

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: P892709

Luminaire Tested: 2MB-4HL-AOL-UNV-L830

Issue Date: 11/11/2024

Test Information

Test Method: LM-79-2019
Report Number: P892709
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2404-077-6)
Test Lab: INNOVATION CENTER
Issue Date: 11/11/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: METALUX
Catalog Number: 2MB-4HL-AOL-UNV-L830
Description: 4000 Lumen 2FT MICROBAY LINEAR BAY with AISLE OPTICS WITH CLEAR LENS NO UPLIGHT, 8
3000K CCT
Light Source: -
Ballast/Driver: -

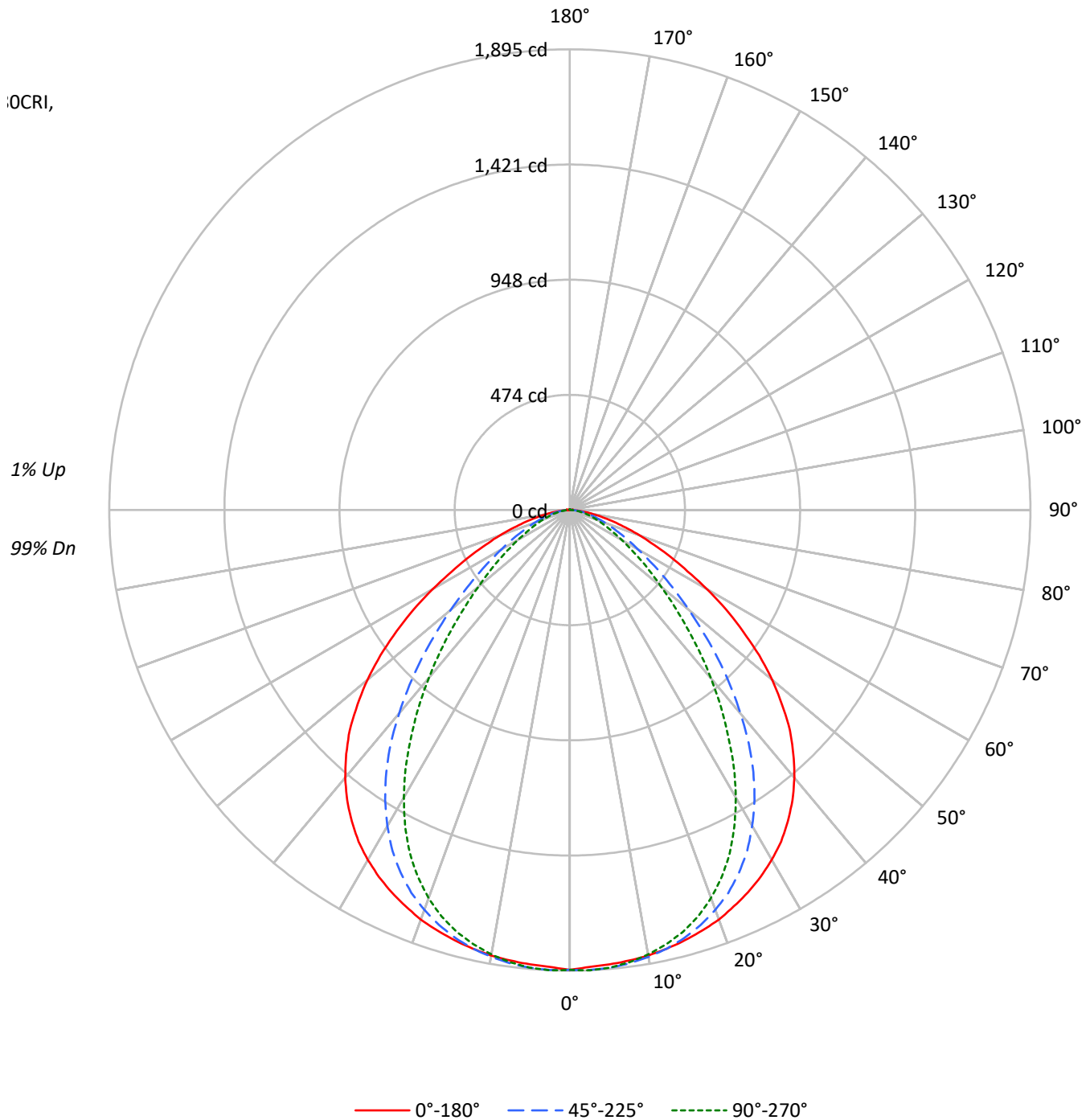
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3920.9 lumens
Efficiency: N/A
Efficacy: 142.1 lumens/watt
Spacing Criteria (0/90/45): 1.3 / 1.1 / 1.2
Luminous Opening: Rectangular (W 0.27' x L: 1.98' x H: 0')
CIE Type: Direct

Input Watts (W): 27.6
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: 6.5
Total Harmonic Distortion (THDi): 0.99
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	101	101	101	99				99
1	110	106	103	100	108	104	101	98	100	97	95	96	94	92	92	91	89	87				87
2	102	95	89	84	99	93	88	83	89	85	81	86	83	79	83	80	77	75				75
3	94	85	78	72	92	83	77	72	80	75	70	78	73	69	75	71	68	66				66
4	87	76	69	63	85	75	68	62	73	66	61	70	65	61	68	64	60	58				58
5	81	69	61	55	79	68	61	55	66	59	54	64	58	54	62	57	53	51				51
6	75	63	55	49	73	62	54	49	60	53	48	59	53	48	57	52	48	46				46
7	70	58	50	44	68	57	49	44	55	48	43	54	48	43	53	47	43	41				41
8	65	53	45	40	64	52	45	40	51	44	39	50	44	39	49	43	39	37				37
9	61	49	41	36	60	48	41	36	47	40	36	46	40	36	45	40	35	34				34
10	58	45	38	33	56	45	38	33	44	37	33	43	37	33	42	36	32	31				31

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	38733	38733	38733
5°	38563	38848	38834
10°	38688	38801	38593
15°	38838	38626	38086
20°	39066	38140	37014
25°	39197	37207	35185
30°	39285	35488	32293
35°	39083	32906	28409
40°	38427	29203	24127
45°	37092	24884	19631
50°	34630	20391	15619
55°	31037	16511	12595
60°	26685	13310	10119
65°	22220	10998	8416
70°	18446	9382	7166
75°	14842	8062	6234
80°	11745	7193	5460
85°	10337	7072	5451

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 37092 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	179.4	4.6
10°-20°	512.7	13.1
20°-30°	756.1	19.3
30°-40°	830.3	21.2
40°-50°	706.7	18.0
50°-60°	479.5	12.2
60°-70°	270.2	6.9
70°-80°	125.9	3.2
80°-90°	36.8	0.9
90°-100°	8.7	0.2
100°-110°	5.7	0.1
110°-120°	3.5	0.1
120°-130°	1.9	0.0
130°-140°	1.1	0.0
140°-150°	0.9	0.0
150°-160°	0.7	0.0
160°-170°	0.5	0.0
170°-180°	0.2	0.0
0°-30°	1448.3	36.9
0°-40°	2278.6	58.1
0°-60°	3464.8	88.4
0°-90°	3897.8	99.4
90°-120°	17.9	0.5
90°-150°	21.8	0.6
90°-180°	23.0	0.6
0°-180°	3920.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1892	1892	1892	1892	1892	
5°	1876	1885	1890	1892	1889	179
15°	1832	1834	1822	1807	1797	518
25°	1735	1713	1647	1585	1557	800
35°	1564	1484	1316	1188	1136	977
45°	1281	1116	859	717	678	982
55°	869	682	462	374	353	778
65°	459	346	227	184	174	459
75°	188	147	102	83	79	203
85°	44	39	30	25	23	48
90°	8	9	8	7	7	7
95°	13	10	8	6	6	10
105°	4	8	5	4	4	4
115°	2	5	3	3	3	2
125°	2	2	2	2	2	1
135°	1	2	2	2	2	1
145°	1	2	2	2	2	1
155°	1	2	2	2	2	0
165°	2	2	2	2	2	0
175°	2	2	2	2	2	0
180°	2	2	2	2	2	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1891.6	1891.6	1891.6	1891.6	1891.6
2.5°	1880.8	1888.5	1893.9	1897.0	1895.4
5°	1876.1	1885.4	1890.0	1891.6	1889.3
7.5°	1869.2	1878.5	1880.8	1880.0	1876.1
10°	1860.7	1867.7	1866.1	1862.3	1856.1
12.5°	1847.6	1853.0	1847.6	1837.5	1829.8
15°	1832.1	1834.5	1822.1	1806.7	1796.6
17.5°	1813.6	1812.1	1789.7	1767.3	1753.4
20°	1792.8	1784.3	1750.3	1716.3	1698.6
22.5°	1764.2	1751.1	1704.0	1655.3	1633.7
25°	1734.9	1713.2	1646.8	1585.1	1557.3
27.5°	1700.9	1666.1	1580.4	1501.7	1466.9
30°	1661.5	1615.2	1500.9	1407.5	1365.8
32.5°	1617.5	1554.2	1414.4	1301.7	1256.9
35°	1563.5	1483.9	1316.4	1188.2	1136.5
37.5°	1504.8	1403.6	1209.8	1064.7	1021.5
40°	1437.6	1314.1	1092.5	945.0	902.6
42.5°	1361.2	1217.6	975.9	826.1	788.3
45°	1280.9	1116.4	859.3	717.3	677.9
47.5°	1184.4	1004.5	743.5	613.8	579.1
50°	1087.1	892.5	640.1	521.9	490.3
52.5°	982.1	786.0	544.3	443.2	416.9
55°	869.4	681.7	462.5	373.7	352.8
57.5°	762.8	583.7	389.1	312.7	293.4
60°	651.6	492.6	325.0	263.3	247.1
62.5°	546.6	413.1	274.9	219.3	206.1
65°	458.6	345.9	227.0	184.5	173.7
67.5°	373.7	287.2	189.2	153.6	144.4
70°	308.1	232.4	156.7	126.6	119.7
72.5°	240.1	188.4	126.6	103.5	97.3
75°	187.6	146.7	101.9	83.4	78.8
77.5°	139.0	113.5	80.3	65.6	62.5
80°	99.6	84.2	61.0	50.2	46.3
82.5°	69.5	58.7	44.0	36.3	34.0
85°	44.0	38.6	30.1	24.7	23.2
87.5°	23.2	21.6	17.8	14.7	13.9
90°	7.7	9.3	8.5	6.9	6.9
92.5°	13.1	10.0	7.7	6.9	6.2
95°	13.1	10.0	7.7	6.2	6.2
97.5°	12.4	9.3	6.9	6.2	5.4
100°	6.2	9.3	6.2	5.4	4.6
102.5°	3.9	8.5	6.2	4.6	4.6
105°	3.9	7.7	5.4	3.9	3.9
107.5°	3.1	6.9	4.6	3.9	3.9
110°	3.1	6.2	4.6	3.9	3.1



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	3.1	5.4	3.9	3.1	3.1
115°	2.3	4.6	3.1	3.1	3.1
117.5°	2.3	3.9	3.1	3.1	3.1
120°	1.5	3.1	2.3	2.3	2.3
122.5°	1.5	2.3	2.3	2.3	2.3
125°	1.5	2.3	2.3	2.3	2.3
127.5°	1.5	1.5	2.3	2.3	2.3
130°	0.8	1.5	1.5	2.3	2.3
132.5°	0.8	1.5	1.5	1.5	1.5
135°	0.8	1.5	1.5	1.5	1.5
137.5°	0.8	1.5	1.5	1.5	1.5
140°	0.8	1.5	1.5	1.5	1.5
142.5°	0.8	1.5	1.5	1.5	1.5
145°	0.8	1.5	1.5	1.5	1.5
147.5°	0.8	1.5	1.5	1.5	1.5
150°	0.8	1.5	1.5	1.5	1.5
152.5°	0.8	1.5	1.5	1.5	1.5
155°	0.8	1.5	1.5	1.5	1.5
157.5°	1.5	1.5	1.5	1.5	2.3
160°	1.5	1.5	1.5	1.5	2.3
162.5°	1.5	1.5	1.5	2.3	2.3
165°	1.5	1.5	1.5	2.3	2.3
167.5°	1.5	1.5	1.5	2.3	2.3
170°	1.5	1.5	1.5	2.3	2.3
172.5°	1.5	1.5	1.5	2.3	2.3
175°	1.5	1.5	2.3	2.3	2.3
177.5°	1.5	1.5	2.3	2.3	2.3
180°	2.3	2.3	2.3	2.3	2.3



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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	23.14	24.58	23.51	24.91	25.24	18.34	19.79	18.72	20.11	20.44
	3H	24.36	25.65	24.75	25.99	26.37	19.35	20.64	19.74	20.98	21.36
	4H	24.76	25.96	25.17	26.33	26.72	19.71	20.91	20.12	21.27	21.67
	6H	25.02	26.13	25.44	26.51	26.91	19.96	21.07	20.39	21.45	21.86
	8H	25.09	26.14	25.53	26.55	26.96	20.05	21.10	20.48	21.50	21.92
	12H	25.14	26.15	25.58	26.54	26.99	20.11	21.12	20.55	21.51	21.96
4H	2H	23.16	24.36	23.57	24.72	25.12	18.97	20.17	19.38	20.53	20.93
	3H	24.55	25.55	24.98	25.96	26.38	20.17	21.16	20.59	21.57	21.99
	4H	25.06	25.95	25.50	26.38	26.83	20.61	21.50	21.05	21.92	22.38
	6H	25.43	26.20	25.90	26.66	27.14	20.95	21.73	21.42	22.18	22.66
	8H	25.55	26.27	26.03	26.73	27.21	21.07	21.79	21.54	22.25	22.73
	12H	25.64	26.28	26.14	26.77	27.26	21.17	21.81	21.66	22.30	22.79
8H	4H	25.06	25.78	25.53	26.24	26.72	20.94	21.67	21.42	22.12	22.60
	6H	25.50	26.09	26.01	26.60	27.09	21.39	21.98	21.90	22.49	22.98
	8H	25.67	26.20	26.19	26.72	27.23	21.56	22.09	22.08	22.61	23.12
	12H	25.82	26.30	26.34	26.80	27.38	21.72	22.19	22.24	22.70	23.28
12H	4H	25.03	25.68	25.53	26.17	26.65	20.99	21.63	21.49	22.13	22.61
	6H	25.47	26.01	26.00	26.53	27.03	21.46	22.00	21.99	22.52	23.02
	8H	25.68	26.15	26.20	26.66	27.24	21.69	22.16	22.21	22.66	23.25