

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: P893163

Luminaire Tested: 4MB-10HL-ASMF-UNV-L840

Issue Date: 11/11/2024

Test Information

Test Method: LM-79-2019
Report Number: P893163
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-L840
Description: 10000 Lumen 4FT MICROBAY LINEAR BAY with FROSTED ASYMMETRIC LENS, 80CRI, 4000K CC
Light Source: -
Ballast/Driver: -

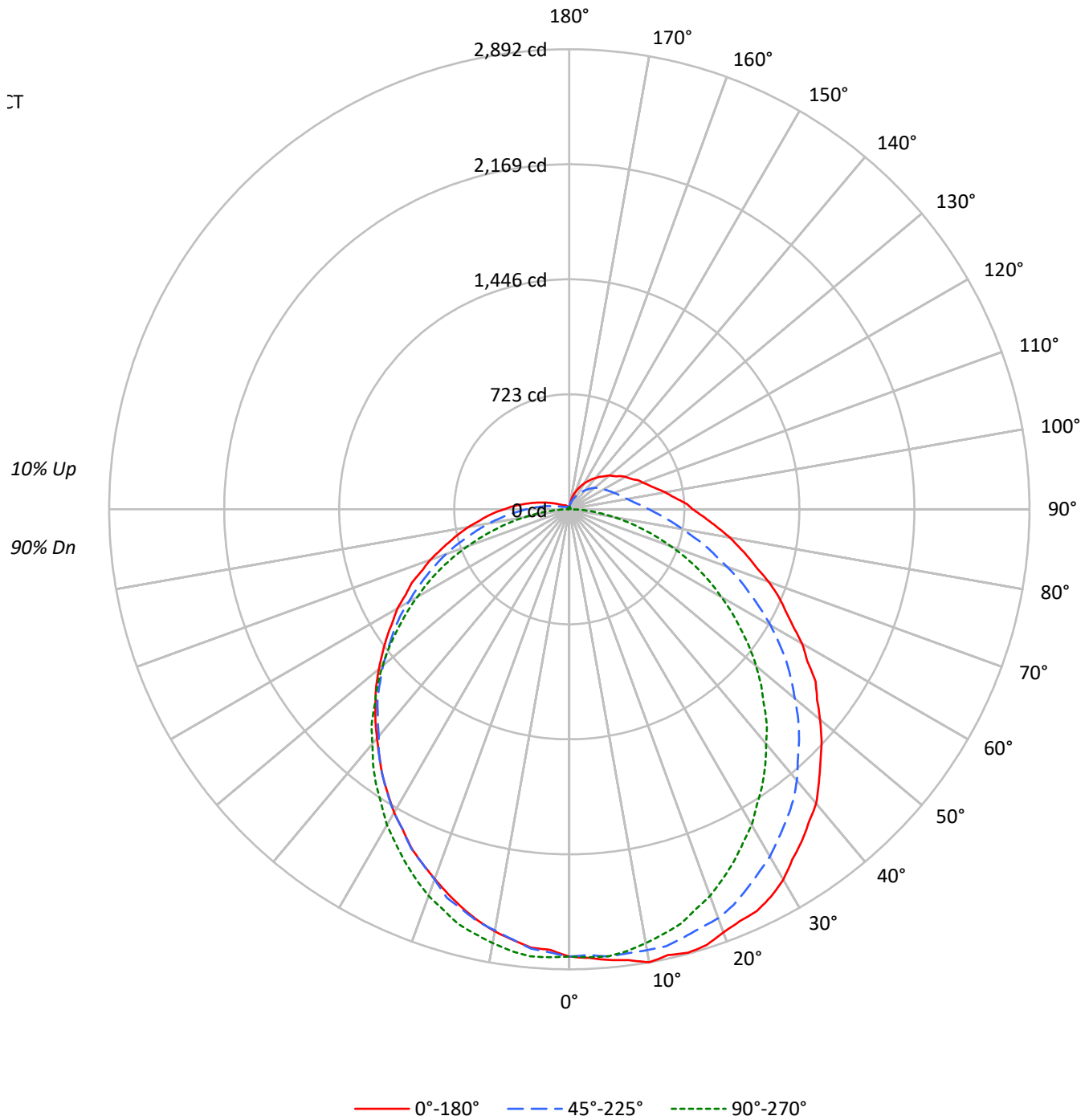
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 9667.0 lumens
Efficiency: N/A
Efficacy: 128.0 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°	28635	28635	28635	28635	28635
5°	28996	27977	27705	27489	28192
10°	29741	27391	26446	26160	27716
15°	30177	26813	25273	25068	27134
20°	30324	26258	23936	23761	26498
25°	30874	25414	22529	22676	26017
30°	31063	24601	21191	21500	25429
35°	30989	23714	19785	20368	24884
40°	31267	22797	18343	19096	24347
45°	31175	21713	16922	18126	24049
50°	31412	20599	15555	17015	23853
55°	32109	19628	13988	15902	23770
60°	32642	18424	12384	14719	24089
65°	33771	17119	10757	13541	24629
70°	36533	15874	8818	12419	25473
75°	41048	14968	6744	11112	27232
80°	51019	14092	4518	9960	31983
85°	76271	13902	2266	8771	44846

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 90°
 Luminance: 251113 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	266.8	2.8
10°-20°	764.6	7.9
20°-30°	1153.0	11.9
30°-40°	1383.9	14.3
40°-50°	1441.0	14.9
50°-60°	1335.8	13.8
60°-70°	1100.1	11.4
70°-80°	793.5	8.2
80°-90°	503.8	5.2
90°-100°	310.6	3.2
100°-110°	207.1	2.1
110°-120°	147.4	1.5
120°-130°	108.0	1.1
130°-140°	74.3	0.8
140°-150°	45.2	0.5
150°-160°	22.4	0.2
160°-170°	8.2	0.1
170°-180°	1.4	0.0
0°-30°	2184.4	22.6
0°-40°	3568.2	36.9
0°-60°	6345.0	65.6
0°-90°	8742.3	90.4
90°-120°	665.1	6.9
90°-150°	892.7	9.2
90°-180°	925.0	9.6
0°-180°	9667.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2812	2812	2812	2812	2812	
5°	2844	2822	2822	2772	2765	273
15°	2886	2785	2699	2604	2595	814
25°	2788	2636	2445	2352	2349	1282
35°	2547	2382	2116	2046	2046	1596
45°	2232	2043	1728	1705	1722	1727
55°	1890	1666	1317	1350	1399	1679
65°	1496	1251	897	990	1091	1490
75°	1166	884	472	656	773	1235
85°	887	602	124	380	522	753
90°	775	500	11	270	406	427
95°	690	423	7	181	314	549
105°	541	332	7	74	164	578
115°	444	274	8	35	79	445
125°	361	229	10	28	45	329
135°	290	183	10	21	34	227
145°	222	129	10	16	24	141
155°	152	86	11	10	16	72
165°	89	49	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°	2811.7	2811.7	2811.7	2811.7	2811.7	2811.7	2811.7	2811.7	2811.7
2.5°	2823.0	2831.4	2804.7	2821.6	2818.7	2821.6	2787.8	2815.9	2772.4
5°	2844.1	2848.3	2821.6	2831.4	2821.6	2797.7	2772.4	2762.5	2765.3
7.5°	2858.1	2880.6	2814.5	2817.3	2800.5	2775.2	2727.4	2735.8	2730.2
10°	2891.9	2866.5	2814.5	2801.9	2769.5	2742.8	2688.0	2692.2	2695.0
12.5°	2870.8	2865.1	2813.1	2766.7	2734.4	2711.9	2655.7	2641.6	2648.6
15°	2886.2	2862.3	2785.0	2748.5	2699.3	2659.9	2603.7	2593.8	2595.2
17.5°	2872.2	2852.5	2756.9	2706.3	2637.4	2613.5	2560.1	2543.2	2534.8
20°	2830.0	2820.2	2735.8	2648.6	2586.8	2540.4	2475.7	2465.9	2472.9
22.5°	2801.9	2778.0	2693.6	2606.5	2516.5	2475.7	2411.0	2409.6	2411.0
25°	2787.8	2756.9	2636.0	2544.6	2444.8	2408.2	2352.0	2330.9	2349.2
27.5°	2745.6	2717.5	2575.5	2475.7	2364.7	2315.5	2269.1	2264.8	2267.7
30°	2689.4	2634.6	2520.7	2398.4	2291.6	2240.9	2203.0	2174.9	2201.6
32.5°	2609.3	2578.3	2449.0	2315.5	2197.4	2162.2	2124.3	2121.4	2121.4
35°	2547.4	2524.9	2381.5	2242.3	2115.8	2068.0	2045.5	2035.7	2045.5
37.5°	2475.7	2442.0	2309.8	2153.8	2024.4	1983.7	1961.2	1952.7	1959.8
40°	2413.9	2352.0	2225.5	2062.4	1924.6	1888.1	1864.2	1872.6	1879.6
42.5°	2322.5	2287.3	2125.7	1969.6	1838.9	1799.5	1779.8	1786.8	1803.7
45°	2232.5	2200.2	2042.7	1872.6	1727.8	1706.7	1705.3	1701.1	1722.2
47.5°	2151.0	2104.6	1951.3	1777.0	1635.0	1611.1	1613.9	1628.0	1646.3
50°	2056.8	2001.9	1850.1	1674.4	1532.4	1516.9	1528.2	1538.0	1561.9
52.5°	1962.6	1919.0	1757.3	1577.4	1428.4	1417.1	1432.6	1464.9	1479.0
55°	1889.5	1810.7	1665.9	1463.5	1317.3	1318.7	1349.6	1367.9	1398.8
57.5°	1772.8	1713.7	1561.9	1362.3	1213.3	1223.1	1265.3	1296.2	1315.9
60°	1689.8	1615.3	1460.7	1254.0	1103.6	1119.1	1166.9	1213.3	1247.0
62.5°	1583.0	1518.3	1355.2	1147.2	1002.4	1024.9	1078.3	1133.1	1157.0
65°	1495.8	1422.7	1251.2	1040.3	896.9	923.6	989.7	1051.6	1090.9
67.5°	1421.3	1345.4	1158.4	941.9	790.1	829.5	906.8	967.2	998.2
70°	1332.8	1244.2	1053.0	832.3	679.0	725.4	823.8	894.1	929.3
72.5°	1238.6	1166.9	961.6	731.0	576.4	632.6	740.9	814.0	847.7
75°	1165.5	1085.3	884.3	629.8	472.4	539.9	656.5	739.5	773.2
77.5°	1090.9	1017.8	797.1	537.0	379.6	455.5	582.0	673.4	708.6
80°	1024.9	940.5	724.0	461.1	282.6	372.6	511.7	601.7	642.5
82.5°	951.8	878.7	660.8	381.0	201.0	296.6	442.8	541.3	575.0
85°	887.1	811.2	601.7	317.7	123.7	229.2	379.6	480.8	521.6
87.5°	828.1	764.8	546.9	269.9	61.9	174.3	319.1	421.8	468.2
90°	774.6	702.9	500.5	226.3	11.2	126.5	269.9	371.1	406.3
92.5°	740.9	655.1	462.5	198.2	7.0	90.0	224.9	324.8	365.5
95°	690.3	614.4	423.2	177.1	7.0	60.5	181.4	278.4	313.5
97.5°	646.7	576.4	395.0	164.5	5.6	40.8	149.0	233.4	269.9
100°	613.0	546.9	369.7	153.2	7.0	29.5	118.1	198.2	230.6
102.5°	575.0	514.5	350.1	146.2	7.0	21.1	92.8	167.3	196.8
105°	541.3	487.8	331.8	139.2	7.0	18.3	74.5	137.8	164.5
107.5°	516.0	459.7	316.3	135.0	7.0	18.3	59.0	112.5	135.0
110°	490.6	437.2	300.9	130.7	7.0	16.9	46.4	92.8	112.5



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
112.5°	473.8	416.1	286.8	126.5	8.4	16.9	38.0	77.3	92.8
115°	444.3	397.9	274.1	125.1	8.4	15.5	35.1	63.3	78.7
117.5°	423.2	381.0	261.5	120.9	8.4	15.5	33.7	52.0	63.3
120°	407.7	361.3	250.2	116.7	8.4	14.1	30.9	46.4	53.4
122.5°	388.0	343.0	240.4	113.9	8.4	14.1	29.5	43.6	47.8
125°	361.3	326.2	229.2	108.3	9.8	14.1	28.1	40.8	45.0
127.5°	344.4	310.7	220.7	101.2	9.8	12.7	26.7	38.0	42.2
130°	330.4	293.8	210.9	94.2	9.8	12.7	25.3	35.1	39.4
132.5°	309.3	277.0	196.8	88.6	9.8	11.2	22.5	32.3	36.6
135°	289.6	262.9	182.8	82.9	9.8	11.2	21.1	30.9	33.7
137.5°	277.0	248.8	170.1	77.3	9.8	9.8	19.7	28.1	30.9
140°	255.9	233.4	156.1	71.7	9.8	9.8	18.3	26.7	28.1
142.5°	240.4	217.9	143.4	66.1	9.8	9.8	16.9	23.9	26.7
145°	222.1	202.4	129.3	60.5	9.8	8.4	15.5	22.5	23.9
147.5°	205.3	184.2	118.1	56.2	9.8	8.4	14.1	19.7	21.1
150°	188.4	165.9	106.8	52.0	9.8	8.4	12.7	16.9	19.7
152.5°	170.1	143.4	95.6	47.8	9.8	8.4	11.2	15.5	16.9
155°	151.8	125.1	85.8	43.6	11.2	8.4	9.8	12.7	15.5
157.5°	136.4	108.3	75.9	39.4	11.2	7.0	9.8	11.2	12.7
160°	118.1	92.8	67.5	35.1	11.2	7.0	8.4	9.8	11.2
162.5°	104.0	77.3	59.0	32.3	11.2	7.0	8.4	8.4	9.8
165°	88.6	64.7	49.2	29.5	11.2	7.0	7.0	7.0	8.4
167.5°	71.7	50.6	40.8	26.7	11.2	7.0	7.0	5.6	7.0
170°	53.4	38.0	33.7	23.9	11.2	7.0	5.6	4.2	5.6
172.5°	23.9	29.5	26.7	21.1	12.7	7.0	5.6	4.2	2.8
175°	12.7	21.1	21.1	18.3	12.7	7.0	5.6	4.2	1.4
177.5°	9.8	12.7	15.5	15.5	12.7	8.4	5.6	2.8	1.4
180°	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4



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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	22.02	23.50	22.53	24.00	24.54	20.99	22.47	21.50	22.97	23.51
	3H	24.11	25.45	24.62	25.96	26.55	22.86	24.21	23.38	24.72	25.30
	4H	25.05	26.33	25.59	26.85	27.45	23.61	24.88	24.15	25.41	26.01
	6H	25.97	27.16	26.52	27.70	28.31	24.24	25.43	24.79	25.97	26.58
	8H	26.40	27.54	26.96	28.10	28.72	24.50	25.63	25.06	26.20	26.82
	12H	26.82	27.91	27.39	28.47	29.11	24.73	25.82	25.30	26.38	27.02
4H	2H	22.51	23.79	23.05	24.32	24.91	21.55	22.83	22.09	23.36	23.95
	3H	24.83	25.91	25.38	26.48	27.10	23.61	24.70	24.17	25.27	25.89
	4H	25.94	26.93	26.51	27.51	28.16	24.47	25.46	25.04	26.04	26.69
	6H	27.04	27.92	27.64	28.53	29.19	25.22	26.10	25.81	26.70	27.37
	8H	27.57	28.40	28.17	29.00	29.68	25.54	26.36	26.13	26.97	27.64
	12H	28.10	28.85	28.72	29.48	30.16	25.83	26.58	26.45	27.21	27.89
8H	4H	26.20	27.02	26.79	27.63	28.30	24.80	25.63	25.40	26.23	26.91
	6H	27.48	28.18	28.11	28.82	29.50	25.69	26.39	26.32	27.03	27.71
	8H	28.15	28.78	28.79	29.43	30.12	26.09	26.72	26.73	27.37	28.07
	12H	28.85	29.41	29.49	30.06	30.81	26.48	27.04	27.12	27.68	28.44
12H	4H	26.21	26.96	26.83	27.59	28.27	24.87	25.62	25.49	26.25	26.93
	6H	27.53	28.17	28.17	28.82	29.51	25.80	26.43	26.44	27.08	27.78
	8H	28.28	28.84	28.92	29.48	30.24	26.26	26.82	26.90	27.47	28.22