

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: P893228

Luminaire Tested: 4MB-10HL-RNDU-UNV-L850

Issue Date: 11/11/2024

**Test Information**

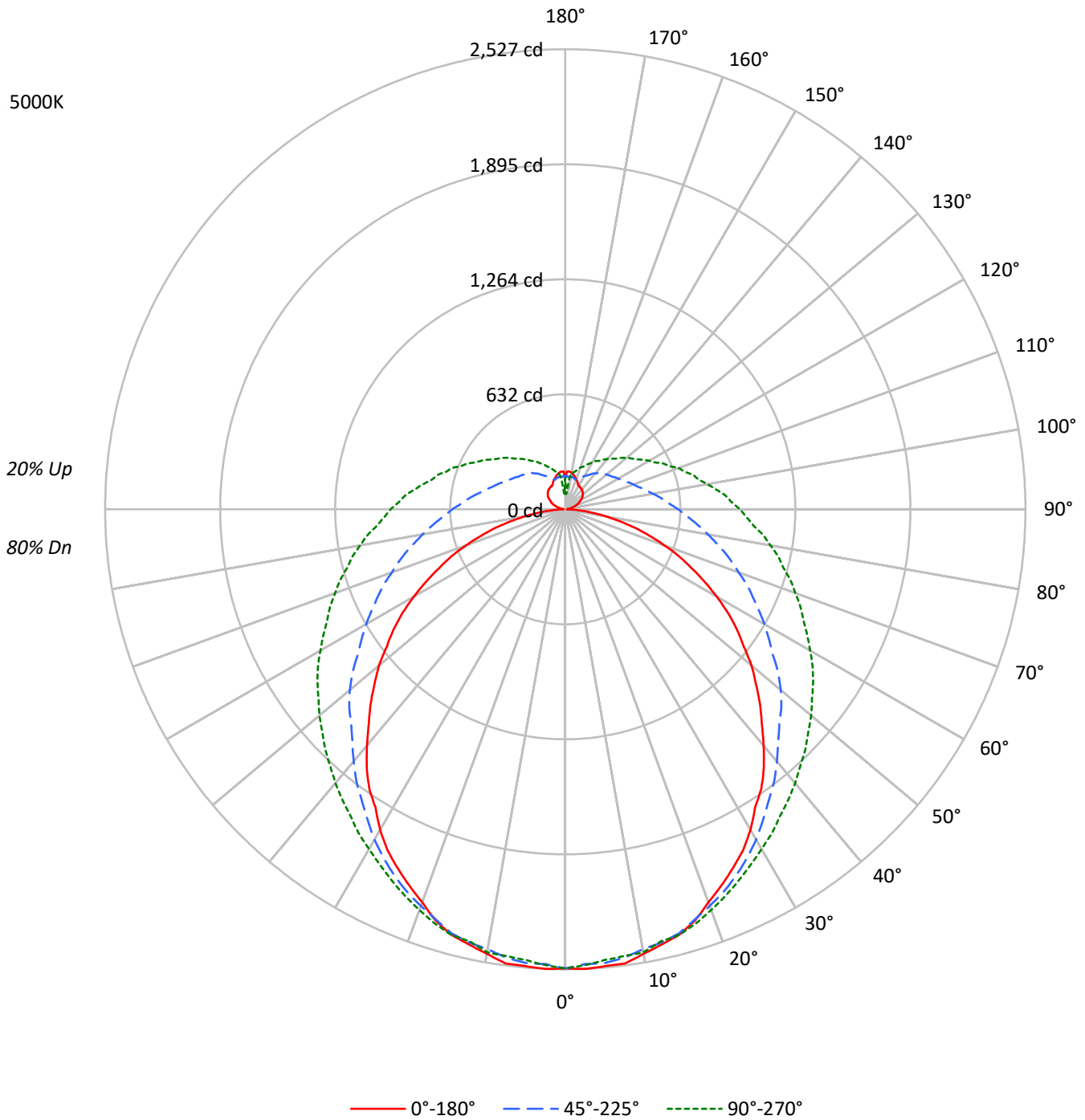
Test Method: LM-79-2019  
Report Number: P893228  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2403-334-3)  
Test Lab: INNOVATION CENTER  
Issue Date: 11/11/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: METALUX  
Catalog Number: 4MB-10HL-RNDU-UNV-L850  
Description: 10000 Lumen 4FT MICROBAY LINEAR BAY with ROUND FROSTED LENS WITH UPLIGHT, 80CRI, CCT  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 10601.0 lumens  
Efficiency: N/A  
Efficacy: 140.4 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): 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				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°	17942	17942	17942
5°	17908	17230	16937
10°	17749	16495	16280
15°	17570	15950	15545
20°	17070	15206	14788
25°	16677	14548	14075
30°	16218	13829	13450
35°	15717	13051	12908
40°	15070	12383	12491
45°	14456	11746	12120
50°	13915	11351	11806
55°	13283	10739	11562
60°	12531	10352	11337
65°	11591	10006	11168
70°	10543	9724	11160
75°	9178	9617	11192
80°	7219	9565	11410
85°	4755	9779	11667

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 14456 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	238.7	2.3
10°-20°	682.1	6.4
20°-30°	1024.3	9.7
30°-40°	1230.0	11.6
40°-50°	1301.0	12.3
50°-60°	1253.8	11.8
60°-70°	1112.4	10.5
70°-80°	912.2	8.6
80°-90°	706.1	6.7
90°-100°	550.8	5.2
100°-110°	438.5	4.1
110°-120°	350.5	3.3
120°-130°	276.4	2.6
130°-140°	210.9	2.0
140°-150°	148.3	1.4
150°-160°	94.8	0.9
160°-170°	53.1	0.5
170°-180°	16.8	0.2
0°-30°	1945.2	18.3
0°-40°	3175.2	30.0
0°-60°	5730.0	54.1
0°-90°	8460.7	79.8
90°-120°	1339.8	12.6
90°-150°	1975.5	18.6
90°-180°	2140.0	20.2
0°-180°	10601.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2522	2522	2522	2522	2522	
5°	2519	2526	2502	2520	2485	240
15°	2419	2420	2412	2427	2420	680
25°	2176	2212	2220	2258	2251	1002
35°	1876	1904	1949	2030	2056	1169
45°	1512	1557	1663	1821	1864	1166
55°	1151	1209	1391	1580	1661	1027
65°	766	872	1135	1371	1443	761
75°	399	574	904	1148	1240	422
85°	93	350	701	953	1038	105
90°	10	278	621	863	959	10
95°	13	230	549	788	882	13
105°	42	186	439	644	728	45
115°	82	182	364	526	594	79
125°	114	185	313	432	478	100
135°	134	179	281	365	394	104
145°	145	165	231	306	324	91
155°	161	169	190	240	268	74
165°	190	186	179	175	217	53
175°	209	202	179	147	93	20
180°	171	171	171	171	171	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2521.7	2521.7	2521.7	2521.7	2521.7
2.5°	2527.4	2535.8	2500.6	2521.7	2506.2
5°	2518.9	2526.0	2502.0	2520.3	2485.1
7.5°	2516.1	2513.3	2483.7	2507.6	2475.2
10°	2479.4	2489.3	2454.0	2486.5	2471.0
12.5°	2448.4	2468.1	2437.1	2462.5	2430.1
15°	2418.8	2420.2	2411.7	2427.2	2420.2
17.5°	2369.4	2382.1	2362.4	2397.6	2384.9
20°	2297.5	2337.0	2318.6	2351.1	2342.6
22.5°	2238.2	2258.0	2273.5	2310.2	2298.9
25°	2176.2	2211.5	2219.9	2258.0	2250.9
27.5°	2112.7	2128.2	2160.7	2201.6	2203.0
30°	2033.7	2050.7	2095.8	2142.3	2155.0
32.5°	1940.7	1994.3	2021.1	2091.6	2111.3
35°	1875.8	1904.0	1949.1	2029.5	2056.3
37.5°	1791.2	1823.6	1884.2	1978.7	2011.2
40°	1693.8	1741.8	1808.1	1925.1	1963.2
42.5°	1596.5	1652.9	1730.5	1867.3	1911.0
45°	1511.9	1557.0	1662.8	1820.8	1864.5
47.5°	1420.2	1475.2	1609.2	1760.1	1809.5
50°	1335.6	1392.0	1544.3	1703.7	1763.0
52.5°	1234.1	1298.9	1473.8	1638.8	1708.0
55°	1150.9	1208.7	1390.6	1579.6	1661.4
57.5°	1059.2	1124.1	1325.7	1535.9	1610.6
60°	960.5	1042.3	1262.3	1480.9	1552.8
62.5°	863.1	960.5	1197.4	1427.3	1497.8
65°	765.8	871.6	1135.3	1370.9	1442.8
67.5°	678.4	792.6	1078.9	1308.8	1397.7
70°	579.7	716.5	1012.6	1251.0	1344.1
72.5°	486.6	647.4	959.0	1204.5	1297.5
75°	399.1	574.0	904.0	1148.0	1239.7
77.5°	311.7	504.9	846.2	1097.3	1197.4
80°	228.5	448.5	795.4	1047.9	1143.8
82.5°	158.0	399.1	746.1	1007.0	1097.3
85°	93.1	349.8	701.0	953.4	1038.0
87.5°	42.3	310.3	654.4	912.5	995.7
90°	9.9	277.8	620.6	863.1	959.0
92.5°	9.9	252.5	579.7	826.5	913.9
95°	12.7	229.9	548.6	788.4	881.5
97.5°	16.9	213.0	520.4	753.1	834.9
100°	24.0	201.7	489.4	712.2	792.6
102.5°	32.4	193.2	461.2	675.6	750.3
105°	42.3	186.2	438.6	644.5	727.7
107.5°	52.2	183.3	416.1	614.9	685.4
110°	62.1	181.9	399.1	583.9	662.9



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	71.9	180.5	380.8	555.7	619.1
115°	81.8	181.9	363.9	526.1	593.8
117.5°	87.4	181.9	348.4	500.7	557.1
120°	95.9	183.3	337.1	473.9	533.1
122.5°	104.4	183.3	325.8	454.1	506.3
125°	114.2	184.8	313.1	431.6	478.1
127.5°	119.9	184.8	306.0	416.1	458.4
130°	125.5	183.3	296.2	396.3	440.0
132.5°	131.2	180.5	290.5	378.0	418.9
135°	134.0	179.1	280.7	365.3	393.5
137.5°	138.2	174.9	270.8	346.9	378.0
140°	142.4	173.5	256.7	332.8	359.6
142.5°	142.4	169.2	246.8	320.2	344.1
145°	145.3	165.0	231.3	306.0	324.4
147.5°	148.1	163.6	220.0	291.9	314.5
150°	148.1	162.2	210.1	276.4	297.6
152.5°	150.9	163.6	200.3	262.3	282.1
155°	160.8	169.2	190.4	239.8	268.0
157.5°	169.2	174.9	180.5	222.8	252.5
160°	176.3	179.1	172.1	205.9	245.4
162.5°	181.9	183.3	173.5	190.4	229.9
165°	190.4	186.2	179.1	174.9	217.2
167.5°	197.5	189.0	181.9	170.7	207.3
170°	203.1	194.6	179.1	160.8	203.1
172.5°	207.3	196.0	180.5	150.9	170.7
175°	208.7	201.7	179.1	146.7	93.1
177.5°	207.3	203.1	184.8	145.3	83.2
180°	170.7	170.7	170.7	170.7	170.7



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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	17.07	18.39	17.71	19.05	19.82	20.48	21.80	21.12	22.46	23.23
	3H	18.53	19.73	19.18	20.40	21.20	23.32	24.52	23.97	25.19	25.99
	4H	19.00	20.14	19.67	20.82	21.63	24.77	25.91	25.44	26.59	27.40
	6H	19.28	20.34	19.96	21.03	21.86	26.33	27.39	27.01	28.09	28.91
	8H	19.34	20.36	20.03	21.07	21.90	27.15	28.17	27.84	28.88	29.71
	12H	19.35	20.33	20.06	21.04	21.90	28.03	29.00	28.73	29.71	30.57
4H	2H	18.21	19.35	18.88	20.04	20.85	20.82	21.96	21.50	22.65	23.46
	3H	19.92	20.89	20.60	21.61	22.45	23.89	24.87	24.58	25.59	26.42
	4H	20.51	21.42	21.22	22.14	23.00	25.53	26.43	26.23	27.15	28.01
	6H	20.92	21.72	21.64	22.47	23.34	27.29	28.09	28.01	28.83	29.70
	8H	21.04	21.79	21.76	22.53	23.41	28.22	28.97	28.94	29.72	30.60
	12H	21.09	21.78	21.84	22.55	23.43	29.23	29.91	29.97	30.68	31.57
8H	4H	21.54	22.30	22.27	23.04	23.92	25.71	26.46	26.43	27.21	28.09
	6H	22.19	22.83	22.94	23.62	24.50	27.65	28.29	28.40	29.07	29.96
	8H	22.42	23.00	23.18	23.78	24.68	28.73	29.31	29.49	30.10	30.99
	12H	22.57	23.09	23.33	23.86	24.82	29.93	30.45	30.70	31.23	32.18
12H	4H	21.87	22.56	22.62	23.33	24.21	25.70	26.39	26.45	27.16	28.04
	6H	22.68	23.26	23.44	24.05	24.94	27.68	28.26	28.44	29.05	29.94
	8H	23.03	23.55	23.80	24.33	25.28	28.83	29.35	29.59	30.12	31.08