

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: P294528

Luminaire Tested: **BMK-15-NFL-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: P294528
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1901-103-7)
Test Lab: INNOVATION CENTER(G3)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: BMK-15-NFL-UNV-L840-CD-U
Description: BENCHMARK HIGHBAY LED FIXTURE
WITH NARROW FROSTED LENS
Light Source: (528) 80 CRI 4000K LEDS
Ballast/Driver: ELECTRONIC DRIVER
Luminaire Equipment: Sample No. Condition Description

Summary

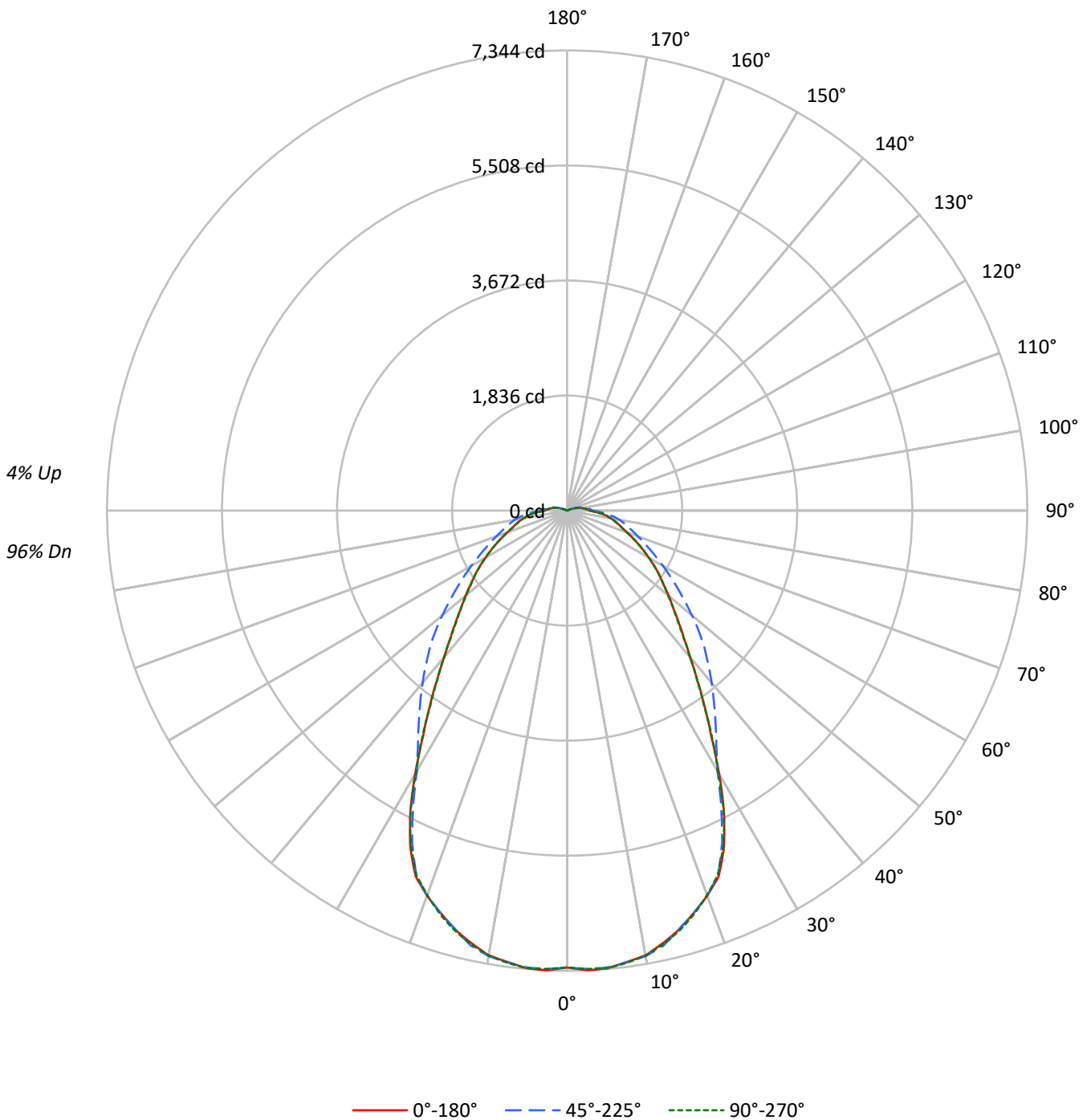
Lumens per Lamp: N/A
Luminaire Lumens: 15272.0 lumens
Efficiency: N/A
Efficacy: 162.8 lumens/watt
Spacing Criteria (0/90/45): 1.06 / 1.06 / 1.11
Luminous Opening: Vertical Cylinder (Dia: 1.33' x H: 0.12')
CIE Type: Direct

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	96
1	108	103	98	95	105	100	96	93	95	92	89	91	88	86	87	84	82	80
2	99	91	84	78	96	88	82	77	84	79	75	80	76	72	77	73	70	68
3	91	80	73	66	88	79	71	66	75	69	64	72	67	62	69	65	61	59
4	84	72	64	57	81	71	63	57	68	61	56	65	59	55	62	58	53	51
5	77	65	57	50	75	64	56	50	61	55	49	59	53	48	57	52	47	45
6	72	59	51	45	70	58	50	45	56	49	44	54	48	43	52	47	43	41
7	67	54	46	40	65	53	46	40	52	45	40	50	44	39	48	43	38	37
8	63	50	42	37	61	49	42	36	48	41	36	46	40	35	45	39	35	33
9	59	46	39	33	58	46	38	33	44	38	33	43	37	32	42	36	32	30
10	56	43	36	31	54	42	35	30	41	35	30	40	34	30	39	34	30	28

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	56204	56204	56204
5°	56159	56061	56159
10°	55249	55351	55277
15°	53506	53445	53657
20°	51429	51387	51322
25°	47738	47153	47544
30°	40398	39908	40136
35°	33247	35857	33149
40°	27896	32842	27926
45°	24480	30182	24294
50°	22228	27274	22075
55°	20623	24656	20614
60°	19212	22581	19259
65°	18128	21049	18027
70°	17209	20383	17140
75°	17433	20789	17441
80°	18696	22473	18706
85°	20464	24358	20710



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	694.3	4.5
10°-20°	1945.1	12.7
20°-30°	2659.1	17.4
30°-40°	2497.6	16.4
40°-50°	2153.4	14.1
50°-60°	1766.9	11.6
60°-70°	1361.4	8.9
70°-80°	997.5	6.5
80°-90°	639.2	4.2
90°-100°	345.6	2.3
100°-110°	179.0	1.2
110°-120°	32.4	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°	5298.5	34.7
0°-40°	7796.1	51.0
0°-60°	11716.4	76.7
0°-90°	14714.5	96.3
90°-120°	557.0	3.6
90°-150°	557.5	3.7
90°-180°	557.0	3.6
0°-180°	15272.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	7291	7291	7291	7291	7291	
5°	7333	7328	7320	7317	7333	695
15°	6919	6903	6911	6907	6938	1946
25°	5925	5860	5852	5837	5901	2680
35°	3828	3965	4129	3956	3817	2409
45°	2513	2759	3099	2751	2494	1954
55°	1796	1963	2147	1962	1795	1609
65°	1248	1388	1449	1385	1241	1239
75°	846	952	1009	949	846	898
85°	547	586	651	584	554	478
90°	355	383	409	387	355	204
95°	301	309	349	308	301	232
105°	162	164	192	165	163	169
115°	18	24	31	24	19	28
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°	7290.6	7290.6	7290.6	7290.6	7290.6
2.5°	7343.7	7330.0	7322.5	7314.2	7321.3
5°	7332.9	7327.9	7320.0	7316.7	7332.9
7.5°	7268.2	7263.6	7274.0	7256.6	7281.1
10°	7206.4	7191.5	7219.7	7161.2	7210.1
12.5°	7070.8	7081.2	7111.0	7069.6	7088.6
15°	6918.6	6902.9	6910.7	6906.6	6938.1
17.5°	6728.7	6718.7	6727.9	6717.1	6750.3
20°	6541.3	6528.8	6535.9	6529.6	6527.6
22.5°	6319.0	6279.2	6295.3	6251.0	6290.0
25°	5924.6	5859.5	5852.0	5836.7	5900.6
27.5°	5422.4	5357.7	5321.2	5337.0	5414.6
30°	4851.0	4847.3	4792.1	4828.2	4819.5
32.5°	4283.7	4392.8	4428.4	4390.7	4309.0
35°	3828.0	3965.2	4128.6	3956.5	3816.8
37.5°	3414.1	3609.0	3847.5	3591.2	3403.3
40°	3049.6	3286.8	3590.3	3270.6	3052.9
42.5°	2755.2	3005.6	3333.7	3001.5	2751.9
45°	2513.4	2759.3	3098.9	2750.6	2494.3
47.5°	2292.0	2539.5	2851.8	2535.0	2291.6
50°	2117.0	2319.8	2597.6	2319.3	2102.5
52.5°	1942.0	2133.6	2358.7	2137.3	1934.5
55°	1796.0	1963.1	2147.2	1961.5	1795.2
57.5°	1649.6	1809.3	1946.9	1807.2	1651.7
60°	1503.7	1658.7	1767.4	1654.2	1507.4
62.5°	1370.1	1521.5	1595.3	1513.6	1373.4
65°	1248.2	1387.5	1449.3	1384.6	1241.2
67.5°	1127.1	1264.4	1320.4	1265.6	1123.4
70°	1013.9	1154.5	1200.9	1152.8	1009.8
72.5°	921.0	1053.3	1099.3	1049.6	921.0
75°	846.0	951.7	1008.9	948.8	846.4
77.5°	773.4	859.6	928.5	857.2	779.2
80°	706.2	773.0	848.9	765.5	706.6
82.5°	635.7	679.3	754.7	675.9	639.0
85°	547.0	586.4	651.1	584.3	553.6
87.5°	443.3	488.5	525.0	488.5	449.1
90°	355.0	382.8	409.3	387.3	354.6
92.5°	336.3	345.4	379.9	346.7	337.1
95°	300.6	308.9	348.8	308.5	300.6
97.5°	267.1	274.9	315.2	273.7	265.4
100°	231.4	238.4	277.0	240.5	230.2
102.5°	199.0	204.4	237.2	204.9	198.6
105°	162.1	164.2	191.6	165.0	163.0
107.5°	120.3	122.7	136.8	124.4	122.3
110°	80.4	82.5	92.1	84.2	82.5



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	45.6	48.1	60.1	48.5	44.8
115°	18.2	24.1	31.1	24.5	18.7
117.5°	5.0	9.1	11.2	9.1	5.4
120°	4.1	4.6	4.1	4.6	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)