

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: P294540

Luminaire Tested: **BMK-24-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: P294540
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-24-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: 24265.0 lumens
Efficiency: N/A
Efficacy: 156.0 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

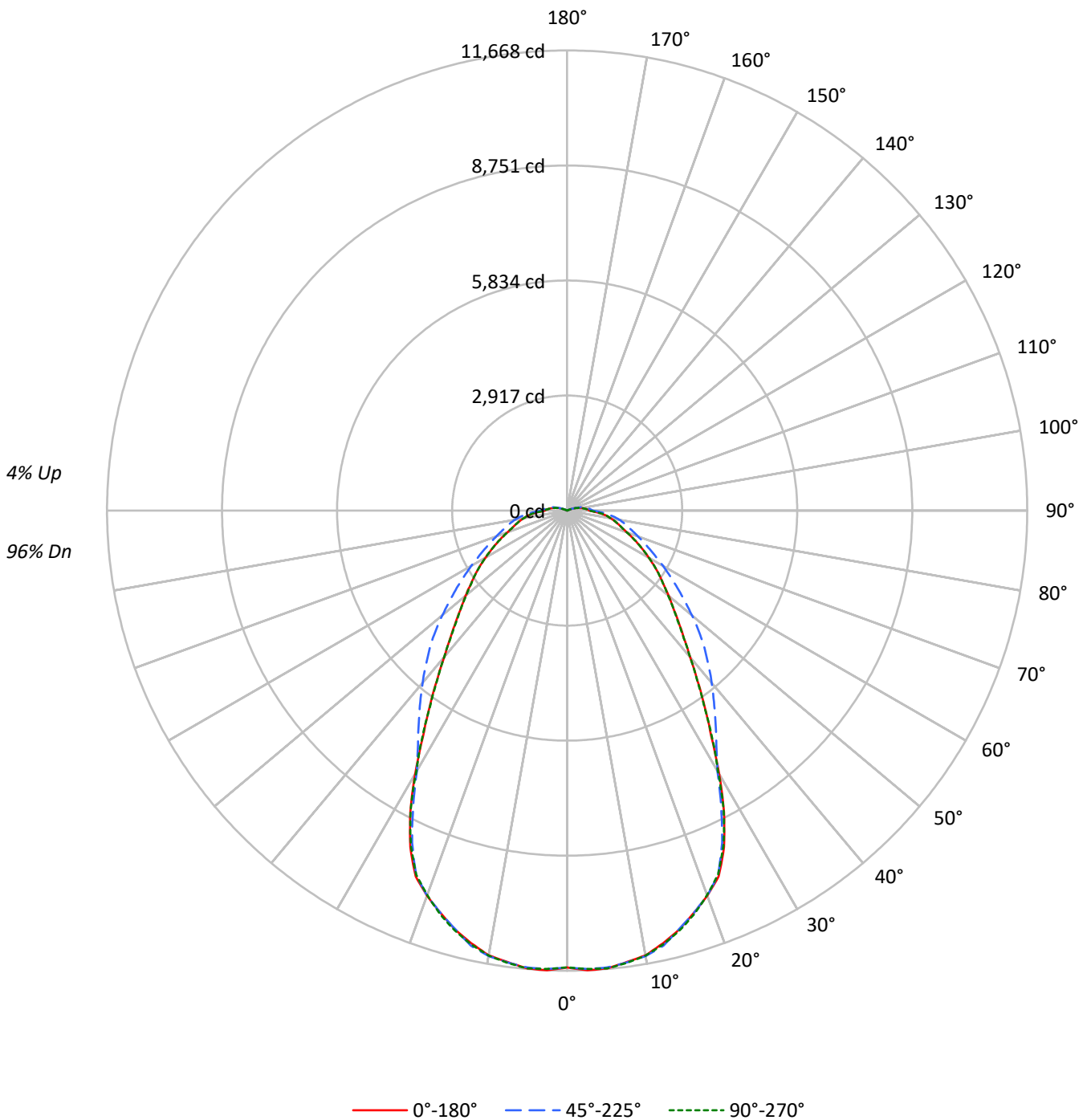
Input Watts (W): 155.5
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	89300	89300	89300
5°	89229	89073	89229
10°	87782	87944	87828
15°	85014	84917	85253
20°	81713	81646	81543
25°	75849	74920	75540
30°	64186	63408	63770
35°	52824	56973	52669
40°	44322	52181	44370
45°	38895	47956	38599
50°	35316	43334	35074
55°	32768	39176	32753
60°	30525	35878	30600
65°	28803	33445	28640
70°	27344	32387	27232
75°	27697	33031	27711
80°	29706	35705	29722
85°	32513	38697	32906



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	1103.2	4.5
10°-20°	3090.5	12.7
20°-30°	4224.9	17.4
30°-40°	3968.3	16.4
40°-50°	3421.5	14.1
50°-60°	2807.3	11.6
60°-70°	2163.1	8.9
70°-80°	1584.9	6.5
80°-90°	1015.6	4.2
90°-100°	549.2	2.3
100°-110°	284.4	1.2
110°-120°	51.4	0.2
120°-130°	0.8	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°	8418.5	34.7
0°-40°	12386.8	51.0
0°-60°	18615.6	76.7
0°-90°	23379.2	96.3
90°-120°	885.0	3.6
90°-150°	885.8	3.7
90°-180°	886.0	3.7
0°-180°	24265.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	11584	11584	11584	11584	11584	
5°	11651	11643	11630	11625	11651	###
15°	10993	10968	10980	10974	11024	3091
25°	9413	9310	9298	9274	9375	4258
35°	6082	6300	6560	6286	6064	3827
45°	3993	4384	4924	4370	3963	3105
55°	2854	3119	3412	3116	2852	2557
65°	1983	2205	2303	2200	1972	1968
75°	1344	1512	1603	1508	1345	1427
85°	869	932	1034	928	880	760
90°	564	608	650	615	563	324
95°	478	491	554	490	478	369
105°	258	261	304	262	259	269
115°	29	38	49	39	30	45
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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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	11583.7	11583.7	11583.7	11583.7	11583.7
2.5°	11668.0	11646.3	11634.4	11621.2	11632.5
5°	11650.9	11643.0	11630.5	11625.2	11650.9
7.5°	11548.1	11540.9	11557.3	11529.7	11568.5
10°	11449.9	11426.2	11471.0	11378.1	11455.9
12.5°	11234.5	11251.0	11298.4	11232.5	11262.8
15°	10992.7	10967.6	10980.2	10973.6	11023.6
17.5°	10690.9	10675.1	10689.6	10672.5	10725.2
20°	10393.1	10373.3	10384.5	10374.7	10371.4
22.5°	10039.9	9976.7	10002.4	9931.9	9993.8
25°	9413.4	9309.9	9298.1	9273.7	9375.1
27.5°	8615.5	8512.7	8454.7	8479.7	8602.9
30°	7707.5	7701.6	7614.0	7671.3	7657.5
32.5°	6806.2	6979.5	7036.1	6976.2	6846.4
35°	6082.1	6300.2	6559.8	6286.3	6064.3
37.5°	5424.5	5734.2	6113.0	5705.9	5407.4
40°	4845.4	5222.2	5704.5	5196.6	4850.6
42.5°	4377.6	4775.5	5296.7	4768.9	4372.3
45°	3993.4	4384.2	4923.8	4370.3	3963.1
47.5°	3641.6	4035.0	4531.1	4027.7	3640.9
50°	3363.6	3685.8	4127.2	3685.1	3340.5
52.5°	3085.5	3389.9	3747.7	3395.8	3073.7
55°	2853.6	3119.1	3411.7	3116.5	2852.3
57.5°	2621.0	2874.7	3093.4	2871.4	2624.3
60°	2389.1	2635.5	2808.1	2628.3	2395.0
62.5°	2176.9	2417.4	2534.7	2404.9	2182.2
65°	1983.2	2204.6	2302.8	2200.0	1972.0
67.5°	1790.8	2008.9	2097.9	2010.9	1784.9
70°	1611.0	1834.3	1908.1	1831.7	1604.4
72.5°	1463.4	1673.5	1746.7	1667.6	1463.4
75°	1344.1	1512.1	1603.0	1507.5	1344.8
77.5°	1228.8	1365.8	1475.2	1361.9	1238.0
80°	1122.1	1228.1	1348.7	1216.3	1122.7
82.5°	1010.1	1079.2	1199.2	1074.0	1015.3
85°	869.1	931.7	1034.4	928.4	879.6
87.5°	704.3	776.2	834.1	776.2	713.6
90°	564.0	608.1	650.3	615.4	563.3
92.5°	534.3	548.8	603.5	550.8	535.7
95°	477.7	490.9	554.1	490.2	477.7
97.5°	424.3	436.8	500.7	434.9	421.7
100°	367.7	378.9	440.1	382.1	365.7
102.5°	316.3	324.8	376.9	325.5	315.6
105°	257.6	260.9	304.4	262.2	258.9
107.5°	191.1	195.0	217.4	197.7	194.4
110°	127.8	131.1	146.3	133.8	131.1



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	72.5	76.4	95.5	77.1	71.2
115°	29.0	38.2	49.4	38.9	29.6
117.5°	7.9	14.5	17.8	14.5	8.6
120°	6.6	7.2	6.6	7.2	5.9
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)