

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: P295463

Luminaire Tested: **BMK-18-MFL-UNV-L850-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: P295463
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1904-251-3)
Test Lab: INNOVATION CENTER(G3)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: BMK-18-MFL-UNV-L850-CD-U
Description: BENCHMARK HIGHBAY LED FIXTURE
WITH MEDIUM FROSTED LENS
Light Source: (528) 80 CRI 5000K LEDS
Ballast/Driver: ELECTRONIC DRIVER
Luminaire Equipment: Sample No. Condition Description

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 18173.9 lumens
Efficiency: N/A
Efficacy: 159.7 lumens/watt
Spacing Criteria (0/90/45): 1.33 / 1.33 / 1.36
Luminous Opening: Vertical Cylinder (Dia: 1.33' x H: 0.12')
CIE Type: Direct

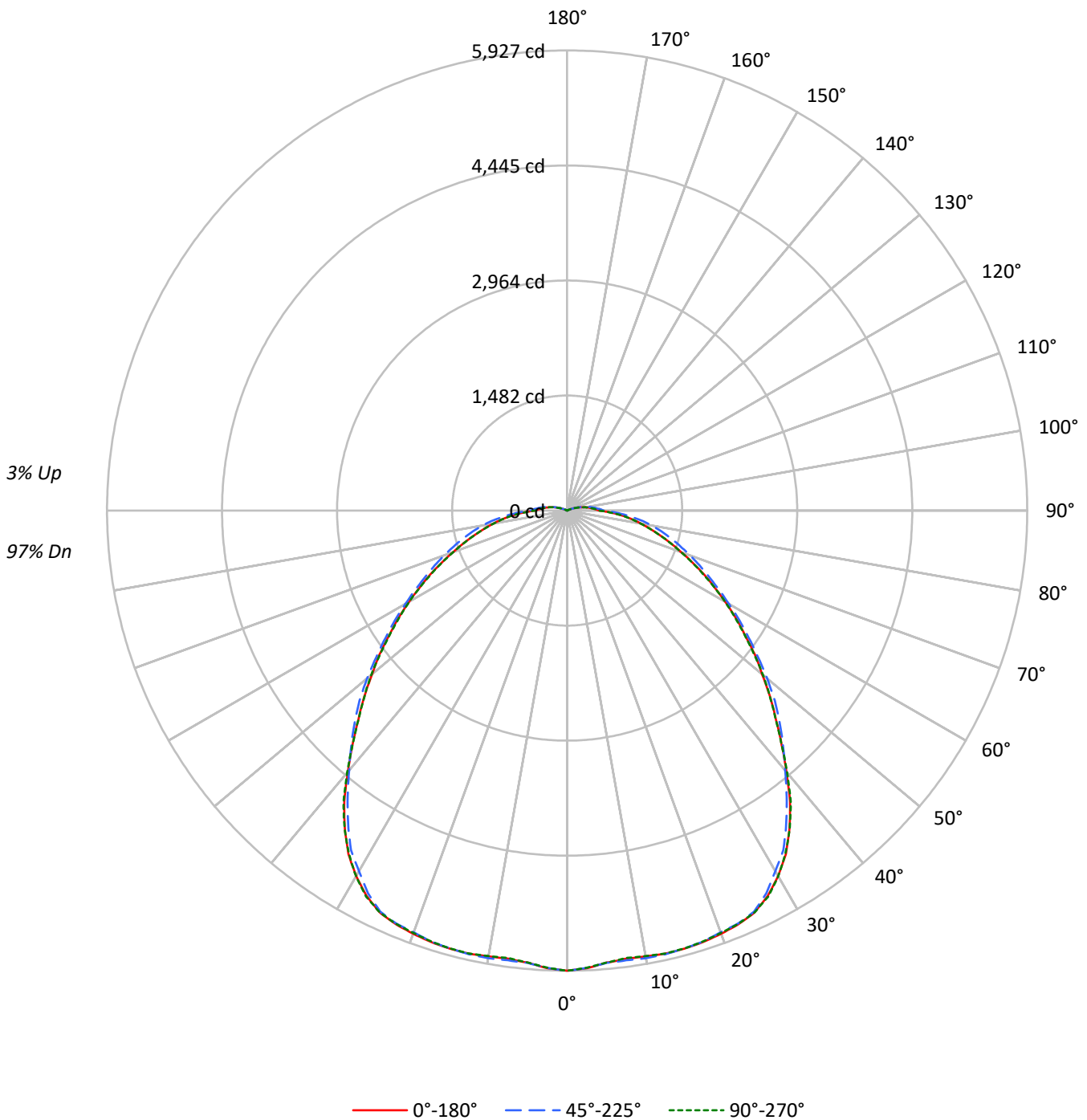
Input Watts (W): 113.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P295463

CATALOG NUMBER: BMK-18-MFL-UNV-L850-CD-U

Luminous Intensity Polar Plot





TEST NUMBER: P295463

CATALOG NUMBER: BMK-18-MFL-UNV-L850-CD-U

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	97
1	107	102	97	93	104	99	95	91	94	91	88	90	87	84	86	83	81	79
2	97	89	81	75	94	86	80	74	82	77	72	78	74	70	75	71	68	65
3	89	78	69	63	86	76	68	62	72	66	60	69	64	59	66	62	58	55
4	81	69	60	53	79	67	59	53	64	57	52	62	56	51	59	54	49	47
5	75	62	53	46	72	60	52	45	58	50	45	56	49	44	53	48	43	41
6	69	56	47	40	67	54	46	40	52	45	39	50	44	39	48	43	38	36
7	64	50	42	35	62	49	41	35	48	40	35	46	39	34	44	38	34	32
8	60	46	38	32	58	45	37	31	44	36	31	42	36	31	41	35	30	28
9	56	42	34	28	54	42	34	28	40	33	28	39	32	28	38	32	27	26
10	52	39	31	26	51	38	31	26	37	30	25	36	30	25	35	29	25	23

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	45690	45690	45690
5°	44760	44789	44755
10°	44693	44882	44670
15°	45171	45136	45142
20°	45598	45445	45522
25°	46019	45917	46007
30°	45256	44658	45300
35°	43356	42726	43421
40°	40180	39961	40324
45°	37045	37731	37001
50°	34427	35307	34592
55°	32099	32778	32013
60°	30035	30715	30007
65°	28218	29229	28055
70°	26473	28532	26448
75°	25615	28531	25584
80°	25600	29205	25539
85°	26404	29790	26318



TEST NUMBER: P295463

CATALOG NUMBER: BMK-18-MFL-UNV-L850-CD-U

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	558.0	3.1
10°-20°	1652.5	9.1
20°-30°	2613.7	14.4
30°-40°	3091.2	17.0
40°-50°	2971.4	16.3
50°-60°	2539.1	14.0
60°-70°	1970.1	10.8
70°-80°	1389.7	7.6
80°-90°	804.6	4.4
90°-100°	377.8	2.1
100°-110°	173.9	1.0
110°-120°	31.3	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°	4824.2	26.5
0°-40°	7915.4	43.6
0°-60°	13426.0	73.9
0°-90°	17590.4	96.8
90°-120°	583.1	3.2
90°-150°	583.6	3.2
90°-180°	584.0	3.2
0°-180°	18173.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	5927	5927	5927	5927	5927	
5°	5844	5846	5848	5840	5844	558
15°	5841	5847	5836	5840	5837	1653
25°	5711	5697	5699	5696	5710	2621
35°	4992	4959	4919	4965	5000	3107
45°	3804	3855	3874	3846	3799	2945
55°	2795	2834	2854	2837	2788	2512
65°	1943	1986	2012	1982	1932	1927
75°	1243	1304	1385	1309	1242	1322
85°	706	732	796	732	704	627
90°	413	453	474	451	412	239
95°	323	340	371	340	325	248
105°	158	160	172	161	157	168
115°	19	24	31	24	19	27
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: P295463

CATALOG NUMBER: BMK-18-MFL-UNV-L850-CD-U

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	5926.8	5926.8	5926.8	5926.8	5926.8
2.5°	5898.4	5892.4	5894.7	5887.9	5892.4
5°	5844.5	5846.0	5848.2	5840.0	5843.8
7.5°	5821.3	5828.8	5842.3	5825.0	5811.6
10°	5829.5	5842.3	5854.2	5835.5	5826.5
12.5°	5845.3	5849.0	5853.5	5844.5	5843.8
15°	5840.8	5846.8	5836.3	5840.0	5837.0
17.5°	5826.5	5828.8	5821.3	5825.0	5820.6
20°	5799.6	5795.9	5780.1	5792.1	5789.9
22.5°	5767.4	5762.2	5757.7	5764.4	5760.7
25°	5711.3	5697.1	5698.6	5696.3	5709.8
27.5°	5594.5	5571.3	5555.6	5566.8	5605.8
30°	5434.4	5402.9	5362.5	5400.7	5439.6
32.5°	5244.3	5220.3	5183.6	5218.1	5234.5
35°	4992.0	4959.1	4919.4	4965.1	4999.5
37.5°	4717.4	4697.2	4645.5	4694.9	4731.6
40°	4392.5	4397.0	4368.6	4407.5	4408.3
42.5°	4090.2	4120.9	4118.6	4118.6	4090.2
45°	3803.5	3855.2	3873.9	3846.2	3799.0
47.5°	3543.1	3594.7	3626.9	3590.2	3540.8
50°	3278.9	3333.5	3362.7	3326.8	3294.6
52.5°	3045.4	3070.1	3098.5	3067.1	3032.6
55°	2795.4	2834.3	2854.5	2837.3	2787.9
57.5°	2577.6	2605.3	2629.2	2612.0	2562.6
60°	2350.8	2381.5	2404.0	2390.5	2348.6
62.5°	2139.8	2184.7	2201.1	2179.4	2134.5
65°	1942.9	1985.6	2012.5	1981.8	1931.7
67.5°	1746.8	1803.0	1845.6	1809.0	1740.9
70°	1559.7	1633.8	1681.0	1624.8	1558.2
72.5°	1401.1	1467.7	1528.3	1465.4	1395.1
75°	1243.1	1304.5	1384.6	1309.0	1241.6
77.5°	1100.2	1158.6	1246.1	1156.3	1093.5
80°	967.0	1013.4	1103.2	1010.4	964.7
82.5°	836.7	871.2	958.7	869.7	833.8
85°	705.8	732.0	796.3	732.0	703.5
87.5°	552.3	595.0	631.7	593.5	544.1
90°	413.1	452.8	473.8	451.3	411.6
92.5°	368.2	388.4	422.1	388.4	368.2
95°	323.3	340.5	371.2	339.8	324.8
97.5°	280.7	294.1	323.3	292.6	282.2
100°	241.7	248.5	275.4	250.0	240.2
102.5°	199.8	204.3	223.8	202.8	199.8
105°	157.9	160.2	172.1	160.9	157.2
107.5°	115.3	117.5	123.5	116.8	114.5
110°	76.3	77.8	85.3	77.8	77.1



TEST NUMBER: P295463

CATALOG NUMBER: BMK-18-MFL-UNV-L850-CD-U

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	44.2	47.9	55.4	47.9	44.2
115°	18.7	23.9	31.4	23.9	18.7
117.5°	6.0	9.7	12.0	9.7	5.2
120°	3.7	4.5	3.7	4.5	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)