

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: P295450

Luminaire Tested: **BMK-12-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: P295450  
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-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**

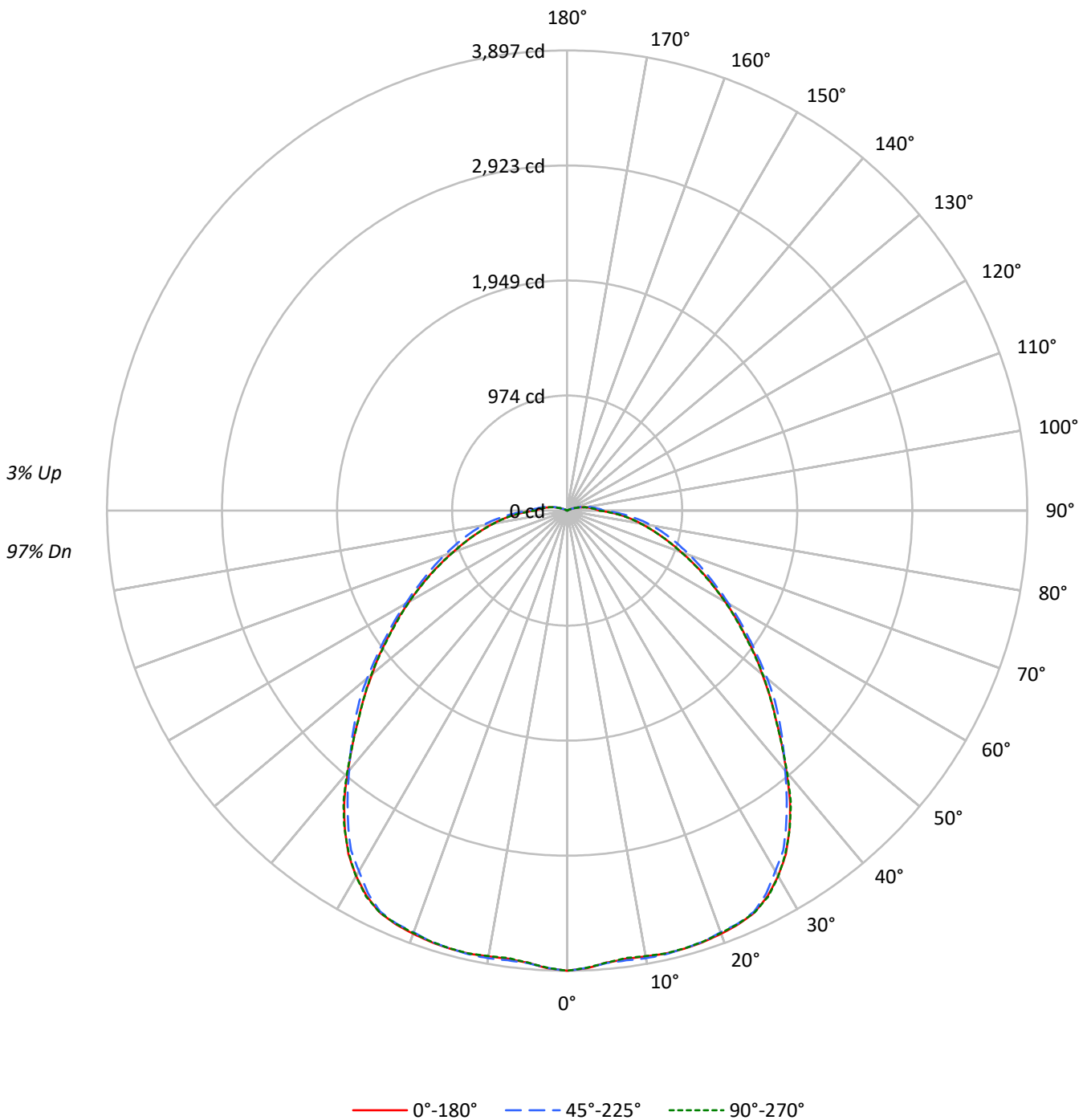
Lumens per Lamp: N/A  
Luminaire Lumens: 11950.0 lumens  
Efficiency: N/A  
Efficacy: 160.8 lumens/watt  
Spacing Criteria (0/90/45): 1.33 / 1.33 / 1.36  
Luminous Opening: Vertical Cylinder (Dia: 1.33' x H: 0.12')  
CIE Type: Direct

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°	30043	30043	30043
5°	29432	29450	29428
10°	29387	29512	29372
15°	29701	29678	29682
20°	29982	29881	29932
25°	30259	30192	30251
30°	29758	29364	29786
35°	28508	28094	28552
40°	26419	26276	26514
45°	24358	24809	24330
50°	22637	23216	22745
55°	21107	21552	21049
60°	19749	20196	19731
65°	18554	19219	18448
70°	17408	18761	17391
75°	16843	18760	16823
80°	16832	19204	16792
85°	17362	19588	17306



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	366.9	3.1
10°-20°	1086.6	9.1
20°-30°	1718.6	14.4
30°-40°	2032.6	17.0
40°-50°	1953.8	16.3
50°-60°	1669.6	14.0
60°-70°	1295.4	10.8
70°-80°	913.8	7.6
80°-90°	529.0	4.4
90°-100°	248.4	2.1
100°-110°	114.4	1.0
110°-120°	20.6	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°	3172.1	26.5
0°-40°	5204.7	43.6
0°-60°	8828.0	73.9
0°-90°	11566.3	96.8
90°-120°	383.4	3.2
90°-150°	383.7	3.2
90°-180°	384.0	3.2
0°-180°	11950.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3897	3897	3897	3897	3897	
5°	3843	3844	3845	3840	3842	367
15°	3840	3844	3838	3840	3838	1087
25°	3755	3746	3747	3746	3754	1723
35°	3282	3261	3235	3265	3287	2043
45°	2501	2535	2547	2529	2498	1937
55°	1838	1864	1877	1866	1833	1651
65°	1278	1306	1323	1303	1270	1267
75°	817	858	910	861	816	869
85°	464	481	524	481	463	412
90°	272	298	312	297	271	157
95°	213	224	244	223	214	163
105°	104	105	113	106	103	110
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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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3897.1	3897.1	3897.1	3897.1	3897.1
2.5°	3878.4	3874.4	3875.9	3871.5	3874.4
5°	3843.0	3843.9	3845.4	3840.0	3842.5
7.5°	3827.7	3832.6	3841.5	3830.2	3821.3
10°	3833.1	3841.5	3849.4	3837.0	3831.1
12.5°	3843.4	3845.9	3848.9	3843.0	3842.5
15°	3840.5	3844.4	3837.5	3840.0	3838.0
17.5°	3831.1	3832.6	3827.7	3830.2	3827.2
20°	3813.4	3811.0	3800.6	3808.5	3807.0
22.5°	3792.3	3788.8	3785.9	3790.3	3787.8
25°	3755.4	3746.0	3747.0	3745.5	3754.4
27.5°	3678.6	3663.3	3653.0	3660.4	3686.0
30°	3573.3	3552.6	3526.0	3551.1	3576.7
32.5°	3448.3	3432.5	3408.4	3431.1	3441.9
35°	3282.4	3260.8	3234.7	3264.7	3287.4
37.5°	3101.8	3088.5	3054.6	3087.1	3111.2
40°	2888.2	2891.2	2872.5	2898.1	2898.6
42.5°	2689.4	2709.6	2708.1	2708.1	2689.4
45°	2500.9	2534.9	2547.2	2529.0	2498.0
47.5°	2329.7	2363.6	2384.8	2360.7	2328.2
50°	2156.0	2191.9	2211.1	2187.5	2166.3
52.5°	2002.4	2018.7	2037.4	2016.7	1994.1
55°	1838.1	1863.7	1876.9	1865.6	1833.1
57.5°	1694.9	1713.1	1728.8	1717.5	1685.0
60°	1545.7	1565.9	1580.7	1571.8	1544.3
62.5°	1407.0	1436.5	1447.3	1433.0	1403.5
65°	1277.5	1305.6	1323.3	1303.1	1270.2
67.5°	1148.6	1185.5	1213.6	1189.5	1144.7
70°	1025.6	1074.3	1105.3	1068.4	1024.6
72.5°	921.2	965.0	1004.9	963.6	917.3
75°	817.4	857.8	910.4	860.7	816.4
77.5°	723.4	761.8	819.4	760.3	719.0
80°	635.8	666.3	725.4	664.4	634.3
82.5°	550.2	572.8	630.4	571.8	548.2
85°	464.1	481.3	523.6	481.3	462.6
87.5°	363.2	391.2	415.3	390.2	357.8
90°	271.6	297.7	311.5	296.7	270.7
92.5°	242.1	255.4	277.6	255.4	242.1
95°	212.6	223.9	244.1	223.4	213.6
97.5°	184.5	193.4	212.6	192.4	185.5
100°	159.0	163.4	181.1	164.4	158.0
102.5°	131.4	134.3	147.1	133.4	131.4
105°	103.8	105.3	113.2	105.8	103.3
107.5°	75.8	77.3	81.2	76.8	75.3
110°	50.2	51.2	56.1	51.2	50.7



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	29.0	31.5	36.4	31.5	29.0
115°	12.3	15.7	20.7	15.7	12.3
117.5°	3.9	6.4	7.9	6.4	3.4
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)