

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: P294521

Luminaire Tested: **BMK-12-NFL-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: P294521
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-12-NFL-UNV-L835-CD-U
Description: BENCHMARK HIGHBAY LED FIXTURE
WITH NARROW FROSTED LENS
Light Source: (528) 80 CRI 3500K LEDS
Ballast/Driver: ELECTRONIC DRIVER
Luminaire Equipment: Sample No. Condition Description

Summary

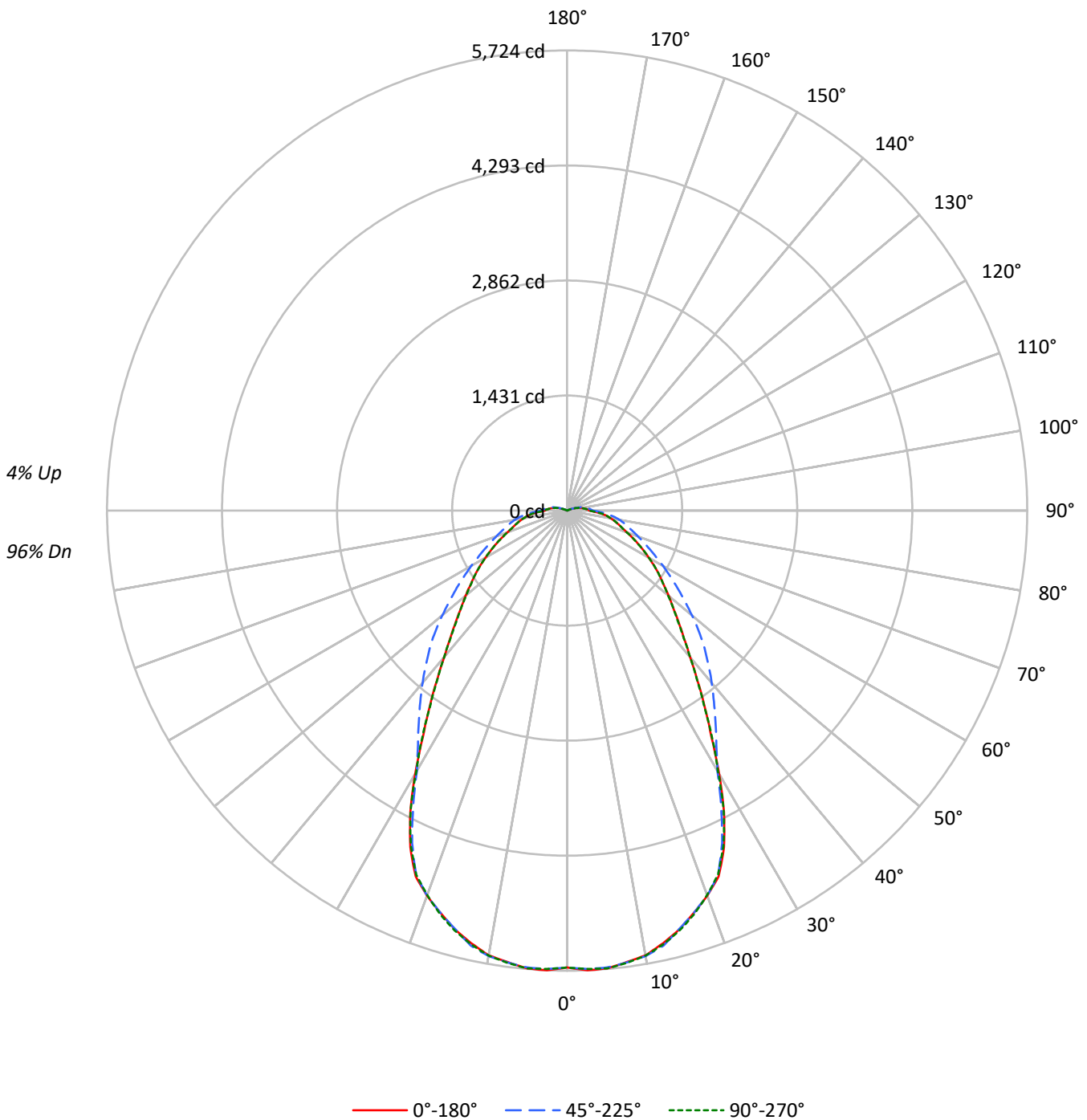
Lumens per Lamp: N/A
Luminaire Lumens: 11904.0 lumens
Efficiency: N/A
Efficacy: 160.2 lumens/watt
Spacing Criteria (0/90/45): 1.06 / 1.06 / 1.11
Luminous Opening: Vertical Cylinder (Dia: 1.33' x H: 0.12')
CIE Type: Direct

Input Watts (W): 74.3
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°	43809	43809	43809
5°	43774	43697	43774
10°	43064	43144	43087
15°	41706	41659	41824
20°	40087	40054	40003
25°	37210	36754	37059
30°	31489	31107	31284
35°	25915	27950	25838
40°	21744	25600	21767
45°	19081	23526	18936
50°	17325	21259	17207
55°	16075	19219	16068
60°	14974	17601	15013
65°	14130	16407	14050
70°	13414	15889	13360
75°	13588	16205	13594
80°	14574	17517	14582
85°	15948	18986	16143



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	541.2	4.5
10°-20°	1516.1	12.7
20°-30°	2072.6	17.4
30°-40°	1946.8	16.4
40°-50°	1678.5	14.1
50°-60°	1377.2	11.6
60°-70°	1061.2	8.9
70°-80°	777.5	6.5
80°-90°	498.3	4.2
90°-100°	269.4	2.3
100°-110°	139.5	1.2
110°-120°	25.2	0.2
120°-130°	0.4	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°	4130.0	34.7
0°-40°	6076.8	51.0
0°-60°	9132.5	76.7
0°-90°	11469.5	96.3
90°-120°	434.2	3.6
90°-150°	434.6	3.7
90°-180°	435.0	3.7
0°-180°	11904.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	5683	5683	5683	5683	5683	
5°	5716	5712	5706	5703	5716	542
15°	5393	5380	5387	5384	5408	1517
25°	4618	4567	4562	4550	4599	2089
35°	2984	3091	3218	3084	2975	1878
45°	1959	2151	2416	2144	1944	1523
55°	1400	1530	1674	1529	1399	1254
65°	973	1082	1130	1079	967	966
75°	659	742	786	740	660	700
85°	426	457	508	455	432	373
90°	277	298	319	302	276	159
95°	234	241	272	240	234	181
105°	126	128	149	129	127	132
115°	14	19	24	19	14	22
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°	5682.8	5682.8	5682.8	5682.8	5682.8
2.5°	5724.1	5713.5	5707.7	5701.2	5706.7
5°	5715.7	5711.9	5705.7	5703.1	5715.7
7.5°	5665.3	5661.8	5669.8	5656.3	5675.3
10°	5617.1	5605.5	5627.5	5581.9	5620.1
12.5°	5511.5	5519.5	5542.8	5510.5	5525.4
15°	5392.8	5380.5	5386.7	5383.5	5408.0
17.5°	5244.8	5237.0	5244.1	5235.7	5261.6
20°	5098.7	5089.0	5094.5	5089.6	5088.0
22.5°	4925.4	4894.4	4907.0	4872.4	4902.8
25°	4618.0	4567.3	4561.5	4549.5	4599.3
27.5°	4226.6	4176.2	4147.7	4160.0	4220.5
30°	3781.2	3778.3	3735.3	3763.4	3756.6
32.5°	3339.0	3424.0	3451.8	3422.4	3358.7
35°	2983.8	3090.8	3218.1	3084.0	2975.0
37.5°	2661.2	2813.1	2999.0	2799.2	2652.8
40°	2377.1	2561.9	2798.6	2549.3	2379.6
42.5°	2147.6	2342.8	2598.5	2339.6	2145.0
45°	1959.1	2150.8	2415.5	2144.0	1944.2
47.5°	1786.5	1979.5	2222.9	1975.9	1786.2
50°	1650.1	1808.2	2024.7	1807.8	1638.8
52.5°	1513.7	1663.0	1838.6	1665.9	1507.9
55°	1399.9	1530.2	1673.7	1528.9	1399.3
57.5°	1285.8	1410.3	1517.6	1408.7	1287.4
60°	1172.0	1292.9	1377.6	1289.4	1175.0
62.5°	1068.0	1185.9	1243.5	1179.8	1070.5
65°	972.9	1081.5	1129.7	1079.3	967.4
67.5°	878.5	985.5	1029.2	986.5	875.6
70°	790.3	899.9	936.1	898.6	787.1
72.5°	717.9	821.0	856.9	818.1	717.9
75°	659.4	741.8	786.4	739.6	659.7
77.5°	602.8	670.1	723.7	668.1	607.4
80°	550.5	602.5	661.7	596.7	550.8
82.5°	495.5	529.5	588.3	526.9	498.1
85°	426.3	457.1	507.5	455.4	431.5
87.5°	345.5	380.8	409.2	380.8	350.1
90°	276.7	298.3	319.0	301.9	276.4
92.5°	262.1	269.3	296.1	270.2	262.8
95°	234.3	240.8	271.8	240.5	234.3
97.5°	208.2	214.3	245.7	213.3	206.9
100°	180.4	185.9	215.9	187.5	179.4
102.5°	155.2	159.4	184.9	159.7	154.8
105°	126.4	128.0	149.3	128.6	127.0
107.5°	93.7	95.7	106.7	97.0	95.4
110°	62.7	64.3	71.8	65.6	64.3



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	35.6	37.5	46.9	37.8	34.9
115°	14.2	18.7	24.2	19.1	14.5
117.5°	3.9	7.1	8.7	7.1	4.2
120°	3.2	3.6	3.2	3.6	2.9
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)