

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: P893483

Luminaire Tested: 4MB-4SL-ASMF-UNV-L840

Issue Date: 11/11/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P893483  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2407-185-1)  
Test Lab: INNOVATION CENTER  
Issue Date: 11/11/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: METALUX  
Catalog Number: 4MB-4SL-ASMF-UNV-L840  
Description: 4000 Lumen 4FT MICROBAY LINEAR BAY with FROSTED ASYMMETRIC LENS, 80CRI, 4000K CCT  
Light Source: -  
Ballast/Driver: -

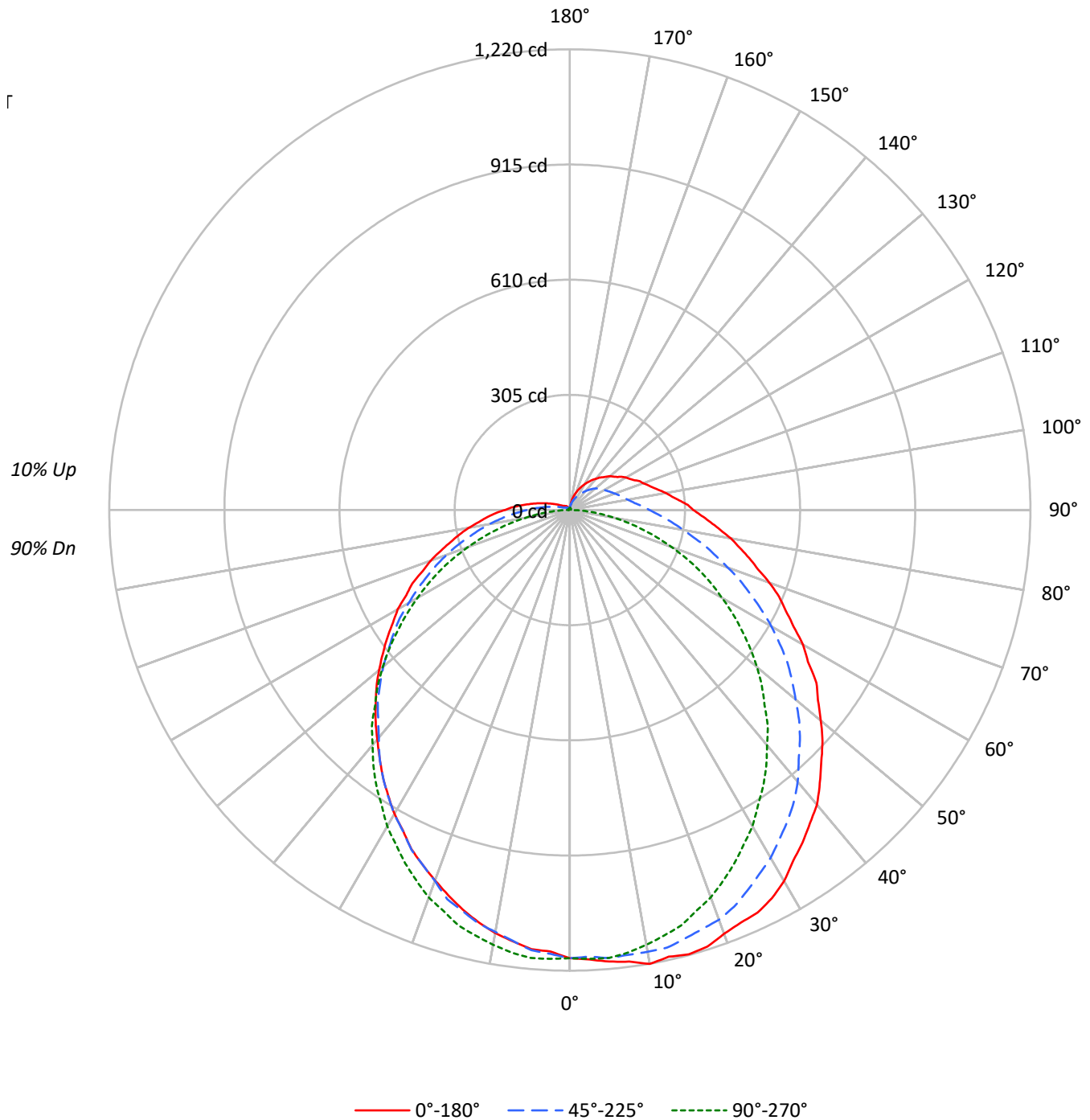
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4080.0 lumens  
Efficiency: N/A  
Efficacy: 136.9 lumens/watt  
Spacing Criteria (0/90/45): 1.28 / 1.21 / 1.37  
Luminous Opening: Rectangular w/ Sides (W: 0.27' x L: 3.98' x H: 0.12')  
CIE Type: Direct

Input Watts (W): 29.8  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: 0.99  
Total Harmonic Distortion (THDi): 5.5  
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	117	117	117	117	113	113	113	113	106	106	106	99	99	99	93	93	93	93	93	93	90
1	105	99	95	90	101	96	92	88	90	87	83	85	82	79	79	77	75	75	75	75	72
2	95	86	79	72	91	83	76	71	78	72	68	73	69	65	69	65	62	62	62	62	59
3	86	75	66	60	83	73	65	58	68	62	56	64	59	54	60	56	52	52	52	52	49
4	79	66	57	50	76	64	56	49	61	53	48	57	51	46	54	49	44	44	44	44	42
5	72	59	50	43	69	57	49	42	54	47	41	51	45	40	48	43	38	38	38	38	36
6	67	53	44	37	64	52	43	37	49	41	36	46	40	35	44	38	34	34	34	34	31
7	62	48	39	33	59	47	38	32	44	37	32	42	36	31	40	34	30	30	30	30	28
8	57	44	35	29	55	43	35	29	41	33	28	39	32	27	37	31	27	27	27	27	25
9	54	40	32	26	52	39	31	26	37	30	25	36	29	25	34	28	24	24	24	24	22
10	50	37	29	24	49	36	29	23	34	28	23	33	27	22	31	26	22	22	22	22	20

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

	0°	45°	90°	135°	180°
0°	12086	12086	12086	12086	12086
5°	12237	11808	11693	11602	11899
10°	12552	11561	11162	11041	11698
15°	12736	11316	10666	10580	11452
20°	12798	11083	10102	10029	11184
25°	13031	10726	9508	9571	10981
30°	13111	10383	8944	9074	10732
35°	13079	10008	8351	8596	10502
40°	13197	9622	7742	8060	10276
45°	13157	9164	7142	7650	10150
50°	13258	8693	6566	7181	10067
55°	13552	8284	5904	6711	10033
60°	13777	7776	5227	6212	10167
65°	14253	7226	4541	5715	10394
70°	15419	6699	3722	5241	10751
75°	17324	6317	2847	4690	11492
80°	21535	5948	1907	4204	13500
85°	32190	5869	956	3701	18924

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 90°  
 Luminance: 105976 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	112.6	2.8
10°-20°	322.7	7.9
20°-30°	486.6	11.9
30°-40°	584.1	14.3
40°-50°	608.2	14.9
50°-60°	563.8	13.8
60°-70°	464.3	11.4
70°-80°	334.9	8.2
80°-90°	212.6	5.2
90°-100°	131.1	3.2
100°-110°	87.4	2.1
110°-120°	62.2	1.5
120°-130°	45.6	1.1
130°-140°	31.4	0.8
140°-150°	19.1	0.5
150°-160°	9.5	0.2
160°-170°	3.5	0.1
170°-180°	0.6	0.0
0°-30°	921.9	22.6
0°-40°	1506.0	36.9
0°-60°	2677.9	65.6
0°-90°	3689.7	90.4
90°-120°	280.7	6.9
90°-150°	376.8	9.2
90°-180°	390.0	9.6
0°-180°	4080.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1187	1187	1187	1187	1187	
5°	1200	1191	1191	1170	1167	115
15°	1218	1175	1139	1099	1095	343
25°	1177	1112	1032	993	992	541
35°	1075	1005	893	863	863	674
45°	942	862	729	720	727	729
55°	798	703	556	570	590	708
65°	631	528	379	418	460	629
75°	492	373	199	277	326	521
85°	374	254	52	160	220	318
90°	327	211	5	114	172	180
95°	291	179	3	76	132	232
105°	228	140	3	31	69	244
115°	188	116	4	15	33	188
125°	152	97	4	12	19	139
135°	122	77	4	9	14	96
145°	94	55	4	6	10	59
155°	64	36	5	4	6	30
165°	37	21	5	3	4	11
175°	5	9	5	2	1	1
180°	4	4	4	4	4	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
0°	1186.7	1186.7	1186.7	1186.7	1186.7	1186.7	1186.7	1186.7	1186.7
2.5°	1191.4	1195.0	1183.7	1190.9	1189.7	1190.9	1176.6	1188.5	1170.1
5°	1200.3	1202.1	1190.9	1195.0	1190.9	1180.8	1170.1	1165.9	1167.1
7.5°	1206.3	1215.8	1187.9	1189.1	1182.0	1171.3	1151.1	1154.7	1152.3
10°	1220.5	1209.8	1187.9	1182.5	1168.9	1157.6	1134.5	1136.3	1137.5
12.5°	1211.6	1209.2	1187.3	1167.7	1154.1	1144.6	1120.8	1114.9	1117.9
15°	1218.1	1208.1	1175.4	1160.0	1139.2	1122.6	1098.9	1094.7	1095.3
17.5°	1212.2	1203.9	1163.6	1142.2	1113.1	1103.0	1080.5	1073.4	1069.8
20°	1194.4	1190.3	1154.7	1117.9	1091.8	1072.2	1044.9	1040.7	1043.7
22.5°	1182.5	1172.5	1136.9	1100.1	1062.1	1044.9	1017.6	1017.0	1017.6
25°	1176.6	1163.6	1112.5	1074.0	1031.8	1016.4	992.7	983.8	991.5
27.5°	1158.8	1146.9	1087.0	1044.9	998.0	977.2	957.7	955.9	957.1
30°	1135.1	1111.9	1063.9	1012.3	967.2	945.8	929.8	917.9	929.2
32.5°	1101.3	1088.2	1033.6	977.2	927.4	912.6	896.6	895.4	895.4
35°	1075.1	1065.7	1005.1	946.4	893.0	872.8	863.3	859.2	863.3
37.5°	1044.9	1030.6	974.9	909.0	854.4	837.2	827.7	824.2	827.1
40°	1018.8	992.7	939.3	870.4	812.3	796.9	786.8	790.3	793.3
42.5°	980.2	965.4	897.1	831.3	776.1	759.5	751.2	754.1	761.3
45°	942.2	928.6	862.1	790.3	729.2	720.3	719.7	718.0	726.9
47.5°	907.8	888.2	823.6	750.0	690.1	680.0	681.2	687.1	694.8
50°	868.1	844.9	780.8	706.7	646.8	640.2	645.0	649.1	659.2
52.5°	828.3	809.9	741.7	665.7	602.8	598.1	604.6	618.3	624.2
55°	797.5	764.2	703.1	617.7	556.0	556.6	569.6	577.3	590.4
57.5°	748.2	723.3	659.2	575.0	512.1	516.2	534.0	547.1	555.4
60°	713.2	681.8	616.5	529.3	465.8	472.3	492.5	512.1	526.3
62.5°	668.1	640.8	572.0	484.2	423.1	432.6	455.1	478.2	488.3
65°	631.3	600.5	528.1	439.1	378.6	389.8	417.7	443.8	460.4
67.5°	599.9	567.8	488.9	397.5	333.5	350.1	382.7	408.2	421.3
70°	562.5	525.1	444.4	351.3	286.6	306.2	347.7	377.4	392.2
72.5°	522.7	492.5	405.9	308.5	243.3	267.0	312.7	343.5	357.8
75°	491.9	458.1	373.2	265.8	199.4	227.8	277.1	312.1	326.3
77.5°	460.4	429.6	336.4	226.7	160.2	192.2	245.6	284.2	299.0
80°	432.6	397.0	305.6	194.6	119.3	157.2	216.0	254.0	271.2
82.5°	401.7	370.8	278.9	160.8	84.8	125.2	186.9	228.4	242.7
85°	374.4	342.4	254.0	134.1	52.2	96.7	160.2	202.9	220.1
87.5°	349.5	322.8	230.8	113.9	26.1	73.6	134.7	178.0	197.6
90°	326.9	296.7	211.2	95.5	4.7	53.4	113.9	156.6	171.5
92.5°	312.7	276.5	195.2	83.7	3.0	38.0	94.9	137.1	154.3
95°	291.3	259.3	178.6	74.8	3.0	25.5	76.5	117.5	132.3
97.5°	272.9	243.3	166.7	69.4	2.4	17.2	62.9	98.5	113.9
100°	258.7	230.8	156.1	64.7	3.0	12.5	49.8	83.7	97.3
102.5°	242.7	217.2	147.7	61.7	3.0	8.9	39.2	70.6	83.1
105°	228.4	205.9	140.0	58.7	3.0	7.7	31.4	58.1	69.4
107.5°	217.8	194.0	133.5	57.0	3.0	7.7	24.9	47.5	57.0
110°	207.1	184.5	127.0	55.2	3.0	7.1	19.6	39.2	47.5



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
112.5°	200.0	175.6	121.0	53.4	3.6	7.1	16.0	32.6	39.2
115°	187.5	167.9	115.7	52.8	3.6	6.5	14.8	26.7	33.2
117.5°	178.6	160.8	110.4	51.0	3.6	6.5	14.2	22.0	26.7
120°	172.1	152.5	105.6	49.2	3.6	5.9	13.1	19.6	22.5
122.5°	163.8	144.8	101.5	48.1	3.6	5.9	12.5	18.4	20.2
125°	152.5	137.7	96.7	45.7	4.2	5.9	11.9	17.2	19.0
127.5°	145.4	131.1	93.2	42.7	4.2	5.3	11.3	16.0	17.8
130°	139.4	124.0	89.0	39.8	4.2	5.3	10.7	14.8	16.6
132.5°	130.5	116.9	83.1	37.4	4.2	4.7	9.5	13.6	15.4
135°	122.2	111.0	77.1	35.0	4.2	4.7	8.9	13.1	14.2
137.5°	116.9	105.0	71.8	32.6	4.2	4.2	8.3	11.9	13.1
140°	108.0	98.5	65.9	30.3	4.2	4.2	7.7	11.3	11.9
142.5°	101.5	92.0	60.5	27.9	4.2	4.2	7.1	10.1	11.3
145°	93.7	85.4	54.6	25.5	4.2	3.6	6.5	9.5	10.1
147.5°	86.6	77.7	49.8	23.7	4.2	3.6	5.9	8.3	8.9
150°	79.5	70.0	45.1	22.0	4.2	3.6	5.3	7.1	8.3
152.5°	71.8	60.5	40.3	20.2	4.2	3.6	4.7	6.5	7.1
155°	64.1	52.8	36.2	18.4	4.7	3.6	4.2	5.3	6.5
157.5°	57.6	45.7	32.0	16.6	4.7	3.0	4.2	4.7	5.3
160°	49.8	39.2	28.5	14.8	4.7	3.0	3.6	4.2	4.7
162.5°	43.9	32.6	24.9	13.6	4.7	3.0	3.6	3.6	4.2
165°	37.4	27.3	20.8	12.5	4.7	3.0	3.0	3.0	3.6
167.5°	30.3	21.4	17.2	11.3	4.7	3.0	3.0	2.4	3.0
170°	22.5	16.0	14.2	10.1	4.7	3.0	2.4	1.8	2.4
172.5°	10.1	12.5	11.3	8.9	5.3	3.0	2.4	1.8	1.2
175°	5.3	8.9	8.9	7.7	5.3	3.0	2.4	1.8	0.6
177.5°	4.2	5.3	6.5	6.5	5.3	3.6	2.4	1.2	0.6
180°	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6



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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	19.02	20.50	19.53	21.00	21.55	17.99	19.47	18.50	19.97	20.52
	3H	21.11	22.46	21.63	22.97	23.55	19.86	21.21	20.38	21.72	22.31
	4H	22.05	23.33	22.59	23.86	24.45	20.61	21.89	21.15	22.42	23.01
	6H	22.97	24.16	23.52	24.70	25.31	21.24	22.43	21.80	22.97	23.58
	8H	23.40	24.54	23.96	25.10	25.72	21.50	22.64	22.06	23.20	23.82
	12H	23.82	24.91	24.39	25.47	26.12	21.73	22.82	22.30	23.38	24.03
4H	2H	19.51	20.79	20.06	21.32	21.92	18.56	19.83	19.10	20.36	20.96
	3H	21.83	22.92	22.38	23.49	24.10	20.62	21.70	21.17	22.27	22.89
	4H	22.94	23.94	23.51	24.52	25.17	21.47	22.46	22.04	23.04	23.69
	6H	24.05	24.93	24.64	25.53	26.19	22.22	23.10	22.82	23.71	24.37
	8H	24.57	25.40	25.17	26.00	26.68	22.54	23.37	23.14	23.97	24.64
	12H	25.10	25.85	25.72	26.48	27.16	22.83	23.58	23.45	24.21	24.89
8H	4H	23.20	24.02	23.80	24.63	25.30	21.81	22.63	22.40	23.24	23.91
	6H	24.48	25.18	25.11	25.83	26.51	22.69	23.39	23.32	24.04	24.72
	8H	25.15	25.78	25.79	26.44	27.13	23.09	23.72	23.73	24.38	25.07
	12H	25.85	26.42	26.50	27.06	27.82	23.48	24.04	24.12	24.68	25.44
12H	4H	23.22	23.97	23.84	24.60	25.28	21.87	22.62	22.49	23.25	23.93
	6H	24.54	25.17	25.18	25.82	26.52	22.80	23.43	23.44	24.09	24.78
	8H	25.28	25.84	25.92	26.49	27.24	23.26	23.83	23.91	24.47	25.23