

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: P893165

Luminaire Tested: 4MB-10HL-ASMF-UNV-L930

Issue Date: 11/11/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P893165  
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-L930  
Description: 10000 Lumen 4FT MICROBAY LINEAR BAY with FROSTED ASYMMETRIC LENS, 90CRI, 3000K CC  
Light Source: -  
Ballast/Driver: -

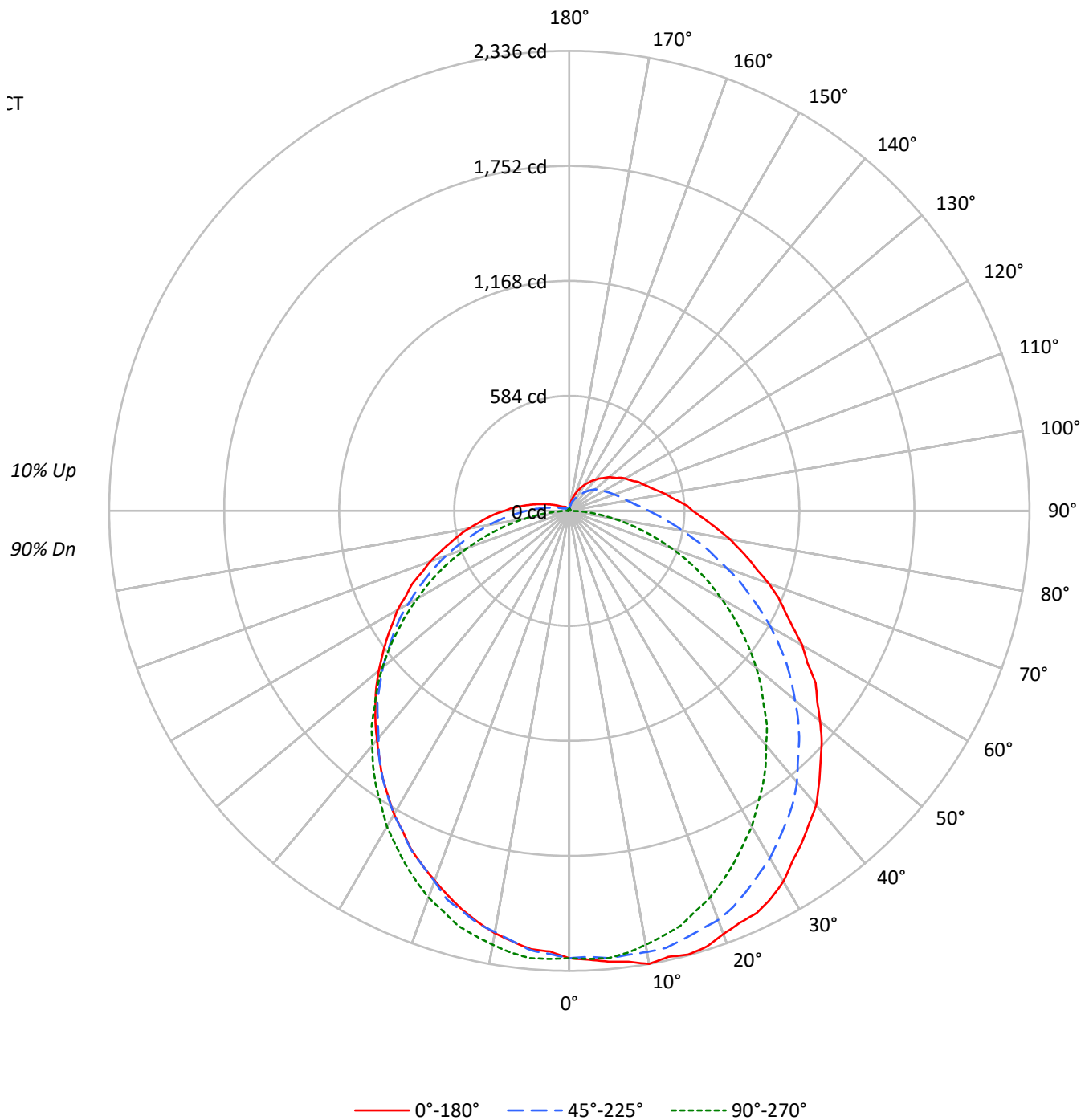
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 7810.0 lumens  
Efficiency: N/A  
Efficacy: 103.4 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<sub>in</sub>): 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	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	93	93	90		
	1	105	99	95	90	101	96	92	88	90	87	83	85	82	79	79	77	75	75	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	62	62	59		
	3	86	75	66	60	83	73	65	58	68	62	56	64	59	54	60	56	52	52	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	44	44	42		
	5	72	59	50	43	69	57	49	42	54	47	41	51	45	40	48	43	38	38	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	34	34	31		
	7	62	48	39	33	59	47	38	32	44	37	32	42	36	31	40	34	30	30	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	27	27	25		
	9	54	40	32	26	52	39	31	26	37	30	25	36	29	25	34	28	24	24	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	22	22	20		

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°	135°	180°
0°	23134	23134	23134	23134	23134
5°	23425	22602	22382	22208	22777
10°	24027	22130	21366	21134	22392
15°	24380	21662	20418	20252	21922
20°	24499	21214	19338	19197	21408
25°	24944	20532	18201	18320	21019
30°	25096	19875	17120	17370	20544
35°	25037	19158	15985	16456	20104
40°	25261	18418	14820	15428	19671
45°	25185	17542	13671	14644	19429
50°	25378	16642	12567	13746	19272
55°	25940	15858	11301	12848	19204
60°	26372	14885	10005	11891	19462
65°	27284	13832	8691	10940	19899
70°	29513	12824	7124	10034	20580
75°	33163	12092	5448	8978	22002
80°	41218	11385	3650	8047	25841
85°	61621	11231	1832	7086	36231

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 90°  
 Luminance: 202874 cd/sqm



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 CATALOG NUMBER: 4MB-10HL-ASMF-UNV-L930

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	215.5	2.8
10°-20°	617.7	7.9
20°-30°	931.5	11.9
30°-40°	1118.0	14.3
40°-50°	1164.2	14.9
50°-60°	1079.2	13.8
60°-70°	888.7	11.4
70°-80°	641.1	8.2
80°-90°	407.0	5.2
90°-100°	250.9	3.2
100°-110°	167.3	2.1
110°-120°	119.1	1.5
120°-130°	87.3	1.1
130°-140°	60.0	0.8
140°-150°	36.5	0.5
150°-160°	18.1	0.2
160°-170°	6.6	0.1
170°-180°	1.1	0.0
0°-30°	1764.8	22.6
0°-40°	2882.8	36.9
0°-60°	5126.1	65.6
0°-90°	7062.9	90.4
90°-120°	537.3	6.9
90°-150°	721.2	9.2
90°-180°	747.0	9.6
0°-180°	7810.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	2272	2272	2272	2272	2272	
5°	2298	2280	2280	2240	2234	220
15°	2332	2250	2181	2104	2097	657
25°	2252	2130	1975	1900	1898	1036
35°	2058	1924	1709	1653	1653	1289
45°	1804	1650	1396	1378	1391	1396
55°	1526	1346	1064	1090	1130	1356
65°	1208	1011	725	800	881	1203
75°	942	714	382	530	625	998
85°	717	486	100	307	421	608
90°	626	404	9	218	328	345
95°	558	342	6	146	253	443
105°	437	268	6	60	133	467
115°	359	222	7	28	64	359
125°	292	185	8	23	36	266
135°	234	148	8	17	27	183
145°	180	104	8	12	19	114
155°	123	69	9	8	12	58
165°	72	40	9	6	7	21
175°	10	17	10	4	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°	2271.6	2271.6	2271.6	2271.6	2271.6	2271.6	2271.6	2271.6	2271.6
2.5°	2280.7	2287.5	2265.9	2279.5	2277.3	2279.5	2252.3	2275.0	2239.8
5°	2297.7	2301.1	2279.5	2287.5	2279.5	2260.2	2239.8	2231.8	2234.1
7.5°	2309.1	2327.3	2273.9	2276.1	2262.5	2242.1	2203.4	2210.3	2205.7
10°	2336.3	2315.9	2273.9	2263.6	2237.5	2215.9	2171.6	2175.1	2177.3
12.5°	2319.3	2314.8	2272.7	2235.3	2209.1	2191.0	2145.5	2134.2	2139.8
15°	2331.8	2312.5	2250.0	2220.5	2180.7	2148.9	2103.5	2095.5	2096.7
17.5°	2320.4	2304.5	2227.3	2186.4	2130.8	2111.4	2068.3	2054.7	2047.8
20°	2286.4	2278.4	2210.3	2139.8	2089.9	2052.4	2000.1	1992.2	1997.9
22.5°	2263.6	2244.3	2176.2	2105.8	2033.1	2000.1	1947.9	1946.8	1947.9
25°	2252.3	2227.3	2129.6	2055.8	1975.2	1945.6	1900.2	1883.2	1897.9
27.5°	2218.2	2195.5	2080.8	2000.1	1910.4	1870.7	1833.2	1829.8	1832.0
30°	2172.8	2128.5	2036.5	1937.7	1851.4	1810.5	1779.8	1757.1	1778.7
32.5°	2108.0	2083.1	1978.6	1870.7	1775.3	1746.9	1716.2	1713.9	1713.9
35°	2058.1	2039.9	1924.0	1811.6	1709.4	1670.8	1652.6	1644.6	1652.6
37.5°	2000.1	1972.9	1866.1	1740.0	1635.5	1602.6	1584.4	1577.6	1583.3
40°	1950.2	1900.2	1798.0	1666.2	1554.9	1525.4	1506.1	1512.9	1518.6
42.5°	1876.3	1847.9	1717.3	1591.3	1485.6	1453.8	1437.9	1443.6	1457.2
45°	1803.6	1777.5	1650.3	1512.9	1395.9	1378.9	1377.7	1374.3	1391.4
47.5°	1737.8	1700.3	1576.5	1435.6	1320.9	1301.6	1303.9	1315.3	1330.0
50°	1661.7	1617.4	1494.7	1352.7	1238.0	1225.5	1234.6	1242.6	1261.9
52.5°	1585.6	1550.4	1419.7	1274.4	1154.0	1144.9	1157.4	1183.5	1194.9
55°	1526.5	1462.9	1345.9	1182.4	1064.2	1065.4	1090.4	1105.1	1130.1
57.5°	1432.2	1384.5	1261.9	1100.6	980.2	988.1	1022.2	1047.2	1063.1
60°	1365.2	1305.0	1180.1	1013.1	891.6	904.1	942.7	980.2	1007.5
62.5°	1278.9	1226.7	1094.9	926.8	809.8	828.0	871.2	915.5	934.8
65°	1208.5	1149.4	1010.9	840.5	724.6	746.2	799.6	849.6	881.4
67.5°	1148.3	1087.0	935.9	761.0	638.3	670.1	732.6	781.4	806.4
70°	1076.7	1005.2	850.7	672.4	548.6	586.1	665.6	722.4	750.8
72.5°	1000.6	942.7	776.9	590.6	465.7	511.1	598.6	657.6	684.9
75°	941.6	876.8	714.4	508.8	381.6	436.1	530.4	597.4	624.7
77.5°	881.4	822.3	644.0	433.9	306.7	368.0	470.2	544.0	572.4
80°	828.0	759.8	584.9	372.5	228.3	301.0	413.4	486.1	519.1
82.5°	768.9	709.9	533.8	307.8	162.4	239.7	357.8	437.3	464.5
85°	716.7	655.4	486.1	256.7	100.0	185.1	306.7	388.4	421.4
87.5°	669.0	617.9	441.8	218.1	50.0	140.8	257.8	340.7	378.2
90°	625.8	567.9	404.3	182.9	9.1	102.2	218.1	299.9	328.2
92.5°	598.6	529.3	373.7	160.1	5.7	72.7	181.7	262.4	295.3
95°	557.7	496.3	341.9	143.1	5.7	48.8	146.5	224.9	253.3
97.5°	522.5	465.7	319.2	132.9	4.5	32.9	120.4	188.5	218.1
100°	495.2	441.8	298.7	123.8	5.7	23.9	95.4	160.1	186.3
102.5°	464.5	415.7	282.8	118.1	5.7	17.0	75.0	135.2	159.0
105°	437.3	394.1	268.0	112.4	5.7	14.8	60.2	111.3	132.9
107.5°	416.8	371.4	255.6	109.0	5.7	14.8	47.7	90.9	109.0
110°	396.4	353.2	243.1	105.6	5.7	13.6	37.5	75.0	90.9



TEST NUMBER: P893165

CATALOG NUMBER: 4MB-10HL-ASMF-UNV-L930

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
112.5°	382.8	336.2	231.7	102.2	6.8	13.6	30.7	62.5	75.0
115°	358.9	321.4	221.5	101.1	6.8	12.5	28.4	51.1	63.6
117.5°	341.9	307.8	211.3	97.7	6.8	12.5	27.3	42.0	51.1
120°	329.4	291.9	202.2	94.3	6.8	11.4	25.0	37.5	43.2
122.5°	313.5	277.1	194.2	92.0	6.8	11.4	23.9	35.2	38.6
125°	291.9	263.5	185.1	87.5	8.0	11.4	22.7	32.9	36.3
127.5°	278.3	251.0	178.3	81.8	8.0	10.2	21.6	30.7	34.1
130°	266.9	237.4	170.4	76.1	8.0	10.2	20.4	28.4	31.8
132.5°	249.9	223.8	159.0	71.6	8.0	9.1	18.2	26.1	29.5
135°	234.0	212.4	147.7	67.0	8.0	9.1	17.0	25.0	27.3
137.5°	223.8	201.0	137.4	62.5	8.0	8.0	15.9	22.7	25.0
140°	206.7	188.5	126.1	57.9	8.0	8.0	14.8	21.6	22.7
142.5°	194.2	176.0	115.9	53.4	8.0	8.0	13.6	19.3	21.6
145°	179.5	163.6	104.5	48.8	8.0	6.8	12.5	18.2	19.3
147.5°	165.8	148.8	95.4	45.4	8.0	6.8	11.4	15.9	17.0
150°	152.2	134.0	86.3	42.0	8.0	6.8	10.2	13.6	15.9
152.5°	137.4	115.9	77.2	38.6	8.0	6.8	9.1	12.5	13.6
155°	122.7	101.1	69.3	35.2	9.1	6.8	8.0	10.2	12.5
157.5°	110.2	87.5	61.3	31.8	9.1	5.7	8.0	9.1	10.2
160°	95.4	75.0	54.5	28.4	9.1	5.7	6.8	8.0	9.1
162.5°	84.0	62.5	47.7	26.1	9.1	5.7	6.8	6.8	8.0
165°	71.6	52.2	39.8	23.9	9.1	5.7	5.7	5.7	6.8
167.5°	57.9	40.9	32.9	21.6	9.1	5.7	5.7	4.5	5.7
170°	43.2	30.7	27.3	19.3	9.1	5.7	4.5	3.4	4.5
172.5°	19.3	23.9	21.6	17.0	10.2	5.7	4.5	3.4	2.3
175°	10.2	17.0	17.0	14.8	10.2	5.7	4.5	3.4	1.1
177.5°	8.0	10.2	12.5	12.5	10.2	6.8	4.5	2.3	1.1
180°	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8



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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	21.28	22.76	21.78	23.26	23.80	20.25	21.73	20.75	22.23	22.77
	3H	23.36	24.71	23.88	25.22	25.81	22.12	23.47	22.64	23.98	24.56
	4H	24.31	25.58	24.85	26.11	26.71	22.87	24.14	23.41	24.67	25.27
	6H	25.23	26.41	25.78	26.96	27.57	23.50	24.69	24.05	25.23	25.84
	8H	25.66	26.79	26.22	27.36	27.97	23.76	24.89	24.32	25.46	26.07
	12H	26.08	27.17	26.65	27.73	28.37	23.99	25.08	24.56	25.63	26.28
4H	2H	21.77	23.05	22.31	23.58	24.17	20.81	22.09	21.35	22.62	23.21
	3H	24.09	25.17	24.64	25.74	26.36	22.87	23.96	23.42	24.53	25.15
	4H	25.20	26.19	25.77	26.77	27.42	23.72	24.72	24.30	25.30	25.95
	6H	26.30	27.18	26.89	27.79	28.45	24.48	25.36	25.07	25.96	26.63
	8H	26.83	27.66	27.43	28.26	28.93	24.80	25.62	25.39	26.23	26.90
	12H	27.36	28.11	27.98	28.74	29.42	25.09	25.84	25.71	26.47	27.15
8H	4H	25.45	26.28	26.05	26.88	27.56	24.06	24.89	24.66	25.49	26.17
	6H	26.74	27.44	27.37	28.08	28.76	24.95	25.65	25.58	26.29	26.97
	8H	27.41	28.04	28.05	28.69	29.38	25.35	25.98	25.99	26.63	27.32
	12H	28.11	28.67	28.75	29.32	30.07	25.74	26.30	26.38	26.94	27.70
12H	4H	25.47	26.22	26.09	26.85	27.53	24.13	24.88	24.75	25.51	26.19
	6H	26.79	27.43	27.43	28.08	28.77	25.06	25.69	25.70	26.34	27.04
	8H	27.53	28.10	28.18	28.74	29.50	25.52	26.08	26.16	26.73	27.48