

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: P893159

Luminaire Tested: 4MB-10HL-AOL-UNV-L940

Issue Date: 11/11/2024

Test Information

Test Method: LM-79-2019
Report Number: P893159
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-10HL-AOL-UNV-L940
Description: 10000 Lumen 4FT MICROBAY LINEAR BAY with AISLE OPTICS WITH CLEAR LENS NO UPLIGHT, 4000K CCT
Light Source: -
Ballast/Driver: -

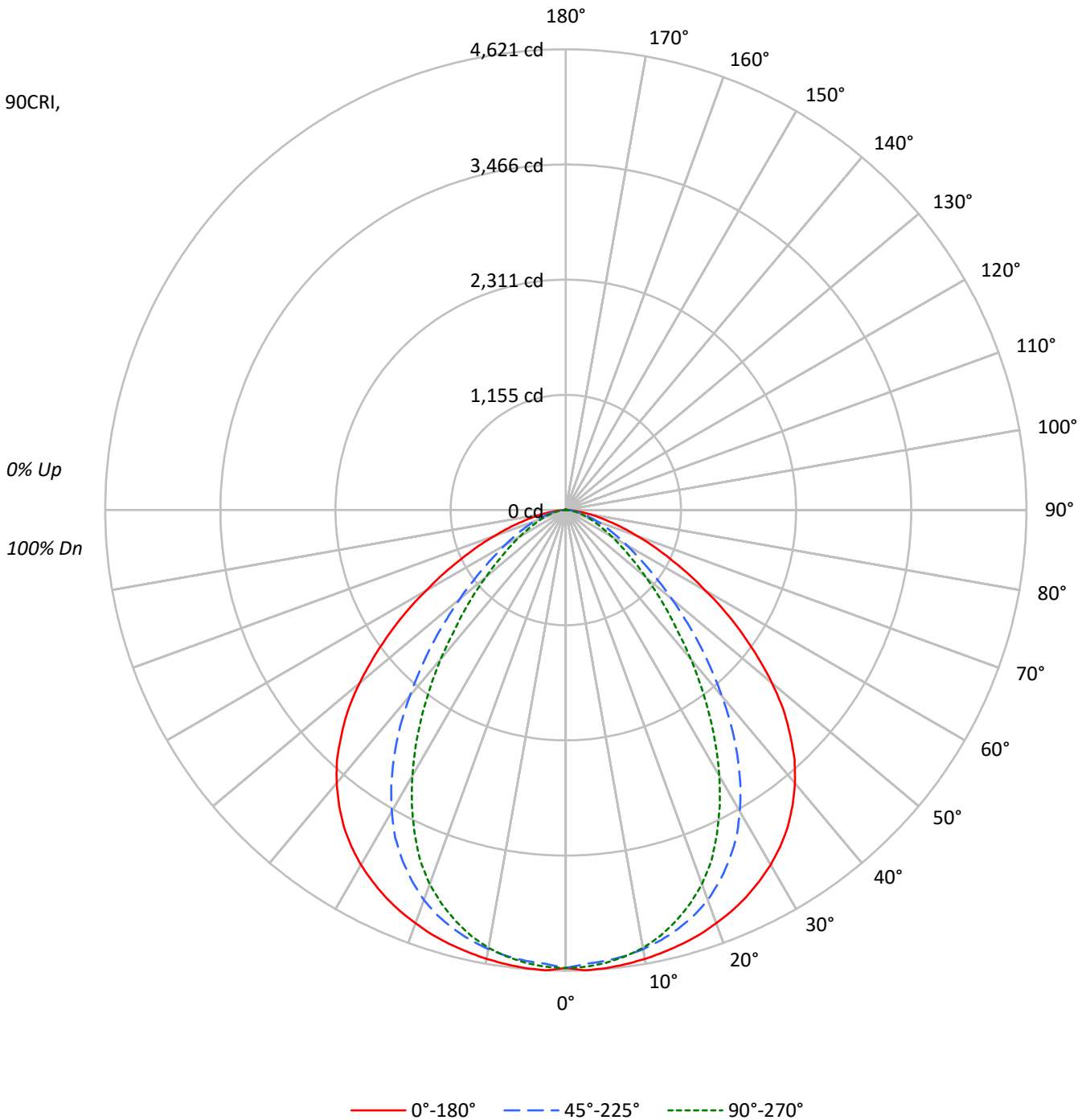
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 9080.9 lumens
Efficiency: N/A
Efficacy: 120.3 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): 75.5
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: 0.997
Total Harmonic Distortion (THDi): 7.45
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P893159
CATALOG NUMBER: 4MB-10HL-AOL-UNV-L940

Luminous Intensity Polar Plot





TEST NUMBER: P893159
 CATALOG NUMBER: 4MB-10HL-AOL-UNV-L940

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	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°	46787	46787	46787
5°	47152	46416	46621
10°	47283	46256	46134
15°	47515	45864	45000
20°	47796	45121	43274
25°	48134	43569	40294
30°	48337	41065	36223
35°	48261	37266	31276
40°	47551	32379	25936
45°	45821	27168	20884
50°	42786	22036	16581
55°	38327	17594	13278
60°	32966	14360	10852
65°	27676	11941	8976
70°	22592	10035	7703
75°	17919	8495	6559
80°	13941	7267	5660
85°	10750	6497	4896

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 45821 cd/sqm



TEST NUMBER: P893159
 CATALOG NUMBER: 4MB-10HL-AOL-UNV-L940

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	434.6	4.8
10°-20°	1233.6	13.6
20°-30°	1795.1	19.8
30°-40°	1929.8	21.3
40°-50°	1611.7	17.7
50°-60°	1082.5	11.9
60°-70°	615.0	6.8
70°-80°	280.2	3.1
80°-90°	71.5	0.8
90°-100°	8.0	0.1
100°-110°	5.8	0.1
110°-120°	3.4	0.0
120°-130°	2.3	0.0
130°-140°	2.1	0.0
140°-150°	1.9	0.0
150°-160°	1.7	0.0
160°-170°	1.3	0.0
170°-180°	0.5	0.0
0°-30°	3463.3	38.1
0°-40°	5393.1	59.4
0°-60°	8087.4	89.1
0°-90°	9054.0	99.7
90°-120°	17.1	0.2
90°-150°	23.4	0.3
90°-180°	27.0	0.3
0°-180°	9080.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4594	4594	4594	4594	4594	
5°	4612	4600	4540	4577	4560	439
15°	4507	4470	4350	4315	4268	1274
25°	4284	4160	3877	3676	3586	1974
35°	3882	3570	2997	2639	2516	2422
45°	3181	2624	1886	1543	1450	2445
55°	2159	1552	991	794	748	1929
65°	1148	790	496	397	372	1154
75°	455	329	216	176	167	501
85°	92	75	56	45	42	105
90°	12	10	7	6	6	11
95°	15	10	6	4	4	12
105°	11	8	5	3	2	11
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	



TEST NUMBER: P893159
 CATALOG NUMBER: 4MB-10HL-AOL-UNV-L940

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4594.1	4594.1	4594.1	4594.1	4594.1
2.5°	4621.4	4608.6	4556.7	4596.8	4585.9
5°	4612.3	4599.5	4540.3	4576.8	4560.4
7.5°	4595.0	4582.2	4513.0	4539.4	4517.6
10°	4572.2	4554.0	4472.9	4480.2	4461.1
12.5°	4542.1	4514.8	4419.2	4406.4	4376.4
15°	4506.6	4470.2	4350.0	4315.4	4268.0
17.5°	4465.6	4412.8	4266.2	4193.3	4141.4
20°	4410.1	4342.7	4163.3	4047.6	3992.9
22.5°	4352.7	4260.7	4030.3	3877.3	3811.7
25°	4283.5	4159.6	3877.3	3676.0	3585.8
27.5°	4200.6	4045.8	3705.1	3451.9	3344.4
30°	4110.4	3911.9	3492.0	3200.5	3080.3
32.5°	4002.0	3754.3	3258.8	2925.5	2800.7
35°	3881.8	3570.3	2997.4	2638.6	2515.6
37.5°	3736.1	3357.2	2726.0	2345.3	2226.9
40°	3576.7	3137.7	2435.5	2053.8	1950.9
42.5°	3397.3	2884.5	2153.1	1786.1	1675.0
45°	3181.4	2624.0	1886.3	1542.9	1450.0
47.5°	2961.0	2336.2	1620.3	1308.8	1242.3
50°	2700.5	2065.7	1390.8	1114.8	1046.5
52.5°	2430.0	1799.7	1176.8	946.3	885.3
55°	2158.6	1552.0	990.9	794.2	747.8
57.5°	1894.5	1324.3	833.4	671.3	631.2
60°	1618.5	1123.9	705.0	565.6	532.8
62.5°	1381.7	950.0	592.0	476.3	449.0
65°	1148.5	789.7	495.5	397.1	372.5
67.5°	952.7	652.1	410.8	329.7	308.8
70°	758.7	531.0	337.0	272.3	258.7
72.5°	604.8	423.5	273.2	221.3	207.7
75°	455.4	328.8	215.9	175.8	166.7
77.5°	342.5	249.6	166.7	136.6	126.6
80°	237.7	178.5	123.9	101.1	96.5
82.5°	152.1	123.0	85.6	72.0	66.5
85°	92.0	74.7	55.6	44.6	41.9
87.5°	43.7	36.4	28.2	21.9	20.0
90°	11.8	10.0	7.3	6.4	5.5
92.5°	13.7	10.0	6.4	4.6	3.6
95°	14.6	10.0	6.4	3.6	3.6
97.5°	14.6	10.9	5.5	3.6	2.7
100°	13.7	10.0	5.5	3.6	2.7
102.5°	11.8	9.1	4.6	2.7	2.7
105°	10.9	8.2	4.6	2.7	1.8
107.5°	9.1	7.3	3.6	2.7	1.8
110°	8.2	6.4	3.6	2.7	1.8



TEST NUMBER: P893159
CATALOG NUMBER: 4MB-10HL-AOL-UNV-L940

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	6.4	5.5	3.6	2.7	1.8
115°	5.5	4.6	2.7	1.8	1.8
117.5°	4.6	3.6	2.7	1.8	1.8
120°	4.6	3.6	2.7	1.8	1.8
122.5°	3.6	3.6	2.7	1.8	1.8
125°	3.6	2.7	2.7	1.8	1.8
127.5°	2.7	2.7	2.7	1.8	1.8
130°	2.7	2.7	2.7	2.7	1.8
132.5°	2.7	2.7	2.7	2.7	1.8
135°	2.7	2.7	2.7	2.7	2.7
137.5°	2.7	2.7	2.7	2.7	2.7
140°	2.7	2.7	2.7	2.7	2.7
142.5°	2.7	2.7	3.6	2.7	2.7
145°	2.7	2.7	3.6	3.6	2.7
147.5°	2.7	2.7	3.6	3.6	3.6
150°	2.7	2.7	3.6	3.6	3.6
152.5°	2.7	3.6	3.6	3.6	3.6
155°	2.7	3.6	3.6	3.6	3.6
157.5°	3.6	3.6	3.6	4.6	4.6
160°	3.6	3.6	4.6	4.6	4.6
162.5°	3.6	3.6	4.6	4.6	4.6
165°	3.6	3.6	4.6	5.5	5.5
167.5°	3.6	4.6	4.6	5.5	5.5
170°	3.6	4.6	4.6	5.5	5.5
172.5°	3.6	4.6	5.5	5.5	5.5
175°	3.6	4.6	5.5	5.5	5.5
177.5°	4.6	4.6	5.5	5.5	5.5
180°	5.5	5.5	5.5	5.5	5.5



TEST NUMBER: P893159
 CATALOG NUMBER: 4MB-10HL-AOL-UNV-L940

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	23.66	25.10	24.03	25.42	25.74	18.34	19.77	18.71	20.09	20.42
	3H	24.98	26.26	25.36	26.59	26.96	19.35	20.63	19.73	20.96	21.34
	4H	25.40	26.59	25.80	26.95	27.33	19.69	20.89	20.10	21.24	21.63
	6H	25.66	26.76	26.07	27.13	27.53	19.92	21.02	20.34	21.40	21.80
	8H	25.72	26.77	26.15	27.16	27.57	19.99	21.03	20.42	21.43	21.84
	12H	25.75	26.75	26.19	27.14	27.58	20.03	21.03	20.46	21.42	21.85
4H	2H	23.66	24.85	24.06	25.21	25.59	18.99	20.18	19.39	20.54	20.92
	3H	25.13	26.11	25.55	26.52	26.93	20.18	21.16	20.60	21.57	21.98
	4H	25.64	26.52	26.08	26.94	27.39	20.60	21.48	21.04	21.90	22.35
	6H	26.01	26.77	26.47	27.22	27.69	20.91	21.68	21.38	22.13	22.60
	8H	26.11	26.82	26.58	27.27	27.75	21.00	21.72	21.48	22.17	22.65
	12H	26.17	26.81	26.66	27.29	27.77	21.07	21.71	21.56	22.19	22.67
8H	4H	25.62	26.33	26.09	26.78	27.26	20.94	21.65	21.41	22.10	22.58
	6H	26.04	26.62	26.54	27.12	27.61	21.33	21.92	21.84	22.42	22.91
	8H	26.18	26.70	26.70	27.22	27.72	21.47	22.00	22.00	22.52	23.02
	12H	26.30	26.76	26.81	27.26	27.84	21.59	22.06	22.11	22.56	23.13
12H	4H	25.59	26.22	26.08	26.71	27.19	20.98	21.62	21.47	22.10	22.58
	6H	26.00	26.53	26.53	27.05	27.55	21.40	21.93	21.92	22.44	22.94
	8H	26.18	26.64	26.69	27.14	27.72	21.59	22.06	22.11	22.55	23.13