

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: P894031

Luminaire Tested: 4MB-9HL-FLTU-UNV-L940

Issue Date: 11/11/2024

**Test Information**

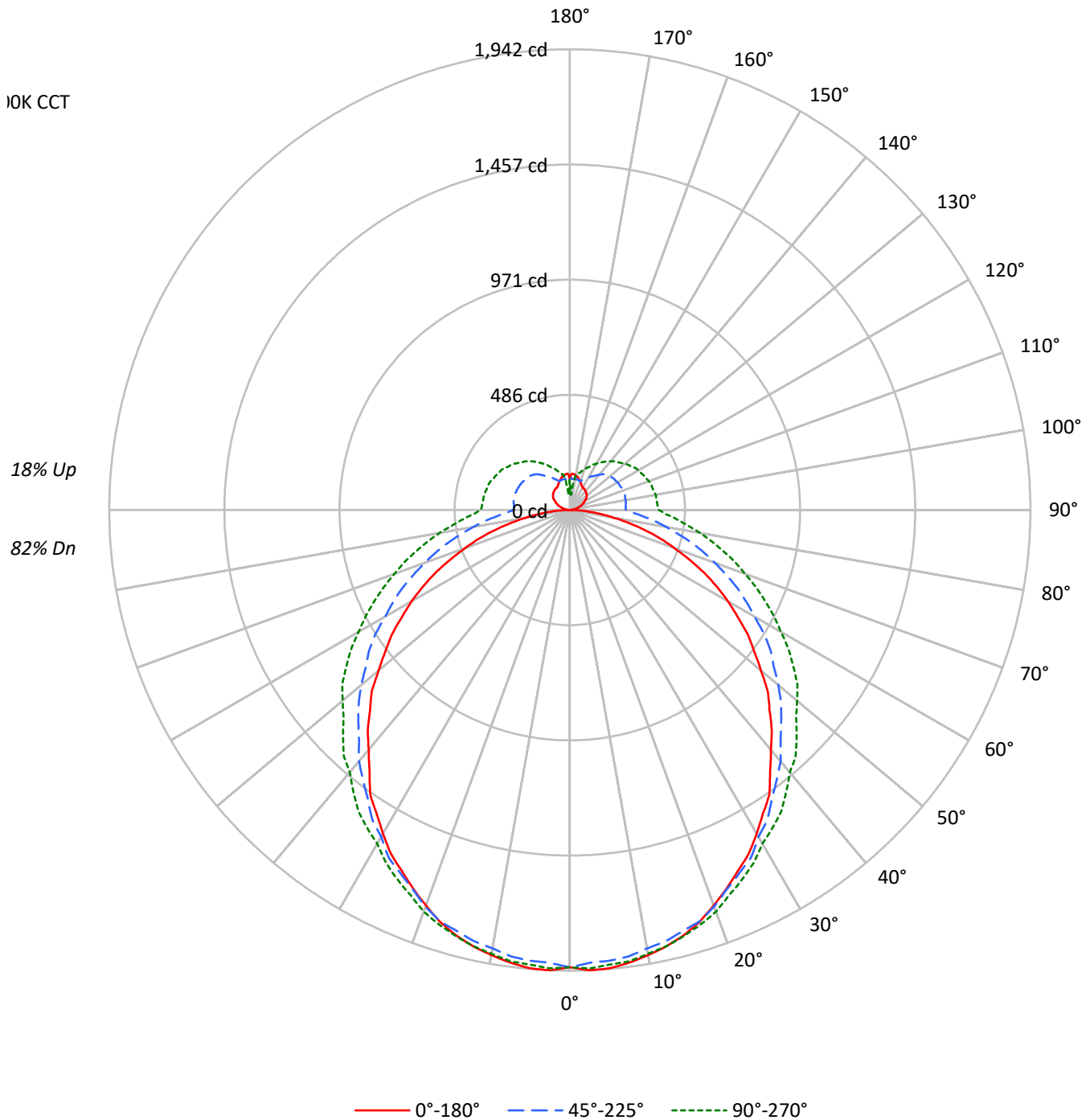
Test Method: LM-79-2019  
Report Number: P894031  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2403-334-6)  
Test Lab: INNOVATION CENTER  
Issue Date: 11/11/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: METALUX  
Catalog Number: 4MB-9HL-FLTU-UNV-L940  
Description: 9000 Lumen 4FT MICROBAY LINEAR BAY with FLAT FROSTED LENS WITH UPLIGHT, 90CRI, 400  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 7247.0 lumens  
Efficiency: N/A  
Efficacy: 112.5 lumens/watt  
Spacing Criteria (0/90/45): 1.22 / 1.26 / 1.36  
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	115	115	115	115	110	110	110	110	101	101	101	93	93	93	86	86	86	86	86	86	82
1	103	98	93	89	99	94	90	86	87	83	80	80	77	74	73	71	69	69	69	69	66
2	93	85	77	71	89	81	75	69	75	70	65	69	65	61	63	60	57	57	57	57	54
3	85	74	66	59	81	71	63	57	66	59	54	60	55	51	56	51	48	48	48	48	45
4	78	65	56	49	74	63	55	48	58	51	46	54	48	43	50	45	41	41	41	41	38
5	71	58	49	42	68	56	48	41	52	45	39	48	42	37	44	39	35	35	35	35	33
6	66	52	43	37	63	50	42	36	47	40	34	43	37	33	40	35	31	31	31	31	28
7	61	47	38	32	58	46	37	32	42	35	30	39	33	29	37	31	27	27	27	27	25
8	56	43	34	29	54	42	34	28	39	32	27	36	30	26	34	28	24	24	24	24	22
9	53	39	31	26	50	38	30	25	36	29	24	33	27	23	31	26	22	22	22	22	20
10	49	36	28	23	47	35	28	23	33	26	22	31	25	21	29	24	20	20	20	20	18

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

	0°	45°	90°
0°	13715	13715	13715
5°	13785	13134	13110
10°	13638	12613	12511
15°	13481	12153	11940
20°	13181	11668	11374
25°	12857	11075	10747
30°	12562	10496	10139
35°	12289	9944	9748
40°	11737	9470	9183
45°	11380	8907	8788
50°	10960	8433	8374
55°	10580	7982	8004
60°	10049	7367	7508
65°	9442	6870	7040
70°	8531	6256	6531
75°	7561	5645	6048
80°	5987	4976	5558
85°	4132	4329	5100

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 11380 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	182.6	2.5
10°-20°	521.4	7.2
20°-30°	783.2	10.8
30°-40°	938.7	13.0
40°-50°	984.2	13.6
50°-60°	923.2	12.7
60°-70°	766.8	10.6
70°-80°	548.3	7.6
80°-90°	325.2	4.5
90°-100°	238.5	3.3
100°-110°	235.0	3.2
110°-120°	219.2	3.0
120°-130°	192.4	2.7
130°-140°	154.9	2.1
140°-150°	111.2	1.5
150°-160°	70.7	1.0
160°-170°	39.2	0.5
170°-180°	12.3	0.2
0°-30°	1487.2	20.5
0°-40°	2425.9	33.5
0°-60°	4333.3	59.8
0°-90°	5973.6	82.4
90°-120°	692.8	9.6
90°-150°	1151.2	15.9
90°-180°	1273.0	17.6
0°-180°	7247.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1928	1928	1928	1928	1928	
5°	1939	1935	1907	1916	1924	184
15°	1856	1845	1838	1851	1859	522
25°	1678	1693	1690	1710	1719	774
35°	1467	1472	1485	1528	1553	910
45°	1190	1224	1261	1344	1352	921
55°	917	946	1034	1118	1150	816
65°	624	671	780	884	910	615
75°	329	405	531	640	670	347
85°	81	177	310	415	454	89
90°	3	108	237	338	375	7
95°	9	113	237	334	369	10
105°	33	124	241	330	360	35
115°	59	134	236	313	344	59
125°	85	138	228	291	318	74
135°	98	133	212	263	285	76
145°	106	123	174	232	248	67
155°	117	123	142	179	203	54
165°	139	135	131	130	163	39
175°	154	148	132	110	67	14
180°	127	127	127	127	127	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1927.6	1927.6	1927.6	1927.6	1927.6
2.5°	1942.0	1926.6	1910.2	1934.8	1933.8
5°	1938.9	1934.8	1907.2	1916.4	1923.5
7.5°	1924.6	1914.3	1897.9	1920.5	1918.4
10°	1905.1	1892.8	1876.4	1889.7	1899.0
12.5°	1883.6	1873.4	1862.1	1876.4	1882.6
15°	1855.9	1844.7	1837.5	1850.8	1859.0
17.5°	1820.1	1817.0	1818.0	1819.1	1832.4
20°	1774.0	1776.0	1779.1	1797.6	1801.7
22.5°	1726.9	1738.2	1730.0	1758.6	1756.6
25°	1677.7	1693.1	1690.0	1709.5	1718.7
27.5°	1633.7	1634.7	1653.1	1680.8	1677.7
30°	1575.3	1592.7	1590.7	1624.5	1624.5
32.5°	1515.9	1541.5	1549.7	1579.4	1589.6
35°	1466.7	1471.8	1485.2	1528.2	1552.8
37.5°	1386.8	1411.4	1432.9	1489.3	1498.5
40°	1319.2	1343.8	1382.7	1448.3	1443.2
42.5°	1260.9	1286.5	1315.1	1390.9	1409.4
45°	1190.2	1224.0	1260.9	1343.8	1352.0
47.5°	1132.8	1159.5	1207.6	1283.4	1293.6
50°	1051.9	1094.9	1147.2	1235.2	1250.6
52.5°	980.2	1017.1	1083.7	1174.8	1209.6
55°	916.7	946.4	1033.5	1117.5	1150.2
57.5°	838.9	879.8	971.0	1064.2	1093.9
60°	770.2	810.2	898.3	1004.8	1028.3
62.5°	697.5	744.6	839.9	943.3	970.0
65°	623.8	670.9	779.5	883.9	909.5
67.5°	543.9	602.3	712.9	821.4	848.1
70°	469.1	532.6	651.4	760.0	786.6
72.5°	401.5	470.1	591.0	702.6	731.3
75°	328.8	404.6	530.6	640.2	669.9
77.5°	258.1	340.1	468.1	578.7	613.5
80°	189.5	279.6	413.8	520.3	557.2
82.5°	133.2	225.3	363.6	468.1	501.9
85°	80.9	177.2	310.3	414.8	453.7
87.5°	35.8	137.2	268.4	371.8	406.6
90°	3.1	107.5	236.6	338.0	374.9
92.5°	6.1	109.6	235.6	333.9	370.8
95°	9.2	112.7	236.6	333.9	368.7
97.5°	13.3	116.8	238.7	333.9	367.7
100°	19.5	118.8	239.7	333.9	367.7
102.5°	25.6	121.9	238.7	328.8	363.6
105°	32.8	123.9	240.7	329.8	360.5
107.5°	39.9	126.0	240.7	324.7	359.5
110°	47.1	129.1	238.7	321.6	355.4



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	53.3	132.1	237.6	315.5	348.2
115°	59.4	134.2	235.6	313.4	344.1
117.5°	65.6	135.2	234.6	308.3	338.0
120°	70.7	137.2	232.5	302.2	334.9
122.5°	76.8	138.3	229.4	296.0	328.8
125°	85.0	138.3	228.4	290.9	317.5
127.5°	89.1	139.3	224.3	284.7	312.4
130°	93.2	136.2	222.3	277.6	304.2
132.5°	96.3	135.2	217.1	270.4	294.0
135°	98.3	133.2	212.0	263.2	284.7
137.5°	101.4	130.1	204.8	258.1	278.6
140°	103.4	128.0	194.6	247.9	268.4
142.5°	105.5	125.0	184.4	238.7	258.1
145°	106.5	122.9	174.1	231.5	247.9
147.5°	109.6	119.8	168.0	222.3	236.6
150°	108.6	117.8	158.8	211.0	225.3
152.5°	111.6	120.9	150.6	195.6	216.1
155°	116.8	122.9	142.4	179.2	202.8
157.5°	121.9	127.0	136.2	164.9	192.6
160°	129.1	129.1	129.1	153.6	184.4
162.5°	133.2	133.2	130.1	140.3	173.1
165°	139.3	135.2	131.1	130.1	162.9
167.5°	145.4	137.2	133.2	126.0	155.7
170°	146.5	140.3	132.1	118.8	150.6
172.5°	150.6	143.4	131.1	112.7	116.8
175°	153.6	147.5	132.1	109.6	66.6
177.5°	152.6	147.5	135.2	109.6	64.5
180°	127.0	127.0	127.0	127.0	127.0



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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	16.82	18.15	17.43	18.77	19.49	19.33	20.66	19.95	21.29	22.00
	3H	18.25	19.46	18.88	20.10	20.85	21.70	22.90	22.32	23.54	24.29
	4H	18.72	19.86	19.36	20.51	21.27	22.81	23.96	23.46	24.61	25.37
	6H	18.99	20.05	19.64	20.71	21.49	23.93	24.99	24.59	25.65	26.43
	8H	19.04	20.05	19.71	20.74	21.52	24.48	25.49	25.15	26.18	26.96
	12H	19.05	20.03	19.73	20.70	21.51	25.06	26.03	25.74	26.71	27.52
4H	2H	17.69	18.84	18.34	19.49	20.25	19.68	20.82	20.33	21.47	22.23
	3H	19.35	20.32	20.01	21.01	21.79	22.26	23.23	22.92	23.92	24.70
	4H	19.93	20.82	20.61	21.51	22.32	23.53	24.42	24.21	25.12	25.93
	6H	20.31	21.09	21.00	21.80	22.62	24.82	25.60	25.52	26.32	27.14
	8H	20.40	21.13	21.10	21.85	22.68	25.47	26.20	26.17	26.92	27.75
	12H	20.44	21.11	21.16	21.84	22.68	26.16	26.82	26.88	27.56	28.40
8H	4H	20.56	21.29	21.25	22.00	22.84	23.69	24.42	24.39	25.14	25.97
	6H	21.09	21.71	21.82	22.46	23.30	25.12	25.74	25.85	26.50	27.33
	8H	21.26	21.82	22.00	22.57	23.43	25.89	26.45	26.63	27.21	28.06
	12H	21.36	21.86	22.11	22.61	23.52	26.74	27.24	27.48	27.98	28.90
12H	4H	20.71	21.38	21.43	22.12	22.96	23.68	24.35	24.40	25.09	25.92
	6H	21.34	21.89	22.08	22.65	23.50	25.14	25.70	25.88	26.46	27.31
	8H	21.58	22.08	22.33	22.83	23.74	25.96	26.46	26.71	27.21	28.12