

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: P894006

Luminaire Tested: 4MB-9HL-AOL-UNV-L935

Issue Date: 11/11/2024

Test Information

Test Method: LM-79-2019
Report Number: P894006
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2404-077-19)
Test Lab: INNOVATION CENTER
Issue Date: 11/11/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: METALUX
Catalog Number: 4MB-9HL-AOL-UNV-L935
Description: 9000 Lumen 4FT MICROBAY LINEAR BAY with AISLE OPTICS WITH CLEAR LENS NO UPLIGHT, 9
3500K CCT
Light Source: -
Ballast/Driver: -

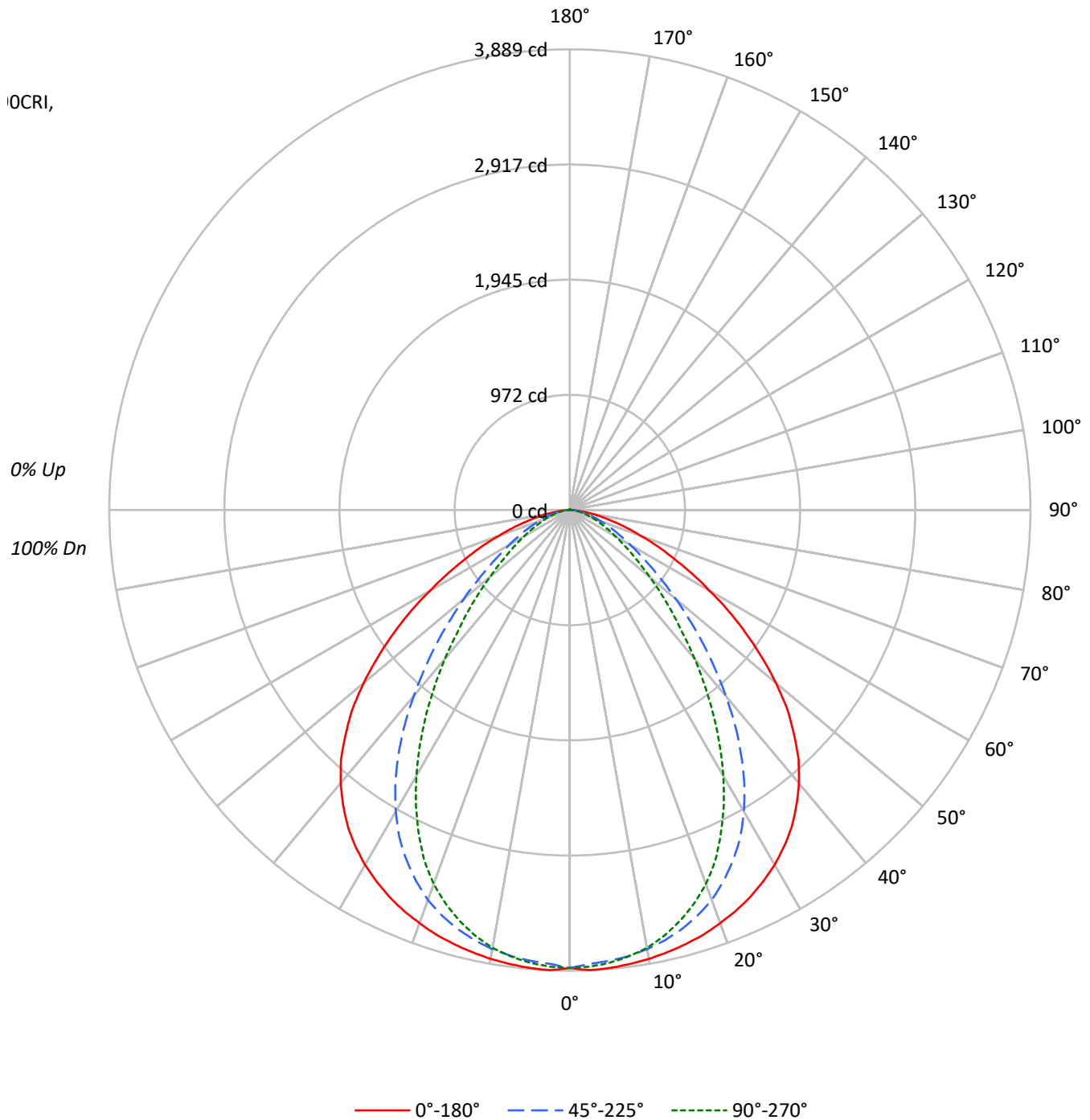
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7641.0 lumens
Efficiency: N/A
Efficacy: 118.6 lumens/watt
Spacing Criteria (0/90/45): 1.32 / 1.05 / 1.16
Luminous Opening: Rectangular (W 0.27' x L: 3.98' x H: 0')
CIE Type: Direct

Input Watts (W): 64.4
Input Voltage (V): 120
Input Current (A_{in}): 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	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	102	102	102	100
1	111	107	103	100	108	104	101	98	100	98	95	96	94	92	93	91	89	89	89	89	87
2	102	95	90	85	100	93	88	84	90	86	82	87	83	80	84	81	78	78	78	78	76
3	95	85	78	73	92	84	77	72	81	75	71	78	74	70	76	72	68	68	68	68	67
4	87	77	69	63	85	76	69	63	73	67	62	71	66	61	69	64	61	61	61	61	59
5	81	70	62	56	79	69	61	56	67	60	55	65	59	54	63	58	54	54	54	54	52
6	76	64	56	50	74	63	55	50	61	54	49	59	53	49	58	52	48	48	48	48	46
7	70	58	50	45	69	57	50	45	56	49	44	55	48	44	53	48	44	44	44	44	42
8	66	54	46	40	64	53	45	40	52	45	40	50	44	40	49	44	40	40	40	40	38
9	62	49	42	37	61	49	42	37	48	41	37	47	41	36	46	40	36	36	36	36	34
10	58	46	39	34	57	45	38	34	44	38	33	44	38	33	43	37	33	33	33	33	32

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	39368	39368	39368
5°	39675	39056	39228
10°	39785	38921	38818
15°	39981	38591	37864
20°	40217	37966	36413
25°	40501	36660	33904
30°	40672	34554	30480
35°	40609	31356	26316
40°	40010	27245	21824
45°	38554	22860	17573
50°	36002	18540	13952
55°	32250	14805	11172
60°	27738	12083	9131
65°	23288	10046	7552
70°	19009	8445	6479
75°	15078	7146	5517
80°	11730	6111	4762
85°	9044	5457	4125

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 38554 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	365.7	4.8
10°-20°	1038.0	13.6
20°-30°	1510.5	19.8
30°-40°	1623.8	21.3
40°-50°	1356.1	17.7
50°-60°	910.9	11.9
60°-70°	517.4	6.8
70°-80°	235.7	3.1
80°-90°	60.2	0.8
90°-100°	6.7	0.1
100°-110°	4.9	0.1
110°-120°	2.9	0.0
120°-130°	2.0	0.0
130°-140°	1.8	0.0
140°-150°	1.7	0.0
150°-160°	1.4	0.0
160°-170°	1.1	0.0
170°-180°	0.4	0.0
0°-30°	2914.1	38.1
0°-40°	4537.9	59.4
0°-60°	6804.9	89.1
0°-90°	7618.3	99.7
90°-120°	14.5	0.2
90°-150°	19.8	0.3
90°-180°	23.0	0.3
0°-180°	7641.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3866	3866	3866	3866	3866	
5°	3881	3870	3820	3851	3837	369
15°	3792	3761	3660	3631	3591	1072
25°	3604	3500	3262	3093	3017	1661
35°	3266	3004	2522	2220	2117	2038
45°	2677	2208	1587	1298	1220	2058
55°	1816	1306	834	668	629	1623
65°	966	664	417	334	313	971
75°	383	277	182	148	140	421
85°	77	63	47	38	35	88
90°	10	8	6	5	5	9
95°	12	8	5	3	3	10
105°	9	7	4	2	2	10
115°	5	4	2	2	2	5
125°	3	2	2	2	2	3
135°	2	2	2	2	2	2
145°	2	2	3	3	2	1
155°	2	3	3	3	3	1
165°	3	3	4	5	5	1
175°	3	4	5	5	5	0
180°	5	5	5	5	5	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3865.6	3865.6	3865.6	3865.6	3865.6
2.5°	3888.6	3877.8	3834.1	3867.9	3858.7
5°	3880.9	3870.2	3820.4	3851.0	3837.2
7.5°	3866.3	3855.6	3797.4	3819.6	3801.2
10°	3847.2	3831.8	3763.6	3769.8	3753.7
12.5°	3821.9	3798.9	3718.4	3707.7	3682.4
15°	3792.0	3761.3	3660.2	3631.1	3591.2
17.5°	3757.5	3713.1	3589.7	3528.4	3484.7
20°	3710.8	3654.0	3503.1	3405.7	3359.8
22.5°	3662.5	3585.1	3391.2	3262.4	3207.3
25°	3604.2	3500.0	3262.4	3093.1	3017.2
27.5°	3534.5	3404.2	3117.6	2904.5	2814.1
30°	3458.6	3291.6	2938.3	2693.0	2591.9
32.5°	3367.4	3159.0	2742.1	2461.6	2356.6
35°	3266.3	3004.2	2522.1	2220.2	2116.7
37.5°	3143.6	2824.8	2293.7	1973.4	1873.8
40°	3009.5	2640.1	2049.3	1728.2	1641.6
42.5°	2858.6	2427.1	1811.7	1502.9	1409.4
45°	2676.9	2207.9	1587.2	1298.2	1220.1
47.5°	2491.5	1965.7	1363.4	1101.3	1045.3
50°	2272.3	1738.1	1170.2	938.0	880.6
52.5°	2044.7	1514.3	990.1	796.3	744.9
55°	1816.3	1305.9	833.8	668.3	629.2
57.5°	1594.0	1114.3	701.2	564.8	531.1
60°	1361.8	945.7	593.2	475.9	448.3
62.5°	1162.6	799.3	498.1	400.8	377.8
65°	966.4	664.4	416.9	334.1	313.4
67.5°	801.6	548.7	345.6	277.4	259.8
70°	638.4	446.8	283.6	229.1	217.6
72.5°	508.9	356.4	229.9	186.2	174.7
75°	383.2	276.7	181.6	147.9	140.2
77.5°	288.2	210.0	140.2	115.0	106.5
80°	200.0	150.2	104.2	85.1	81.2
82.5°	128.0	103.5	72.0	60.5	55.9
85°	77.4	62.8	46.7	37.6	35.3
87.5°	36.8	30.7	23.8	18.4	16.9
90°	10.0	8.4	6.1	5.4	4.6
92.5°	11.5	8.4	5.4	3.8	3.1
95°	12.3	8.4	5.4	3.1	3.1
97.5°	12.3	9.2	4.6	3.1	2.3
100°	11.5	8.4	4.6	3.1	2.3
102.5°	10.0	7.7	3.8	2.3	2.3
105°	9.2	6.9	3.8	2.3	1.5
107.5°	7.7	6.1	3.1	2.3	1.5
110°	6.9	5.4	3.1	2.3	1.5



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	5.4	4.6	3.1	2.3	1.5
115°	4.6	3.8	2.3	1.5	1.5
117.5°	3.8	3.1	2.3	1.5	1.5
120°	3.8	3.1	2.3	1.5	1.5
122.5°	3.1	3.1	2.3	1.5	1.5
125°	3.1	2.3	2.3	1.5	1.5
127.5°	2.3	2.3	2.3	1.5	1.5
130°	2.3	2.3	2.3	2.3	1.5
132.5°	2.3	2.3	2.3	2.3	1.5
135°	2.3	2.3	2.3	2.3	2.3
137.5°	2.3	2.3	2.3	2.3	2.3
140°	2.3	2.3	2.3	2.3	2.3
142.5°	2.3	2.3	3.1	2.3	2.3
145°	2.3	2.3	3.1	3.1	2.3
147.5°	2.3	2.3	3.1	3.1	3.1
150°	2.3	2.3	3.1	3.1	3.1
152.5°	2.3	3.1	3.1	3.1	3.1
155°	2.3	3.1	3.1	3.1	3.1
157.5°	3.1	3.1	3.1	3.8	3.8
160°	3.1	3.1	3.8	3.8	3.8
162.5°	3.1	3.1	3.8	3.8	3.8
165°	3.1	3.1	3.8	4.6	4.6
167.5°	3.1	3.8	3.8	4.6	4.6
170°	3.1	3.8	3.8	4.6	4.6
172.5°	3.1	3.8	4.6	4.6	4.6
175°	3.1	3.8	4.6	4.6	4.6
177.5°	3.8	3.8	4.6	4.6	4.6
180°	4.6	4.6	4.6	4.6	4.6



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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	23.06	24.50	23.43	24.82	25.14	17.74	19.17	18.11	19.49	19.82
	3H	24.38	25.66	24.76	25.99	26.36	18.75	20.03	19.13	20.36	20.73
	4H	24.80	25.99	25.20	26.35	26.73	19.09	20.29	19.50	20.64	21.03
	6H	25.06	26.16	25.47	26.53	26.93	19.32	20.42	19.74	20.80	21.20
	8H	25.12	26.17	25.55	26.56	26.97	19.39	20.43	19.82	20.83	21.24
	12H	25.15	26.15	25.59	26.54	26.98	19.43	20.43	19.86	20.82	21.25
4H	2H	23.06	24.25	23.46	24.61	24.99	18.39	19.58	18.79	19.94	20.32
	3H	24.53	25.51	24.95	25.92	26.33	19.58	20.56	19.99	20.97	21.38
	4H	25.04	25.92	25.48	26.34	26.79	20.00	20.88	20.44	21.30	21.75
	6H	25.41	26.17	25.87	26.62	27.09	20.31	21.07	20.78	21.52	21.99
	8H	25.51	26.22	25.98	26.67	27.15	20.40	21.12	20.88	21.57	22.04
	12H	25.57	26.21	26.06	26.69	27.17	20.47	21.11	20.96	21.59	22.07
8H	4H	25.02	25.73	25.49	26.18	26.66	20.34	21.05	20.81	21.50	21.98
	6H	25.44	26.02	25.94	26.52	27.01	20.73	21.32	21.24	21.82	22.31
	8H	25.58	26.10	26.10	26.62	27.12	20.87	21.40	21.40	21.92	22.42
	12H	25.70	26.16	26.21	26.66	27.24	20.99	21.46	21.51	21.96	22.53
12H	4H	24.99	25.62	25.48	26.11	26.59	20.38	21.02	20.87	21.50	21.98
	6H	25.40	25.93	25.93	26.45	26.95	20.80	21.33	21.32	21.84	22.34
	8H	25.58	26.04	26.09	26.54	27.12	20.99	21.46	21.51	21.95	22.53