

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: P381715

Luminaire Tested: **BMK-50-MCL-UNV-L840-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: P381715  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1908-468-6)  
Test Lab: INNOVATIONS CENTER(G2)  
Issue Date: 2/4/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: BMK-50-MCL-UNV-L840-CD-U  
Description: BENCHMARK HIGHBAY LED FIXTURE WITH MEDIUM CLEAR LENS

Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.    Condition    Description

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 49909.7 lumens  
Efficiency: N/A  
Efficacy: 150.1 lumens/watt  
Spacing Criteria (0/90/45): 1.41 / 1.41 / 1.39  
Luminous Opening: Vertical Cylinder (Dia: 1.33' x H: 0.12')  
CIE Type: Direct

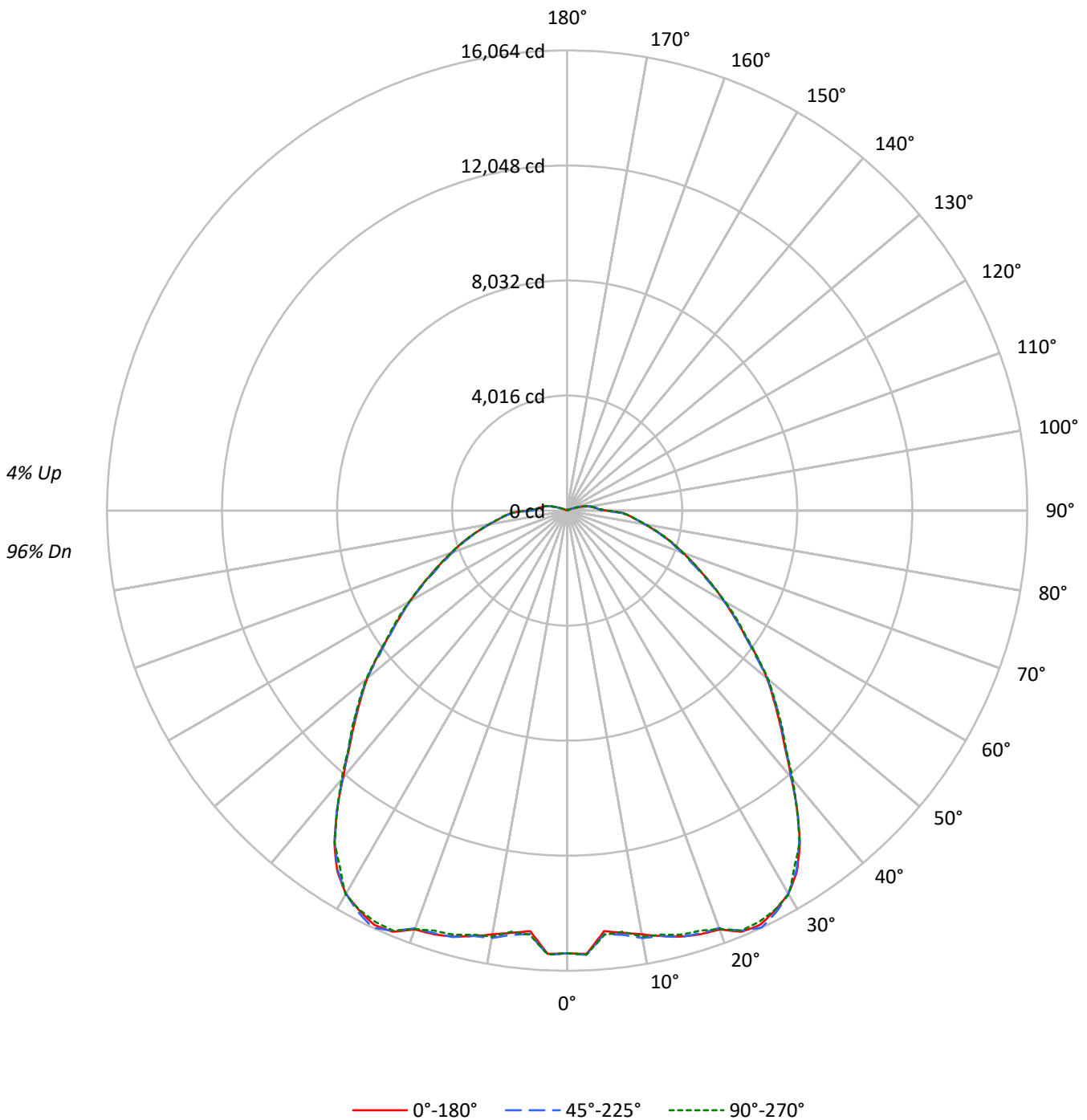
Input Watts (W): 332.5  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	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	90	87	89	87	84	85	83	81	78
2	97	88	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	63	59	66	61	57	55
4	81	69	60	53	79	67	59	53	64	57	52	62	55	50	59	54	49	47
5	75	62	53	46	72	60	52	45	58	50	45	55	49	44	53	48	43	41
6	69	56	47	40	67	54	46	40	52	45	39	50	44	38	48	42	38	36
7	64	50	42	35	62	49	41	35	48	40	35	46	39	34	44	38	34	32
8	60	46	37	32	58	45	37	31	43	36	31	42	35	31	41	35	30	28
9	56	42	34	28	54	41	34	28	40	33	28	39	32	28	37	32	27	25
10	52	39	31	26	51	38	31	26	37	30	25	36	29	25	35	29	25	23

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

	0°	45°	90°
0°	119183	119183	119183
5°	112909	113680	113932
10°	115225	116226	115808
15°	119109	119260	118577
20°	122358	122026	122261
25°	128626	129503	127732
30°	128695	128635	128960
35°	123052	122749	122927
40°	111299	111449	112098
45°	102264	102764	103094
50°	95687	95848	96237
55°	86913	86642	87315
60°	81017	80937	81266
65°	75855	74901	75915
70°	72989	72065	73111
75°	72432	71438	72368
80°	72627	72844	73769
85°	82141	81793	83253



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	1433.3	2.9
10°-20°	4356.0	8.7
20°-30°	7303.1	14.6
30°-40°	8759.4	17.6
40°-50°	8164.8	16.4
50°-60°	6810.1	13.6
60°-70°	5173.8	10.4
70°-80°	3690.6	7.4
80°-90°	2338.5	4.7
90°-100°	1123.2	2.3
100°-110°	584.8	1.2
110°-120°	79.3	0.2
120°-130°	23.7	0.0
130°-140°	26.3	0.1
140°-150°	22.1	0.0
150°-160°	11.8	0.0
160°-170°	6.8	0.0
170°-180°	2.2	0.0
0°-30°	13092.4	26.2
0°-40°	21851.8	43.8
0°-60°	36826.7	73.8
0°-90°	48029.6	96.2
90°-120°	1787.3	3.6
90°-150°	1859.3	3.7
90°-180°	1880.0	3.8
0°-180°	49909.7	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	15452	15452	15452	15452	15452	
5°	14736	14799	14836	14846	14869	###
15°	15394	15352	15413	15447	15325	4360
25°	15956	15988	16064	15947	15845	7299
35°	14161	14122	14126	14172	14147	8769
45°	10495	10522	10546	10558	10580	8133
55°	7565	7546	7542	7522	7600	6825
65°	5221	5130	5155	5164	5225	5211
75°	3514	3488	3465	3474	3510	3706
85°	2195	2195	2186	2176	2225	1905
90°	1357	1304	1194	1290	1378	793
95°	995	1034	1036	1006	999	784
105°	563	569	564	559	570	588
115°	45	48	49	47	48	78
125°	27	27	26	27	28	23
135°	34	34	34	34	35	26
145°	37	36	36	36	35	23
155°	25	25	24	24	25	12
165°	25	24	24	24	24	7
175°	23	24	23	24	25	2
180°	24	24	24	24	24	



TEST NUMBER: P381715

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	15452.4	15452.4	15452.4	15452.4	15452.4
2.5°	15490.4	15450.3	15523.2	15548.9	15508.8
5°	14735.5	14799.1	14836.1	14846.4	14869.0
7.5°	14863.8	14799.1	14935.7	14935.7	14829.9
10°	15022.0	15172.0	15152.4	15127.8	15098.0
12.5°	15216.1	15210.0	15207.9	15186.3	15161.7
15°	15393.8	15351.7	15413.3	15447.2	15325.0
17.5°	15506.8	15388.7	15470.8	15528.4	15379.4
20°	15555.1	15432.8	15512.9	15609.5	15542.7
22.5°	15916.6	15839.6	15871.4	15943.3	15868.3
25°	15955.6	15988.5	16064.5	15947.4	15844.7
27.5°	15729.7	15776.9	15806.7	15790.3	15710.1
30°	15446.2	15434.9	15439.0	15496.5	15478.0
32.5°	14934.7	14870.0	14893.6	14828.9	14762.2
35°	14161.3	14122.3	14126.4	14171.6	14146.9
37.5°	13200.0	13140.4	13204.1	13236.9	13181.5
40°	12161.6	12249.9	12178.0	12201.7	12248.9
42.5°	11262.9	11343.0	11306.0	11338.9	11300.9
45°	10494.7	10522.4	10546.0	10558.3	10579.9
47.5°	9780.8	9810.6	9829.1	9842.5	9843.5
50°	9109.1	9097.8	9124.5	9055.7	9161.5
52.5°	8327.5	8253.6	8250.5	8227.9	8347.0
55°	7565.4	7545.9	7541.8	7522.3	7600.4
57.5°	6921.5	6923.5	6933.8	6939.9	7005.7
60°	6338.1	6283.6	6331.9	6317.5	6357.6
62.5°	5769.1	5704.4	5728.0	5727.0	5780.4
65°	5220.6	5130.2	5154.9	5164.1	5224.7
67.5°	4744.1	4695.8	4668.1	4707.1	4751.3
70°	4298.3	4265.4	4243.9	4269.6	4305.5
72.5°	3894.7	3848.5	3849.5	3844.3	3908.0
75°	3513.6	3487.9	3465.4	3473.6	3510.5
77.5°	3105.9	3138.7	3094.6	3111.0	3127.4
80°	2742.3	2779.3	2750.5	2747.4	2785.4
82.5°	2454.7	2457.8	2456.8	2439.3	2451.6
85°	2194.9	2194.9	2185.6	2176.4	2224.6
87.5°	1955.6	1905.2	1895.0	1902.1	1930.9
90°	1356.8	1304.4	1194.5	1290.0	1378.3
92.5°	1117.5	1137.0	1108.2	1108.2	1120.5
95°	995.2	1034.3	1036.3	1005.5	999.3
97.5°	915.1	939.8	930.5	914.1	923.3
100°	817.6	825.8	817.6	811.4	814.5
102.5°	729.2	728.2	724.1	716.9	736.4
105°	562.8	569.0	563.9	558.7	570.0
107.5°	394.4	389.3	381.0	382.1	387.2
110°	239.3	240.3	226.0	230.1	244.4



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	108.9	115.0	119.1	113.0	116.1
115°	45.2	48.3	49.3	47.2	48.3
117.5°	23.6	23.6	22.6	23.6	25.7
120°	21.6	22.6	20.5	21.6	23.6
122.5°	23.6	24.6	23.6	24.6	25.7
125°	26.7	26.7	25.7	26.7	27.7
127.5°	28.8	28.8	27.7	28.8	29.8
130°	29.8	30.8	30.8	30.8	30.8
132.5°	31.8	32.9	31.8	32.9	32.9
135°	33.9	33.9	33.9	33.9	34.9
137.5°	35.9	35.9	35.9	35.9	35.9
140°	37.0	37.0	37.0	37.0	37.0
142.5°	38.0	37.0	37.0	37.0	35.9
145°	37.0	35.9	35.9	35.9	34.9
147.5°	33.9	33.9	32.9	33.9	32.9
150°	30.8	29.8	29.8	29.8	29.8
152.5°	26.7	26.7	25.7	26.7	26.7
155°	24.6	24.6	23.6	23.6	24.6
157.5°	24.6	24.6	23.6	23.6	24.6
160°	24.6	24.6	23.6	23.6	23.6
162.5°	24.6	24.6	23.6	23.6	23.6
165°	24.6	23.6	23.6	23.6	23.6
167.5°	24.6	23.6	23.6	23.6	23.6
170°	24.6	23.6	23.6	23.6	23.6
172.5°	23.6	23.6	23.6	23.6	23.6
175°	22.6	23.6	22.6	23.6	24.6
177.5°	22.6	22.6	22.6	23.6	24.6
180°	23.6	23.6	23.6	23.6	23.6

(END OF REPORT)