

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: P381686

Luminaire Tested: **BMK-60-NFL-UNV-L850-CD-U**

Issue Date: 2/4/2020

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: P381686  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1908-468-4)  
Test Lab: INNOVATIONS CENTER(G2)  
Issue Date: 2/4/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: BMK-60-NFL-UNV-L850-CD-U  
Description: BENCHMARK HIGHBAY LED FIXTURE WITH NARROW FROSTED LENS

Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.    Condition    Description

**Summary**

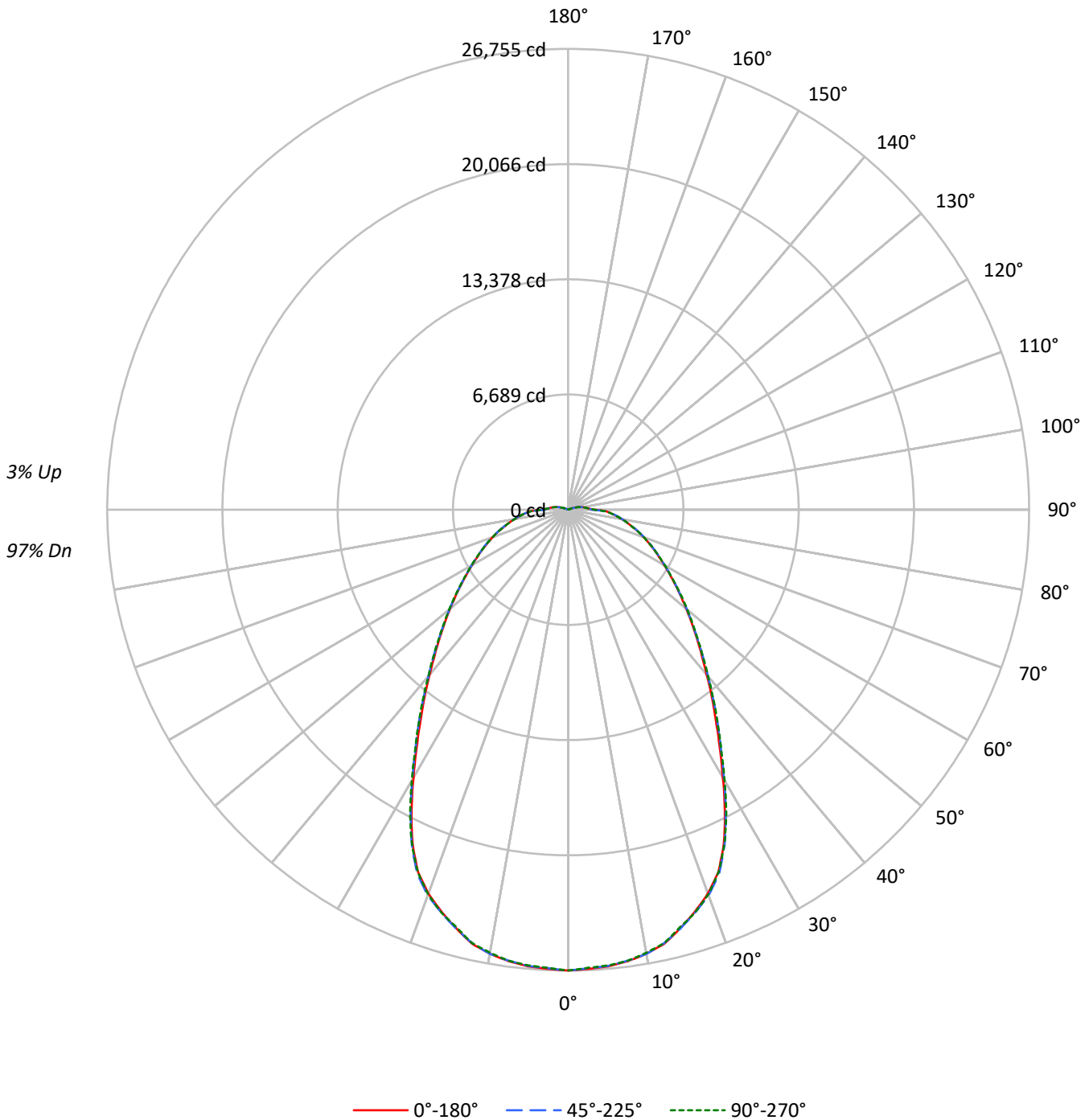
Lumens per Lamp: N/A  
Luminaire Lumens: 58172.0 lumens  
Efficiency: N/A  
Efficacy: 143.4 lumens/watt  
Spacing Criteria (0/90/45): 1.06 / 1.07 / 1.1  
Luminous Opening: Vertical Cylinder (Dia: 1.33' x H: 0.12')  
CIE Type: Direct

Input Watts (W): 405.7  
Input Voltage (V): NR  
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	104	104	104	99	99	99	99	99	99	97	
1	107	102	98	94	104	100	96	92	95	91	88	90	88	85	86	84	82	86	84	82	80	
2	98	90	83	77	95	88	81	76	84	78	74	80	75	72	76	73	70	76	73	70	67	
3	90	80	72	65	87	78	70	65	74	68	63	71	66	61	68	64	60	68	64	60	58	
4	83	71	63	56	80	70	62	56	67	60	55	64	58	54	62	57	52	62	57	52	50	
5	77	64	56	49	75	63	55	49	61	54	48	58	52	47	56	51	46	56	51	46	44	
6	71	59	50	44	69	57	49	43	55	48	43	53	47	42	51	46	42	51	46	42	39	
7	67	54	45	39	65	53	45	39	51	44	38	49	43	38	47	42	37	47	42	37	36	
8	62	49	41	35	61	48	41	35	47	40	35	45	39	34	44	38	34	44	38	34	32	
9	58	46	38	32	57	45	37	32	43	37	32	42	36	31	41	35	31	41	35	31	29	
10	55	42	35	30	54	42	34	30	40	34	29	39	33	29	38	33	29	38	33	29	27	

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	206362	206362	206362
5°	203955	203666	203470
10°	200752	200846	200314
15°	194623	194773	194123
20°	186559	187430	186922
25°	172300	173144	172939
30°	149557	150621	151119
35°	129687	131296	131380
40°	114429	115376	115576
45°	102765	103488	103642
50°	93863	94336	94669
55°	87072	87450	87618
60°	82240	82691	82940
65°	79845	80358	80058
70°	79317	79711	79236
75°	79629	80457	79705
80°	83793	84534	83634
85°	94716	95307	94259



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	2524.0	4.3
10°-20°	7077.9	12.2
20°-30°	9747.8	16.8
30°-40°	9453.0	16.3
40°-50°	8226.3	14.1
50°-60°	6843.2	11.8
60°-70°	5492.7	9.4
70°-80°	4123.1	7.1
80°-90°	2692.4	4.6
90°-100°	1216.3	2.1
100°-110°	577.2	1.0
110°-120°	92.6	0.2
120°-130°	25.7	0.0
130°-140°	28.6	0.0
140°-150°	24.9	0.0
150°-160°	14.4	0.0
160°-170°	8.7	0.0
170°-180°	3.0	0.0
0°-30°	19349.7	33.3
0°-40°	28802.7	49.5
0°-60°	43872.3	75.4
0°-90°	56180.6	96.6
90°-120°	1886.0	3.2
90°-150°	1965.3	3.4
90°-180°	1991.0	3.4
0°-180°	58172.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	26755	26755	26755	26755	26755	
5°	26618	26530	26580	26624	26554	###
15°	25153	25069	25173	25191	25089	7076
25°	21373	21372	21478	21513	21452	9716
35°	14925	14974	15110	15110	15120	9385
45°	10546	10590	10620	10636	10636	8179
55°	7579	7594	7612	7630	7627	6814
65°	5495	5511	5530	5533	5510	5464
75°	3863	3885	3903	3886	3866	4112
85°	2531	2553	2547	2514	2519	2196
90°	1545	1495	1371	1471	1504	896
95°	1105	1109	1105	1082	1090	850
105°	554	550	547	539	538	585
115°	66	64	64	62	61	95
125°	28	29	28	29	30	25
135°	36	38	36	38	38	28
145°	41	40	40	40	40	25
155°	29	30	29	29	29	14
165°	32	32	30	30	30	9
175°	30	32	30	32	32	3
180°	32	32	32	32	32	



TEST NUMBER: P381686

CATALOG NUMBER: BMK-60-NFL-UNV-L850-CD-U

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	26755.3	26755.3	26755.3	26755.3	26755.3
2.5°	26688.4	26616.5	26643.3	26689.6	26620.2
5°	26617.8	26530.1	26580.0	26623.9	26554.5
7.5°	26443.7	26353.6	26415.7	26486.3	26415.7
10°	26172.2	26090.6	26184.4	26192.9	26115.0
12.5°	25807.0	25716.9	25768.0	25799.7	25770.5
15°	25153.3	25069.3	25172.7	25191.0	25088.7
17.5°	24463.0	24433.8	24510.5	24554.3	24515.4
20°	23716.8	23737.5	23827.6	23837.3	23763.0
22.5°	22764.8	22747.7	22878.0	22862.2	22795.2
25°	21373.3	21372.1	21478.0	21513.3	21452.5
27.5°	19688.5	19648.3	19800.5	19800.5	19874.8
30°	17950.1	17925.8	18077.9	18087.7	18137.6
32.5°	16350.5	16391.9	16508.7	16534.3	16530.6
35°	14924.9	14973.6	15110.0	15110.0	15119.7
37.5°	13678.4	13716.1	13797.7	13840.3	13822.0
40°	12503.6	12553.5	12607.1	12655.8	12629.0
42.5°	11466.4	11496.8	11578.4	11611.3	11577.2
45°	10546.1	10589.9	10620.3	10636.1	10636.1
47.5°	9706.1	9713.4	9766.9	9768.2	9785.2
50°	8935.5	8916.0	8980.5	8962.3	9012.2
52.5°	8229.4	8233.1	8259.8	8270.8	8304.9
55°	7579.3	7593.9	7612.2	7630.5	7626.8
57.5°	6981.6	7004.7	7030.3	7043.7	7023.0
60°	6433.8	6476.4	6469.1	6500.7	6488.6
62.5°	5943.2	5983.4	5987.0	6002.8	5985.8
65°	5495.2	5511.0	5530.5	5532.9	5509.8
67.5°	5071.6	5086.2	5114.2	5108.1	5077.6
70°	4671.0	4677.1	4694.2	4696.6	4666.2
72.5°	4273.0	4276.6	4288.8	4286.4	4265.7
75°	3862.7	3884.6	3902.9	3885.8	3866.4
77.5°	3518.2	3520.6	3534.0	3508.5	3512.1
80°	3163.9	3178.5	3191.9	3153.0	3157.9
82.5°	2847.4	2863.3	2871.8	2824.3	2830.4
85°	2530.9	2552.8	2546.7	2513.9	2518.7
87.5°	2212.0	2187.6	2170.6	2157.2	2163.3
90°	1544.8	1494.9	1370.8	1470.6	1503.5
92.5°	1239.3	1257.5	1240.5	1221.0	1239.3
95°	1105.4	1109.0	1105.4	1082.2	1089.5
97.5°	975.1	984.9	975.1	952.0	960.5
100°	837.5	840.0	833.9	819.3	825.4
102.5°	700.0	702.4	693.9	684.2	686.6
105°	553.9	550.3	546.6	539.3	538.1
107.5°	399.3	399.3	393.2	385.9	390.8
110°	261.7	258.1	244.7	247.1	249.6



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	138.8	140.0	142.4	135.1	130.3
115°	65.7	64.5	64.5	62.1	60.9
117.5°	29.2	29.2	26.8	28.0	29.2
120°	23.1	24.3	23.1	23.1	25.6
122.5°	25.6	26.8	25.6	26.8	28.0
125°	28.0	29.2	28.0	29.2	30.4
127.5°	30.4	31.7	30.4	31.7	31.7
130°	32.9	34.1	32.9	32.9	34.1
132.5°	34.1	35.3	35.3	35.3	35.3
135°	36.5	37.7	36.5	37.7	37.7
137.5°	39.0	39.0	39.0	39.0	39.0
140°	40.2	40.2	40.2	40.2	40.2
142.5°	41.4	41.4	41.4	41.4	40.2
145°	41.4	40.2	40.2	40.2	40.2
147.5°	39.0	39.0	39.0	39.0	37.7
150°	35.3	35.3	35.3	35.3	35.3
152.5°	31.7	32.9	31.7	31.7	31.7
155°	29.2	30.4	29.2	29.2	29.2
157.5°	30.4	30.4	29.2	29.2	30.4
160°	30.4	30.4	30.4	30.4	30.4
162.5°	31.7	31.7	30.4	30.4	30.4
165°	31.7	31.7	30.4	30.4	30.4
167.5°	31.7	31.7	30.4	30.4	30.4
170°	31.7	31.7	30.4	30.4	30.4
172.5°	31.7	31.7	31.7	31.7	31.7
175°	30.4	31.7	30.4	31.7	31.7
177.5°	30.4	30.4	30.4	31.7	32.9
180°	31.7	31.7	31.7	31.7	31.7

(END OF REPORT)