

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: P893166

Luminaire Tested: 4MB-10HL-ASMF-UNV-L935

Issue Date: 11/11/2024

Test Information

Test Method: LM-79-2019
Report Number: P893166
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-L935
Description: 10000 Lumen 4FT MICROBAY LINEAR BAY with FROSTED ASYMMETRIC LENS, 90CRI, 3500K CC
Light Source: -
Ballast/Driver: -

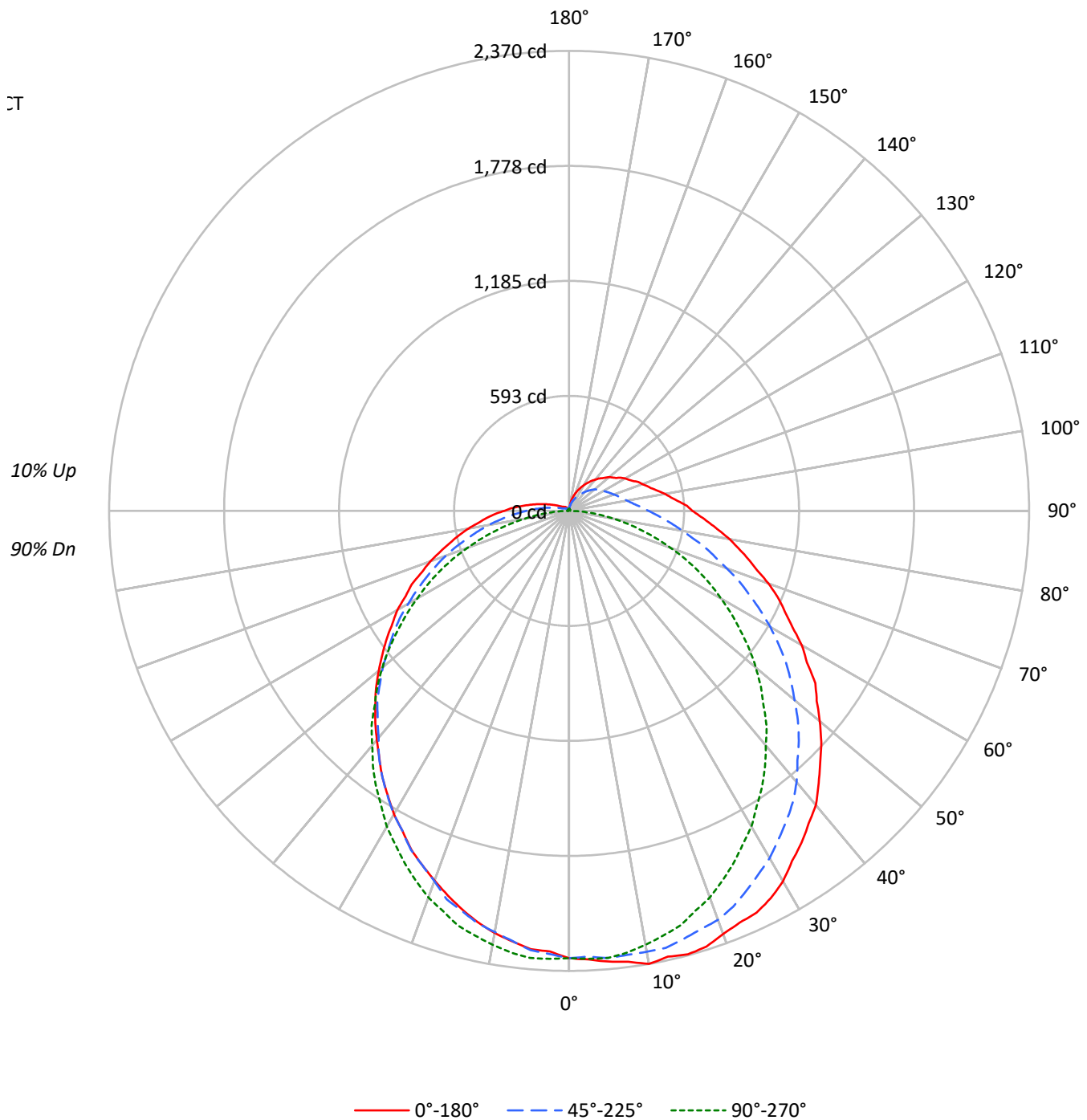
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7922.0 lumens
Efficiency: N/A
Efficacy: 104.9 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°	23466	23466	23466	23466	23466
5°	23762	22926	22703	22526	23104
10°	24372	22447	21672	21438	22713
15°	24729	21973	20711	20543	22237
20°	24850	21518	19614	19472	21715
25°	25301	20827	18462	18582	21320
30°	25456	20160	17365	17619	20839
35°	25396	19433	16214	16692	20392
40°	25623	18682	15032	15649	19952
45°	25547	17794	13867	14855	19707
50°	25741	16880	12748	13943	19548
55°	26312	16085	11463	13031	19479
60°	26751	15098	10149	12061	19740
65°	27675	14030	8816	11098	20184
70°	29938	13008	7227	10177	20873
75°	33638	12266	5526	9106	22315
80°	41810	11548	3702	8163	26209
85°	62506	11393	1857	7188	36747

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 90°
 Luminance: 205792 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	218.6	2.8
10°-20°	626.6	7.9
20°-30°	944.8	11.9
30°-40°	1134.1	14.3
40°-50°	1180.9	14.9
50°-60°	1094.7	13.8
60°-70°	901.5	11.4
70°-80°	650.3	8.2
80°-90°	412.8	5.2
90°-100°	254.5	3.2
100°-110°	169.7	2.1
110°-120°	120.8	1.5
120°-130°	88.5	1.1
130°-140°	60.9	0.8
140°-150°	37.1	0.5
150°-160°	18.4	0.2
160°-170°	6.7	0.1
170°-180°	1.1	0.0
0°-30°	1790.1	22.6
0°-40°	2924.1	36.9
0°-60°	5199.6	65.6
0°-90°	7164.2	90.4
90°-120°	545.0	6.9
90°-150°	731.5	9.2
90°-180°	758.0	9.6
0°-180°	7922.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2304	2304	2304	2304	2304	
5°	2331	2312	2312	2272	2266	223
15°	2365	2282	2212	2134	2127	667
25°	2285	2160	2004	1927	1925	1051
35°	2088	1952	1734	1676	1676	1308
45°	1830	1674	1416	1398	1411	1416
55°	1548	1365	1080	1106	1146	1376
65°	1226	1025	735	811	894	1221
75°	955	725	387	538	634	1012
85°	727	493	101	311	427	617
90°	635	410	9	221	333	350
95°	566	347	6	149	257	450
105°	444	272	6	61	135	474
115°	364	225	7	29	64	365
125°	296	188	8	23	37	269
135°	237	150	8	17	28	186
145°	182	106	8	13	20	115
155°	124	70	9	8	13	59
165°	73	40	9	6	7	21
175°	10	17	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°	2304.2	2304.2	2304.2	2304.2	2304.2	2304.2	2304.2	2304.2	2304.2
2.5°	2313.4	2320.3	2298.4	2312.2	2309.9	2312.2	2284.6	2307.6	2271.9
5°	2330.7	2334.1	2312.2	2320.3	2312.2	2292.7	2271.9	2263.8	2266.2
7.5°	2342.2	2360.6	2306.5	2308.8	2295.0	2274.2	2235.0	2242.0	2237.4
10°	2369.8	2349.1	2306.5	2296.1	2269.6	2247.7	2202.8	2206.2	2208.5
12.5°	2352.6	2348.0	2305.3	2267.3	2240.8	2222.4	2176.3	2164.8	2170.5
15°	2365.2	2345.6	2282.3	2252.3	2212.0	2179.7	2133.7	2125.6	2126.8
17.5°	2353.7	2337.6	2259.2	2217.8	2161.3	2141.7	2097.9	2084.1	2077.2
20°	2319.1	2311.1	2242.0	2170.5	2119.8	2081.8	2028.8	2020.8	2026.5
22.5°	2296.1	2276.5	2207.4	2136.0	2062.2	2028.8	1975.8	1974.7	1975.8
25°	2284.6	2259.2	2160.2	2085.3	2003.5	1973.5	1927.4	1910.2	1925.1
27.5°	2250.0	2227.0	2110.6	2028.8	1937.8	1897.5	1859.5	1856.0	1858.3
30°	2203.9	2159.0	2065.7	1965.5	1877.9	1836.4	1805.3	1782.3	1804.2
32.5°	2138.3	2112.9	2006.9	1897.5	1800.7	1771.9	1740.8	1738.5	1738.5
35°	2087.6	2069.1	1951.6	1837.6	1733.9	1694.7	1676.3	1668.2	1676.3
37.5°	2028.8	2001.2	1892.9	1765.0	1659.0	1625.6	1607.2	1600.2	1606.0
40°	1978.1	1927.4	1823.8	1690.1	1577.2	1547.3	1527.7	1534.6	1540.3
42.5°	1903.2	1874.4	1742.0	1614.1	1506.9	1474.7	1458.5	1464.3	1478.1
45°	1829.5	1803.0	1674.0	1534.6	1415.9	1398.6	1397.5	1394.0	1411.3
47.5°	1762.7	1724.7	1599.1	1456.2	1339.9	1320.3	1322.6	1334.1	1349.1
50°	1685.5	1640.6	1516.1	1372.1	1255.8	1243.1	1252.3	1260.4	1280.0
52.5°	1608.3	1572.6	1440.1	1292.6	1170.5	1161.3	1174.0	1200.5	1212.0
55°	1548.4	1483.9	1365.2	1199.3	1079.5	1080.7	1106.0	1121.0	1146.3
57.5°	1452.8	1404.4	1280.0	1116.4	994.3	1002.3	1036.9	1062.2	1078.4
60°	1384.8	1323.7	1197.0	1027.7	904.4	917.1	956.2	994.3	1021.9
62.5°	1297.2	1244.3	1110.6	940.1	821.4	839.9	883.7	928.6	948.2
65°	1225.8	1165.9	1025.4	852.5	735.0	756.9	811.1	861.8	894.0
67.5°	1164.8	1102.5	949.3	771.9	647.5	679.7	743.1	792.6	818.0
70°	1092.2	1019.6	862.9	682.0	556.5	594.5	675.1	732.7	761.5
72.5°	1015.0	956.2	788.0	599.1	472.4	518.4	607.1	667.1	694.7
75°	955.1	889.4	724.7	516.1	387.1	442.4	538.0	606.0	633.6
77.5°	894.0	834.1	653.2	440.1	311.1	373.3	477.0	551.8	580.7
80°	839.9	770.7	593.3	377.9	231.6	305.3	419.4	493.1	526.5
82.5°	780.0	720.1	541.5	312.2	164.7	243.1	362.9	443.6	471.2
85°	727.0	664.8	493.1	260.4	101.4	187.8	311.1	394.0	427.4
87.5°	678.6	626.7	448.2	221.2	50.7	142.9	261.5	345.6	383.6
90°	634.8	576.0	410.1	185.5	9.2	103.7	221.2	304.2	333.0
92.5°	607.1	536.9	379.0	162.4	5.8	73.7	184.3	266.1	299.5
95°	565.7	503.5	346.8	145.2	5.8	49.5	148.6	228.1	256.9
97.5°	530.0	472.4	323.7	134.8	4.6	33.4	122.1	191.2	221.2
100°	502.3	448.2	303.0	125.6	5.8	24.2	96.8	162.4	188.9
102.5°	471.2	421.7	286.9	119.8	5.8	17.3	76.0	137.1	161.3
105°	443.6	399.8	271.9	114.1	5.8	15.0	61.1	112.9	134.8
107.5°	422.8	376.7	259.2	110.6	5.8	15.0	48.4	92.2	110.6
110°	402.1	358.3	246.5	107.1	5.8	13.8	38.0	76.0	92.2



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
112.5°	388.3	341.0	235.0	103.7	6.9	13.8	31.1	63.4	76.0
115°	364.1	326.0	224.7	102.5	6.9	12.7	28.8	51.8	64.5
117.5°	346.8	312.2	214.3	99.1	6.9	12.7	27.7	42.6	51.8
120°	334.1	296.1	205.1	95.6	6.9	11.5	25.3	38.0	43.8
122.5°	318.0	281.1	197.0	93.3	6.9	11.5	24.2	35.7	39.2
125°	296.1	267.3	187.8	88.7	8.1	11.5	23.0	33.4	36.9
127.5°	282.3	254.6	180.9	83.0	8.1	10.4	21.9	31.1	34.6
130°	270.7	240.8	172.8	77.2	8.1	10.4	20.7	28.8	32.3
132.5°	253.5	227.0	161.3	72.6	8.1	9.2	18.4	26.5	30.0
135°	237.3	215.4	149.8	68.0	8.1	9.2	17.3	25.3	27.7
137.5°	227.0	203.9	139.4	63.4	8.1	8.1	16.1	23.0	25.3
140°	209.7	191.2	127.9	58.8	8.1	8.1	15.0	21.9	23.0
142.5°	197.0	178.6	117.5	54.1	8.1	8.1	13.8	19.6	21.9
145°	182.0	165.9	106.0	49.5	8.1	6.9	12.7	18.4	19.6
147.5°	168.2	150.9	96.8	46.1	8.1	6.9	11.5	16.1	17.3
150°	154.4	135.9	87.6	42.6	8.1	6.9	10.4	13.8	16.1
152.5°	139.4	117.5	78.3	39.2	8.1	6.9	9.2	12.7	13.8
155°	124.4	102.5	70.3	35.7	9.2	6.9	8.1	10.4	12.7
157.5°	111.8	88.7	62.2	32.3	9.2	5.8	8.1	9.2	10.4
160°	96.8	76.0	55.3	28.8	9.2	5.8	6.9	8.1	9.2
162.5°	85.3	63.4	48.4	26.5	9.2	5.8	6.9	6.9	8.1
165°	72.6	53.0	40.3	24.2	9.2	5.8	5.8	5.8	6.9
167.5°	58.8	41.5	33.4	21.9	9.2	5.8	5.8	4.6	5.8
170°	43.8	31.1	27.7	19.6	9.2	5.8	4.6	3.5	4.6
172.5°	19.6	24.2	21.9	17.3	10.4	5.8	4.6	3.5	2.3
175°	10.4	17.3	17.3	15.0	10.4	5.8	4.6	3.5	1.2
177.5°	8.1	10.4	12.7	12.7	10.4	6.9	4.6	2.3	1.2
180°	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9



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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	21.33	22.81	21.83	23.31	23.85	20.30	21.78	20.80	22.28	22.82
	3H	23.41	24.76	23.93	25.27	25.86	22.17	23.52	22.69	24.03	24.61
	4H	24.36	25.63	24.90	26.16	26.76	22.92	24.19	23.46	24.72	25.32
	6H	25.28	26.46	25.83	27.00	27.62	23.55	24.74	24.10	25.28	25.89
	8H	25.71	26.84	26.27	27.41	28.02	23.80	24.94	24.37	25.51	26.12
	12H	26.13	27.22	26.70	27.77	28.42	24.04	25.13	24.61	25.68	26.33
4H	2H	21.82	23.10	22.36	23.62	24.22	20.86	22.14	21.40	22.67	23.26
	3H	24.13	25.22	24.69	25.79	26.41	22.92	24.01	23.47	24.58	25.20
	4H	25.25	26.24	25.82	26.82	27.47	23.77	24.77	24.35	25.35	26.00
	6H	26.35	27.23	26.94	27.83	28.50	24.53	25.41	25.12	26.01	26.68
	8H	26.88	27.71	27.48	28.31	28.98	24.85	25.67	25.44	26.27	26.95
	12H	27.41	28.16	28.03	28.79	29.47	25.14	25.89	25.76	26.52	27.20
8H	4H	25.50	26.33	26.10	26.93	27.61	24.11	24.94	24.71	25.54	26.22
	6H	26.79	27.49	27.42	28.13	28.81	25.00	25.70	25.63	26.34	27.02
	8H	27.46	28.09	28.10	28.74	29.43	25.40	26.03	26.04	26.68	27.37
	12H	28.16	28.72	28.80	29.36	30.12	25.78	26.35	26.43	26.99	27.75
12H	4H	25.52	26.27	26.14	26.90	27.58	24.18	24.93	24.80	25.56	26.24
	6H	26.84	27.47	27.48	28.13	28.82	25.11	25.74	25.75	26.39	27.08
	8H	27.58	28.15	28.23	28.79	29.55	25.57	26.13	26.21	26.78	27.53