

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: P295492

Luminaire Tested: **BMK-15-MCL-UNV-L840-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: P295492  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1904-251-5)  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: BMK-15-MCL-UNV-L840-CD-U  
Description: BENCHMARK HIGHBAY LED FIXTURE  
WITH MEDIUM CLEAR LENS  
Light Source: (528) 80 CRI 4000K LEDS  
Ballast/Driver: ELECTRONIC DRIVER  
Luminaire Equipment: Sample No.   Condition   Description

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 15502.0 lumens  
Efficiency: N/A  
Efficacy: 165.3 lumens/watt  
Spacing Criteria (0/90/45): 1.37 / 1.37 / 1.37  
Luminous Opening: Vertical Cylinder (Dia: 1.33' x H: 0.12')  
CIE Type: Direct

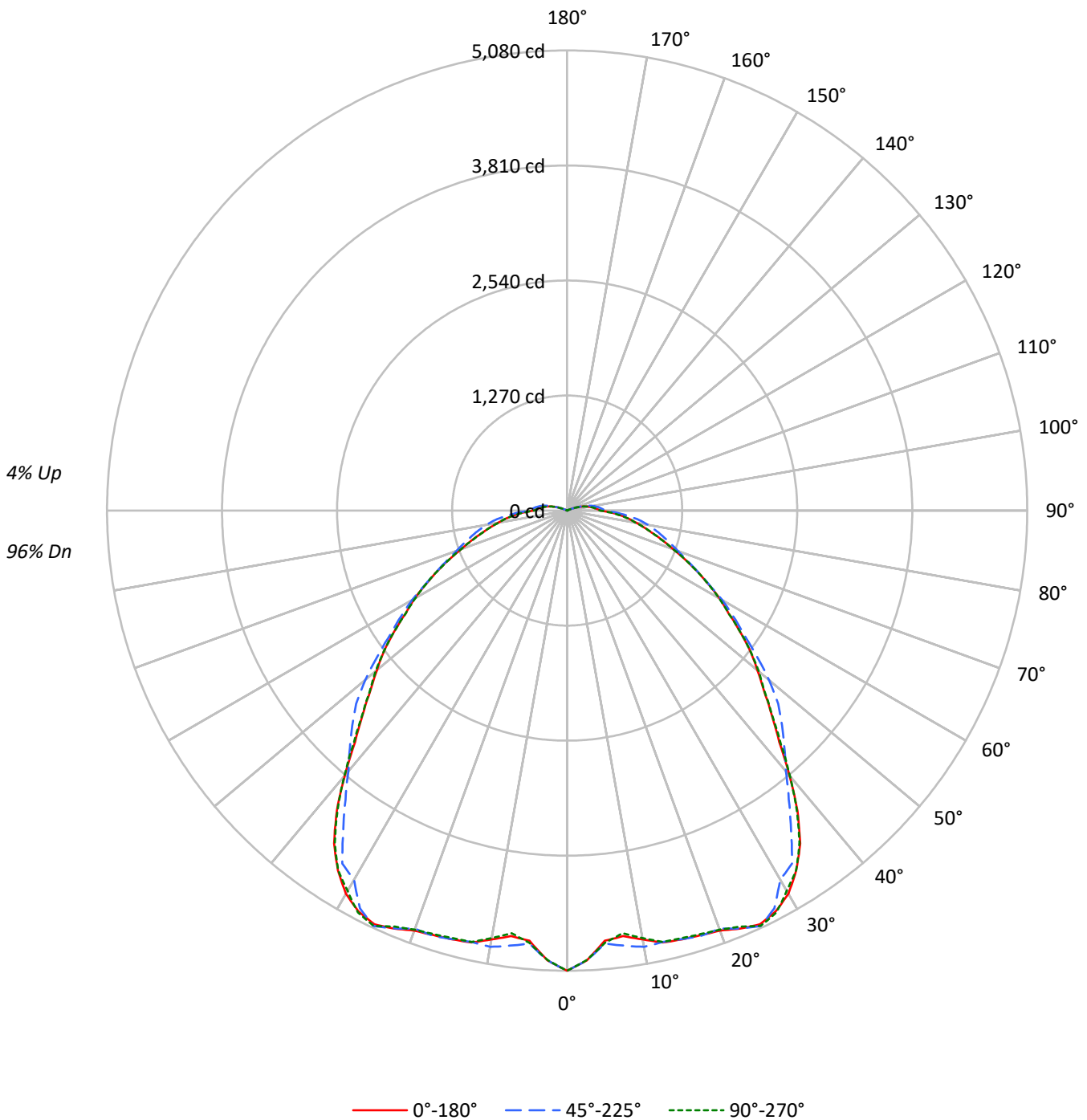
Input Watts (W): 93.8  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	96
1	107	102	97	93	104	99	95	91	94	91	88	90	87	84	86	83	81	79
2	97	89	82	76	94	87	80	75	82	77	72	79	74	70	75	71	68	66
3	89	78	70	63	86	76	69	62	73	66	61	69	64	59	66	62	58	55
4	81	69	61	54	79	68	60	53	65	58	52	62	56	51	59	54	50	48
5	75	62	53	46	73	61	52	46	58	51	45	56	49	44	54	48	44	41
6	69	56	47	41	67	55	46	40	53	45	40	51	44	39	49	43	38	36
7	64	51	42	36	62	50	42	36	48	41	35	46	40	35	45	39	34	32
8	60	46	38	32	58	46	37	32	44	37	31	42	36	31	41	35	31	29
9	56	43	34	29	54	42	34	29	40	33	28	39	33	28	38	32	28	26
10	52	39	31	26	51	39	31	26	37	30	26	36	30	25	35	29	25	23

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

	0°	45°	90°
0°	39161	39161	39161
5°	36510	36743	36676
10°	36853	37492	36743
15°	37892	37877	37791
20°	38796	38610	38703
25°	40606	40776	40746
30°	40679	39177	40373
35°	38968	37423	38838
40°	34950	34370	35007
45°	31103	32666	31194
50°	28804	30546	28966
55°	26760	27332	26782
60°	24866	25247	24762
65°	22965	23027	22946
70°	21118	22025	21191
75°	20219	22512	20283
80°	20461	24033	20279
85°	21934	25331	21840



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	461.4	3.0
10°-20°	1391.0	9.0
20°-30°	2298.5	14.8
30°-40°	2735.7	17.6
40°-50°	2551.4	16.5
50°-60°	2126.2	13.7
60°-70°	1590.8	10.3
70°-80°	1104.5	7.1
80°-90°	669.4	4.3
90°-100°	358.2	2.3
100°-110°	186.2	1.2
110°-120°	28.3	0.2
120°-130°	0.5	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°	4150.9	26.8
0°-40°	6886.6	44.4
0°-60°	11564.2	74.6
0°-90°	14928.9	96.3
90°-120°	572.6	3.7
90°-150°	573.1	3.7
90°-180°	573.0	3.7
0°-180°	15502.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	5080	5080	5080	5080	5080	
5°	4767	4803	4798	4791	4789	458
15°	4900	4933	4898	4922	4886	1388
25°	5040	5037	5061	5046	5057	2306
35°	4487	4413	4309	4416	4472	2771
45°	3193	3307	3354	3312	3203	2484
55°	2330	2367	2380	2369	2332	2087
65°	1581	1599	1586	1599	1580	1567
75°	981	1037	1092	1039	984	1051
85°	586	603	677	603	584	518
90°	371	395	415	392	365	214
95°	305	325	363	323	308	239
105°	171	174	195	172	172	179
115°	16	19	24	19	17	27
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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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	5079.9	5079.9	5079.9	5079.9	5079.9
2.5°	4969.9	4974.2	4969.2	4956.2	4965.5
5°	4767.2	4802.6	4797.6	4790.8	4788.9
7.5°	4737.9	4791.4	4844.9	4786.4	4705.6
10°	4806.9	4860.4	4890.3	4856.1	4792.6
12.5°	4884.7	4882.2	4879.1	4876.6	4876.6
15°	4899.6	4933.2	4897.7	4922.0	4886.5
17.5°	4913.3	4937.5	4922.0	4933.8	4902.7
20°	4934.4	4959.3	4910.8	4947.5	4922.6
22.5°	4994.7	5012.8	4992.9	5010.9	4971.7
25°	5039.5	5037.0	5060.6	5046.3	5056.9
27.5°	4987.9	4972.3	4951.2	4946.2	5002.8
30°	4884.7	4801.3	4704.4	4783.3	4848.0
32.5°	4708.7	4713.1	4620.4	4718.7	4706.2
35°	4486.7	4413.4	4308.9	4415.8	4471.8
37.5°	4175.8	4120.5	4020.4	4119.9	4163.4
40°	3820.8	3830.1	3757.4	3828.3	3827.0
42.5°	3465.2	3556.6	3549.1	3541.6	3491.9
45°	3193.4	3306.6	3353.9	3312.2	3202.8
47.5°	2948.5	3106.4	3158.6	3107.6	2955.3
50°	2743.3	2847.7	2909.3	2847.1	2758.8
52.5°	2547.4	2584.1	2635.1	2595.3	2550.5
55°	2330.4	2367.1	2380.2	2369.0	2332.3
57.5°	2114.7	2172.5	2175.0	2168.1	2113.4
60°	1946.2	1969.8	1976.0	1977.9	1938.1
62.5°	1752.8	1785.1	1762.7	1785.1	1757.1
65°	1581.2	1599.2	1585.5	1598.6	1579.9
67.5°	1404.6	1454.3	1432.6	1451.8	1408.9
70°	1244.2	1307.6	1297.6	1308.8	1248.5
72.5°	1112.4	1168.3	1191.3	1164.0	1106.8
75°	981.2	1037.1	1092.5	1039.0	984.3
77.5°	877.3	919.6	997.9	923.3	876.1
80°	772.9	812.0	907.8	808.9	766.0
82.5°	688.3	706.3	802.7	710.1	684.6
85°	586.3	603.1	677.1	603.1	583.8
87.5°	481.9	494.3	543.4	500.5	475.0
90°	370.6	395.4	414.7	392.3	365.0
92.5°	338.9	356.9	390.5	353.8	336.4
95°	304.7	324.6	363.1	322.7	307.8
97.5°	279.2	289.1	327.1	288.5	277.3
100°	247.5	257.4	296.0	254.3	243.7
102.5°	210.8	216.4	251.8	218.2	211.4
105°	171.0	174.1	194.6	172.2	172.2
107.5°	127.5	125.6	132.4	123.7	126.8
110°	82.1	76.5	82.7	76.5	83.3



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	44.8	40.4	48.5	41.0	44.1
115°	16.2	18.7	24.2	19.3	16.8
117.5°	4.4	7.5	8.7	7.5	4.4
120°	3.7	4.4	3.7	4.4	3.7
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)