

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: P381649

Luminaire Tested: **BMK-60-WCL-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: P381649
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1908-468-2)
Test Lab: INNOVATIONS CENTER(G2)
Issue Date: 2/4/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: BMK-60-WCL-UNV-L840-CD-U
Description: BENCHMARK HIGHBAY LED FIXTURE WITH WIDE CLEAR LENS

Light Source: -
Ballast/Driver: -

Luminaire Equipment: Sample No. Condition Description

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 60539.6 lumens
Efficiency: N/A
Efficacy: 149.2 lumens/watt
Spacing Criteria (0/90/45): 1.76 / 1.77 / 1.85
Luminous Opening: Vertical Cylinder (Dia: 1.33' x H: 0.12')
CIE Type: Direct

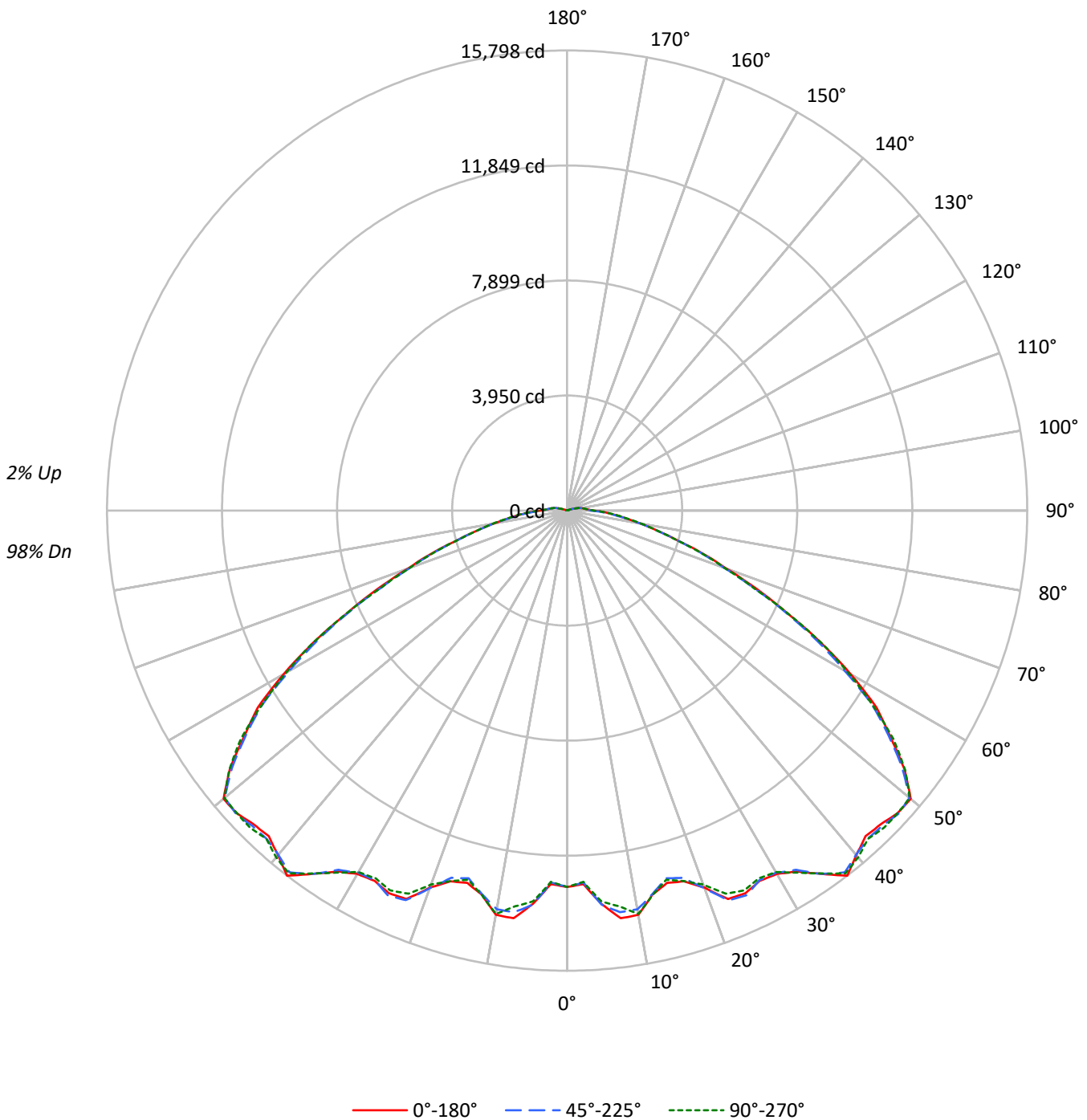
Input Watts (W): 405.7
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	0
RCR																		
0	119	119	119	119	116	116	116	116	110	110	110	105	105	105	100	100	100	98
1	107	102	98	93	104	100	95	92	95	92	88	91	88	85	87	85	82	80
2	97	88	81	74	94	86	79	73	82	76	71	78	74	69	75	71	68	65
3	88	76	68	61	85	74	66	60	71	64	59	68	62	57	65	60	56	54
4	80	67	57	50	77	65	56	50	62	55	49	60	53	48	57	52	47	45
5	73	59	49	42	70	58	49	42	55	47	41	53	46	41	51	45	40	38
6	67	52	43	36	64	51	42	36	49	41	35	47	40	35	46	39	34	32
7	61	47	38	31	59	46	37	31	44	36	31	43	36	30	41	35	30	28
8	57	43	34	27	55	42	33	27	40	32	27	39	32	27	37	31	26	24
9	53	39	30	24	51	38	30	24	37	29	24	35	29	24	34	28	23	21
10	49	35	27	22	48	35	27	22	34	26	21	33	26	21	32	25	21	19

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	99639	99639	99639
5°	103868	104044	103227
10°	108093	106625	107852
15°	102393	101147	101540
20°	108354	108526	107458
25°	116826	117470	115967
30°	120007	119613	119361
35°	132303	132324	132135
40°	141327	141172	142214
45°	148366	149074	149995
50°	161747	161162	161264
55°	155632	154838	157162
60°	143855	140867	142508
65°	121230	120596	121423
70°	98606	97105	97660
75°	80080	79981	79606
80°	67592	67399	68652
85°	60653	58523	62150



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	1303.2	2.2
10°-20°	3809.6	6.3
20°-30°	6638.2	11.0
30°-40°	9527.3	15.7
40°-50°	11879.0	19.6
50°-60°	12009.6	19.8
60°-70°	8260.2	13.6
70°-80°	4201.8	6.9
80°-90°	1790.2	3.0
90°-100°	715.7	1.2
100°-110°	306.9	0.5
110°-120°	34.5	0.1
120°-130°	16.0	0.0
130°-140°	17.7	0.0
140°-150°	14.9	0.0
150°-160°	8.3	0.0
160°-170°	4.9	0.0
170°-180°	1.6	0.0
0°-30°	11751.0	19.4
0°-40°	21278.4	35.1
0°-60°	45167.0	74.6
0°-90°	59419.2	98.1
90°-120°	1057.1	1.7
90°-150°	1105.7	1.8
90°-180°	1120.0	1.9
0°-180°	60539.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	12918	12918	12918	12918	12918	
5°	13556	13504	13579	13545	13472	###
15°	13233	13198	13072	13163	13123	3824
25°	14492	14514	14572	14598	14385	6639
35°	15226	15254	15228	15242	15207	9541
45°	15226	15273	15299	15291	15393	11849
55°	13547	13474	13478	13448	13680	12092
65°	8343	8326	8300	8312	8357	8346
75°	3885	3846	3880	3845	3862	4239
85°	1621	1595	1564	1602	1661	1516
90°	912	871	814	868	914	526
95°	631	642	659	634	638	492
105°	277	287	286	283	281	305
115°	22	22	22	21	22	35
125°	18	18	18	18	18	16
135°	23	23	23	23	23	18
145°	24	24	24	24	24	15
155°	17	17	17	17	17	8
165°	18	17	17	17	17	5
175°	17	17	17	17	17	2
180°	17	17	17	17	17	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	12918.4	12918.4	12918.4	12918.4	12918.4
2.5°	12834.8	12741.6	12779.1	12808.2	12759.7
5°	13555.6	13503.5	13578.6	13544.7	13472.0
7.5°	14115.2	13897.2	13906.8	13853.5	13702.1
10°	14092.2	13923.8	13900.8	14029.2	14060.7
12.5°	13510.7	13459.9	13492.6	13544.7	13526.5
15°	13233.4	13198.2	13072.3	13163.1	13123.1
17.5°	13344.8	13249.1	13215.2	13360.5	13335.1
20°	13774.8	13725.1	13796.6	13807.5	13660.9
22.5°	14432.5	14368.3	14478.6	14358.7	14236.3
25°	14491.9	14513.7	14571.8	14598.5	14385.3
27.5°	14325.9	14365.9	14301.7	14408.3	14233.9
30°	14403.5	14414.4	14356.2	14391.4	14325.9
32.5°	14685.7	14683.3	14625.1	14768.1	14740.2
35°	15225.9	15253.8	15228.4	15241.7	15206.6
37.5°	15797.7	15648.7	15659.6	15674.1	15697.1
40°	15442.8	15493.6	15425.8	15549.4	15539.7
42.5°	15161.7	15326.5	15275.6	15264.7	15285.3
45°	15225.9	15273.2	15298.6	15291.3	15393.1
47.5°	15383.4	15406.4	15418.5	15338.6	15382.2
50°	15397.9	15273.2	15342.2	15276.8	15351.9
52.5°	14602.1	14564.6	14498.0	14661.5	14621.5
55°	13547.1	13474.4	13478.0	13447.8	13680.3
57.5°	12593.8	12356.4	12423.0	12400.0	12441.2
60°	11254.1	11009.4	11020.3	11071.2	11148.7
62.5°	9834.5	9817.5	9680.6	9789.7	9851.4
65°	8343.4	8326.4	8299.8	8311.9	8356.7
67.5°	7061.8	6871.7	6910.4	6882.6	6928.6
70°	5806.9	5730.6	5718.5	5724.6	5751.2
72.5°	4863.3	4783.4	4793.1	4761.6	4805.2
75°	3884.6	3845.9	3879.8	3844.6	3861.6
77.5°	3148.1	3133.6	3142.1	3121.5	3144.5
80°	2552.2	2542.5	2544.9	2547.3	2592.2
82.5°	2037.4	2026.5	1988.9	2031.3	2049.5
85°	1620.7	1595.3	1563.8	1602.5	1660.7
87.5°	1276.7	1227.0	1204.0	1244.0	1282.8
90°	912.1	870.9	814.0	868.5	914.5
92.5°	736.5	746.2	720.7	731.6	753.4
95°	631.1	642.0	658.9	633.5	638.4
97.5°	566.9	568.1	568.1	566.9	569.3
100°	480.9	485.7	488.2	486.9	483.3
102.5°	400.9	404.6	394.9	398.5	396.1
105°	277.4	287.1	285.9	283.4	281.0
107.5°	180.5	180.5	176.8	180.5	187.8
110°	98.1	95.7	93.3	96.9	100.5



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	44.8	46.0	47.2	44.8	44.8
115°	21.8	21.8	21.8	20.6	21.8
117.5°	14.5	14.5	14.5	14.5	14.5
120°	14.5	14.5	14.5	14.5	15.7
122.5°	15.7	17.0	15.7	17.0	17.0
125°	18.2	18.2	18.2	18.2	18.2
127.5°	19.4	19.4	19.4	19.4	19.4
130°	20.6	20.6	20.6	20.6	20.6
132.5°	21.8	21.8	21.8	21.8	21.8
135°	23.0	23.0	23.0	23.0	23.0
137.5°	24.2	24.2	24.2	24.2	24.2
140°	25.4	24.2	24.2	25.4	24.2
142.5°	25.4	24.2	24.2	25.4	24.2
145°	24.2	24.2	24.2	24.2	24.2
147.5°	23.0	23.0	23.0	23.0	21.8
150°	20.6	20.6	20.6	20.6	20.6
152.5°	19.4	18.2	18.2	18.2	18.2
155°	17.0	17.0	17.0	17.0	17.0
157.5°	17.0	17.0	17.0	17.0	17.0
160°	18.2	17.0	17.0	17.0	17.0
162.5°	18.2	17.0	17.0	17.0	17.0
165°	18.2	17.0	17.0	17.0	17.0
167.5°	18.2	17.0	17.0	17.0	17.0
170°	18.2	17.0	17.0	17.0	17.0
172.5°	17.0	17.0	17.0	17.0	17.0
175°	17.0	17.0	17.0	17.0	17.0
177.5°	17.0	17.0	17.0	17.0	18.2
180°	17.0	17.0	17.0	17.0	17.0

(END OF REPORT)