

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: P894009

Luminaire Tested: 4MB-9HL-ASMF-UNV-L830

Issue Date: 11/11/2024

Test Information

Test Method: LM-79-2019
Report Number: P894009
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-L830
Description: 9000 Lumen 4FT MICROBAY LINEAR BAY with FROSTED ASYMMETRIC LENS, 80CRI, 3000K CCT
Light Source: -
Ballast/Driver: -

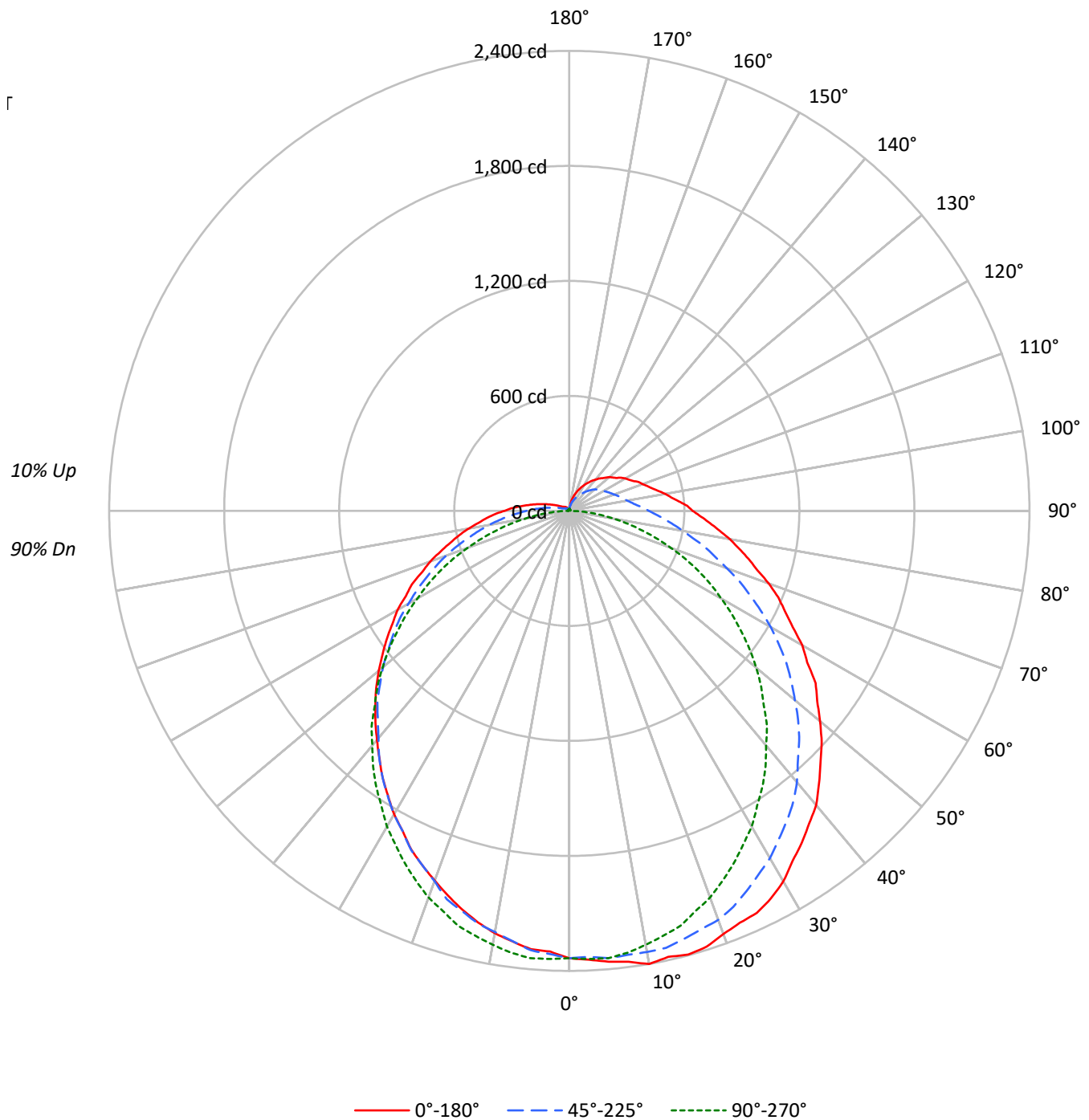
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8024.0 lumens
Efficiency: N/A
Efficacy: 124.6 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

TEST NUMBER: P894009
CATALOG NUMBER: 4MB-9HL-ASMF-UNV-L830

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°	23768	23768	23768	23768	23768
5°	24068	23221	22996	22817	23401
10°	24687	22736	21951	21714	23006
15°	25048	22256	20978	20807	22522
20°	25170	21795	19867	19723	21994
25°	25627	21095	18700	18822	21595
30°	25784	20420	17589	17846	21107
35°	25723	19684	16423	16907	20655
40°	25953	18922	15226	15850	20209
45°	25877	18022	14045	15046	19961
50°	26072	17098	12911	14122	19799
55°	26650	16293	11611	13199	19731
60°	27094	15292	10279	12216	19995
65°	28031	14211	8929	11240	20443
70°	30322	13175	7319	10308	21142
75°	34071	12424	5598	9225	22604
80°	42348	11698	3750	8268	26547
85°	63306	11539	1881	7280	37220

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 90°
 Luminance: 208450 cd/sqm



TEST NUMBER: P894009
 CATALOG NUMBER: 4MB-9HL-ASMF-UNV-L830

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	221.4	2.8
10°-20°	634.7	7.9
20°-30°	957.0	11.9
30°-40°	1148.7	14.3
40°-50°	1196.1	14.9
50°-60°	1108.7	13.8
60°-70°	913.1	11.4
70°-80°	658.7	8.2
80°-90°	418.1	5.2
90°-100°	257.8	3.2
100°-110°	171.9	2.1
110°-120°	122.4	1.5
120°-130°	89.7	1.1
130°-140°	61.7	0.8
140°-150°	37.5	0.5
150°-160°	18.6	0.2
160°-170°	6.8	0.1
170°-180°	1.1	0.0
0°-30°	1813.1	22.6
0°-40°	2961.8	36.9
0°-60°	5266.6	65.6
0°-90°	7256.5	90.4
90°-120°	552.1	6.9
90°-150°	740.9	9.2
90°-180°	768.0	9.6
0°-180°	8024.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2334	2334	2334	2334	2334	
5°	2361	2342	2342	2301	2295	226
15°	2396	2312	2240	2161	2154	675
25°	2314	2188	2029	1952	1950	1064
35°	2114	1977	1756	1698	1698	1325
45°	1853	1696	1434	1416	1430	1434
55°	1568	1383	1093	1120	1161	1393
65°	1242	1039	744	822	906	1236
75°	967	734	392	545	642	1025
85°	736	499	103	315	433	625
90°	643	415	9	224	337	355
95°	573	351	6	150	260	455
105°	449	275	6	62	136	480
115°	369	228	7	29	65	369
125°	300	190	8	23	37	273
135°	240	152	8	18	28	188
145°	184	107	8	13	20	117
155°	126	71	9	8	13	60
165°	74	41	9	6	7	21
175°	10	18	10	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°	2333.8	2333.8	2333.8	2333.8	2333.8	2333.8	2333.8	2333.8	2333.8
2.5°	2343.2	2350.2	2328.0	2342.0	2339.7	2342.0	2314.0	2337.3	2301.2
5°	2360.7	2364.2	2342.0	2350.2	2342.0	2322.2	2301.2	2293.0	2295.3
7.5°	2372.3	2391.0	2336.2	2338.5	2324.5	2303.5	2263.8	2270.8	2266.2
10°	2400.4	2379.4	2336.2	2325.7	2298.8	2276.7	2231.2	2234.7	2237.0
12.5°	2382.9	2378.2	2335.0	2296.5	2269.7	2251.0	2204.3	2192.6	2198.5
15°	2395.7	2375.8	2311.7	2281.3	2240.5	2207.8	2161.1	2153.0	2154.1
17.5°	2384.0	2367.7	2288.3	2246.3	2189.1	2169.3	2125.0	2111.0	2104.0
20°	2349.0	2340.8	2270.8	2198.5	2147.1	2108.6	2054.9	2046.8	2052.6
22.5°	2325.7	2305.8	2235.8	2163.5	2088.8	2054.9	2001.3	2000.1	2001.3
25°	2314.0	2288.3	2188.0	2112.1	2029.3	1998.9	1952.3	1934.8	1949.9
27.5°	2279.0	2255.7	2137.8	2054.9	1962.8	1921.9	1883.4	1879.9	1882.2
30°	2232.3	2186.8	2092.3	1990.8	1902.1	1860.1	1828.6	1805.2	1827.4
32.5°	2165.8	2140.1	2032.8	1921.9	1823.9	1794.7	1763.2	1760.9	1760.9
35°	2114.5	2095.8	1976.8	1861.2	1756.2	1716.5	1697.9	1689.7	1697.9
37.5°	2054.9	2026.9	1917.2	1787.7	1680.4	1646.5	1627.9	1620.9	1626.7
40°	2003.6	1952.3	1847.2	1711.9	1597.5	1567.2	1547.3	1554.3	1560.2
42.5°	1927.8	1898.6	1764.4	1634.9	1526.3	1493.7	1477.3	1483.2	1497.2
45°	1853.1	1826.2	1695.5	1554.3	1434.1	1416.6	1415.5	1412.0	1429.5
47.5°	1785.4	1746.9	1619.7	1475.0	1357.1	1337.3	1339.6	1351.3	1366.5
50°	1707.2	1661.7	1535.7	1389.8	1271.9	1259.1	1268.4	1276.6	1296.4
52.5°	1629.0	1592.8	1458.7	1309.3	1185.6	1176.3	1189.1	1215.9	1227.6
55°	1568.3	1503.0	1382.8	1214.8	1093.4	1094.6	1120.2	1135.4	1161.1
57.5°	1471.5	1422.5	1296.4	1130.7	1007.1	1015.2	1050.2	1075.9	1092.2
60°	1402.6	1340.8	1212.4	1040.9	916.0	928.9	968.5	1007.1	1035.1
62.5°	1314.0	1260.3	1124.9	952.2	832.0	850.7	895.0	940.5	960.4
65°	1241.6	1180.9	1038.6	863.5	744.5	766.7	821.5	872.9	905.5
67.5°	1179.8	1116.7	961.5	781.8	655.8	688.5	752.7	802.8	828.5
70°	1106.2	1032.7	874.0	690.8	563.6	602.1	683.8	742.2	771.3
72.5°	1028.1	968.5	798.2	606.8	478.4	525.1	615.0	675.6	703.7
75°	967.4	900.9	734.0	522.8	392.1	448.1	545.0	613.8	641.8
77.5°	905.5	844.9	661.6	445.8	315.1	378.1	483.1	559.0	588.1
80°	850.7	780.7	601.0	382.7	234.6	309.2	424.8	499.4	533.3
82.5°	790.0	729.3	548.5	316.2	166.9	246.2	367.6	449.3	477.3
85°	736.3	673.3	499.4	263.7	102.7	190.2	315.1	399.1	432.9
87.5°	687.3	634.8	453.9	224.0	51.3	144.7	264.9	350.1	388.6
90°	643.0	583.5	415.4	187.9	9.3	105.0	224.0	308.1	337.2
92.5°	615.0	543.8	383.9	164.5	5.8	74.7	186.7	269.6	303.4
95°	573.0	509.9	351.2	147.0	5.8	50.2	150.5	231.1	260.2
97.5°	536.8	478.4	327.9	136.5	4.7	33.8	123.7	193.7	224.0
100°	508.8	453.9	306.9	127.2	5.8	24.5	98.0	164.5	191.4
102.5°	477.3	427.1	290.6	121.4	5.8	17.5	77.0	138.9	163.4
105°	449.3	404.9	275.4	115.5	5.8	15.2	61.8	114.4	136.5
107.5°	428.3	381.6	262.6	112.0	5.8	15.2	49.0	93.4	112.0
110°	407.3	362.9	249.7	108.5	5.8	14.0	38.5	77.0	93.4



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CATALOG NUMBER: 4MB-9HL-ASMF-UNV-L830

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
112.5°	393.3	345.4	238.1	105.0	7.0	14.0	31.5	64.2	77.0
115°	368.7	330.2	227.5	103.9	7.0	12.8	29.2	52.5	65.3
117.5°	351.2	316.2	217.0	100.4	7.0	12.8	28.0	43.2	52.5
120°	338.4	299.9	207.7	96.9	7.0	11.7	25.7	38.5	44.3
122.5°	322.1	284.7	199.5	94.5	7.0	11.7	24.5	36.2	39.7
125°	299.9	270.7	190.2	89.9	8.2	11.7	23.3	33.8	37.3
127.5°	285.9	257.9	183.2	84.0	8.2	10.5	22.2	31.5	35.0
130°	274.2	243.9	175.0	78.2	8.2	10.5	21.0	29.2	32.7
132.5°	256.7	229.9	163.4	73.5	8.2	9.3	18.7	26.8	30.3
135°	240.4	218.2	151.7	68.8	8.2	9.3	17.5	25.7	28.0
137.5°	229.9	206.5	141.2	64.2	8.2	8.2	16.3	23.3	25.7
140°	212.4	193.7	129.5	59.5	8.2	8.2	15.2	22.2	23.3
142.5°	199.5	180.9	119.0	54.8	8.2	8.2	14.0	19.8	22.2
145°	184.4	168.0	107.4	50.2	8.2	7.0	12.8	18.7	19.8
147.5°	170.4	152.9	98.0	46.7	8.2	7.0	11.7	16.3	17.5
150°	156.4	137.7	88.7	43.2	8.2	7.0	10.5	14.0	16.3
152.5°	141.2	119.0	79.4	39.7	8.2	7.0	9.3	12.8	14.0
155°	126.0	103.9	71.2	36.2	9.3	7.0	8.2	10.5	12.8
157.5°	113.2	89.9	63.0	32.7	9.3	5.8	8.2	9.3	10.5
160°	98.0	77.0	56.0	29.2	9.3	5.8	7.0	8.2	9.3
162.5°	86.4	64.2	49.0	26.8	9.3	5.8	7.0	7.0	8.2
165°	73.5	53.7	40.8	24.5	9.3	5.8	5.8	5.8	7.0
167.5°	59.5	42.0	33.8	22.2	9.3	5.8	5.8	4.7	5.8
170°	44.3	31.5	28.0	19.8	9.3	5.8	4.7	3.5	4.7
172.5°	19.8	24.5	22.2	17.5	10.5	5.8	4.7	3.5	2.3
175°	10.5	17.5	17.5	15.2	10.5	5.8	4.7	3.5	1.2
177.5°	8.2	10.5	12.8	12.8	10.5	7.0	4.7	2.3	1.2
180°	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0



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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	21.37	22.85	21.88	23.35	23.90	20.34	21.82	20.85	22.32	22.87
	3H	23.46	24.81	23.98	25.32	25.90	22.21	23.56	22.73	24.07	24.66
	4H	24.40	25.68	24.94	26.21	26.80	22.96	24.24	23.50	24.77	25.36
	6H	25.32	26.51	25.87	27.05	27.66	23.59	24.78	24.15	25.32	25.93
	8H	25.75	26.89	26.31	27.45	28.07	23.85	24.99	24.41	25.55	26.17
	12H	26.17	27.26	26.74	27.82	28.47	24.08	25.17	24.65	25.73	26.38
4H	2H	21.86	23.14	22.41	23.67	24.27	20.91	22.18	21.45	22.71	23.31
	3H	24.18	25.27	24.73	25.84	26.45	22.97	24.05	23.52	24.62	25.24
	4H	25.29	26.29	25.86	26.87	27.52	23.82	24.81	24.39	25.39	26.04
	6H	26.40	27.28	26.99	27.88	28.54	24.57	25.45	25.17	26.06	26.72
	8H	26.92	27.75	27.52	28.35	29.03	24.89	25.72	25.49	26.32	26.99
	12H	27.45	28.20	28.07	28.83	29.51	25.18	25.93	25.80	26.56	27.24
8H	4H	25.55	26.37	26.15	26.98	27.65	24.16	24.98	24.75	25.59	26.26
	6H	26.83	27.53	27.46	28.18	28.86	25.04	25.74	25.67	26.39	27.07
	8H	27.50	28.13	28.14	28.78	29.48	25.44	26.07	26.08	26.73	27.42
	12H	28.20	28.77	28.85	29.41	30.17	25.83	26.39	26.47	27.04	27.79
12H	4H	25.57	26.32	26.19	26.95	27.63	24.22	24.97	24.84	25.60	26.28
	6H	26.89	27.52	27.53	28.17	28.87	25.15	25.78	25.79	26.44	27.13
	8H	27.63	28.19	28.27	28.83	29.59	25.61	26.18	26.26	26.82	27.58