

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: P894079

Luminaire Tested: 4MB-9HL-RNDU-UNV-L940

Issue Date: 11/11/2024

**Test Information**

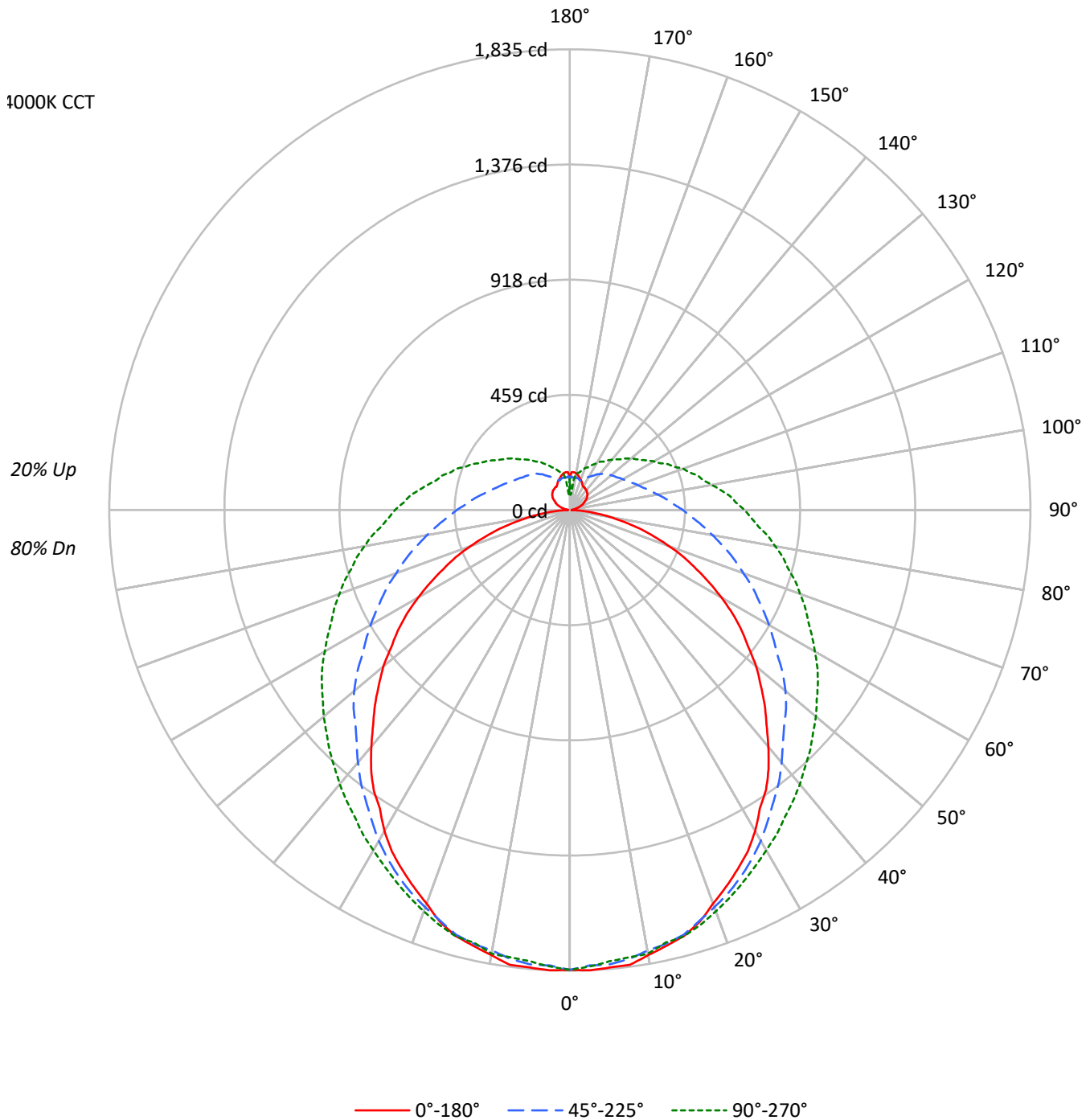
Test Method: LM-79-2019  
Report Number: P894079  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2403-334-3)  
Test Lab: INNOVATION CENTER  
Issue Date: 11/11/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: METALUX  
Catalog Number: 4MB-9HL-RNDU-UNV-L940  
Description: 9000 Lumen 4FT MICROBAY LINEAR BAY with ROUND FROSTED LENS WITH UPLIGHT, 90CRI, 4  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 7698.0 lumens  
Efficiency: N/A  
Efficacy: 119.5 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.28 / 1.37  
Luminous Opening: Rectangular w/ Sides (W: 0.38' x L: 3.98' x H: 0.21')  
CIE Type: Semi-Direct  
  
Input Watts (W): 64.4  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): 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

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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	114	114	114	114	109	109	109	109	100	100	100	91	91	91	83	83	83	83	83	83	80
1	102	96	91	86	97	92	87	83	84	80	77	76	73	71	69	67	65	65	65	65	61
2	92	82	75	68	87	79	72	66	72	66	61	66	61	57	60	56	53	53	53	53	49
3	83	72	63	56	79	69	61	54	63	56	51	57	52	47	52	48	44	44	44	44	41
4	76	63	54	47	72	60	52	45	55	48	43	51	45	40	46	41	37	37	37	37	34
5	69	56	47	40	66	54	45	39	49	42	37	45	39	34	41	36	32	32	32	32	29
6	64	50	41	35	61	48	40	34	44	37	32	41	35	30	38	32	28	28	28	28	26
7	59	46	37	30	56	44	35	30	40	33	28	37	31	26	34	29	25	25	25	25	23
8	55	41	33	27	52	40	32	26	37	30	25	34	28	24	31	26	22	22	22	22	20
9	51	38	30	24	49	37	29	23	34	27	22	31	25	21	29	24	20	20	20	20	18
10	48	35	27	22	46	34	26	21	31	25	20	29	23	19	27	22	18	18	18	18	16

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

	0°	45°	90°
0°	13029	13029	13029
5°	13004	12511	12298
10°	12889	11978	11821
15°	12759	11583	11288
20°	12396	11042	10738
25°	12111	10564	10220
30°	11777	10042	9767
35°	11413	9477	9373
40°	10943	8992	9071
45°	10498	8529	8801
50°	10105	8243	8573
55°	9645	7799	8395
60°	9099	7517	8233
65°	8417	7266	8109
70°	7655	7061	8104
75°	6664	6984	8127
80°	5241	6946	8285
85°	3452	7101	8473

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 10498 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	173.4	2.3
10°-20°	495.3	6.4
20°-30°	743.8	9.7
30°-40°	893.2	11.6
40°-50°	944.8	12.3
50°-60°	910.5	11.8
60°-70°	807.7	10.5
70°-80°	662.4	8.6
80°-90°	512.7	6.7
90°-100°	400.0	5.2
100°-110°	318.4	4.1
110°-120°	254.5	3.3
120°-130°	200.7	2.6
130°-140°	153.2	2.0
140°-150°	107.7	1.4
150°-160°	68.9	0.9
160°-170°	38.6	0.5
170°-180°	12.2	0.2
0°-30°	1412.5	18.3
0°-40°	2305.7	30.0
0°-60°	4160.9	54.1
0°-90°	6143.8	79.8
90°-120°	972.9	12.6
90°-150°	1434.5	18.6
90°-180°	1554.0	20.2
0°-180°	7698.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1831	1831	1831	1831	1831	
5°	1829	1834	1817	1830	1804	174
15°	1756	1757	1751	1763	1757	494
25°	1580	1606	1612	1640	1634	728
35°	1362	1383	1415	1474	1493	849
45°	1098	1131	1208	1322	1354	847
55°	836	878	1010	1147	1206	746
65°	556	633	824	996	1048	553
75°	290	417	656	834	900	307
85°	68	254	509	692	754	76
90°	7	202	451	627	696	7
95°	9	167	398	572	640	9
105°	31	135	318	468	528	33
115°	59	132	264	382	431	58
125°	83	134	227	313	347	73
135°	97	130	204	265	286	75
145°	106	120	168	222	236	66
155°	117	123	138	174	195	54
165°	138	135	130	127	158	39
175°	152	146	130	106	68	14
180°	124	124	124	124	124	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1831.2	1831.2	1831.2	1831.2	1831.2
2.5°	1835.3	1841.4	1815.8	1831.2	1819.9
5°	1829.1	1834.2	1816.8	1830.2	1804.5
7.5°	1827.1	1825.0	1803.5	1820.9	1797.4
10°	1800.5	1807.6	1782.0	1805.6	1794.3
12.5°	1777.9	1792.3	1769.7	1788.2	1764.6
15°	1756.4	1757.4	1751.3	1762.6	1757.4
17.5°	1720.6	1729.8	1715.4	1741.0	1731.8
20°	1668.3	1697.0	1683.7	1707.3	1701.1
22.5°	1625.3	1639.7	1650.9	1677.6	1669.4
25°	1580.3	1605.9	1612.0	1639.7	1634.5
27.5°	1534.2	1545.4	1569.0	1598.7	1599.7
30°	1476.8	1489.1	1521.9	1555.7	1564.9
32.5°	1409.2	1448.1	1467.6	1518.8	1533.1
35°	1362.1	1382.6	1415.4	1473.7	1493.2
37.5°	1300.7	1324.2	1368.3	1436.9	1460.4
40°	1230.0	1264.8	1313.0	1398.0	1425.6
42.5°	1159.3	1200.3	1256.6	1356.0	1387.7
45°	1097.9	1130.7	1207.5	1322.2	1353.9
47.5°	1031.3	1071.3	1168.6	1278.1	1314.0
50°	969.9	1010.8	1121.4	1237.2	1280.2
52.5°	896.1	943.2	1070.2	1190.1	1240.2
55°	835.7	877.7	1009.8	1147.0	1206.4
57.5°	769.1	816.2	962.7	1115.3	1169.6
60°	697.4	756.8	916.6	1075.4	1127.6
62.5°	626.8	697.4	869.5	1036.4	1087.6
65°	556.1	632.9	824.4	995.5	1047.7
67.5°	492.6	575.6	783.5	950.4	1014.9
70°	420.9	520.3	735.3	908.4	976.0
72.5°	353.3	470.1	696.4	874.6	942.2
75°	289.8	416.8	656.5	833.7	900.2
77.5°	226.3	366.6	614.5	796.8	869.5
80°	165.9	325.7	577.6	760.9	830.6
82.5°	114.7	289.8	541.8	731.2	796.8
85°	67.6	254.0	509.0	692.3	753.8
87.5°	30.7	225.3	475.2	662.6	723.0
90°	7.2	201.8	450.6	626.8	696.4
92.5°	7.2	183.3	420.9	600.2	663.6
95°	9.2	166.9	398.4	572.5	640.1
97.5°	12.3	154.6	377.9	546.9	606.3
100°	17.4	146.5	355.4	517.2	575.6
102.5°	23.6	140.3	334.9	490.6	544.8
105°	30.7	135.2	318.5	468.0	528.5
107.5°	37.9	133.1	302.1	446.5	497.7
110°	45.1	132.1	289.8	424.0	481.3



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	52.2	131.1	276.5	403.5	449.6
115°	59.4	132.1	264.2	382.0	431.2
117.5°	63.5	132.1	253.0	363.6	404.5
120°	69.6	133.1	244.8	344.1	387.1
122.5°	75.8	133.1	236.6	329.8	367.7
125°	83.0	134.2	227.4	313.4	347.2
127.5°	87.1	134.2	222.2	302.1	332.8
130°	91.1	133.1	215.1	287.8	319.5
132.5°	95.2	131.1	211.0	274.5	304.2
135°	97.3	130.1	203.8	265.3	285.7
137.5°	100.4	127.0	196.6	251.9	274.5
140°	103.4	126.0	186.4	241.7	261.2
142.5°	103.4	122.9	179.2	232.5	249.9
145°	105.5	119.8	168.0	222.2	235.6
147.5°	107.5	118.8	159.8	212.0	228.4
150°	107.5	117.8	152.6	200.7	216.1
152.5°	109.6	118.8	145.4	190.5	204.8
155°	116.8	122.9	138.3	174.1	194.6
157.5°	122.9	127.0	131.1	161.8	183.3
160°	128.0	130.1	124.9	149.5	178.2
162.5°	132.1	133.1	126.0	138.3	166.9
165°	138.3	135.2	130.1	127.0	157.7
167.5°	143.4	137.2	132.1	123.9	150.5
170°	147.5	141.3	130.1	116.8	147.5
172.5°	150.5	142.4	131.1	109.6	123.9
175°	151.6	146.5	130.1	106.5	67.6
177.5°	150.5	147.5	134.2	105.5	60.4
180°	123.9	123.9	123.9	123.9	123.9



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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	15.96	17.28	16.60	17.94	18.71	19.37	20.69	20.01	21.35	22.12
	3H	17.41	18.61	18.07	19.29	20.09	22.21	23.41	22.86	24.08	24.88
	4H	17.89	19.03	18.56	19.71	20.52	23.66	24.80	24.33	25.48	26.29
	6H	18.16	19.23	18.85	19.92	20.75	25.22	26.28	25.90	26.97	27.80
	8H	18.22	19.24	18.92	19.96	20.79	26.03	27.05	26.73	27.77	28.60
	12H	18.24	19.22	18.94	19.93	20.79	26.91	27.89	27.62	28.60	29.46
4H	2H	17.10	18.24	17.77	18.92	19.74	19.71	20.85	20.38	21.54	22.35
	3H	18.80	19.78	19.49	20.50	21.33	22.78	23.76	23.47	24.48	25.31
	4H	19.40	20.30	20.10	21.03	21.89	24.41	25.32	25.12	26.04	26.90
	6H	19.81	20.61	20.53	21.36	22.22	26.17	26.97	26.89	27.72	28.59
	8H	19.92	20.68	20.65	21.42	22.30	27.11	27.86	27.83	28.60	29.48
	12H	19.98	20.67	20.73	21.44	22.32	28.12	28.80	28.86	29.57	30.46
8H	4H	20.43	21.19	21.16	21.93	22.81	24.60	25.35	25.32	26.09	26.97
	6H	21.08	21.72	21.83	22.51	23.39	26.54	27.18	27.29	27.96	28.84
	8H	21.31	21.89	22.07	22.67	23.57	27.62	28.20	28.38	28.98	29.88
	12H	21.45	21.97	22.22	22.75	23.70	28.82	29.34	29.59	30.12	31.07
12H	4H	20.76	21.45	21.51	22.22	23.10	24.59	25.28	25.34	26.05	26.93
	6H	21.57	22.15	22.33	22.93	23.83	26.57	27.15	27.33	27.94	28.83
	8H	21.92	22.44	22.68	23.21	24.17	27.71	28.23	28.48	29.01	29.96