

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: P894025

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

Issue Date: 11/11/2024

**Test Information**

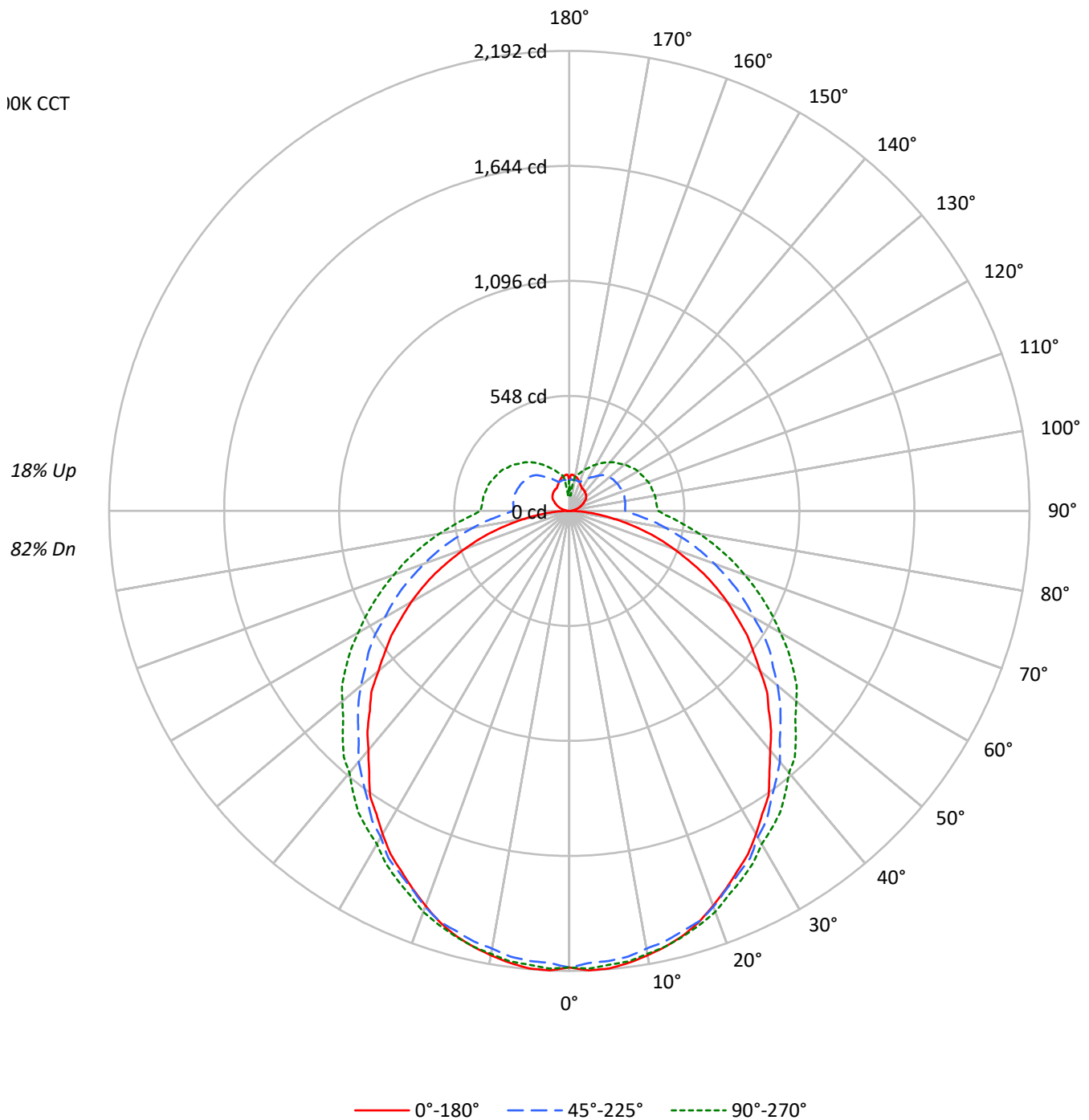
Test Method: LM-79-2019  
Report Number: P894025  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2403-334-6)  
Test Lab: INNOVATION CENTER  
Issue Date: 11/11/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: METALUX  
Catalog Number: 4MB-9HL-FLTU-UNV-L830  
Description: 9000 Lumen 4FT MICROBAY LINEAR BAY with FLAT FROSTED LENS WITH UPLIGHT, 80CRI, 300  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 8179.0 lumens  
Efficiency: N/A  
Efficacy: 127.0 lumens/watt  
Spacing Criteria (0/90/45): 1.22 / 1.26 / 1.36  
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	115	115	115	115	110	110	110	110	101	101	101	93	93	93	86	86	86	86	86	86	82
1	103	98	93	89	99	94	90	86	87	83	80	80	77	74	73	71	69	69	69	69	66
2	93	85	77	71	89	81	75	69	75	70	65	69	65	61	63	60	57	57	57	57	54
3	85	74	66	59	81	71	63	57	66	59	54	60	55	51	56	51	48	48	48	48	45
4	78	65	56	49	74	63	55	48	58	51	46	54	48	43	50	45	41	41	41	41	38
5	71	58	49	42	68	56	48	41	52	45	39	48	42	37	44	39	35	35	35	35	33
6	66	52	43	37	63	50	42	36	47	40	34	43	37	33	40	35	31	31	31	31	28
7	61	47	38	32	58	46	37	32	42	35	30	39	33	29	37	31	27	27	27	27	25
8	56	43	34	29	54	42	34	28	39	32	27	36	30	26	34	28	24	24	24	24	22
9	53	39	31	26	50	38	30	25	36	29	24	33	27	23	31	26	22	22	22	22	20
10	49	36	28	23	47	35	28	23	33	26	22	31	25	21	29	24	20	20	20	20	18

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

	0°	45°	90°
0°	15479	15479	15479
5°	15558	14822	14796
10°	15392	14234	14120
15°	15215	13716	13476
20°	14876	13169	12836
25°	14511	12500	12129
30°	14178	11846	11443
35°	13870	11223	11001
40°	13247	10688	10363
45°	12843	10052	9919
50°	12369	9517	9451
55°	11941	9008	9034
60°	11342	8314	8474
65°	10656	7753	7945
70°	9628	7060	7371
75°	8534	6370	6825
80°	6758	5616	6272
85°	4663	4887	5756

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 12843 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	206.1	2.5
10°-20°	588.5	7.2
20°-30°	884.0	10.8
30°-40°	1059.4	13.0
40°-50°	1110.7	13.6
50°-60°	1042.0	12.7
60°-70°	865.5	10.6
70°-80°	618.8	7.6
80°-90°	367.0	4.5
90°-100°	269.2	3.3
100°-110°	265.2	3.2
110°-120°	247.4	3.0
120°-130°	217.1	2.7
130°-140°	174.8	2.1
140°-150°	125.5	1.5
150°-160°	79.7	1.0
160°-170°	44.2	0.5
170°-180°	13.9	0.2
0°-30°	1678.5	20.5
0°-40°	2737.9	33.5
0°-60°	4890.6	59.8
0°-90°	6741.9	82.4
90°-120°	781.9	9.6
90°-150°	1299.3	15.9
90°-180°	1437.0	17.6
0°-180°	8179.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2176	2176	2176	2176	2176	
5°	2188	2184	2152	2163	2171	208
15°	2095	2082	2074	2089	2098	590
25°	1894	1911	1907	1929	1940	874
35°	1655	1661	1676	1725	1752	1027
45°	1343	1381	1423	1517	1526	1039
55°	1035	1068	1166	1261	1298	920
65°	704	757	880	998	1026	694
75°	371	457	599	722	756	392
85°	91	200	350	468	512	100
90°	4	121	267	382	423	7
95°	10	127	267	377	416	11
105°	37	140	272	372	407	39
115°	67	151	266	354	388	66
125°	96	156	258	328	358	84
135°	111	150	239	297	321	86
145°	120	139	196	261	280	76
155°	132	139	161	202	229	61
165°	157	153	148	147	184	44
175°	173	166	149	124	75	16
180°	143	143	143	143	143	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2175.5	2175.5	2175.5	2175.5	2175.5
2.5°	2191.7	2174.4	2155.9	2183.6	2182.5
5°	2188.3	2183.6	2152.4	2162.8	2170.9
7.5°	2172.1	2160.5	2142.0	2167.5	2165.1
10°	2150.1	2136.2	2117.7	2132.8	2143.2
12.5°	2125.8	2114.3	2101.6	2117.7	2124.7
15°	2094.6	2081.9	2073.8	2088.8	2098.1
17.5°	2054.2	2050.7	2051.9	2053.0	2068.0
20°	2002.1	2004.5	2007.9	2028.7	2033.4
22.5°	1949.0	1961.7	1952.4	1984.8	1982.5
25°	1893.5	1910.8	1907.4	1929.3	1939.7
27.5°	1843.8	1844.9	1865.7	1897.0	1893.5
30°	1777.9	1797.5	1795.2	1833.4	1833.4
32.5°	1710.8	1739.7	1749.0	1782.5	1794.1
35°	1655.4	1661.1	1676.2	1724.7	1752.5
37.5°	1565.2	1592.9	1617.2	1680.8	1691.2
40°	1488.9	1516.6	1560.6	1634.5	1628.8
42.5°	1423.0	1451.9	1484.3	1569.8	1590.6
45°	1343.2	1381.4	1423.0	1516.6	1525.9
47.5°	1278.5	1308.6	1362.9	1448.4	1460.0
50°	1187.2	1235.7	1294.7	1394.1	1411.4
52.5°	1106.3	1147.9	1223.0	1325.9	1365.2
55°	1034.6	1068.1	1166.4	1261.2	1298.2
57.5°	946.7	993.0	1095.9	1201.1	1234.6
60°	869.3	914.4	1013.8	1134.0	1160.6
62.5°	787.2	840.4	947.9	1064.7	1094.7
65°	704.0	757.2	879.7	997.6	1026.5
67.5°	613.8	679.7	804.6	927.1	957.1
70°	529.4	601.1	735.2	857.7	887.8
72.5°	453.1	530.6	667.0	793.0	825.4
75°	371.1	456.6	598.8	722.5	756.0
77.5°	291.3	383.8	528.3	653.1	692.4
80°	213.9	315.6	467.0	587.2	628.8
82.5°	150.3	254.3	410.4	528.3	566.4
85°	91.3	200.0	350.3	468.2	512.1
87.5°	40.5	154.9	302.9	419.6	458.9
90°	3.5	121.4	267.0	381.5	423.1
92.5°	6.9	123.7	265.9	376.8	418.5
95°	10.4	127.2	267.0	376.8	416.2
97.5°	15.0	131.8	269.3	376.8	415.0
100°	22.0	134.1	270.5	376.8	415.0
102.5°	28.9	137.6	269.3	371.1	410.4
105°	37.0	139.9	271.7	372.2	406.9
107.5°	45.1	142.2	271.7	366.4	405.7
110°	53.2	145.7	269.3	363.0	401.1



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	60.1	149.1	268.2	356.0	393.0
115°	67.0	151.4	265.9	353.7	388.4
117.5°	74.0	152.6	264.7	347.9	381.5
120°	79.8	154.9	262.4	341.0	378.0
122.5°	86.7	156.1	258.9	334.1	371.1
125°	95.9	156.1	257.8	328.3	358.4
127.5°	100.6	157.2	253.2	321.4	352.6
130°	105.2	153.7	250.8	313.3	343.3
132.5°	108.7	152.6	245.1	305.2	331.8
135°	111.0	150.3	239.3	297.1	321.4
137.5°	114.4	146.8	231.2	291.3	314.4
140°	116.8	144.5	219.6	279.7	302.9
142.5°	119.1	141.0	208.1	269.3	291.3
145°	120.2	138.7	196.5	261.2	279.7
147.5°	123.7	135.2	189.6	250.8	267.0
150°	122.5	132.9	179.2	238.1	254.3
152.5°	126.0	136.4	169.9	220.8	243.9
155°	131.8	138.7	160.7	202.3	228.9
157.5°	137.6	143.3	153.7	186.1	217.3
160°	145.7	145.7	145.7	173.4	208.1
162.5°	150.3	150.3	146.8	158.4	195.4
165°	157.2	152.6	148.0	146.8	183.8
167.5°	164.1	154.9	150.3	142.2	175.7
170°	165.3	158.4	149.1	134.1	169.9
172.5°	169.9	161.8	148.0	127.2	131.8
175°	173.4	166.5	149.1	123.7	75.1
177.5°	172.2	166.5	152.6	123.7	72.8
180°	143.3	143.3	143.3	143.3	143.3



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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	17.24	18.57	17.85	19.19	19.91	19.75	21.08	20.37	21.71	22.42
	3H	18.67	19.88	19.30	20.52	21.27	22.12	23.32	22.74	23.96	24.71
	4H	19.14	20.28	19.78	20.93	21.69	23.24	24.38	23.88	25.03	25.79
	6H	19.41	20.47	20.06	21.13	21.91	24.35	25.41	25.01	26.07	26.85
	8H	19.46	20.47	20.13	21.16	21.94	24.90	25.91	25.57	26.60	27.38
	12H	19.47	20.45	20.15	21.12	21.93	25.48	26.45	26.16	27.13	27.94
4H	2H	18.11	19.26	18.76	19.91	20.67	20.10	21.24	20.75	21.89	22.65
	3H	19.77	20.74	20.43	21.43	22.21	22.68	23.65	23.34	24.34	25.12
	4H	20.35	21.24	21.03	21.93	22.74	23.95	24.84	24.63	25.54	26.35
	6H	20.73	21.51	21.42	22.22	23.05	25.24	26.02	25.94	26.74	27.56
	8H	20.82	21.55	21.52	22.27	23.10	25.89	26.62	26.59	27.34	28.17
	12H	20.86	21.53	21.58	22.26	23.10	26.58	27.24	27.30	27.98	28.82
8H	4H	20.98	21.71	21.67	22.42	23.26	24.11	24.84	24.81	25.56	26.39
	6H	21.51	22.13	22.24	22.89	23.72	25.54	26.16	26.27	26.92	27.76
	8H	21.68	22.24	22.42	22.99	23.85	26.31	26.87	27.05	27.63	28.48
	12H	21.78	22.28	22.53	23.03	23.94	27.16	27.66	27.90	28.41	29.32
12H	4H	21.13	21.80	21.85	22.54	23.38	24.10	24.77	24.82	25.51	26.35
	6H	21.76	22.31	22.50	23.07	23.92	25.56	26.12	26.30	26.88	27.73
	8H	22.00	22.50	22.75	23.25	24.16	26.38	26.88	27.13	27.63	28.54