

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: P892724

Luminaire Tested: 2MB-4HL-ASMF-UNV-L950

Issue Date: 11/11/2024

Test Information

Test Method: LM-79-2019
Report Number: P892724
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: 2MB-4HL-ASMF-UNV-L950
Description: 4000 Lumen 2FT MICROBAY LINEAR BAY with FROSTED ASYMMETRIC LENS, 90CRI, 5000K CCT
Light Source: -
Ballast/Driver: -

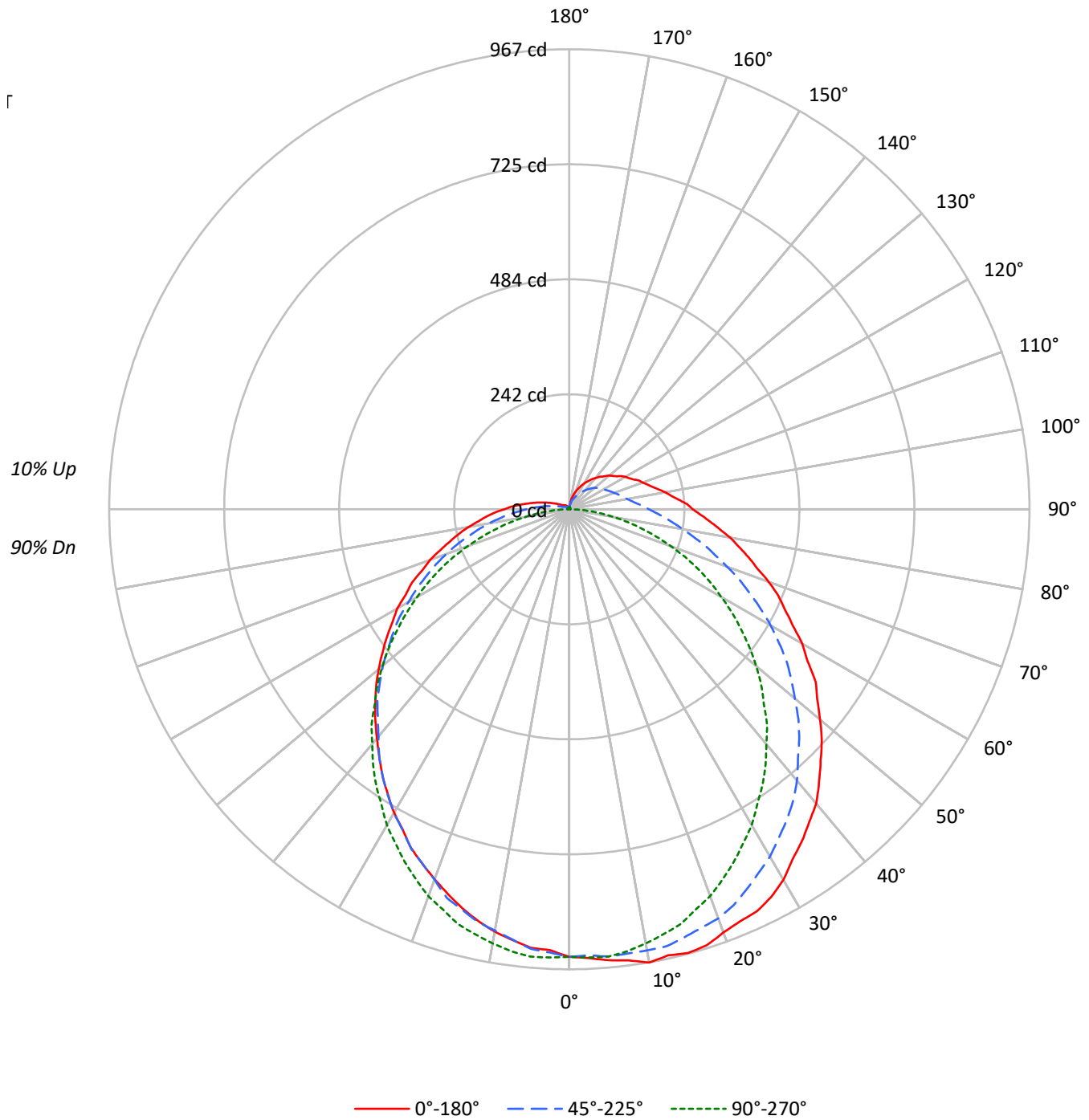
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3234.0 lumens
Efficiency: N/A
Efficacy: 117.2 lumens/watt
Spacing Criteria (0/90/45): 1.28 / 1.21 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.27' x L: 1.98' x H: 0.12')
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	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°	19260	19260	19260	19260	19260
5°	19450	18781	18634	18455	18911
10°	19893	18356	17788	17530	18540
15°	20129	17937	16999	16768	18099
20°	20166	17534	16100	15867	17622
25°	20468	16941	15154	15116	17248
30°	20524	16372	14253	14308	16801
35°	20400	15752	13308	13530	16381
40°	20498	15114	12339	12660	15962
45°	20344	14367	11382	11994	15692
50°	20385	13599	10462	11232	15479
55°	20699	12927	9409	10473	15325
60°	20868	12102	8330	9668	15401
65°	21353	11209	7237	8866	15575
70°	22748	10355	5932	8100	15861
75°	24963	9716	4535	7213	16563
80°	29770	9094	3037	6428	18657
85°	40495	8900	1525	5615	23809

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 90°
 Luminance: 83996 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	89.3	2.8
10°-20°	255.8	7.9
20°-30°	385.7	11.9
30°-40°	463.0	14.3
40°-50°	482.1	14.9
50°-60°	446.9	13.8
60°-70°	368.0	11.4
70°-80°	265.5	8.2
80°-90°	168.5	5.2
90°-100°	103.9	3.2
100°-110°	69.3	2.1
110°-120°	49.3	1.5
120°-130°	36.1	1.1
130°-140°	24.9	0.8
140°-150°	15.1	0.5
150°-160°	7.5	0.2
160°-170°	2.8	0.1
170°-180°	0.5	0.0
0°-30°	730.8	22.6
0°-40°	1193.7	36.9
0°-60°	2122.7	65.6
0°-90°	2924.7	90.4
90°-120°	222.5	6.9
90°-150°	298.6	9.2
90°-180°	309.0	9.6
0°-180°	3234.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	941	941	941	941	941	
5°	952	944	944	928	925	91
15°	966	932	903	871	868	272
25°	933	882	818	787	786	429
35°	852	797	708	684	684	534
45°	747	683	578	570	576	578
55°	632	557	441	452	468	562
65°	500	419	300	331	365	498
75°	390	296	158	220	259	413
85°	297	201	41	127	174	252
90°	259	167	4	90	136	143
95°	231	142	2	61	105	184
105°	181	111	2	25	55	193
115°	149	92	3	12	26	149
125°	121	77	3	9	15	110
135°	97	61	3	7	11	76
145°	74	43	3	5	8	47
155°	51	29	4	3	5	24
165°	30	16	4	2	3	9
175°	4	7	4	2	0	1
180°	3	3	3	3	3	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
0°	940.6	940.6	940.6	940.6	940.6	940.6	940.6	940.6	940.6
2.5°	944.4	947.2	938.3	943.9	943.0	943.9	932.6	942.0	927.5
5°	951.5	952.9	943.9	947.2	943.9	935.9	927.5	924.2	925.1
7.5°	956.2	963.7	941.6	942.5	936.9	928.4	912.4	915.2	913.4
10°	967.4	959.0	941.6	937.3	926.5	917.6	899.2	900.7	901.6
12.5°	960.4	958.5	941.1	925.6	914.8	907.2	888.4	883.7	886.1
15°	965.6	957.6	931.7	919.5	903.0	889.8	871.0	867.7	868.2
17.5°	960.9	954.3	922.3	905.4	882.3	874.3	856.4	850.8	848.0
20°	946.7	943.5	915.2	886.1	865.4	849.9	828.2	824.9	827.3
22.5°	937.3	929.3	901.1	872.0	841.9	828.2	806.6	806.1	806.6
25°	932.6	922.3	881.8	851.3	817.9	805.7	786.8	779.8	785.9
27.5°	918.5	909.1	861.6	828.2	791.1	774.6	759.1	757.7	758.6
30°	899.7	881.4	843.3	802.4	766.6	749.7	737.0	727.6	736.5
32.5°	872.9	862.6	819.3	774.6	735.1	723.3	710.6	709.7	709.7
35°	852.2	844.7	796.7	750.2	707.8	691.8	684.3	681.0	684.3
37.5°	828.2	816.9	772.7	720.5	677.3	663.6	656.1	653.3	655.6
40°	807.5	786.8	744.5	690.0	643.9	631.6	623.6	626.5	628.8
42.5°	777.0	765.2	711.1	658.9	615.2	602.0	595.4	597.8	603.4
45°	746.9	736.0	683.4	626.5	578.0	571.0	570.5	569.1	576.1
47.5°	719.6	704.1	652.8	594.5	547.0	539.0	539.9	544.6	550.7
50°	688.1	669.7	618.9	560.1	512.6	507.5	511.2	514.5	522.5
52.5°	656.6	642.0	587.9	527.7	477.8	474.1	479.3	490.1	494.8
55°	632.1	605.8	557.3	489.6	440.7	441.2	451.5	457.6	468.0
57.5°	593.1	573.3	522.5	455.7	405.9	409.2	423.3	433.6	440.2
60°	565.3	540.4	488.7	419.5	369.2	374.4	390.4	405.9	417.2
62.5°	529.6	507.9	453.4	383.8	335.3	342.9	360.7	379.1	387.1
65°	500.4	476.0	418.6	348.0	300.1	309.0	331.1	351.8	365.0
67.5°	475.5	450.1	387.5	315.1	264.3	277.5	303.4	323.6	333.9
70°	445.9	416.2	352.3	278.4	227.2	242.7	275.6	299.1	310.9
72.5°	414.3	390.4	321.7	244.6	192.8	211.6	247.9	272.3	283.6
75°	389.9	363.1	295.8	210.7	158.0	180.6	219.6	247.4	258.7
77.5°	365.0	340.5	266.7	179.7	127.0	152.4	194.7	225.3	237.0
80°	342.9	314.6	242.2	154.3	94.5	124.6	171.2	201.3	214.9
82.5°	318.4	293.9	221.0	127.5	67.3	99.2	148.1	181.1	192.4
85°	296.8	271.4	201.3	106.3	41.4	76.7	127.0	160.8	174.5
87.5°	277.0	255.9	183.0	90.3	20.7	58.3	106.8	141.1	156.6
90°	259.1	235.2	167.4	75.7	3.8	42.3	90.3	124.2	135.9
92.5°	247.9	219.2	154.7	66.3	2.4	30.1	75.3	108.6	122.3
95°	230.9	205.5	141.6	59.3	2.4	20.2	60.7	93.1	104.9
97.5°	216.3	192.8	132.2	55.0	1.9	13.6	49.9	78.1	90.3
100°	205.1	183.0	123.7	51.3	2.4	9.9	39.5	66.3	77.1
102.5°	192.4	172.1	117.1	48.9	2.4	7.1	31.0	56.0	65.8
105°	181.1	163.2	111.0	46.6	2.4	6.1	24.9	46.1	55.0
107.5°	172.6	153.8	105.8	45.2	2.4	6.1	19.8	37.6	45.2
110°	164.1	146.3	100.6	43.7	2.4	5.6	15.5	31.0	37.6



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
112.5°	158.5	139.2	95.9	42.3	2.8	5.6	12.7	25.9	31.0
115°	148.6	133.1	91.7	41.9	2.8	5.2	11.8	21.2	26.3
117.5°	141.6	127.5	87.5	40.4	2.8	5.2	11.3	17.4	21.2
120°	136.4	120.9	83.7	39.0	2.8	4.7	10.3	15.5	17.9
122.5°	129.8	114.8	80.4	38.1	2.8	4.7	9.9	14.6	16.0
125°	120.9	109.1	76.7	36.2	3.3	4.7	9.4	13.6	15.1
127.5°	115.2	103.9	73.8	33.9	3.3	4.2	8.9	12.7	14.1
130°	110.5	98.3	70.5	31.5	3.3	4.2	8.5	11.8	13.2
132.5°	103.5	92.7	65.8	29.6	3.3	3.8	7.5	10.8	12.2
135°	96.9	87.9	61.1	27.7	3.3	3.8	7.1	10.3	11.3
137.5°	92.7	83.2	56.9	25.9	3.3	3.3	6.6	9.4	10.3
140°	85.6	78.1	52.2	24.0	3.3	3.3	6.1	8.9	9.4
142.5°	80.4	72.9	48.0	22.1	3.3	3.3	5.6	8.0	8.9
145°	74.3	67.7	43.3	20.2	3.3	2.8	5.2	7.5	8.0
147.5°	68.7	61.6	39.5	18.8	3.3	2.8	4.7	6.6	7.1
150°	63.0	55.5	35.7	17.4	3.3	2.8	4.2	5.6	6.6
152.5°	56.9	48.0	32.0	16.0	3.3	2.8	3.8	5.2	5.6
155°	50.8	41.9	28.7	14.6	3.8	2.8	3.3	4.2	5.2
157.5°	45.6	36.2	25.4	13.2	3.8	2.4	3.3	3.8	4.2
160°	39.5	31.0	22.6	11.8	3.8	2.4	2.8	3.3	3.8
162.5°	34.8	25.9	19.8	10.8	3.8	2.4	2.8	2.8	3.3
165°	29.6	21.6	16.5	9.9	3.8	2.4	2.4	2.4	2.8
167.5°	24.0	16.9	13.6	8.9	3.8	2.4	2.4	1.9	2.4
170°	17.9	12.7	11.3	8.0	3.8	2.4	1.9	1.4	1.9
172.5°	8.0	9.9	8.9	7.1	4.2	2.4	1.9	1.4	0.9
175°	4.2	7.1	7.1	6.1	4.2	2.4	1.9	1.4	0.5
177.5°	3.3	4.2	5.2	5.2	4.2	2.8	1.9	0.9	0.5
180°	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8



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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	20.61	22.09	21.12	22.59	23.13	19.49	20.96	19.99	21.47	22.01
	3H	22.70	24.05	23.22	24.56	25.14	21.32	22.67	21.84	23.18	23.76
	4H	23.64	24.92	24.18	25.45	26.05	22.05	23.32	22.58	23.85	24.45
	6H	24.57	25.75	25.12	26.29	26.91	22.65	23.83	23.20	24.37	24.99
	8H	25.00	26.13	25.56	26.70	27.32	22.88	24.02	23.44	24.58	25.20
	12H	25.42	26.51	25.99	27.07	27.72	23.08	24.17	23.65	24.73	25.38
4H	2H	21.09	22.37	21.63	22.90	23.49	20.06	21.33	20.60	21.86	22.46
	3H	23.41	24.49	23.96	25.06	25.68	22.08	23.17	22.64	23.74	24.36
	4H	24.52	25.52	25.09	26.10	26.75	22.91	23.91	23.49	24.49	25.14
	6H	25.63	26.51	26.22	27.11	27.77	23.64	24.51	24.23	25.12	25.78
	8H	26.16	26.99	26.76	27.59	28.26	23.93	24.76	24.53	25.36	26.03
	12H	26.69	27.44	27.31	28.07	28.75	24.19	24.94	24.81	25.57	26.25
8H	4H	24.77	25.60	25.37	26.20	26.87	23.26	24.08	23.85	24.69	25.36
	6H	26.05	26.75	26.68	27.40	28.08	24.11	24.81	24.74	25.46	26.14
	8H	26.72	27.36	27.36	28.01	28.70	24.49	25.12	25.13	25.77	26.47
	12H	27.43	27.99	28.07	28.64	29.39	24.85	25.41	25.49	26.05	26.81
12H	4H	24.79	25.54	25.40	26.17	26.85	23.32	24.07	23.94	24.70	25.39
	6H	26.11	26.74	26.75	27.39	28.08	24.22	24.86	24.86	25.51	26.20
	8H	26.85	27.41	27.49	28.05	28.81	24.66	25.23	25.31	25.87	26.63