

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: P893485

Luminaire Tested: 4MB-4SL-ASMF-UNV-L930

Issue Date: 11/11/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P893485  
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-L930  
Description: 4000 Lumen 4FT MICROBAY LINEAR BAY with FROSTED ASYMMETRIC LENS, 90CRI, 3000K CCT  
Light Source: -  
Ballast/Driver: -

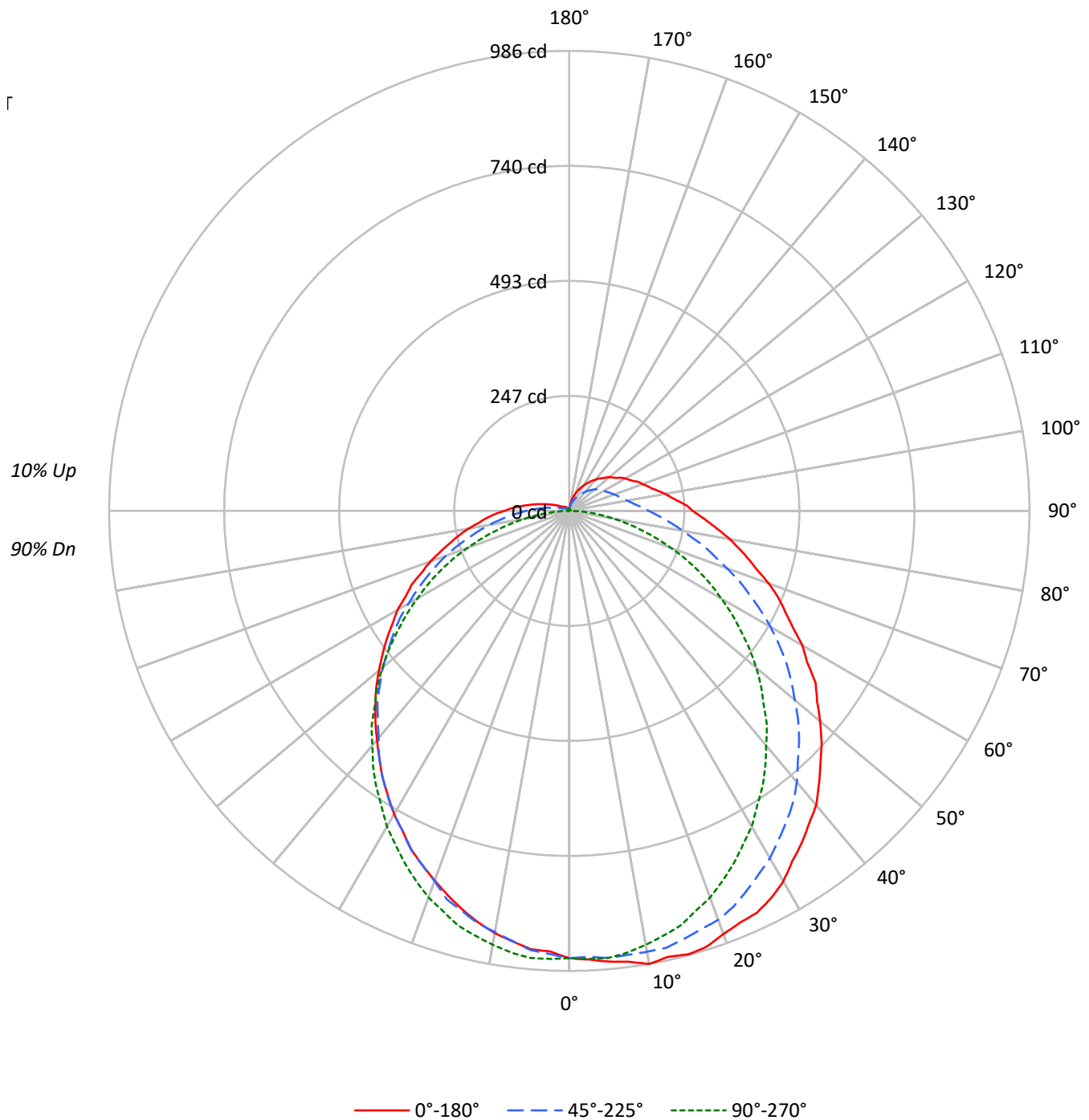
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3296.0 lumens  
Efficiency: N/A  
Efficacy: 110.6 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°	9764	9764	9764	9764	9764
5°	9886	9538	9446	9372	9612
10°	10140	9339	9017	8920	9450
15°	10289	9143	8617	8547	9251
20°	10339	8953	8161	8101	9034
25°	10527	8665	7682	7731	8871
30°	10592	8387	7225	7330	8670
35°	10567	8086	6746	6944	8484
40°	10660	7773	6254	6511	8302
45°	10629	7403	5770	6180	8200
50°	10710	7023	5304	5801	8132
55°	10947	6692	4769	5422	8104
60°	11131	6281	4223	5018	8214
65°	11514	5837	3668	4618	8399
70°	12455	5412	3006	4234	8684
75°	13996	5103	2300	3788	9284
80°	17393	4806	1539	3397	10907
85°	26008	4741	773	2990	15287

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 90°  
 Luminance: 85617 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	91.0	2.8
10°-20°	260.7	7.9
20°-30°	393.1	11.9
30°-40°	471.8	14.3
40°-50°	491.3	14.9
50°-60°	455.4	13.8
60°-70°	375.1	11.4
70°-80°	270.5	8.2
80°-90°	171.8	5.2
90°-100°	105.9	3.2
100°-110°	70.6	2.1
110°-120°	50.3	1.5
120°-130°	36.8	1.1
130°-140°	25.3	0.8
140°-150°	15.4	0.5
150°-160°	7.6	0.2
160°-170°	2.8	0.1
170°-180°	0.5	0.0
0°-30°	744.8	22.6
0°-40°	1216.6	36.9
0°-60°	2163.4	65.6
0°-90°	2980.7	90.4
90°-120°	226.8	6.9
90°-150°	304.4	9.2
90°-180°	315.0	9.6
0°-180°	3296.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	959	959	959	959	959	
5°	970	962	962	945	943	93
15°	984	950	920	888	885	277
25°	950	899	834	802	801	437
35°	869	812	721	697	697	544
45°	761	696	589	581	587	589
55°	644	568	449	460	477	572
65°	510	427	306	338	372	508
75°	397	302	161	224	264	421
85°	302	205	42	129	178	257
90°	264	171	4	92	138	146
95°	235	144	2	62	107	187
105°	184	113	2	25	56	197
115°	152	94	3	12	27	152
125°	123	78	3	10	15	112
135°	99	62	3	7	12	77
145°	76	44	3	5	8	48
155°	52	29	4	3	5	24
165°	30	17	4	2	3	9
175°	4	7	4	2	0	1
180°	3	3	3	3	3	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
0°	958.7	958.7	958.7	958.7	958.7	958.7	958.7	958.7	958.7
2.5°	962.5	965.4	956.3	962.0	961.1	962.0	950.5	960.1	945.2
5°	969.7	971.1	962.0	965.4	962.0	953.9	945.2	941.9	942.8
7.5°	974.5	982.2	959.6	960.6	954.8	946.2	929.9	932.8	930.9
10°	986.0	977.4	959.6	955.3	944.3	935.2	916.5	917.9	918.9
12.5°	978.8	976.9	959.1	943.3	932.3	924.6	905.5	900.7	903.1
15°	984.1	975.9	949.6	937.1	920.3	906.9	887.7	884.4	884.8
17.5°	979.3	972.6	940.0	922.7	899.2	891.1	872.9	867.1	864.2
20°	964.9	961.5	932.8	903.1	882.0	866.2	844.1	840.8	843.1
22.5°	955.3	947.2	918.4	888.7	858.0	844.1	822.1	821.6	822.1
25°	950.5	940.0	898.7	867.6	833.6	821.1	801.9	794.7	801.0
27.5°	936.1	926.6	878.1	844.1	806.2	789.5	773.6	772.2	773.2
30°	917.0	898.3	859.4	817.7	781.3	764.1	751.1	741.5	750.6
32.5°	889.6	879.1	835.0	789.5	749.2	737.2	724.3	723.3	723.3
35°	868.6	860.9	812.0	764.5	721.4	705.1	697.4	694.1	697.4
37.5°	844.1	832.6	787.5	734.3	690.2	676.3	668.7	665.8	668.2
40°	823.0	801.9	758.8	703.2	656.2	643.7	635.6	638.5	640.9
42.5°	791.9	779.9	724.8	671.5	627.0	613.5	606.8	609.2	615.0
45°	761.2	750.2	696.5	638.5	589.1	581.9	581.4	580.0	587.2
47.5°	733.4	717.6	665.3	605.9	557.5	549.3	550.3	555.1	561.3
50°	701.3	682.6	630.8	570.9	522.5	517.2	521.0	524.4	532.5
52.5°	669.1	654.3	599.2	537.8	487.0	483.2	488.4	499.5	504.3
55°	644.2	617.4	568.0	499.0	449.1	449.6	460.2	466.4	476.9
57.5°	604.4	584.3	532.5	464.5	413.7	417.0	431.4	441.9	448.7
60°	576.2	550.8	498.0	427.6	376.3	381.5	397.8	413.7	425.2
62.5°	539.7	517.7	462.1	391.1	341.8	349.4	367.6	386.3	394.5
65°	510.0	485.1	426.6	354.7	305.8	314.9	337.5	358.5	372.0
67.5°	484.6	458.7	395.0	321.2	269.4	282.8	309.2	329.8	340.3
70°	454.4	424.2	359.0	283.8	231.5	247.3	280.9	304.9	316.8
72.5°	422.3	397.8	327.9	249.3	196.5	215.7	252.6	277.5	289.0
75°	397.4	370.0	301.5	214.7	161.1	184.1	223.8	252.1	263.6
77.5°	372.0	347.0	271.8	183.1	129.4	155.3	198.4	229.6	241.6
80°	349.4	320.7	246.9	157.2	96.3	127.0	174.5	205.2	219.1
82.5°	324.5	299.6	225.3	129.9	68.5	101.1	151.0	184.5	196.0
85°	302.5	276.6	205.2	108.3	42.2	78.1	129.4	163.9	177.8
87.5°	282.3	260.8	186.5	92.0	21.1	59.4	108.8	143.8	159.6
90°	264.1	239.7	170.6	77.2	3.8	43.1	92.0	126.5	138.5
92.5°	252.6	223.4	157.7	67.6	2.4	30.7	76.7	110.7	124.6
95°	235.4	209.5	144.3	60.4	2.4	20.6	61.8	94.9	106.9
97.5°	220.5	196.5	134.7	56.1	1.9	13.9	50.8	79.6	92.0
100°	209.0	186.5	126.1	52.2	2.4	10.1	40.3	67.6	78.6
102.5°	196.0	175.4	119.4	49.9	2.4	7.2	31.6	57.0	67.1
105°	184.5	166.3	113.1	47.5	2.4	6.2	25.4	47.0	56.1
107.5°	175.9	156.7	107.8	46.0	2.4	6.2	20.1	38.3	46.0
110°	167.3	149.1	102.6	44.6	2.4	5.8	15.8	31.6	38.3



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
112.5°	161.5	141.9	97.8	43.1	2.9	5.8	12.9	26.4	31.6
115°	151.5	135.7	93.5	42.7	2.9	5.3	12.0	21.6	26.8
117.5°	144.3	129.9	89.2	41.2	2.9	5.3	11.5	17.7	21.6
120°	139.0	123.2	85.3	39.8	2.9	4.8	10.5	15.8	18.2
122.5°	132.3	117.0	82.0	38.8	2.9	4.8	10.1	14.9	16.3
125°	123.2	111.2	78.1	36.9	3.4	4.8	9.6	13.9	15.3
127.5°	117.4	105.9	75.3	34.5	3.4	4.3	9.1	12.9	14.4
130°	112.6	100.2	71.9	32.1	3.4	4.3	8.6	12.0	13.4
132.5°	105.5	94.4	67.1	30.2	3.4	3.8	7.7	11.0	12.5
135°	98.7	89.6	62.3	28.3	3.4	3.8	7.2	10.5	11.5
137.5°	94.4	84.8	58.0	26.4	3.4	3.4	6.7	9.6	10.5
140°	87.2	79.6	53.2	24.4	3.4	3.4	6.2	9.1	9.6
142.5°	82.0	74.3	48.9	22.5	3.4	3.4	5.8	8.1	9.1
145°	75.7	69.0	44.1	20.6	3.4	2.9	5.3	7.7	8.1
147.5°	70.0	62.8	40.3	19.2	3.4	2.9	4.8	6.7	7.2
150°	64.2	56.6	36.4	17.7	3.4	2.9	4.3	5.8	6.7
152.5°	58.0	48.9	32.6	16.3	3.4	2.9	3.8	5.3	5.8
155°	51.8	42.7	29.2	14.9	3.8	2.9	3.4	4.3	5.3
157.5°	46.5	36.9	25.9	13.4	3.8	2.4	3.4	3.8	4.3
160°	40.3	31.6	23.0	12.0	3.8	2.4	2.9	3.4	3.8
162.5°	35.5	26.4	20.1	11.0	3.8	2.4	2.9	2.9	3.4
165°	30.2	22.0	16.8	10.1	3.8	2.4	2.4	2.4	2.9
167.5°	24.4	17.3	13.9	9.1	3.8	2.4	2.4	1.9	2.4
170°	18.2	12.9	11.5	8.1	3.8	2.4	1.9	1.4	1.9
172.5°	8.1	10.1	9.1	7.2	4.3	2.4	1.9	1.4	1.0
175°	4.3	7.2	7.2	6.2	4.3	2.4	1.9	1.4	0.5
177.5°	3.4	4.3	5.3	5.3	4.3	2.9	1.9	1.0	0.5
180°	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9



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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	18.28	19.76	18.79	20.26	20.80	17.25	18.73	17.76	19.23	19.77
	3H	20.37	21.71	20.89	22.23	22.81	19.12	20.47	19.64	20.98	21.56
	4H	21.31	22.59	21.85	23.11	23.71	19.87	21.15	20.41	21.67	22.27
	6H	22.23	23.42	22.78	23.96	24.57	20.50	21.69	21.05	22.23	22.84
	8H	22.66	23.80	23.22	24.36	24.98	20.76	21.90	21.32	22.46	23.08
	12H	23.08	24.17	23.65	24.73	25.38	20.99	22.08	21.56	22.64	23.28
4H	2H	18.77	20.05	19.31	20.58	21.17	17.82	19.09	18.36	19.62	20.22
	3H	21.09	22.18	21.64	22.74	23.36	19.87	20.96	20.43	21.53	22.15
	4H	22.20	23.20	22.77	23.77	24.42	20.73	21.72	21.30	22.30	22.95
	6H	23.31	24.18	23.90	24.79	25.45	21.48	22.36	22.07	22.97	23.63
	8H	23.83	24.66	24.43	25.26	25.94	21.80	22.62	22.39	23.23	23.90
	12H	24.36	25.11	24.98	25.74	26.42	22.09	22.84	22.71	23.47	24.15
8H	4H	22.46	23.28	23.05	23.89	24.56	21.07	21.89	21.66	22.50	23.17
	6H	23.74	24.44	24.37	25.08	25.77	21.95	22.65	22.58	23.30	23.98
	8H	24.41	25.04	25.05	25.69	26.39	22.35	22.98	22.99	23.63	24.33
	12H	25.11	25.68	25.75	26.32	27.08	22.74	23.30	23.38	23.94	24.70
12H	4H	22.48	23.23	23.09	23.86	24.54	21.13	21.88	21.75	22.51	23.19
	6H	23.80	24.43	24.44	25.08	25.77	22.06	22.69	22.70	23.34	24.04
	8H	24.54	25.10	25.18	25.74	26.50	22.52	23.09	23.16	23.73	24.49