

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: P893219

Luminaire Tested: 4MB-10HL-RND-UNV-L840

Issue Date: 11/11/2024

**Test Information**

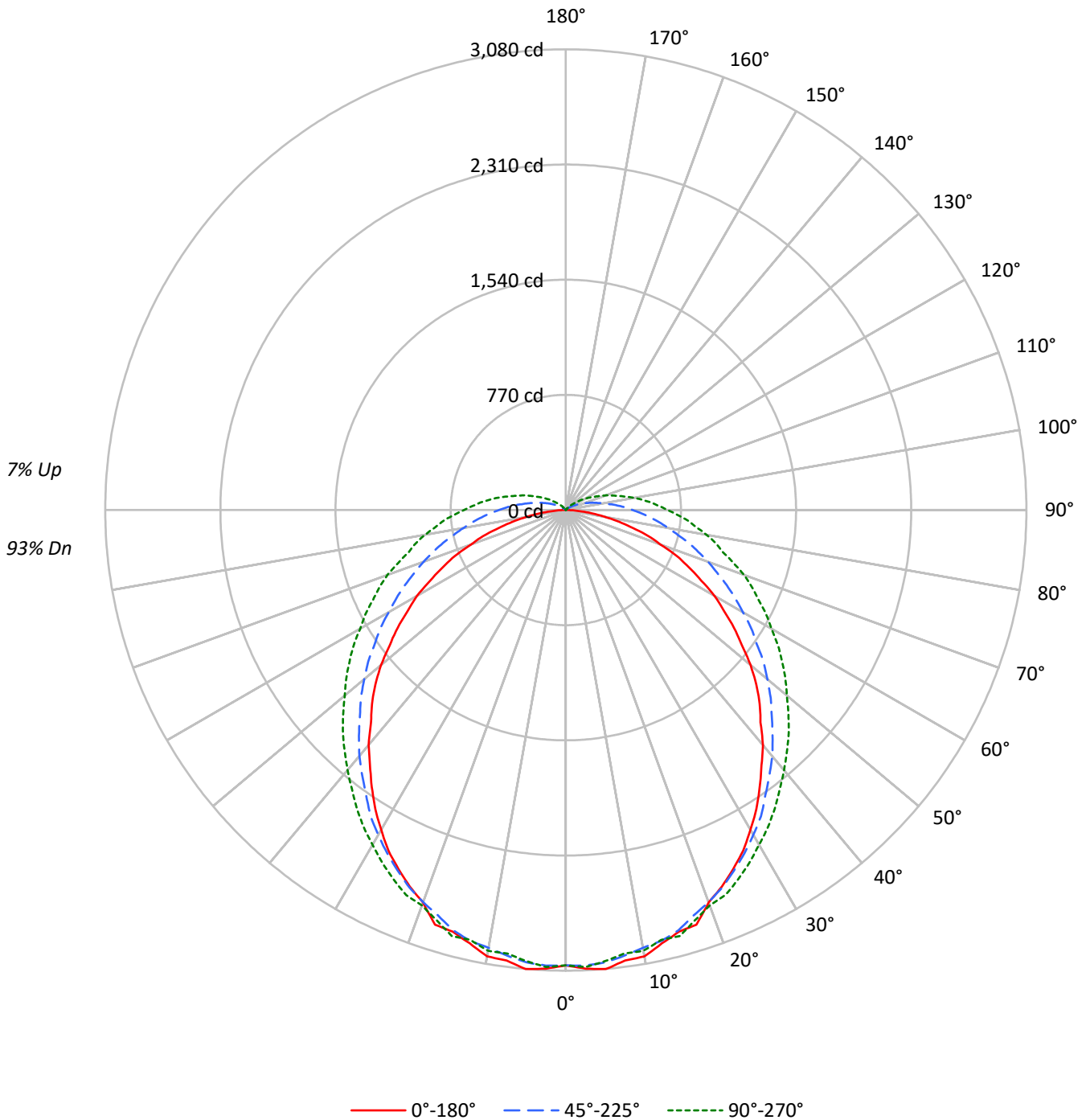
Test Method: LM-79-2019  
Report Number: P893219  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2403-334-1)  
Test Lab: INNOVATION CENTER  
Issue Date: 11/11/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: METALUX  
Catalog Number: 4MB-10HL-RND-UNV-L840  
Description: 10000 Lumen 4FT MICROBAY LINEAR BAY with ROUND FROSTED LENS, 80CRI, 4000K CCT  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 10027.0 lumens  
Efficiency: N/A  
Efficacy: 132.8 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.26 / 1.35  
Luminous Opening: Rectangular (W 0.38' x L: 3.98' x H: 0')  
CIE Type: 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		
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	0
RCR																						
0	117	117	117	117	114	114	114	114		107	107	107		101	101	101			96	96	96	93
1	105	100	95	90	102	97	92	88		91	87	84		86	83	80			81	79	77	74
2	95	86	79	72	92	84	77	71		79	73	68		74	70	66			70	67	63	60
3	86	75	66	60	83	73	65	59		69	62	57		65	60	55			62	57	53	50
4	79	66	57	50	76	65	56	49		61	54	48		58	52	47			55	50	45	43
5	73	59	50	43	70	58	49	42		55	47	41		52	45	40			49	44	39	37
6	67	53	44	37	65	52	43	37		49	42	36		47	40	35			45	39	34	32
7	62	48	39	33	60	47	39	33		45	37	32		43	36	31			41	35	30	28
8	58	44	35	29	56	43	35	29		41	34	28		39	33	28			38	32	27	25
9	54	40	32	26	52	39	32	26		38	31	26		36	30	25			35	29	25	23
10	51	37	29	24	49	36	29	24		35	28	23		34	27	23			32	27	22	21

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

	0°	45°	90°
0°	21659	21659	21659
5°	22000	21682	21622
10°	21892	21470	21621
15°	21500	21428	21715
20°	21141	21120	21298
25°	20793	20881	21394
30°	20285	20605	21234
35°	19643	20212	21155
40°	19051	19944	21083
45°	18454	19589	21214
50°	17850	19468	21349
55°	17033	19330	21904
60°	16367	19460	22590
65°	15285	19975	23960
70°	14050	21090	26391
75°	12747	23353	29898
80°	10956	28530	39199
85°	8866	46157	67072

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 90°  
 Vertical Angle: 87.5°  
 Luminance: 121749 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	288.6	2.9
10°-20°	821.6	8.2
20°-30°	1231.2	12.3
30°-40°	1463.1	14.6
40°-50°	1514.7	15.1
50°-60°	1403.7	14.0
60°-70°	1168.6	11.7
70°-80°	867.4	8.7
80°-90°	573.7	5.7
90°-100°	349.1	3.5
100°-110°	195.7	2.0
110°-120°	96.4	1.0
120°-130°	39.2	0.4
130°-140°	11.4	0.1
140°-150°	1.6	0.0
150°-160°	0.4	0.0
160°-170°	0.3	0.0
170°-180°	0.1	0.0
0°-30°	2341.4	23.4
0°-40°	3804.6	37.9
0°-60°	6723.0	67.0
0°-90°	9332.7	93.1
90°-120°	641.2	6.4
90°-150°	693.4	6.9
90°-180°	694.0	6.9
0°-180°	10027.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3044	3044	3044	3044	3044	
5°	3080	3047	3036	3051	3027	291
15°	2919	2908	2909	2913	2948	827
25°	2649	2646	2660	2711	2725	1219
35°	2262	2278	2327	2401	2436	1415
45°	1834	1860	1947	2068	2108	1413
55°	1373	1432	1558	1714	1766	1228
65°	908	993	1186	1360	1423	902
75°	464	604	850	1032	1088	496
85°	109	305	565	766	822	122
90°	6	198	447	625	681	8
95°	1	122	347	517	574	1
105°	1	40	188	319	364	1
115°	1	10	88	176	210	1
125°	1	3	32	81	103	1
135°	3	1	8	26	36	2
145°	3	1	0	3	4	2
155°	3	3	0	0	0	1
165°	4	3	0	0	0	1
175°	4	3	0	0	0	0
180°	1	1	1	1	1	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3044.1	3044.1	3044.1	3044.1	3044.1
2.5°	3069.2	3053.9	3048.3	3041.3	3058.0
5°	3080.3	3046.9	3035.8	3051.1	3027.4
7.5°	3037.2	3028.8	3005.1	3013.5	2991.2
10°	3030.2	2984.2	2971.7	2999.6	2992.6
12.5°	2967.5	2928.5	2950.8	2970.3	2943.8
15°	2918.8	2907.6	2909.0	2913.2	2948.0
17.5°	2906.3	2856.1	2842.2	2877.0	2874.2
20°	2792.1	2782.3	2789.3	2835.2	2812.9
22.5°	2725.2	2694.6	2732.2	2776.7	2786.5
25°	2648.6	2645.8	2659.8	2711.3	2725.2
27.5°	2567.9	2549.8	2587.4	2647.2	2658.4
30°	2469.0	2462.0	2508.0	2559.5	2584.6
32.5°	2371.5	2375.7	2428.6	2471.8	2514.9
35°	2261.5	2278.2	2327.0	2400.8	2435.6
37.5°	2150.1	2171.0	2236.4	2321.4	2350.6
40°	2051.2	2055.4	2147.3	2233.6	2269.9
42.5°	1927.3	1969.1	2047.0	2161.2	2189.1
45°	1834.0	1860.4	1946.8	2067.9	2108.3
47.5°	1728.2	1758.8	1857.7	1976.0	2019.2
50°	1612.6	1640.4	1758.8	1893.9	1928.7
52.5°	1484.5	1541.6	1665.5	1804.7	1850.7
55°	1373.1	1431.5	1558.3	1714.2	1765.8
57.5°	1253.3	1311.8	1470.5	1615.4	1682.2
60°	1150.2	1205.9	1367.5	1547.1	1587.5
62.5°	1022.1	1101.5	1277.0	1453.8	1510.9
65°	907.9	992.9	1186.5	1360.5	1423.2
67.5°	803.5	891.2	1093.2	1279.8	1348.0
70°	675.4	791.0	1013.8	1197.6	1268.6
72.5°	580.7	696.3	928.8	1111.3	1175.3
75°	463.7	604.4	849.5	1031.9	1087.6
77.5°	366.2	518.0	767.3	972.0	1027.7
80°	267.4	440.0	696.3	892.6	956.7
82.5°	182.4	367.6	630.8	818.8	880.1
85°	108.6	305.0	565.4	765.9	821.6
87.5°	47.3	249.3	505.5	689.3	746.4
90°	5.6	197.7	447.0	625.3	681.0
92.5°	1.4	158.8	395.5	568.2	622.5
95°	1.4	122.5	346.7	516.6	573.7
97.5°	1.4	94.7	298.0	463.7	518.0
100°	1.4	72.4	257.6	408.0	466.5
102.5°	1.4	54.3	218.6	362.1	412.2
105°	1.4	40.4	188.0	318.9	363.5
107.5°	1.4	29.2	157.4	278.5	323.1
110°	1.4	20.9	132.3	240.9	285.5



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	1.4	15.3	107.2	207.5	245.1
115°	1.4	9.7	87.7	175.5	210.3
117.5°	1.4	7.0	69.6	147.6	181.0
120°	1.4	5.6	55.7	122.5	151.8
122.5°	1.4	4.2	43.2	100.3	128.1
125°	1.4	2.8	32.0	80.8	103.0
127.5°	1.4	2.8	23.7	64.1	83.6
130°	1.4	1.4	16.7	48.7	65.4
132.5°	1.4	1.4	11.1	36.2	48.7
135°	2.8	1.4	8.4	26.5	36.2
137.5°	2.8	1.4	5.6	18.1	25.1
140°	2.8	1.4	2.8	11.1	15.3
142.5°	2.8	1.4	1.4	5.6	8.4
145°	2.8	1.4	0.0	2.8	4.2
147.5°	2.8	1.4	0.0	1.4	1.4
150°	2.8	1.4	0.0	0.0	0.0
152.5°	2.8	1.4	0.0	0.0	0.0
155°	2.8	2.8	0.0	0.0	0.0
157.5°	2.8	2.8	0.0	0.0	0.0
160°	2.8	2.8	0.0	0.0	0.0
162.5°	2.8	2.8	0.0	0.0	0.0
165°	4.2	2.8	0.0	0.0	0.0
167.5°	4.2	2.8	0.0	0.0	0.0
170°	4.2	2.8	0.0	0.0	0.0
172.5°	4.2	2.8	0.0	0.0	0.0
175°	4.2	2.8	0.0	0.0	0.0
177.5°	4.2	2.8	0.0	0.0	0.0
180°	1.4	1.4	1.4	1.4	1.4



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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	20.91	22.45	21.38	22.91	23.39	22.49	24.03	22.96	24.48	24.96
	3H	22.68	24.08	23.16	24.55	25.07	25.07	26.48	25.55	26.94	27.47
	4H	23.33	24.67	23.84	25.15	25.68	26.33	27.66	26.83	28.14	28.68
	6H	23.81	25.05	24.33	25.55	26.10	27.71	28.95	28.23	29.45	30.00
	8H	23.96	25.15	24.49	25.67	26.23	28.44	29.63	28.97	30.15	30.71
	12H	24.06	25.20	24.59	25.71	26.30	29.29	30.43	29.82	30.94	31.53
4H	2H	21.87	23.20	22.37	23.68	24.22	23.06	24.39	23.56	24.87	25.41
	3H	23.91	25.05	24.43	25.57	26.13	25.93	27.06	26.44	27.59	28.15
	4H	24.72	25.76	25.26	26.30	26.89	27.41	28.45	27.94	28.98	29.57
	6H	25.37	26.29	25.93	26.86	27.46	29.03	29.95	29.58	30.51	31.11
	8H	25.60	26.47	26.16	27.03	27.65	29.88	30.75	30.44	31.31	31.93
	12H	25.77	26.56	26.35	27.15	27.77	30.87	31.66	31.45	32.25	32.87
8H	4H	25.57	26.44	26.13	27.00	27.62	27.78	28.64	28.34	29.20	29.82
	6H	26.50	27.23	27.09	27.83	28.46	29.65	30.39	30.25	30.99	31.62
	8H	26.88	27.54	27.48	28.16	28.79	30.72	31.38	31.32	31.99	32.63
	12H	27.20	27.79	27.80	28.40	29.10	31.97	32.57	32.58	33.17	33.87
12H	4H	25.83	26.62	26.42	27.21	27.84	27.82	28.61	28.40	29.20	29.82
	6H	26.92	27.59	27.52	28.20	28.84	29.77	30.43	30.37	31.05	31.68
	8H	27.46	28.05	28.06	28.66	29.36	30.94	31.53	31.55	32.14	32.84