

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: P893161

Luminaire Tested: 4MB-10HL-ASMF-UNV-L830

Issue Date: 11/11/2024

Test Information

Test Method: LM-79-2019
Report Number: P893161
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2407-185-1)
Test Lab: INNOVATION CENTER
Issue Date: 11/11/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: METALUX
Catalog Number: 4MB-10HL-ASMF-UNV-L830
Description: 10000 Lumen 4FT MICROBAY LINEAR BAY with FROSTED ASYMMETRIC LENS, 80CRI, 3000K CC
Light Source: -
Ballast/Driver: -

Summary

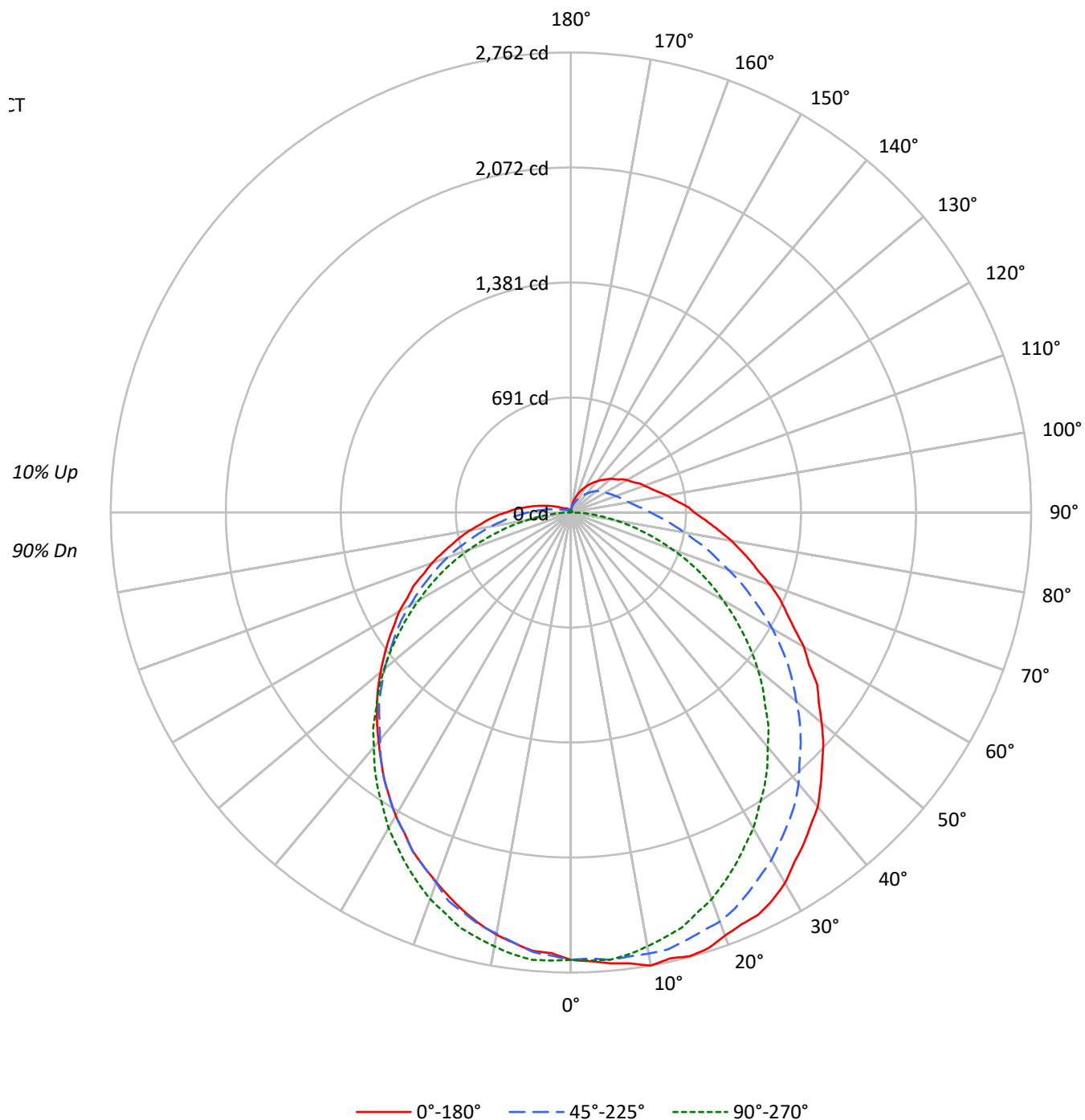
Lumens per Lamp: N/A
Luminaire Lumens: 9234.0 lumens
Efficiency: N/A
Efficacy: 122.3 lumens/watt
Spacing Criteria (0/90/45): 1.28 / 1.21 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.27' x L: 3.98' x H: 0.12')
CIE Type: Direct

Input Watts (W): 75.5
Input Voltage (V): 120
Input Current (A_{in}): 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	50	30	10
RCR																				
0	117	117	117	117	113	113	113	113	106	106	106	99	99	99	93	93	93	90		
1	105	99	95	90	101	96	92	88	90	87	83	85	82	79	79	77	75	72		
2	95	86	79	72	91	83	76	71	78	72	68	73	69	65	69	65	62	59		
3	86	75	66	60	83	73	65	58	68	62	56	64	59	54	60	56	52	49		
4	79	66	57	50	76	64	56	49	61	53	48	57	51	46	54	49	44	42		
5	72	59	50	43	69	57	49	42	54	47	41	51	45	40	48	43	38	36		
6	67	53	44	37	64	52	43	37	49	41	36	46	40	35	44	38	34	31		
7	62	48	39	33	59	47	38	32	44	37	32	42	36	31	40	34	30	28		
8	57	44	35	29	55	43	35	29	41	33	28	39	32	27	37	31	27	25		
9	54	40	32	26	52	39	31	26	37	30	25	36	29	25	34	28	24	22		
10	50	37	29	24	49	36	29	23	34	28	23	33	27	22	31	26	22	20		

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	27353	27353	27353	27353	27353
5°	27697	26723	26464	26257	26930
10°	28408	26165	25262	24988	26475
15°	28826	25613	24140	23944	25919
20°	28966	25082	22863	22697	25311
25°	29491	24276	21520	21661	24852
30°	29671	23499	20241	20537	24290
35°	29601	22653	18899	19456	23769
40°	29866	21776	17522	18241	23256
45°	29778	20740	16164	17314	22971
50°	30003	19676	14858	16252	22784
55°	30669	18749	13362	15190	22706
60°	31182	17599	11830	14059	23009
65°	32258	16353	10276	12935	23527
70°	34897	15162	8423	11862	24330
75°	39210	14297	6441	10614	26013
80°	48734	13462	4315	9514	30550
85°	72858	13281	2165	8378	42834

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 90°

Luminance: 239864 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	254.8	2.8
10°-20°	730.4	7.9
20°-30°	1101.3	11.9
30°-40°	1321.9	14.3
40°-50°	1376.4	14.9
50°-60°	1275.9	13.8
60°-70°	1050.8	11.4
70°-80°	758.0	8.2
80°-90°	481.2	5.2
90°-100°	296.7	3.2
100°-110°	197.8	2.1
110°-120°	140.9	1.5
120°-130°	103.2	1.1
130°-140°	71.0	0.8
140°-150°	43.2	0.5
150°-160°	21.4	0.2
160°-170°	7.8	0.1
170°-180°	1.3	0.0
0°-30°	2086.5	22.6
0°-40°	3408.4	36.9
0°-60°	6060.8	65.6
0°-90°	8350.7	90.4
90°-120°	635.3	6.9
90°-150°	852.7	9.2
90°-180°	883.0	9.6
0°-180°	9234.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2686	2686	2686	2686	2686	
5°	2717	2695	2695	2648	2642	260
15°	2757	2660	2578	2487	2479	777
25°	2663	2518	2335	2247	2244	1225
35°	2433	2275	2021	1954	1954	1525
45°	2132	1951	1650	1629	1645	1650
55°	1805	1591	1258	1289	1336	1603
65°	1429	1195	857	945	1042	1423
75°	1113	845	451	627	739	1180
85°	847	575	118	363	498	719
90°	740	478	11	258	388	408
95°	659	404	7	173	300	524
105°	517	317	7	71	157	552
115°	424	262	8	34	75	425
125°	345	219	9	27	43	314
135°	277	175	9	20	32	217
145°	212	124	9	15	23	134
155°	145	82	11	9	15	68
165°	85	47	11	7	8	25
175°	12	20	12	5	1	2
180°	8	8	8	8	8	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
0°	2685.8	2685.8	2685.8	2685.8	2685.8	2685.8	2685.8	2685.8	2685.8
2.5°	2696.5	2704.6	2679.1	2695.2	2692.5	2695.2	2662.9	2689.8	2648.2
5°	2716.7	2720.7	2695.2	2704.6	2695.2	2672.3	2648.2	2638.8	2641.5
7.5°	2730.1	2751.6	2688.5	2691.1	2675.0	2650.9	2605.2	2613.3	2607.9
10°	2762.3	2738.2	2688.5	2676.4	2645.5	2620.0	2567.6	2571.6	2574.3
12.5°	2742.2	2736.8	2687.1	2642.8	2611.9	2590.4	2536.7	2523.3	2530.0
15°	2757.0	2734.1	2660.3	2625.3	2578.3	2540.7	2487.0	2477.6	2479.0
17.5°	2743.5	2724.7	2633.4	2585.1	2519.3	2496.4	2445.4	2429.3	2421.2
20°	2703.2	2693.8	2613.3	2530.0	2470.9	2426.6	2364.8	2355.4	2362.1
22.5°	2676.4	2653.5	2573.0	2489.7	2403.8	2364.8	2303.1	2301.7	2303.1
25°	2662.9	2633.4	2517.9	2430.6	2335.3	2300.4	2246.7	2226.5	2244.0
27.5°	2622.7	2595.8	2460.2	2364.8	2258.7	2211.7	2167.4	2163.4	2166.1
30°	2568.9	2516.6	2407.8	2291.0	2188.9	2140.6	2104.3	2077.4	2103.0
32.5°	2492.4	2462.9	2339.3	2211.7	2098.9	2065.4	2029.1	2026.4	2026.4
35°	2433.3	2411.8	2274.9	2141.9	2021.0	1975.4	1953.9	1944.5	1953.9
37.5°	2364.8	2332.6	2206.4	2057.3	1933.8	1894.8	1873.3	1865.3	1872.0
40°	2305.7	2246.7	2125.8	1970.0	1838.4	1803.5	1780.7	1788.7	1795.4
42.5°	2218.5	2184.9	2030.4	1881.4	1756.5	1718.9	1700.1	1706.8	1722.9
45°	2132.5	2101.6	1951.2	1788.7	1650.4	1630.3	1628.9	1624.9	1645.0
47.5°	2054.6	2010.3	1863.9	1697.4	1561.8	1539.0	1541.6	1555.1	1572.5
50°	1964.6	1912.3	1767.2	1599.4	1463.7	1449.0	1459.7	1469.1	1491.9
52.5°	1874.7	1833.0	1678.6	1506.7	1364.4	1353.6	1368.4	1399.3	1412.7
55°	1804.8	1729.6	1591.3	1397.9	1258.3	1259.6	1289.2	1306.6	1336.2
57.5°	1693.4	1637.0	1491.9	1301.3	1158.9	1168.3	1208.6	1238.1	1256.9
60°	1614.2	1543.0	1395.3	1197.9	1054.2	1068.9	1114.6	1158.9	1191.1
62.5°	1512.1	1450.3	1294.5	1095.8	957.5	979.0	1030.0	1082.4	1105.2
65°	1428.8	1359.0	1195.2	993.7	856.8	882.3	945.4	1004.5	1042.1
67.5°	1357.7	1285.1	1106.5	899.7	754.7	792.3	866.2	923.9	953.5
70°	1273.1	1188.5	1005.8	795.0	648.6	692.9	786.9	854.1	887.6
72.5°	1183.1	1114.6	918.5	698.3	550.6	604.3	707.7	777.5	809.8
75°	1113.3	1036.7	844.7	601.6	451.2	515.7	627.1	706.4	738.6
77.5°	1042.1	972.3	761.4	513.0	362.6	435.1	556.0	643.2	676.8
80°	979.0	898.4	691.6	440.5	269.9	355.9	488.8	574.8	613.7
82.5°	909.1	839.3	631.2	363.9	192.0	283.3	423.0	517.0	549.2
85°	847.4	774.8	574.8	303.5	118.2	218.9	362.6	459.3	498.2
87.5°	791.0	730.5	522.4	257.8	59.1	166.5	304.8	402.9	447.2
90°	739.9	671.4	478.1	216.2	10.7	120.9	257.8	354.5	388.1
92.5°	707.7	625.8	441.8	189.3	6.7	85.9	214.9	310.2	349.2
95°	659.4	586.8	404.2	169.2	6.7	57.7	173.2	265.9	299.5
97.5°	617.7	550.6	377.4	157.1	5.4	38.9	142.3	222.9	257.8
100°	585.5	522.4	353.2	146.4	6.7	28.2	112.8	189.3	220.2
102.5°	549.2	491.5	334.4	139.7	6.7	20.1	88.6	159.8	188.0
105°	517.0	466.0	316.9	132.9	6.7	17.5	71.2	131.6	157.1
107.5°	492.8	439.1	302.1	128.9	6.7	17.5	56.4	107.4	128.9
110°	468.7	417.6	287.4	124.9	6.7	16.1	44.3	88.6	107.4

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
112.5°	452.6	397.5	273.9	120.9	8.1	16.1	36.3	73.9	88.6
115°	424.4	380.0	261.9	119.5	8.1	14.8	33.6	60.4	75.2
117.5°	404.2	363.9	249.8	115.5	8.1	14.8	32.2	49.7	60.4
120°	389.4	345.1	239.0	111.5	8.1	13.4	29.5	44.3	51.0
122.5°	370.6	327.7	229.6	108.8	8.1	13.4	28.2	41.6	45.7
125°	345.1	311.6	218.9	103.4	9.4	13.4	26.9	38.9	43.0
127.5°	329.0	296.8	210.8	96.7	9.4	12.1	25.5	36.3	40.3
130°	315.6	280.7	201.4	90.0	9.4	12.1	24.2	33.6	37.6
132.5°	295.4	264.5	188.0	84.6	9.4	10.7	21.5	30.9	34.9
135°	276.6	251.1	174.6	79.2	9.4	10.7	20.1	29.5	32.2
137.5°	264.5	237.7	162.5	73.9	9.4	9.4	18.8	26.9	29.5
140°	244.4	222.9	149.1	68.5	9.4	9.4	17.5	25.5	26.9
142.5°	229.6	208.1	137.0	63.1	9.4	9.4	16.1	22.8	25.5
145°	212.2	193.4	123.5	57.7	9.4	8.1	14.8	21.5	22.8
147.5°	196.1	175.9	112.8	53.7	9.4	8.1	13.4	18.8	20.1
150°	179.9	158.5	102.1	49.7	9.4	8.1	12.1	16.1	18.8
152.5°	162.5	137.0	91.3	45.7	9.4	8.1	10.7	14.8	16.1
155°	145.0	119.5	81.9	41.6	10.7	8.1	9.4	12.1	14.8
157.5°	130.3	103.4	72.5	37.6	10.7	6.7	9.4	10.7	12.1
160°	112.8	88.6	64.5	33.6	10.7	6.7	8.1	9.4	10.7
162.5°	99.4	73.9	56.4	30.9	10.7	6.7	8.1	8.1	9.4
165°	84.6	61.8	47.0	28.2	10.7	6.7	6.7	6.7	8.1
167.5°	68.5	48.3	38.9	25.5	10.7	6.7	6.7	5.4	6.7
170°	51.0	36.3	32.2	22.8	10.7	6.7	5.4	4.0	5.4
172.5°	22.8	28.2	25.5	20.1	12.1	6.7	5.4	4.0	2.7
175°	12.1	20.1	20.1	17.5	12.1	6.7	5.4	4.0	1.3
177.5°	9.4	12.1	14.8	14.8	12.1	8.1	5.4	2.7	1.3
180°	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1

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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	21.86	23.34	22.37	23.84	24.38	20.83	22.31	21.34	22.81	23.35
	3H	23.95	25.29	24.47	25.81	26.39	22.70	24.05	23.22	24.56	25.14
	4H	24.89	26.17	25.43	26.69	27.29	23.45	24.73	23.99	25.25	25.85
	6H	25.81	27.00	26.36	27.54	28.15	24.08	25.27	24.63	25.81	26.42
	8H	26.24	27.38	26.80	27.94	28.56	24.34	25.48	24.90	26.04	26.66
	12H	26.66	27.75	27.23	28.31	28.95	24.57	25.66	25.14	26.22	26.86
4H	2H	22.35	23.63	22.89	24.16	24.75	21.39	22.67	21.93	23.20	23.80
	3H	24.67	25.75	25.22	26.32	26.94	23.45	24.54	24.01	25.11	25.73
	4H	25.78	26.78	26.35	27.35	28.00	24.31	25.30	24.88	25.88	26.53
	6H	26.89	27.76	27.48	28.37	29.03	25.06	25.94	25.65	26.55	27.21
	8H	27.41	28.24	28.01	28.84	29.52	25.38	26.20	25.97	26.81	27.48
	12H	27.94	28.69	28.56	29.32	30.00	25.67	26.42	26.29	27.05	27.73
8H	4H	26.04	26.86	26.63	27.47	28.14	24.65	25.47	25.24	26.07	26.75
	6H	27.32	28.02	27.95	28.66	29.34	25.53	26.23	26.16	26.87	27.56
	8H	27.99	28.62	28.63	29.27	29.97	25.93	26.56	26.57	27.21	27.91
	12H	28.69	29.26	29.33	29.90	30.66	26.32	26.88	26.96	27.52	28.28
12H	4H	26.05	26.80	26.67	27.44	28.12	24.71	25.46	25.33	26.09	26.77
	6H	27.37	28.01	28.02	28.66	29.35	25.64	26.27	26.28	26.92	27.62
	8H	28.12	28.68	28.76	29.32	30.08	26.10	26.67	26.74	27.31	28.07