	46.37	46.36	46.37	46.32	46.30	46.41	46.30	46.32	46.37	46.36	46.37	46.32	46.30
10	45.92	45.80	45.80	45.86	45.86	45.86	45.80	45.80	45.92	45.80	45.80	45.86	45.86	45.86	45.80	45.80
15	44.96	44.83	44.84	44.88	44.88	44.88	44.84	44.83	44.96	44.83	44.84	44.88	44.88	44.88	44.84	44.83
20	43.64	43.56	43.61	43.60	43.61	43.60	43.61	43.56	43.64	43.56	43.61	43.60	43.61	43.60	43.61	43.56
25	41.95	41.88	41.99	41.97	42.01	41.97	41.99	41.88	41.95	41.88	41.99	41.97	42.01	41.97	41.99	41.88
30	39.98	39.88	40.00	39.99	39.92	39.99	40.00	39.88	39.98	39.88	40.00	39.99	39.92	39.99	40.00	39.88
35	37.70	37.56	37.69	37.65	37.58	37.65	37.69	37.56	37.70	37.56	37.69	37.65	37.58	37.65	37.69	37.56
40	35.11	34.91	35.01	34.97	35.02	34.97	35.01	34.91	35.11	34.91	35.01	34.97	35.02	34.97	35.01	34.91
45	32.06	31.95	32.02	32.01	32.04	32.01	32.02	31.95	32.06	31.95	32.02	32.01	32.04	32.01	32.02	31.95
50	28.67	28.72	28.70	28.80	28.70	28.80	28.70	28.72	28.67	28.72	28.70	28.80	28.70	28.80	28.70	28.72
55	25.07	25.19	25.16	25.23	25.01	25.23	25.16	25.19	25.07	25.19	25.16	25.23	25.01	25.23	25.16	25.19
60	21.31	21.37	21.38	21.43	21.26	21.43	21.38	21.37	21.31	21.37	21.38	21.43	21.26	21.43	21.38	21.37
65	17.35	17.34	17.33	17.38	17.36	17.38	17.33	17.34	17.35	17.34	17.33	17.38	17.36	17.38	17.33	17.34
70	13.10	13.09	13.15	13.15	13.11	13.15	13.15	13.09	13.10	13.09	13.15	13.15	13.11	13.15	13.15	13.09
75	8.87	8.90	8.92	8.93	8.88	8.93	8.92	8.90	8.87	8.90	8.92	8.93	8.88	8.93	8.92	8.90
80	5.01	5.00	5.03	5.03	5.00	5.03	5.03	5.00	5.01	5.00	5.03	5.03	5.00	5.03	5.03	5.00
85	1.76	1.76	1.59	1.79	1.76	1.79	1.59	1.76	1.76	1.76	1.59	1.79	1.76	1.79	1.59	1.76
90	0.15	0.10	0.08	0.08	0.07	0.08	0.08	0.10	0.15	0.10	0.08	0.08	0.07	0.08	0.08	0.10
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	5895	5895	5895
45	5736	5730	5733
55	5530	5549	5517
65	5194	5188	5198
75	4337	4361	4339
85	2560	2303	2559



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	162	162	162	162	158	158	158	158	151	151	151	145	145	145	139	139	139	136
1	148	141	135	130	144	138	133	128	132	128	124	127	124	120	122	119	117	114
2	134	123	114	106	131	120	112	104	116	108	102	111	105	100	107	102	97	94
3	122	108	97	88	119	106	95	87	102	93	85	98	90	84	94	88	82	79
4	112	95	83	74	109	93	82	74	90	80	72	87	78	71	84	77	71	68
5	103	85	73	64	100	84	72	63	81	70	63	78	69	62	75	67	61	58
6	95	76	64	55	92	75	64	55	73	62	55	70	61	54	68	60	54	51
7	88	69	57	49	85	68	57	49	66	56	48	64	55	48	62	54	48	45
8	82	63	51	43	80	62	51	43	60	50	43	59	49	43	57	49	43	40
9	76	58	47	39	74	57	46	39	56	46	39	54	45	39	53	44	38	36
10	71	53	43	35	70	53	42	35	51	42	35	50	41	35	49	41	35	32

Cone of Light Tabulation

Mounting Height	Footcandles at Nadir	Diameter (Feet)
4.00	2.91	5.10
6.00	1.29	7.65
8.00	0.728	10.2
10.0	0.466	12.7
12.0	0.324	15.3
14.0	0.238	17.8
16.0	0.182	20.4

Cone of Light Plot

