

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: P894016

Luminaire Tested: 4MB-9HL-ASMF-UNV-L950

Issue Date: 11/11/2024

Test Information

Test Method: LM-79-2019
Report Number: P894016
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-L950
Description: 9000 Lumen 4FT MICROBAY LINEAR BAY with FROSTED ASYMMETRIC LENS, 90CRI, 5000K CCT
Light Source: -
Ballast/Driver: -

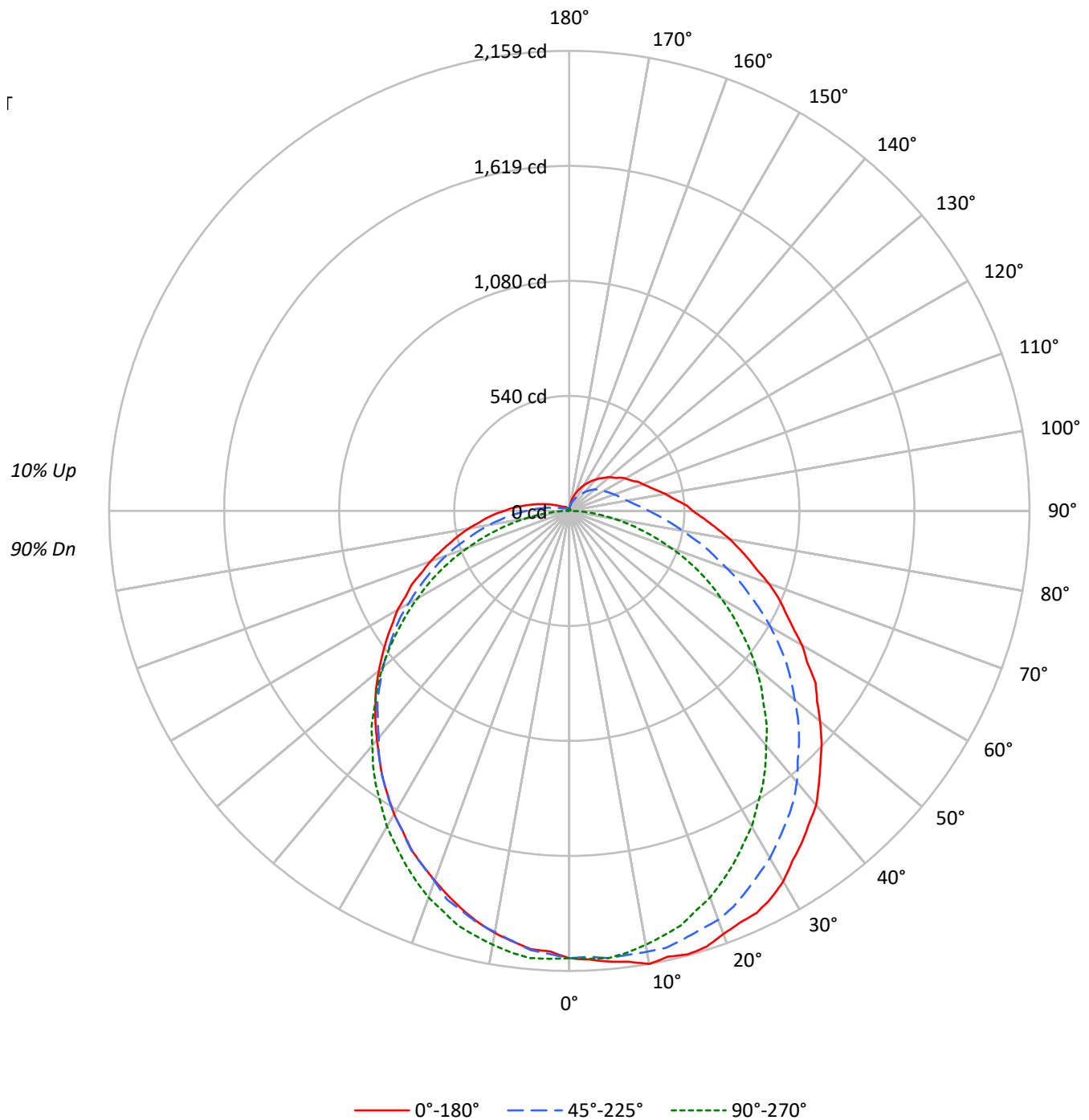
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7216.9 lumens
Efficiency: N/A
Efficacy: 112.1 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°	21378	21378	21378	21378	21378
5°	21647	20886	20683	20521	21048
10°	22203	20449	19743	19531	20692
15°	22528	20018	18868	18714	20257
20°	22639	19603	17869	17740	19783
25°	23050	18973	16819	16929	19423
30°	23191	18367	15820	16052	18984
35°	23135	17705	14771	15206	18577
40°	23343	17020	13694	14256	18177
45°	23274	16210	12633	13532	17953
50°	23450	15378	11613	12703	17809
55°	23971	14654	10443	11872	17746
60°	24371	13755	9246	10988	17984
65°	25212	12781	8031	10110	18389
70°	27274	11850	6583	9271	19018
75°	30645	11174	5035	8295	20332
80°	38086	10520	3373	7435	23874
85°	56943	10379	1693	6548	33480

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 90°
 Luminance: 187475 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	199.2	2.8
10°-20°	570.8	7.9
20°-30°	860.8	11.9
30°-40°	1033.1	14.3
40°-50°	1075.8	14.9
50°-60°	997.2	13.8
60°-70°	821.3	11.4
70°-80°	592.4	8.2
80°-90°	376.1	5.2
90°-100°	231.9	3.2
100°-110°	154.6	2.1
110°-120°	110.1	1.5
120°-130°	80.6	1.1
130°-140°	55.5	0.8
140°-150°	33.8	0.5
150°-160°	16.7	0.2
160°-170°	6.1	0.1
170°-180°	1.0	0.0
0°-30°	1630.8	22.6
0°-40°	2663.9	36.9
0°-60°	4736.9	65.6
0°-90°	6526.7	90.4
90°-120°	496.5	6.9
90°-150°	666.4	9.2
90°-180°	690.0	9.6
0°-180°	7216.9	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2099	2099	2099	2099	2099	
5°	2123	2106	2106	2070	2064	204
15°	2155	2079	2015	1944	1938	608
25°	2081	1968	1825	1756	1754	957
35°	1902	1778	1580	1527	1527	1192
45°	1667	1525	1290	1273	1286	1290
55°	1411	1244	983	1008	1044	1253
65°	1117	934	670	739	814	1112
75°	870	660	353	490	577	922
85°	662	449	92	283	389	562
90°	578	374	8	202	303	319
95°	515	316	5	135	234	410
105°	404	248	5	56	123	432
115°	332	205	6	26	59	332
125°	270	171	7	21	34	245
135°	216	136	7	16	25	170
145°	166	97	7	12	18	105
155°	113	64	8	7	12	54
165°	66	37	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°	2099.1	2099.1	2099.1	2099.1	2099.1	2099.1	2099.1	2099.1	2099.1
2.5°	2107.5	2113.8	2093.9	2106.5	2104.4	2106.5	2081.3	2102.3	2069.7
5°	2123.3	2126.4	2106.5	2113.8	2106.5	2088.6	2069.7	2062.4	2064.5
7.5°	2133.8	2150.5	2101.2	2103.3	2090.7	2071.8	2036.1	2042.4	2038.2
10°	2158.9	2140.1	2101.2	2091.8	2067.6	2047.7	2006.8	2009.9	2012.0
12.5°	2143.2	2139.0	2100.2	2065.5	2041.4	2024.6	1982.6	1972.1	1977.4
15°	2154.7	2136.9	2079.2	2051.9	2015.2	1985.8	1943.8	1936.4	1937.5
17.5°	2144.2	2129.6	2058.2	2020.4	1969.0	1951.1	1911.2	1898.7	1892.4
20°	2112.8	2105.4	2042.4	1977.4	1931.2	1896.6	1848.3	1840.9	1846.2
22.5°	2091.8	2073.9	2011.0	1945.9	1878.7	1848.3	1800.0	1798.9	1800.0
25°	2081.3	2058.2	1967.9	1899.7	1825.2	1797.9	1755.9	1740.2	1753.8
27.5°	2049.8	2028.8	1922.8	1848.3	1765.4	1728.6	1694.0	1690.8	1692.9
30°	2007.8	1966.9	1881.9	1790.5	1710.8	1673.0	1644.7	1623.7	1643.6
32.5°	1948.0	1924.9	1828.3	1728.6	1640.5	1614.2	1585.9	1583.8	1583.8
35°	1901.8	1885.0	1778.0	1674.0	1579.6	1543.9	1527.1	1519.8	1527.1
37.5°	1848.3	1823.1	1724.4	1607.9	1511.4	1480.9	1464.1	1457.8	1463.1
40°	1802.1	1755.9	1661.5	1539.7	1436.8	1409.6	1391.7	1398.0	1403.3
42.5°	1733.9	1707.6	1586.9	1470.4	1372.8	1343.4	1328.7	1334.0	1346.6
45°	1666.7	1642.6	1525.0	1398.0	1289.9	1274.2	1273.1	1270.0	1285.7
47.5°	1605.8	1571.2	1456.8	1326.6	1220.6	1202.8	1204.9	1215.4	1229.0
50°	1535.5	1494.6	1381.2	1250.0	1144.0	1132.5	1140.9	1148.2	1166.1
52.5°	1465.2	1432.6	1311.9	1177.6	1066.4	1058.0	1069.5	1093.6	1104.1
55°	1410.6	1351.8	1243.7	1092.6	983.4	984.5	1007.6	1021.2	1044.3
57.5°	1323.5	1279.4	1166.1	1017.0	905.8	913.1	944.6	967.7	982.4
60°	1261.6	1205.9	1090.5	936.2	823.9	835.4	871.1	905.8	931.0
62.5°	1181.8	1133.5	1011.8	856.4	748.3	765.1	805.0	845.9	863.8
65°	1116.7	1062.2	934.1	776.7	669.6	689.6	738.9	785.1	814.5
67.5°	1061.1	1004.4	864.8	703.2	589.9	619.2	677.0	722.1	745.2
70°	995.0	928.9	786.1	621.3	506.9	541.6	615.0	667.5	693.8
72.5°	924.7	871.1	717.9	545.8	430.3	472.3	553.1	607.7	632.9
75°	870.1	810.3	660.2	470.2	352.7	403.0	490.1	552.1	577.3
77.5°	814.5	759.9	595.1	400.9	283.4	340.1	434.5	502.7	529.0
80°	765.1	702.2	540.5	344.3	211.0	278.1	382.0	449.2	479.6
82.5°	710.6	656.0	493.3	284.4	150.1	221.5	330.6	404.1	429.3
85°	662.3	605.6	449.2	237.2	92.4	171.1	283.4	358.9	389.4
87.5°	618.2	571.0	408.3	201.5	46.2	130.1	238.2	314.9	349.5
90°	578.3	524.8	373.6	169.0	8.4	94.5	201.5	277.1	303.3
92.5°	553.1	489.1	345.3	148.0	5.2	67.2	167.9	242.4	272.9
95°	515.3	458.7	315.9	132.2	5.2	45.1	135.4	207.8	234.1
97.5°	482.8	430.3	294.9	122.8	4.2	30.4	111.3	174.2	201.5
100°	457.6	408.3	276.0	114.4	5.2	22.0	88.2	148.0	172.1
102.5°	429.3	384.1	261.3	109.2	5.2	15.7	69.3	124.9	146.9
105°	404.1	364.2	247.7	103.9	5.2	13.6	55.6	102.9	122.8
107.5°	385.2	343.2	236.2	100.8	5.2	13.6	44.1	84.0	100.8
110°	366.3	326.4	224.6	97.6	5.2	12.6	34.6	69.3	84.0



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
112.5°	353.7	310.7	214.1	94.5	6.3	12.6	28.3	57.7	69.3
115°	331.7	297.0	204.7	93.4	6.3	11.5	26.2	47.2	58.8
117.5°	315.9	284.4	195.2	90.3	6.3	11.5	25.2	38.8	47.2
120°	304.4	269.7	186.8	87.1	6.3	10.5	23.1	34.6	39.9
122.5°	289.7	256.1	179.5	85.0	6.3	10.5	22.0	32.5	35.7
125°	269.7	243.5	171.1	80.8	7.3	10.5	21.0	30.4	33.6
127.5°	257.1	232.0	164.8	75.6	7.3	9.4	19.9	28.3	31.5
130°	246.6	219.4	157.4	70.3	7.3	9.4	18.9	26.2	29.4
132.5°	230.9	206.8	146.9	66.1	7.3	8.4	16.8	24.1	27.3
135°	216.2	196.3	136.4	61.9	7.3	8.4	15.7	23.1	25.2
137.5°	206.8	185.8	127.0	57.7	7.3	7.3	14.7	21.0	23.1
140°	191.0	174.2	116.5	53.5	7.3	7.3	13.6	19.9	21.0
142.5°	179.5	162.7	107.1	49.3	7.3	7.3	12.6	17.8	19.9
145°	165.8	151.1	96.6	45.1	7.3	6.3	11.5	16.8	17.8
147.5°	153.2	137.5	88.2	42.0	7.3	6.3	10.5	14.7	15.7
150°	140.6	123.8	79.8	38.8	7.3	6.3	9.4	12.6	14.7
152.5°	127.0	107.1	71.4	35.7	7.3	6.3	8.4	11.5	12.6
155°	113.4	93.4	64.0	32.5	8.4	6.3	7.3	9.4	11.5
157.5°	101.8	80.8	56.7	29.4	8.4	5.2	7.3	8.4	9.4
160°	88.2	69.3	50.4	26.2	8.4	5.2	6.3	7.3	8.4
162.5°	77.7	57.7	44.1	24.1	8.4	5.2	6.3	6.3	7.3
165°	66.1	48.3	36.7	22.0	8.4	5.2	5.2	5.2	6.3
167.5°	53.5	37.8	30.4	19.9	8.4	5.2	5.2	4.2	5.2
170°	39.9	28.3	25.2	17.8	8.4	5.2	4.2	3.1	4.2
172.5°	17.8	22.0	19.9	15.7	9.4	5.2	4.2	3.1	2.1
175°	9.4	15.7	15.7	13.6	9.4	5.2	4.2	3.1	1.0
177.5°	7.3	9.4	11.5	11.5	9.4	6.3	4.2	2.1	1.0
180°	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3



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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	21.00	22.48	21.51	22.98	23.53	19.97	21.45	20.48	21.95	22.50
	3H	23.09	24.44	23.61	24.95	25.53	21.85	23.19	22.36	23.70	24.29
	4H	24.03	25.31	24.57	25.84	26.43	22.59	23.87	23.13	24.40	24.99
	6H	24.95	26.14	25.50	26.68	27.29	23.23	24.41	23.78	24.95	25.57
	8H	25.38	26.52	25.95	27.08	27.70	23.48	24.62	24.05	25.18	25.80
	12H	25.80	26.89	26.37	27.45	28.10	23.71	24.80	24.28	25.36	26.01
4H	2H	21.50	22.77	22.04	23.30	23.90	20.54	21.82	21.08	22.34	22.94
	3H	23.81	24.90	24.36	25.47	26.09	22.60	23.68	23.15	24.25	24.87
	4H	24.92	25.92	25.50	26.50	27.15	23.45	24.45	24.02	25.02	25.67
	6H	26.03	26.91	26.62	27.51	28.17	24.21	25.09	24.80	25.69	26.35
	8H	26.56	27.38	27.15	27.99	28.66	24.52	25.35	25.12	25.95	26.63
	12H	27.08	27.83	27.70	28.47	29.15	24.81	25.56	25.43	26.20	26.88
8H	4H	25.18	26.01	25.78	26.61	27.28	23.79	24.62	24.39	25.22	25.89
	6H	26.46	27.16	27.09	27.81	28.49	24.67	25.37	25.30	26.02	26.70
	8H	27.13	27.76	27.77	28.42	29.11	25.07	25.70	25.71	26.36	27.05
	12H	27.84	28.40	28.48	29.04	29.80	25.46	26.02	26.10	26.67	27.42
12H	4H	25.20	25.95	25.82	26.58	27.26	23.85	24.60	24.47	25.23	25.91
	6H	26.52	27.15	27.16	27.80	28.50	24.78	25.41	25.42	26.07	26.76
	8H	27.26	27.82	27.90	28.47	29.22	25.25	25.81	25.89	26.45	27.21