

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: P892719

Luminaire Tested: 2MB-4HL-ASMF-UNV-L840

Issue Date: 11/11/2024

Test Information

Test Method: LM-79-2019
Report Number: P892719
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-L840
Description: 4000 Lumen 2FT MICROBAY LINEAR BAY with FROSTED ASYMMETRIC LENS, 80CRI, 4000K CCT
Light Source: -
Ballast/Driver: -

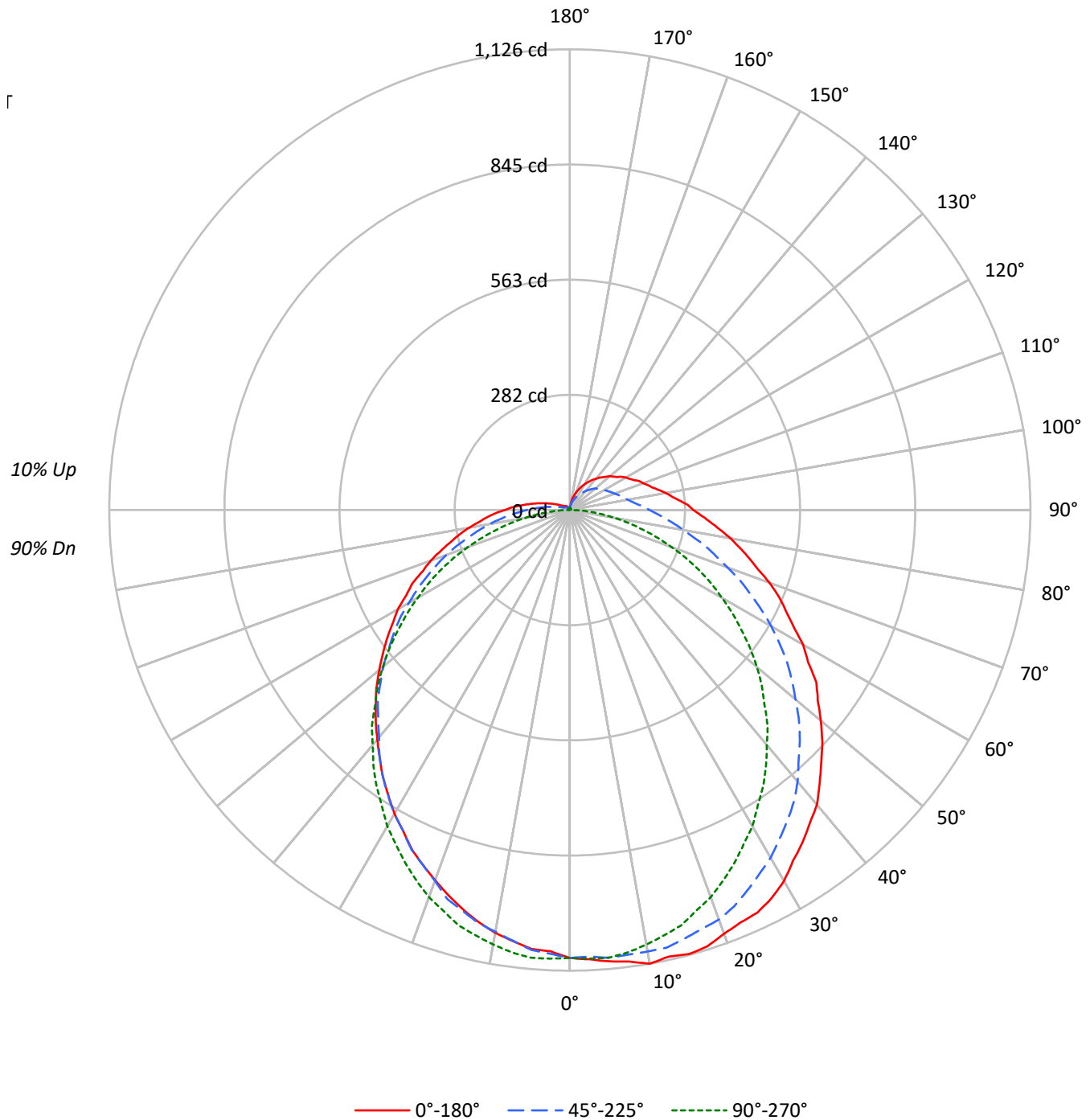
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3764.0 lumens
Efficiency: N/A
Efficacy: 136.4 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

TEST NUMBER: P892719
CATALOG NUMBER: 2MB-4HL-ASMF-UNV-L840

Luminous Intensity Polar Plot





TEST NUMBER: P892719

CATALOG NUMBER: 2MB-4HL-ASMF-UNV-L840

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	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°	22418	22418	22418	22418	22418
5°	22637	21860	21688	21480	22010
10°	23154	21365	20704	20403	21579
15°	23427	20877	19785	19518	21065
20°	23471	20408	18738	18469	20511
25°	23823	19719	17636	17594	20075
30°	23889	19055	16590	16653	19555
35°	23745	18335	15489	15748	19067
40°	23859	17591	14361	14734	18579
45°	23678	16722	13246	13960	18266
50°	23724	15829	12178	13074	18018
55°	24091	15048	10951	12190	17837
60°	24290	14083	9695	11250	17922
65°	24852	13046	8421	10320	18127
70°	26472	12051	6904	9429	18458
75°	29054	11309	5279	8396	19277
80°	34650	10585	3535	7483	21722
85°	47126	10359	1775	6535	27711

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 90°
 Luminance: 97774 cd/sqm



TEST NUMBER: P892719
 CATALOG NUMBER: 2MB-4HL-ASMF-UNV-L840

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	103.9	2.8
10°-20°	297.7	7.9
20°-30°	448.9	11.9
30°-40°	538.8	14.3
40°-50°	561.1	14.9
50°-60°	520.1	13.8
60°-70°	428.3	11.4
70°-80°	309.0	8.2
80°-90°	196.1	5.2
90°-100°	120.9	3.2
100°-110°	80.6	2.1
110°-120°	57.4	1.5
120°-130°	42.1	1.1
130°-140°	28.9	0.8
140°-150°	17.6	0.5
150°-160°	8.7	0.2
160°-170°	3.2	0.1
170°-180°	0.5	0.0
0°-30°	850.5	22.6
0°-40°	1389.4	36.9
0°-60°	2470.5	65.6
0°-90°	3404.0	90.4
90°-120°	259.0	6.9
90°-150°	347.5	9.2
90°-180°	360.0	9.6
0°-180°	3764.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1095	1095	1095	1095	1095	
5°	1107	1099	1099	1080	1077	106
15°	1124	1084	1051	1014	1010	317
25°	1086	1026	952	916	915	499
35°	992	927	824	796	796	621
45°	869	795	673	664	671	673
55°	736	649	513	526	545	654
65°	582	487	349	385	425	580
75°	454	344	184	256	301	481
85°	345	234	48	148	203	293
90°	302	195	4	105	158	166
95°	269	165	3	71	122	214
105°	211	129	3	29	64	225
115°	173	107	3	14	31	173
125°	141	89	4	11	18	128
135°	113	71	4	8	13	88
145°	86	50	4	6	9	55
155°	59	33	4	4	6	28
165°	34	19	4	3	3	10
175°	5	8	5	2	0	1
180°	3	3	3	3	3	



TEST NUMBER: P892719
 CATALOG NUMBER: 2MB-4HL-ASMF-UNV-L840

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
0°	1094.8	1094.8	1094.8	1094.8	1094.8	1094.8	1094.8	1094.8	1094.8
2.5°	1099.2	1102.5	1092.1	1098.6	1097.5	1098.6	1085.5	1096.4	1079.5
5°	1107.4	1109.0	1098.6	1102.5	1098.6	1089.3	1079.5	1075.6	1076.7
7.5°	1112.9	1121.6	1095.9	1097.0	1090.4	1080.6	1061.9	1065.2	1063.0
10°	1126.0	1116.1	1095.9	1091.0	1078.4	1068.0	1046.6	1048.3	1049.4
12.5°	1117.8	1115.6	1095.3	1077.3	1064.7	1055.9	1034.0	1028.6	1031.3
15°	1123.8	1114.5	1084.4	1070.2	1051.0	1035.7	1013.8	1009.9	1010.5
17.5°	1118.3	1110.7	1073.4	1053.7	1026.9	1017.6	996.8	990.2	987.0
20°	1101.9	1098.1	1065.2	1031.3	1007.2	989.1	964.0	960.1	962.9
22.5°	1091.0	1081.6	1048.8	1014.9	979.8	964.0	938.8	938.2	938.8
25°	1085.5	1073.4	1026.4	990.8	951.9	937.7	915.8	907.6	914.7
27.5°	1069.1	1058.1	1002.8	964.0	920.7	901.6	883.5	881.9	882.9
30°	1047.2	1025.8	981.5	933.9	892.3	872.5	857.8	846.8	857.2
32.5°	1016.0	1003.9	953.6	901.6	855.6	841.9	827.1	826.0	826.0
35°	991.9	983.1	927.3	873.1	823.8	805.2	796.5	792.6	796.5
37.5°	964.0	950.8	899.4	838.6	788.2	772.4	763.6	760.3	763.1
40°	939.9	915.8	866.5	803.0	749.4	735.1	725.8	729.1	731.9
42.5°	904.3	890.6	827.7	766.9	716.0	700.7	693.0	695.7	702.3
45°	869.3	856.7	795.4	729.1	672.7	664.5	664.0	662.3	670.6
47.5°	837.5	819.4	759.8	691.9	636.6	627.3	628.4	633.9	641.0
50°	800.8	779.5	720.4	651.9	596.7	590.6	595.0	598.8	608.2
52.5°	764.2	747.2	684.2	614.2	556.2	551.8	557.8	570.4	575.9
55°	735.7	705.0	648.7	569.8	512.9	513.5	525.5	532.6	544.7
57.5°	690.3	667.3	608.2	530.4	472.4	476.2	492.7	504.7	512.4
60°	658.0	629.0	568.7	488.3	429.7	435.7	454.3	472.4	485.5
62.5°	616.4	591.2	527.7	446.7	390.3	399.1	419.9	441.2	450.5
65°	582.4	554.0	487.2	405.1	349.2	359.6	385.4	409.5	424.8
67.5°	553.4	523.9	451.1	366.8	307.6	323.0	353.1	376.6	388.6
70°	518.9	484.4	410.0	324.1	264.4	282.5	320.8	348.1	361.8
72.5°	482.3	454.3	374.4	284.6	224.4	246.3	288.5	316.9	330.1
75°	453.8	422.6	344.3	245.2	183.9	210.2	255.6	287.9	301.1
77.5°	424.8	396.3	310.4	209.1	147.8	177.4	226.6	262.2	275.9
80°	399.1	366.2	281.9	179.5	110.0	145.1	199.3	234.3	250.2
82.5°	370.6	342.1	257.3	148.3	78.3	115.5	172.4	210.7	223.9
85°	345.4	315.8	234.3	123.7	48.2	89.2	147.8	187.2	203.1
87.5°	322.4	297.8	212.9	105.1	24.1	67.9	124.3	164.2	182.3
90°	301.6	273.7	194.9	88.1	4.4	49.3	105.1	144.5	158.2
92.5°	288.5	255.1	180.1	77.2	2.7	35.0	87.6	126.4	142.3
95°	268.8	239.2	164.8	69.0	2.7	23.5	70.6	108.4	122.1
97.5°	251.8	224.4	153.8	64.0	2.2	15.9	58.0	90.9	105.1
100°	238.7	212.9	144.0	59.7	2.7	11.5	46.0	77.2	89.8
102.5°	223.9	200.3	136.3	56.9	2.7	8.2	36.1	65.1	76.6
105°	210.7	189.9	129.2	54.2	2.7	7.1	29.0	53.6	64.0
107.5°	200.9	179.0	123.2	52.5	2.7	7.1	23.0	43.8	52.5
110°	191.0	170.2	117.1	50.9	2.7	6.6	18.1	36.1	43.8



TEST NUMBER: P892719
 CATALOG NUMBER: 2MB-4HL-ASMF-UNV-L840

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
112.5°	184.5	162.0	111.7	49.3	3.3	6.6	14.8	30.1	36.1
115°	173.0	154.9	106.7	48.7	3.3	6.0	13.7	24.6	30.7
117.5°	164.8	148.3	101.8	47.1	3.3	6.0	13.1	20.3	24.6
120°	158.7	140.7	97.4	45.4	3.3	5.5	12.0	18.1	20.8
122.5°	151.1	133.6	93.6	44.3	3.3	5.5	11.5	17.0	18.6
125°	140.7	127.0	89.2	42.1	3.8	5.5	10.9	15.9	17.5
127.5°	134.1	121.0	85.9	39.4	3.8	4.9	10.4	14.8	16.4
130°	128.6	114.4	82.1	36.7	3.8	4.9	9.9	13.7	15.3
132.5°	120.4	107.8	76.6	34.5	3.8	4.4	8.8	12.6	14.2
135°	112.8	102.4	71.2	32.3	3.8	4.4	8.2	12.0	13.1
137.5°	107.8	96.9	66.2	30.1	3.8	3.8	7.7	10.9	12.0
140°	99.6	90.9	60.8	27.9	3.8	3.8	7.1	10.4	10.9
142.5°	93.6	84.8	55.8	25.7	3.8	3.8	6.6	9.3	10.4
145°	86.5	78.8	50.4	23.5	3.8	3.3	6.0	8.8	9.3
147.5°	79.9	71.7	46.0	21.9	3.8	3.3	5.5	7.7	8.2
150°	73.4	64.6	41.6	20.3	3.8	3.3	4.9	6.6	7.7
152.5°	66.2	55.8	37.2	18.6	3.8	3.3	4.4	6.0	6.6
155°	59.1	48.7	33.4	17.0	4.4	3.3	3.8	4.9	6.0
157.5°	53.1	42.1	29.6	15.3	4.4	2.7	3.8	4.4	4.9
160°	46.0	36.1	26.3	13.7	4.4	2.7	3.3	3.8	4.4
162.5°	40.5	30.1	23.0	12.6	4.4	2.7	3.3	3.3	3.8
165°	34.5	25.2	19.2	11.5	4.4	2.7	2.7	2.7	3.3
167.5°	27.9	19.7	15.9	10.4	4.4	2.7	2.7	2.2	2.7
170°	20.8	14.8	13.1	9.3	4.4	2.7	2.2	1.6	2.2
172.5°	9.3	11.5	10.4	8.2	4.9	2.7	2.2	1.6	1.1
175°	4.9	8.2	8.2	7.1	4.9	2.7	2.2	1.6	0.5
177.5°	3.8	4.9	6.0	6.0	4.9	3.3	2.2	1.1	0.5
180°	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3



TEST NUMBER: P892719
 CATALOG NUMBER: 2MB-4HL-ASMF-UNV-L840

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	21.14	22.62	21.64	23.12	23.66	20.01	21.49	20.52	21.99	22.54
	3H	23.23	24.57	23.75	25.09	25.67	21.85	23.20	22.37	23.71	24.29
	4H	24.17	25.45	24.71	25.98	26.57	22.57	23.85	23.11	24.38	24.97
	6H	25.09	26.28	25.65	26.82	27.43	23.17	24.36	23.73	24.90	25.51
	8H	25.52	26.66	26.09	27.23	27.84	23.41	24.55	23.97	25.11	25.73
	12H	25.95	27.04	26.52	27.60	28.24	23.61	24.70	24.18	25.26	25.91
4H	2H	21.62	22.90	22.16	23.42	24.02	20.58	21.86	21.12	22.39	22.98
	3H	23.93	25.02	24.49	25.59	26.21	22.61	23.70	23.16	24.27	24.89
	4H	25.05	26.05	25.62	26.62	27.27	23.44	24.44	24.01	25.01	25.66
	6H	26.16	27.04	26.75	27.64	28.30	24.16	25.04	24.76	25.65	26.31
	8H	26.69	27.51	27.28	28.12	28.79	24.46	25.28	25.05	25.89	26.56
	12H	27.22	27.97	27.84	28.60	29.28	24.72	25.47	25.34	26.10	26.78
8H	4H	25.30	26.12	25.89	26.73	27.40	23.79	24.61	24.38	25.21	25.89
	6H	26.58	27.28	27.21	27.93	28.61	24.64	25.34	25.27	25.98	26.66
	8H	27.25	27.88	27.89	28.54	29.23	25.02	25.65	25.66	26.30	26.99
	12H	27.96	28.52	28.60	29.16	29.92	25.37	25.94	26.02	26.58	27.34
12H	4H	25.31	26.06	25.93	26.69	27.37	23.85	24.60	24.47	25.23	25.91
	6H	26.63	27.27	27.27	27.92	28.61	24.75	25.38	25.39	26.04	26.73
	8H	27.38	27.94	28.02	28.58	29.34	25.19	25.76	25.83	26.40	27.16