

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: P294569

Luminaire Tested: **BMK-18-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: P294569
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-18-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

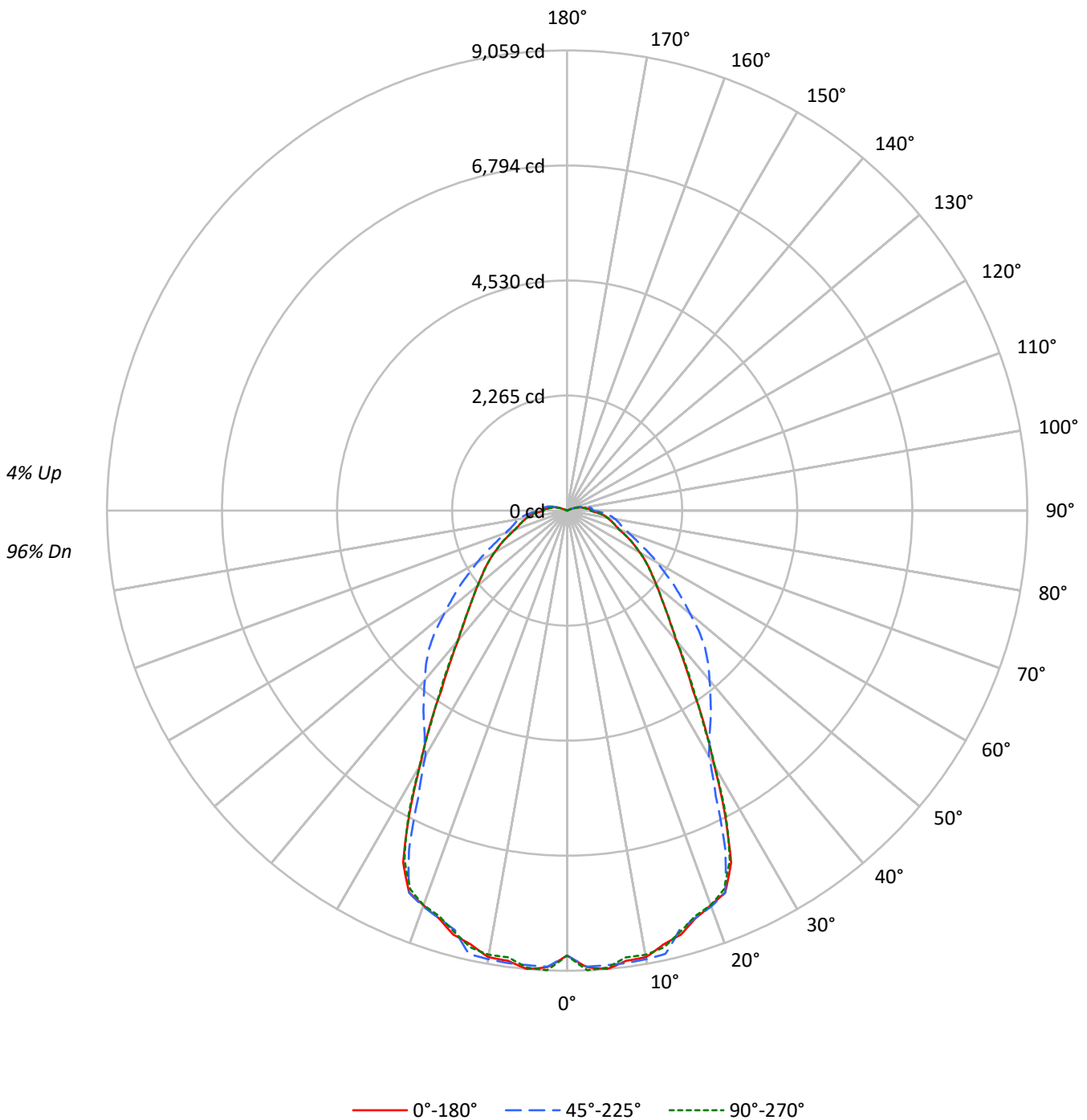
Lumens per Lamp: N/A
Luminaire Lumens: 18196.0 lumens
Efficiency: N/A
Efficacy: 159.9 lumens/watt
Spacing Criteria (0/90/45): 1.08 / 1.08 / 1.11
Luminous Opening: Vertical Cylinder (Dia: 1.33' x H: 0.12')
CIE Type: Direct

Input Watts (W): 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	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°	67533	67533	67533
5°	69376	68793	69182
10°	68454	68740	68088
15°	66848	66098	66422
20°	65015	65203	64992
25°	61544	59333	61040
30°	48200	46473	48412
35°	37517	42792	37841
40°	30587	39869	30697
45°	26624	37422	26638
50°	24173	33166	24189
55°	22634	29504	22513
60°	21143	26137	21143
65°	19785	23361	19785
70°	18538	21984	18513
75°	19308	22444	19248
80°	21213	25438	21173
85°	24003	29027	23946



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	852.6	4.7
10°-20°	2423.5	13.3
20°-30°	3326.6	18.3
30°-40°	2916.7	16.0
40°-50°	2496.2	13.7
50°-60°	2021.5	11.1
60°-70°	1516.3	8.3
70°-80°	1104.4	6.1
80°-90°	756.0	4.2
90°-100°	467.4	2.6
100°-110°	271.3	1.5
110°-120°	42.9	0.2
120°-130°	0.6	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°	6602.7	36.3
0°-40°	9519.4	52.3
0°-60°	14037.2	77.1
0°-90°	17413.8	95.7
90°-120°	781.6	4.3
90°-150°	782.2	4.3
90°-180°	782.0	4.3
0°-180°	18196.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	8760	8760	8760	8760	8760	
5°	9059	8975	8982	9000	9033	856
15°	8644	8557	8547	8547	8589	2428
25°	7638	7352	7364	7364	7576	3380
35°	4320	4570	4927	4609	4357	2752
45°	2734	3183	3842	3156	2735	2131
55°	1971	2243	2569	2244	1961	1761
65°	1362	1561	1608	1553	1362	1351
75°	937	1064	1089	1058	934	992
85°	642	697	776	697	640	555
90°	472	489	513	480	458	267
95°	401	407	483	415	404	318
105°	249	255	319	251	246	252
115°	27	28	37	28	27	41
125°	0	0	0	0	0	1
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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CATALOG NUMBER: BMK-18-NCL-UNV-L835-CD-U

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	8760.2	8760.2	8760.2	8760.2	8760.2
2.5°	8999.0	8934.8	8988.5	9024.3	9057.1
5°	9058.6	8975.1	8982.5	9000.4	9033.3
7.5°	8939.3	8849.7	8982.5	8916.9	8870.6
10°	8928.8	8784.1	8966.1	8845.3	8881.1
12.5°	8748.3	8733.4	8939.3	8791.6	8805.0
15°	8643.8	8557.3	8546.8	8546.8	8588.6
17.5°	8412.6	8360.3	8408.1	8382.7	8369.3
20°	8269.3	8245.4	8293.2	8317.1	8266.3
22.5°	8133.5	8017.1	8139.5	8038.0	8067.9
25°	7638.1	7351.7	7363.6	7363.6	7575.5
27.5°	6716.0	6548.9	6338.5	6572.8	6766.7
30°	5787.9	5837.2	5580.5	5826.7	5813.3
32.5°	5038.9	5177.6	5219.4	5183.6	5001.6
35°	4319.7	4570.4	4927.0	4609.1	4357.0
37.5°	3790.0	4134.7	4636.0	4127.2	3833.2
40°	3343.8	3754.2	4358.5	3772.1	3355.8
42.5°	3008.1	3458.7	4112.3	3440.8	3017.1
45°	2733.6	3182.7	3842.2	3155.8	2735.0
47.5°	2497.8	2927.5	3519.9	2929.0	2497.8
50°	2302.3	2651.5	3158.8	2650.0	2303.8
52.5°	2118.8	2444.1	2851.4	2426.2	2124.8
55°	1971.1	2242.7	2569.4	2244.1	1960.6
57.5°	1808.4	2059.1	2282.9	2056.1	1815.9
60°	1654.8	1878.6	2045.7	1862.2	1654.8
62.5°	1504.1	1714.4	1821.9	1715.9	1507.0
65°	1362.3	1560.8	1608.5	1553.3	1362.3
67.5°	1217.6	1411.5	1433.9	1402.6	1225.0
70°	1092.2	1286.2	1295.2	1272.8	1090.7
72.5°	1007.2	1163.9	1174.3	1166.8	1007.2
75°	937.0	1063.9	1089.2	1057.9	934.1
77.5°	863.9	968.4	1026.6	969.9	869.9
80°	801.3	878.9	960.9	880.3	799.8
82.5°	735.6	793.8	884.8	796.8	741.6
85°	641.6	696.8	775.9	696.8	640.1
87.5°	522.2	590.9	640.1	586.4	513.3
90°	471.5	489.4	513.3	480.5	458.1
92.5°	484.9	458.1	498.4	455.1	465.5
95°	401.4	407.3	483.4	414.8	404.4
97.5°	362.6	379.0	459.6	371.5	361.1
100°	319.3	346.2	413.3	340.2	320.8
102.5°	291.0	308.9	379.0	313.3	295.4
105°	249.2	255.2	319.3	250.7	246.2
107.5°	186.5	186.5	210.4	188.0	183.5
110°	123.8	117.9	126.8	114.9	123.8



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	65.7	62.7	73.1	61.2	64.2
115°	26.9	28.4	37.3	28.4	26.9
117.5°	7.5	11.9	13.4	11.9	7.5
120°	4.5	6.0	4.5	6.0	4.5
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)