

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: P295449

Luminaire Tested: **BMK-12-MFL-UNV-L835-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: P295449  
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-L835-CD-U  
Description: BENCHMARK HIGHBAY LED FIXTURE  
WITH MEDIUM FROSTED LENS  
Light Source: (528) 80 CRI 3500K LEDS  
Ballast/Driver: ELECTRONIC DRIVER  
Luminaire Equipment: Sample No.   Condition   Description

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 11782.0 lumens  
Efficiency: N/A  
Efficacy: 158.6 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

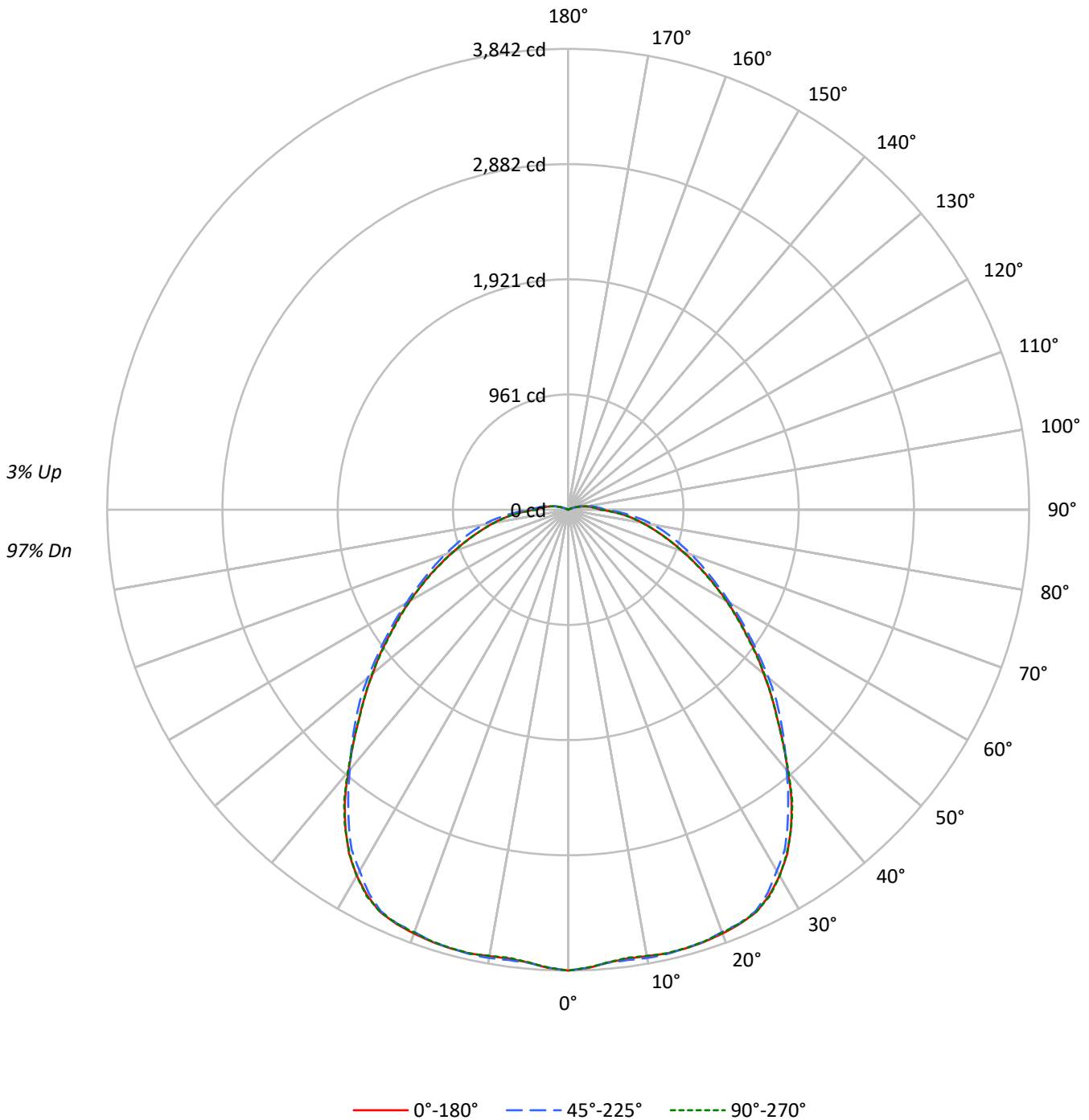
Input Watts (W): 74.3  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	29621	29621	29621
5°	29018	29037	29014
10°	28974	29096	28959
15°	29284	29261	29265
20°	29561	29461	29511
25°	29834	29767	29826
30°	29339	28952	29367
35°	28108	27699	28149
40°	26048	25906	26141
45°	24016	24460	23988
50°	22319	22889	22426
55°	20809	21250	20754
60°	19472	19912	19454
65°	18294	18949	18188
70°	17163	18498	17146
75°	16606	18496	16586
80°	16596	18934	16556
85°	17115	19315	17063



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	361.8	3.1
10°-20°	1071.3	9.1
20°-30°	1694.4	14.4
30°-40°	2004.0	17.0
40°-50°	1926.3	16.3
50°-60°	1646.1	14.0
60°-70°	1277.2	10.8
70°-80°	900.9	7.6
80°-90°	521.6	4.4
90°-100°	244.9	2.1
100°-110°	112.8	1.0
110°-120°	20.3	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°	3127.5	26.5
0°-40°	5131.5	43.6
0°-60°	8703.9	73.9
0°-90°	11403.7	96.8
90°-120°	378.0	3.2
90°-150°	378.4	3.2
90°-180°	378.0	3.2
0°-180°	11782.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3842	3842	3842	3842	3842	
5°	3789	3790	3791	3786	3788	362
15°	3786	3790	3784	3786	3784	1071
25°	3703	3693	3694	3693	3702	1699
35°	3236	3215	3189	3219	3241	2014
45°	2466	2499	2511	2493	2463	1909
55°	1812	1838	1851	1839	1807	1628
65°	1260	1287	1305	1285	1252	1249
75°	806	846	898	849	805	857
85°	458	474	516	474	456	406
90°	268	294	307	293	267	155
95°	210	221	241	220	211	161
105°	102	104	112	104	102	109
115°	12	16	20	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°	3842.3	3842.3	3842.3	3842.3	3842.3
2.5°	3823.9	3820.0	3821.4	3817.1	3820.0
5°	3788.9	3789.9	3791.4	3786.0	3788.4
7.5°	3773.9	3778.7	3787.5	3776.3	3767.6
10°	3779.2	3787.5	3795.2	3783.1	3777.3
12.5°	3789.4	3791.8	3794.7	3788.9	3788.4
15°	3786.5	3790.4	3783.6	3786.0	3784.1
17.5°	3777.3	3778.7	3773.9	3776.3	3773.4
20°	3759.8	3757.4	3747.2	3755.0	3753.5
22.5°	3739.0	3735.6	3732.6	3737.0	3734.6
25°	3702.6	3693.3	3694.3	3692.9	3701.6
27.5°	3626.9	3611.8	3601.6	3608.9	3634.1
30°	3523.0	3502.7	3476.5	3501.2	3526.4
32.5°	3399.8	3384.3	3360.5	3382.8	3393.5
35°	3236.3	3214.9	3189.2	3218.8	3241.1
37.5°	3058.2	3045.1	3011.6	3043.7	3067.4
40°	2847.6	2850.6	2832.1	2857.3	2857.8
42.5°	2651.6	2671.5	2670.1	2670.1	2651.6
45°	2465.8	2499.3	2511.4	2493.4	2462.9
47.5°	2296.9	2330.4	2351.3	2327.5	2295.5
50°	2125.7	2161.1	2180.0	2156.7	2135.9
52.5°	1974.3	1990.3	2008.7	1988.3	1966.0
55°	1812.2	1837.5	1850.6	1839.4	1807.4
57.5°	1671.0	1689.0	1704.5	1693.3	1661.3
60°	1524.0	1543.9	1558.5	1549.7	1522.6
62.5°	1387.2	1416.3	1427.0	1412.9	1383.8
65°	1259.6	1287.2	1304.7	1284.8	1252.3
67.5°	1132.5	1168.8	1196.5	1172.7	1128.6
70°	1011.2	1059.2	1089.8	1053.4	1010.2
72.5°	908.3	951.5	990.8	950.0	904.4
75°	805.9	845.7	897.6	848.6	804.9
77.5°	713.2	751.1	807.9	749.6	708.9
80°	626.9	657.0	715.2	655.0	625.4
82.5°	542.5	564.8	621.5	563.8	540.5
85°	457.5	474.5	516.3	474.5	456.1
87.5°	358.1	385.7	409.5	384.8	352.7
90°	267.8	293.5	307.1	292.6	266.9
92.5°	238.7	251.8	273.7	251.8	238.7
95°	209.6	220.8	240.7	220.3	210.6
97.5°	182.0	190.7	209.6	189.7	182.9
100°	156.7	161.1	178.6	162.1	155.7
102.5°	129.5	132.5	145.1	131.5	129.5
105°	102.4	103.8	111.6	104.3	101.9
107.5°	74.7	76.2	80.1	75.7	74.2
110°	49.5	50.5	55.3	50.5	50.0



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	28.6	31.1	35.9	31.1	28.6
115°	12.1	15.5	20.4	15.5	12.1
117.5°	3.9	6.3	7.8	6.3	3.4
120°	2.4	2.9	2.4	2.9	2.4
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)