

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: P294456

Luminaire Tested: **BMK-15-WFL-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: P294456  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1901-103-3)  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: BMK-15-WFL-UNV-L840-CD-U  
Description: BENCHMARK HIGHBAY LED FIXTURE  
WITH WIDE FROSTED 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: 15346.0 lumens  
Efficiency: N/A  
Efficacy: 163.6 lumens/watt  
Spacing Criteria (0/90/45): 1.7 / 1.7 / 1.72  
Luminous Opening: Vertical Cylinder (Dia: 1.33' x H: 0.12')  
CIE Type: Direct

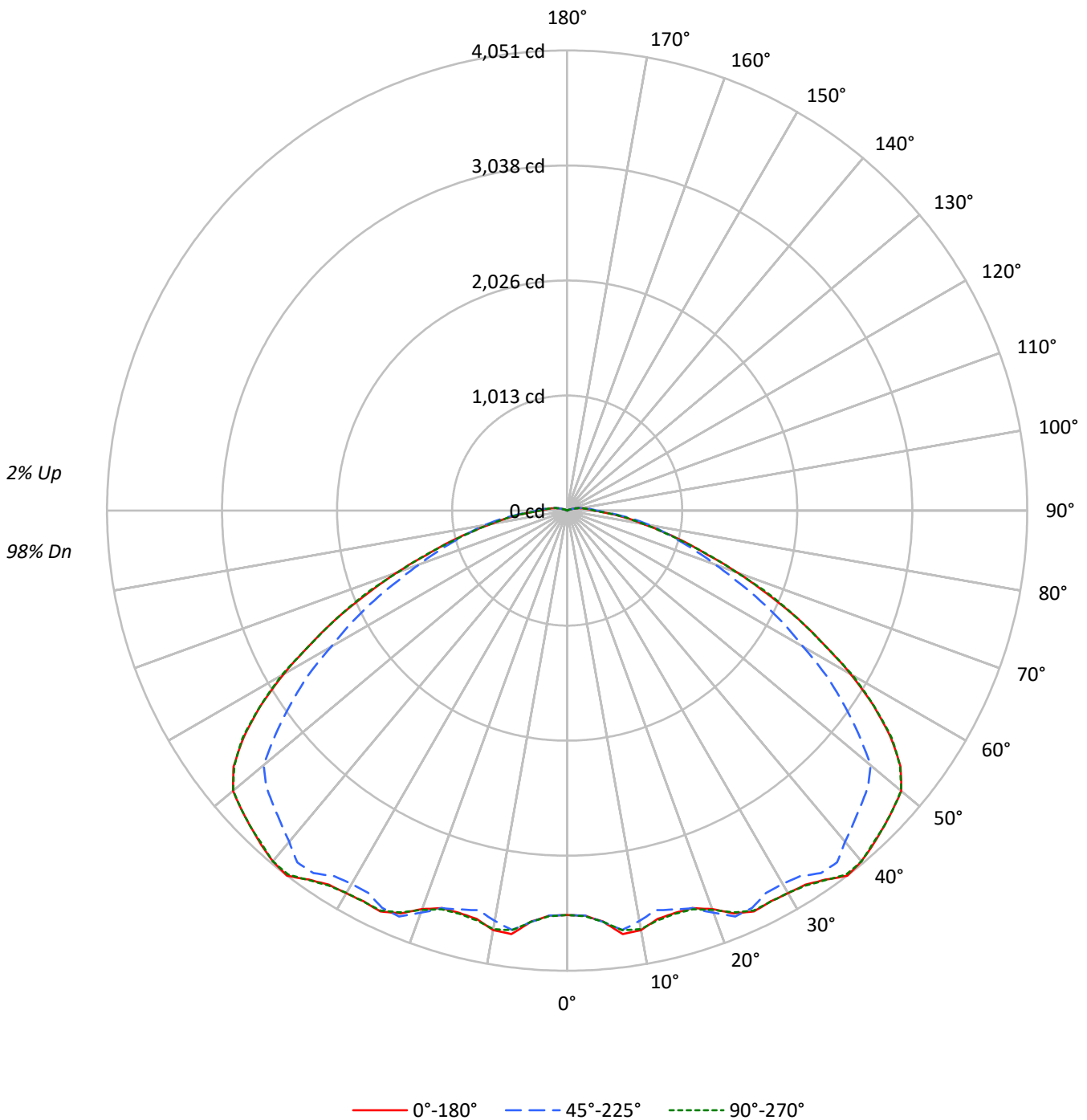
Input Watts (W): 93.8  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	50	30	10	50	30	10	0		
RCR																										
0	119	119	119	119	116	116	116	116	110	110	110	105	105	105	100	100	100	100	100	100	100	100	100	98		
1	107	102	97	93	104	100	95	92	95	91	88	91	88	85	87	84	82	87	84	82	87	84	82	80		
2	97	88	81	75	94	86	79	74	82	76	72	78	74	70	75	71	68	75	71	68	75	71	68	65		
3	88	77	68	61	85	75	67	60	71	65	59	68	62	58	65	61	56	65	61	56	65	61	56	54		
4	80	67	58	51	77	66	57	50	63	55	49	60	54	48	58	52	47	58	52	47	58	52	47	45		
5	73	59	50	43	71	58	49	43	56	48	42	53	47	41	51	45	41	51	45	41	51	45	41	38		
6	67	53	44	37	65	52	43	37	50	42	36	48	41	36	46	40	35	46	40	35	46	40	35	33		
7	62	48	38	32	60	47	38	32	45	37	31	43	36	31	42	35	31	42	35	31	42	35	31	29		
8	57	43	34	28	56	42	34	28	41	33	28	39	32	27	38	32	27	38	32	27	38	32	27	25		
9	53	39	31	25	52	39	30	25	37	30	25	36	29	24	35	29	24	35	29	24	35	29	24	22		
10	50	36	28	22	48	35	28	22	34	27	22	33	27	22	32	26	22	32	26	22	32	26	22	20		

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

	0°	45°	90°
0°	27442	27442	27442
5°	27813	27833	27829
10°	28747	28124	28679
15°	28357	28115	28413
20°	29344	29620	29401
25°	31368	31082	31307
30°	32393	31596	32357
35°	34444	33830	34477
40°	36876	34822	36868
45°	38371	35659	38374
50°	40315	36611	40293
55°	39904	34124	40059
60°	36871	30693	37077
65°	32415	27253	32383
70°	27069	23528	26889
75°	22149	21016	21688
80°	18018	19429	18243
85°	15746	17123	15982



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	351.0	2.3
10°-20°	1038.8	6.8
20°-30°	1767.1	11.5
30°-40°	2461.0	16.0
40°-50°	2944.7	19.2
50°-60°	2863.6	18.7
60°-70°	2031.5	13.2
70°-80°	1106.3	7.2
80°-90°	484.9	3.2
90°-100°	201.5	1.3
100°-110°	82.7	0.5
110°-120°	12.7	0.1
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°	3156.8	20.6
0°-40°	5617.8	36.6
0°-60°	11426.1	74.5
0°-90°	15048.8	98.1
90°-120°	296.9	1.9
90°-150°	297.2	1.9
90°-180°	297.0	1.9
0°-180°	15346.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3560	3560	3560	3560	3560	
5°	3632	3626	3634	3627	3634	353
15°	3667	3620	3635	3613	3674	1046
25°	3893	3792	3858	3796	3885	1786
35°	3966	3969	3895	3956	3970	2497
45°	3940	3811	3661	3816	3940	3048
55°	3475	3214	2972	3221	3489	3073
65°	2232	2038	1876	2040	2230	2203
75°	1075	1007	1020	1010	1052	1152
85°	421	420	458	423	427	398
90°	235	253	258	252	238	134
95°	172	181	193	183	174	130
105°	75	76	74	76	75	81
115°	7	9	11	9	7	12
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°	3559.7	3559.7	3559.7	3559.7	3559.7
2.5°	3568.6	3566.5	3569.0	3569.9	3573.7
5°	3631.6	3625.7	3634.2	3627.0	3633.7
7.5°	3760.6	3731.0	3723.8	3721.7	3725.1
10°	3749.6	3728.5	3668.4	3727.6	3740.8
12.5°	3681.5	3659.5	3603.3	3657.4	3693.8
15°	3666.7	3620.2	3635.4	3613.4	3673.9
17.5°	3668.8	3627.4	3669.7	3624.0	3680.3
20°	3732.3	3705.7	3767.4	3702.7	3739.5
22.5°	3838.1	3791.5	3867.7	3777.1	3827.9
25°	3893.0	3792.4	3857.5	3796.2	3885.4
27.5°	3878.7	3811.8	3793.6	3811.4	3880.8
30°	3889.7	3852.0	3794.1	3845.7	3885.4
32.5°	3904.0	3881.6	3816.1	3879.1	3912.5
35°	3965.8	3968.8	3895.2	3956.1	3969.6
37.5°	4051.3	3957.8	3903.2	3951.4	4037.7
40°	4031.4	3905.7	3806.8	3905.3	4030.5
42.5°	3987.4	3871.5	3730.6	3873.2	3980.2
45°	3939.6	3811.4	3661.2	3816.1	3940.0
47.5°	3890.9	3788.6	3593.1	3783.9	3890.9
50°	3839.7	3657.0	3486.9	3657.8	3837.6
52.5°	3700.6	3465.0	3234.0	3465.0	3693.8
55°	3475.1	3214.5	2971.7	3220.9	3488.6
57.5°	3200.1	2970.4	2706.5	2967.5	3203.5
60°	2885.8	2649.4	2402.3	2666.3	2901.9
62.5°	2544.5	2376.1	2142.2	2361.3	2542.3
65°	2231.9	2038.1	1876.5	2040.2	2229.7
67.5°	1894.3	1741.1	1608.3	1738.6	1924.7
70°	1594.8	1467.0	1386.2	1467.0	1584.2
72.5°	1298.2	1233.5	1192.9	1231.0	1312.6
75°	1074.9	1006.8	1019.9	1010.2	1052.5
77.5°	858.3	824.5	873.1	824.9	852.8
80°	680.6	673.4	733.9	671.3	689.1
82.5°	545.7	537.7	594.8	535.1	551.6
85°	420.9	420.1	457.7	423.4	427.2
87.5°	310.9	321.9	339.3	323.6	311.3
90°	234.8	253.0	258.5	252.5	237.7
92.5°	200.9	213.2	221.2	212.8	204.3
95°	171.7	180.6	193.3	182.7	173.9
97.5°	145.5	154.0	162.9	154.0	146.8
100°	121.0	126.9	135.4	127.8	122.3
102.5°	99.8	101.1	105.3	102.8	99.4
105°	74.9	75.7	74.5	76.1	75.3
107.5°	54.1	53.3	49.9	54.6	53.7
110°	33.8	33.8	33.0	34.3	33.8



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	17.8	19.0	20.7	19.0	18.6
115°	6.8	9.3	11.0	8.9	7.2
117.5°	3.0	4.2	4.7	4.2	3.0
120°	2.5	3.0	2.5	2.5	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)