

Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269



Scaled data based on original data using  
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions

Brand: METALUX

Report Number: P894067

Luminaire Tested: 4MB-9HL-RND-UNV-L840

Issue Date: 11/11/2024

**Test Information**

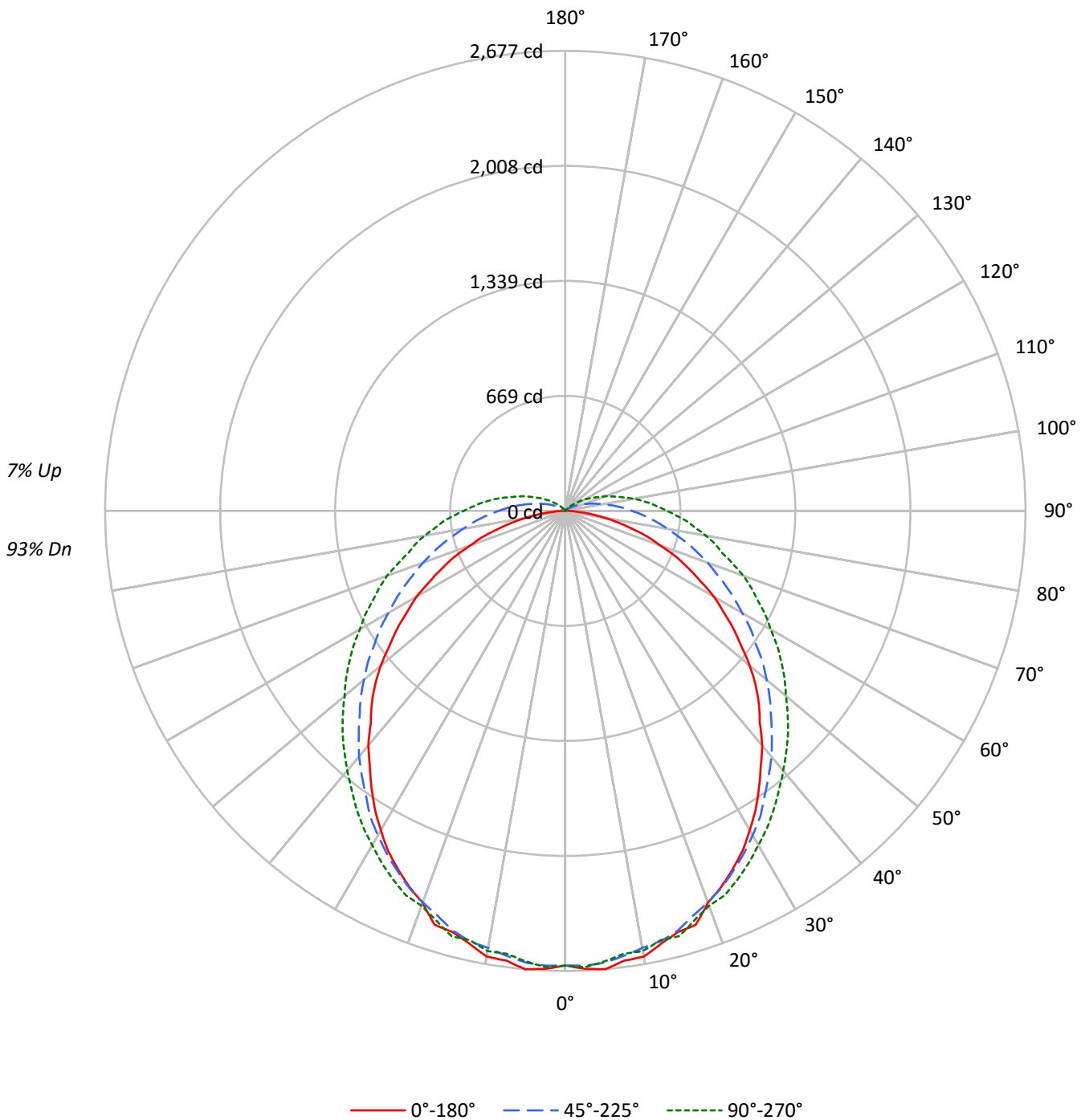
Test Method: LM-79-2019  
Report Number: P894067  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2403-334-1)  
Test Lab: INNOVATION CENTER  
Issue Date: 11/11/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: METALUX  
Catalog Number: 4MB-9HL-RND-UNV-L840  
Description: 9000 Lumen 4FT MICROBAY LINEAR BAY with ROUND FROSTED LENS, 80CRI, 4000K CCT  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 8714.0 lumens  
Efficiency: N/A  
Efficacy: 135.3 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.26 / 1.35  
Luminous Opening: Rectangular (W 0.38' x L: 3.98' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 64.4  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: 0.996  
Total Harmonic Distortion (THDi): 8.94  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT

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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20				20				20				20				20			20	
RC	80				70				50				30				10			0	
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																					
0	117	117	117	117	114	114	114	114	107	107	107	101	101	101	96	96	96	96	96	96	93
1	105	100	95	90	102	97	92	88	91	87	84	86	83	80	81	79	77	77	77	77	74
2	95	86	79	72	92	84	77	71	79	73	68	74	70	66	70	67	63	63	63	63	60
3	86	75	66	60	83	73	65	59	69	62	57	65	60	55	62	57	53	53	53	53	50
4	79	66	57	50	76	65	56	49	61	54	48	58	52	47	55	50	45	45	45	45	43
5	73	59	50	43	70	58	49	42	55	47	41	52	45	40	49	44	39	39	39	39	37
6	67	53	44	37	65	52	43	37	49	42	36	47	40	35	45	39	34	34	34	34	32
7	62	48	39	33	60	47	39	33	45	37	32	43	36	31	41	35	30	30	30	30	28
8	58	44	35	29	56	43	35	29	41	34	28	39	33	28	38	32	27	27	27	27	25
9	54	40	32	26	52	39	32	26	38	31	26	36	30	25	35	29	25	25	25	25	23
10	51	37	29	24	49	36	29	24	35	28	23	34	27	23	32	27	22	22	22	22	21

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	18823	18823	18823
5°	19120	18842	18791
10°	19026	18659	18789
15°	18685	18622	18872
20°	18373	18354	18510
25°	18070	18147	18593
30°	17628	17907	18453
35°	17071	17564	18384
40°	16557	17332	18321
45°	16037	17024	18436
50°	15512	16919	18553
55°	14802	16798	19035
60°	14224	16911	19632
65°	13285	17359	20822
70°	12209	18327	22935
75°	11079	20293	25984
80°	9522	24793	34065
85°	7706	40107	58288

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 90°  
 Vertical Angle: 87.5°  
 Luminance: 105813 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	250.8	2.9
10°-20°	714.0	8.2
20°-30°	1070.0	12.3
30°-40°	1271.5	14.6
40°-50°	1316.4	15.1
50°-60°	1219.9	14.0
60°-70°	1015.6	11.7
70°-80°	753.8	8.7
80°-90°	498.6	5.7
90°-100°	303.4	3.5
100°-110°	170.1	2.0
110°-120°	83.8	1.0
120°-130°	34.1	0.4
130°-140°	9.9	0.1
140°-150°	1.4	0.0
150°-160°	0.4	0.0
160°-170°	0.3	0.0
170°-180°	0.1	0.0
0°-30°	2034.8	23.4
0°-40°	3306.4	37.9
0°-60°	5842.7	67.0
0°-90°	8110.6	93.1
90°-120°	557.2	6.4
90°-150°	602.6	6.9
90°-180°	603.0	6.9
0°-180°	8714.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2646	2646	2646	2646	2646	
5°	2677	2648	2638	2652	2631	253
15°	2537	2527	2528	2532	2562	718
25°	2302	2299	2312	2356	2368	1059
35°	1965	1980	2022	2086	2117	1230
45°	1594	1617	1692	1797	1832	1228
55°	1193	1244	1354	1490	1534	1067
65°	789	863	1031	1182	1237	784
75°	403	525	738	897	945	431
85°	94	265	491	666	714	106
90°	5	172	388	543	592	7
95°	1	106	301	449	499	1
105°	1	35	163	277	316	1
115°	1	8	76	152	183	1
125°	1	2	28	70	90	1
135°	2	1	7	23	32	1
145°	2	1	0	2	4	2
155°	2	2	0	0	0	1
165°	4	2	0	0	0	1
175°	4	2	0	0	0	0
180°	1	1	1	1	1	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2645.5	2645.5	2645.5	2645.5	2645.5
2.5°	2667.3	2654.0	2649.1	2643.1	2657.6
5°	2677.0	2647.9	2638.2	2651.5	2631.0
7.5°	2639.4	2632.2	2611.6	2618.9	2599.5
10°	2633.4	2593.5	2582.6	2606.8	2600.7
12.5°	2578.9	2545.1	2564.4	2581.4	2558.4
15°	2536.6	2526.9	2528.1	2531.7	2562.0
17.5°	2525.7	2482.1	2470.0	2500.3	2497.9
20°	2426.5	2418.0	2424.0	2464.0	2444.6
22.5°	2368.4	2341.7	2374.4	2413.1	2421.6
25°	2301.8	2299.4	2311.5	2356.3	2368.4
27.5°	2231.6	2215.9	2248.6	2300.6	2310.3
30°	2145.7	2139.6	2179.6	2224.3	2246.1
32.5°	2061.0	2064.6	2110.6	2148.1	2185.6
35°	1965.4	1979.9	2022.2	2086.4	2116.6
37.5°	1868.5	1886.7	1943.6	2017.4	2042.8
40°	1782.6	1786.3	1866.1	1941.2	1972.6
42.5°	1674.9	1711.2	1779.0	1878.2	1902.4
45°	1593.8	1616.8	1691.9	1797.1	1832.2
47.5°	1501.9	1528.5	1614.4	1717.3	1754.8
50°	1401.4	1425.6	1528.5	1645.9	1676.1
52.5°	1290.1	1339.7	1447.4	1568.4	1608.4
55°	1193.3	1244.1	1354.2	1489.8	1534.5
57.5°	1089.2	1140.0	1278.0	1403.8	1461.9
60°	999.6	1048.0	1188.4	1344.5	1379.6
62.5°	888.3	957.3	1109.8	1263.4	1313.1
65°	789.1	862.9	1031.1	1182.4	1236.8
67.5°	698.3	774.5	950.0	1112.2	1171.5
70°	586.9	687.4	881.0	1040.8	1102.5
72.5°	504.7	605.1	807.2	965.7	1021.4
75°	403.0	525.2	738.2	896.8	945.2
77.5°	318.3	450.2	666.8	844.7	893.1
80°	232.4	382.4	605.1	775.7	831.4
82.5°	158.5	319.5	548.2	711.6	764.8
85°	94.4	265.0	491.3	665.6	714.0
87.5°	41.1	216.6	439.3	599.0	648.7
90°	4.8	171.8	388.5	543.4	591.8
92.5°	1.2	138.0	343.7	493.8	541.0
95°	1.2	106.5	301.3	449.0	498.6
97.5°	1.2	82.3	259.0	403.0	450.2
100°	1.2	62.9	223.9	354.6	405.4
102.5°	1.2	47.2	190.0	314.7	358.2
105°	1.2	35.1	163.4	277.1	315.9
107.5°	1.2	25.4	136.8	242.0	280.8
110°	1.2	18.2	115.0	209.4	248.1



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	1.2	13.3	93.2	180.3	213.0
115°	1.2	8.5	76.2	152.5	182.7
117.5°	1.2	6.1	60.5	128.3	157.3
120°	1.2	4.8	48.4	106.5	131.9
122.5°	1.2	3.6	37.5	87.1	111.3
125°	1.2	2.4	27.8	70.2	89.6
127.5°	1.2	2.4	20.6	55.7	72.6
130°	1.2	1.2	14.5	42.4	56.9
132.5°	1.2	1.2	9.7	31.5	42.4
135°	2.4	1.2	7.3	23.0	31.5
137.5°	2.4	1.2	4.8	15.7	21.8
140°	2.4	1.2	2.4	9.7	13.3
142.5°	2.4	1.2	1.2	4.8	7.3
145°	2.4	1.2	0.0	2.4	3.6
147.5°	2.4	1.2	0.0	1.2	1.2
150°	2.4	1.2	0.0	0.0	0.0
152.5°	2.4	1.2	0.0	0.0	0.0
155°	2.4	2.4	0.0	0.0	0.0
157.5°	2.4	2.4	0.0	0.0	0.0
160°	2.4	2.4	0.0	0.0	0.0
162.5°	2.4	2.4	0.0	0.0	0.0
165°	3.6	2.4	0.0	0.0	0.0
167.5°	3.6	2.4	0.0	0.0	0.0
170°	3.6	2.4	0.0	0.0	0.0
172.5°	3.6	2.4	0.0	0.0	0.0
175°	3.6	2.4	0.0	0.0	0.0
177.5°	3.6	2.4	0.0	0.0	0.0
180°	1.2	1.2	1.2	1.2	1.2



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**CIE UGR TABLE:**

Reflectances:											
Ceiling		0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
Wall		0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
Reference plane		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Room dimensions		Viewed crosswise					Viewed endwise				
X=2H	Y=2H	20.43	21.96	20.89	22.42	22.90	22.00	23.54	22.47	23.99	24.48
	3H	22.19	23.59	22.67	24.06	24.58	24.59	25.99	25.07	26.45	26.98
	4H	22.85	24.18	23.35	24.66	25.20	25.84	27.18	26.35	27.66	28.19
	6H	23.33	24.57	23.84	25.06	25.61	27.23	28.47	27.74	28.96	29.52
	8H	23.47	24.66	24.00	25.18	25.74	27.96	29.14	28.48	29.66	30.22
	12H	23.57	24.71	24.11	25.23	25.82	28.80	29.94	29.33	30.45	31.04
4H	2H	21.38	22.71	21.88	23.20	23.73	22.57	23.90	23.07	24.38	24.92
	3H	23.42	24.56	23.94	25.08	25.64	25.44	26.58	25.95	27.10	27.66
	4H	24.24	25.28	24.77	25.81	26.40	26.92	27.96	27.45	28.49	29.09
	6H	24.89	25.81	25.44	26.37	26.97	28.54	29.46	29.09	30.02	30.63
	8H	25.11	25.98	25.67	26.54	27.16	29.39	30.26	29.95	30.82	31.44
	12H	25.28	26.07	25.86	26.66	27.28	30.39	31.17	30.97	31.76	32.39
8H	4H	25.08	25.95	25.64	26.51	27.13	27.29	28.16	27.85	28.72	29.34
	6H	26.01	26.74	26.60	27.35	27.97	29.17	29.90	29.76	30.51	31.13
	8H	26.39	27.06	26.99	27.67	28.31	30.23	30.89	30.83	31.51	32.14
	12H	26.71	27.31	27.32	27.91	28.61	31.48	32.08	32.09	32.68	33.38
12H	4H	25.35	26.13	25.93	26.72	27.35	27.33	28.12	27.91	28.71	29.33
	6H	26.43	27.10	27.04	27.71	28.35	29.28	29.94	29.88	30.56	31.20
	8H	26.97	27.57	27.58	28.17	28.87	30.45	31.05	31.06	31.65	32.35