

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: P893251

Luminaire Tested: 4MB-2SL-AOL-UNV-L840

Issue Date: 11/11/2024

**Test Information**

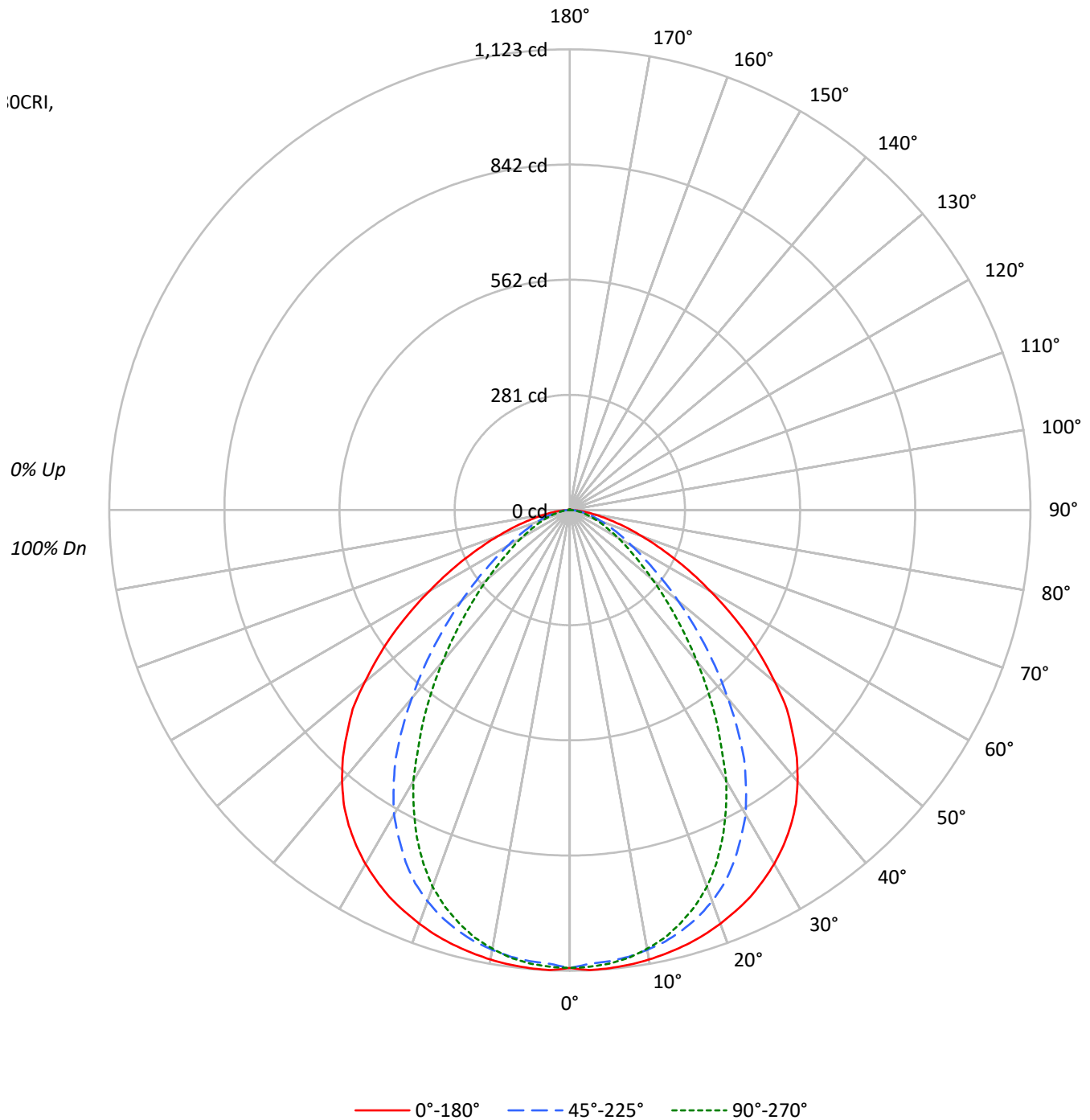
Test Method: LM-79-2019  
Report Number: P893251  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2404-077-14)  
Test Lab: INNOVATION CENTER  
Issue Date: 11/11/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: METALUX  
Catalog Number: 4MB-2SL-AOL-UNV-L840  
Description: 2000 Lumen 4FT MICROBAY LINEAR BAY with AISLE OPTICS WITH CLEAR LENS NO UPLIGHT, 8  
4000K CCT  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2229.9 lumens  
Efficiency: N/A  
Efficacy: 161.6 lumens/watt  
Spacing Criteria (0/90/45): 1.32 / 1.06 / 1.16  
Luminous Opening: Rectangular (W 0.27' x L: 3.98' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 13.8  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: 0.996  
Total Harmonic Distortion (THDi): 5.92  
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	0
RCR																					
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	102	102	102	100
1	111	107	103	100	108	104	101	98	100	98	95	96	94	92	93	91	89	89	89	89	87
2	102	95	89	85	100	93	88	84	90	85	82	87	83	80	84	81	78	78	78	78	76
3	94	85	78	73	92	84	77	72	81	75	71	78	73	70	76	72	68	68	68	68	66
4	87	77	69	63	85	76	68	63	73	67	62	71	66	61	69	64	60	60	60	60	58
5	81	70	62	56	79	69	61	55	67	60	55	65	59	54	63	58	54	54	54	54	52
6	75	63	55	50	74	63	55	49	61	54	49	59	53	49	58	52	48	48	48	48	46
7	70	58	50	45	69	57	50	44	56	49	44	54	48	44	53	48	43	43	43	43	42
8	66	53	46	40	64	53	45	40	51	45	40	50	44	40	49	44	39	39	39	39	38
9	62	49	42	37	60	49	42	37	48	41	36	47	41	36	46	40	36	36	36	36	34
10	58	46	38	34	57	45	38	33	44	38	33	43	37	33	43	37	33	33	33	33	31

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

	0°	45°	90°
0°	11369	11369	11369
5°	11461	11288	11347
10°	11508	11260	11230
15°	11567	11179	10994
20°	11630	10998	10593
25°	11696	10640	9907
30°	11716	10082	8970
35°	11677	9209	7716
40°	11482	7970	6412
45°	11055	6697	5189
50°	10346	5455	4156
55°	9348	4384	3333
60°	8062	3569	2760
65°	6822	2971	2268
70°	5568	2528	1927
75°	4462	2129	1637
80°	3472	1824	1408
85°	2699	1613	1274

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 11055 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	105.7	4.7
10°-20°	300.8	13.5
20°-30°	438.5	19.7
30°-40°	472.6	21.2
40°-50°	396.2	17.8
50°-60°	268.2	12.0
60°-70°	153.0	6.9
70°-80°	69.9	3.1
80°-90°	18.3	0.8
90°-100°	2.3	0.1
100°-110°	1.5	0.1
110°-120°	0.8	0.0
120°-130°	0.5	0.0
130°-140°	0.4	0.0
140°-150°	0.4	0.0
150°-160°	0.3	0.0
160°-170°	0.3	0.0
170°-180°	0.1	0.0
0°-30°	845.0	37.9
0°-40°	1317.6	59.1
0°-60°	1982.1	88.9
0°-90°	2223.3	99.7
90°-120°	4.6	0.2
90°-150°	5.9	0.3
90°-180°	7.0	0.3
0°-180°	2229.9	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1116	1116	1116	1116	1116	
5°	1121	1118	1104	1113	1110	107
15°	1097	1088	1060	1053	1043	310
25°	1041	1013	947	903	882	480
35°	939	868	741	650	621	586
45°	768	640	465	383	360	591
55°	526	385	247	200	188	469
65°	283	197	123	100	94	282
75°	113	83	54	44	42	124
85°	23	20	14	12	11	27
90°	3	3	2	2	1	3
95°	5	3	2	1	1	4
105°	3	2	1	1	0	3
115°	2	1	1	0	0	2
125°	1	1	1	0	0	1
135°	0	1	1	1	0	0
145°	1	1	1	1	1	0
155°	1	1	1	1	1	0
165°	1	1	1	1	1	0
175°	1	1	1	1	1	0
180°	1	1	1	1	1	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1116.3	1116.3	1116.3	1116.3	1116.3
2.5°	1122.7	1119.9	1107.1	1117.6	1114.4
5°	1121.1	1117.6	1104.2	1113.1	1109.9
7.5°	1117.9	1113.5	1098.4	1105.1	1101.0
10°	1112.8	1107.4	1088.8	1092.6	1085.9
12.5°	1105.8	1099.0	1077.0	1076.0	1068.0
15°	1097.1	1087.5	1060.3	1053.3	1042.7
17.5°	1086.6	1074.4	1040.4	1026.4	1013.5
20°	1073.1	1057.4	1014.8	992.4	977.4
22.5°	1057.7	1036.6	985.0	949.2	932.8
25°	1040.8	1013.2	946.9	903.4	881.6
27.5°	1019.6	985.0	902.7	846.4	824.0
30°	996.3	952.4	857.3	785.2	762.8
32.5°	969.7	914.9	799.3	719.2	687.9
35°	939.2	868.5	740.7	650.1	620.6
37.5°	905.0	820.1	670.6	580.3	550.5
40°	863.7	762.8	599.5	510.1	482.3
42.5°	819.2	704.5	531.3	443.5	419.5
45°	767.6	640.5	465.0	383.3	360.3
47.5°	718.0	575.8	402.9	328.2	309.3
50°	653.0	506.9	344.3	278.0	262.3
52.5°	589.6	443.2	294.3	237.6	222.9
55°	526.5	385.2	246.9	200.1	187.7
57.5°	459.9	328.6	207.8	169.4	161.1
60°	395.8	279.6	175.2	142.2	135.5
62.5°	337.2	234.4	148.3	120.1	113.7
65°	283.1	196.9	123.3	99.9	94.1
67.5°	231.9	162.0	102.8	83.3	79.1
70°	187.0	131.3	84.9	68.5	64.7
72.5°	148.3	105.0	67.9	56.0	51.9
75°	113.4	83.3	54.1	44.2	41.6
77.5°	84.5	62.8	41.6	33.9	32.0
80°	59.2	45.5	31.1	25.6	24.0
82.5°	40.3	31.4	21.8	17.9	17.0
85°	23.1	19.5	13.8	11.5	10.9
87.5°	11.8	10.2	7.4	5.4	4.8
90°	3.2	3.2	1.9	1.6	1.3
92.5°	5.1	2.9	1.9	1.3	1.0
95°	4.8	2.9	1.6	1.0	1.0
97.5°	4.5	2.9	1.3	1.0	0.6
100°	4.2	2.6	1.3	0.6	0.6
102.5°	3.8	2.6	1.3	0.6	0.6
105°	3.2	2.2	1.0	0.6	0.3
107.5°	2.9	1.9	1.0	0.6	0.3
110°	2.2	1.6	1.0	0.6	0.3



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	1.9	1.6	0.6	0.6	0.3
115°	1.6	1.3	0.6	0.3	0.3
117.5°	1.3	1.0	0.6	0.3	0.3
120°	1.0	1.0	0.6	0.3	0.3
122.5°	1.0	0.6	0.6	0.3	0.3
125°	0.6	0.6	0.6	0.3	0.3
127.5°	0.6	0.6	0.6	0.3	0.3
130°	0.6	0.6	0.6	0.3	0.3
132.5°	0.6	0.6	0.6	0.6	0.3
135°	0.3	0.6	0.6	0.6	0.3
137.5°	0.6	0.6	0.6	0.6	0.6
140°	0.6	0.6	0.6	0.6	0.6
142.5°	0.6	0.6	0.6	0.6	0.6
145°	0.6	0.6	0.6	0.6	0.6
147.5°	0.6	0.6	0.6	0.6	0.6
150°	0.6	0.6	0.6	0.6	0.6
152.5°	0.6	0.6	0.6	0.6	0.6
155°	0.6	0.6	0.6	1.0	1.0
157.5°	0.6	0.6	1.0	1.0	1.0
160°	0.6	0.6	1.0	1.0	1.0
162.5°	0.6	0.6	1.0	1.0	1.0
165°	0.6	1.0	1.0	1.0	1.0
167.5°	0.6	1.0	1.0	1.0	1.3
170°	0.6	1.0	1.0	1.3	1.3
172.5°	0.6	1.0	1.0	1.3	1.3
175°	1.0	1.0	1.0	1.3	1.3
177.5°	1.0	1.0	1.0	1.3	1.3
180°	1.0	1.0	1.0	1.0	1.0



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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	18.82	20.25	19.19	20.57	20.90	13.66	15.10	14.03	15.42	15.74
	3H	20.12	21.41	20.51	21.74	22.11	14.67	15.95	15.05	16.29	16.66
	4H	20.55	21.75	20.95	22.10	22.49	15.01	16.20	15.41	16.56	16.95
	6H	20.81	21.92	21.23	22.29	22.69	15.23	16.33	15.65	16.71	17.11
	8H	20.89	21.94	21.32	22.33	22.74	15.30	16.35	15.73	16.74	17.15
	12H	20.92	21.93	21.36	22.32	22.75	15.34	16.34	15.78	16.73	17.17
4H	2H	18.81	20.01	19.22	20.37	20.76	14.28	15.48	14.69	15.84	16.22
	3H	20.28	21.27	20.70	21.67	22.08	15.48	16.47	15.90	16.87	17.28
	4H	20.80	21.69	21.24	22.11	22.56	15.89	16.78	16.33	17.20	17.65
	6H	21.18	21.95	21.65	22.40	22.87	16.20	16.97	16.67	17.42	17.89
	8H	21.29	22.01	21.76	22.46	22.94	16.30	17.01	16.77	17.47	17.94
	12H	21.37	22.01	21.86	22.49	22.97	16.37	17.01	16.86	17.49	17.97
8H	4H	20.79	21.50	21.26	21.95	22.43	16.23	16.94	16.70	17.40	17.87
	6H	21.22	21.81	21.72	22.31	22.79	16.62	17.21	17.12	17.71	18.19
	8H	21.37	21.90	21.90	22.42	22.92	16.76	17.29	17.28	17.81	18.30
	12H	21.50	21.97	22.02	22.47	23.04	16.88	17.35	17.40	17.85	18.43
12H	4H	20.76	21.40	21.25	21.88	22.36	16.27	16.91	16.76	17.40	17.88
	6H	21.18	21.71	21.71	22.23	22.73	16.69	17.22	17.21	17.74	18.23
	8H	21.37	21.84	21.89	22.34	22.92	16.88	17.35	17.39	17.85	18.42