

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: P893162

Luminaire Tested: 4MB-10HL-ASMF-UNV-L835

Issue Date: 11/11/2024

Test Information

Test Method: LM-79-2019
Report Number: P893162
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-10HL-ASMF-UNV-L835
Description: 10000 Lumen 4FT MICROBAY LINEAR BAY with FROSTED ASYMMETRIC LENS, 80CRI, 3500K CC
Light Source: -
Ballast/Driver: -

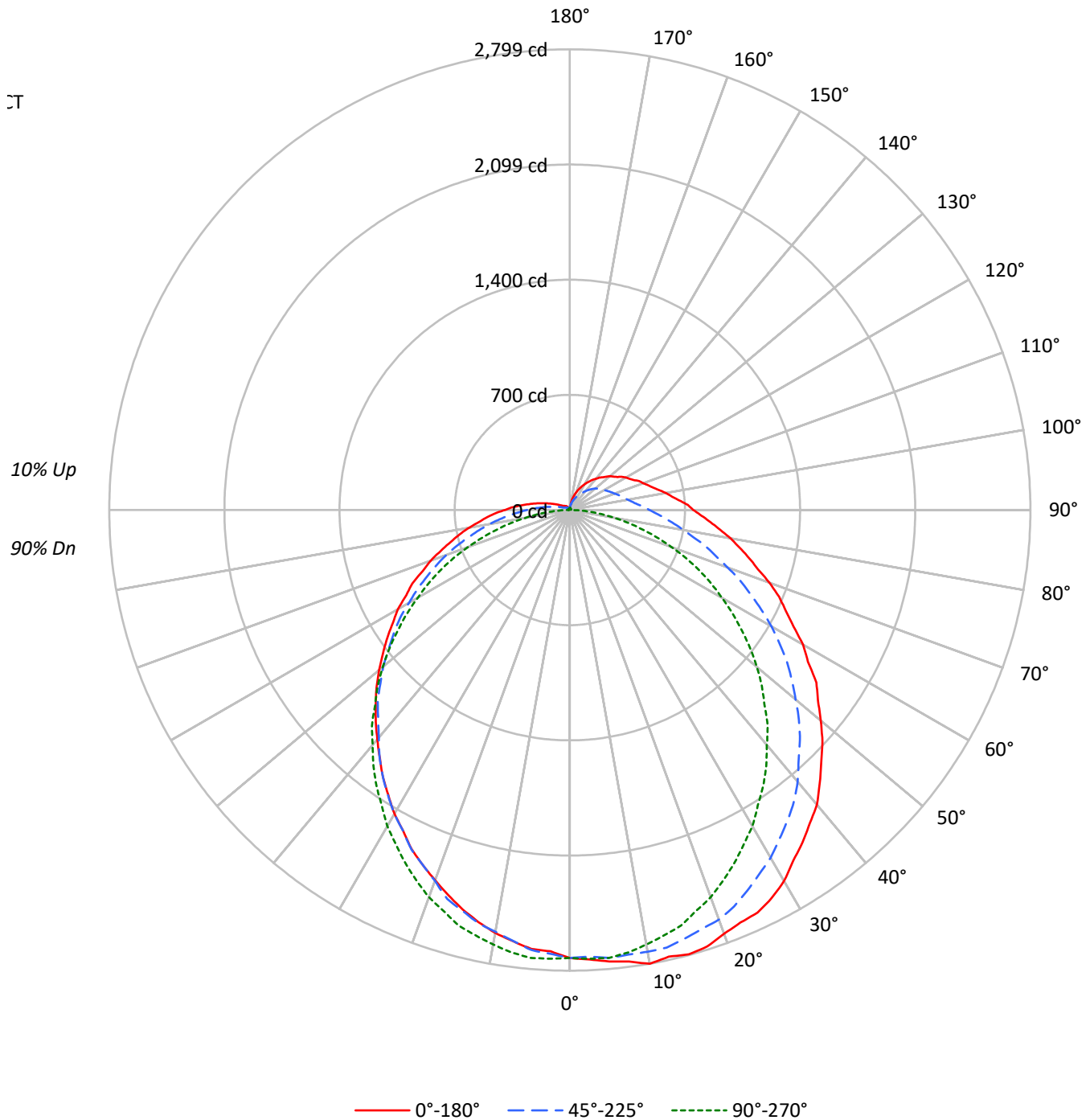
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 9358.0 lumens
Efficiency: N/A
Efficacy: 123.9 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): 75.5
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: 0.997
Total Harmonic Distortion (THDi): 7.45
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°	27719	27719	27719	27719	27719
5°	28068	27082	26819	26609	27291
10°	28790	26516	25601	25324	26831
15°	29213	25956	24465	24266	26267
20°	29355	25419	23170	23002	25651
25°	29888	24601	21808	21951	25185
30°	30070	23814	20513	20813	24616
35°	29999	22956	19153	19717	24088
40°	30267	22068	17757	18485	23569
45°	30178	21019	16381	17547	23279
50°	30407	19941	15058	16470	23091
55°	31082	19002	13541	15394	23011
60°	31599	17835	11988	14248	23318
65°	32691	16572	10414	13109	23843
70°	35365	15366	8536	12022	24659
75°	39735	14489	6528	10758	26362
80°	49386	13643	4372	9643	30958
85°	73829	13459	2195	8489	43410

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 90°
 Luminance: 243105 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	258.3	2.8
10°-20°	740.2	7.9
20°-30°	1116.1	11.9
30°-40°	1339.6	14.3
40°-50°	1394.9	14.9
50°-60°	1293.1	13.8
60°-70°	1064.9	11.4
70°-80°	768.1	8.2
80°-90°	487.7	5.2
90°-100°	300.6	3.2
100°-110°	200.5	2.1
110°-120°	142.7	1.5
120°-130°	104.6	1.1
130°-140°	71.9	0.8
140°-150°	43.8	0.5
150°-160°	21.7	0.2
160°-170°	8.0	0.1
170°-180°	1.3	0.0
0°-30°	2114.6	22.6
0°-40°	3454.2	36.9
0°-60°	6142.2	65.6
0°-90°	8462.9	90.4
90°-120°	643.8	6.9
90°-150°	864.1	9.2
90°-180°	895.0	9.6
0°-180°	9358.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2722	2722	2722	2722	2722	
5°	2753	2731	2731	2684	2677	264
15°	2794	2696	2613	2520	2512	788
25°	2699	2552	2367	2277	2274	1241
35°	2466	2305	2048	1980	1980	1545
45°	2161	1977	1673	1651	1667	1672
55°	1829	1613	1275	1306	1354	1625
65°	1448	1211	868	958	1056	1442
75°	1128	856	457	636	748	1195
85°	859	582	120	367	505	729
90°	750	484	11	261	393	414
95°	668	410	7	176	304	531
105°	524	321	7	72	159	560
115°	430	265	8	34	76	431
125°	350	222	10	27	44	318
135°	280	177	10	20	33	220
145°	215	125	10	15	23	136
155°	147	83	11	10	15	69
165°	86	48	11	7	8	25
175°	12	20	12	5	1	2
180°	8	8	8	8	8	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
0°	2721.8	2721.8	2721.8	2721.8	2721.8	2721.8	2721.8	2721.8	2721.8
2.5°	2732.7	2740.9	2715.0	2731.4	2728.6	2731.4	2698.7	2725.9	2683.7
5°	2753.1	2757.2	2731.4	2740.9	2731.4	2708.2	2683.7	2674.2	2676.9
7.5°	2766.8	2788.5	2724.6	2727.3	2711.0	2686.5	2640.2	2648.4	2642.9
10°	2799.4	2774.9	2724.6	2712.3	2681.0	2655.2	2602.1	2606.2	2608.9
12.5°	2779.0	2773.6	2723.2	2678.3	2647.0	2625.2	2570.8	2557.2	2564.0
15°	2794.0	2770.8	2696.0	2660.6	2613.0	2574.9	2520.4	2510.9	2512.3
17.5°	2780.4	2761.3	2668.8	2619.8	2553.1	2530.0	2478.2	2461.9	2453.7
20°	2739.5	2730.0	2648.4	2564.0	2504.1	2459.2	2396.6	2387.1	2393.9
22.5°	2712.3	2689.2	2607.5	2523.1	2436.1	2396.6	2334.0	2332.6	2334.0
25°	2698.7	2668.8	2551.7	2463.3	2366.6	2331.3	2276.8	2256.4	2274.1
27.5°	2657.9	2630.7	2493.2	2396.6	2289.1	2241.4	2196.5	2192.4	2195.2
30°	2603.4	2550.4	2440.1	2321.7	2218.3	2169.3	2132.6	2105.3	2131.2
32.5°	2525.9	2495.9	2370.7	2241.4	2127.1	2093.1	2056.4	2053.6	2053.6
35°	2466.0	2444.2	2305.4	2170.7	2048.2	2001.9	1980.1	1970.6	1980.1
37.5°	2396.6	2363.9	2236.0	2084.9	1959.7	1920.3	1898.5	1890.3	1897.1
40°	2336.7	2276.8	2154.3	1996.5	1863.1	1827.7	1804.6	1812.7	1819.6
42.5°	2248.2	2214.2	2057.7	1906.7	1780.1	1742.0	1722.9	1729.7	1746.1
45°	2161.1	2129.8	1977.4	1812.7	1672.6	1652.2	1650.8	1646.7	1667.1
47.5°	2082.2	2037.3	1889.0	1720.2	1582.8	1559.6	1562.3	1575.9	1593.6
50°	1991.0	1938.0	1791.0	1620.9	1483.4	1468.4	1479.3	1488.8	1512.0
52.5°	1899.8	1857.7	1701.2	1527.0	1382.7	1371.8	1386.8	1418.1	1431.7
55°	1829.1	1752.9	1612.7	1416.7	1275.2	1276.5	1306.5	1324.2	1354.1
57.5°	1716.1	1659.0	1512.0	1318.7	1174.5	1184.0	1224.8	1254.8	1273.8
60°	1635.8	1563.7	1414.0	1213.9	1068.3	1083.3	1129.6	1174.5	1207.1
62.5°	1532.4	1469.8	1311.9	1110.5	970.3	992.1	1043.8	1096.9	1120.0
65°	1448.0	1377.3	1211.2	1007.1	868.3	894.1	958.1	1018.0	1056.1
67.5°	1375.9	1302.4	1121.4	911.8	764.8	802.9	877.8	936.3	966.3
70°	1290.2	1204.4	1019.3	805.7	657.3	702.2	797.5	865.5	899.6
72.5°	1199.0	1129.6	930.9	707.7	558.0	612.4	717.2	788.0	820.6
75°	1128.2	1050.6	856.0	609.7	457.3	522.6	635.6	715.8	748.5
77.5°	1056.1	985.3	771.6	519.9	367.4	440.9	563.4	651.9	685.9
80°	992.1	910.5	700.9	446.4	273.5	360.6	495.4	582.5	621.9
82.5°	921.3	850.6	639.6	368.8	194.6	287.2	428.7	524.0	556.6
85°	858.7	785.3	582.5	307.6	119.8	221.8	367.4	465.4	504.9
87.5°	801.6	740.3	529.4	261.3	59.9	168.8	308.9	408.3	453.2
90°	749.9	680.5	484.5	219.1	10.9	122.5	261.3	359.3	393.3
92.5°	717.2	634.2	447.7	191.9	6.8	87.1	217.7	314.4	353.8
95°	668.2	594.7	409.6	171.5	6.8	58.5	175.6	269.5	303.5
97.5°	626.0	558.0	382.4	159.2	5.4	39.5	144.3	225.9	261.3
100°	593.4	529.4	357.9	148.3	6.8	28.6	114.3	191.9	223.2
102.5°	556.6	498.1	338.9	141.5	6.8	20.4	89.8	161.9	190.5
105°	524.0	472.2	321.2	134.7	6.8	17.7	72.1	133.4	159.2
107.5°	499.5	445.0	306.2	130.6	6.8	17.7	57.2	108.9	130.6
110°	475.0	423.2	291.2	126.6	6.8	16.3	44.9	89.8	108.9



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
112.5°	458.6	402.8	277.6	122.5	8.2	16.3	36.7	74.9	89.8
115°	430.1	385.1	265.4	121.1	8.2	15.0	34.0	61.2	76.2
117.5°	409.6	368.8	253.1	117.0	8.2	15.0	32.7	50.4	61.2
120°	394.7	349.8	242.2	113.0	8.2	13.6	29.9	44.9	51.7
122.5°	375.6	332.1	232.7	110.2	8.2	13.6	28.6	42.2	46.3
125°	349.8	315.7	221.8	104.8	9.5	13.6	27.2	39.5	43.5
127.5°	333.4	300.8	213.7	98.0	9.5	12.2	25.9	36.7	40.8
130°	319.8	284.4	204.1	91.2	9.5	12.2	24.5	34.0	38.1
132.5°	299.4	268.1	190.5	85.7	9.5	10.9	21.8	31.3	35.4
135°	280.3	254.5	176.9	80.3	9.5	10.9	20.4	29.9	32.7
137.5°	268.1	240.9	164.7	74.9	9.5	9.5	19.1	27.2	29.9
140°	247.7	225.9	151.1	69.4	9.5	9.5	17.7	25.9	27.2
142.5°	232.7	210.9	138.8	64.0	9.5	9.5	16.3	23.1	25.9
145°	215.0	196.0	125.2	58.5	9.5	8.2	15.0	21.8	23.1
147.5°	198.7	178.3	114.3	54.4	9.5	8.2	13.6	19.1	20.4
150°	182.4	160.6	103.4	50.4	9.5	8.2	12.2	16.3	19.1
152.5°	164.7	138.8	92.5	46.3	9.5	8.2	10.9	15.0	16.3
155°	147.0	121.1	83.0	42.2	10.9	8.2	9.5	12.2	15.0
157.5°	132.0	104.8	73.5	38.1	10.9	6.8	9.5	10.9	12.2
160°	114.3	89.8	65.3	34.0	10.9	6.8	8.2	9.5	10.9
162.5°	100.7	74.9	57.2	31.3	10.9	6.8	8.2	8.2	9.5
165°	85.7	62.6	47.6	28.6	10.9	6.8	6.8	6.8	8.2
167.5°	69.4	49.0	39.5	25.9	10.9	6.8	6.8	5.4	6.8
170°	51.7	36.7	32.7	23.1	10.9	6.8	5.4	4.1	5.4
172.5°	23.1	28.6	25.9	20.4	12.2	6.8	5.4	4.1	2.7
175°	12.2	20.4	20.4	17.7	12.2	6.8	5.4	4.1	1.4
177.5°	9.5	12.2	15.0	15.0	12.2	8.2	5.4	2.7	1.4
180°	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2



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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	21.91	23.38	22.41	23.89	24.43	20.88	22.35	21.38	22.86	23.40
	3H	23.99	25.34	24.51	25.85	26.43	22.75	24.10	23.27	24.61	25.19
	4H	24.94	26.21	25.47	26.74	27.34	23.49	24.77	24.03	25.30	25.90
	6H	25.85	27.04	26.41	27.58	28.20	24.13	25.32	24.68	25.86	26.47
	8H	26.28	27.42	26.85	27.99	28.60	24.38	25.52	24.95	26.09	26.70
	12H	26.70	27.80	27.28	28.35	29.00	24.61	25.71	25.18	26.26	26.91
4H	2H	22.40	23.68	22.94	24.20	24.80	21.44	22.72	21.98	23.25	23.84
	3H	24.71	25.80	25.27	26.37	26.99	23.50	24.59	24.05	25.16	25.77
	4H	25.83	26.82	26.40	27.40	28.05	24.35	25.35	24.93	25.93	26.58
	6H	26.93	27.81	27.52	28.41	29.08	25.11	25.99	25.70	26.59	27.25
	8H	27.46	28.28	28.06	28.89	29.56	25.42	26.25	26.02	26.85	27.53
	12H	27.99	28.74	28.61	29.37	30.05	25.72	26.47	26.34	27.10	27.78
8H	4H	26.08	26.91	26.68	27.51	28.19	24.69	25.52	25.29	26.12	26.80
	6H	27.37	28.07	27.99	28.71	29.39	25.58	26.28	26.20	26.92	27.60
	8H	28.03	28.67	28.67	29.32	30.01	25.97	26.61	26.62	27.26	27.95
	12H	28.74	29.30	29.38	29.94	30.70	26.36	26.93	27.01	27.57	28.33
12H	4H	26.10	26.85	26.72	27.48	28.16	24.76	25.51	25.37	26.14	26.82
	6H	27.42	28.05	28.06	28.71	29.40	25.68	26.32	26.33	26.97	27.66
	8H	28.16	28.73	28.81	29.37	30.13	26.15	26.71	26.79	27.35	28.11