

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: P894077

Luminaire Tested: 4MB-9HL-RNDU-UNV-L930

Issue Date: 11/11/2024

**Test Information**

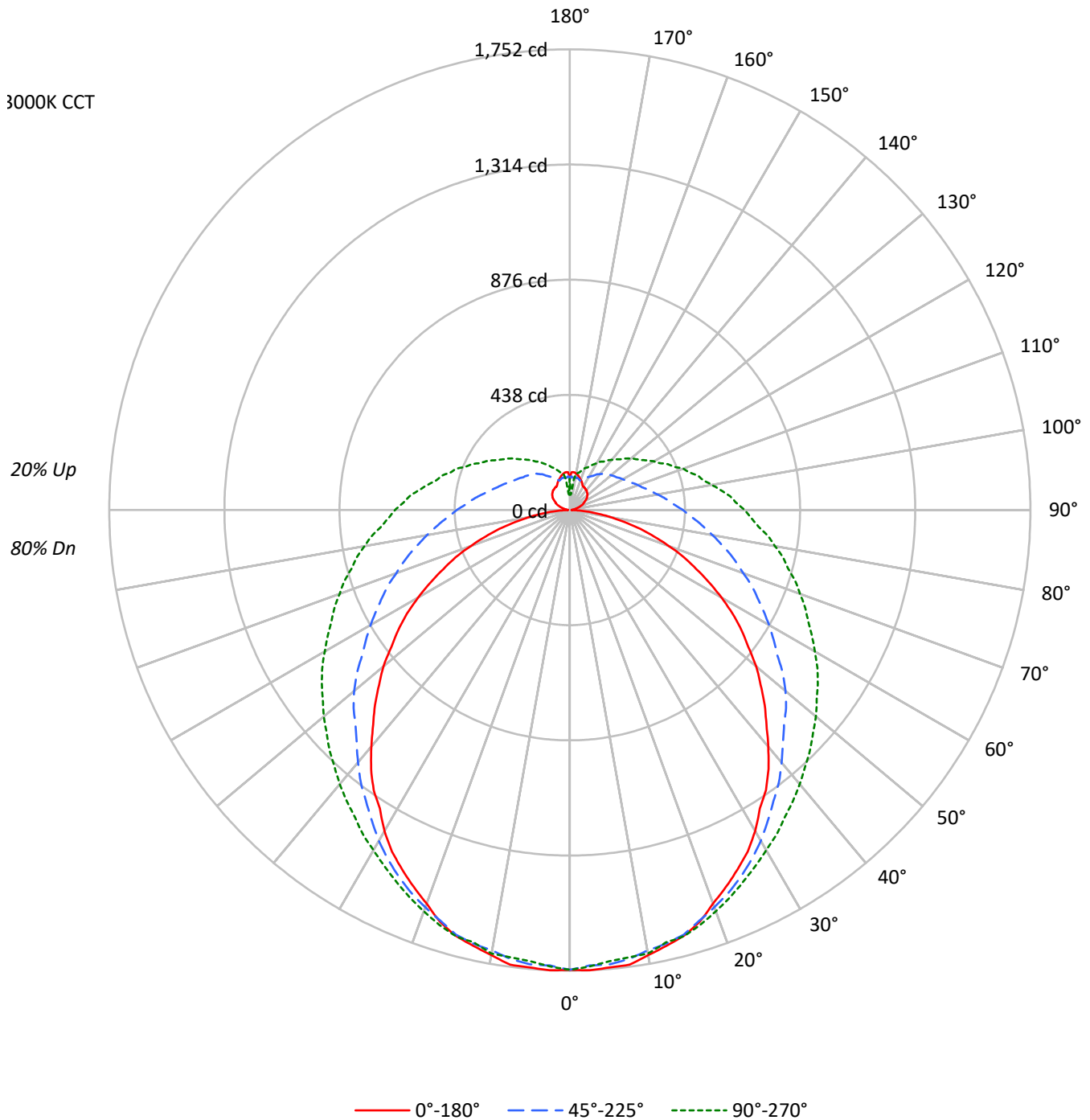
Test Method: LM-79-2019  
Report Number: P894077  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2403-334-3)  
Test Lab: INNOVATION CENTER  
Issue Date: 11/11/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: METALUX  
Catalog Number: 4MB-9HL-RNDU-UNV-L930  
Description: 9000 Lumen 4FT MICROBAY LINEAR BAY with ROUND FROSTED LENS WITH UPLIGHT, 90CRI, 5  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 7349.0 lumens  
Efficiency: N/A  
Efficacy: 114.1 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.28 / 1.37  
Luminous Opening: Rectangular w/ Sides (W: 0.38' x L: 3.98' x H: 0.21')  
CIE Type: Semi-Direct  
  
Input Watts (W): 64.4  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: 0.996  
Total Harmonic Distortion (THDi): 8.94  
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				
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	114	114	114	114	109	109	109	109	100	100	100	91	91	91	83	83	83	83	83	83	80
1	102	96	91	86	97	92	87	83	84	80	77	76	73	71	69	67	65	65	65	65	61
2	92	82	75	68	87	79	72	66	72	66	61	66	61	57	60	56	53	53	53	53	49
3	83	72	63	56	79	69	61	54	63	56	51	57	52	47	52	48	44	44	44	44	41
4	76	63	54	47	72	60	52	45	55	48	43	51	45	40	46	41	37	37	37	37	34
5	69	56	47	40	66	54	45	39	49	42	37	45	39	34	41	36	32	32	32	32	29
6	64	50	41	35	61	48	40	34	44	37	32	41	35	30	38	32	28	28	28	28	26
7	59	46	37	30	56	44	35	30	40	33	28	37	31	26	34	29	25	25	25	25	23
8	55	41	33	27	52	40	32	26	37	30	25	34	28	24	31	26	22	22	22	22	20
9	51	38	30	24	49	37	29	23	34	27	22	31	25	21	29	24	20	20	20	20	18
10	48	35	27	22	46	34	26	21	31	25	20	29	23	19	27	22	18	18	18	18	16

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	12438	12438	12438
5°	12415	11945	11741
10°	12304	11435	11286
15°	12180	11058	10776
20°	11834	10542	10252
25°	11561	10085	9757
30°	11243	9587	9324
35°	10896	9047	8948
40°	10447	8584	8660
45°	10021	8142	8402
50°	9647	7870	8184
55°	9208	7445	8015
60°	8687	7176	7859
65°	8036	6937	7742
70°	7307	6741	7737
75°	6363	6667	7759
80°	5004	6631	7909
85°	3294	6779	8088

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 10021 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	165.5	2.3
10°-20°	472.9	6.4
20°-30°	710.1	9.7
30°-40°	852.7	11.6
40°-50°	901.9	12.3
50°-60°	869.2	11.8
60°-70°	771.1	10.5
70°-80°	632.4	8.6
80°-90°	489.5	6.7
90°-100°	381.8	5.2
100°-110°	304.0	4.1
110°-120°	243.0	3.3
120°-130°	191.6	2.6
130°-140°	146.2	2.0
140°-150°	102.8	1.4
150°-160°	65.7	0.9
160°-170°	36.8	0.5
170°-180°	11.7	0.2
0°-30°	1348.5	18.3
0°-40°	2201.2	30.0
0°-60°	3972.3	54.1
0°-90°	5865.3	79.8
90°-120°	928.8	12.6
90°-150°	1369.5	18.6
90°-180°	1484.0	20.2
0°-180°	7349.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1748	1748	1748	1748	1748	
5°	1746	1751	1734	1747	1723	166
15°	1677	1678	1672	1683	1678	471
25°	1509	1533	1539	1565	1560	695
35°	1300	1320	1351	1407	1426	811
45°	1048	1079	1153	1262	1292	809
55°	798	838	964	1095	1152	712
65°	531	604	787	950	1000	528
75°	277	398	627	796	859	293
85°	64	242	486	661	720	73
90°	7	193	430	598	665	7
95°	9	159	380	546	611	9
105°	29	129	304	447	504	31
115°	57	126	252	365	412	55
125°	79	128	217	299	331	70
135°	93	124	195	253	273	72
145°	101	114	160	212	225	63
155°	112	117	132	166	186	51
165°	132	129	124	121	151	37
175°	145	140	124	102	64	14
180°	118	118	118	118	118	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1748.2	1748.2	1748.2	1748.2	1748.2
2.5°	1752.1	1757.9	1733.5	1748.2	1737.4
5°	1746.2	1751.1	1734.5	1747.2	1722.7
7.5°	1744.2	1742.3	1721.8	1738.4	1715.9
10°	1718.8	1725.7	1701.2	1723.7	1713.0
12.5°	1697.3	1711.0	1689.5	1707.1	1684.6
15°	1676.8	1677.8	1671.9	1682.6	1677.8
17.5°	1642.6	1651.4	1637.7	1662.1	1653.3
20°	1592.7	1620.1	1607.4	1629.9	1624.0
22.5°	1551.6	1565.3	1576.1	1601.5	1593.7
25°	1508.6	1533.1	1538.9	1565.3	1560.4
27.5°	1464.6	1475.4	1497.9	1526.2	1527.2
30°	1409.9	1421.6	1452.9	1485.2	1493.9
32.5°	1345.3	1382.5	1401.1	1450.0	1463.6
35°	1300.4	1319.9	1351.2	1406.9	1425.5
37.5°	1241.7	1264.2	1306.2	1371.7	1394.2
40°	1174.2	1207.5	1253.4	1334.6	1361.0
42.5°	1106.8	1145.9	1199.7	1294.5	1324.8
45°	1048.1	1079.4	1152.7	1262.2	1292.5
47.5°	984.6	1022.7	1115.6	1220.2	1254.4
50°	925.9	965.0	1070.6	1181.1	1222.1
52.5°	855.5	900.5	1021.7	1136.1	1184.0
55°	797.8	837.9	964.0	1095.0	1151.7
57.5°	734.3	779.2	919.1	1064.7	1116.6
60°	665.8	722.5	875.1	1026.6	1076.5
62.5°	598.4	665.8	830.1	989.4	1038.3
65°	530.9	604.2	787.1	950.3	1000.2
67.5°	470.3	549.5	748.0	907.3	968.9
70°	401.8	496.7	702.0	867.2	931.8
72.5°	337.3	448.8	664.8	835.0	899.5
75°	276.7	397.9	626.7	795.9	859.4
77.5°	216.1	350.0	586.6	760.7	830.1
80°	158.4	310.9	551.4	726.4	792.9
82.5°	109.5	276.7	517.2	698.1	760.7
85°	64.5	242.5	485.9	660.9	719.6
87.5°	29.3	215.1	453.7	632.6	690.3
90°	6.8	192.6	430.2	598.4	664.8
92.5°	6.8	175.0	401.8	572.9	633.6
95°	8.8	159.4	380.3	546.5	611.1
97.5°	11.7	147.6	360.8	522.1	578.8
100°	16.6	139.8	339.3	493.7	549.5
102.5°	22.5	133.9	319.7	468.3	520.1
105°	29.3	129.1	304.1	446.8	504.5
107.5°	36.2	127.1	288.4	426.3	475.2
110°	43.0	126.1	276.7	404.8	459.5



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	49.9	125.1	264.0	385.2	429.2
115°	56.7	126.1	252.3	364.7	411.6
117.5°	60.6	126.1	241.5	347.1	386.2
120°	66.5	127.1	233.7	328.5	369.6
122.5°	72.4	127.1	225.9	314.8	351.0
125°	79.2	128.1	217.1	299.2	331.4
127.5°	83.1	128.1	212.2	288.4	317.8
130°	87.0	127.1	205.3	274.7	305.0
132.5°	90.9	125.1	201.4	262.0	290.4
135°	92.9	124.2	194.6	253.2	272.8
137.5°	95.8	121.2	187.7	240.5	262.0
140°	98.7	120.3	177.9	230.7	249.3
142.5°	98.7	117.3	171.1	221.9	238.6
145°	100.7	114.4	160.3	212.2	224.9
147.5°	102.7	113.4	152.5	202.4	218.0
150°	102.7	112.4	145.7	191.6	206.3
152.5°	104.6	113.4	138.8	181.9	195.5
155°	111.5	117.3	132.0	166.2	185.8
157.5°	117.3	121.2	125.1	154.5	175.0
160°	122.2	124.2	119.3	142.7	170.1
162.5°	126.1	127.1	120.3	132.0	159.4
165°	132.0	129.1	124.2	121.2	150.6
167.5°	136.9	131.0	126.1	118.3	143.7
170°	140.8	134.9	124.2	111.5	140.8
172.5°	143.7	135.9	125.1	104.6	118.3
175°	144.7	139.8	124.2	101.7	64.5
177.5°	143.7	140.8	128.1	100.7	57.7
180°	118.3	118.3	118.3	118.3	118.3



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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	15.80	17.11	16.44	17.78	18.54	19.21	20.52	19.85	21.19	21.95
	3H	17.25	18.45	17.91	19.13	19.93	22.05	23.25	22.70	23.92	24.72
	4H	17.72	18.87	18.40	19.55	20.36	23.49	24.64	24.17	25.32	26.13
	6H	18.00	19.07	18.69	19.76	20.59	25.06	26.12	25.74	26.81	27.64
	8H	18.06	19.08	18.76	19.80	20.63	25.87	26.89	26.57	27.61	28.44
	12H	18.08	19.06	18.78	19.77	20.63	26.75	27.73	27.45	28.44	29.30
4H	2H	16.94	18.08	17.61	18.76	19.57	19.55	20.69	20.22	21.38	22.19
	3H	18.64	19.62	19.33	20.34	21.17	22.62	23.60	23.30	24.32	25.15
	4H	19.24	20.14	19.94	20.87	21.73	24.25	25.16	24.96	25.88	26.74
	6H	19.65	20.45	20.37	21.20	22.06	26.01	26.81	26.73	27.56	28.43
	8H	19.76	20.52	20.49	21.26	22.14	26.95	27.70	27.67	28.44	29.32
	12H	19.82	20.51	20.57	21.27	22.16	27.95	28.64	28.70	29.41	30.30
8H	4H	20.27	21.02	20.99	21.77	22.65	24.44	25.19	25.16	25.93	26.81
	6H	20.92	21.56	21.67	22.34	23.23	26.37	27.02	27.13	27.80	28.68
	8H	21.14	21.72	21.91	22.51	23.41	27.46	28.04	28.22	28.82	29.72
	12H	21.29	21.81	22.06	22.59	23.54	28.66	29.18	29.43	29.96	30.91
12H	4H	20.60	21.29	21.35	22.05	22.94	24.43	25.12	25.18	25.89	26.77
	6H	21.41	21.99	22.17	22.77	23.67	26.41	26.99	27.17	27.77	28.67
	8H	21.76	22.27	22.52	23.05	24.00	27.55	28.07	28.32	28.85	29.80