

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: P893987

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

Issue Date: 11/11/2024

**Test Information**

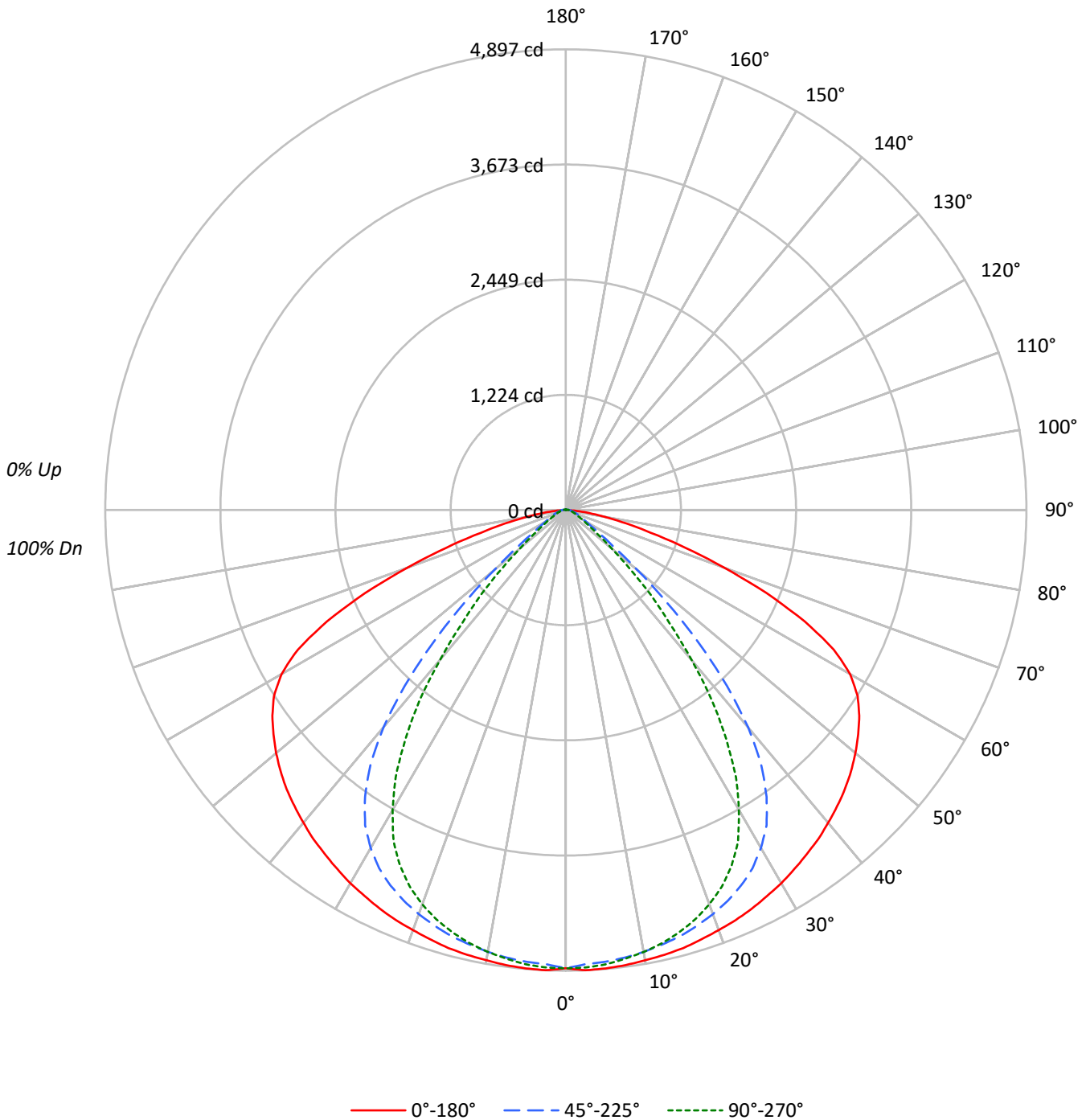
Test Method: LM-79-2019  
Report Number: P893987  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2404-077-21)  
Test Lab: INNOVATION CENTER  
Issue Date: 11/11/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: METALUX  
Catalog Number: 4MB-9HL-A-UNV-L840  
Description: 9000 Lumen 4FT MICROBAY LINEAR BAY with AISLE OPTIC, 80CRI, 4000K CCT  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 9865.0 lumens  
Efficiency: N/A  
Efficacy: 153.2 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	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	104	101	108	105	102	99	101	98	96	97	95	93	93	91	90	90	90	90	88
2	103	96	90	86	100	94	89	85	91	86	83	88	84	81	85	82	79	79	79	79	77
3	95	86	80	74	93	85	79	74	82	77	72	79	75	71	77	73	70	70	70	70	68
4	88	78	71	65	86	77	70	64	74	68	64	72	67	63	70	66	62	62	62	62	60
5	82	71	63	57	80	70	63	57	68	61	56	66	60	56	64	59	55	55	55	55	53
6	76	65	57	51	75	64	56	51	62	55	50	60	55	50	59	54	50	50	50	50	48
7	71	59	51	46	70	58	51	46	57	50	45	56	50	45	54	49	45	45	45	45	43
8	67	55	47	42	65	54	47	41	53	46	41	51	45	41	50	45	41	41	41	41	39
9	63	50	43	38	61	50	43	38	49	42	38	48	42	37	47	41	37	37	37	37	35
10	59	47	39	35	58	46	39	35	45	39	34	44	38	34	43	38	34	34	34	34	32

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

	0°	45°	90°
0°	49614	49614	49614
5°	50001	49286	49569
10°	50265	49323	49332
15°	50821	49441	49014
20°	51490	49534	48347
25°	52539	49517	46857
30°	53868	48777	43286
35°	55519	46268	36947
40°	57690	40072	27633
45°	60444	28836	18397
50°	63689	15803	10083
55°	67629	7766	5804
60°	71129	5121	4015
65°	67510	4195	3174
70°	53145	3811	2933
75°	36854	3770	2790
80°	24251	3783	3454
85°	13882	5807	5924

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 60°  
 Luminance: 71129 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	462.0	4.7
10°-20°	1333.5	13.5
20°-30°	2031.5	20.6
30°-40°	2307.1	23.4
40°-50°	1852.6	18.8
50°-60°	993.7	10.1
60°-70°	525.6	5.3
70°-80°	238.3	2.4
80°-90°	75.9	0.8
90°-100°	23.5	0.2
100°-110°	8.4	0.1
110°-120°	2.6	0.0
120°-130°	1.9	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°	3827.0	38.8
0°-40°	6134.1	62.2
0°-60°	8980.4	91.0
0°-90°	9820.2	99.5
90°-120°	34.5	0.3
90°-150°	40.7	0.4
90°-180°	45.0	0.5
0°-180°	9865.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4872	4872	4872	4872	4872	
5°	4891	4881	4821	4862	4849	466
15°	4820	4790	4689	4676	4649	1363
25°	4676	4601	4407	4253	4170	2160
35°	4466	4276	3722	3182	2972	2802
45°	4197	3551	2002	1392	1277	3241
55°	3809	1421	437	342	327	3396
65°	2802	331	174	141	132	2709
75°	937	189	96	76	71	1059
85°	119	71	50	50	51	162
90°	5	32	36	41	40	7
95°	5	13	28	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	7	6	0
180°	6	6	6	6	6	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4871.7	4871.7	4871.7	4871.7	4871.7
2.5°	4896.6	4887.3	4832.1	4878.1	4866.2
5°	4891.0	4880.9	4821.0	4861.6	4848.7
7.5°	4879.1	4866.2	4798.9	4832.1	4811.8
10°	4860.6	4847.7	4769.5	4792.5	4770.4
12.5°	4842.2	4820.1	4730.8	4738.2	4717.0
15°	4820.1	4789.7	4689.3	4676.5	4648.8
17.5°	4786.0	4752.0	4635.0	4604.6	4565.9
20°	4751.0	4705.0	4570.5	4508.8	4461.0
22.5°	4718.8	4655.3	4496.9	4398.3	4333.9
25°	4675.5	4600.9	4406.6	4252.8	4169.9
27.5°	4628.6	4537.4	4295.2	4065.0	3966.4
30°	4580.7	4461.0	4147.8	3829.2	3680.9
32.5°	4524.5	4377.2	3971.0	3543.7	3368.7
35°	4465.6	4275.9	3721.5	3181.8	2971.8
37.5°	4409.4	4158.9	3413.9	2742.5	2556.5
40°	4339.4	4022.6	3014.2	2271.0	2078.5
42.5°	4270.3	3812.6	2535.3	1818.8	1634.6
45°	4196.7	3551.1	2002.1	1392.4	1277.3
47.5°	4112.8	3192.8	1465.2	1013.9	914.5
50°	4019.8	2677.1	997.4	690.7	636.4
52.5°	3917.6	2073.9	648.3	476.1	444.8
55°	3808.9	1421.0	437.4	341.7	326.9
57.5°	3678.2	890.5	324.2	256.9	248.6
60°	3492.1	577.4	251.4	207.2	197.1
62.5°	3212.2	413.5	210.9	169.5	161.2
65°	2801.5	330.6	174.1	140.9	131.7
67.5°	2309.7	282.7	149.2	120.6	114.2
70°	1784.8	248.6	128.0	105.0	98.5
72.5°	1331.7	217.3	110.5	91.2	82.9
75°	936.6	188.8	95.8	75.5	70.9
77.5°	658.5	163.0	79.2	64.5	63.5
80°	413.5	135.4	64.5	59.9	58.9
82.5°	251.4	106.8	56.2	55.3	54.3
85°	118.8	70.9	49.7	49.7	50.7
87.5°	38.7	47.0	42.4	44.2	44.2
90°	4.6	32.2	35.9	41.4	39.6
92.5°	4.6	23.0	33.2	33.2	26.7
95°	4.6	12.9	28.5	24.9	23.9
97.5°	4.6	6.4	21.2	23.9	23.0
100°	4.6	3.7	15.7	21.2	23.0
102.5°	3.7	2.8	10.1	17.5	19.3
105°	2.8	1.8	5.5	12.9	15.7
107.5°	1.8	1.8	3.7	9.2	11.1
110°	1.8	0.9	2.8	6.4	7.4



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	1.8	0.9	2.8	4.6	4.6
115°	1.8	1.8	1.8	3.7	3.7
117.5°	1.8	1.8	1.8	2.8	2.8
120°	1.8	1.8	1.8	2.8	1.8
122.5°	1.8	1.8	1.8	2.8	1.8
125°	1.8	1.8	1.8	2.8	1.8
127.5°	1.8	1.8	2.8	2.8	1.8
130°	1.8	1.8	2.8	2.8	1.8
132.5°	1.8	1.8	2.8	2.8	2.8
135°	2.8	1.8	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	4.6	3.7
150°	2.8	3.7	4.6	4.6	3.7
152.5°	2.8	3.7	4.6	4.6	4.6
155°	3.7	3.7	4.6	5.5	4.6
157.5°	3.7	3.7	4.6	5.5	4.6
160°	3.7	3.7	5.5	5.5	5.5
162.5°	3.7	4.6	5.5	6.4	5.5
165°	3.7	4.6	5.5	6.4	5.5
167.5°	3.7	4.6	5.5	6.4	6.4
170°	3.7	4.6	6.4	6.4	6.4
172.5°	4.6	4.6	6.4	7.4	6.4
175°	4.6	4.6	6.4	7.4	6.4
177.5°	4.6	4.6	6.4	7.4	6.4
180°	6.4	6.4	6.4	6.4	6.4



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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	23.23	24.62	23.60	24.94	25.27	11.44	12.83	11.81	13.15	13.48
	3H	26.13	27.36	26.52	27.70	28.08	12.40	13.63	12.79	13.97	14.35
	4H	26.91	28.06	27.32	28.42	28.82	12.82	13.97	13.23	14.33	14.72
	6H	27.35	28.41	27.77	28.79	29.19	13.30	14.36	13.72	14.74	15.14
	8H	27.45	28.45	27.89	28.85	29.27	13.61	14.61	14.04	15.01	15.43
	12H	27.49	28.45	27.93	28.84	29.28	14.01	14.97	14.45	15.36	15.81
4H	2H	23.04	24.19	23.45	24.55	24.95	11.96	13.11	12.37	13.47	13.86
	3H	25.96	26.90	26.38	27.32	27.73	13.17	14.11	13.59	14.52	14.94
	4H	26.75	27.60	27.20	28.03	28.48	13.71	14.55	14.15	14.98	15.43
	6H	27.28	28.01	27.75	28.47	28.94	14.34	15.07	14.81	15.53	16.00
	8H	27.43	28.11	27.90	28.56	29.04	14.74	15.43	15.22	15.88	16.36
	12H	27.50	28.11	28.00	28.60	29.08	15.27	15.88	15.77	16.37	16.85
8H	4H	26.64	27.32	27.12	27.78	28.26	14.27	14.95	14.74	15.41	15.89
	6H	27.17	27.73	27.68	28.24	28.73	15.04	15.60	15.55	16.11	16.60
	8H	27.34	27.84	27.86	28.36	28.87	15.56	16.07	16.09	16.59	17.09
	12H	27.46	27.90	27.98	28.41	28.99	16.27	16.71	16.79	17.22	17.79
12H	4H	26.60	27.21	27.09	27.70	28.18	14.52	15.12	15.01	15.61	16.10
	6H	27.12	27.62	27.64	28.14	28.65	15.32	15.82	15.84	16.34	16.84
	8H	27.31	27.76	27.83	28.26	28.84	15.91	16.36	16.43	16.86	17.44