

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: P894015

Luminaire Tested: 4MB-9HL-ASMF-UNV-L940

Issue Date: 11/11/2024

Test Information

Test Method: LM-79-2019
Report Number: P894015
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-L940
Description: 9000 Lumen 4FT MICROBAY LINEAR BAY with FROSTED ASYMMETRIC LENS, 90CRI, 4000K CCT
Light Source: -
Ballast/Driver: -

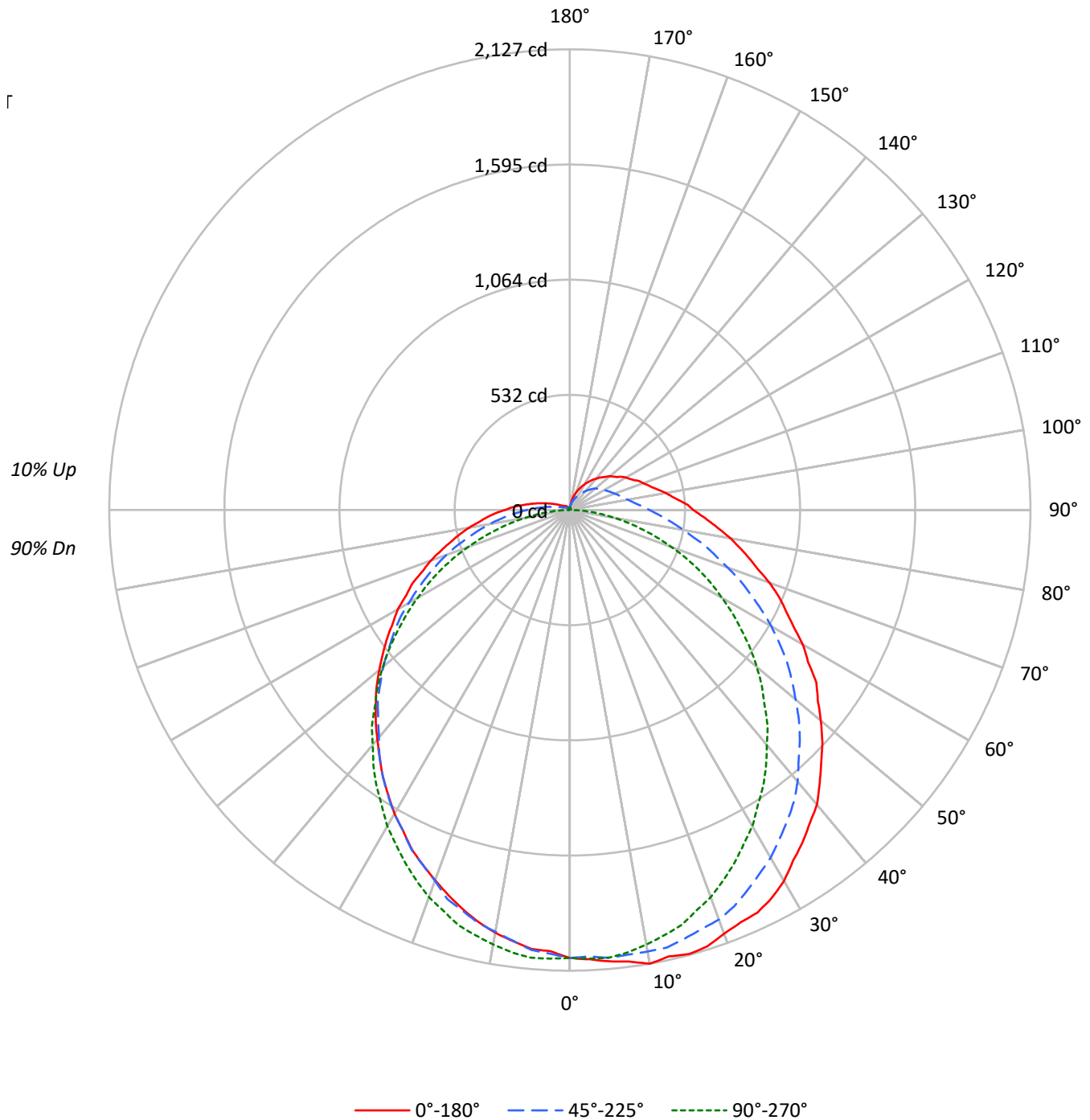
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7110.0 lumens
Efficiency: N/A
Efficacy: 110.4 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°	21061	21061	21061	21061	21061
5°	21326	20576	20376	20217	20736
10°	21874	20147	19451	19241	20386
15°	22195	19721	18588	18437	19957
20°	22303	19313	17605	17477	19489
25°	22708	18691	16569	16678	19135
30°	22846	18094	15585	15813	18702
35°	22792	17442	14552	14981	18302
40°	22997	16767	13491	14045	17908
45°	22929	15970	12446	13332	17687
50°	23102	15150	11441	12514	17545
55°	23615	14437	10289	11695	17483
60°	24009	13551	9109	10825	17718
65°	24839	12592	7912	9959	18116
70°	26868	11675	6485	9134	18735
75°	30190	11009	4960	8174	20029
80°	37524	10365	3322	7326	23521
85°	56101	10226	1667	6451	32981

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 90°
 Luminance: 184688 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	196.2	2.8
10°-20°	562.4	7.9
20°-30°	848.0	11.9
30°-40°	1017.8	14.3
40°-50°	1059.8	14.9
50°-60°	982.5	13.8
60°-70°	809.1	11.4
70°-80°	583.6	8.2
80°-90°	370.5	5.2
90°-100°	228.4	3.2
100°-110°	152.3	2.1
110°-120°	108.4	1.5
120°-130°	79.5	1.1
130°-140°	54.6	0.8
140°-150°	33.3	0.5
150°-160°	16.5	0.2
160°-170°	6.0	0.1
170°-180°	1.0	0.0
0°-30°	1606.6	22.6
0°-40°	2624.4	36.9
0°-60°	4666.7	65.6
0°-90°	6429.9	90.4
90°-120°	489.2	6.9
90°-150°	656.5	9.2
90°-180°	680.0	9.6
0°-180°	7110.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2068	2068	2068	2068	2068	
5°	2092	2075	2075	2039	2034	201
15°	2123	2048	1985	1915	1909	599
25°	2050	1939	1798	1730	1728	943
35°	1874	1752	1556	1504	1504	1174
45°	1642	1502	1271	1254	1267	1271
55°	1390	1225	969	993	1029	1235
65°	1100	920	660	728	802	1096
75°	857	650	347	483	569	908
85°	652	443	91	279	384	554
90°	570	368	8	198	299	314
95°	508	311	5	133	231	403
105°	398	244	5	55	121	425
115°	327	202	6	26	58	327
125°	266	168	7	21	33	242
135°	213	134	7	16	25	167
145°	163	95	7	11	18	103
155°	112	63	8	7	11	53
165°	65	36	8	5	6	19
175°	9	16	9	4	1	2
180°	6	6	6	6	6	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
0°	2068.0	2068.0	2068.0	2068.0	2068.0	2068.0	2068.0	2068.0	2068.0
2.5°	2076.3	2082.5	2062.8	2075.2	2073.2	2075.2	2050.4	2071.1	2039.0
5°	2091.8	2094.9	2075.2	2082.5	2075.2	2057.7	2039.0	2031.8	2033.9
7.5°	2102.1	2118.7	2070.1	2072.1	2059.7	2041.1	2006.0	2012.2	2008.0
10°	2126.9	2108.3	2070.1	2060.8	2037.0	2017.3	1977.0	1980.1	1982.2
12.5°	2111.4	2107.3	2069.0	2034.9	2011.1	1994.6	1953.2	1942.9	1948.1
15°	2122.8	2105.2	2048.4	2021.5	1985.3	1956.3	1915.0	1907.7	1908.8
17.5°	2112.5	2098.0	2027.7	1990.4	1939.8	1922.2	1882.9	1870.5	1864.3
20°	2081.4	2074.2	2012.2	1948.1	1902.6	1868.4	1820.9	1813.6	1818.8
22.5°	2060.8	2043.2	1981.1	1917.0	1850.9	1820.9	1773.3	1772.3	1773.3
25°	2050.4	2027.7	1938.7	1871.5	1798.1	1771.2	1729.9	1714.4	1727.8
27.5°	2019.4	1998.7	1894.3	1820.9	1739.2	1703.0	1668.9	1665.8	1667.8
30°	1978.0	1937.7	1854.0	1764.0	1685.4	1648.2	1620.3	1599.6	1619.2
32.5°	1919.1	1896.4	1801.2	1703.0	1616.1	1590.3	1562.4	1560.3	1560.3
35°	1873.6	1857.1	1751.6	1649.2	1556.2	1521.0	1504.5	1497.2	1504.5
37.5°	1820.9	1796.1	1698.9	1584.1	1489.0	1459.0	1442.4	1436.2	1441.4
40°	1775.4	1729.9	1636.8	1516.9	1415.5	1388.7	1371.1	1377.3	1382.5
42.5°	1708.2	1682.3	1563.4	1448.6	1352.5	1323.5	1309.0	1314.2	1326.6
45°	1642.0	1618.2	1502.4	1377.3	1270.8	1255.3	1254.2	1251.1	1266.6
47.5°	1582.0	1547.9	1435.2	1307.0	1202.5	1185.0	1187.0	1197.4	1210.8
50°	1512.7	1472.4	1360.7	1231.5	1127.1	1115.7	1124.0	1131.2	1148.8
52.5°	1443.5	1411.4	1292.5	1160.1	1050.5	1042.3	1053.6	1077.4	1087.8
55°	1389.7	1331.8	1225.3	1076.4	968.9	969.9	992.6	1006.1	1028.8
57.5°	1303.9	1260.4	1148.8	1001.9	892.3	899.6	930.6	953.3	967.8
60°	1242.9	1188.1	1074.3	922.3	811.7	823.1	858.2	892.3	917.2
62.5°	1164.3	1116.7	996.8	843.7	737.2	753.8	793.1	833.4	851.0
65°	1100.2	1046.4	920.3	765.2	659.7	679.3	727.9	773.4	802.4
67.5°	1045.4	989.5	852.0	692.8	581.1	610.1	666.9	711.4	734.1
70°	980.2	915.1	774.5	612.1	499.4	533.5	605.9	657.6	683.5
72.5°	911.0	858.2	707.3	537.7	423.9	465.3	544.9	598.7	623.5
75°	857.2	798.2	650.4	463.2	347.4	397.1	482.9	543.9	568.7
77.5°	802.4	748.6	586.3	395.0	279.2	335.0	428.1	495.3	521.1
80°	753.8	691.7	532.5	339.2	207.8	274.0	376.4	442.6	472.5
82.5°	700.0	646.2	486.0	280.2	147.9	218.2	325.7	398.1	422.9
85°	652.5	596.6	442.6	233.7	91.0	168.5	279.2	353.6	383.6
87.5°	609.0	562.5	402.2	198.5	45.5	128.2	234.7	310.2	344.3
90°	569.7	517.0	368.1	166.5	8.3	93.1	198.5	273.0	298.8
92.5°	544.9	481.8	340.2	145.8	5.2	66.2	165.4	238.9	268.8
95°	507.7	451.9	311.2	130.3	5.2	44.5	133.4	204.7	230.6
97.5°	475.6	423.9	290.6	121.0	4.1	30.0	109.6	171.6	198.5
100°	450.8	402.2	271.9	112.7	5.2	21.7	86.9	145.8	169.6
102.5°	422.9	378.4	257.5	107.5	5.2	15.5	68.2	123.0	144.8
105°	398.1	358.8	244.0	102.4	5.2	13.4	54.8	101.3	121.0
107.5°	379.5	338.1	232.6	99.3	5.2	13.4	43.4	82.7	99.3
110°	360.9	321.6	221.3	96.2	5.2	12.4	34.1	68.2	82.7



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
112.5°	348.5	306.1	210.9	93.1	6.2	12.4	27.9	56.9	68.2
115°	326.7	292.6	201.6	92.0	6.2	11.4	25.8	46.5	57.9
117.5°	311.2	280.2	192.3	88.9	6.2	11.4	24.8	38.3	46.5
120°	299.9	265.7	184.1	85.8	6.2	10.3	22.7	34.1	39.3
122.5°	285.4	252.3	176.8	83.8	6.2	10.3	21.7	32.1	35.2
125°	265.7	239.9	168.5	79.6	7.2	10.3	20.7	30.0	33.1
127.5°	253.3	228.5	162.3	74.4	7.2	9.3	19.6	27.9	31.0
130°	243.0	216.1	155.1	69.3	7.2	9.3	18.6	25.8	29.0
132.5°	227.5	203.7	144.8	65.1	7.2	8.3	16.5	23.8	26.9
135°	213.0	193.4	134.4	61.0	7.2	8.3	15.5	22.7	24.8
137.5°	203.7	183.0	125.1	56.9	7.2	7.2	14.5	20.7	22.7
140°	188.2	171.6	114.8	52.7	7.2	7.2	13.4	19.6	20.7
142.5°	176.8	160.3	105.5	48.6	7.2	7.2	12.4	17.6	19.6
145°	163.4	148.9	95.1	44.5	7.2	6.2	11.4	16.5	17.6
147.5°	151.0	135.5	86.9	41.4	7.2	6.2	10.3	14.5	15.5
150°	138.6	122.0	78.6	38.3	7.2	6.2	9.3	12.4	14.5
152.5°	125.1	105.5	70.3	35.2	7.2	6.2	8.3	11.4	12.4
155°	111.7	92.0	63.1	32.1	8.3	6.2	7.2	9.3	11.4
157.5°	100.3	79.6	55.8	29.0	8.3	5.2	7.2	8.3	9.3
160°	86.9	68.2	49.6	25.8	8.3	5.2	6.2	7.2	8.3
162.5°	76.5	56.9	43.4	23.8	8.3	5.2	6.2	6.2	7.2
165°	65.1	47.6	36.2	21.7	8.3	5.2	5.2	5.2	6.2
167.5°	52.7	37.2	30.0	19.6	8.3	5.2	5.2	4.1	5.2
170°	39.3	27.9	24.8	17.6	8.3	5.2	4.1	3.1	4.1
172.5°	17.6	21.7	19.6	15.5	9.3	5.2	4.1	3.1	2.1
175°	9.3	15.5	15.5	13.4	9.3	5.2	4.1	3.1	1.0
177.5°	7.2	9.3	11.4	11.4	9.3	6.2	4.1	2.1	1.0
180°	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2



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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	20.95	22.43	21.46	22.93	23.48	19.92	21.40	20.43	21.90	22.45
	3H	23.04	24.39	23.56	24.90	25.48	21.79	23.14	22.31	23.65	24.24
	4H	23.98	25.26	24.52	25.79	26.38	22.54	23.82	23.08	24.34	24.94
	6H	24.90	26.09	25.45	26.63	27.24	23.17	24.36	23.73	24.90	25.51
	8H	25.33	26.47	25.89	27.03	27.65	23.43	24.57	23.99	25.13	25.75
	12H	25.75	26.84	26.32	27.40	28.05	23.66	24.75	24.23	25.31	25.96
4H	2H	21.44	22.72	21.98	23.25	23.85	20.49	21.76	21.03	22.29	22.89
	3H	23.76	24.85	24.31	25.42	26.03	22.55	23.63	23.10	24.20	24.82
	4H	24.87	25.87	25.44	26.45	27.10	23.40	24.39	23.97	24.97	25.62
	6H	25.98	26.86	26.57	27.46	28.12	24.15	25.03	24.75	25.64	26.30
	8H	26.50	27.33	27.10	27.93	28.61	24.47	25.30	25.07	25.90	26.57
	12H	27.03	27.78	27.65	28.41	29.09	24.76	25.51	25.38	26.14	26.82
8H	4H	25.13	25.95	25.73	26.56	27.23	23.74	24.56	24.33	25.17	25.84
	6H	26.41	27.11	27.04	27.76	28.44	24.62	25.32	25.25	25.97	26.65
	8H	27.08	27.71	27.72	28.36	29.06	25.02	25.65	25.66	26.31	27.00
	12H	27.78	28.35	28.43	28.99	29.75	25.41	25.97	26.05	26.61	27.37
12H	4H	25.15	25.90	25.77	26.53	27.21	23.80	24.55	24.42	25.18	25.86
	6H	26.47	27.10	27.11	27.75	28.45	24.73	25.36	25.37	26.02	26.71
	8H	27.21	27.77	27.85	28.41	29.17	25.19	25.76	25.84	26.40	27.16