

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: P893257

Luminaire Tested: 4MB-2SL-ASMF-UNV-L830

Issue Date: 11/11/2024

Test Information

Test Method: LM-79-2019
Report Number: P893257
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-2SL-ASMF-UNV-L830
Description: 2000 Lumen 4FT MICROBAY LINEAR BAY with FROSTED ASYMMETRIC LENS, 80CRI, 3000K CCT
Light Source: -
Ballast/Driver: -

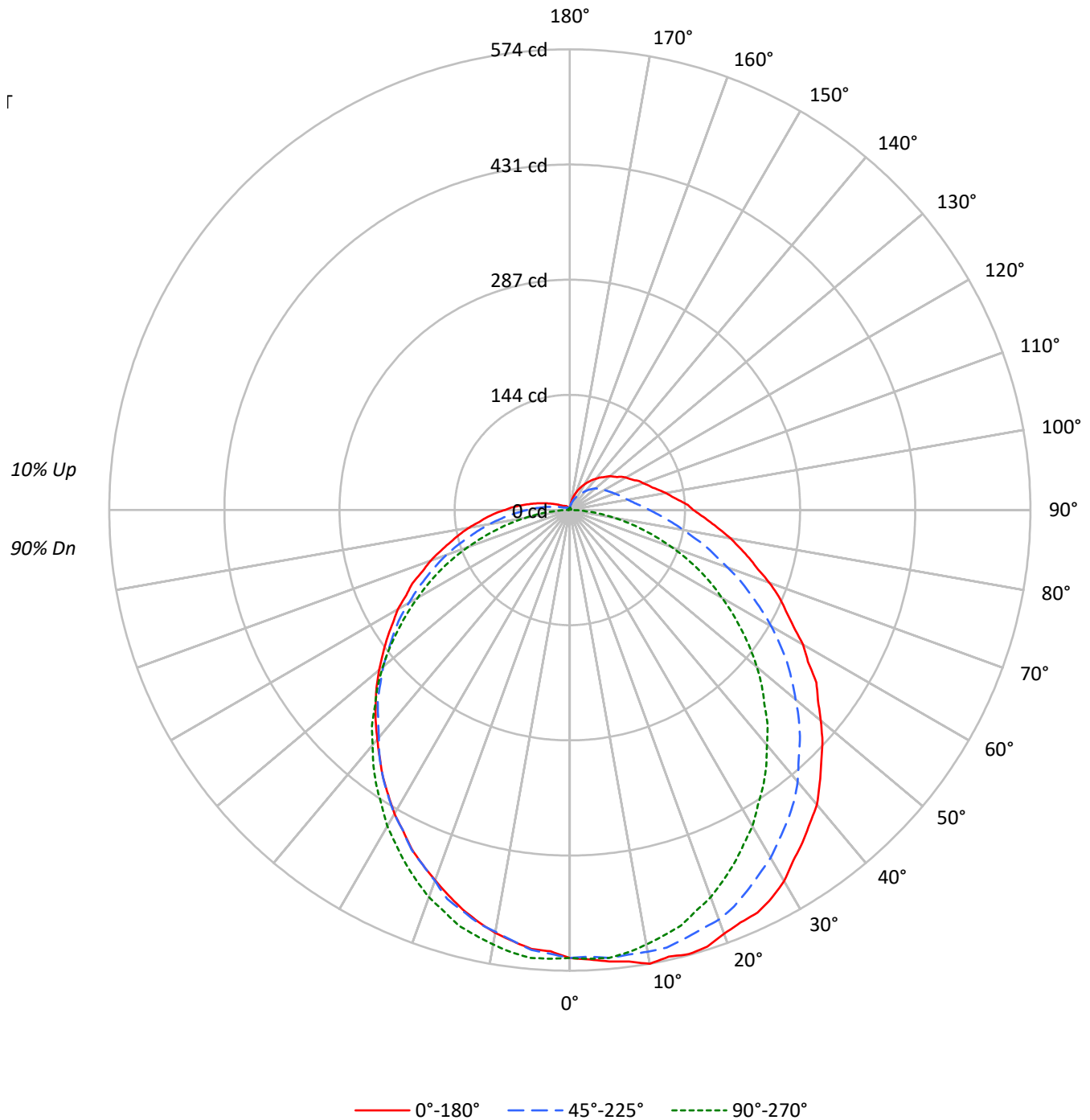
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1919.0 lumens
Efficiency: N/A
Efficacy: 139.1 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): 13.8
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: 0.996
Total Harmonic Distortion (THDi): 5.92
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	117	117	117	117	113	113	113	113	106	106	106	99	99	99	93	93	93	93	93	93	90
1	105	99	95	90	101	96	92	88	90	87	83	85	82	79	79	77	75	75	75	75	72
2	95	86	79	72	91	83	76	71	78	72	68	73	69	65	69	65	62	62	62	62	59
3	86	75	66	60	83	73	65	58	68	62	56	64	59	54	60	56	52	52	52	52	49
4	79	66	57	50	76	64	56	49	61	53	48	57	51	46	54	49	44	44	44	44	42
5	72	59	50	43	69	57	49	42	54	47	41	51	45	40	48	43	38	38	38	38	36
6	67	53	44	37	64	52	43	37	49	41	36	46	40	35	44	38	34	34	34	34	31
7	62	48	39	33	59	47	38	32	44	37	32	42	36	31	40	34	30	30	30	30	28
8	57	44	35	29	55	43	35	29	41	33	28	39	32	27	37	31	27	27	27	27	25
9	54	40	32	26	52	39	31	26	37	30	25	36	29	25	34	28	24	24	24	24	22
10	50	37	29	24	49	36	29	23	34	28	23	33	27	22	31	26	22	22	22	22	20

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	5685	5685	5685	5685	5685
5°	5756	5553	5500	5456	5596
10°	5904	5437	5250	5193	5502
15°	5990	5323	5017	4977	5387
20°	6020	5213	4751	4717	5260
25°	6129	5045	4472	4501	5164
30°	6167	4884	4207	4268	5047
35°	6152	4708	3928	4044	4940
40°	6207	4526	3642	3791	4833
45°	6189	4310	3359	3598	4774
50°	6236	4089	3088	3378	4736
55°	6374	3896	2777	3157	4719
60°	6481	3658	2459	2921	4781
65°	6703	3399	2136	2689	4890
70°	7253	3151	1751	2465	5057
75°	8150	2970	1339	2205	5406
80°	10125	2797	897	1978	6347
85°	15141	2759	451	1742	8899

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 90°
 Luminance: 49859 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	53.0	2.8
10°-20°	151.8	7.9
20°-30°	228.9	11.9
30°-40°	274.7	14.3
40°-50°	286.1	14.9
50°-60°	265.2	13.8
60°-70°	218.4	11.4
70°-80°	157.5	8.2
80°-90°	100.0	5.2
90°-100°	61.7	3.2
100°-110°	41.1	2.1
110°-120°	29.3	1.5
120°-130°	21.5	1.1
130°-140°	14.8	0.8
140°-150°	9.0	0.5
150°-160°	4.5	0.2
160°-170°	1.6	0.1
170°-180°	0.3	0.0
0°-30°	433.6	22.6
0°-40°	708.3	36.9
0°-60°	1259.5	65.6
0°-90°	1735.4	90.4
90°-120°	132.0	6.9
90°-150°	177.2	9.2
90°-180°	184.0	9.6
0°-180°	1919.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	558	558	558	558	558	
5°	565	560	560	550	549	54
15°	573	553	536	517	515	162
25°	553	523	485	467	466	255
35°	506	473	420	406	406	317
45°	443	406	343	338	342	343
55°	375	331	262	268	278	333
65°	297	248	178	196	217	296
75°	231	176	94	130	154	245
85°	176	119	25	75	104	149
90°	154	99	2	54	81	85
95°	137	84	1	36	62	109
105°	107	66	1	15	33	115
115°	88	54	2	7	16	88
125°	72	46	2	6	9	65
135°	58	36	2	4	7	45
145°	44	26	2	3	5	28
155°	30	17	2	2	3	14
165°	18	10	2	1	2	5
175°	2	4	2	1	0	0
180°	2	2	2	2	2	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
0°	558.2	558.2	558.2	558.2	558.2	558.2	558.2	558.2	558.2
2.5°	560.4	562.1	556.8	560.1	559.6	560.1	553.4	559.0	550.3
5°	564.6	565.4	560.1	562.1	560.1	555.4	550.3	548.4	548.9
7.5°	567.4	571.8	558.7	559.3	555.9	550.9	541.4	543.1	542.0
10°	574.1	569.0	558.7	556.2	549.8	544.5	533.6	534.4	535.0
12.5°	569.9	568.8	558.4	549.2	542.8	538.3	527.2	524.4	525.8
15°	572.9	568.2	552.9	545.6	535.8	528.0	516.9	514.9	515.2
17.5°	570.2	566.2	547.3	537.2	523.5	518.8	508.2	504.9	503.2
20°	561.8	559.8	543.1	525.8	513.5	504.3	491.5	489.5	490.9
22.5°	556.2	551.5	534.7	517.4	499.5	491.5	478.6	478.3	478.6
25°	553.4	547.3	523.3	505.1	485.3	478.1	466.9	462.7	466.3
27.5°	545.0	539.5	511.3	491.5	469.4	459.6	450.4	449.6	450.2
30°	533.9	523.0	500.4	476.1	454.9	444.8	437.3	431.7	437.0
32.5°	518.0	511.8	486.2	459.6	436.2	429.2	421.7	421.1	421.1
35°	505.7	501.2	472.8	445.1	420.0	410.5	406.1	404.1	406.1
37.5°	491.5	484.8	458.5	427.5	401.9	393.8	389.3	387.6	389.0
40°	479.2	466.9	441.8	409.4	382.1	374.8	370.1	371.7	373.1
42.5°	461.0	454.1	422.0	391.0	365.0	357.2	353.3	354.7	358.1
45°	443.2	436.8	405.5	371.7	343.0	338.8	338.5	337.7	341.9
47.5°	427.0	417.8	387.4	352.8	324.6	319.8	320.4	323.2	326.8
50°	408.3	397.4	367.3	332.4	304.2	301.1	303.4	305.3	310.1
52.5°	389.6	380.9	348.8	313.1	283.5	281.3	284.4	290.8	293.6
55°	375.1	359.5	330.7	290.5	261.5	261.8	267.9	271.5	277.7
57.5°	351.9	340.2	310.1	270.4	240.8	242.8	251.2	257.3	261.2
60°	335.5	320.7	290.0	248.9	219.1	222.1	231.6	240.8	247.5
62.5°	314.2	301.4	269.0	227.7	199.0	203.4	214.1	224.9	229.7
65°	296.9	282.4	248.4	206.5	178.1	183.4	196.5	208.8	216.6
67.5°	282.1	267.1	230.0	187.0	156.8	164.7	180.0	192.0	198.1
70°	264.6	247.0	209.0	165.2	134.8	144.0	163.5	177.5	184.5
72.5°	245.9	231.6	190.9	145.1	114.4	125.6	147.1	161.6	168.3
75°	231.4	215.4	175.5	125.0	93.8	107.2	130.3	146.8	153.5
77.5°	216.6	202.1	158.2	106.6	75.4	90.4	115.5	133.7	140.7
80°	203.4	186.7	143.7	91.5	56.1	74.0	101.6	119.4	127.5
82.5°	188.9	174.4	131.2	75.6	39.9	58.9	87.9	107.4	114.1
85°	176.1	161.0	119.4	63.1	24.6	45.5	75.4	95.4	103.5
87.5°	164.4	151.8	108.6	53.6	12.3	34.6	63.4	83.7	92.9
90°	153.8	139.5	99.4	44.9	2.2	25.1	53.6	73.7	80.7
92.5°	147.1	130.1	91.8	39.3	1.4	17.9	44.7	64.5	72.6
95°	137.0	122.0	84.0	35.2	1.4	12.0	36.0	55.3	62.2
97.5°	128.4	114.4	78.4	32.7	1.1	8.1	29.6	46.3	53.6
100°	121.7	108.6	73.4	30.4	1.4	5.9	23.4	39.3	45.8
102.5°	114.1	102.1	69.5	29.0	1.4	4.2	18.4	33.2	39.1
105°	107.4	96.8	65.9	27.6	1.4	3.6	14.8	27.3	32.7
107.5°	102.4	91.3	62.8	26.8	1.4	3.6	11.7	22.3	26.8
110°	97.4	86.8	59.7	26.0	1.4	3.3	9.2	18.4	22.3



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
112.5°	94.0	82.6	56.9	25.1	1.7	3.3	7.5	15.3	18.4
115°	88.2	79.0	54.4	24.8	1.7	3.1	7.0	12.6	15.6
117.5°	84.0	75.6	51.9	24.0	1.7	3.1	6.7	10.3	12.6
120°	80.9	71.7	49.7	23.2	1.7	2.8	6.1	9.2	10.6
122.5°	77.0	68.1	47.7	22.6	1.7	2.8	5.9	8.7	9.5
125°	71.7	64.7	45.5	21.5	2.0	2.8	5.6	8.1	8.9
127.5°	68.4	61.7	43.8	20.1	2.0	2.5	5.3	7.5	8.4
130°	65.6	58.3	41.9	18.7	2.0	2.5	5.0	7.0	7.8
132.5°	61.4	55.0	39.1	17.6	2.0	2.2	4.5	6.4	7.3
135°	57.5	52.2	36.3	16.5	2.0	2.2	4.2	6.1	6.7
137.5°	55.0	49.4	33.8	15.3	2.0	2.0	3.9	5.6	6.1
140°	50.8	46.3	31.0	14.2	2.0	2.0	3.6	5.3	5.6
142.5°	47.7	43.3	28.5	13.1	2.0	2.0	3.3	4.7	5.3
145°	44.1	40.2	25.7	12.0	2.0	1.7	3.1	4.5	4.7
147.5°	40.7	36.6	23.4	11.2	2.0	1.7	2.8	3.9	4.2
150°	37.4	32.9	21.2	10.3	2.0	1.7	2.5	3.3	3.9
152.5°	33.8	28.5	19.0	9.5	2.0	1.7	2.2	3.1	3.3
155°	30.1	24.8	17.0	8.7	2.2	1.7	2.0	2.5	3.1
157.5°	27.1	21.5	15.1	7.8	2.2	1.4	2.0	2.2	2.5
160°	23.4	18.4	13.4	7.0	2.2	1.4	1.7	2.0	2.2
162.5°	20.7	15.3	11.7	6.4	2.2	1.4	1.7	1.7	2.0
165°	17.6	12.8	9.8	5.9	2.2	1.4	1.4	1.4	1.7
167.5°	14.2	10.0	8.1	5.3	2.2	1.4	1.4	1.1	1.4
170°	10.6	7.5	6.7	4.7	2.2	1.4	1.1	0.8	1.1
172.5°	4.7	5.9	5.3	4.2	2.5	1.4	1.1	0.8	0.6
175°	2.5	4.2	4.2	3.6	2.5	1.4	1.1	0.8	0.3
177.5°	2.0	2.5	3.1	3.1	2.5	1.7	1.1	0.6	0.3
180°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7



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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	16.40	17.88	16.91	18.38	18.93	15.37	16.85	15.88	17.35	17.90
	3H	18.49	19.84	19.01	20.35	20.93	17.24	18.59	17.76	19.10	19.69
	4H	19.43	20.71	19.97	21.24	21.83	17.99	19.27	18.53	19.79	20.39
	6H	20.35	21.54	20.90	22.08	22.69	18.62	19.81	19.18	20.35	20.96
	8H	20.78	21.92	21.34	22.48	23.10	18.88	20.02	19.44	20.58	21.20
	12H	21.20	22.29	21.77	22.85	23.50	19.11	20.20	19.68	20.76	21.41
4H	2H	16.89	18.17	17.43	18.70	19.30	15.94	17.21	16.48	17.74	18.34
	3H	19.21	20.30	19.76	20.87	21.48	18.00	19.08	18.55	19.65	20.27
	4H	20.32	21.32	20.89	21.90	22.54	18.85	19.84	19.42	20.42	21.07
	6H	21.43	22.30	22.02	22.91	23.57	19.60	20.48	20.20	21.09	21.75
	8H	21.95	22.78	22.55	23.38	24.06	19.92	20.75	20.52	21.35	22.02
	12H	22.48	23.23	23.10	23.86	24.54	20.21	20.96	20.83	21.59	22.27
8H	4H	20.58	21.40	21.17	22.01	22.68	19.19	20.01	19.78	20.62	21.29
	6H	21.86	22.56	22.49	23.21	23.89	20.07	20.77	20.70	21.42	22.10
	8H	22.53	23.16	23.17	23.81	24.51	20.47	21.10	21.11	21.76	22.45
	12H	23.23	23.80	23.88	24.44	25.20	20.86	21.42	21.50	22.06	22.82
12H	4H	20.60	21.35	21.21	21.98	22.66	19.25	20.00	19.87	20.63	21.31
	6H	21.92	22.55	22.56	23.20	23.89	20.18	20.81	20.82	21.47	22.16
	8H	22.66	23.22	23.30	23.86	24.62	20.64	21.21	21.29	21.85	22.61