

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: P893164

Luminaire Tested: 4MB-10HL-ASMF-UNV-L850

Issue Date: 11/11/2024

Test Information

Test Method: LM-79-2019
Report Number: P893164
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-10HL-ASMF-UNV-L850
Description: 10000 Lumen 4FT MICROBAY LINEAR BAY with FROSTED ASYMMETRIC LENS, 80CRI, 5000K CC
Light Source: -
Ballast/Driver: -

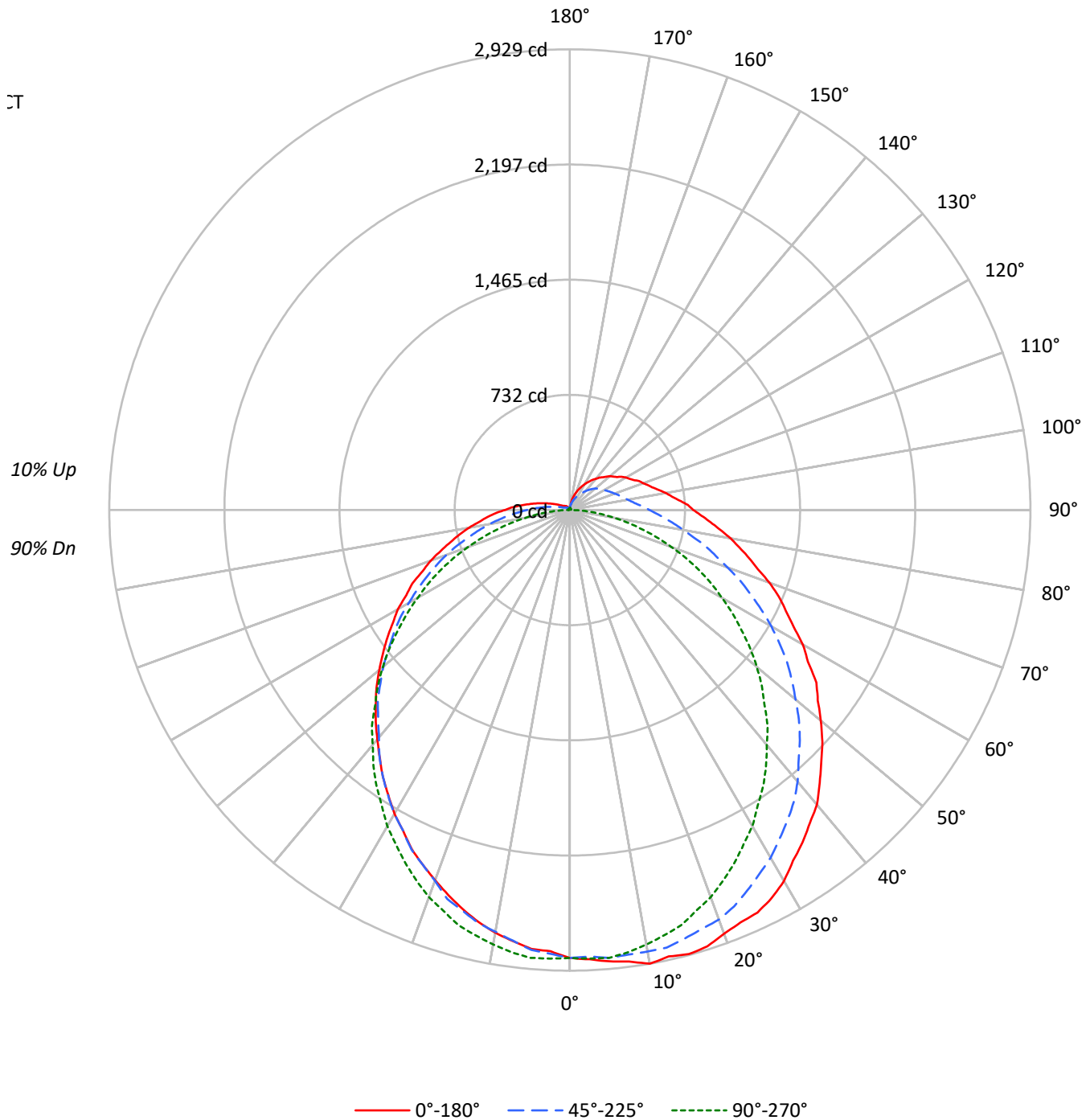
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 9791.0 lumens
Efficiency: N/A
Efficacy: 129.7 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): 75.5
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: 0.997
Total Harmonic Distortion (THDi): 7.45
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°	29003	29003	29003	29003	29003
5°	29367	28336	28060	27841	28554
10°	30122	27743	26786	26496	28072
15°	30564	27157	25597	25388	27482
20°	30713	26595	24243	24066	26838
25°	31271	25740	22817	22967	26350
30°	31462	24916	21462	21776	25755
35°	31387	24019	20040	20630	25204
40°	31668	23089	18579	19341	24659
45°	31574	21991	17139	18359	24357
50°	31815	20863	15754	17233	24159
55°	32520	19881	14168	16105	24076
60°	33062	18660	12544	14906	24398
65°	34204	17340	10895	13715	24945
70°	37002	16077	8931	12578	25799
75°	41573	15159	6830	11256	27580
80°	51671	14273	4575	10088	32392
85°	77251	14080	2295	8884	45422

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 90°
 Luminance: 254355 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	270.2	2.8
10°-20°	774.4	7.9
20°-30°	1167.8	11.9
30°-40°	1401.6	14.3
40°-50°	1459.5	14.9
50°-60°	1352.9	13.8
60°-70°	1114.2	11.4
70°-80°	803.7	8.2
80°-90°	510.2	5.2
90°-100°	314.6	3.2
100°-110°	209.7	2.1
110°-120°	149.3	1.5
120°-130°	109.4	1.1
130°-140°	75.3	0.8
140°-150°	45.8	0.5
150°-160°	22.7	0.2
160°-170°	8.3	0.1
170°-180°	1.4	0.0
0°-30°	2212.4	22.6
0°-40°	3614.0	36.9
0°-60°	6426.4	65.6
0°-90°	8854.5	90.4
90°-120°	673.6	6.9
90°-150°	904.1	9.2
90°-180°	937.0	9.6
0°-180°	9791.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2848	2848	2848	2848	2848	
5°	2880	2858	2858	2808	2801	276
15°	2923	2821	2734	2637	2628	824
25°	2824	2670	2476	2382	2379	1299
35°	2580	2412	2143	2072	2072	1617
45°	2261	2069	1750	1727	1744	1750
55°	1914	1687	1334	1367	1417	1700
65°	1515	1267	908	1002	1105	1509
75°	1180	896	478	665	783	1251
85°	898	609	125	384	528	763
90°	785	507	11	273	412	433
95°	699	429	7	184	318	556
105°	548	336	7	76	167	586
115°	450	278	8	36	80	451
125°	366	232	10	28	46	333
135°	293	185	10	21	34	230
145°	225	131	10	16	24	142
155°	154	87	11	10	16	73
165°	90	50	11	7	8	26
175°	13	21	13	6	1	2
180°	8	8	8	8	8	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
0°	2847.8	2847.8	2847.8	2847.8	2847.8	2847.8	2847.8	2847.8	2847.8
2.5°	2859.2	2867.7	2840.7	2857.8	2854.9	2857.8	2823.6	2852.1	2807.9
5°	2880.5	2884.8	2857.8	2867.7	2857.8	2833.5	2807.9	2797.9	2800.8
7.5°	2894.8	2917.6	2850.6	2853.5	2836.4	2810.8	2762.4	2770.9	2765.2
10°	2928.9	2903.3	2850.6	2837.8	2805.1	2778.0	2722.5	2726.8	2729.6
12.5°	2907.6	2901.9	2849.2	2802.2	2769.5	2746.7	2689.7	2675.5	2682.6
15°	2923.3	2899.0	2820.7	2783.7	2733.9	2694.0	2637.0	2627.1	2628.5
17.5°	2909.0	2889.1	2792.3	2741.0	2671.2	2647.0	2592.9	2575.8	2567.3
20°	2866.3	2856.3	2770.9	2682.6	2620.0	2573.0	2507.5	2497.5	2504.6
22.5°	2837.8	2813.6	2728.2	2639.9	2548.8	2507.5	2442.0	2440.6	2442.0
25°	2823.6	2792.3	2669.8	2577.2	2476.1	2439.1	2382.2	2360.8	2379.3
27.5°	2780.9	2752.4	2608.6	2507.5	2395.0	2345.2	2298.2	2293.9	2296.7
30°	2723.9	2668.4	2553.0	2429.2	2320.9	2269.7	2231.2	2202.8	2229.8
32.5°	2642.7	2611.4	2480.4	2345.2	2225.5	2189.9	2151.5	2148.7	2148.7
35°	2580.1	2557.3	2412.1	2271.1	2143.0	2094.5	2071.8	2061.8	2071.8
37.5°	2507.5	2473.3	2339.5	2181.4	2050.4	2009.1	1986.3	1977.8	1984.9
40°	2444.8	2382.2	2254.0	2088.9	1949.3	1912.3	1888.1	1896.6	1903.7
42.5°	2352.3	2316.7	2152.9	1994.9	1862.5	1822.6	1802.6	1809.8	1826.9
45°	2261.1	2228.4	2068.9	1896.6	1750.0	1728.6	1727.2	1722.9	1744.3
47.5°	2178.6	2131.6	1976.4	1799.8	1656.0	1631.8	1634.6	1648.9	1667.4
50°	2083.2	2027.6	1873.8	1695.9	1552.0	1536.4	1547.8	1557.7	1581.9
52.5°	1987.8	1943.6	1779.9	1597.6	1446.7	1435.3	1450.9	1483.7	1497.9
55°	1913.7	1834.0	1687.3	1482.3	1334.2	1335.6	1366.9	1385.4	1416.8
57.5°	1795.5	1735.7	1581.9	1379.8	1228.8	1238.8	1281.5	1312.8	1332.8
60°	1711.5	1636.1	1479.4	1270.1	1117.8	1133.4	1181.8	1228.8	1263.0
62.5°	1603.3	1537.8	1372.6	1161.9	1015.2	1038.0	1092.1	1147.7	1171.9
65°	1515.0	1441.0	1267.3	1053.7	908.4	935.5	1002.4	1065.1	1104.9
67.5°	1439.6	1362.7	1173.3	954.0	800.2	840.1	918.4	979.6	1011.0
70°	1349.9	1260.1	1066.5	842.9	687.7	734.7	834.4	905.6	941.2
72.5°	1254.4	1181.8	973.9	740.4	583.8	640.8	750.4	824.4	858.6
75°	1180.4	1099.2	895.6	637.9	478.4	546.8	665.0	749.0	783.1
77.5°	1104.9	1030.9	807.3	543.9	384.5	461.3	589.5	682.0	717.6
80°	1038.0	952.6	733.3	467.0	286.2	377.3	518.3	609.4	650.7
82.5°	964.0	889.9	669.2	385.9	203.6	300.4	448.5	548.2	582.4
85°	898.5	821.6	609.4	321.8	125.3	232.1	384.5	487.0	528.3
87.5°	838.7	774.6	553.9	273.4	62.7	176.6	323.2	427.2	474.2
90°	784.6	711.9	506.9	229.2	11.4	128.2	273.4	375.9	411.5
92.5°	750.4	663.5	468.5	200.8	7.1	91.1	227.8	328.9	370.2
95°	699.1	622.2	428.6	179.4	7.1	61.2	183.7	281.9	317.5
97.5°	655.0	583.8	400.1	166.6	5.7	41.3	150.9	236.4	273.4
100°	620.8	553.9	374.5	155.2	7.1	29.9	119.6	200.8	233.5
102.5°	582.4	521.1	354.5	148.1	7.1	21.4	94.0	169.4	199.3
105°	548.2	494.1	336.0	141.0	7.1	18.5	75.5	139.5	166.6
107.5°	522.6	465.6	320.4	136.7	7.1	18.5	59.8	113.9	136.7
110°	496.9	442.8	304.7	132.4	7.1	17.1	47.0	94.0	113.9



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
112.5°	479.9	421.5	290.5	128.2	8.5	17.1	38.4	78.3	94.0
115°	450.0	403.0	277.7	126.7	8.5	15.7	35.6	64.1	79.7
117.5°	428.6	385.9	264.8	122.5	8.5	15.7	34.2	52.7	64.1
120°	412.9	365.9	253.5	118.2	8.5	14.2	31.3	47.0	54.1
122.5°	393.0	347.4	243.5	115.3	8.5	14.2	29.9	44.1	48.4
125°	365.9	330.3	232.1	109.6	10.0	14.2	28.5	41.3	45.6
127.5°	348.9	314.7	223.6	102.5	10.0	12.8	27.1	38.4	42.7
130°	334.6	297.6	213.6	95.4	10.0	12.8	25.6	35.6	39.9
132.5°	313.3	280.5	199.3	89.7	10.0	11.4	22.8	32.7	37.0
135°	293.3	266.3	185.1	84.0	10.0	11.4	21.4	31.3	34.2
137.5°	280.5	252.0	172.3	78.3	10.0	10.0	19.9	28.5	31.3
140°	259.1	236.4	158.1	72.6	10.0	10.0	18.5	27.1	28.5
142.5°	243.5	220.7	145.2	66.9	10.0	10.0	17.1	24.2	27.1
145°	225.0	205.0	131.0	61.2	10.0	8.5	15.7	22.8	24.2
147.5°	207.9	186.5	119.6	57.0	10.0	8.5	14.2	19.9	21.4
150°	190.8	168.0	108.2	52.7	10.0	8.5	12.8	17.1	19.9
152.5°	172.3	145.2	96.8	48.4	10.0	8.5	11.4	15.7	17.1
155°	153.8	126.7	86.9	44.1	11.4	8.5	10.0	12.8	15.7
157.5°	138.1	109.6	76.9	39.9	11.4	7.1	10.0	11.4	12.8
160°	119.6	94.0	68.3	35.6	11.4	7.1	8.5	10.0	11.4
162.5°	105.4	78.3	59.8	32.7	11.4	7.1	8.5	8.5	10.0
165°	89.7	65.5	49.8	29.9	11.4	7.1	7.1	7.1	8.5
167.5°	72.6	51.3	41.3	27.1	11.4	7.1	7.1	5.7	7.1
170°	54.1	38.4	34.2	24.2	11.4	7.1	5.7	4.3	5.7
172.5°	24.2	29.9	27.1	21.4	12.8	7.1	5.7	4.3	2.8
175°	12.8	21.4	21.4	18.5	12.8	7.1	5.7	4.3	1.4
177.5°	10.0	12.8	15.7	15.7	12.8	8.5	5.7	2.8	1.4
180°	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5



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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	22.06	23.54	22.57	24.04	24.59	21.03	22.51	21.54	23.01	23.56
	3H	24.15	25.50	24.67	26.01	26.59	22.91	24.25	23.42	24.76	25.35
	4H	25.09	26.37	25.63	26.90	27.49	23.65	24.93	24.19	25.46	26.05
	6H	26.01	27.20	26.56	27.74	28.35	24.29	25.47	24.84	26.01	26.63
	8H	26.44	27.58	27.01	28.14	28.76	24.54	25.68	25.10	26.24	26.86
	12H	26.86	27.95	27.43	28.51	29.16	24.77	25.86	25.34	26.42	27.07
4H	2H	22.56	23.83	23.10	24.36	24.96	21.60	22.87	22.14	23.40	24.00
	3H	24.87	25.96	25.42	26.53	27.15	23.66	24.74	24.21	25.31	25.93
	4H	25.98	26.98	26.56	27.56	28.21	24.51	25.51	25.08	26.08	26.73
	6H	27.09	27.97	27.68	28.57	29.23	25.27	26.14	25.86	26.75	27.41
	8H	27.62	28.44	28.21	29.05	29.72	25.58	26.41	26.18	27.01	27.69
	12H	28.14	28.89	28.76	29.52	30.20	25.87	26.62	26.49	27.25	27.94
8H	4H	26.24	27.07	26.84	27.67	28.34	24.85	25.67	25.45	26.28	26.95
	6H	27.52	28.22	28.15	28.87	29.55	25.73	26.43	26.36	27.08	27.76
	8H	28.19	28.82	28.83	29.48	30.17	26.13	26.76	26.77	27.42	28.11
	12H	28.89	29.46	29.54	30.10	30.86	26.52	27.08	27.16	27.73	28.48
12H	4H	26.26	27.01	26.88	27.64	28.32	24.91	25.66	25.53	26.29	26.97
	6H	27.58	28.21	28.22	28.86	29.56	25.84	26.47	26.48	27.13	27.82
	8H	28.32	28.88	28.96	29.53	30.28	26.31	26.87	26.95	27.51	28.27