

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: P894076

Luminaire Tested: 4MB-9HL-RNDU-UNV-L850

Issue Date: 11/11/2024

**Test Information**

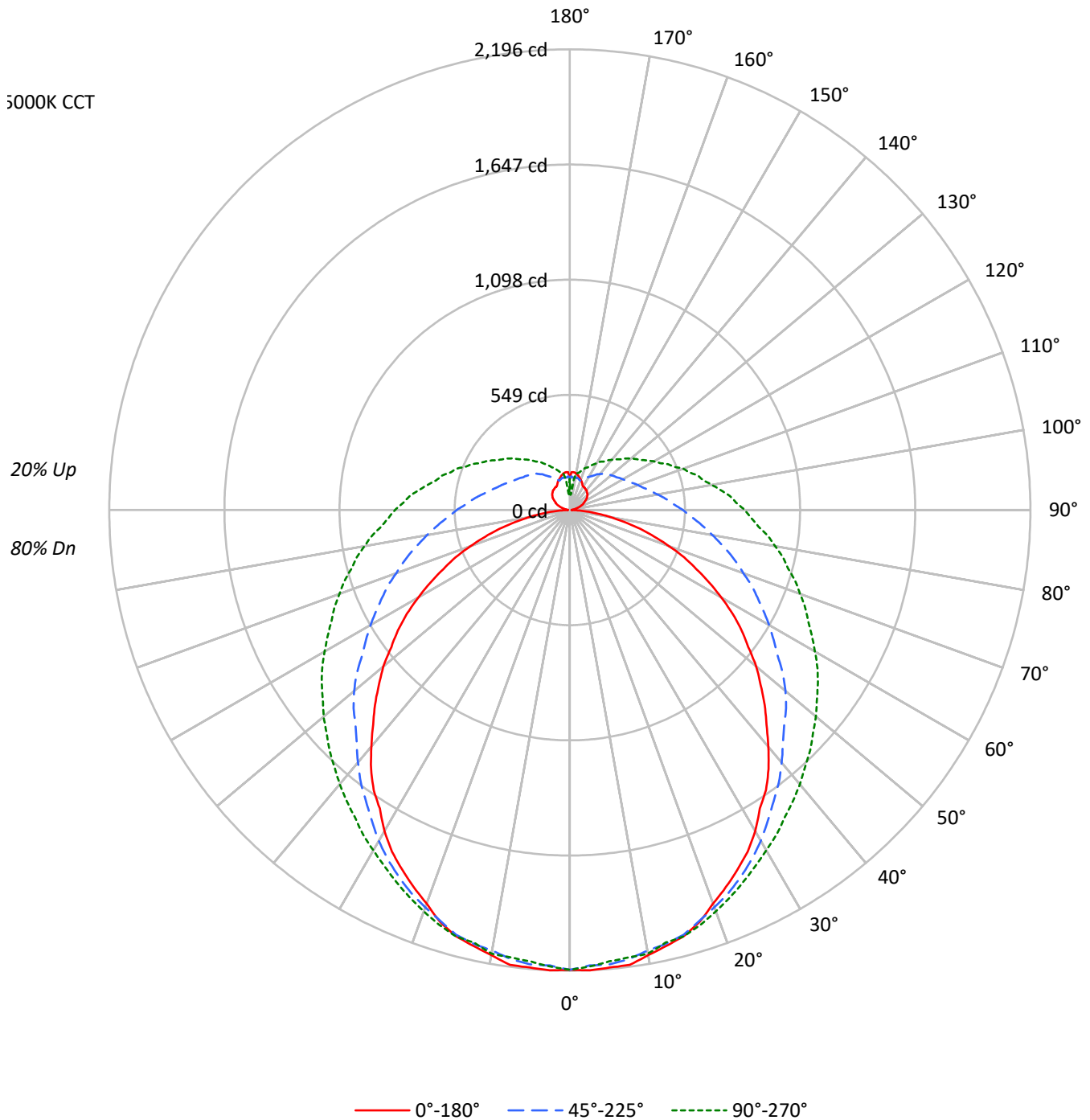
Test Method: LM-79-2019  
Report Number: P894076  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2403-334-3)  
Test Lab: INNOVATION CENTER  
Issue Date: 11/11/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: METALUX  
Catalog Number: 4MB-9HL-RNDU-UNV-L850  
Description: 9000 Lumen 4FT MICROBAY LINEAR BAY with ROUND FROSTED LENS WITH UPLIGHT, 80CRI, 5  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 9213.0 lumens  
Efficiency: N/A  
Efficacy: 143.1 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

TEST NUMBER: P894076  
CATALOG NUMBER: 4MB-9HL-RNDU-UNV-L850

### Luminous Intensity Polar Plot





TEST NUMBER: P894076  
 CATALOG NUMBER: 4MB-9HL-RNDU-UNV-L850

**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
RCR																				
0	114	114	114	114	109	109	109	109	100	100	100	91	91	91	83	83	83	80		
1	102	96	91	86	97	92	87	83	84	80	77	76	73	71	69	67	65	61		
2	92	82	75	68	87	79	72	66	72	66	61	66	61	57	60	56	53	49		
3	83	72	63	56	79	69	61	54	63	56	51	57	52	47	52	48	44	41		
4	76	63	54	47	72	60	52	45	55	48	43	51	45	40	46	41	37	34		
5	69	56	47	40	66	54	45	39	49	42	37	45	39	34	41	36	32	29		
6	64	50	41	35	61	48	40	34	44	37	32	41	35	30	38	32	28	26		
7	59	46	37	30	56	44	35	30	40	33	28	37	31	26	34	29	25	23		
8	55	41	33	27	52	40	32	26	37	30	25	34	28	24	31	26	22	20		
9	51	38	30	24	49	37	29	23	34	27	22	31	25	21	29	24	20	18		
10	48	35	27	22	46	34	26	21	31	25	20	29	23	19	27	22	18	16		

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

	0°	45°	90°
0°	15593	15593	15593
5°	15564	14974	14719
10°	15425	14335	14148
15°	15270	13862	13509
20°	14836	13216	12852
25°	14494	12643	12232
30°	14095	12019	11689
35°	13659	11342	11218
40°	13097	10762	10856
45°	12564	10208	10533
50°	12093	9865	10259
55°	11544	9333	10048
60°	10890	8996	9853
65°	10075	8696	9706
70°	9162	8452	9699
75°	7978	8358	9727
80°	6274	8313	9915
85°	4132	8499	10140

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 12564 cd/sqm



TEST NUMBER: P894076  
 CATALOG NUMBER: 4MB-9HL-RNDU-UNV-L850

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	207.5	2.3
10°-20°	592.8	6.4
20°-30°	890.2	9.7
30°-40°	1069.0	11.6
40°-50°	1130.7	12.3
50°-60°	1089.7	11.8
60°-70°	966.7	10.5
70°-80°	792.8	8.6
80°-90°	613.6	6.7
90°-100°	478.7	5.2
100°-110°	381.1	4.1
110°-120°	304.6	3.3
120°-130°	240.2	2.6
130°-140°	183.3	2.0
140°-150°	128.9	1.4
150°-160°	82.4	0.9
160°-170°	46.2	0.5
170°-180°	14.6	0.2
0°-30°	1690.5	18.3
0°-40°	2759.5	30.0
0°-60°	4979.8	54.1
0°-90°	7353.0	79.8
90°-120°	1164.4	12.6
90°-150°	1716.8	18.6
90°-180°	1860.0	20.2
0°-180°	9213.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2192	2192	2192	2192	2192	
5°	2189	2195	2174	2190	2160	208
15°	2102	2103	2096	2109	2103	591
25°	1891	1922	1929	1962	1956	871
35°	1630	1655	1694	1764	1787	1016
45°	1314	1353	1445	1582	1620	1014
55°	1000	1050	1208	1373	1444	892
65°	666	758	987	1191	1254	662
75°	347	499	786	998	1077	367
85°	81	304	609	829	902	91
90°	9	242	539	750	834	9
95°	11	200	477	685	766	11
105°	37	162	381	560	632	39
115°	71	158	316	457	516	69
125°	99	161	272	375	416	87
135°	116	156	244	318	342	90
145°	126	143	201	266	282	79
155°	140	147	166	208	233	64
165°	166	162	156	152	189	46
175°	181	175	156	128	81	17
180°	148	148	148	148	148	



TEST NUMBER: P894076

CATALOG NUMBER: 4MB-9HL-RNDU-UNV-L850

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2191.6	2191.6	2191.6	2191.6	2191.6
2.5°	2196.5	2203.8	2173.2	2191.6	2178.1
5°	2189.1	2195.2	2174.4	2190.3	2159.7
7.5°	2186.7	2184.2	2158.5	2179.3	2151.1
10°	2154.8	2163.4	2132.7	2160.9	2147.4
12.5°	2127.8	2145.0	2118.0	2140.1	2111.9
15°	2102.1	2103.3	2096.0	2109.4	2103.3
17.5°	2059.2	2070.2	2053.1	2083.7	2072.7
20°	1996.7	2031.0	2015.1	2043.2	2035.9
22.5°	1945.2	1962.4	1975.8	2007.7	1997.9
25°	1891.3	1921.9	1929.3	1962.4	1956.2
27.5°	1836.1	1849.6	1877.8	1913.3	1914.5
30°	1767.5	1782.2	1821.4	1861.8	1872.9
32.5°	1686.6	1733.1	1756.4	1817.7	1834.9
35°	1630.2	1654.7	1693.9	1763.8	1787.1
37.5°	1556.6	1584.8	1637.5	1719.7	1747.9
40°	1472.1	1513.7	1571.4	1673.1	1706.2
42.5°	1387.5	1436.5	1503.9	1622.8	1660.8
45°	1314.0	1353.2	1445.1	1582.4	1620.4
47.5°	1234.3	1282.1	1398.5	1529.7	1572.6
50°	1160.7	1209.8	1342.1	1480.7	1532.1
52.5°	1072.5	1128.9	1280.9	1424.3	1484.3
55°	1000.2	1050.4	1208.5	1372.8	1443.9
57.5°	920.5	976.9	1152.2	1334.8	1399.8
60°	834.7	905.8	1097.0	1287.0	1349.5
62.5°	750.1	834.7	1040.6	1240.4	1301.7
65°	665.6	757.5	986.7	1191.4	1253.9
67.5°	589.6	688.8	937.7	1137.5	1214.7
70°	503.8	622.7	880.1	1087.2	1168.1
72.5°	422.9	562.6	833.5	1046.8	1127.6
75°	346.9	498.9	785.7	997.7	1077.4
77.5°	270.9	438.8	735.4	953.6	1040.6
80°	198.6	389.8	691.3	910.7	994.0
82.5°	137.3	346.9	648.4	875.2	953.6
85°	80.9	304.0	609.2	828.6	902.1
87.5°	36.8	269.7	568.7	793.0	865.3
90°	8.6	241.5	539.3	750.1	833.5
92.5°	8.6	219.4	503.8	718.3	794.3
95°	11.0	199.8	476.8	685.2	766.1
97.5°	14.7	185.1	452.3	654.5	725.6
100°	20.8	175.3	425.3	619.0	688.8
102.5°	28.2	167.9	400.8	587.1	652.1
105°	36.8	161.8	381.2	560.1	632.5
107.5°	45.4	159.3	361.6	534.4	595.7
110°	53.9	158.1	346.9	507.4	576.1



TEST NUMBER: P894076

CATALOG NUMBER: 4MB-9HL-RNDU-UNV-L850

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	62.5	156.9	330.9	482.9	538.1
115°	71.1	158.1	316.2	457.2	516.0
117.5°	76.0	158.1	302.7	435.1	484.2
120°	83.3	159.3	292.9	411.8	463.3
122.5°	90.7	159.3	283.1	394.7	440.0
125°	99.3	160.6	272.1	375.1	415.5
127.5°	104.2	160.6	266.0	361.6	398.4
130°	109.1	159.3	257.4	344.4	382.4
132.5°	114.0	156.9	252.5	328.5	364.0
135°	116.4	155.7	243.9	317.5	342.0
137.5°	120.1	152.0	235.3	301.5	328.5
140°	123.8	150.8	223.1	289.3	312.6
142.5°	123.8	147.1	214.5	278.2	299.1
145°	126.2	143.4	201.0	266.0	281.9
147.5°	128.7	142.2	191.2	253.7	273.3
150°	128.7	141.0	182.6	240.2	258.6
152.5°	131.2	142.2	174.0	228.0	245.1
155°	139.7	147.1	165.5	208.4	232.9
157.5°	147.1	152.0	156.9	193.7	219.4
160°	153.2	155.7	149.5	179.0	213.3
162.5°	158.1	159.3	150.8	165.5	199.8
165°	165.5	161.8	155.7	152.0	188.8
167.5°	171.6	164.2	158.1	148.3	180.2
170°	176.5	169.1	155.7	139.7	176.5
172.5°	180.2	170.4	156.9	131.2	148.3
175°	181.4	175.3	155.7	127.5	80.9
177.5°	180.2	176.5	160.6	126.2	72.3
180°	148.3	148.3	148.3	148.3	148.3



TEST NUMBER: P894076  
 CATALOG NUMBER: 4MB-9HL-RNDU-UNV-L850

**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	16.59	17.90	17.23	18.56	19.33	20.00	21.31	20.64	21.97	22.74
	3H	18.04	19.24	18.69	19.91	20.71	22.83	24.03	23.48	24.70	25.50
	4H	18.51	19.65	19.18	20.34	21.15	24.28	25.42	24.95	26.11	26.92
	6H	18.79	19.85	19.47	20.55	21.37	25.84	26.91	26.52	27.60	28.43
	8H	18.85	19.87	19.54	20.58	21.41	26.66	27.68	27.35	28.39	29.22
	12H	18.87	19.84	19.57	20.55	21.41	27.54	28.52	28.24	29.23	30.09
4H	2H	17.72	18.87	18.40	19.55	20.36	20.33	21.48	21.01	22.16	22.97
	3H	19.43	20.41	20.11	21.13	21.96	23.40	24.38	24.09	25.10	25.93
	4H	20.03	20.93	20.73	21.65	22.51	25.04	25.94	25.74	26.66	27.52
	6H	20.44	21.23	21.16	21.98	22.85	26.80	27.60	27.52	28.35	29.21
	8H	20.55	21.30	21.27	22.05	22.93	27.73	28.48	28.45	29.23	30.11
	12H	20.61	21.29	21.35	22.06	22.95	28.74	29.43	29.49	30.19	31.08
8H	4H	21.06	21.81	21.78	22.55	23.44	25.22	25.97	25.94	26.72	27.60
	6H	21.70	22.35	22.46	23.13	24.01	27.16	27.80	27.91	28.59	29.47
	8H	21.93	22.51	22.69	23.30	24.19	28.24	28.82	29.01	29.61	30.50
	12H	22.08	22.60	22.85	23.38	24.33	29.44	29.96	30.21	30.74	31.69
12H	4H	21.39	22.07	22.13	22.84	23.73	25.22	25.90	25.96	26.67	27.56
	6H	22.19	22.77	22.96	23.56	24.45	27.19	27.77	27.96	28.56	29.46
	8H	22.54	23.06	23.31	23.84	24.79	28.34	28.86	29.11	29.63	30.59