

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: P893988

Luminaire Tested: 4MB-9HL-A-UNV-L850

Issue Date: 11/11/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P893988  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2404-077-21)  
Test Lab: INNOVATION CENTER  
Issue Date: 11/11/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: METALUX  
Catalog Number: 4MB-9HL-A-UNV-L850  
Description: 9000 Lumen 4FT MICROBAY LINEAR BAY with AISLE OPTIC, 80CRI, 5000K CCT  
Light Source: -  
Ballast/Driver: -

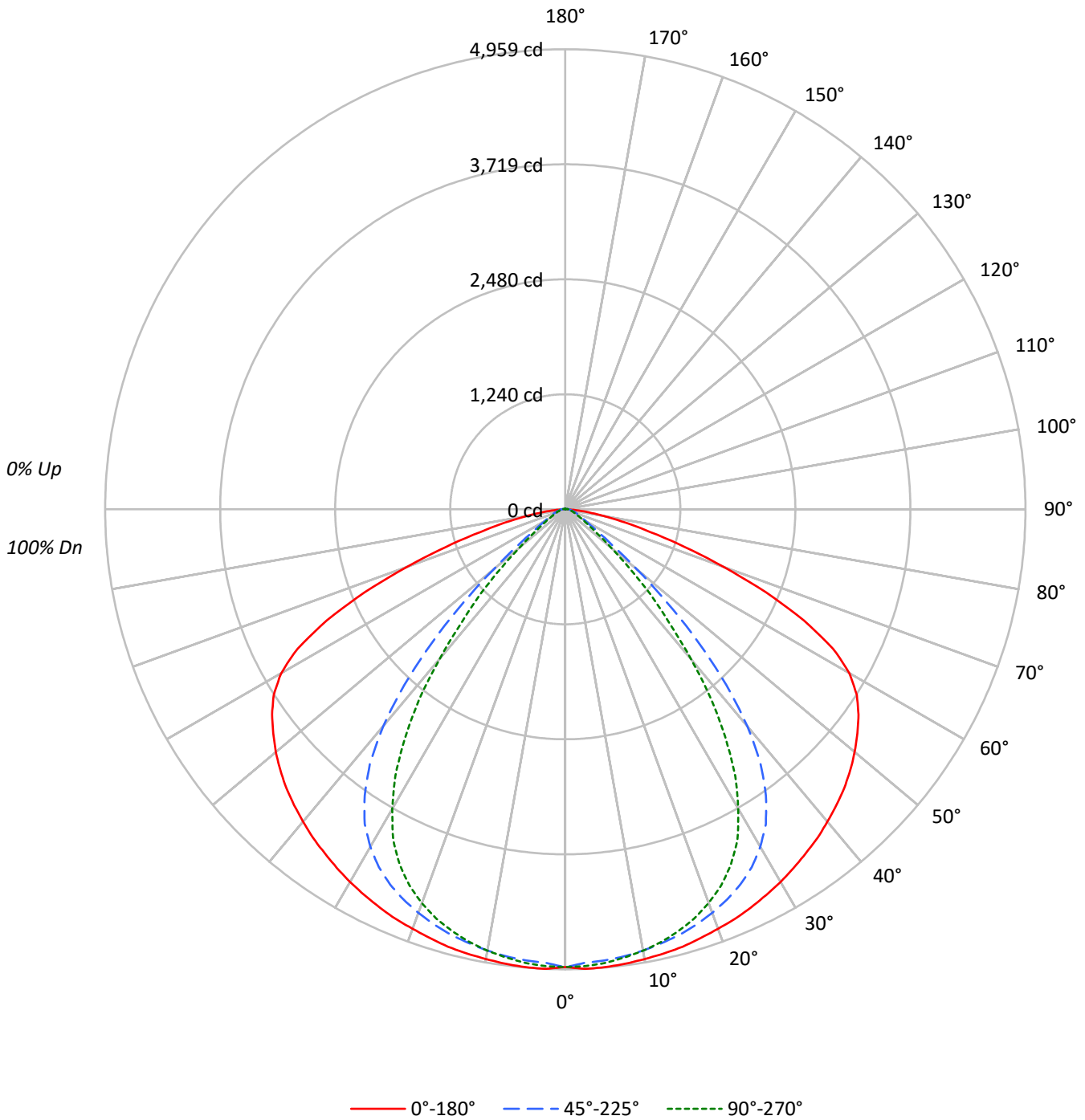
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 9991.0 lumens  
Efficiency: N/A  
Efficacy: 155.1 lumens/watt  
Spacing Criteria (0/90/45): 1.41 / 1.14 / 1.22  
Luminous Opening: Rectangular (W 0.27' x L: 3.98' x H: 0')  
CIE Type: Direct

Input Watts (W): 64.4  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): 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			
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
RCR																				
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100	100	100
1	111	107	104	101	108	105	102	99	101	98	96	97	95	93	93	91	90	88	88	88
2	103	96	90	86	100	94	89	85	91	86	83	88	84	81	85	82	79	77	77	77
3	95	86	80	74	93	85	79	74	82	77	72	79	75	71	77	73	70	68	68	68
4	88	78	71	65	86	77	70	64	74	68	64	72	67	63	70	66	62	60	60	60
5	82	71	63	57	80	70	63	57	68	61	56	66	60	56	64	59	55	53	53	53
6	76	65	57	51	75	64	56	51	62	55	50	60	55	50	59	54	50	48	48	48
7	71	59	51	46	70	58	51	46	57	50	45	56	50	45	54	49	45	43	43	43
8	67	55	47	42	65	54	47	41	53	46	41	51	45	41	50	45	41	39	39	39
9	63	50	43	38	61	50	43	38	49	42	38	48	42	37	47	41	37	35	35	35
10	59	47	39	35	58	46	39	35	45	39	34	44	38	34	43	38	34	32	32	32

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

	0°	45°	90°
0°	50248	50248	50248
5°	50640	49915	50202
10°	50907	49953	49962
15°	51470	50073	49641
20°	52148	50167	48964
25°	53210	50150	47456
30°	54556	49400	43839
35°	56228	46859	37420
40°	58427	40584	27986
45°	61216	29204	18631
50°	64503	16004	10211
55°	68494	7866	5879
60°	72037	5186	4066
65°	68371	4248	3215
70°	53821	3859	2972
75°	37322	3817	2825
80°	24562	3830	3501
85°	14057	5889	5994

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 60°  
 Luminance: 72037 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	467.9	4.7
10°-20°	1350.5	13.5
20°-30°	2057.5	20.6
30°-40°	2336.6	23.4
40°-50°	1876.2	18.8
50°-60°	1006.4	10.1
60°-70°	532.3	5.3
70°-80°	241.3	2.4
80°-90°	76.9	0.8
90°-100°	23.8	0.2
100°-110°	8.6	0.1
110°-120°	2.7	0.0
120°-130°	2.0	0.0
130°-140°	2.1	0.0
140°-150°	2.2	0.0
150°-160°	2.0	0.0
160°-170°	1.5	0.0
170°-180°	0.6	0.0
0°-30°	3875.9	38.8
0°-40°	6212.5	62.2
0°-60°	9095.1	91.0
0°-90°	9945.6	99.5
90°-120°	35.0	0.4
90°-150°	41.3	0.4
90°-180°	45.0	0.5
0°-180°	9991.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4934	4934	4934	4934	4934	
5°	4954	4943	4883	4924	4911	472
15°	4882	4851	4749	4736	4708	1380
25°	4735	4660	4463	4307	4223	2188
35°	4523	4330	3769	3222	3010	2838
45°	4250	3596	2028	1410	1294	3283
55°	3858	1439	443	346	331	3439
65°	2837	335	176	143	133	2744
75°	948	191	97	76	72	1073
85°	120	72	50	50	51	164
90°	5	33	36	42	40	7
95°	5	13	29	25	24	4
105°	3	2	6	13	16	3
115°	2	2	2	4	4	2
125°	2	2	2	3	2	2
135°	3	2	3	3	3	2
145°	3	3	4	4	4	2
155°	4	4	5	6	5	2
165°	4	5	6	6	6	1
175°	5	5	6	8	6	0
180°	6	6	6	6	6	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4933.9	4933.9	4933.9	4933.9	4933.9
2.5°	4959.1	4949.8	4893.8	4940.4	4928.3
5°	4953.5	4943.2	4882.6	4923.7	4910.6
7.5°	4941.4	4928.3	4860.2	4893.8	4873.3
10°	4922.7	4909.7	4830.4	4853.7	4831.3
12.5°	4904.1	4881.7	4791.2	4798.7	4777.2
15°	4881.7	4850.9	4749.2	4736.2	4708.2
17.5°	4847.2	4812.7	4694.2	4663.4	4624.3
20°	4811.7	4765.1	4628.9	4566.4	4517.9
22.5°	4779.1	4714.7	4554.3	4454.5	4389.2
25°	4735.2	4659.7	4462.9	4307.1	4223.2
27.5°	4687.7	4595.3	4350.0	4116.9	4017.1
30°	4639.2	4517.9	4200.8	3878.1	3727.9
32.5°	4582.3	4433.1	4021.7	3589.0	3411.8
35°	4522.6	4330.5	3769.0	3222.4	3009.8
37.5°	4465.7	4212.0	3457.5	2777.5	2589.1
40°	4394.8	4074.0	3052.7	2300.0	2105.1
42.5°	4324.9	3861.3	2567.7	1842.1	1655.5
45°	4250.3	3596.4	2027.7	1410.2	1293.6
47.5°	4165.4	3233.6	1483.9	1026.9	926.2
50°	4071.2	2711.3	1010.1	699.5	644.5
52.5°	3967.6	2100.4	656.6	482.2	450.5
55°	3857.6	1439.1	443.0	346.0	331.1
57.5°	3725.1	901.9	328.3	260.2	251.8
60°	3536.7	584.8	254.6	209.9	199.6
62.5°	3253.2	418.8	213.6	171.6	163.2
65°	2837.2	334.8	176.3	142.7	133.4
67.5°	2339.2	286.3	151.1	122.2	115.7
70°	1807.5	251.8	129.6	106.3	99.8
72.5°	1348.7	220.1	111.9	92.3	83.9
75°	948.5	191.2	97.0	76.5	71.8
77.5°	666.9	165.1	80.2	65.3	64.4
80°	418.8	137.1	65.3	60.6	59.7
82.5°	254.6	108.2	56.9	56.0	55.0
85°	120.3	71.8	50.4	50.4	51.3
87.5°	39.2	47.6	42.9	44.8	44.8
90°	4.7	32.6	36.4	42.0	40.1
92.5°	4.7	23.3	33.6	33.6	27.0
95°	4.7	13.1	28.9	25.2	24.2
97.5°	4.7	6.5	21.5	24.2	23.3
100°	4.7	3.7	15.9	21.5	23.3
102.5°	3.7	2.8	10.3	17.7	19.6
105°	2.8	1.9	5.6	13.1	15.9
107.5°	1.9	1.9	3.7	9.3	11.2
110°	1.9	0.9	2.8	6.5	7.5



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	1.9	0.9	2.8	4.7	4.7
115°	1.9	1.9	1.9	3.7	3.7
117.5°	1.9	1.9	1.9	2.8	2.8
120°	1.9	1.9	1.9	2.8	1.9
122.5°	1.9	1.9	1.9	2.8	1.9
125°	1.9	1.9	1.9	2.8	1.9
127.5°	1.9	1.9	2.8	2.8	1.9
130°	1.9	1.9	2.8	2.8	1.9
132.5°	1.9	1.9	2.8	2.8	2.8
135°	2.8	1.9	2.8	2.8	2.8
137.5°	2.8	2.8	2.8	3.7	2.8
140°	2.8	2.8	3.7	3.7	2.8
142.5°	2.8	2.8	3.7	3.7	3.7
145°	2.8	2.8	3.7	3.7	3.7
147.5°	2.8	2.8	3.7	4.7	3.7
150°	2.8	3.7	4.7	4.7	3.7
152.5°	2.8	3.7	4.7	4.7	4.7
155°	3.7	3.7	4.7	5.6	4.7
157.5°	3.7	3.7	4.7	5.6	4.7
160°	3.7	3.7	5.6	5.6	5.6
162.5°	3.7	4.7	5.6	6.5	5.6
165°	3.7	4.7	5.6	6.5	5.6
167.5°	3.7	4.7	5.6	6.5	6.5
170°	3.7	4.7	6.5	6.5	6.5
172.5°	4.7	4.7	6.5	7.5	6.5
175°	4.7	4.7	6.5	7.5	6.5
177.5°	4.7	4.7	6.5	7.5	6.5
180°	6.5	6.5	6.5	6.5	6.5



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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	23.28	24.66	23.65	24.99	25.31	11.49	12.87	11.86	13.20	13.52
	3H	26.17	27.41	26.56	27.75	28.12	12.44	13.68	12.83	14.02	14.39
	4H	26.96	28.11	27.37	28.47	28.86	12.86	14.01	13.27	14.37	14.77
	6H	27.39	28.45	27.82	28.83	29.24	13.34	14.40	13.77	14.78	15.19
	8H	27.49	28.50	27.93	28.90	29.31	13.65	14.66	14.09	15.06	15.47
	12H	27.53	28.49	27.97	28.88	29.33	14.06	15.02	14.50	15.41	15.85
4H	2H	23.09	24.24	23.50	24.60	24.99	12.00	13.15	12.41	13.51	13.91
	3H	26.00	26.95	26.42	27.36	27.77	13.21	14.16	13.63	14.57	14.98
	4H	26.80	27.64	27.24	28.07	28.52	13.75	14.59	14.19	15.02	15.47
	6H	27.33	28.06	27.79	28.51	28.99	14.39	15.12	14.85	15.57	16.04
	8H	27.47	28.15	27.95	28.61	29.09	14.79	15.47	15.26	15.92	16.41
	12H	27.55	28.15	28.04	28.64	29.13	15.32	15.92	15.81	16.41	16.90
8H	4H	26.69	27.37	27.16	27.82	28.30	14.31	15.00	14.79	15.45	15.93
	6H	27.22	27.78	27.72	28.28	28.77	15.09	15.65	15.59	16.15	16.64
	8H	27.38	27.89	27.91	28.41	28.91	15.61	16.11	16.13	16.63	17.13
	12H	27.50	27.95	28.02	28.45	29.03	16.31	16.76	16.83	17.26	17.84
12H	4H	26.65	27.25	27.14	27.74	28.23	14.56	15.17	15.05	15.66	16.14
	6H	27.16	27.67	27.69	28.19	28.69	15.36	15.86	15.89	16.39	16.89
	8H	27.35	27.80	27.87	28.30	28.88	15.95	16.40	16.48	16.90	17.48