

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: P894004

Luminaire Tested: 4MB-9HL-AOL-UNV-L850

Issue Date: 11/11/2024

Test Information

Test Method: LM-79-2019
Report Number: P894004
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-L850
Description: 9000 Lumen 4FT MICROBAY LINEAR BAY with AISLE OPTICS WITH CLEAR LENS NO UPLIGHT, 8
5000K CCT
Light Source: -
Ballast/Driver: -

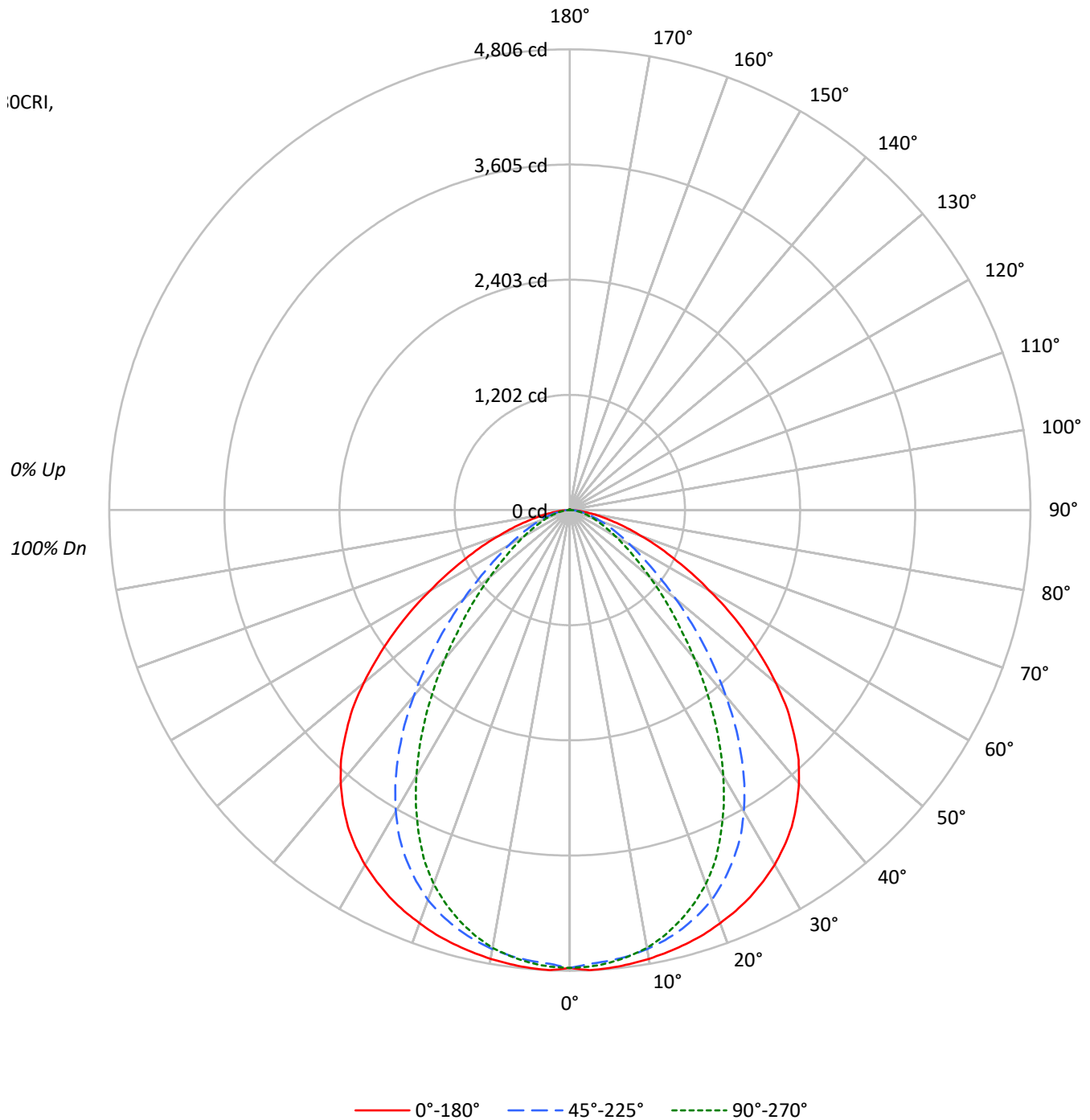
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 9442.9 lumens
Efficiency: N/A
Efficacy: 146.6 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				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	88
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°	48652	48652	48652
5°	49031	48266	48480
10°	49168	48100	47972
15°	49410	47692	46793
20°	49701	46919	45000
25°	50052	45305	41901
30°	50265	42702	37668
35°	50186	38751	32523
40°	49446	33670	26971
45°	47647	28251	21716
50°	44493	22913	17241
55°	39854	18295	13807
60°	34280	14932	11286
65°	28780	12415	9336
70°	23491	10434	8010
75°	18636	8834	6819
80°	14498	7554	5888
85°	11183	6754	5095

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 47647 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	451.9	4.8
10°-20°	1282.8	13.6
20°-30°	1866.7	19.8
30°-40°	2006.8	21.3
40°-50°	1675.9	17.7
50°-60°	1125.7	11.9
60°-70°	639.5	6.8
70°-80°	291.3	3.1
80°-90°	74.4	0.8
90°-100°	8.3	0.1
100°-110°	6.0	0.1
110°-120°	3.5	0.0
120°-130°	2.4	0.0
130°-140°	2.1	0.0
140°-150°	2.0	0.0
150°-160°	1.8	0.0
160°-170°	1.3	0.0
170°-180°	0.5	0.0
0°-30°	3601.4	38.1
0°-40°	5608.1	59.4
0°-60°	8409.8	89.1
0°-90°	9414.9	99.7
90°-120°	17.8	0.2
90°-150°	24.4	0.3
90°-180°	28.0	0.3
0°-180°	9442.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4777	4777	4777	4777	4777	
5°	4796	4783	4721	4759	4742	456
15°	4686	4648	4523	4487	4438	1324
25°	4454	4325	4032	3822	3729	2053
35°	4037	3713	3117	2744	2616	2519
45°	3308	2729	1962	1604	1508	2543
55°	2245	1614	1030	826	778	2006
65°	1194	821	515	413	387	1200
75°	474	342	224	183	173	521
85°	96	78	58	46	44	109
90°	12	10	8	7	6	12
95°	15	10	7	4	4	12
105°	11	8	5	3	2	12
115°	6	5	3	2	2	6
125°	4	3	3	2	2	3
135°	3	3	3	3	3	2
145°	3	3	4	4	3	2
155°	3	4	4	4	4	1
165°	4	4	5	6	6	1
175°	4	5	6	6	6	0
180°	6	6	6	6	6	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4777.2	4777.2	4777.2	4777.2	4777.2
2.5°	4805.6	4792.4	4738.4	4780.0	4768.7
5°	4796.1	4782.9	4721.3	4759.2	4742.2
7.5°	4778.1	4764.9	4692.9	4720.4	4697.6
10°	4754.5	4735.5	4651.2	4658.8	4638.9
12.5°	4723.2	4694.8	4595.4	4582.1	4550.8
15°	4686.3	4648.4	4523.4	4487.4	4438.1
17.5°	4643.7	4588.7	4436.2	4360.5	4306.5
20°	4585.9	4515.8	4329.2	4208.9	4152.1
22.5°	4526.2	4430.6	4190.9	4031.8	3963.6
25°	4454.2	4325.4	4031.8	3822.5	3728.8
27.5°	4368.0	4207.0	3852.8	3589.5	3477.8
30°	4274.3	4067.8	3631.2	3328.1	3203.1
32.5°	4161.6	3904.0	3388.7	3042.1	2912.3
35°	4036.6	3712.7	3116.9	2743.8	2615.9
37.5°	3885.0	3491.0	2834.7	2438.8	2315.7
40°	3719.3	3262.8	2532.6	2135.7	2028.7
42.5°	3532.7	2999.5	2239.0	1857.3	1741.7
45°	3308.2	2728.6	1961.5	1604.4	1507.8
47.5°	3079.0	2429.3	1684.9	1361.0	1291.9
50°	2808.2	2148.0	1446.2	1159.3	1088.2
52.5°	2526.9	1871.5	1223.7	984.0	920.6
55°	2244.6	1613.9	1030.4	825.9	777.6
57.5°	1970.0	1377.1	866.6	698.0	656.3
60°	1683.0	1168.7	733.1	588.2	554.1
62.5°	1436.8	987.8	615.6	495.3	466.9
65°	1194.3	821.1	515.2	412.9	387.4
67.5°	990.7	678.1	427.1	342.9	321.1
70°	788.9	552.2	350.4	283.2	269.0
72.5°	628.9	440.4	284.1	230.1	215.9
75°	473.6	341.9	224.5	182.8	173.3
77.5°	356.1	259.5	173.3	142.1	131.6
80°	247.2	185.6	128.8	105.1	100.4
82.5°	158.2	127.9	89.0	74.8	69.1
85°	95.7	77.7	57.8	46.4	43.6
87.5°	45.5	37.9	29.4	22.7	20.8
90°	12.3	10.4	7.6	6.6	5.7
92.5°	14.2	10.4	6.6	4.7	3.8
95°	15.2	10.4	6.6	3.8	3.8
97.5°	15.2	11.4	5.7	3.8	2.8
100°	14.2	10.4	5.7	3.8	2.8
102.5°	12.3	9.5	4.7	2.8	2.8
105°	11.4	8.5	4.7	2.8	1.9
107.5°	9.5	7.6	3.8	2.8	1.9
110°	8.5	6.6	3.8	2.8	1.9



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	6.6	5.7	3.8	2.8	1.9
115°	5.7	4.7	2.8	1.9	1.9
117.5°	4.7	3.8	2.8	1.9	1.9
120°	4.7	3.8	2.8	1.9	1.9
122.5°	3.8	3.8	2.8	1.9	1.9
125°	3.8	2.8	2.8	1.9	1.9
127.5°	2.8	2.8	2.8	1.9	1.9
130°	2.8	2.8	2.8	2.8	1.9
132.5°	2.8	2.8	2.8	2.8	1.9
135°	2.8	2.8	2.8	2.8	2.8
137.5°	2.8	2.8	2.8	2.8	2.8
140°	2.8	2.8	2.8	2.8	2.8
142.5°	2.8	2.8	3.8	2.8	2.8
145°	2.8	2.8	3.8	3.8	2.8
147.5°	2.8	2.8	3.8	3.8	3.8
150°	2.8	2.8	3.8	3.8	3.8
152.5°	2.8	3.8	3.8	3.8	3.8
155°	2.8	3.8	3.8	3.8	3.8
157.5°	3.8	3.8	3.8	4.7	4.7
160°	3.8	3.8	4.7	4.7	4.7
162.5°	3.8	3.8	4.7	4.7	4.7
165°	3.8	3.8	4.7	5.7	5.7
167.5°	3.8	4.7	4.7	5.7	5.7
170°	3.8	4.7	4.7	5.7	5.7
172.5°	3.8	4.7	5.7	5.7	5.7
175°	3.8	4.7	5.7	5.7	5.7
177.5°	4.7	4.7	5.7	5.7	5.7
180°	5.7	5.7	5.7	5.7	5.7



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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	23.80	25.23	24.17	25.55	25.87	18.48	19.91	18.85	20.23	20.55
	3H	25.11	26.39	25.50	26.73	27.10	19.49	20.76	19.87	21.10	21.47
	4H	25.53	26.73	25.94	27.08	27.47	19.83	21.02	20.23	21.38	21.77
	6H	25.79	26.89	26.21	27.27	27.67	20.06	21.16	20.48	21.53	21.93
	8H	25.85	26.90	26.29	27.30	27.71	20.12	21.17	20.56	21.57	21.98
	12H	25.89	26.89	26.32	27.28	27.71	20.16	21.16	20.60	21.55	21.99
4H	2H	23.79	24.99	24.20	25.34	25.73	19.12	20.32	19.53	20.67	21.06
	3H	25.26	26.25	25.68	26.66	27.06	20.31	21.30	20.73	21.71	22.11
	4H	25.77	26.66	26.21	27.08	27.53	20.73	21.62	21.17	22.04	22.49
	6H	26.14	26.91	26.61	27.36	27.83	21.05	21.81	21.51	22.26	22.73
	8H	26.24	26.96	26.71	27.41	27.88	21.14	21.85	21.61	22.30	22.78
	12H	26.31	26.94	26.80	27.43	27.91	21.21	21.84	21.70	22.33	22.81
8H	4H	25.75	26.47	26.22	26.92	27.39	21.07	21.79	21.55	22.24	22.72
	6H	26.17	26.76	26.68	27.26	27.75	21.47	22.06	21.97	22.56	23.04
	8H	26.31	26.84	26.84	27.36	27.85	21.61	22.14	22.13	22.65	23.15
	12H	26.43	26.90	26.95	27.40	27.97	21.73	22.19	22.24	22.69	23.27
12H	4H	25.72	26.36	26.21	26.84	27.32	21.12	21.75	21.61	22.24	22.72
	6H	26.14	26.67	26.66	27.18	27.68	21.53	22.06	22.06	22.58	23.08
	8H	26.31	26.78	26.83	27.28	27.85	21.72	22.19	22.24	22.69	23.26