

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: P294563

Luminaire Tested: **BMK-15-NCL-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: P294563
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1903-198-7)
Test Lab: INNOVATION CENTER(G3)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: BMK-15-NCL-UNV-L835-CD-U
Description: BENCHMARK HIGHBAY LED FIXTURE
WITH NARROW CLEAR LENS
Light Source: (528) 80 CRI 3500K LEDS
Ballast/Driver: ELECTRONIC DRIVER
Luminaire Equipment: Sample No. Condition Description

Summary

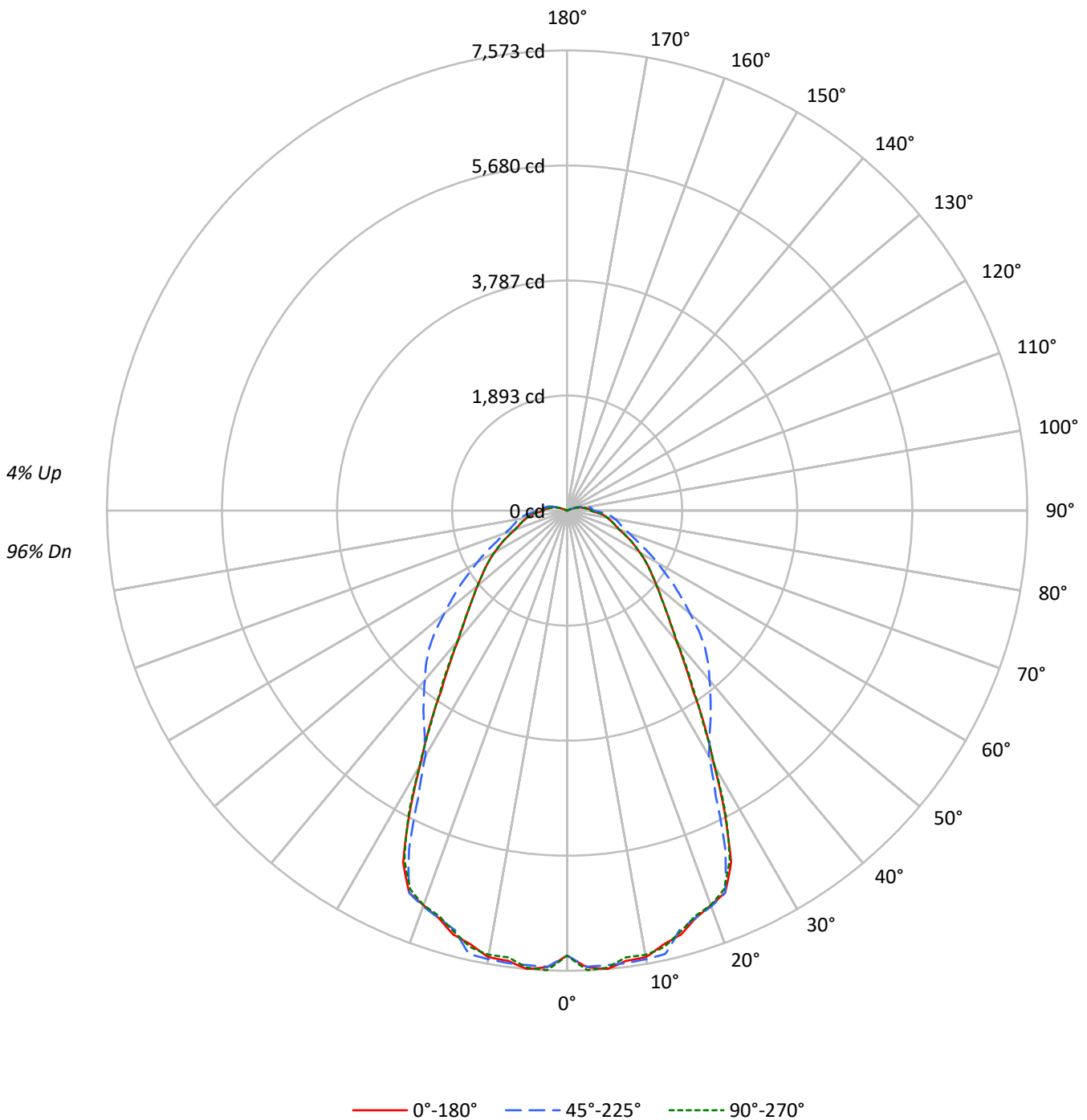
Lumens per Lamp: N/A
Luminaire Lumens: 15211.0 lumens
Efficiency: N/A
Efficacy: 162.2 lumens/watt
Spacing Criteria (0/90/45): 1.08 / 1.08 / 1.11
Luminous Opening: Vertical Cylinder (Dia: 1.33' x H: 0.12')
CIE Type: Direct

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	50	30	10	0	
RCR																						
0	118	118	118	118	115	115	115	115	109	109	109	103	103	103	98	98	98	96				
1	108	103	99	95	105	100	96	93	95	92	89	91	88	86	86	84	82	80				
2	99	91	84	79	96	89	83	78	84	79	75	81	76	73	77	74	71	68				
3	91	81	73	67	88	79	72	66	76	70	65	72	67	63	69	65	61	59				
4	84	73	65	58	82	71	64	58	68	62	56	65	60	55	63	58	54	52				
5	78	66	58	51	76	65	57	51	62	55	50	60	54	49	58	52	48	46				
6	73	60	52	46	71	59	51	45	57	50	45	55	49	44	53	48	43	41				
7	68	55	47	41	66	54	46	41	52	45	40	51	44	40	49	43	39	37				
8	64	51	43	37	62	50	42	37	48	42	37	47	41	36	45	40	36	34				
9	60	47	39	34	58	46	39	34	45	38	34	44	38	33	42	37	33	31				
10	56	44	36	31	55	43	36	31	42	35	31	41	35	31	40	34	30	29				

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	56454	56454	56454
5°	57995	57508	57833
10°	57225	57464	56919
15°	55882	55256	55526
20°	54350	54507	54331
25°	51448	49599	51026
30°	40293	38849	40470
35°	31362	35772	31633
40°	25569	33328	25661
45°	22256	31283	22269
50°	20208	27725	20221
55°	18920	24664	18820
60°	17674	21849	17674
65°	16539	19528	16539
70°	15498	18377	15476
75°	16141	18764	16089
80°	17732	21266	17700
85°	20067	24264	20018



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	712.8	4.7
10°-20°	2026.0	13.3
20°-30°	2780.8	18.3
30°-40°	2438.2	16.0
40°-50°	2086.7	13.7
50°-60°	1689.9	11.1
60°-70°	1267.5	8.3
70°-80°	923.2	6.1
80°-90°	632.0	4.2
90°-100°	390.7	2.6
100°-110°	226.8	1.5
110°-120°	35.8	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°	5519.6	36.3
0°-40°	7957.8	52.3
0°-60°	11734.4	77.1
0°-90°	14557.2	95.7
90°-120°	653.3	4.3
90°-150°	653.8	4.3
90°-180°	654.0	4.3
0°-180°	15211.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	7323	7323	7323	7323	7323	
5°	7573	7503	7509	7524	7551	716
15°	7226	7154	7145	7145	7180	2030
25°	6385	6146	6156	6156	6333	2826
35°	3611	3821	4119	3853	3642	2300
45°	2285	2661	3212	2638	2286	1781
55°	1648	1875	2148	1876	1639	1472
65°	1139	1305	1345	1298	1139	1129
75°	783	889	911	884	781	829
85°	536	582	649	582	535	464
90°	394	409	429	402	383	223
95°	336	340	404	347	338	266
105°	208	213	267	210	206	210
115°	22	24	31	24	22	35
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



TEST NUMBER: P294563

CATALOG NUMBER: BMK-15-NCL-UNV-L835-CD-U

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	7323.1	7323.1	7323.1	7323.1	7323.1
2.5°	7522.7	7469.1	7514.0	7543.9	7571.3
5°	7572.6	7502.7	7509.0	7524.0	7551.4
7.5°	7472.8	7398.0	7509.0	7454.1	7415.4
10°	7464.1	7343.1	7495.3	7394.2	7424.2
12.5°	7313.2	7300.7	7472.8	7349.3	7360.5
15°	7225.8	7153.5	7144.8	7144.8	7179.7
17.5°	7032.5	6988.8	7028.8	7007.6	6996.3
20°	6912.8	6892.8	6932.7	6952.7	6910.3
22.5°	6799.2	6702.0	6804.2	6719.4	6744.4
25°	6385.1	6145.6	6155.6	6155.6	6332.7
27.5°	5614.3	5474.6	5298.7	5494.5	5656.7
30°	4838.4	4879.6	4665.0	4870.9	4859.6
32.5°	4212.3	4328.3	4363.2	4333.3	4181.1
35°	3611.0	3820.6	4118.7	3853.0	3642.2
37.5°	3168.2	3456.4	3875.5	3450.1	3204.4
40°	2795.3	3138.3	3643.5	3153.3	2805.3
42.5°	2514.6	2891.3	3437.7	2876.4	2522.1
45°	2285.1	2660.6	3211.9	2638.1	2286.4
47.5°	2088.0	2447.3	2942.5	2448.5	2088.0
50°	1924.6	2216.5	2640.6	2215.3	1925.9
52.5°	1771.2	2043.1	2383.7	2028.2	1776.2
55°	1647.7	1874.8	2147.9	1876.0	1639.0
57.5°	1511.8	1721.3	1908.4	1718.8	1518.0
60°	1383.3	1570.4	1710.1	1556.7	1383.3
62.5°	1257.3	1433.2	1523.0	1434.4	1259.8
65°	1138.8	1304.7	1344.6	1298.5	1138.8
67.5°	1017.8	1180.0	1198.7	1172.5	1024.1
70°	913.1	1075.2	1082.7	1064.0	911.8
72.5°	842.0	972.9	981.7	975.4	842.0
75°	783.3	889.4	910.6	884.4	780.8
77.5°	722.2	809.5	858.2	810.8	727.2
80°	669.8	734.7	803.3	735.9	668.6
82.5°	614.9	663.6	739.7	666.1	619.9
85°	536.4	582.5	648.6	582.5	535.1
87.5°	436.6	493.9	535.1	490.2	429.1
90°	394.2	409.1	429.1	401.6	382.9
92.5°	405.4	382.9	416.6	380.4	389.2
95°	335.5	340.5	404.1	346.8	338.0
97.5°	303.1	316.8	384.2	310.6	301.9
100°	266.9	289.4	345.5	284.4	268.2
102.5°	243.2	258.2	316.8	261.9	247.0
105°	208.3	213.3	266.9	209.6	205.8
107.5°	155.9	155.9	175.9	157.2	153.4
110°	103.5	98.5	106.0	96.0	103.5



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	54.9	52.4	61.1	51.1	53.6
115°	22.5	23.7	31.2	23.7	22.5
117.5°	6.2	10.0	11.2	10.0	6.2
120°	3.7	5.0	3.7	5.0	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)