

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: P894014

Luminaire Tested: 4MB-9HL-ASMF-UNV-L935

Issue Date: 11/11/2024

Test Information

Test Method: LM-79-2019
Report Number: P894014
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-L935
Description: 9000 Lumen 4FT MICROBAY LINEAR BAY with FROSTED ASYMMETRIC LENS, 90CRI, 3500K CCT
Light Source: -
Ballast/Driver: -

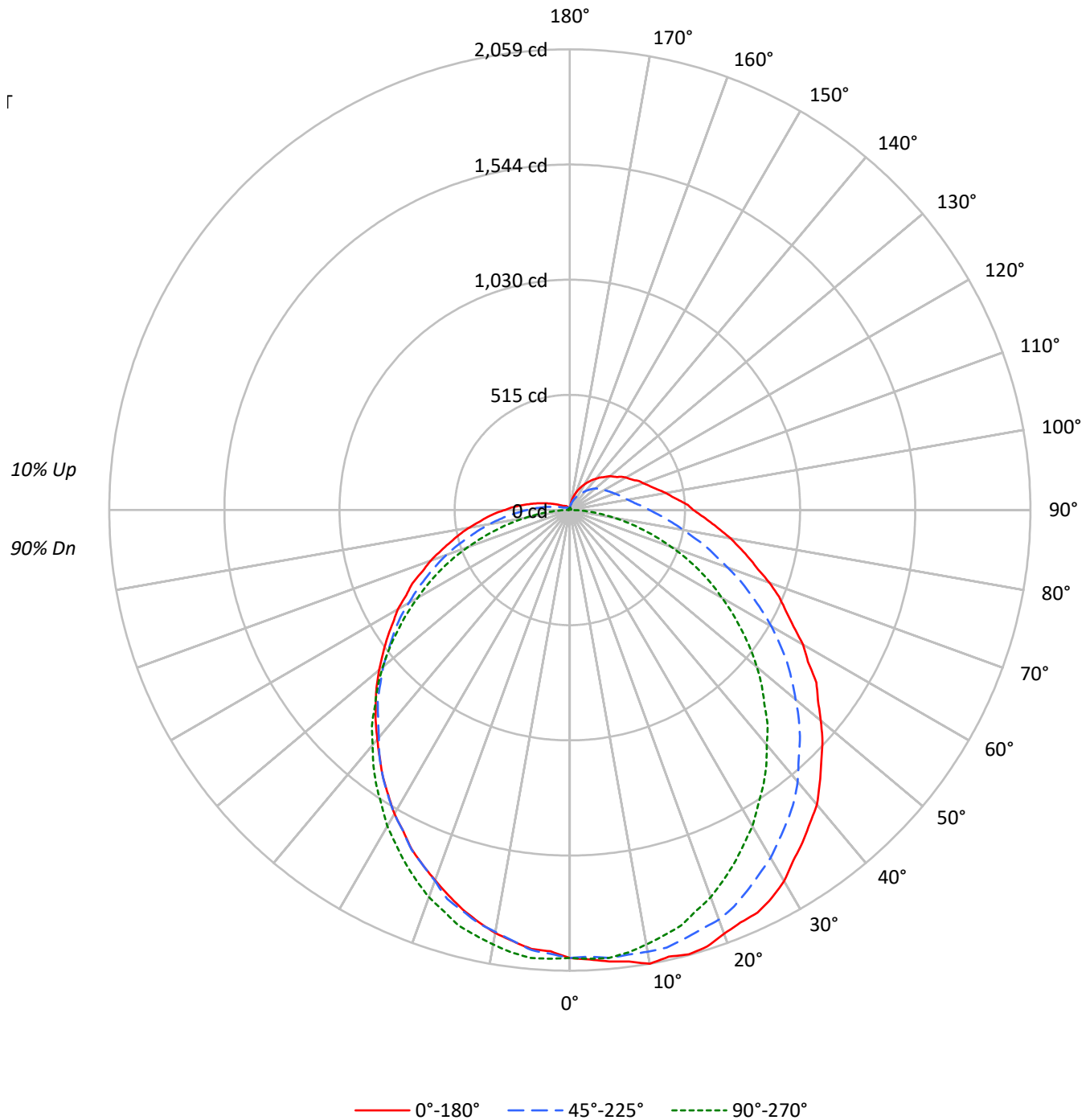
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6884.0 lumens
Efficiency: N/A
Efficacy: 106.9 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°	20392	20392	20392	20392	20392
5°	20648	19923	19729	19575	20076
10°	21179	19506	18832	18629	19738
15°	21489	19094	17997	17851	19323
20°	21595	18698	17045	16921	18870
25°	21986	18097	16043	16148	18527
30°	22121	17518	15090	15311	18108
35°	22069	16887	14090	14504	17720
40°	22265	16234	13062	13598	17338
45°	22200	15462	12050	12908	17125
50°	22369	14669	11077	12116	16987
55°	22864	13978	9962	11324	16927
60°	23246	13120	8819	10480	17154
65°	24049	12191	7661	9643	17540
70°	26016	11303	6279	8844	18138
75°	29229	10658	4802	7913	19392
80°	36329	10036	3216	7093	22774
85°	54312	9901	1614	6245	31932

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 90°
 Luminance: 178820 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	190.0	2.8
10°-20°	544.5	7.9
20°-30°	821.0	11.9
30°-40°	985.5	14.3
40°-50°	1026.1	14.9
50°-60°	951.2	13.8
60°-70°	783.4	11.4
70°-80°	565.1	8.2
80°-90°	358.7	5.2
90°-100°	221.2	3.2
100°-110°	147.5	2.1
110°-120°	105.0	1.5
120°-130°	76.9	1.1
130°-140°	52.9	0.8
140°-150°	32.2	0.5
150°-160°	16.0	0.2
160°-170°	5.8	0.1
170°-180°	1.0	0.0
0°-30°	1555.5	22.6
0°-40°	2541.0	36.9
0°-60°	4518.3	65.6
0°-90°	6225.5	90.4
90°-120°	473.6	6.9
90°-150°	635.7	9.2
90°-180°	658.0	9.6
0°-180°	6884.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2002	2002	2002	2002	2002	
5°	2025	2009	2009	1974	1969	194
15°	2055	1983	1922	1854	1848	579
25°	1985	1877	1741	1675	1673	913
35°	1814	1696	1507	1457	1457	1137
45°	1590	1455	1230	1214	1226	1230
55°	1346	1186	938	961	996	1195
65°	1065	891	639	705	777	1061
75°	830	630	336	468	551	879
85°	632	428	88	270	371	536
90°	552	356	8	192	289	304
95°	492	301	5	129	223	391
105°	385	236	5	53	117	412
115°	316	195	6	25	56	317
125°	257	163	7	20	32	234
135°	206	130	7	15	24	162
145°	158	92	7	11	17	100
155°	108	61	8	7	11	51
165°	63	35	8	5	6	18
175°	9	15	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°	2002.3	2002.3	2002.3	2002.3	2002.3	2002.3	2002.3	2002.3	2002.3
2.5°	2010.3	2016.3	1997.3	2009.3	2007.3	2009.3	1985.2	2005.3	1974.2
5°	2025.3	2028.3	2009.3	2016.3	2009.3	1992.3	1974.2	1967.2	1969.2
7.5°	2035.3	2051.3	2004.3	2006.3	1994.3	1976.2	1942.2	1948.2	1944.2
10°	2059.3	2041.3	2004.3	1995.3	1972.2	1953.2	1914.2	1917.2	1919.2
12.5°	2044.3	2040.3	2003.3	1970.2	1947.2	1931.2	1891.1	1881.1	1886.1
15°	2055.3	2038.3	1983.2	1957.2	1922.2	1894.1	1854.1	1847.1	1848.1
17.5°	2045.3	2031.3	1963.2	1927.2	1878.1	1861.1	1823.1	1811.0	1805.0
20°	2015.3	2008.3	1948.2	1886.1	1842.1	1809.0	1763.0	1756.0	1761.0
22.5°	1995.3	1978.2	1918.2	1856.1	1792.0	1763.0	1716.9	1715.9	1716.9
25°	1985.2	1963.2	1877.1	1812.0	1741.0	1714.9	1674.9	1659.9	1672.9
27.5°	1955.2	1935.2	1834.1	1763.0	1683.9	1648.9	1615.8	1612.8	1614.8
30°	1915.2	1876.1	1795.0	1707.9	1631.8	1595.8	1568.8	1548.8	1567.8
32.5°	1858.1	1836.1	1744.0	1648.9	1564.8	1539.7	1512.7	1510.7	1510.7
35°	1814.1	1798.0	1695.9	1596.8	1506.7	1472.7	1456.6	1449.6	1456.6
37.5°	1763.0	1739.0	1644.9	1533.7	1441.6	1412.6	1396.6	1390.6	1395.6
40°	1718.9	1674.9	1584.8	1468.7	1370.5	1344.5	1327.5	1333.5	1338.5
42.5°	1653.9	1628.8	1513.7	1402.6	1309.5	1281.4	1267.4	1272.4	1284.5
45°	1589.8	1566.8	1454.6	1333.5	1230.4	1215.4	1214.4	1211.4	1226.4
47.5°	1531.7	1498.7	1389.6	1265.4	1164.3	1147.3	1149.3	1159.3	1172.3
50°	1464.7	1425.6	1317.5	1192.3	1091.2	1080.2	1088.2	1095.2	1112.3
52.5°	1397.6	1366.5	1251.4	1123.3	1017.1	1009.1	1020.2	1043.2	1053.2
55°	1345.5	1289.5	1186.3	1042.2	938.1	939.1	961.1	974.1	996.1
57.5°	1262.4	1220.4	1112.3	970.1	864.0	871.0	901.0	923.0	937.1
60°	1203.4	1150.3	1040.2	893.0	785.9	796.9	830.9	864.0	888.0
62.5°	1127.3	1081.2	965.1	816.9	713.8	729.8	767.9	806.9	823.9
65°	1065.2	1013.1	891.0	740.8	638.7	657.7	704.8	748.8	776.9
67.5°	1012.1	958.1	824.9	670.8	562.6	590.7	645.7	688.8	710.8
70°	949.1	886.0	749.8	592.7	483.5	516.6	586.7	636.7	661.7
72.5°	882.0	830.9	684.8	520.6	410.5	450.5	527.6	579.7	603.7
75°	829.9	772.9	629.7	448.5	336.4	384.4	467.5	526.6	550.6
77.5°	776.9	724.8	567.6	382.4	270.3	324.4	414.5	479.5	504.6
80°	729.8	669.8	515.6	328.4	201.2	265.3	364.4	428.5	457.5
82.5°	677.8	625.7	470.5	271.3	143.2	211.2	315.4	385.4	409.5
85°	631.7	577.7	428.5	226.3	88.1	163.2	270.3	342.4	371.4
87.5°	589.7	544.6	389.4	192.2	44.0	124.1	227.3	300.3	333.4
90°	551.6	500.6	356.4	161.2	8.0	90.1	192.2	264.3	289.3
92.5°	527.6	466.5	329.4	141.2	5.0	64.1	160.2	231.3	260.3
95°	491.6	437.5	301.3	126.1	5.0	43.0	129.1	198.2	223.3
97.5°	460.5	410.5	281.3	117.1	4.0	29.0	106.1	166.2	192.2
100°	436.5	389.4	263.3	109.1	5.0	21.0	84.1	141.2	164.2
102.5°	409.5	366.4	249.3	104.1	5.0	15.0	66.1	119.1	140.2
105°	385.4	347.4	236.3	99.1	5.0	13.0	53.1	98.1	117.1
107.5°	367.4	327.4	225.3	96.1	5.0	13.0	42.0	80.1	96.1
110°	349.4	311.4	214.2	93.1	5.0	12.0	33.0	66.1	80.1



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
112.5°	337.4	296.3	204.2	90.1	6.0	12.0	27.0	55.1	66.1
115°	316.4	283.3	195.2	89.1	6.0	11.0	25.0	45.1	56.1
117.5°	301.3	271.3	186.2	86.1	6.0	11.0	24.0	37.0	45.1
120°	290.3	257.3	178.2	83.1	6.0	10.0	22.0	33.0	38.0
122.5°	276.3	244.3	171.2	81.1	6.0	10.0	21.0	31.0	34.0
125°	257.3	232.3	163.2	77.1	7.0	10.0	20.0	29.0	32.0
127.5°	245.3	221.3	157.2	72.1	7.0	9.0	19.0	27.0	30.0
130°	235.3	209.2	150.2	67.1	7.0	9.0	18.0	25.0	28.0
132.5°	220.2	197.2	140.2	63.1	7.0	8.0	16.0	23.0	26.0
135°	206.2	187.2	130.1	59.1	7.0	8.0	15.0	22.0	24.0
137.5°	197.2	177.2	121.1	55.1	7.0	7.0	14.0	20.0	22.0
140°	182.2	166.2	111.1	51.1	7.0	7.0	13.0	19.0	20.0
142.5°	171.2	155.2	102.1	47.1	7.0	7.0	12.0	17.0	19.0
145°	158.2	144.2	92.1	43.0	7.0	6.0	11.0	16.0	17.0
147.5°	146.2	131.1	84.1	40.0	7.0	6.0	10.0	14.0	15.0
150°	134.2	118.1	76.1	37.0	7.0	6.0	9.0	12.0	14.0
152.5°	121.1	102.1	68.1	34.0	7.0	6.0	8.0	11.0	12.0
155°	108.1	89.1	61.1	31.0	8.0	6.0	7.0	9.0	11.0
157.5°	97.1	77.1	54.1	28.0	8.0	5.0	7.0	8.0	9.0
160°	84.1	66.1	48.1	25.0	8.0	5.0	6.0	7.0	8.0
162.5°	74.1	55.1	42.0	23.0	8.0	5.0	6.0	6.0	7.0
165°	63.1	46.1	35.0	21.0	8.0	5.0	5.0	5.0	6.0
167.5°	51.1	36.0	29.0	19.0	8.0	5.0	5.0	4.0	5.0
170°	38.0	27.0	24.0	17.0	8.0	5.0	4.0	3.0	4.0
172.5°	17.0	21.0	19.0	15.0	9.0	5.0	4.0	3.0	2.0
175°	9.0	15.0	15.0	13.0	9.0	5.0	4.0	3.0	1.0
177.5°	7.0	9.0	11.0	11.0	9.0	6.0	4.0	2.0	1.0
180°	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0



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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	20.84	22.32	21.35	22.82	23.36	19.81	21.29	20.32	21.79	22.33
	3H	22.93	24.27	23.45	24.78	25.37	21.68	23.03	22.20	23.54	24.12
	4H	23.87	25.15	24.41	25.67	26.27	22.43	23.70	22.97	24.23	24.83
	6H	24.79	25.98	25.34	26.52	27.13	23.06	24.25	23.61	24.79	25.40
	8H	25.22	26.36	25.78	26.92	27.54	23.32	24.46	23.88	25.02	25.64
	12H	25.64	26.73	26.21	27.29	27.93	23.55	24.64	24.12	25.20	25.84
4H	2H	21.33	22.61	21.87	23.14	23.73	20.37	21.65	20.91	22.18	22.77
	3H	23.65	24.73	24.20	25.30	25.92	22.43	23.52	22.99	24.09	24.71
	4H	24.76	25.76	25.33	26.33	26.98	23.29	24.28	23.86	24.86	25.51
	6H	25.86	26.74	26.46	27.35	28.01	24.04	24.92	24.63	25.52	26.19
	8H	26.39	27.22	26.99	27.82	28.50	24.36	25.18	24.95	25.79	26.46
	12H	26.92	27.67	27.54	28.30	28.98	24.65	25.40	25.27	26.03	26.71
8H	4H	25.02	25.84	25.61	26.45	27.12	23.62	24.45	24.22	25.05	25.73
	6H	26.30	27.00	26.93	27.64	28.32	24.51	25.21	25.14	25.85	26.53
	8H	26.97	27.60	27.61	28.25	28.95	24.91	25.54	25.55	26.19	26.89
	12H	27.67	28.23	28.31	28.88	29.63	25.30	25.86	25.94	26.50	27.26
12H	4H	25.03	25.78	25.65	26.41	27.10	23.69	24.44	24.31	25.07	25.75
	6H	26.35	26.99	26.99	27.64	28.33	24.62	25.25	25.26	25.90	26.60
	8H	27.10	27.66	27.74	28.30	29.06	25.08	25.65	25.72	26.29	27.05