

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: P893821

Luminaire Tested: 4MB-7HL-ASMF-UNV-L930

Issue Date: 11/11/2024

**Test Information**

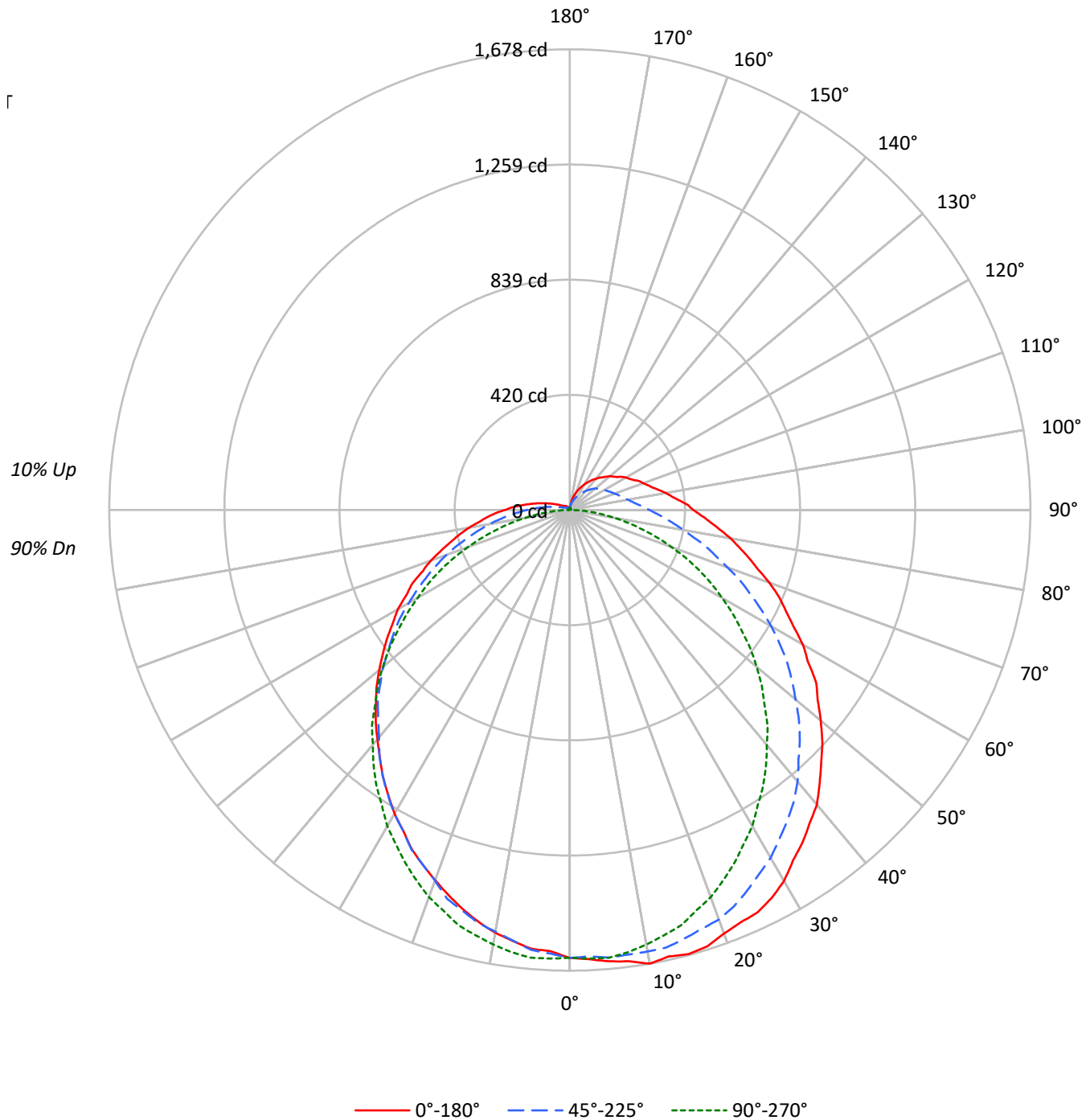
Test Method: LM-79-2019  
Report Number: P893821  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2407-185-1)  
Test Lab: INNOVATION CENTER  
Issue Date: 11/11/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: METALUX  
Catalog Number: 4MB-7HL-ASMF-UNV-L930  
Description: 7000 Lumen 4FT MICROBAY LINEAR BAY with FROSTED ASYMMETRIC LENS, 90CRI, 3000K CCT  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5608.0 lumens  
Efficiency: N/A  
Efficacy: 108.3 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): 51.8  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: 0.99  
Total Harmonic Distortion (THDi): 4  
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°	16611	16611	16611	16611	16611
5°	16821	16229	16072	15947	16355
10°	17253	15891	15342	15176	16079
15°	17507	15555	14661	14542	15741
20°	17591	15233	13885	13784	15372
25°	17911	14743	13070	13154	15093
30°	18021	14271	12293	12473	14752
35°	17977	13757	11478	11816	14435
40°	18138	13224	10641	11077	14124
45°	18085	12596	9816	10516	13951
50°	18223	11950	9024	9870	13838
55°	18626	11387	8115	9225	13790
60°	18937	10689	7184	8538	13974
65°	19592	9932	6240	7856	14289
70°	21194	9209	5115	7204	14777
75°	23812	8683	3912	6447	15799
80°	29594	8175	2620	5779	18553
85°	44244	8066	1315	5088	26017

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 90°  
 Luminance: 145688 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	154.8	2.8
10°-20°	443.6	7.9
20°-30°	668.9	11.9
30°-40°	802.8	14.3
40°-50°	835.9	14.9
50°-60°	774.9	13.8
60°-70°	638.2	11.4
70°-80°	460.3	8.2
80°-90°	292.2	5.2
90°-100°	180.2	3.2
100°-110°	120.1	2.1
110°-120°	85.5	1.5
120°-130°	62.7	1.1
130°-140°	43.1	0.8
140°-150°	26.2	0.5
150°-160°	13.0	0.2
160°-170°	4.8	0.1
170°-180°	0.8	0.0
0°-30°	1267.2	22.6
0°-40°	2070.0	36.9
0°-60°	3680.8	65.6
0°-90°	5071.6	90.4
90°-120°	385.8	6.9
90°-150°	517.9	9.2
90°-180°	536.0	9.6
0°-180°	5608.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1631	1631	1631	1631	1631	
5°	1650	1637	1637	1608	1604	158
15°	1674	1616	1566	1510	1506	472
25°	1617	1529	1418	1364	1363	744
35°	1478	1382	1227	1187	1187	926
45°	1295	1185	1002	989	999	1002
55°	1096	966	764	783	812	974
65°	868	726	520	574	633	864
75°	676	513	274	381	449	716
85°	515	349	72	220	303	437
90°	449	290	6	157	236	248
95°	400	246	4	105	182	318
105°	314	192	4	43	95	335
115°	258	159	5	20	46	258
125°	210	133	6	16	26	191
135°	168	106	6	12	20	132
145°	129	75	6	9	14	82
155°	88	50	6	6	9	42
165°	51	28	6	4	5	15
175°	7	12	7	3	1	1
180°	5	5	5	5	5	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
0°	1631.1	1631.1	1631.1	1631.1	1631.1	1631.1	1631.1	1631.1	1631.1
2.5°	1637.7	1642.5	1627.1	1636.8	1635.2	1636.8	1617.3	1633.6	1608.3
5°	1649.9	1652.3	1636.8	1642.5	1636.8	1623.0	1608.3	1602.6	1604.2
7.5°	1658.0	1671.1	1632.8	1634.4	1624.6	1609.9	1582.2	1587.1	1583.8
10°	1677.6	1662.9	1632.8	1625.4	1606.7	1591.2	1559.4	1561.8	1563.4
12.5°	1665.4	1662.1	1631.9	1605.0	1586.3	1573.2	1540.6	1532.4	1536.5
15°	1674.4	1660.5	1615.6	1594.4	1565.9	1543.0	1510.4	1504.7	1505.5
17.5°	1666.2	1654.8	1599.3	1570.0	1530.0	1516.1	1485.1	1475.4	1470.5
20°	1641.7	1636.0	1587.1	1536.5	1500.6	1473.7	1436.2	1430.5	1434.6
22.5°	1625.4	1611.6	1562.6	1512.1	1459.9	1436.2	1398.7	1397.9	1398.7
25°	1617.3	1599.3	1529.2	1476.2	1418.3	1397.1	1364.4	1352.2	1362.8
27.5°	1592.8	1576.5	1494.1	1436.2	1371.8	1343.2	1316.3	1313.9	1315.5
30°	1560.2	1528.4	1462.3	1391.4	1329.4	1300.0	1278.0	1261.7	1277.2
32.5°	1513.7	1495.7	1420.7	1343.2	1274.7	1254.3	1232.3	1230.7	1230.7
35°	1477.8	1464.8	1381.6	1300.8	1227.4	1199.7	1186.6	1180.9	1186.6
37.5°	1436.2	1416.6	1340.0	1249.4	1174.4	1150.8	1137.7	1132.8	1136.9
40°	1400.3	1364.4	1291.0	1196.4	1116.5	1095.3	1081.4	1086.3	1090.4
42.5°	1347.3	1326.9	1233.1	1142.6	1066.8	1043.9	1032.5	1036.6	1046.4
45°	1295.1	1276.4	1185.0	1086.3	1002.3	990.1	989.3	986.8	999.1
47.5°	1247.8	1220.9	1132.0	1030.9	948.5	934.6	936.3	944.4	955.0
50°	1193.2	1161.4	1073.3	971.3	889.0	880.0	886.5	892.2	906.1
52.5°	1138.5	1113.2	1019.5	915.1	828.6	822.1	831.1	849.8	858.0
55°	1096.1	1050.4	966.4	849.0	764.2	765.0	782.9	793.5	811.5
57.5°	1028.4	994.2	906.1	790.3	703.8	709.5	734.0	752.0	763.4
60°	980.3	937.1	847.4	727.5	640.2	649.2	676.9	703.8	723.4
62.5°	918.3	880.8	786.2	665.5	581.5	594.5	625.5	657.3	671.2
65°	867.8	825.4	725.9	603.5	520.3	535.8	574.2	610.0	632.9
67.5°	824.5	780.5	672.0	546.4	458.3	481.2	526.0	561.1	579.1
70°	773.2	721.8	610.9	482.8	393.9	420.8	477.9	518.7	539.1
72.5°	718.5	676.9	557.8	424.1	334.4	367.0	429.8	472.2	491.8
75°	676.1	629.6	513.0	365.4	274.0	313.2	380.9	429.0	448.6
77.5°	632.9	590.5	462.4	311.5	220.2	264.2	337.6	390.7	411.0
80°	594.5	545.6	420.0	267.5	163.9	216.1	296.9	349.1	372.7
82.5°	552.1	509.7	383.3	221.0	116.6	172.1	256.9	314.0	333.6
85°	514.6	470.6	349.1	184.3	71.8	132.9	220.2	278.9	302.6
87.5°	480.4	443.7	317.3	156.6	35.9	101.1	185.1	244.7	271.6
90°	449.4	407.8	290.3	131.3	6.5	73.4	156.6	215.3	235.7
92.5°	429.8	380.1	268.3	115.0	4.1	52.2	130.5	188.4	212.0
95°	400.4	356.4	245.5	102.8	4.1	35.1	105.2	161.5	181.9
97.5°	375.2	334.4	229.2	95.4	3.3	23.7	86.4	135.4	156.6
100°	355.6	317.3	214.5	88.9	4.1	17.1	68.5	115.0	133.8
102.5°	333.6	298.5	203.1	84.8	4.1	12.2	53.8	97.1	114.2
105°	314.0	283.0	192.5	80.7	4.1	10.6	43.2	79.9	95.4
107.5°	299.3	266.7	183.5	78.3	4.1	10.6	34.3	65.2	78.3
110°	284.6	253.6	174.5	75.8	4.1	9.8	26.9	53.8	65.2



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
112.5°	274.8	241.4	166.4	73.4	4.9	9.8	22.0	44.9	53.8
115°	257.7	230.8	159.0	72.6	4.9	9.0	20.4	36.7	45.7
117.5°	245.5	221.0	151.7	70.1	4.9	9.0	19.6	30.2	36.7
120°	236.5	209.6	145.2	67.7	4.9	8.2	17.9	26.9	31.0
122.5°	225.1	199.0	139.5	66.1	4.9	8.2	17.1	25.3	27.7
125°	209.6	189.2	132.9	62.8	5.7	8.2	16.3	23.7	26.1
127.5°	199.8	180.2	128.0	58.7	5.7	7.3	15.5	22.0	24.5
130°	191.7	170.5	122.3	54.6	5.7	7.3	14.7	20.4	22.8
132.5°	179.4	160.7	114.2	51.4	5.7	6.5	13.0	18.8	21.2
135°	168.0	152.5	106.0	48.1	5.7	6.5	12.2	17.9	19.6
137.5°	160.7	144.4	98.7	44.9	5.7	5.7	11.4	16.3	17.9
140°	148.4	135.4	90.5	41.6	5.7	5.7	10.6	15.5	16.3
142.5°	139.5	126.4	83.2	38.3	5.7	5.7	9.8	13.9	15.5
145°	128.9	117.4	75.0	35.1	5.7	4.9	9.0	13.0	13.9
147.5°	119.1	106.8	68.5	32.6	5.7	4.9	8.2	11.4	12.2
150°	109.3	96.2	62.0	30.2	5.7	4.9	7.3	9.8	11.4
152.5°	98.7	83.2	55.5	27.7	5.7	4.9	6.5	9.0	9.8
155°	88.1	72.6	49.7	25.3	6.5	4.9	5.7	7.3	9.0
157.5°	79.1	62.8	44.0	22.8	6.5	4.1	5.7	6.5	7.3
160°	68.5	53.8	39.1	20.4	6.5	4.1	4.9	5.7	6.5
162.5°	60.4	44.9	34.3	18.8	6.5	4.1	4.9	4.9	5.7
165°	51.4	37.5	28.5	17.1	6.5	4.1	4.1	4.1	4.9
167.5°	41.6	29.4	23.7	15.5	6.5	4.1	4.1	3.3	4.1
170°	31.0	22.0	19.6	13.9	6.5	4.1	3.3	2.4	3.3
172.5°	13.9	17.1	15.5	12.2	7.3	4.1	3.3	2.4	1.6
175°	7.3	12.2	12.2	10.6	7.3	4.1	3.3	2.4	0.8
177.5°	5.7	7.3	9.0	9.0	7.3	4.9	3.3	1.6	0.8
180°	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9



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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	20.13	21.61	20.63	22.11	22.65	19.10	20.58	19.60	21.08	21.62
	3H	22.21	23.56	22.73	24.07	24.66	20.97	22.32	21.49	22.83	23.41
	4H	23.16	24.43	23.70	24.96	25.56	21.72	22.99	22.25	23.52	24.12
	6H	24.08	25.26	24.63	25.80	26.42	22.35	23.54	22.90	24.08	24.69
	8H	24.50	25.64	25.07	26.21	26.82	22.60	23.74	23.17	24.31	24.92
	12H	24.93	26.02	25.50	26.57	27.22	22.83	23.93	23.41	24.48	25.13
4H	2H	20.62	21.90	21.16	22.42	23.02	19.66	20.94	20.20	21.47	22.06
	3H	22.93	24.02	23.49	24.59	25.21	21.72	22.81	22.27	23.38	24.00
	4H	24.05	25.04	24.62	25.62	26.27	22.57	23.57	23.15	24.15	24.80
	6H	25.15	26.03	25.74	26.63	27.30	23.33	24.21	23.92	24.81	25.47
	8H	25.68	26.51	26.28	27.11	27.78	23.64	24.47	24.24	25.07	25.75
	12H	26.21	26.96	26.83	27.59	28.27	23.94	24.69	24.56	25.32	26.00
8H	4H	24.30	25.13	24.90	25.73	26.41	22.91	23.74	23.51	24.34	25.02
	6H	25.59	26.29	26.21	26.93	27.61	23.80	24.50	24.43	25.14	25.82
	8H	26.26	26.89	26.90	27.54	28.23	24.20	24.83	24.84	25.48	26.17
	12H	26.96	27.52	27.60	28.16	28.92	24.58	25.15	25.23	25.79	26.55
12H	4H	24.32	25.07	24.94	25.70	26.38	22.98	23.73	23.60	24.36	25.04
	6H	25.64	26.27	26.28	26.93	27.62	23.91	24.54	24.55	25.19	25.88
	8H	26.38	26.95	27.03	27.59	28.35	24.37	24.93	25.01	25.58	26.33