

Scaled data based on original data using  
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State  
Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: METALUX

Report Number: P295451

Luminaire Tested: **BMK-12-MFL-UNV-L850-CD-U**

Issue Date: 3/3/2020

This test was performed under the Supervised Manufacturer's Testing Program. The results of this test have not been influenced by sources from within Cooper Lighting Solutions or from external interests.

**Test Information**

Test Method: LM-79-08  
Report Number: P295451  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1904-251-3)  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: BMK-12-MFL-UNV-L850-CD-U  
Description: BENCHMARK HIGHBAY LED FIXTURE  
WITH MEDIUM FROSTED LENS  
Light Source: (528) 80 CRI 5000K LEDS  
Ballast/Driver: ELECTRONIC DRIVER  
Luminaire Equipment: Sample No.   Condition   Description

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 12009.0 lumens  
Efficiency: N/A  
Efficacy: 161.6 lumens/watt  
Spacing Criteria (0/90/45): 1.33 / 1.33 / 1.36  
Luminous Opening: Vertical Cylinder (Dia: 1.33' x H: 0.12')  
CIE Type: Direct

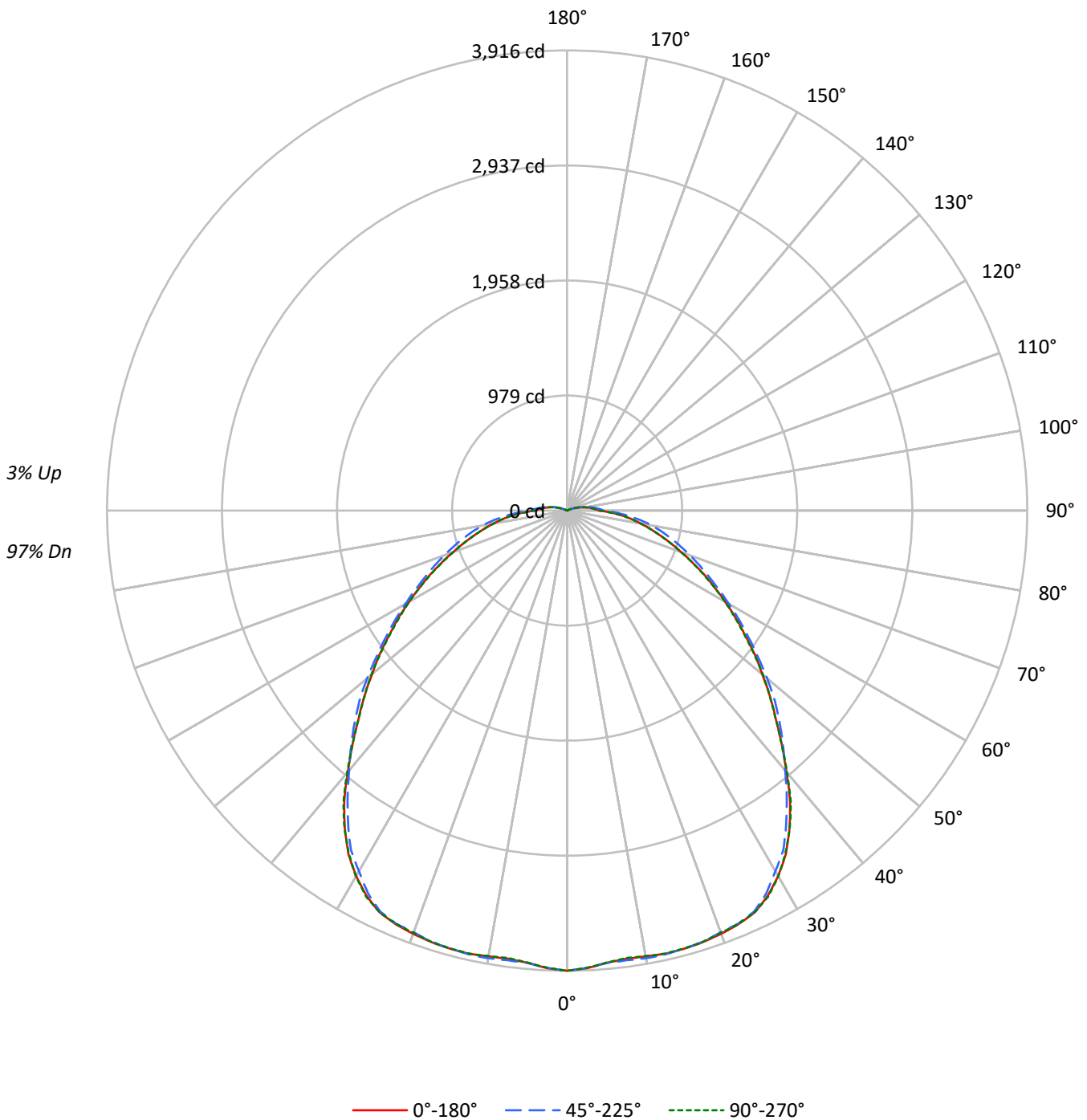
Input Watts (W): 74.3  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	0
RCR																		
0	118	118	118	118	115	115	115	115	109	109	109	104	104	104	99	99	99	97
1	107	102	97	93	104	99	95	91	94	91	88	90	87	84	86	83	81	79
2	97	89	81	75	94	86	80	74	82	77	72	78	74	70	75	71	68	65
3	89	78	69	63	86	76	68	62	72	66	60	69	64	59	66	62	58	55
4	81	69	60	53	79	67	59	53	64	57	52	62	56	51	59	54	49	47
5	75	62	53	46	72	60	52	45	58	50	45	56	49	44	53	48	43	41
6	69	56	47	40	67	54	46	40	52	45	39	50	44	39	48	43	38	36
7	64	50	42	35	62	49	41	35	48	40	35	46	39	34	44	38	34	32
8	60	46	38	32	58	45	37	31	44	36	31	42	36	31	41	35	30	28
9	56	42	34	28	54	42	34	28	40	33	28	39	32	28	38	32	27	26
10	52	39	31	26	51	38	31	26	37	30	25	36	30	25	35	29	25	23

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

	0°	45°	90°
0°	30191	30191	30191
5°	29577	29596	29573
10°	29532	29658	29517
15°	29848	29825	29829
20°	30131	30029	30079
25°	30408	30341	30400
30°	29904	29509	29933
35°	28649	28233	28692
40°	26550	26406	26645
45°	24479	24932	24450
50°	22748	23330	22858
55°	21210	21659	21154
60°	19847	20296	19828
65°	18645	19313	18538
70°	17493	18854	17476
75°	16926	18852	16907
80°	16917	19299	16877
85°	17448	19685	17392



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	368.7	3.1
10°-20°	1091.9	9.1
20°-30°	1727.1	14.4
30°-40°	2042.6	17.0
40°-50°	1963.4	16.3
50°-60°	1677.8	14.0
60°-70°	1301.8	10.8
70°-80°	918.3	7.6
80°-90°	531.7	4.4
90°-100°	249.6	2.1
100°-110°	114.9	1.0
110°-120°	20.7	0.2
120°-130°	0.3	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	3187.7	26.5
0°-40°	5230.4	43.6
0°-60°	8871.6	73.9
0°-90°	11623.4	96.8
90°-120°	385.3	3.2
90°-150°	385.6	3.2
90°-180°	386.0	3.2
0°-180°	12009.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3916	3916	3916	3916	3916	
5°	3862	3863	3864	3859	3861	368
15°	3860	3863	3856	3859	3857	1092
25°	3774	3764	3766	3764	3773	1732
35°	3299	3277	3251	3281	3304	2053
45°	2513	2547	2560	2542	2510	1946
55°	1847	1873	1886	1875	1842	1660
65°	1284	1312	1330	1310	1276	1273
75°	821	862	915	865	820	874
85°	466	484	526	484	465	414
90°	273	299	313	298	272	158
95°	214	225	245	224	215	164
105°	104	106	114	106	104	111
115°	12	16	21	16	12	18
125°	0	0	0	0	0	0
135°	0	0	0	0	0	0
145°	0	0	0	0	0	0
155°	0	0	0	0	0	0
165°	0	0	0	0	0	0
175°	0	0	0	0	0	0
180°	0	0	0	0	0	0



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CATALOG NUMBER: BMK-12-MFL-UNV-L850-CD-U

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3916.3	3916.3	3916.3	3916.3	3916.3
2.5°	3897.5	3893.6	3895.1	3890.6	3893.6
5°	3861.9	3862.9	3864.4	3859.0	3861.4
7.5°	3846.6	3851.5	3860.4	3849.1	3840.2
10°	3852.0	3860.4	3868.4	3856.0	3850.1
12.5°	3862.4	3864.9	3867.9	3861.9	3861.4
15°	3859.5	3863.4	3856.5	3859.0	3857.0
17.5°	3850.1	3851.5	3846.6	3849.1	3846.1
20°	3832.3	3829.8	3819.4	3827.3	3825.8
22.5°	3811.0	3807.5	3804.6	3809.0	3806.5
25°	3773.9	3764.5	3765.5	3764.0	3772.9
27.5°	3696.7	3681.4	3671.0	3678.4	3704.2
30°	3590.9	3570.1	3543.4	3568.7	3594.4
32.5°	3465.3	3449.5	3425.2	3448.0	3458.9
35°	3298.6	3276.9	3250.7	3280.8	3303.6
37.5°	3117.1	3103.8	3069.7	3102.3	3126.5
40°	2902.5	2905.5	2886.7	2912.4	2912.9
42.5°	2702.7	2723.0	2721.5	2721.5	2702.7
45°	2513.3	2547.4	2559.8	2541.5	2510.3
47.5°	2341.2	2375.3	2396.6	2372.3	2339.7
50°	2166.6	2202.7	2222.0	2198.3	2177.0
52.5°	2012.3	2028.6	2047.4	2026.7	2003.9
55°	1847.1	1872.9	1886.2	1874.8	1842.2
57.5°	1703.2	1721.5	1737.3	1726.0	1693.3
60°	1553.4	1573.7	1588.5	1579.6	1551.9
62.5°	1413.9	1443.6	1454.5	1440.1	1410.5
65°	1283.8	1312.0	1329.8	1309.6	1276.4
67.5°	1154.3	1191.4	1219.6	1195.3	1150.3
70°	1030.6	1079.6	1110.8	1073.7	1029.6
72.5°	925.8	969.8	1009.9	968.3	921.8
75°	821.4	862.0	914.9	865.0	820.5
77.5°	727.0	765.6	823.4	764.1	722.5
80°	639.0	669.6	729.0	667.6	637.5
82.5°	552.9	575.7	633.5	574.7	550.9
85°	466.4	483.7	526.2	483.7	464.9
87.5°	365.0	393.2	417.4	392.2	359.5
90°	273.0	299.2	313.0	298.2	272.0
92.5°	243.3	256.7	278.9	256.7	243.3
95°	213.6	225.0	245.3	224.5	214.6
97.5°	185.5	194.4	213.6	193.4	186.4
100°	159.7	164.2	182.0	165.2	158.7
102.5°	132.0	135.0	147.9	134.0	132.0
105°	104.3	105.8	113.7	106.3	103.9
107.5°	76.2	77.6	81.6	77.1	75.7
110°	50.4	51.4	56.4	51.4	50.9



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	29.2	31.7	36.6	31.7	29.2
115°	12.4	15.8	20.8	15.8	12.4
117.5°	4.0	6.4	7.9	6.4	3.5
120°	2.5	3.0	2.5	3.0	2.5
122.5°	0.0	0.0	0.0	0.0	0.0
125°	0.0	0.0	0.0	0.0	0.0
127.5°	0.0	0.0	0.0	0.0	0.0
130°	0.0	0.0	0.0	0.0	0.0
132.5°	0.0	0.0	0.0	0.0	0.0
135°	0.0	0.0	0.0	0.0	0.0
137.5°	0.0	0.0	0.0	0.0	0.0
140°	0.0	0.0	0.0	0.0	0.0
142.5°	0.0	0.0	0.0	0.0	0.0
145°	0.0	0.0	0.0	0.0	0.0
147.5°	0.0	0.0	0.0	0.0	0.0
150°	0.0	0.0	0.0	0.0	0.0
152.5°	0.0	0.0	0.0	0.0	0.0
155°	0.0	0.0	0.0	0.0	0.0
157.5°	0.0	0.0	0.0	0.0	0.0
160°	0.0	0.0	0.0	0.0	0.0
162.5°	0.0	0.0	0.0	0.0	0.0
165°	0.0	0.0	0.0	0.0	0.0
167.5°	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0
172.5°	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.0
180°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)