

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: P892721

Luminaire Tested: 2MB-4HL-ASMF-UNV-L930

Issue Date: 11/11/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P892721  
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-L930  
Description: 4000 Lumen 2FT MICROBAY LINEAR BAY with FROSTED ASYMMETRIC LENS, 90CRI, 3000K CCT  
Light Source: -  
Ballast/Driver: -

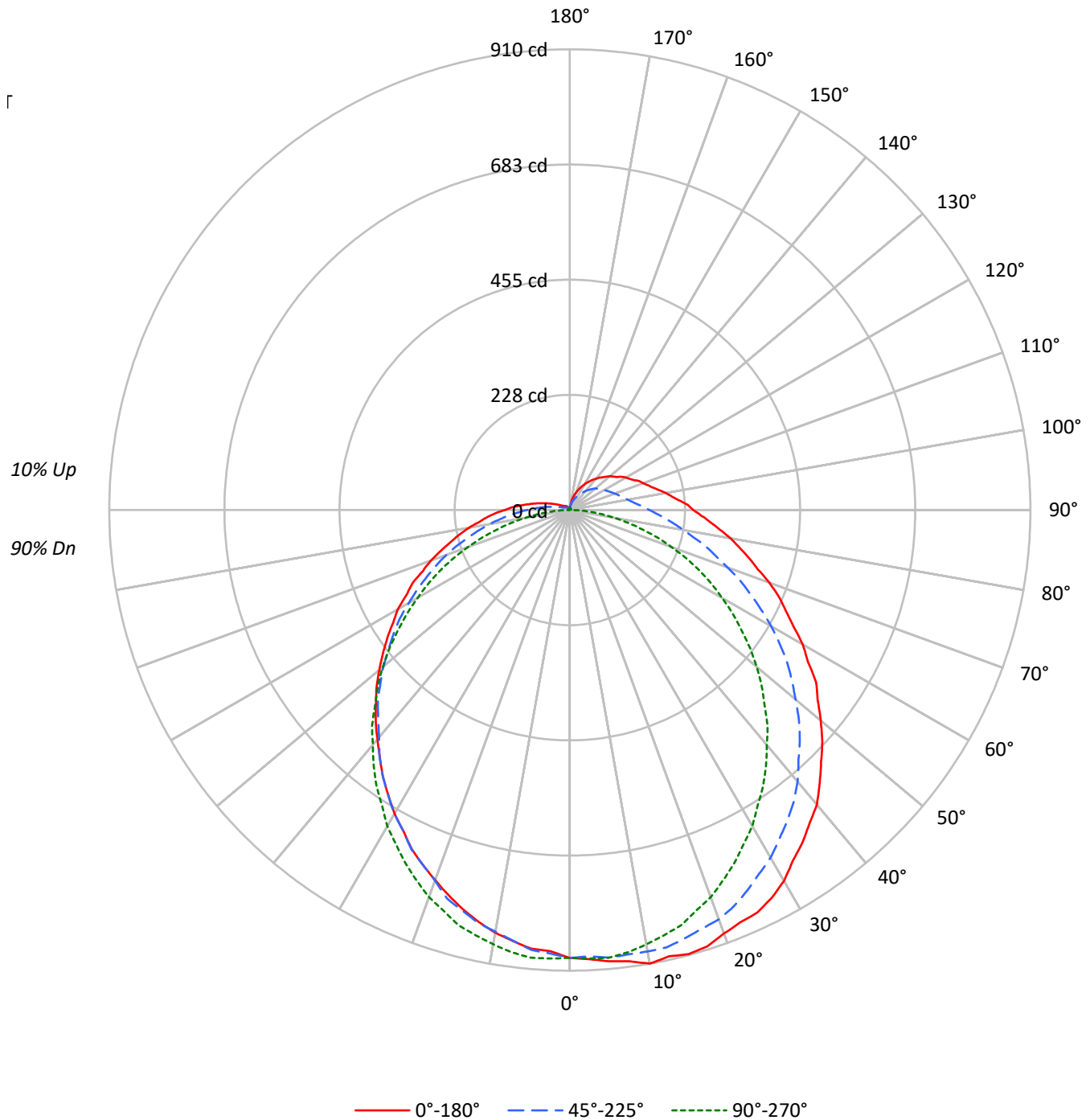
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3041.0 lumens  
Efficiency: N/A  
Efficacy: 110.2 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	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°	18111	18111	18111	18111	18111
5°	18289	17661	17523	17353	17782
10°	18706	17261	16726	16485	17434
15°	18926	16867	15984	15767	17019
20°	18962	16488	15138	14921	16570
25°	19247	15931	14250	14215	16219
30°	19299	15395	13403	13454	15800
35°	19184	14813	12514	12723	15404
40°	19275	14213	11601	11905	15010
45°	19129	13510	10702	11277	14757
50°	19168	12788	9839	10562	14555
55°	19464	12157	8848	9849	14408
60°	19624	11379	7834	9091	14482
65°	20081	10540	6805	8336	14645
70°	21391	9734	5577	7618	14912
75°	23471	9138	4265	6783	15570
80°	27991	8554	2857	6045	17546
85°	38080	8369	1433	5279	22390

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 90°  
 Luminance: 79004 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	83.9	2.8
10°-20°	240.5	7.9
20°-30°	362.7	11.9
30°-40°	435.3	14.3
40°-50°	453.3	14.9
50°-60°	420.2	13.8
60°-70°	346.1	11.4
70°-80°	249.6	8.2
80°-90°	158.5	5.2
90°-100°	97.7	3.2
100°-110°	65.1	2.1
110°-120°	46.4	1.5
120°-130°	34.0	1.1
130°-140°	23.4	0.8
140°-150°	14.2	0.5
150°-160°	7.1	0.2
160°-170°	2.6	0.1
170°-180°	0.4	0.0
0°-30°	687.1	22.6
0°-40°	1122.5	36.9
0°-60°	1996.0	65.6
0°-90°	2750.1	90.4
90°-120°	209.2	6.9
90°-150°	280.8	9.2
90°-180°	291.0	9.6
0°-180°	3041.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	884	884	884	884	884	
5°	895	888	888	872	870	86
15°	908	876	849	819	816	256
25°	877	829	769	740	739	403
35°	801	749	666	644	644	502
45°	702	643	544	536	542	543
55°	594	524	414	425	440	528
65°	471	394	282	311	343	469
75°	367	278	149	206	243	388
85°	279	189	39	119	164	237
90°	244	157	4	85	128	134
95°	217	133	2	57	99	173
105°	170	104	2	23	52	182
115°	140	86	3	11	25	140
125°	114	72	3	9	14	103
135°	91	58	3	7	11	71
145°	70	41	3	5	8	44
155°	48	27	4	3	5	23
165°	28	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°	884.5	884.5	884.5	884.5	884.5	884.5	884.5	884.5	884.5
2.5°	888.0	890.7	882.3	887.6	886.7	887.6	877.0	885.8	872.1
5°	894.7	896.0	887.6	890.7	887.6	880.1	872.1	869.0	869.9
7.5°	899.1	906.2	885.4	886.3	881.0	873.0	858.0	860.6	858.8
10°	909.7	901.7	885.4	881.4	871.2	862.8	845.6	846.9	847.8
12.5°	903.1	901.3	884.9	870.3	860.2	853.1	835.4	831.0	833.2
15°	907.9	900.4	876.1	864.6	849.1	836.7	819.0	815.9	816.4
17.5°	903.5	897.3	867.2	851.3	829.7	822.1	805.3	800.0	797.4
20°	890.2	887.2	860.6	833.2	813.7	799.1	778.8	775.7	777.9
22.5°	881.4	873.9	847.3	819.9	791.6	778.8	758.5	758.0	758.5
25°	877.0	867.2	829.2	800.5	769.1	757.6	739.9	733.2	739.0
27.5°	863.7	854.9	810.2	778.8	743.9	728.4	713.8	712.5	713.3
30°	846.0	828.8	793.0	754.5	720.9	704.9	693.0	684.2	692.6
32.5°	820.8	811.1	770.4	728.4	691.2	680.2	668.2	667.4	667.4
35°	801.4	794.3	749.2	705.4	665.6	650.5	643.5	640.4	643.5
37.5°	778.8	768.2	726.6	677.5	636.8	624.0	616.9	614.3	616.5
40°	759.3	739.9	700.1	648.8	605.4	593.9	586.4	589.1	591.3
42.5°	730.6	719.5	668.7	619.6	578.5	566.1	559.9	562.1	567.4
45°	702.3	692.1	642.6	589.1	543.5	536.9	536.4	535.1	541.8
47.5°	676.6	662.0	613.8	559.0	514.3	506.8	507.7	512.1	517.9
50°	647.0	629.8	582.0	526.7	482.1	477.2	480.7	483.8	491.3
52.5°	617.4	603.7	552.8	496.2	449.3	445.8	450.7	460.8	465.2
55°	594.4	569.6	524.1	460.4	414.4	414.8	424.6	430.3	440.0
57.5°	557.7	539.1	491.3	428.5	381.7	384.8	398.0	407.8	413.9
60°	531.6	508.1	459.5	394.5	347.2	352.0	367.1	381.7	392.3
62.5°	498.0	477.6	426.3	360.9	315.3	322.4	339.2	356.5	364.0
65°	470.6	447.6	393.6	327.3	282.2	290.6	311.3	330.8	343.2
67.5°	447.1	423.2	364.4	296.3	248.5	260.9	285.3	304.3	314.0
70°	419.3	391.4	331.2	261.8	213.6	228.2	259.2	281.3	292.3
72.5°	389.6	367.1	302.5	230.0	181.3	199.0	233.1	256.1	266.7
75°	366.6	341.4	278.2	198.1	148.6	169.8	206.5	232.6	243.2
77.5°	343.2	320.2	250.8	168.9	119.4	143.3	183.1	211.8	222.9
80°	322.4	295.9	227.8	145.1	88.9	117.2	161.0	189.3	202.1
82.5°	299.4	276.4	207.9	119.8	63.2	93.3	139.3	170.3	180.9
85°	279.1	255.2	189.3	99.9	38.9	72.1	119.4	151.2	164.1
87.5°	260.5	240.6	172.0	84.9	19.5	54.8	100.4	132.7	147.3
90°	243.7	221.1	157.4	71.2	3.5	39.8	84.9	116.8	127.8
92.5°	233.1	206.1	145.5	62.4	2.2	28.3	70.8	102.2	115.0
95°	217.1	193.3	133.1	55.7	2.2	19.0	57.1	87.6	98.6
97.5°	203.4	181.3	124.3	51.7	1.8	12.8	46.9	73.4	84.9
100°	192.8	172.0	116.3	48.2	2.2	9.3	37.1	62.4	72.5
102.5°	180.9	161.9	110.1	46.0	2.2	6.6	29.2	52.6	61.9
105°	170.3	153.5	104.4	43.8	2.2	5.7	23.4	43.3	51.7
107.5°	162.3	144.6	99.5	42.5	2.2	5.7	18.6	35.4	42.5
110°	154.3	137.5	94.6	41.1	2.2	5.3	14.6	29.2	35.4



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
112.5°	149.0	130.9	90.2	39.8	2.7	5.3	11.9	24.3	29.2
115°	139.8	125.2	86.2	39.4	2.7	4.9	11.1	19.9	24.8
117.5°	133.1	119.8	82.3	38.0	2.7	4.9	10.6	16.4	19.9
120°	128.3	113.7	78.7	36.7	2.7	4.4	9.7	14.6	16.8
122.5°	122.1	107.9	75.6	35.8	2.7	4.4	9.3	13.7	15.0
125°	113.7	102.6	72.1	34.1	3.1	4.4	8.8	12.8	14.2
127.5°	108.4	97.7	69.4	31.8	3.1	4.0	8.4	11.9	13.3
130°	103.9	92.4	66.3	29.6	3.1	4.0	8.0	11.1	12.4
132.5°	97.3	87.1	61.9	27.9	3.1	3.5	7.1	10.2	11.5
135°	91.1	82.7	57.5	26.1	3.1	3.5	6.6	9.7	10.6
137.5°	87.1	78.3	53.5	24.3	3.1	3.1	6.2	8.8	9.7
140°	80.5	73.4	49.1	22.6	3.1	3.1	5.7	8.4	8.8
142.5°	75.6	68.5	45.1	20.8	3.1	3.1	5.3	7.5	8.4
145°	69.9	63.7	40.7	19.0	3.1	2.7	4.9	7.1	7.5
147.5°	64.6	57.9	37.1	17.7	3.1	2.7	4.4	6.2	6.6
150°	59.3	52.2	33.6	16.4	3.1	2.7	4.0	5.3	6.2
152.5°	53.5	45.1	30.1	15.0	3.1	2.7	3.5	4.9	5.3
155°	47.8	39.4	27.0	13.7	3.5	2.7	3.1	4.0	4.9
157.5°	42.9	34.1	23.9	12.4	3.5	2.2	3.1	3.5	4.0
160°	37.1	29.2	21.2	11.1	3.5	2.2	2.7	3.1	3.5
162.5°	32.7	24.3	18.6	10.2	3.5	2.2	2.7	2.7	3.1
165°	27.9	20.3	15.5	9.3	3.5	2.2	2.2	2.2	2.7
167.5°	22.6	15.9	12.8	8.4	3.5	2.2	2.2	1.8	2.2
170°	16.8	11.9	10.6	7.5	3.5	2.2	1.8	1.3	1.8
172.5°	7.5	9.3	8.4	6.6	4.0	2.2	1.8	1.3	0.9
175°	4.0	6.6	6.6	5.7	4.0	2.2	1.8	1.3	0.4
177.5°	3.1	4.0	4.9	4.9	4.0	2.7	1.8	0.9	0.4
180°	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7



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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	20.40	21.87	20.90	22.38	22.92	19.27	20.75	19.78	21.25	21.80
	3H	22.49	23.83	23.00	24.34	24.93	21.11	22.46	21.63	22.97	23.55
	4H	23.43	24.71	23.97	25.23	25.83	21.83	23.11	22.37	23.64	24.23
	6H	24.35	25.54	24.90	26.08	26.69	22.43	23.62	22.98	24.16	24.77
	8H	24.78	25.92	25.35	26.48	27.10	22.67	23.80	23.23	24.37	24.99
	12H	25.21	26.30	25.78	26.85	27.50	22.87	23.96	23.44	24.52	25.17
4H	2H	20.88	22.15	21.42	22.68	23.28	19.84	21.12	20.38	21.65	22.24
	3H	23.19	24.28	23.75	24.85	25.47	21.87	22.96	22.42	23.53	24.14
	4H	24.31	25.30	24.88	25.88	26.53	22.70	23.69	23.27	24.27	24.92
	6H	25.42	26.29	26.01	26.90	27.56	23.42	24.30	24.01	24.90	25.57
	8H	25.95	26.77	26.54	27.37	28.05	23.72	24.54	24.31	25.14	25.82
	12H	26.48	27.23	27.09	27.86	28.54	23.98	24.73	24.60	25.36	26.04
8H	4H	24.56	25.38	25.15	25.99	26.66	23.04	23.87	23.64	24.47	25.15
	6H	25.84	26.54	26.47	27.19	27.87	23.90	24.60	24.53	25.24	25.92
	8H	26.51	27.14	27.15	27.80	28.49	24.27	24.91	24.91	25.56	26.25
	12H	27.22	27.78	27.86	28.42	29.18	24.63	25.20	25.27	25.84	26.60
12H	4H	24.57	25.32	25.19	25.95	26.63	23.11	23.86	23.73	24.49	25.17
	6H	25.89	26.53	26.53	27.18	27.87	24.01	24.64	24.65	25.29	25.99
	8H	26.63	27.20	27.28	27.84	28.60	24.45	25.01	25.09	25.66	26.41