

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: P295456

Luminaire Tested: **BMK-15-MFL-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: P295456  
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-15-MFL-UNV-L840-CD-U  
Description: BENCHMARK HIGHBAY LED FIXTURE  
WITH MEDIUM 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: 15117.0 lumens  
Efficiency: N/A  
Efficacy: 161.2 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

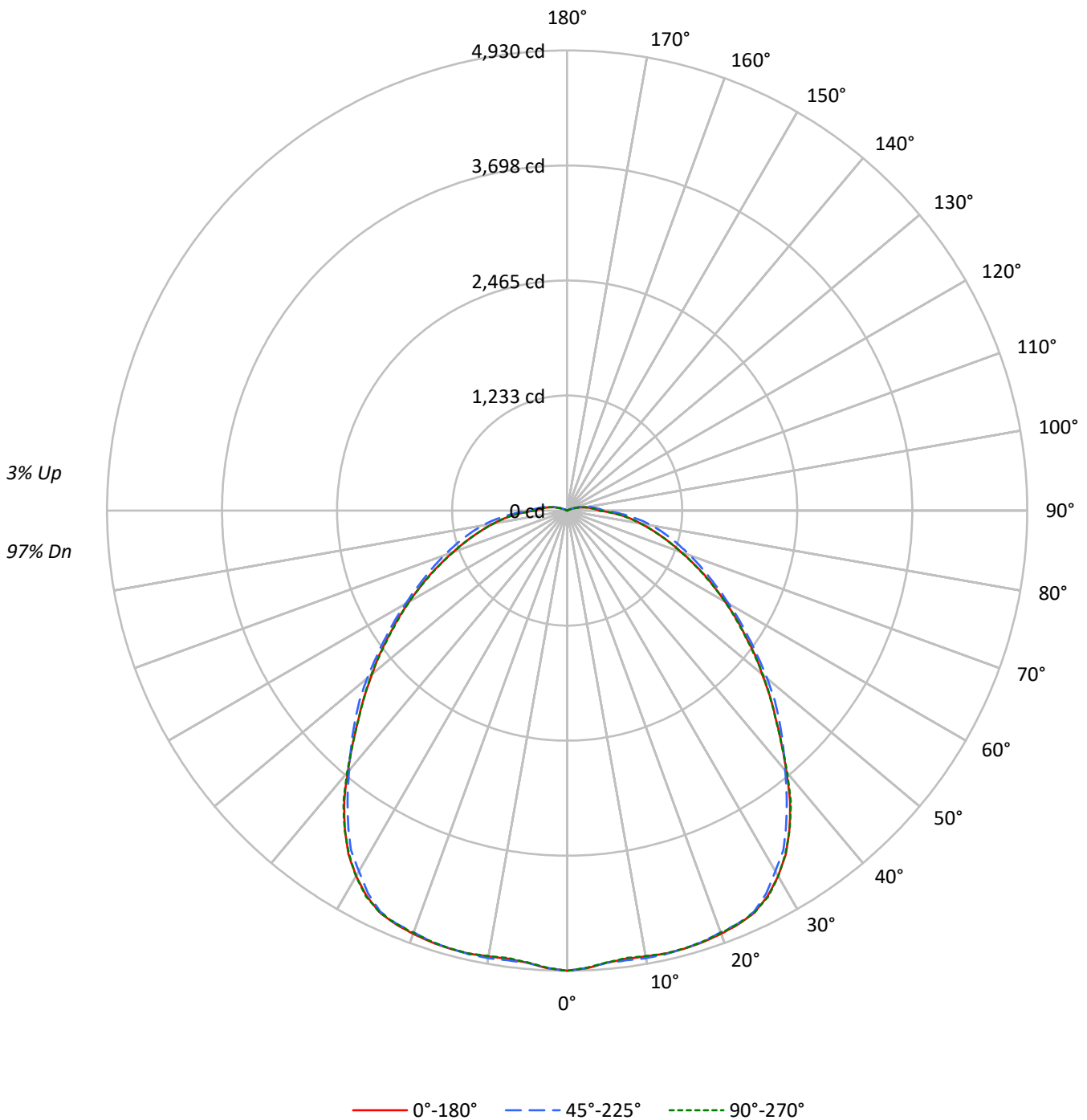
Input Watts (W): 93.8  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	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°	38005	38005	38005
5°	37231	37255	37227
10°	37176	37333	37156
15°	37573	37544	37549
20°	37928	37801	37865
25°	38278	38193	38269
30°	37644	37146	37680
35°	36063	35540	36118
40°	33422	33239	33541
45°	30814	31384	30777
50°	28636	29368	28773
55°	26700	27265	26629
60°	24983	25548	24959
65°	23471	24312	23336
70°	22021	23732	21999
75°	21307	23732	21282
80°	21293	24292	21245
85°	21964	24781	21893



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	464.2	3.1
10°-20°	1374.5	9.1
20°-30°	2174.0	14.4
30°-40°	2571.3	17.0
40°-50°	2471.6	16.3
50°-60°	2112.0	14.0
60°-70°	1638.7	10.8
70°-80°	1155.9	7.6
80°-90°	669.2	4.4
90°-100°	314.3	2.1
100°-110°	144.7	1.0
110°-120°	26.1	0.2
120°-130°	0.4	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°	4012.8	26.5
0°-40°	6584.0	43.6
0°-60°	11167.7	73.9
0°-90°	14631.6	96.8
90°-120°	485.0	3.2
90°-150°	485.4	3.2
90°-180°	485.0	3.2
0°-180°	15117.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4930	4930	4930	4930	4930	
5°	4861	4863	4864	4858	4861	464
15°	4858	4863	4855	4858	4855	1375
25°	4751	4739	4740	4738	4749	2180
35°	4152	4125	4092	4130	4159	2585
45°	3164	3207	3222	3199	3160	2450
55°	2325	2358	2374	2360	2319	2089
65°	1616	1652	1674	1648	1607	1603
75°	1034	1085	1152	1089	1033	1100
85°	587	609	662	609	585	521
90°	344	377	394	375	342	199
95°	269	283	309	283	270	206
105°	131	133	143	134	131	140
115°	16	20	26	20	16	23
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°	4929.9	4929.9	4929.9	4929.9	4929.9
2.5°	4906.2	4901.3	4903.1	4897.5	4901.3
5°	4861.4	4862.7	4864.5	4857.7	4860.8
7.5°	4842.1	4848.3	4859.5	4845.2	4834.0
10°	4849.0	4859.5	4869.5	4853.9	4846.5
12.5°	4862.0	4865.2	4868.9	4861.4	4860.8
15°	4858.3	4863.3	4854.6	4857.7	4855.2
17.5°	4846.5	4848.3	4842.1	4845.2	4841.5
20°	4824.1	4821.0	4807.9	4817.8	4816.0
22.5°	4797.3	4792.9	4789.2	4794.8	4791.7
25°	4750.6	4738.8	4740.0	4738.2	4749.4
27.5°	4653.5	4634.2	4621.1	4630.5	4662.8
30°	4520.3	4494.1	4460.5	4492.3	4524.6
32.5°	4362.1	4342.2	4311.7	4340.4	4354.0
35°	4152.3	4125.0	4092.0	4129.9	4158.6
37.5°	3923.9	3907.1	3864.1	3905.2	3935.7
40°	3653.7	3657.4	3633.8	3666.1	3666.8
42.5°	3402.2	3427.7	3425.8	3425.8	3402.2
45°	3163.7	3206.7	3222.3	3199.2	3160.0
47.5°	2947.1	2990.1	3016.8	2986.3	2945.2
50°	2727.3	2772.8	2797.1	2767.2	2740.4
52.5°	2533.1	2553.7	2577.3	2551.2	2522.5
55°	2325.2	2357.6	2374.4	2360.0	2319.0
57.5°	2144.0	2167.1	2187.0	2172.7	2131.6
60°	1955.4	1980.9	1999.6	1988.4	1953.5
62.5°	1779.8	1817.2	1830.9	1812.8	1775.5
65°	1616.1	1651.6	1674.0	1648.5	1606.8
67.5°	1453.0	1499.7	1535.2	1504.7	1448.0
70°	1297.4	1359.0	1398.2	1351.5	1296.1
72.5°	1165.4	1220.8	1271.2	1218.9	1160.4
75°	1034.0	1085.1	1151.7	1088.8	1032.8
77.5°	915.1	963.7	1036.5	961.8	909.5
80°	804.3	842.9	917.6	840.4	802.5
82.5°	696.0	724.6	797.5	723.4	693.5
85°	587.1	608.8	662.4	608.8	585.2
87.5°	459.4	494.9	525.4	493.7	452.6
90°	343.6	376.6	394.1	375.4	342.4
92.5°	306.3	323.1	351.1	323.1	306.3
95°	268.9	283.3	308.8	282.6	270.2
97.5°	233.5	244.7	268.9	243.4	234.7
100°	201.1	206.7	229.1	207.9	199.8
102.5°	166.2	170.0	186.1	168.7	166.2
105°	131.4	133.2	143.2	133.8	130.7
107.5°	95.9	97.7	102.7	97.1	95.2
110°	63.5	64.7	71.0	64.7	64.1



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	36.7	39.8	46.1	39.8	36.7
115°	15.6	19.9	26.1	19.9	15.6
117.5°	5.0	8.1	10.0	8.1	4.4
120°	3.1	3.7	3.1	3.7	3.1
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)