

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: P381716

Luminaire Tested: **BMK-50-MCL-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: P381716  
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-L850-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: 50160.7 lumens  
Efficiency: N/A  
Efficacy: 150.9 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

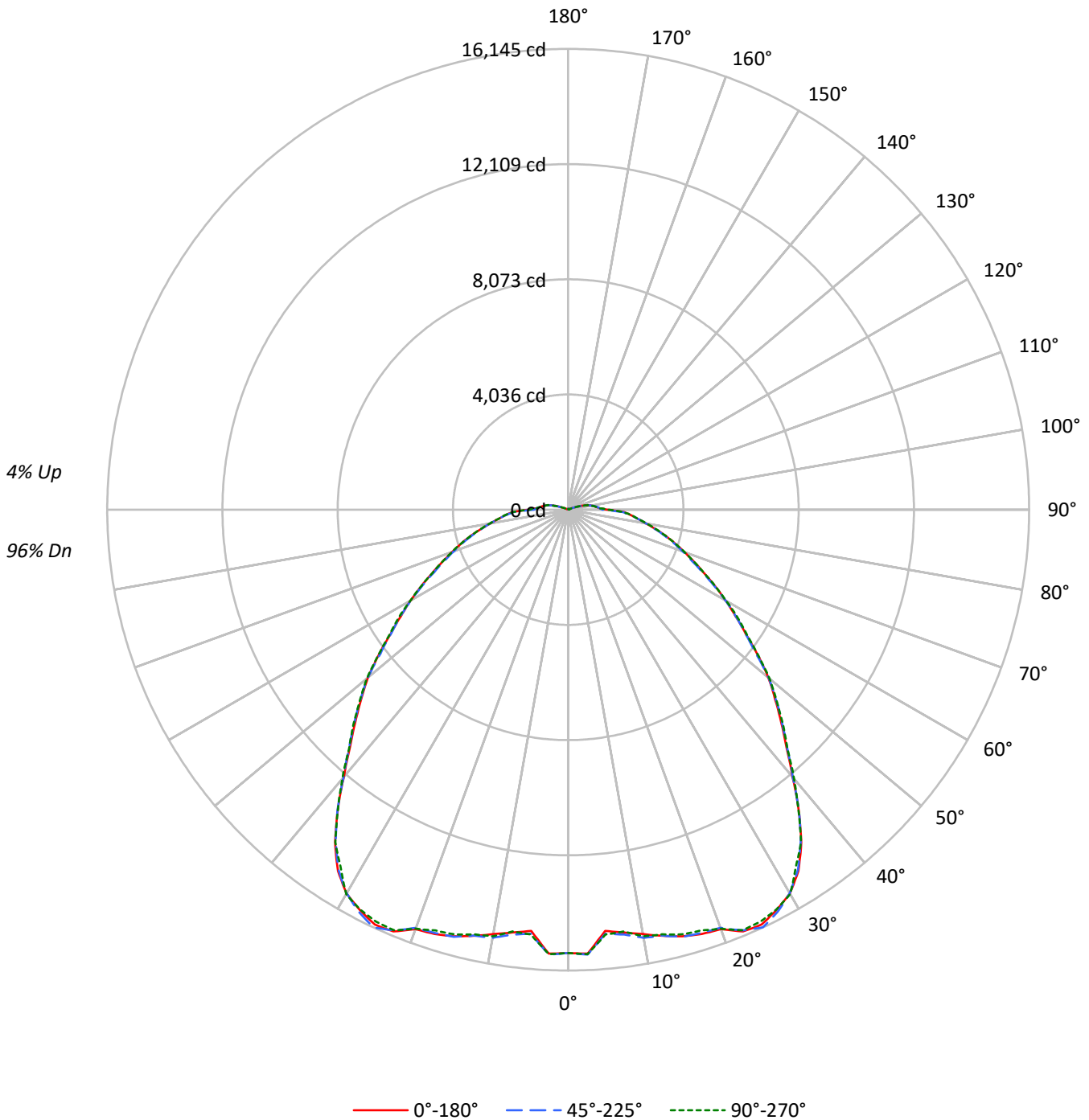
Input Watts (W): 332.5  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	119783	119783	119783
5°	113476	114251	114504
10°	115805	116810	116391
15°	119708	119860	119174
20°	122973	122640	122876
25°	129272	130155	128374
30°	129342	129281	129609
35°	123671	123366	123546
40°	111859	112010	112662
45°	102777	103280	103612
50°	96168	96331	96721
55°	87350	87077	87754
60°	81424	81345	81675
65°	76238	75277	76297
70°	73355	72426	73479
75°	72797	71797	72733
80°	72993	73210	74139
85°	82553	82205	83672



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	1440.5	2.9
10°-20°	4377.9	8.7
20°-30°	7339.9	14.6
30°-40°	8803.4	17.6
40°-50°	8205.9	16.4
50°-60°	6844.4	13.6
60°-70°	5199.8	10.4
70°-80°	3709.1	7.4
80°-90°	2350.3	4.7
90°-100°	1128.9	2.3
100°-110°	587.7	1.2
110°-120°	79.7	0.2
120°-130°	23.8	0.0
130°-140°	26.5	0.1
140°-150°	22.2	0.0
150°-160°	11.9	0.0
160°-170°	6.8	0.0
170°-180°	2.3	0.0
0°-30°	13158.2	26.2
0°-40°	21961.7	43.8
0°-60°	37011.9	73.8
0°-90°	48271.1	96.2
90°-120°	1796.3	3.6
90°-150°	1868.7	3.7
90°-180°	1890.0	3.8
0°-180°	50160.7	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	15530	15530	15530	15530	15530	
5°	14810	14874	14911	14921	14944	###
15°	15471	15429	15491	15525	15402	4381
25°	16036	16069	16145	16028	15924	7336
35°	14232	14193	14197	14243	14218	8814
45°	10547	10575	10599	10611	10633	8174
55°	7604	7584	7580	7560	7639	6860
65°	5247	5156	5181	5190	5251	5237
75°	3531	3506	3483	3491	3528	3724
85°	2206	2206	2197	2187	2236	1915
90°	1364	1311	1200	1296	1385	797
95°	1000	1040	1042	1011	1004	788
105°	566	572	567	562	573	591
115°	45	48	50	48	48	78
125°	27	27	26	27	28	24
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: P381716

CATALOG NUMBER: BMK-50-MCL-UNV-L850-CD-U

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	15530.1	15530.1	15530.1	15530.1	15530.1
2.5°	15568.2	15528.0	15601.3	15627.1	15586.8
5°	14809.5	14873.5	14910.7	14921.0	14943.7
7.5°	14938.6	14873.5	15010.8	15010.8	14904.5
10°	15097.5	15248.3	15228.6	15203.9	15173.9
12.5°	15292.6	15286.4	15284.4	15262.7	15237.9
15°	15471.2	15428.9	15490.8	15524.9	15402.1
17.5°	15584.8	15466.1	15548.6	15606.4	15456.8
20°	15633.3	15510.4	15591.0	15688.0	15620.9
22.5°	15996.6	15919.2	15951.2	16023.5	15948.1
25°	16035.8	16068.9	16145.3	16027.6	15924.4
27.5°	15808.8	15856.2	15886.2	15869.7	15789.1
30°	15523.9	15512.5	15516.6	15574.4	15555.9
32.5°	15009.8	14944.8	14968.5	14903.5	14836.4
35°	14232.5	14193.3	14197.4	14242.8	14218.1
37.5°	13266.3	13206.5	13270.5	13303.5	13247.8
40°	12222.8	12311.5	12239.3	12263.0	12310.5
42.5°	11319.5	11400.1	11362.9	11395.9	11357.7
45°	10547.4	10575.3	10599.0	10611.4	10633.1
47.5°	9830.0	9860.0	9878.5	9892.0	9893.0
50°	9154.9	9143.6	9170.4	9101.3	9207.6
52.5°	8369.4	8295.1	8292.0	8269.3	8389.0
55°	7603.5	7583.9	7579.7	7560.1	7638.6
57.5°	6956.3	6958.3	6968.7	6974.8	7040.9
60°	6370.0	6315.2	6363.8	6349.3	6389.6
62.5°	5798.1	5733.1	5756.8	5755.8	5809.4
65°	5246.9	5156.0	5180.8	5190.1	5251.0
67.5°	4767.9	4719.4	4691.5	4730.8	4775.1
70°	4319.9	4286.9	4265.2	4291.0	4327.2
72.5°	3914.3	3867.8	3868.8	3863.7	3927.7
75°	3531.3	3505.5	3482.8	3491.0	3528.2
77.5°	3121.5	3154.5	3110.1	3126.7	3143.2
80°	2756.1	2793.2	2764.3	2761.2	2799.4
82.5°	2467.1	2470.2	2469.1	2451.6	2464.0
85°	2205.9	2205.9	2196.6	2187.3	2235.8
87.5°	1965.4	1914.8	1904.5	1911.7	1940.6
90°	1363.6	1310.9	1200.5	1296.5	1385.3
92.5°	1123.1	1142.7	1113.8	1113.8	1126.2
95°	1000.2	1039.5	1041.5	1010.6	1004.4
97.5°	919.7	944.5	935.2	918.7	928.0
100°	821.7	829.9	821.7	815.5	818.6
102.5°	732.9	731.9	727.7	720.5	740.1
105°	565.7	571.9	566.7	561.5	572.9
107.5°	396.4	391.2	383.0	384.0	389.2
110°	240.5	241.5	227.1	231.2	245.7



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	109.4	115.6	119.7	113.5	116.6
115°	45.4	48.5	49.5	47.5	48.5
117.5°	23.7	23.7	22.7	23.7	25.8
120°	21.7	22.7	20.6	21.7	23.7
122.5°	23.7	24.8	23.7	24.8	25.8
125°	26.8	26.8	25.8	26.8	27.9
127.5°	28.9	28.9	27.9	28.9	29.9
130°	29.9	31.0	31.0	31.0	31.0
132.5°	32.0	33.0	32.0	33.0	33.0
135°	34.1	34.1	34.1	34.1	35.1
137.5°	36.1	36.1	36.1	36.1	36.1
140°	37.2	37.2	37.2	37.2	37.2
142.5°	38.2	37.2	37.2	37.2	36.1
145°	37.2	36.1	36.1	36.1	35.1
147.5°	34.1	34.1	33.0	34.1	33.0
150°	31.0	29.9	29.9	29.9	29.9
152.5°	26.8	26.8	25.8	26.8	26.8
155°	24.8	24.8	23.7	23.7	24.8
157.5°	24.8	24.8	23.7	23.7	24.8
160°	24.8	24.8	23.7	23.7	23.7
162.5°	24.8	24.8	23.7	23.7	23.7
165°	24.8	23.7	23.7	23.7	23.7
167.5°	24.8	23.7	23.7	23.7	23.7
170°	24.8	23.7	23.7	23.7	23.7
172.5°	23.7	23.7	23.7	23.7	23.7
175°	22.7	23.7	22.7	23.7	24.8
177.5°	22.7	22.7	22.7	23.7	24.8
180°	23.7	23.7	23.7	23.7	23.7

(END OF REPORT)