

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: P295498

Luminaire Tested: **BMK-18-MCL-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: P295498  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1904-251-5)  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: BMK-18-MCL-UNV-L840-CD-U  
Description: BENCHMARK Highbay LED Fixture  
WITH MEDIUM CLEAR 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: 18544.0 lumens  
Efficiency: N/A  
Efficacy: 163.0 lumens/watt  
Spacing Criteria (0/90/45): 1.37 / 1.37 / 1.37  
Luminous Opening: Vertical Cylinder (Dia: 1.33' x H: 0.12')  
CIE Type: Direct

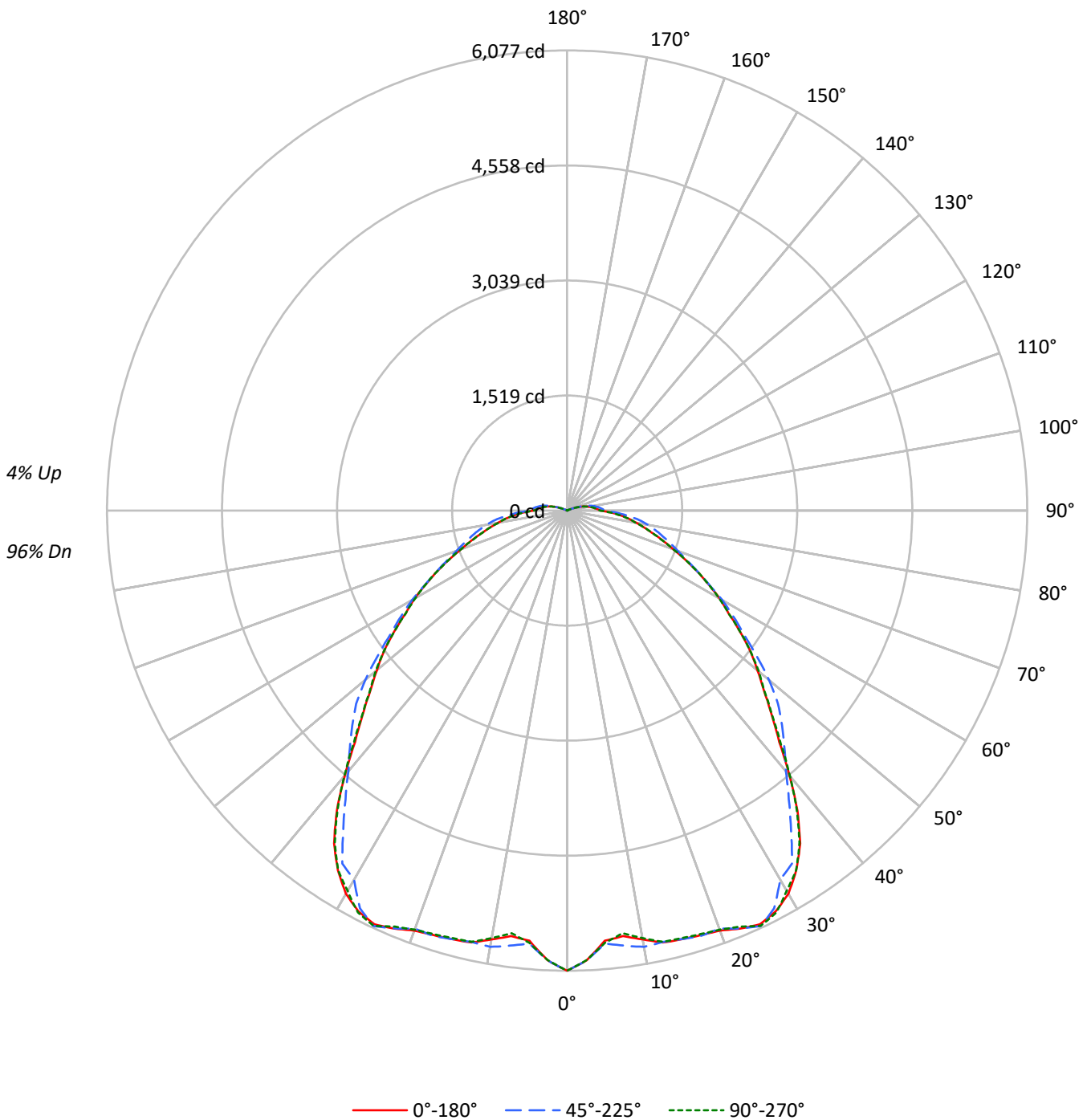
Input Watts (W): 113.8  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	104	104	104	99	99	99	96				
1	107	102	97	93	104	99	95	91	94	91	88	90	87	84	86	83	81	79				
2	97	89	82	76	94	87	80	75	82	77	72	79	74	70	75	71	68	66				
3	89	78	70	63	86	76	69	62	73	66	61	69	64	59	66	62	58	55				
4	81	69	61	54	79	68	60	53	65	58	52	62	56	51	59	54	50	48				
5	75	62	53	46	73	61	52	46	58	51	45	56	49	44	54	48	44	41				
6	69	56	47	41	67	55	46	40	53	45	40	51	44	39	49	43	38	36				
7	64	51	42	36	62	50	42	36	48	41	35	46	40	35	45	39	34	32				
8	60	46	38	32	58	46	37	32	44	37	31	42	36	31	41	35	31	29				
9	56	43	34	29	54	42	34	29	40	33	28	39	33	28	38	32	28	26				
10	52	39	31	26	51	39	31	26	37	30	26	36	30	25	35	29	25	23				

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

	0°	45°	90°
0°	46846	46846	46846
5°	43674	43953	43874
10°	44085	44849	43954
15°	45327	45310	45206
20°	46409	46186	46298
25°	48574	48778	48742
30°	48661	46865	48295
35°	46615	44768	46459
40°	41809	41114	41876
45°	37207	39076	37316
50°	34455	36541	34651
55°	32011	32694	32036
60°	29745	30201	29621
65°	27471	27547	27449
70°	25261	26348	25350
75°	24185	26928	24262
80°	24475	28748	24258
85°	26240	30302	26127



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	552.0	3.0
10°-20°	1663.9	9.0
20°-30°	2749.6	14.8
30°-40°	3272.5	17.6
40°-50°	3052.1	16.5
50°-60°	2543.4	13.7
60°-70°	1902.9	10.3
70°-80°	1321.2	7.1
80°-90°	800.8	4.3
90°-100°	428.5	2.3
100°-110°	222.7	1.2
110°-120°	33.8	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°	4965.5	26.8
0°-40°	8238.0	44.4
0°-60°	13833.5	74.6
0°-90°	17858.4	96.3
90°-120°	685.0	3.7
90°-150°	685.6	3.7
90°-180°	686.0	3.7
0°-180°	18544.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	6077	6077	6077	6077	6077	
5°	5703	5745	5739	5731	5729	548
15°	5861	5901	5859	5888	5845	1661
25°	6028	6025	6054	6037	6049	2758
35°	5367	5279	5154	5282	5349	3314
45°	3820	3956	4012	3962	3831	2972
55°	2788	2832	2847	2834	2790	2497
65°	1892	1913	1897	1912	1890	1875
75°	1174	1241	1307	1243	1177	1257
85°	701	722	810	722	698	619
90°	443	473	496	469	437	256
95°	364	388	434	386	368	286
105°	204	208	233	206	206	214
115°	19	22	29	23	20	33
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°	6076.7	6076.7	6076.7	6076.7	6076.7
2.5°	5945.1	5950.3	5944.4	5928.7	5939.9
5°	5702.6	5745.0	5739.1	5730.9	5728.7
7.5°	5667.7	5731.6	5795.6	5725.7	5629.0
10°	5750.2	5814.2	5849.9	5809.0	5733.1
12.5°	5843.2	5840.2	5836.5	5833.5	5833.5
15°	5861.0	5901.2	5858.8	5887.8	5845.4
17.5°	5877.4	5906.4	5887.8	5902.0	5864.8
20°	5902.7	5932.5	5874.4	5918.3	5888.6
22.5°	5974.8	5996.4	5972.6	5994.2	5947.3
25°	6028.4	6025.4	6053.7	6036.6	6049.2
27.5°	5966.7	5948.1	5922.8	5916.8	5984.5
30°	5843.2	5743.5	5627.5	5722.0	5799.3
32.5°	5632.7	5637.9	5527.1	5644.6	5629.7
35°	5367.2	5279.4	5154.5	5282.4	5349.3
37.5°	4995.3	4929.1	4809.3	4928.3	4980.4
40°	4570.6	4581.7	4494.7	4579.5	4578.0
42.5°	4145.1	4254.5	4245.5	4236.6	4177.1
45°	3820.1	3955.5	4012.0	3962.2	3831.3
47.5°	3527.0	3716.0	3778.4	3717.5	3535.2
50°	3281.6	3406.5	3480.2	3405.8	3300.2
52.5°	3047.3	3091.2	3152.2	3104.6	3051.0
55°	2787.7	2831.6	2847.2	2833.8	2789.9
57.5°	2529.6	2598.8	2601.8	2593.6	2528.1
60°	2328.1	2356.3	2363.8	2366.0	2318.4
62.5°	2096.7	2135.4	2108.6	2135.4	2101.9
65°	1891.5	1913.0	1896.7	1912.3	1890.0
67.5°	1680.2	1739.7	1713.7	1736.7	1685.4
70°	1488.3	1564.2	1552.3	1565.7	1493.5
72.5°	1330.6	1397.6	1425.1	1392.4	1323.9
75°	1173.7	1240.6	1306.8	1242.9	1177.4
77.5°	1049.5	1100.1	1193.8	1104.5	1048.0
80°	924.5	971.4	1085.9	967.7	916.3
82.5°	823.4	844.9	960.2	849.4	818.9
85°	701.4	721.5	810.0	721.5	698.4
87.5°	576.4	591.3	650.1	598.7	568.3
90°	443.3	473.0	496.1	469.3	436.6
92.5°	405.4	426.9	467.1	423.2	402.4
95°	364.5	388.3	434.4	386.0	368.2
97.5°	334.0	345.9	391.2	345.1	331.7
100°	296.0	307.9	354.0	304.2	291.6
102.5°	252.1	258.8	301.2	261.1	252.9
105°	204.5	208.3	232.8	206.0	206.0
107.5°	152.5	150.2	158.4	148.0	151.7
110°	98.2	91.5	98.9	91.5	99.7



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	53.6	48.3	58.0	49.1	52.8
115°	19.3	22.3	29.0	23.1	20.1
117.5°	5.2	8.9	10.4	8.9	5.2
120°	4.5	5.2	4.5	5.2	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)