

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: P894073

Luminaire Tested: 4MB-9HL-RNDU-UNV-L830

Issue Date: 11/11/2024

**Test Information**

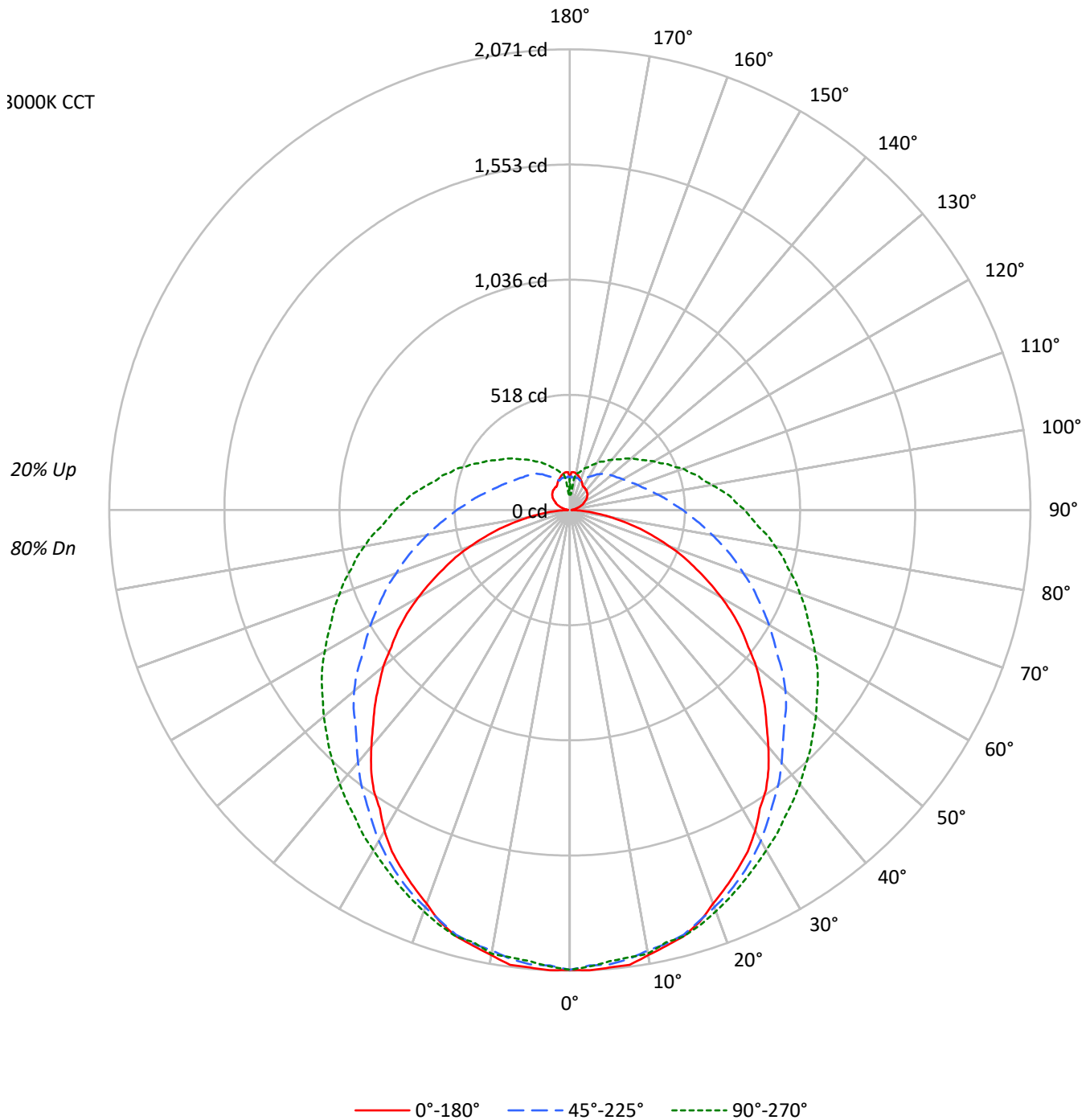
Test Method: LM-79-2019  
Report Number: P894073  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2403-334-3)  
Test Lab: INNOVATION CENTER  
Issue Date: 11/11/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: METALUX  
Catalog Number: 4MB-9HL-RNDU-UNV-L830  
Description: 9000 Lumen 4FT MICROBAY LINEAR BAY with ROUND FROSTED LENS WITH UPLIGHT, 80CRI, 5  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 8688.0 lumens  
Efficiency: N/A  
Efficacy: 134.9 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°	14705	14705	14705
5°	14677	14121	13880
10°	14546	13519	13342
15°	14400	13072	12740
20°	13990	12462	12120
25°	13668	11923	11535
30°	13291	11334	11023
35°	12880	10696	10579
40°	12351	10148	10237
45°	11848	9626	9933
50°	11404	9304	9675
55°	10886	8802	9475
60°	10269	8484	9291
65°	9499	8201	9152
70°	8640	7970	9146
75°	7522	7882	9173
80°	5914	7839	9351
85°	3897	8015	9562

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 11848 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	195.7	2.3
10°-20°	559.1	6.4
20°-30°	839.4	9.7
30°-40°	1008.1	11.6
40°-50°	1066.2	12.3
50°-60°	1027.6	11.8
60°-70°	911.6	10.5
70°-80°	747.6	8.6
80°-90°	578.7	6.7
90°-100°	451.4	5.2
100°-110°	359.4	4.1
110°-120°	287.2	3.3
120°-130°	226.5	2.6
130°-140°	172.9	2.0
140°-150°	121.6	1.4
150°-160°	77.7	0.9
160°-170°	43.5	0.5
170°-180°	13.8	0.2
0°-30°	1594.2	18.3
0°-40°	2602.2	30.0
0°-60°	4696.0	54.1
0°-90°	6933.9	79.8
90°-120°	1098.1	12.6
90°-150°	1619.0	18.6
90°-180°	1754.0	20.2
0°-180°	8688.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2067	2067	2067	2067	2067	
5°	2064	2070	2050	2066	2037	196
15°	1982	1984	1976	1989	1984	557
25°	1784	1812	1819	1850	1845	822
35°	1537	1560	1597	1663	1685	958
45°	1239	1276	1363	1492	1528	956
55°	943	991	1140	1295	1362	842
65°	628	714	930	1124	1182	624
75°	327	470	741	941	1016	346
85°	76	287	574	781	851	86
90°	8	228	509	707	786	8
95°	10	188	450	646	722	10
105°	35	153	360	528	596	37
115°	67	149	298	431	487	65
125°	94	151	257	354	392	82
135°	110	147	230	299	322	85
145°	119	135	190	251	266	75
155°	132	139	156	196	220	61
165°	156	153	147	143	178	44
175°	171	165	147	120	76	16
180°	140	140	140	140	140	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2066.7	2066.7	2066.7	2066.7	2066.7
2.5°	2071.3	2078.2	2049.3	2066.7	2054.0
5°	2064.4	2070.1	2050.5	2065.5	2036.6
7.5°	2062.0	2059.7	2035.5	2055.1	2028.5
10°	2032.0	2040.1	2011.2	2037.8	2025.1
12.5°	2006.6	2022.8	1997.3	2018.1	1991.5
15°	1982.3	1983.5	1976.5	1989.2	1983.5
17.5°	1941.8	1952.2	1936.1	1965.0	1954.6
20°	1882.9	1915.3	1900.2	1926.8	1919.9
22.5°	1834.3	1850.5	1863.2	1893.3	1884.0
25°	1783.5	1812.4	1819.3	1850.5	1844.7
27.5°	1731.5	1744.2	1770.8	1804.3	1805.4
30°	1666.7	1680.6	1717.6	1755.7	1766.1
32.5°	1590.5	1634.4	1656.3	1714.1	1730.3
35°	1537.3	1560.4	1597.4	1663.3	1685.2
37.5°	1467.9	1494.5	1544.2	1621.7	1648.3
40°	1388.2	1427.5	1481.8	1577.7	1609.0
42.5°	1308.4	1354.7	1418.2	1530.4	1566.2
45°	1239.1	1276.1	1362.8	1492.2	1528.0
47.5°	1163.9	1209.0	1318.8	1442.5	1483.0
50°	1094.6	1140.8	1265.7	1396.3	1444.8
52.5°	1011.4	1064.5	1207.9	1343.1	1399.7
55°	943.2	990.6	1139.7	1294.6	1361.6
57.5°	868.0	921.2	1086.5	1258.7	1320.0
60°	787.1	854.2	1034.5	1213.7	1272.6
62.5°	707.4	787.1	981.3	1169.7	1227.5
65°	627.6	714.3	930.5	1123.5	1182.4
67.5°	556.0	649.6	884.2	1072.6	1145.5
70°	475.1	587.2	829.9	1025.2	1101.5
72.5°	398.8	530.5	786.0	987.1	1063.4
75°	327.1	470.4	740.9	940.9	1016.0
77.5°	255.4	413.8	693.5	899.3	981.3
80°	187.2	367.6	651.9	858.8	937.4
82.5°	129.5	327.1	611.4	825.3	899.3
85°	76.3	286.7	574.5	781.4	850.7
87.5°	34.7	254.3	536.3	747.8	816.0
90°	8.1	227.7	508.6	707.4	786.0
92.5°	8.1	206.9	475.1	677.3	749.0
95°	10.4	188.4	449.6	646.1	722.4
97.5°	13.9	174.5	426.5	617.2	684.3
100°	19.6	165.3	401.1	583.7	649.6
102.5°	26.6	158.4	378.0	553.7	614.9
105°	34.7	152.6	359.5	528.2	596.4
107.5°	42.8	150.3	341.0	504.0	561.7
110°	50.9	149.1	327.1	478.5	543.3



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	58.9	147.9	312.1	455.4	507.4
115°	67.0	149.1	298.2	431.1	486.6
117.5°	71.7	149.1	285.5	410.3	456.6
120°	78.6	150.3	276.2	388.4	436.9
122.5°	85.5	150.3	267.0	372.2	415.0
125°	93.6	151.4	256.6	353.7	391.8
127.5°	98.2	151.4	250.8	341.0	375.7
130°	102.9	150.3	242.7	324.8	360.6
132.5°	107.5	147.9	238.1	309.8	343.3
135°	109.8	146.8	230.0	299.4	322.5
137.5°	113.3	143.3	221.9	284.3	309.8
140°	116.7	142.2	210.4	272.8	294.7
142.5°	116.7	138.7	202.3	262.4	282.0
145°	119.1	135.2	189.6	250.8	265.8
147.5°	121.4	134.1	180.3	239.3	257.8
150°	121.4	132.9	172.2	226.5	243.9
152.5°	123.7	134.1	164.1	215.0	231.2
155°	131.8	138.7	156.0	196.5	219.6
157.5°	138.7	143.3	147.9	182.6	206.9
160°	144.5	146.8	141.0	168.8	201.1
162.5°	149.1	150.3	142.2	156.0	188.4
165°	156.0	152.6	146.8	143.3	178.0
167.5°	161.8	154.9	149.1	139.9	169.9
170°	166.4	159.5	146.8	131.8	166.4
172.5°	169.9	160.7	147.9	123.7	139.9
175°	171.1	165.3	146.8	120.2	76.3
177.5°	169.9	166.4	151.4	119.1	68.2
180°	139.9	139.9	139.9	139.9	139.9



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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	16.38	17.70	17.02	18.36	19.13	19.79	21.11	20.43	21.77	22.54
	3H	17.83	19.04	18.49	19.71	20.51	22.63	23.83	23.28	24.50	25.30
	4H	18.31	19.45	18.98	20.13	20.94	24.08	25.22	24.75	25.90	26.71
	6H	18.58	19.65	19.27	20.34	21.17	25.64	26.70	26.32	27.39	28.22
	8H	18.64	19.66	19.34	20.38	21.21	26.45	27.47	27.15	28.19	29.02
	12H	18.66	19.64	19.36	20.35	21.21	27.33	28.31	28.04	29.02	29.88
4H	2H	17.52	18.66	18.19	19.35	20.16	20.13	21.27	20.80	21.96	22.77
	3H	19.22	20.20	19.91	20.92	21.75	23.20	24.18	23.89	24.90	25.73
	4H	19.82	20.73	20.52	21.45	22.31	24.83	25.74	25.54	26.46	27.32
	6H	20.23	21.03	20.95	21.78	22.64	26.60	27.39	27.31	28.14	29.01
	8H	20.34	21.10	21.07	21.84	22.72	27.53	28.28	28.25	29.02	29.90
	12H	20.40	21.09	21.15	21.86	22.74	28.54	29.22	29.28	29.99	30.88
8H	4H	20.85	21.61	21.58	22.35	23.23	25.02	25.77	25.74	26.51	27.39
	6H	21.50	22.14	22.25	22.93	23.81	26.96	27.60	27.71	28.38	29.27
	8H	21.73	22.31	22.49	23.09	23.99	28.04	28.62	28.80	29.40	30.30
	12H	21.88	22.39	22.64	23.17	24.12	29.24	29.76	30.01	30.54	31.49
12H	4H	21.18	21.87	21.93	22.64	23.52	25.01	25.70	25.76	26.47	27.35
	6H	21.99	22.57	22.75	23.35	24.25	26.99	27.57	27.75	28.36	29.25
	8H	22.34	22.86	23.11	23.63	24.59	28.13	28.65	28.90	29.43	30.38