

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: P894935

Luminaire Tested: 8TMB-20HL-RNDU-UNV-L840

Issue Date: 11/11/2024

**Test Information**

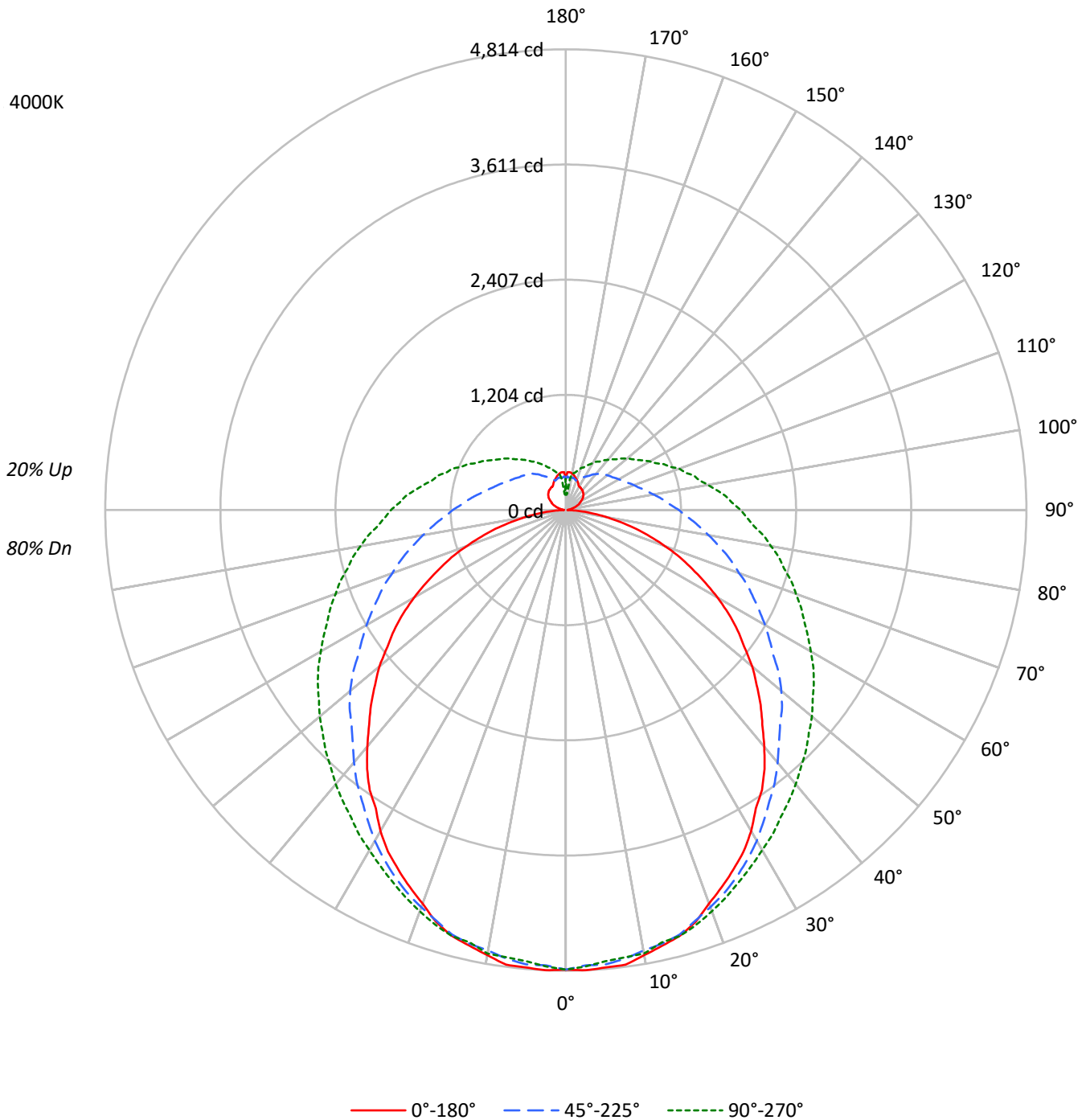
Test Method: LM-79-2019  
Report Number: P894935  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2403-334-3)  
Test Lab: INNOVATION CENTER  
Issue Date: 11/11/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: METALUX  
Catalog Number: 8TMB-20HL-RNDU-UNV-L840  
Description: 20000 Lumen 8FT MICROBAY LINEAR BAY with ROUND FROSTED LENS WITH UPLIGHT, 80CRI, CCT  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 20190.0 lumens  
Efficiency: N/A  
Efficacy: 139.2 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.28 / 1.37  
Luminous Opening: Rectangular w/ Sides (W: 0.38' x L: 7.98' x H: 0.21')  
CIE Type: Semi-Direct  
  
Input Watts (W): 145  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: 0.997  
Total Harmonic Distortion (THDi): 7.79  
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°	17041	17041	17041
5°	17048	16390	16086
10°	16935	15714	15461
15°	16804	15217	14764
20°	16366	14527	14045
25°	16031	13918	13368
30°	15633	13248	12774
35°	15196	12521	12260
40°	14622	11898	11864
45°	14081	11303	11511
50°	13617	10942	11212
55°	13072	10371	10981
60°	12419	10017	10768
65°	11596	9705	10607
70°	10686	9459	10599
75°	9496	9386	10630
80°	7744	9375	10837
85°	5559	9637	11081

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 14081 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	454.7	2.3
10°-20°	1299.2	6.4
20°-30°	1950.8	9.7
30°-40°	2342.6	11.6
40°-50°	2477.8	12.3
50°-60°	2387.9	11.8
60°-70°	2118.5	10.5
70°-80°	1737.4	8.6
80°-90°	1344.7	6.7
90°-100°	1049.1	5.2
100°-110°	835.2	4.1
110°-120°	667.5	3.3
120°-130°	526.4	2.6
130°-140°	401.7	2.0
140°-150°	282.5	1.4
150°-160°	180.6	0.9
160°-170°	101.2	0.5
170°-180°	32.1	0.2
0°-30°	3704.7	18.3
0°-40°	6047.3	30.0
0°-60°	10913.1	54.1
0°-90°	16113.7	79.8
90°-120°	2551.8	12.6
90°-150°	3762.4	18.6
90°-180°	4076.0	20.2
0°-180°	20190.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4803	4803	4803	4803	4803	
5°	4797	4811	4765	4800	4733	456
15°	4607	4609	4593	4623	4609	1294
25°	4145	4212	4228	4300	4287	1909
35°	3572	3626	3712	3865	3916	2227
45°	2880	2965	3167	3468	3551	2221
55°	2192	2302	2648	3008	3164	1956
65°	1458	1660	2162	2611	2748	1450
75°	760	1093	1722	2186	2361	804
85°	177	666	1335	1816	1977	200
90°	19	529	1182	1644	1826	19
95°	24	438	1045	1502	1679	24
105°	81	355	835	1228	1386	85
115°	156	346	693	1002	1131	151
125°	218	352	596	822	911	191
135°	255	341	534	696	749	198
145°	277	314	440	583	618	174
155°	306	322	363	457	510	141
165°	363	355	341	333	414	102
175°	398	384	341	279	177	37
180°	325	325	325	325	325	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4802.7	4802.7	4802.7	4802.7	4802.7
2.5°	4813.5	4829.6	4762.4	4802.7	4773.2
5°	4797.4	4810.8	4765.1	4800.0	4732.9
7.5°	4792.0	4786.6	4730.2	4775.9	4714.1
10°	4722.1	4741.0	4673.8	4735.6	4706.0
12.5°	4663.1	4700.7	4641.6	4689.9	4628.1
15°	4606.6	4609.3	4593.2	4622.8	4609.3
17.5°	4512.6	4536.8	4499.2	4566.4	4542.2
20°	4375.6	4450.9	4415.9	4477.7	4461.6
22.5°	4262.8	4300.4	4330.0	4399.8	4378.3
25°	4144.6	4211.8	4227.9	4300.4	4287.0
27.5°	4023.8	4053.3	4115.1	4193.0	4195.7
30°	3873.3	3905.6	3991.5	4080.2	4104.3
32.5°	3696.1	3798.1	3849.2	3983.5	4021.1
35°	3572.5	3626.2	3712.2	3865.3	3916.3
37.5°	3411.3	3473.1	3588.6	3768.6	3830.4
40°	3226.0	3317.3	3443.6	3666.5	3739.0
42.5°	3040.7	3148.1	3295.8	3556.4	3639.7
45°	2879.5	2965.4	3166.9	3467.7	3551.0
47.5°	2704.9	2809.7	3064.8	3352.2	3446.3
50°	2543.7	2651.2	2941.3	3244.8	3357.6
52.5°	2350.3	2473.9	2807.0	3121.2	3252.9
55°	2191.9	2302.0	2648.5	3008.4	3164.2
57.5°	2017.3	2140.8	2524.9	2925.2	3067.5
60°	1829.2	1985.0	2404.1	2820.4	2957.4
62.5°	1643.9	1829.2	2280.5	2718.3	2852.6
65°	1458.5	1660.0	2162.3	2610.9	2747.9
67.5°	1292.0	1509.6	2054.9	2492.7	2661.9
70°	1104.0	1364.5	1928.6	2382.6	2559.8
72.5°	926.7	1232.9	1826.5	2293.9	2471.2
75°	760.2	1093.2	1721.8	2186.5	2361.1
77.5°	593.6	961.6	1611.7	2089.8	2280.5
80°	435.1	854.2	1515.0	1995.8	2178.4
82.5°	300.8	760.2	1420.9	1917.9	2089.8
85°	177.3	666.2	1335.0	1815.8	1977.0
87.5°	80.6	590.9	1246.3	1737.9	1896.4
90°	18.8	529.2	1181.9	1643.9	1826.5
92.5°	18.8	480.8	1104.0	1574.0	1740.6
95°	24.2	437.8	1044.9	1501.5	1678.8
97.5°	32.2	405.6	991.2	1434.4	1590.2
100°	45.7	384.1	932.1	1356.5	1509.6
102.5°	61.8	368.0	878.4	1286.6	1429.0
105°	80.6	354.6	835.4	1227.5	1386.0
107.5°	99.4	349.2	792.4	1171.1	1305.4
110°	118.2	346.5	760.2	1112.0	1262.5



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	137.0	343.8	725.2	1058.3	1179.2
115°	155.8	346.5	693.0	1001.9	1130.8
117.5°	166.5	346.5	663.5	953.6	1061.0
120°	182.7	349.2	642.0	902.5	1015.3
122.5°	198.8	349.2	620.5	864.9	964.3
125°	217.6	351.9	596.3	821.9	910.6
127.5°	228.3	351.9	582.9	792.4	873.0
130°	239.1	349.2	564.1	754.8	838.1
132.5°	249.8	343.8	553.3	719.9	797.8
135°	255.2	341.1	534.5	695.7	749.4
137.5°	263.2	333.1	515.7	660.8	719.9
140°	271.3	330.4	488.9	633.9	685.0
142.5°	271.3	322.3	470.1	609.7	655.4
145°	276.7	314.3	440.5	582.9	617.8
147.5°	282.0	311.6	419.0	556.0	599.0
150°	282.0	308.9	400.2	526.5	566.8
152.5°	287.4	311.6	381.4	499.6	537.2
155°	306.2	322.3	362.6	456.6	510.4
157.5°	322.3	333.1	343.8	424.4	480.8
160°	335.8	341.1	327.7	392.2	467.4
162.5°	346.5	349.2	330.4	362.6	437.8
165°	362.6	354.6	341.1	333.1	413.7
167.5°	376.1	359.9	346.5	325.0	394.9
170°	386.8	370.7	341.1	306.2	386.8
172.5°	394.9	373.4	343.8	287.4	325.0
175°	397.5	384.1	341.1	279.4	177.3
177.5°	394.9	386.8	351.9	276.7	158.5
180°	325.0	325.0	325.0	325.0	325.0



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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	16.92	18.23	17.56	18.90	19.66	20.41	21.72	21.05	22.38	23.15
	3H	18.37	19.57	19.02	20.24	21.04	23.28	24.48	23.93	25.15	25.95
	4H	18.84	19.98	19.51	20.67	21.48	24.76	25.90	25.43	26.59	27.40
	6H	19.12	20.18	19.80	20.88	21.70	26.37	27.44	27.06	28.13	28.96
	8H	19.18	20.20	19.87	20.91	21.74	27.23	28.25	27.93	28.97	29.80
	12H	19.20	20.17	19.90	20.88	21.74	28.18	29.16	28.88	29.87	30.73
4H	2H	18.07	19.21	18.75	19.90	20.71	20.74	21.88	21.41	22.57	23.38
	3H	19.77	20.75	20.46	21.47	22.30	23.84	24.82	24.53	25.54	26.37
	4H	20.37	21.27	21.07	22.00	22.86	25.51	26.41	26.21	27.13	27.99
	6H	20.78	21.58	21.50	22.33	23.19	27.32	28.12	28.04	28.86	29.73
	8H	20.89	21.64	21.62	22.39	23.27	28.29	29.04	29.01	29.79	30.67
	12H	20.95	21.64	21.69	22.40	23.29	29.36	30.05	30.11	30.82	31.70
8H	4H	21.42	22.17	22.15	22.92	23.80	25.69	26.44	26.41	27.18	28.06
	6H	22.07	22.71	22.82	23.49	24.38	27.67	28.31	28.42	29.10	29.98
	8H	22.29	22.87	23.06	23.66	24.55	28.79	29.37	29.55	30.15	31.05
	12H	22.44	22.96	23.21	23.74	24.69	30.05	30.57	30.82	31.35	32.30
12H	4H	21.76	22.45	22.51	23.22	24.10	25.68	26.37	26.43	27.14	28.02
	6H	22.57	23.15	23.33	23.94	24.83	27.70	28.28	28.47	29.07	29.96
	8H	22.92	23.44	23.69	24.21	25.17	28.88	29.40	29.65	30.18	31.13