

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: P381709

Luminaire Tested: **BMK-70-MFL-UNV-L840-CD-U**

Issue Date: 2/4/2020

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: P381709
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1908-468-5)
Test Lab: INNOVATIONS CENTER(G2)
Issue Date: 2/4/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: BMK-70-MFL-UNV-L840-CD-U
Description: BENCHMARK HIGHBAY LED FIXTURE WITH MEDIUM FROSTED LENS

Light Source: -
Ballast/Driver: -

Luminaire Equipment: Sample No. Condition Description

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 67873.4 lumens
Efficiency: N/A
Efficacy: 135.6 lumens/watt
Spacing Criteria (0/90/45): 1.36 / 1.36 / 1.38
Luminous Opening: Vertical Cylinder (Dia: 1.33' x H: 0.12')
CIE Type: Direct

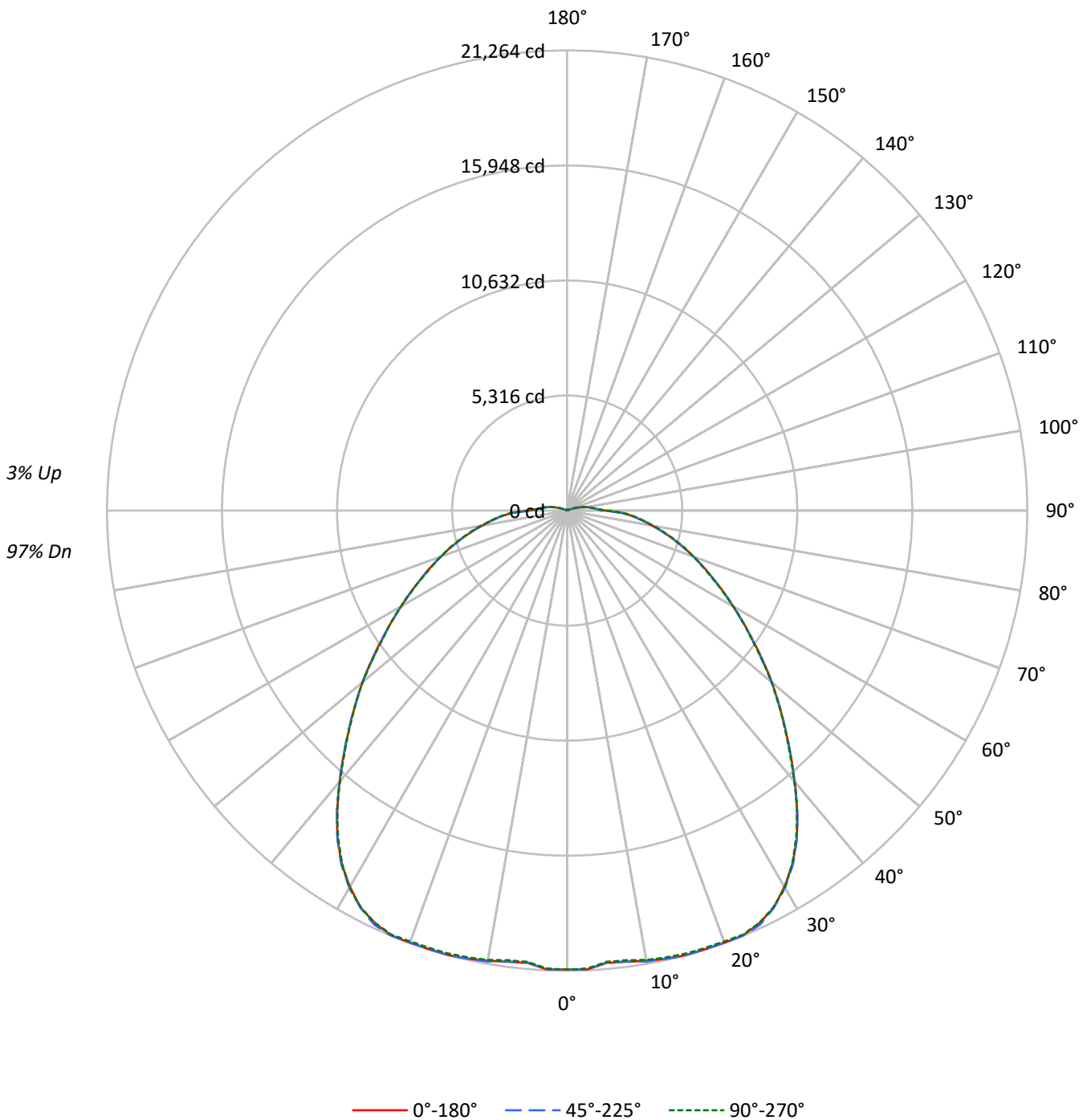
Input Watts (W): 500.7
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	0	
RCR																						
0	118	118	118	118	115	115	115	115	109	109	109	104	104	104	99	99	99	99	99	99	97	
1	107	101	97	92	104	99	95	91	94	90	87	89	87	84	85	83	81	85	83	81	78	
2	97	88	81	75	94	86	79	74	82	76	71	78	73	69	75	71	67	75	71	67	65	
3	88	77	69	62	85	76	68	61	72	65	60	69	63	58	66	61	57	66	61	57	55	
4	81	69	60	53	78	67	59	52	64	57	51	61	55	50	59	53	49	59	53	49	47	
5	74	61	52	45	72	60	51	45	57	50	44	55	49	43	53	47	43	53	47	43	40	
6	69	55	46	40	67	54	46	39	52	44	39	50	43	38	48	42	38	48	42	38	35	
7	64	50	41	35	62	49	41	35	47	40	34	46	39	34	44	38	33	44	38	33	31	
8	59	46	37	31	58	45	37	31	43	36	31	42	35	30	40	34	30	40	34	30	28	
9	55	42	34	28	54	41	33	28	40	33	28	39	32	27	37	31	27	37	31	27	25	
10	52	39	31	25	51	38	30	25	37	30	25	36	29	25	35	29	25	35	29	25	23	

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	163527	163527	163527
5°	160751	160620	160402
10°	162047	162287	161708
15°	164533	164511	163960
20°	167134	167100	166640
25°	169550	170158	169423
30°	167255	167635	167670
35°	160784	160796	160325
40°	149707	149668	149329
45°	138749	138930	138610
50°	129691	129586	129436
55°	120466	120155	119942
60°	113323	113232	113323
65°	108230	108003	107567
70°	105429	105188	105502
75°	104220	104309	105277
80°	105319	106262	107242
85°	113989	114524	116496



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	2009.4	3.0
10°-20°	6014.0	8.9
20°-30°	9663.8	14.2
30°-40°	11505.7	17.0
40°-50°	11021.3	16.2
50°-60°	9403.1	13.9
60°-70°	7395.8	10.9
70°-80°	5367.6	7.9
80°-90°	3280.1	4.8
90°-100°	1383.9	2.0
100°-110°	621.3	0.9
110°-120°	94.0	0.1
120°-130°	28.5	0.0
130°-140°	31.7	0.0
140°-150°	26.9	0.0
150°-160°	14.8	0.0
160°-170°	8.6	0.0
170°-180°	2.9	0.0
0°-30°	17687.2	26.1
0°-40°	29192.9	43.0
0°-60°	49617.3	73.1
0°-90°	65660.9	96.7
90°-120°	2099.2	3.1
90°-150°	2186.2	3.2
90°-180°	2213.0	3.3
0°-180°	67873.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	21202	21202	21202	21202	21202	
5°	20979	20937	20962	20986	20934	###
15°	21264	21192	21262	21293	21190	6018
25°	21032	21026	21108	21089	21016	9659
35°	18504	18476	18505	18525	18451	11503
45°	14239	14285	14258	14263	14225	11021
55°	10486	10490	10459	10449	10440	9421
65°	7449	7432	7433	7417	7403	7414
75°	5056	5081	5060	5053	5107	5355
85°	3046	3092	3060	3059	3113	2670
90°	1755	1757	1589	1728	1794	1025
95°	1234	1261	1247	1239	1251	945
105°	572	586	582	583	590	613
115°	61	64	64	63	61	91
125°	31	33	31	31	33	28
135°	41	41	41	41	41	32
145°	44	44	44	44	43	27
155°	30	31	30	30	30	15
165°	31	30	30	30	30	9
175°	30	30	30	30	31	3
180°	30	30	30	30	30	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	21201.7	21201.7	21201.7	21201.7	21201.7
2.5°	21224.5	21170.3	21215.9	21231.6	21174.6
5°	20979.3	20936.6	20962.2	20986.5	20933.7
7.5°	21030.7	20963.7	21015.0	21027.8	20952.3
10°	21126.2	21123.3	21157.5	21143.3	21082.0
12.5°	21204.5	21171.8	21208.8	21214.5	21147.5
15°	21264.4	21191.7	21261.6	21292.9	21190.3
17.5°	21245.9	21170.3	21250.2	21292.9	21186.0
20°	21247.3	21157.5	21243.0	21274.4	21184.6
22.5°	21240.2	21186.0	21258.7	21294.3	21213.1
25°	21032.1	21026.4	21107.6	21089.1	21016.4
27.5°	20671.5	20641.5	20688.6	20707.1	20657.2
30°	20074.3	20054.3	20119.9	20155.5	20124.1
32.5°	19373.0	19370.2	19411.5	19380.1	19345.9
35°	18503.6	18476.5	18505.0	18524.9	18450.8
37.5°	17443.1	17446.0	17483.0	17427.4	17455.9
40°	16358.4	16375.5	16354.2	16338.5	16317.1
42.5°	15276.6	15292.3	15278.0	15273.8	15223.9
45°	14239.0	14284.6	14257.5	14263.2	14224.7
47.5°	13272.6	13286.9	13284.0	13262.6	13255.5
50°	12346.2	12336.2	12336.2	12283.4	12321.9
52.5°	11401.2	11404.0	11347.0	11329.9	11374.1
55°	10486.1	10490.4	10459.0	10449.0	10440.5
57.5°	9642.3	9635.2	9642.3	9612.4	9662.3
60°	8865.5	8861.2	8858.4	8832.7	8865.5
62.5°	8141.5	8127.2	8120.1	8105.8	8121.5
65°	7448.7	7431.6	7433.1	7417.4	7403.1
67.5°	6815.9	6803.1	6795.9	6793.1	6778.8
70°	6208.7	6200.2	6194.5	6180.2	6213.0
72.5°	5627.2	5631.5	5611.5	5598.7	5667.1
75°	5055.6	5081.3	5059.9	5052.8	5106.9
77.5°	4505.4	4548.2	4522.6	4519.7	4565.3
80°	3976.7	4026.5	4012.3	3999.5	4049.3
82.5°	3496.3	3551.9	3532.0	3514.8	3559.0
85°	3045.9	3091.5	3060.2	3058.7	3112.9
87.5°	2555.6	2596.9	2530.0	2565.6	2611.2
90°	1754.6	1757.4	1589.2	1727.5	1794.5
92.5°	1415.3	1442.4	1411.1	1418.2	1432.5
95°	1234.3	1261.4	1247.2	1238.6	1251.4
97.5°	1071.8	1094.6	1080.4	1079.0	1090.4
100°	909.4	925.0	912.2	916.5	925.0
102.5°	748.3	762.5	755.4	758.3	769.7
105°	571.6	585.8	581.5	583.0	590.1
107.5°	406.2	413.3	406.2	409.1	419.0
110°	253.7	260.8	249.4	256.6	269.4



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	131.1	139.7	142.5	139.7	135.4
115°	61.3	64.1	64.1	62.7	61.3
117.5°	29.9	29.9	28.5	29.9	29.9
120°	25.7	27.1	25.7	25.7	27.1
122.5°	28.5	29.9	28.5	28.5	29.9
125°	31.4	32.8	31.4	31.4	32.8
127.5°	34.2	35.6	34.2	34.2	35.6
130°	37.1	37.1	37.1	37.1	37.1
132.5°	38.5	39.9	38.5	38.5	39.9
135°	41.3	41.3	41.3	41.3	41.3
137.5°	42.8	42.8	42.8	42.8	44.2
140°	44.2	44.2	44.2	44.2	44.2
142.5°	45.6	44.2	44.2	45.6	44.2
145°	44.2	44.2	44.2	44.2	42.8
147.5°	41.3	41.3	41.3	41.3	41.3
150°	37.1	37.1	37.1	37.1	37.1
152.5°	32.8	32.8	32.8	32.8	32.8
155°	29.9	31.4	29.9	29.9	29.9
157.5°	31.4	31.4	29.9	29.9	29.9
160°	31.4	31.4	29.9	29.9	29.9
162.5°	31.4	31.4	29.9	29.9	29.9
165°	31.4	29.9	29.9	29.9	29.9
167.5°	31.4	29.9	29.9	29.9	29.9
170°	31.4	31.4	29.9	29.9	29.9
172.5°	29.9	31.4	29.9	29.9	29.9
175°	29.9	29.9	29.9	29.9	31.4
177.5°	28.5	28.5	29.9	29.9	31.4
180°	29.9	29.9	29.9	29.9	29.9

(END OF REPORT)