

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: P893221

Luminaire Tested: 4MB-10HL-RND-UNV-L930

Issue Date: 11/11/2024

Test Information

Test Method: LM-79-2019
Report Number: P893221
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2403-334-1)
Test Lab: INNOVATION CENTER
Issue Date: 11/11/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: METALUX
Catalog Number: 4MB-10HL-RND-UNV-L930
Description: 10000 Lumen 4FT MICROBAY LINEAR BAY with ROUND FROSTED LENS, 90CRI, 3000K CCT
Light Source: -
Ballast/Driver: -

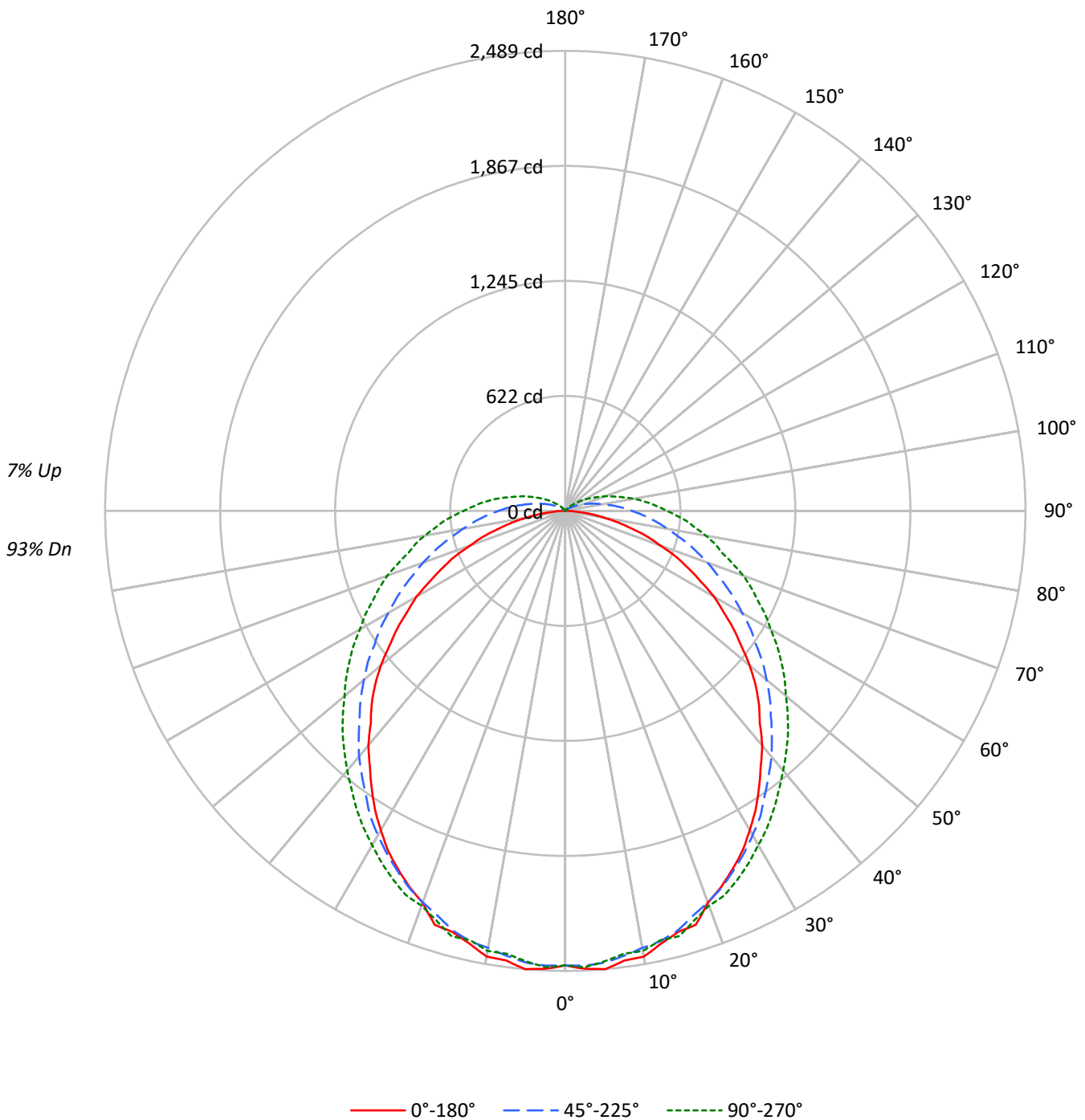
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8101.0 lumens
Efficiency: N/A
Efficacy: 107.3 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.26 / 1.35
Luminous Opening: Rectangular (W 0.38' 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: P893221
CATALOG NUMBER: 4MB-10HL-RND-UNV-L930

Luminous Intensity Polar Plot





TEST NUMBER: P893221
 CATALOG NUMBER: 4MB-10HL-RND-UNV-L930

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	114	114	114	114	107	107	107	101	101	101	96	96	96	96	96	96	96	93
1	105	100	95	90	102	97	92	88	91	87	84	86	83	80	81	79	77	77	77	77	77	74
2	95	86	79	72	92	84	77	71	79	73	68	74	70	66	70	67	63	63	63	63	63	60
3	86	75	66	60	83	73	65	59	69	62	57	65	60	55	62	57	53	53	53	53	53	50
4	79	66	57	50	76	65	56	49	61	54	48	58	52	47	55	50	45	45	45	45	45	43
5	73	59	50	43	70	58	49	42	55	47	41	52	45	40	49	44	39	39	39	39	39	37
6	67	53	44	37	65	52	43	37	49	42	36	47	40	35	45	39	34	34	34	34	34	32
7	62	48	39	33	60	47	39	33	45	37	32	43	36	31	41	35	30	30	30	30	30	28
8	58	44	35	29	56	43	35	29	41	34	28	39	33	28	38	32	27	27	27	27	27	25
9	54	40	32	26	52	39	32	26	38	31	26	36	30	25	35	29	25	25	25	25	25	23
10	51	37	29	24	49	36	29	24	35	28	23	34	27	23	32	27	22	22	22	22	22	21

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	17499	17499	17499
5°	17774	17517	17469
10°	17687	17346	17468
15°	17370	17312	17544
20°	17080	17063	17207
25°	16799	16870	17285
30°	16388	16647	17155
35°	15870	16329	17091
40°	15392	16114	17033
45°	14909	15826	17140
50°	14421	15729	17248
55°	13760	15616	17696
60°	13224	15721	18251
65°	12349	16139	19357
70°	11352	17038	21321
75°	10298	18867	24156
80°	8850	23048	31669
85°	7168	37291	54190

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 87.5°
 Luminance: 98359 cd/sqm



TEST NUMBER: P893221
 CATALOG NUMBER: 4MB-10HL-RND-UNV-L930

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	233.2	2.9
10°-20°	663.8	8.2
20°-30°	994.7	12.3
30°-40°	1182.1	14.6
40°-50°	1223.8	15.1
50°-60°	1134.1	14.0
60°-70°	944.2	11.7
70°-80°	700.8	8.7
80°-90°	463.5	5.7
90°-100°	282.0	3.5
100°-110°	158.1	2.0
110°-120°	77.9	1.0
120°-130°	31.7	0.4
130°-140°	9.2	0.1
140°-150°	1.3	0.0
150°-160°	0.3	0.0
160°-170°	0.3	0.0
170°-180°	0.1	0.0
0°-30°	1891.7	23.4
0°-40°	3073.8	37.9
0°-60°	5431.6	67.0
0°-90°	7540.1	93.1
90°-120°	518.0	6.4
90°-150°	560.2	6.9
90°-180°	561.0	6.9
0°-180°	8101.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2459	2459	2459	2459	2459	
5°	2489	2462	2453	2465	2446	235
15°	2358	2349	2350	2354	2382	668
25°	2140	2138	2149	2190	2202	985
35°	1827	1841	1880	1940	1968	1143
45°	1482	1503	1573	1671	1703	1142
55°	1109	1157	1259	1385	1427	992
65°	734	802	959	1099	1150	729
75°	375	488	686	834	879	401
85°	88	246	457	619	664	99
90°	4	160	361	505	550	7
95°	1	99	280	417	464	1
105°	1	33	152	258	294	1
115°	1	8	71	142	170	1
125°	1	2	26	65	83	1
135°	2	1	7	21	29	1
145°	2	1	0	2	3	1
155°	2	2	0	0	0	1
165°	3	2	0	0	0	1
175°	3	2	0	0	0	0
180°	1	1	1	1	1	



TEST NUMBER: P893221

CATALOG NUMBER: 4MB-10HL-RND-UNV-L930

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2459.4	2459.4	2459.4	2459.4	2459.4
2.5°	2479.6	2467.3	2462.8	2457.1	2470.6
5°	2488.6	2461.6	2452.6	2465.0	2445.9
7.5°	2453.8	2447.0	2427.9	2434.6	2416.6
10°	2448.1	2411.0	2400.9	2423.4	2417.8
12.5°	2397.5	2366.0	2384.0	2399.8	2378.4
15°	2358.1	2349.1	2350.3	2353.6	2381.8
17.5°	2348.0	2307.5	2296.3	2324.4	2322.1
20°	2255.8	2247.9	2253.5	2290.6	2272.6
22.5°	2201.8	2177.0	2207.4	2243.4	2251.3
25°	2139.9	2137.6	2148.9	2190.5	2201.8
27.5°	2074.6	2060.0	2090.4	2138.8	2147.8
30°	1994.7	1989.1	2026.2	2067.9	2088.1
32.5°	1916.0	1919.4	1962.1	1997.0	2031.9
35°	1827.1	1840.6	1880.0	1939.6	1967.7
37.5°	1737.1	1754.0	1806.9	1875.5	1899.1
40°	1657.2	1660.6	1734.9	1804.6	1833.9
42.5°	1557.1	1590.8	1653.8	1746.1	1768.6
45°	1481.7	1503.1	1572.8	1670.7	1703.4
47.5°	1396.2	1421.0	1500.8	1596.5	1631.3
50°	1302.8	1325.3	1421.0	1530.1	1558.2
52.5°	1199.3	1245.4	1345.6	1458.1	1495.2
55°	1109.3	1156.6	1258.9	1385.0	1426.6
57.5°	1012.6	1059.8	1188.1	1305.1	1359.1
60°	929.3	974.3	1104.8	1249.9	1282.6
62.5°	825.8	889.9	1031.7	1174.6	1220.7
65°	733.5	802.2	958.6	1099.2	1149.8
67.5°	649.2	720.0	883.2	1033.9	1089.1
70°	545.7	639.0	819.0	967.6	1024.9
72.5°	469.2	562.5	750.4	897.8	949.6
75°	374.6	488.3	686.3	833.7	878.7
77.5°	295.9	418.5	619.9	785.3	830.3
80°	216.0	355.5	562.5	721.2	772.9
82.5°	147.4	297.0	509.7	661.5	711.0
85°	87.8	246.4	456.8	618.8	663.8
87.5°	38.3	201.4	408.4	556.9	603.0
90°	4.5	159.8	361.1	505.2	550.2
92.5°	1.1	128.3	319.5	459.0	502.9
95°	1.1	99.0	280.1	417.4	463.5
97.5°	1.1	76.5	240.8	374.6	418.5
100°	1.1	58.5	208.1	329.6	376.9
102.5°	1.1	43.9	176.6	292.5	333.0
105°	1.1	32.6	151.9	257.6	293.6
107.5°	1.1	23.6	127.1	225.0	261.0
110°	1.1	16.9	106.9	194.6	230.6



TEST NUMBER: P893221
 CATALOG NUMBER: 4MB-10HL-RND-UNV-L930

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1.1	12.4	86.6	167.6	198.0
115°	1.1	7.9	70.9	141.8	169.9
117.5°	1.1	5.6	56.3	119.3	146.3
120°	1.1	4.5	45.0	99.0	122.6
122.5°	1.1	3.4	34.9	81.0	103.5
125°	1.1	2.3	25.9	65.3	83.3
127.5°	1.1	2.3	19.1	51.8	67.5
130°	1.1	1.1	13.5	39.4	52.9
132.5°	1.1	1.1	9.0	29.3	39.4
135°	2.3	1.1	6.8	21.4	29.3
137.5°	2.3	1.1	4.5	14.6	20.3
140°	2.3	1.1	2.3	9.0	12.4
142.5°	2.3	1.1	1.1	4.5	6.8
145°	2.3	1.1	0.0	2.3	3.4
147.5°	2.3	1.1	0.0	1.1	1.1
150°	2.3	1.1	0.0	0.0	0.0
152.5°	2.3	1.1	0.0	0.0	0.0
155°	2.3	2.3	0.0	0.0	0.0
157.5°	2.3	2.3	0.0	0.0	0.0
160°	2.3	2.3	0.0	0.0	0.0
162.5°	2.3	2.3	0.0	0.0	0.0
165°	3.4	2.3	0.0	0.0	0.0
167.5°	3.4	2.3	0.0	0.0	0.0
170°	3.4	2.3	0.0	0.0	0.0
172.5°	3.4	2.3	0.0	0.0	0.0
175°	3.4	2.3	0.0	0.0	0.0
177.5°	3.4	2.3	0.0	0.0	0.0
180°	1.1	1.1	1.1	1.1	1.1



TEST NUMBER: P893221
 CATALOG NUMBER: 4MB-10HL-RND-UNV-L930

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	20.17	21.71	20.64	22.17	22.65	21.75	23.28	22.22	23.74	24.22
	3H	21.94	23.34	22.42	23.80	24.33	24.33	25.74	24.81	26.20	26.72
	4H	22.59	23.92	23.09	24.41	24.94	25.59	26.92	26.09	27.40	27.94
	6H	23.07	24.31	23.59	24.81	25.36	26.97	28.21	27.49	28.71	29.26
	8H	23.22	24.41	23.75	24.93	25.49	27.70	28.89	28.23	29.41	29.97
	12H	23.32	24.46	23.85	24.97	25.56	28.55	29.69	29.08	30.20	30.79
4H	2H	21.13	22.46	21.63	22.94	23.48	22.32	23.65	22.82	24.13	24.67
	3H	23.17	24.31	23.68	24.83	25.39	25.19	26.32	25.70	26.85	27.41
	4H	23.98	25.02	24.52	25.56	26.15	26.66	27.71	27.20	28.24	28.83
	6H	24.63	25.55	25.19	26.11	26.72	28.28	29.20	28.84	29.77	30.37
	8H	24.86	25.73	25.42	26.29	26.91	29.14	30.01	29.70	30.57	31.19
	12H	25.03	25.82	25.61	26.41	27.03	30.13	30.92	30.71	31.51	32.13
8H	4H	24.83	25.70	25.39	26.26	26.88	27.04	27.90	27.60	28.46	29.08
	6H	25.75	26.49	26.35	27.09	27.72	28.91	29.65	29.51	30.25	30.88
	8H	26.14	26.80	26.74	27.42	28.05	29.97	30.64	30.58	31.25	31.89
	12H	26.46	27.05	27.06	27.65	28.36	31.23	31.83	31.84	32.43	33.13
12H	4H	25.09	25.88	25.67	26.47	27.09	27.08	27.87	27.66	28.46	29.08
	6H	26.18	26.84	26.78	27.46	28.10	29.02	29.69	29.63	30.30	30.94
	8H	26.72	27.31	27.32	27.91	28.62	30.20	30.79	30.80	31.40	32.10