

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: P295462

Luminaire Tested: **BMK-18-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: P295462
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-18-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: 18084.0 lumens
Efficiency: N/A
Efficacy: 158.9 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

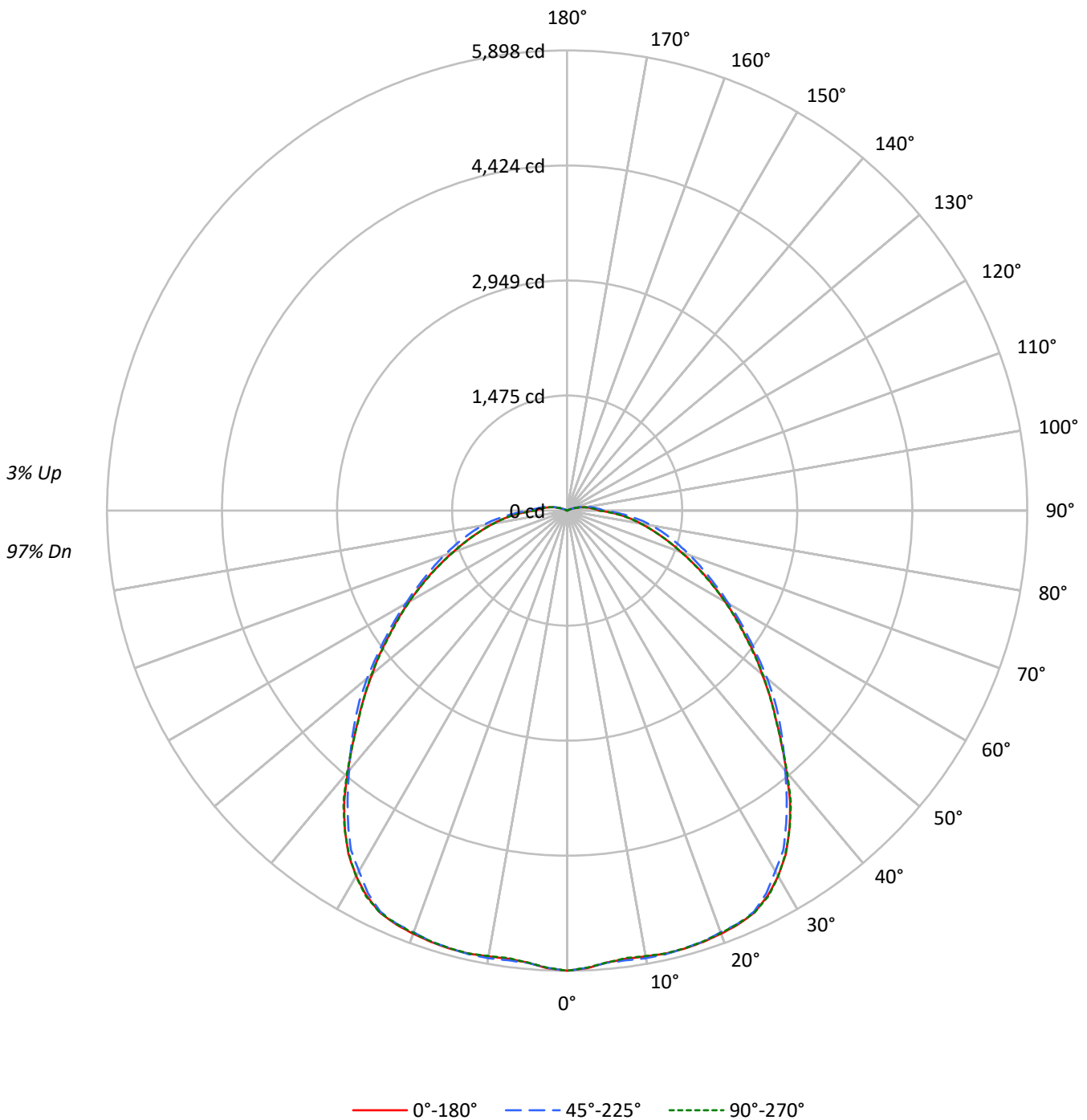
Input Watts (W): 113.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	118	118	118	118	115	115	115	115	109	109	109	104	104	104	99	99	99	99	99	99	99	99	99	97		
1	107	102	97	93	104	99	95	91	94	91	88	90	87	84	86	83	81	86	83	81	86	83	81	79		
2	97	89	81	75	94	86	80	74	82	77	72	78	74	70	75	71	68	75	71	68	75	71	68	65		
3	89	78	69	63	86	76	68	62	72	66	60	69	64	59	66	62	58	66	62	58	66	62	58	55		
4	81	69	60	53	79	67	59	53	64	57	52	62	56	51	59	54	49	59	54	49	59	54	49	47		
5	75	62	53	46	72	60	52	45	58	50	45	56	49	44	53	48	43	53	48	43	53	48	43	41		
6	69	56	47	40	67	54	46	40	52	45	39	50	44	39	48	43	38	48	43	38	48	43	38	36		
7	64	50	42	35	62	49	41	35	48	40	35	46	39	34	44	38	34	44	38	34	44	38	34	32		
8	60	46	38	32	58	45	37	31	44	36	31	42	36	31	41	35	30	41	35	30	41	35	30	28		
9	56	42	34	28	54	42	34	28	40	33	28	39	32	28	38	32	27	38	32	27	38	32	27	26		
10	52	39	31	26	51	38	31	26	37	30	25	36	30	25	35	29	25	35	29	25	35	29	25	23		

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	45464	45464	45464
5°	44539	44567	44533
10°	44472	44660	44449
15°	44947	44913	44918
20°	45372	45220	45296
25°	45791	45689	45779
30°	45032	44437	45076
35°	43142	42515	43207
40°	39981	39763	40124
45°	36862	37544	36818
50°	34256	35133	34421
55°	31941	32616	31855
60°	29887	30563	29858
65°	28078	29085	27916
70°	26343	28391	26317
75°	25490	28389	25459
80°	25473	29060	25414
85°	26273	29644	26187



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	555.3	3.1
10°-20°	1644.3	9.1
20°-30°	2600.7	14.4
30°-40°	3075.9	17.0
40°-50°	2956.7	16.3
50°-60°	2526.6	14.0
60°-70°	1960.4	10.8
70°-80°	1382.8	7.6
80°-90°	800.6	4.4
90°-100°	375.9	2.1
100°-110°	173.1	1.0
110°-120°	31.2	0.2
120°-130°	0.5	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°	4800.3	26.5
0°-40°	7876.3	43.6
0°-60°	13359.5	73.9
0°-90°	17503.3	96.8
90°-120°	580.2	3.2
90°-150°	580.7	3.2
90°-180°	581.0	3.2
0°-180°	18084.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	5898	5898	5898	5898	5898	
5°	5816	5817	5819	5811	5815	555
15°	5812	5818	5807	5811	5808	1644
25°	5683	5669	5670	5668	5682	2608
35°	4967	4935	4895	4940	4975	3092
45°	3785	3836	3855	3827	3780	2931
55°	2782	2820	2840	2823	2774	2499
65°	1933	1976	2003	1972	1922	1917
75°	1237	1298	1378	1302	1236	1316
85°	702	728	792	728	700	624
90°	411	451	471	449	410	238
95°	322	339	369	338	323	246
105°	157	159	171	160	156	167
115°	19	24	31	24	19	27
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°	5897.5	5897.5	5897.5	5897.5	5897.5
2.5°	5869.2	5863.2	5865.5	5858.8	5863.2
5°	5815.6	5817.1	5819.3	5811.1	5814.8
7.5°	5792.5	5799.9	5813.3	5796.2	5782.8
10°	5800.7	5813.3	5825.2	5806.6	5797.7
12.5°	5816.3	5820.0	5824.5	5815.6	5814.8
15°	5811.8	5817.8	5807.4	5811.1	5808.1
17.5°	5797.7	5799.9	5792.5	5796.2	5791.7
20°	5770.9	5767.2	5751.5	5763.4	5761.2
22.5°	5738.9	5733.6	5729.2	5735.9	5732.2
25°	5683.0	5668.9	5670.3	5668.1	5681.5
27.5°	5566.8	5543.7	5528.1	5539.3	5578.0
30°	5407.5	5376.2	5336.0	5373.9	5412.7
32.5°	5218.3	5194.5	5158.0	5192.2	5208.6
35°	4967.3	4934.6	4895.1	4940.5	4974.8
37.5°	4694.0	4673.9	4622.5	4671.7	4708.2
40°	4370.8	4375.3	4347.0	4385.7	4386.4
42.5°	4069.9	4100.5	4098.2	4098.2	4069.9
45°	3784.7	3836.1	3854.7	3827.1	3780.2
47.5°	3525.5	3576.9	3608.9	3572.4	3523.3
50°	3262.6	3317.0	3346.1	3310.3	3278.3
52.5°	3030.3	3054.9	3083.2	3051.9	3017.6
55°	2781.6	2820.3	2840.4	2823.3	2774.1
57.5°	2564.8	2592.4	2616.2	2599.1	2549.9
60°	2339.2	2369.7	2392.1	2378.7	2336.9
62.5°	2129.2	2173.9	2190.2	2168.6	2124.0
65°	1933.3	1975.8	2002.6	1972.0	1922.1
67.5°	1738.2	1794.0	1836.5	1800.0	1732.2
70°	1552.0	1625.7	1672.7	1616.8	1550.5
72.5°	1394.1	1460.4	1520.7	1458.2	1388.2
75°	1237.0	1298.1	1377.7	1302.5	1235.5
77.5°	1094.7	1152.8	1240.0	1150.6	1088.0
80°	962.2	1008.4	1097.7	1005.4	960.0
82.5°	832.6	866.9	954.0	865.4	829.6
85°	702.3	728.3	792.4	728.3	700.0
87.5°	549.6	592.1	628.5	590.6	541.4
90°	411.1	450.6	471.4	449.1	409.6
92.5°	366.4	386.5	420.0	386.5	366.4
95°	321.7	338.9	369.4	338.1	323.2
97.5°	279.3	292.7	321.7	291.2	280.8
100°	240.5	247.2	274.1	248.7	239.1
102.5°	198.8	203.3	222.7	201.8	198.8
105°	157.1	159.4	171.3	160.1	156.4
107.5°	114.7	116.9	122.9	116.2	113.9
110°	76.0	77.5	84.9	77.5	76.7



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	43.9	47.7	55.1	47.7	43.9
115°	18.6	23.8	31.3	23.8	18.6
117.5°	6.0	9.7	11.9	9.7	5.2
120°	3.7	4.5	3.7	4.5	3.7
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)