

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: P892723

Luminaire Tested: 2MB-4HL-ASMF-UNV-L940

Issue Date: 11/11/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P892723  
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: 2MB-4HL-ASMF-UNV-L940  
Description: 4000 Lumen 2FT MICROBAY LINEAR BAY with FROSTED ASYMMETRIC LENS, 90CRI, 4000K CCT  
Light Source: -  
Ballast/Driver: -

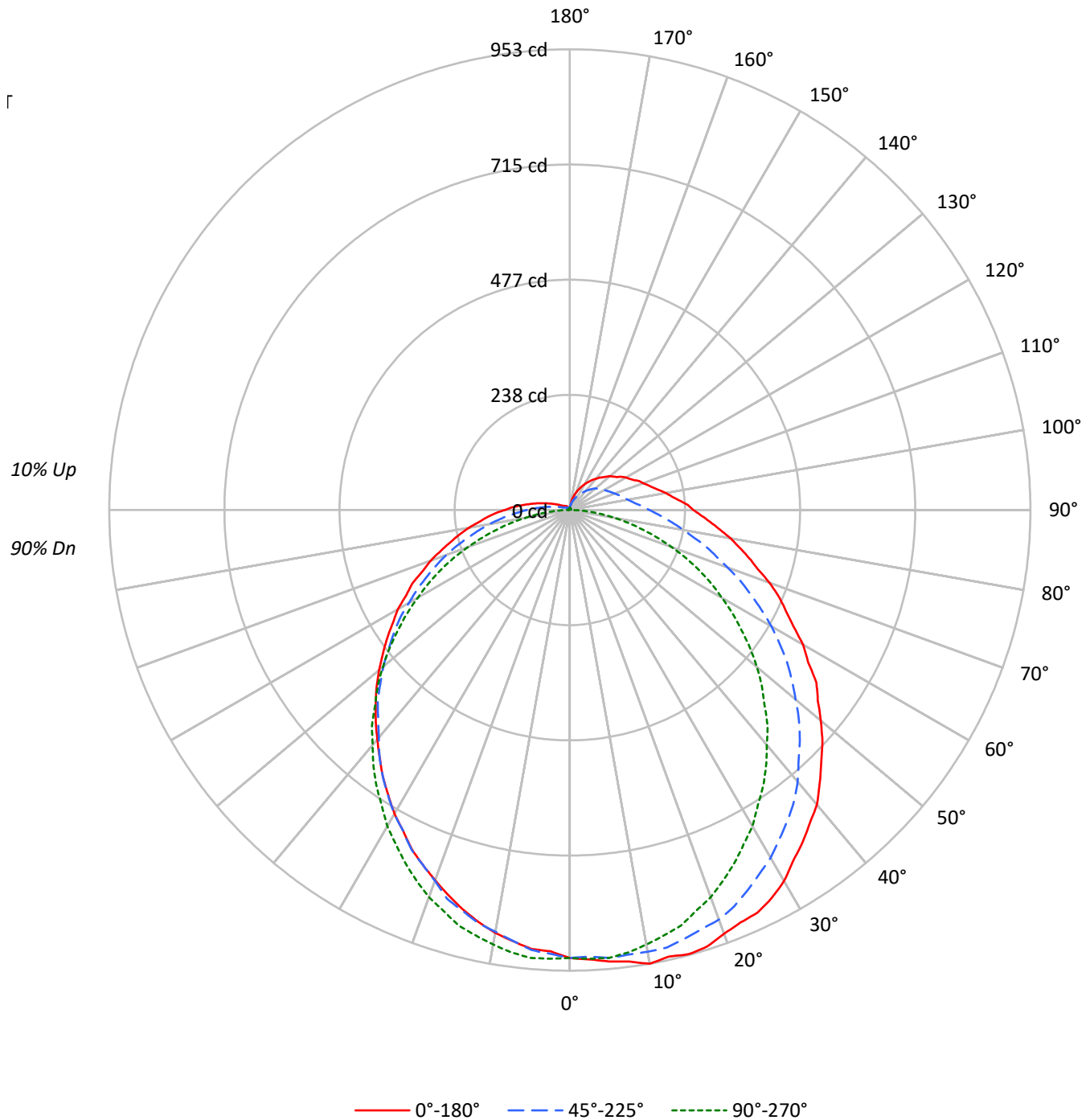
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3186.0 lumens  
Efficiency: N/A  
Efficacy: 115.4 lumens/watt  
Spacing Criteria (0/90/45): 1.28 / 1.21 / 1.37  
Luminous Opening: Rectangular w/ Sides (W: 0.27' x L: 1.98' x H: 0.12')  
CIE Type: Direct

Input Watts (W): 27.6  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: 6.5  
Total Harmonic Distortion (THDi): 0.99  
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	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	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	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	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	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	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	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	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	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	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	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	22	22	22	20		

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

	0°	45°	90°	135°	180°
0°	18976	18976	18976	18976	18976
5°	19160	18503	18358	18181	18631
10°	19599	18084	17525	17271	18264
15°	19829	17671	16747	16520	17830
20°	19867	17275	15860	15632	17360
25°	20165	16691	14928	14893	16991
30°	20221	16129	14041	14094	16553
35°	20099	15519	13110	13330	16139
40°	20194	14891	12155	12473	15726
45°	20042	14153	11212	11815	15460
50°	20083	13399	10307	11065	15251
55°	20391	12737	9268	10318	15096
60°	20558	11922	8206	9524	15172
65°	21037	11043	7128	8735	15340
70°	22406	10199	5843	7980	15626
75°	24591	9572	4469	7108	16313
80°	29328	8959	2992	6334	18380
85°	39895	8767	1503	5531	23454

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 90°  
 Luminance: 82764 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	87.9	2.8
10°-20°	252.0	7.9
20°-30°	380.0	11.9
30°-40°	456.1	14.3
40°-50°	474.9	14.9
50°-60°	440.2	13.8
60°-70°	362.6	11.4
70°-80°	261.5	8.2
80°-90°	166.0	5.2
90°-100°	102.4	3.2
100°-110°	68.3	2.1
110°-120°	48.6	1.5
120°-130°	35.6	1.1
130°-140°	24.5	0.8
140°-150°	14.9	0.5
150°-160°	7.4	0.2
160°-170°	2.7	0.1
170°-180°	0.5	0.0
0°-30°	719.9	22.6
0°-40°	1176.0	36.9
0°-60°	2091.2	65.6
0°-90°	2881.3	90.4
90°-120°	219.2	6.9
90°-150°	294.2	9.2
90°-180°	305.0	9.6
0°-180°	3186.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	927	927	927	927	927	
5°	937	930	930	914	911	90
15°	951	918	890	858	855	268
25°	919	869	806	775	774	423
35°	840	785	697	674	674	526
45°	736	673	569	562	568	569
55°	623	549	434	445	461	553
65°	493	412	296	326	360	491
75°	384	291	156	216	255	407
85°	292	198	41	125	172	248
90°	255	165	4	89	134	141
95°	228	140	2	60	103	181
105°	178	109	2	25	54	191
115°	146	90	3	12	26	147
125°	119	76	3	9	15	108
135°	95	60	3	7	11	75
145°	73	43	3	5	8	46
155°	50	28	4	3	5	24
165°	29	16	4	2	3	8
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°	926.7	926.7	926.7	926.7	926.7	926.7	926.7	926.7	926.7
2.5°	930.4	933.2	924.4	929.9	929.0	929.9	918.8	928.1	913.7
5°	937.3	938.7	929.9	933.2	929.9	922.0	913.7	910.5	911.4
7.5°	942.0	949.4	927.6	928.5	923.0	914.6	898.9	901.7	899.8
10°	953.1	944.7	927.6	923.4	912.8	904.0	885.9	887.3	888.2
12.5°	946.1	944.3	927.1	911.8	901.2	893.8	875.2	870.6	872.9
15°	951.2	943.4	917.9	905.8	889.6	876.6	858.1	854.9	855.3
17.5°	946.6	940.1	908.6	891.9	869.2	861.3	843.7	838.2	835.4
20°	932.7	929.5	901.7	872.9	852.5	837.2	815.9	812.7	815.0
22.5°	923.4	915.6	887.8	859.0	829.4	815.9	794.6	794.2	794.6
25°	918.8	908.6	868.8	838.6	805.7	793.7	775.2	768.2	774.2
27.5°	904.9	895.6	848.8	815.9	779.3	763.1	747.8	746.4	747.4
30°	886.4	868.3	830.8	790.5	755.2	738.6	726.0	716.8	725.6
32.5°	860.0	849.8	807.1	763.1	724.2	712.6	700.1	699.2	699.2
35°	839.6	832.2	784.9	739.0	697.3	681.6	674.2	670.9	674.2
37.5°	815.9	804.8	761.3	709.8	667.2	653.8	646.4	643.6	645.9
40°	795.5	775.2	733.5	679.7	634.3	622.3	614.4	617.2	619.5
42.5°	765.4	753.8	700.6	649.1	606.0	593.1	586.6	588.9	594.5
45°	735.8	725.1	673.2	617.2	569.4	562.5	562.0	560.6	567.6
47.5°	708.9	693.6	643.1	585.7	538.9	531.0	531.9	536.5	542.6
50°	677.9	659.8	609.8	551.8	505.0	499.9	503.6	506.9	514.8
52.5°	646.8	632.5	579.2	519.9	470.7	467.0	472.1	482.8	487.4
55°	622.7	596.8	549.1	482.3	434.1	434.6	444.8	450.8	461.0
57.5°	584.3	564.8	514.8	449.0	399.9	403.1	417.0	427.2	433.7
60°	556.9	532.4	481.4	413.3	363.7	368.8	384.6	399.9	411.0
62.5°	521.7	500.4	446.7	378.1	330.4	337.8	355.4	373.4	381.3
65°	493.0	468.9	412.4	342.9	295.6	304.4	326.2	346.6	359.5
67.5°	468.4	443.4	381.8	310.4	260.4	273.4	298.9	318.8	329.0
70°	439.2	410.1	347.0	274.3	223.8	239.1	271.5	294.7	306.3
72.5°	408.2	384.6	316.9	240.9	190.0	208.5	244.2	268.3	279.4
75°	384.1	357.7	291.4	207.6	155.7	177.9	216.4	243.7	254.8
77.5°	359.5	335.5	262.7	177.0	125.1	150.1	191.8	221.9	233.5
80°	337.8	310.0	238.6	152.0	93.1	122.8	168.7	198.3	211.7
82.5°	313.7	289.6	217.8	125.6	66.3	97.8	146.0	178.4	189.5
85°	292.4	267.3	198.3	104.7	40.8	75.5	125.1	158.5	171.9
87.5°	272.9	252.1	180.2	89.0	20.4	57.5	105.2	139.0	154.3
90°	255.3	231.7	164.9	74.6	3.7	41.7	89.0	122.3	133.9
92.5°	244.2	215.9	152.4	65.3	2.3	29.7	74.1	107.0	120.5
95°	227.5	202.5	139.5	58.4	2.3	19.9	59.8	91.7	103.3
97.5°	213.1	190.0	130.2	54.2	1.9	13.4	49.1	76.9	89.0
100°	202.0	180.2	121.9	50.5	2.3	9.7	38.9	65.3	76.0
102.5°	189.5	169.6	115.4	48.2	2.3	7.0	30.6	55.1	64.9
105°	178.4	160.8	109.3	45.9	2.3	6.0	24.6	45.4	54.2
107.5°	170.0	151.5	104.3	44.5	2.3	6.0	19.5	37.1	44.5
110°	161.7	144.1	99.2	43.1	2.3	5.6	15.3	30.6	37.1



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
112.5°	156.1	137.1	94.5	41.7	2.8	5.6	12.5	25.5	30.6
115°	146.4	131.1	90.4	41.2	2.8	5.1	11.6	20.9	25.9
117.5°	139.5	125.6	86.2	39.8	2.8	5.1	11.1	17.1	20.9
120°	134.4	119.1	82.5	38.5	2.8	4.6	10.2	15.3	17.6
122.5°	127.9	113.1	79.2	37.5	2.8	4.6	9.7	14.4	15.8
125°	119.1	107.5	75.5	35.7	3.2	4.6	9.3	13.4	14.8
127.5°	113.5	102.4	72.7	33.4	3.2	4.2	8.8	12.5	13.9
130°	108.9	96.8	69.5	31.0	3.2	4.2	8.3	11.6	13.0
132.5°	101.9	91.3	64.9	29.2	3.2	3.7	7.4	10.7	12.0
135°	95.4	86.6	60.2	27.3	3.2	3.7	7.0	10.2	11.1
137.5°	91.3	82.0	56.1	25.5	3.2	3.2	6.5	9.3	10.2
140°	84.3	76.9	51.4	23.6	3.2	3.2	6.0	8.8	9.3
142.5°	79.2	71.8	47.3	21.8	3.2	3.2	5.6	7.9	8.8
145°	73.2	66.7	42.6	19.9	3.2	2.8	5.1	7.4	7.9
147.5°	67.6	60.7	38.9	18.5	3.2	2.8	4.6	6.5	7.0
150°	62.1	54.7	35.2	17.1	3.2	2.8	4.2	5.6	6.5
152.5°	56.1	47.3	31.5	15.8	3.2	2.8	3.7	5.1	5.6
155°	50.0	41.2	28.3	14.4	3.7	2.8	3.2	4.2	5.1
157.5°	44.9	35.7	25.0	13.0	3.7	2.3	3.2	3.7	4.2
160°	38.9	30.6	22.2	11.6	3.7	2.3	2.8	3.2	3.7
162.5°	34.3	25.5	19.5	10.7	3.7	2.3	2.8	2.8	3.2
165°	29.2	21.3	16.2	9.7	3.7	2.3	2.3	2.3	2.8
167.5°	23.6	16.7	13.4	8.8	3.7	2.3	2.3	1.9	2.3
170°	17.6	12.5	11.1	7.9	3.7	2.3	1.9	1.4	1.9
172.5°	7.9	9.7	8.8	7.0	4.2	2.3	1.9	1.4	0.9
175°	4.2	7.0	7.0	6.0	4.2	2.3	1.9	1.4	0.5
177.5°	3.2	4.2	5.1	5.1	4.2	2.8	1.9	0.9	0.5
180°	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8



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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	20.56	22.04	21.06	22.54	23.08	19.43	20.91	19.94	21.41	21.96
	3H	22.65	23.99	23.17	24.51	25.09	21.27	22.62	21.79	23.13	23.71
	4H	23.59	24.87	24.13	25.40	25.99	21.99	23.27	22.53	23.80	24.39
	6H	24.51	25.70	25.07	26.24	26.85	22.59	23.78	23.15	24.32	24.93
	8H	24.94	26.08	25.51	26.65	27.26	22.83	23.97	23.39	24.53	25.15
	12H	25.37	26.46	25.94	27.02	27.66	23.03	24.12	23.60	24.68	25.33
4H	2H	21.04	22.32	21.58	22.84	23.44	20.00	21.28	20.54	21.81	22.41
	3H	23.36	24.44	23.91	25.01	25.63	22.03	23.12	22.58	23.69	24.31
	4H	24.47	25.47	25.04	26.04	26.69	22.86	23.86	23.43	24.44	25.08
	6H	25.58	26.46	26.17	27.06	27.72	23.58	24.46	24.18	25.07	25.73
	8H	26.11	26.93	26.70	27.54	28.21	23.88	24.70	24.47	25.31	25.98
	12H	26.64	27.39	27.26	28.02	28.70	24.14	24.89	24.76	25.52	26.20
8H	4H	24.72	25.54	25.32	26.15	26.82	23.21	24.03	23.80	24.64	25.31
	6H	26.00	26.70	26.63	27.35	28.03	24.06	24.76	24.69	25.40	26.08
	8H	26.67	27.30	27.31	27.96	28.65	24.44	25.07	25.08	25.72	26.41
	12H	27.38	27.94	28.02	28.58	29.34	24.79	25.36	25.44	26.00	26.76
12H	4H	24.73	25.48	25.35	26.11	26.80	23.27	24.02	23.89	24.65	25.33
	6H	26.05	26.69	26.69	27.34	28.03	24.17	24.80	24.81	25.46	26.15
	8H	26.80	27.36	27.44	28.00	28.76	24.61	25.18	25.26	25.82	26.58