

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: P894010

Luminaire Tested: 4MB-9HL-ASMF-UNV-L835

Issue Date: 11/11/2024

Test Information

Test Method: LM-79-2019
Report Number: P894010
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-9HL-ASMF-UNV-L835
Description: 9000 Lumen 4FT MICROBAY LINEAR BAY with FROSTED ASYMMETRIC LENS, 80CRI, 3500K CCT
Light Source: -
Ballast/Driver: -

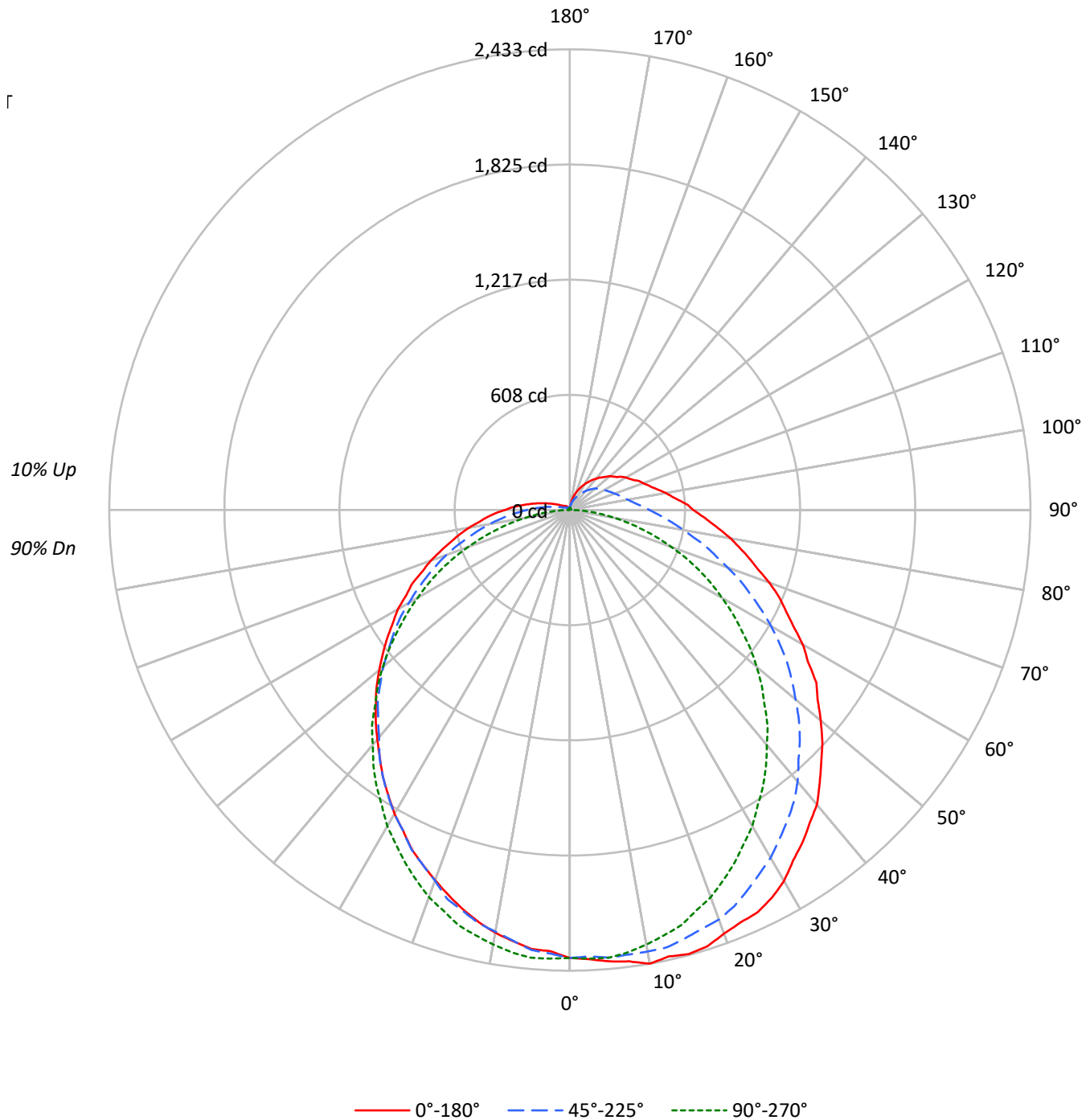
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8132.0 lumens
Efficiency: N/A
Efficacy: 126.3 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): 64.4
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: 0.996
Total Harmonic Distortion (THDi): 8.94
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°	24089	24089	24089	24089	24089
5°	24392	23534	23305	23123	23716
10°	25019	23042	22247	22006	23316
15°	25385	22556	21259	21087	22825
20°	25509	22088	20134	19988	22290
25°	25972	21378	18951	19075	21886
30°	26131	20694	17826	18086	21391
35°	26068	19949	16644	17134	20932
40°	26303	19177	15431	16064	20481
45°	26224	18266	14234	15248	20230
50°	26424	17328	13086	14313	20066
55°	27009	16512	11767	13377	19996
60°	27460	15498	10418	12381	20264
65°	28409	14401	9049	11392	20719
70°	30730	13353	7418	10447	21427
75°	34529	12591	5673	9348	22907
80°	42915	11856	3800	8379	26906
85°	64157	11696	1907	7378	37727

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 90°
 Luminance: 211238 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	224.4	2.8
10°-20°	643.2	7.9
20°-30°	969.9	11.9
30°-40°	1164.1	14.3
40°-50°	1212.2	14.9
50°-60°	1123.7	13.8
60°-70°	925.4	11.4
70°-80°	667.5	8.2
80°-90°	423.8	5.2
90°-100°	261.3	3.2
100°-110°	174.2	2.1
110°-120°	124.0	1.5
120°-130°	90.9	1.1
130°-140°	62.5	0.8
140°-150°	38.0	0.5
150°-160°	18.9	0.2
160°-170°	6.9	0.1
170°-180°	1.2	0.0
0°-30°	1837.5	22.6
0°-40°	3001.6	36.9
0°-60°	5337.5	65.6
0°-90°	7354.1	90.4
90°-120°	559.5	6.9
90°-150°	750.9	9.2
90°-180°	778.0	9.6
0°-180°	8132.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2365	2365	2365	2365	2365	
5°	2392	2374	2374	2332	2326	229
15°	2428	2343	2271	2190	2183	685
25°	2345	2217	2057	1978	1976	1079
35°	2143	2003	1780	1721	1721	1343
45°	1878	1718	1453	1434	1449	1453
55°	1589	1401	1108	1135	1177	1412
65°	1258	1052	754	833	918	1253
75°	980	744	397	552	650	1039
85°	746	506	104	319	439	633
90°	652	421	10	227	342	359
95°	581	356	6	153	264	461
105°	455	279	6	63	138	486
115°	374	231	7	30	66	374
125°	304	193	8	24	38	277
135°	244	154	8	18	28	191
145°	187	109	8	13	20	118
155°	128	72	10	8	13	60
165°	74	41	10	6	7	22
175°	11	18	11	5	1	2
180°	7	7	7	7	7	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
0°	2365.3	2365.3	2365.3	2365.3	2365.3	2365.3	2365.3	2365.3	2365.3
2.5°	2374.7	2381.8	2359.3	2373.5	2371.2	2373.5	2345.1	2368.8	2332.1
5°	2392.5	2396.0	2373.5	2381.8	2373.5	2353.4	2332.1	2323.9	2326.2
7.5°	2404.3	2423.2	2367.6	2370.0	2355.8	2334.5	2294.3	2301.4	2296.7
10°	2432.7	2411.4	2367.6	2357.0	2329.8	2307.3	2261.2	2264.7	2267.1
12.5°	2414.9	2410.2	2366.4	2327.4	2300.2	2281.3	2234.0	2222.2	2228.1
15°	2427.9	2407.8	2342.8	2312.0	2270.6	2237.5	2190.2	2181.9	2183.1
17.5°	2416.1	2399.5	2319.1	2276.6	2218.6	2198.5	2153.6	2139.4	2132.3
20°	2380.6	2372.3	2301.4	2228.1	2176.0	2137.0	2082.6	2074.3	2080.2
22.5°	2357.0	2336.9	2265.9	2192.6	2116.9	2082.6	2028.2	2027.0	2028.2
25°	2345.1	2319.1	2217.4	2140.6	2056.6	2025.8	1978.5	1960.8	1976.2
27.5°	2309.7	2286.0	2166.6	2082.6	1989.2	1947.8	1908.8	1905.2	1907.6
30°	2262.4	2216.2	2120.4	2017.6	1927.7	1885.1	1853.2	1829.5	1852.0
32.5°	2195.0	2168.9	2060.1	1947.8	1848.4	1818.9	1786.9	1784.6	1784.6
35°	2142.9	2124.0	2003.4	1886.3	1779.9	1739.6	1720.7	1712.4	1720.7
37.5°	2082.6	2054.2	1943.1	1811.8	1703.0	1668.7	1649.8	1642.7	1648.6
40°	2030.6	1978.5	1872.1	1734.9	1619.0	1588.3	1568.2	1575.3	1581.2
42.5°	1953.7	1924.1	1788.1	1656.9	1546.9	1513.8	1497.2	1503.1	1517.3
45°	1878.0	1850.8	1718.4	1575.3	1453.4	1435.7	1434.5	1431.0	1448.7
47.5°	1809.4	1770.4	1641.5	1494.8	1375.4	1355.3	1357.7	1369.5	1384.9
50°	1730.2	1684.1	1556.3	1408.5	1289.1	1276.1	1285.5	1293.8	1313.9
52.5°	1650.9	1614.3	1478.3	1326.9	1201.5	1192.1	1205.1	1232.3	1244.1
55°	1589.4	1523.2	1401.4	1231.1	1108.1	1109.3	1135.3	1150.7	1176.7
57.5°	1491.3	1441.6	1313.9	1146.0	1020.6	1028.9	1064.4	1090.4	1106.9
60°	1421.5	1358.8	1228.7	1054.9	928.4	941.4	981.6	1020.6	1049.0
62.5°	1331.6	1277.2	1140.1	965.0	843.2	862.1	907.1	953.2	973.3
65°	1258.3	1196.8	1052.5	875.1	754.5	777.0	832.6	884.6	917.7
67.5°	1195.6	1131.8	974.5	792.4	664.6	697.7	762.8	813.6	839.7
70°	1121.1	1046.6	885.8	700.1	571.2	610.2	693.0	752.2	781.7
72.5°	1041.9	981.6	808.9	615.0	484.9	532.2	623.2	684.7	713.1
75°	980.4	913.0	743.9	529.8	397.4	454.1	552.3	622.1	650.4
77.5°	917.7	856.2	670.5	451.8	319.3	383.2	489.6	566.5	596.0
80°	862.1	791.2	609.1	387.9	237.7	313.4	430.5	506.2	540.5
82.5°	800.6	739.1	555.8	320.5	169.1	249.5	372.5	455.3	483.7
85°	746.2	682.4	506.2	267.3	104.1	192.8	319.3	404.5	438.8
87.5°	696.6	643.3	460.0	227.1	52.0	146.6	268.5	354.8	393.8
90°	651.6	591.3	421.0	190.4	9.5	106.4	227.1	312.2	341.8
92.5°	623.2	551.1	389.1	166.8	5.9	75.7	189.2	273.2	307.5
95°	580.7	516.8	356.0	149.0	5.9	50.9	152.6	234.2	263.7
97.5°	544.0	484.9	332.3	138.4	4.7	34.3	125.4	196.3	227.1
100°	515.6	460.0	311.0	128.9	5.9	24.8	99.3	166.8	194.0
102.5°	483.7	432.8	294.5	123.0	5.9	17.7	78.1	140.7	165.6
105°	455.3	410.4	279.1	117.1	5.9	15.4	62.7	115.9	138.4
107.5°	434.0	386.7	266.1	113.5	5.9	15.4	49.7	94.6	113.5
110°	412.7	367.8	253.1	110.0	5.9	14.2	39.0	78.1	94.6



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
112.5°	398.5	350.1	241.3	106.4	7.1	14.2	31.9	65.0	78.1
115°	373.7	334.7	230.6	105.3	7.1	13.0	29.6	53.2	66.2
117.5°	356.0	320.5	220.0	101.7	7.1	13.0	28.4	43.8	53.2
120°	343.0	303.9	210.5	98.2	7.1	11.8	26.0	39.0	44.9
122.5°	326.4	288.6	202.2	95.8	7.1	11.8	24.8	36.7	40.2
125°	303.9	274.4	192.8	91.1	8.3	11.8	23.7	34.3	37.8
127.5°	289.7	261.4	185.7	85.1	8.3	10.6	22.5	31.9	35.5
130°	277.9	247.2	177.4	79.2	8.3	10.6	21.3	29.6	33.1
132.5°	260.2	233.0	165.6	74.5	8.3	9.5	18.9	27.2	30.7
135°	243.6	221.2	153.7	69.8	8.3	9.5	17.7	26.0	28.4
137.5°	233.0	209.3	143.1	65.0	8.3	8.3	16.6	23.7	26.0
140°	215.2	196.3	131.3	60.3	8.3	8.3	15.4	22.5	23.7
142.5°	202.2	183.3	120.6	55.6	8.3	8.3	14.2	20.1	22.5
145°	186.9	170.3	108.8	50.9	8.3	7.1	13.0	18.9	20.1
147.5°	172.7	154.9	99.3	47.3	8.3	7.1	11.8	16.6	17.7
150°	158.5	139.5	89.9	43.8	8.3	7.1	10.6	14.2	16.6
152.5°	143.1	120.6	80.4	40.2	8.3	7.1	9.5	13.0	14.2
155°	127.7	105.3	72.1	36.7	9.5	7.1	8.3	10.6	13.0
157.5°	114.7	91.1	63.9	33.1	9.5	5.9	8.3	9.5	10.6
160°	99.3	78.1	56.8	29.6	9.5	5.9	7.1	8.3	9.5
162.5°	87.5	65.0	49.7	27.2	9.5	5.9	7.1	7.1	8.3
165°	74.5	54.4	41.4	24.8	9.5	5.9	5.9	5.9	7.1
167.5°	60.3	42.6	34.3	22.5	9.5	5.9	5.9	4.7	5.9
170°	44.9	31.9	28.4	20.1	9.5	5.9	4.7	3.5	4.7
172.5°	20.1	24.8	22.5	17.7	10.6	5.9	4.7	3.5	2.4
175°	10.6	17.7	17.7	15.4	10.6	5.9	4.7	3.5	1.2
177.5°	8.3	10.6	13.0	13.0	10.6	7.1	4.7	2.4	1.2
180°	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1



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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	21.42	22.90	21.92	23.40	23.94	20.39	21.87	20.90	22.37	22.91
	3H	23.51	24.85	24.02	25.36	25.95	22.26	23.61	22.78	24.12	24.70
	4H	24.45	25.72	24.99	26.25	26.85	23.01	24.28	23.55	24.81	25.41
	6H	25.37	26.56	25.92	27.10	27.71	23.64	24.83	24.19	25.37	25.98
	8H	25.80	26.93	26.36	27.50	28.12	23.90	25.03	24.46	25.60	26.21
	12H	26.22	27.31	26.79	27.87	28.51	24.13	25.22	24.70	25.77	26.42
4H	2H	21.91	23.19	22.45	23.72	24.31	20.95	22.23	21.49	22.76	23.35
	3H	24.23	25.31	24.78	25.88	26.50	23.01	24.10	23.56	24.67	25.29
	4H	25.34	26.33	25.91	26.91	27.56	23.87	24.86	24.44	25.44	26.09
	6H	26.44	27.32	27.03	27.93	28.59	24.62	25.50	25.21	26.10	26.77
	8H	26.97	27.80	27.57	28.40	29.08	24.94	25.76	25.53	26.37	27.04
	12H	27.50	28.25	28.12	28.88	29.56	25.23	25.98	25.85	26.61	27.29
8H	4H	25.59	26.42	26.19	27.02	27.70	24.20	25.03	24.80	25.63	26.31
	6H	26.88	27.58	27.51	28.22	28.90	25.09	25.79	25.72	26.43	27.11
	8H	27.55	28.18	28.19	28.83	29.52	25.49	26.12	26.13	26.77	27.46
	12H	28.25	28.81	28.89	29.46	30.21	25.88	26.44	26.52	27.08	27.84
12H	4H	25.61	26.36	26.23	26.99	27.67	24.27	25.02	24.89	25.65	26.33
	6H	26.93	27.57	27.57	28.22	28.91	25.20	25.83	25.84	26.48	27.18
	8H	27.68	28.24	28.32	28.88	29.64	25.66	26.22	26.30	26.87	27.62