

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: P894012

Luminaire Tested: 4MB-9HL-ASMF-UNV-L850

Issue Date: 11/11/2024

Test Information

Test Method: LM-79-2019
Report Number: P894012
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-L850
Description: 9000 Lumen 4FT MICROBAY LINEAR BAY with FROSTED ASYMMETRIC LENS, 80CRI, 5000K CCT
Light Source: -
Ballast/Driver: -

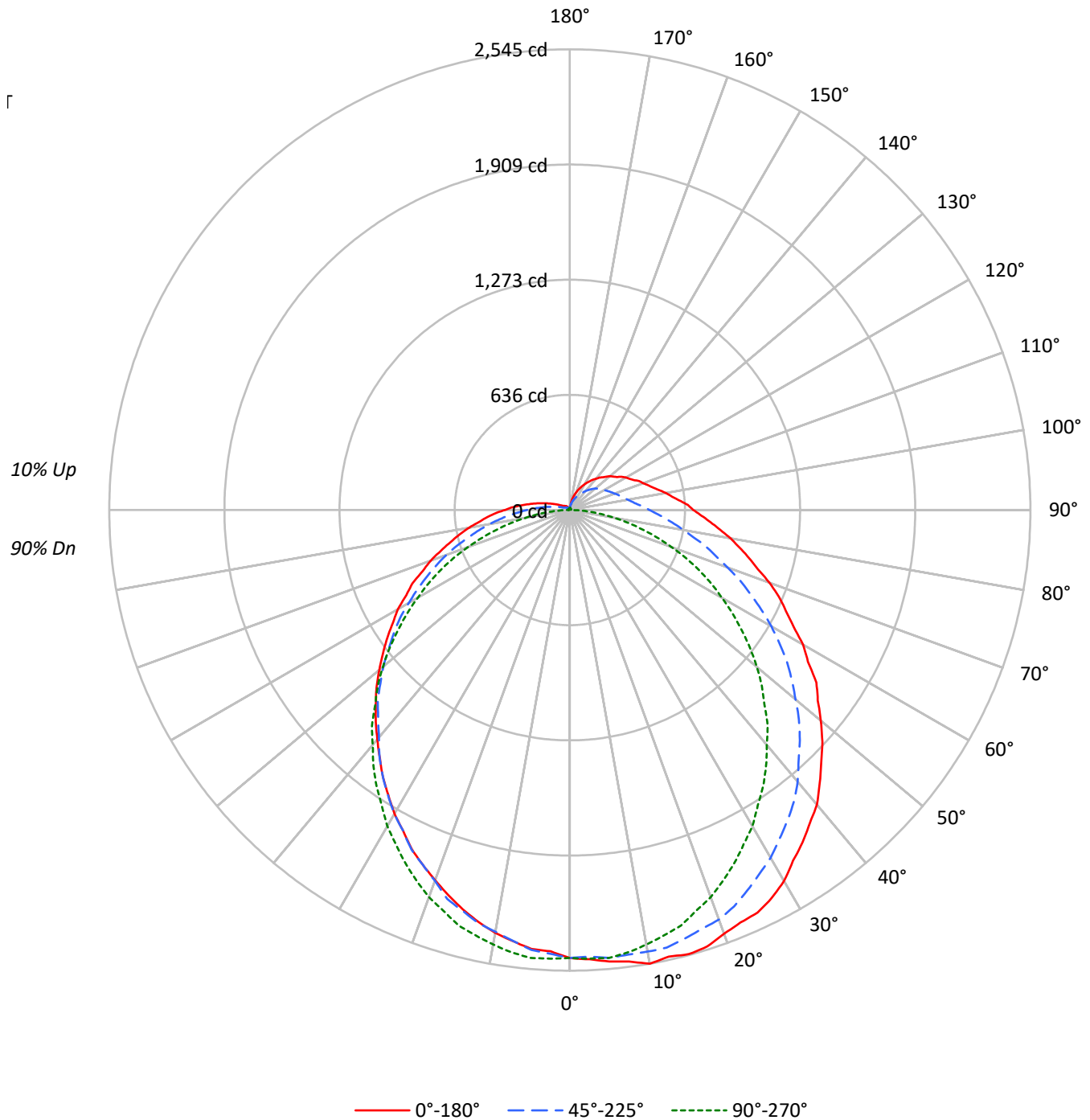
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8508.0 lumens
Efficiency: N/A
Efficacy: 132.1 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°	25202	25202	25202	25202	25202
5°	25519	24622	24383	24193	24813
10°	26175	24108	23276	23023	24393
15°	26559	23599	22242	22062	23881
20°	26689	23110	21065	20913	23321
25°	27173	22368	19828	19957	22897
30°	27339	21652	18650	18923	22380
35°	27274	20871	17413	17927	21901
40°	27519	20064	16145	16806	21428
45°	27436	19110	14893	15954	21165
50°	27645	18129	13691	14975	20993
55°	28258	17275	12312	13995	20920
60°	28729	16216	10900	12954	21201
65°	29722	15067	9468	11919	21678
70°	32153	13970	7761	10931	22419
75°	36125	13173	5935	9780	23967
80°	44901	12403	3976	8767	28145
85°	67123	12237	1995	7719	39464

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 90°
 Luminance: 221029 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	234.8	2.8
10°-20°	672.9	7.9
20°-30°	1014.7	11.9
30°-40°	1217.9	14.3
40°-50°	1268.2	14.9
50°-60°	1175.6	13.8
60°-70°	968.2	11.4
70°-80°	698.4	8.2
80°-90°	443.4	5.2
90°-100°	273.3	3.2
100°-110°	182.3	2.1
110°-120°	129.8	1.5
120°-130°	95.1	1.1
130°-140°	65.4	0.8
140°-150°	39.8	0.5
150°-160°	19.7	0.2
160°-170°	7.2	0.1
170°-180°	1.2	0.0
0°-30°	1922.5	22.6
0°-40°	3140.4	36.9
0°-60°	5584.3	65.6
0°-90°	7694.2	90.4
90°-120°	585.4	6.9
90°-150°	785.7	9.2
90°-180°	814.0	9.6
0°-180°	8508.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2475	2475	2475	2475	2475	
5°	2503	2483	2483	2440	2434	240
15°	2540	2451	2376	2292	2284	716
25°	2454	2320	2152	2070	2068	1128
35°	2242	2096	1862	1800	1800	1405
45°	1965	1798	1521	1501	1516	1520
55°	1663	1466	1159	1188	1231	1477
65°	1316	1101	789	871	960	1311
75°	1026	778	416	578	680	1087
85°	781	530	109	334	459	663
90°	682	440	10	238	358	376
95°	608	372	6	160	276	483
105°	476	292	6	66	145	509
115°	391	241	7	31	69	392
125°	318	202	9	25	40	289
135°	255	161	9	19	30	200
145°	196	114	9	14	21	124
155°	134	76	10	9	14	63
165°	78	43	10	6	7	23
175°	11	19	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°	2474.6	2474.6	2474.6	2474.6	2474.6	2474.6	2474.6	2474.6	2474.6
2.5°	2484.5	2491.9	2468.4	2483.3	2480.8	2483.3	2453.6	2478.3	2440.0
5°	2503.1	2506.8	2483.3	2491.9	2483.3	2462.2	2440.0	2431.3	2433.8
7.5°	2515.4	2535.2	2477.1	2479.6	2464.7	2442.4	2400.4	2407.8	2402.9
10°	2545.1	2522.9	2477.1	2466.0	2437.5	2414.0	2365.7	2369.4	2371.9
12.5°	2526.6	2521.6	2475.9	2435.0	2406.6	2386.8	2337.3	2324.9	2331.1
15°	2540.2	2519.2	2451.1	2418.9	2375.6	2341.0	2291.5	2282.8	2284.1
17.5°	2527.8	2510.5	2426.4	2381.8	2321.2	2300.2	2253.1	2238.3	2230.9
20°	2490.7	2482.0	2407.8	2331.1	2276.6	2235.8	2178.9	2170.2	2176.4
22.5°	2466.0	2444.9	2370.7	2294.0	2214.8	2178.9	2122.0	2120.7	2122.0
25°	2453.6	2426.4	2320.0	2239.5	2151.7	2119.5	2070.0	2051.5	2067.5
27.5°	2416.5	2391.7	2266.7	2178.9	2081.2	2037.8	1997.0	1993.3	1995.8
30°	2367.0	2318.7	2218.5	2110.8	2016.8	1972.3	1938.9	1914.1	1937.6
32.5°	2296.4	2269.2	2155.4	2037.8	1933.9	1903.0	1869.6	1867.1	1867.1
35°	2242.0	2222.2	2096.0	1973.5	1862.1	1820.1	1800.3	1791.6	1800.3
37.5°	2178.9	2149.2	2032.9	1895.6	1781.7	1745.8	1726.0	1718.6	1724.8
40°	2124.5	2070.0	1958.7	1815.1	1693.9	1661.7	1640.7	1648.1	1654.3
42.5°	2044.0	2013.1	1870.8	1733.5	1618.4	1583.8	1566.4	1572.6	1587.5
45°	1964.8	1936.4	1797.8	1648.1	1520.7	1502.1	1500.9	1497.1	1515.7
47.5°	1893.1	1852.2	1717.4	1564.0	1439.0	1418.0	1420.4	1432.8	1448.9
50°	1810.2	1761.9	1628.3	1473.6	1348.7	1335.1	1345.0	1353.6	1374.6
52.5°	1727.3	1688.9	1546.6	1388.3	1257.1	1247.2	1260.8	1289.3	1301.6
55°	1662.9	1593.7	1466.2	1288.0	1159.4	1160.6	1187.8	1203.9	1231.1
57.5°	1560.2	1508.3	1374.6	1199.0	1067.8	1076.5	1113.6	1140.8	1158.1
60°	1487.2	1421.7	1285.6	1103.7	971.3	984.9	1027.0	1067.8	1097.5
62.5°	1393.2	1336.3	1192.8	1009.6	882.2	902.0	949.0	997.3	1018.3
65°	1316.5	1252.2	1101.2	915.6	789.4	812.9	871.1	925.5	960.2
67.5°	1250.9	1184.1	1019.5	829.0	695.4	730.0	798.1	851.3	878.5
70°	1173.0	1095.0	926.7	732.5	597.6	638.5	725.1	786.9	817.9
72.5°	1090.1	1027.0	846.3	643.4	507.3	556.8	652.1	716.4	746.1
75°	1025.7	955.2	778.3	554.3	415.7	475.1	577.8	650.8	680.5
77.5°	960.2	895.8	701.6	472.7	334.1	400.9	512.2	592.7	623.6
80°	902.0	827.8	637.2	405.8	248.7	327.9	450.4	529.6	565.4
82.5°	837.7	773.3	581.5	335.3	176.9	261.1	389.8	476.4	506.1
85°	780.7	713.9	529.6	279.6	108.9	201.7	334.1	423.2	459.0
87.5°	728.8	673.1	481.3	237.6	54.4	153.4	280.9	371.2	412.0
90°	681.8	618.7	440.5	199.2	9.9	111.4	237.6	326.6	357.6
92.5°	652.1	576.6	407.1	174.5	6.2	79.2	198.0	285.8	321.7
95°	607.5	540.7	372.4	155.9	6.2	53.2	159.6	245.0	275.9
97.5°	569.2	507.3	347.7	144.8	4.9	35.9	131.2	205.4	237.6
100°	539.5	481.3	325.4	134.9	6.2	26.0	103.9	174.5	202.9
102.5°	506.1	452.9	308.1	128.7	6.2	18.6	81.7	147.2	173.2
105°	476.4	429.3	292.0	122.5	6.2	16.1	65.6	121.3	144.8
107.5°	454.1	404.6	278.4	118.8	6.2	16.1	52.0	99.0	118.8
110°	431.8	384.8	264.8	115.1	6.2	14.8	40.8	81.7	99.0



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
112.5°	417.0	366.2	252.4	111.4	7.4	14.8	33.4	68.1	81.7
115°	391.0	350.2	241.3	110.1	7.4	13.6	30.9	55.7	69.3
117.5°	372.4	335.3	230.1	106.4	7.4	13.6	29.7	45.8	55.7
120°	358.8	318.0	220.2	102.7	7.4	12.4	27.2	40.8	47.0
122.5°	341.5	301.9	211.6	100.2	7.4	12.4	26.0	38.4	42.1
125°	318.0	287.1	201.7	95.3	8.7	12.4	24.7	35.9	39.6
127.5°	303.1	273.4	194.3	89.1	8.7	11.1	23.5	33.4	37.1
130°	290.8	258.6	185.6	82.9	8.7	11.1	22.3	30.9	34.6
132.5°	272.2	243.7	173.2	78.0	8.7	9.9	19.8	28.5	32.2
135°	254.9	231.4	160.8	73.0	8.7	9.9	18.6	27.2	29.7
137.5°	243.7	219.0	149.7	68.1	8.7	8.7	17.3	24.7	27.2
140°	225.2	205.4	137.3	63.1	8.7	8.7	16.1	23.5	24.7
142.5°	211.6	191.8	126.2	58.2	8.7	8.7	14.8	21.0	23.5
145°	195.5	178.2	113.8	53.2	8.7	7.4	13.6	19.8	21.0
147.5°	180.6	162.1	103.9	49.5	8.7	7.4	12.4	17.3	18.6
150°	165.8	146.0	94.0	45.8	8.7	7.4	11.1	14.8	17.3
152.5°	149.7	126.2	84.1	42.1	8.7	7.4	9.9	13.6	14.8
155°	133.6	110.1	75.5	38.4	9.9	7.4	8.7	11.1	13.6
157.5°	120.0	95.3	66.8	34.6	9.9	6.2	8.7	9.9	11.1
160°	103.9	81.7	59.4	30.9	9.9	6.2	7.4	8.7	9.9
162.5°	91.6	68.1	52.0	28.5	9.9	6.2	7.4	7.4	8.7
165°	78.0	56.9	43.3	26.0	9.9	6.2	6.2	6.2	7.4
167.5°	63.1	44.5	35.9	23.5	9.9	6.2	6.2	4.9	6.2
170°	47.0	33.4	29.7	21.0	9.9	6.2	4.9	3.7	4.9
172.5°	21.0	26.0	23.5	18.6	11.1	6.2	4.9	3.7	2.5
175°	11.1	18.6	18.6	16.1	11.1	6.2	4.9	3.7	1.2
177.5°	8.7	11.1	13.6	13.6	11.1	7.4	4.9	2.5	1.2
180°	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4



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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	21.58	23.05	22.08	23.56	24.10	20.55	22.02	21.05	22.53	23.07
	3H	23.66	25.01	24.18	25.52	26.10	22.42	23.76	22.94	24.28	24.86
	4H	24.61	25.88	25.14	26.41	27.01	23.16	24.44	23.70	24.97	25.56
	6H	25.52	26.71	26.08	27.25	27.86	23.80	24.99	24.35	25.53	26.14
	8H	25.95	27.09	26.52	27.66	28.27	24.05	25.19	24.62	25.75	26.37
	12H	26.37	27.47	26.94	28.02	28.67	24.28	25.37	24.85	25.93	26.58
4H	2H	22.07	23.34	22.61	23.87	24.47	21.11	22.39	21.65	22.91	23.51
	3H	24.38	25.47	24.94	26.04	26.66	23.17	24.26	23.72	24.83	25.44
	4H	25.50	26.49	26.07	27.07	27.72	24.02	25.02	24.59	25.60	26.25
	6H	26.60	27.48	27.19	28.08	28.75	24.78	25.66	25.37	26.26	26.92
	8H	27.13	27.95	27.72	28.56	29.23	25.09	25.92	25.69	26.52	27.20
	12H	27.66	28.41	28.27	29.04	29.72	25.39	26.14	26.00	26.77	27.45
8H	4H	25.75	26.58	26.35	27.18	27.86	24.36	25.19	24.96	25.79	26.47
	6H	27.03	27.74	27.66	28.38	29.06	25.25	25.95	25.87	26.59	27.27
	8H	27.70	28.34	28.34	28.99	29.68	25.64	26.28	26.28	26.93	27.62
	12H	28.41	28.97	29.05	29.61	30.37	26.03	26.60	26.68	27.24	28.00
12H	4H	25.77	26.52	26.39	27.15	27.83	24.42	25.18	25.04	25.81	26.49
	6H	27.09	27.72	27.73	28.38	29.07	25.35	25.99	25.99	26.64	27.33
	8H	27.83	28.40	28.47	29.04	29.80	25.82	26.38	26.46	27.02	27.78