

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: P381697

Luminaire Tested: **BMK-50-MFL-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: P381697
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1908-468-5)
Test Lab: INNOVATIONS CENTER(G2)
Issue Date: 2/4/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: BMK-50-MFL-UNV-L840-CD-U
Description: BENCHMARK HIGHBAY LED FIXTURE WITH MEDIUM FROSTED LENS

Light Source: -
Ballast/Driver: -

Luminaire Equipment: Sample No. Condition Description

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 48909.4 lumens
Efficiency: N/A
Efficacy: 147.1 lumens/watt
Spacing Criteria (0/90/45): 1.36 / 1.36 / 1.38
Luminous Opening: Vertical Cylinder (Dia: 1.33' x H: 0.12')
CIE Type: Direct

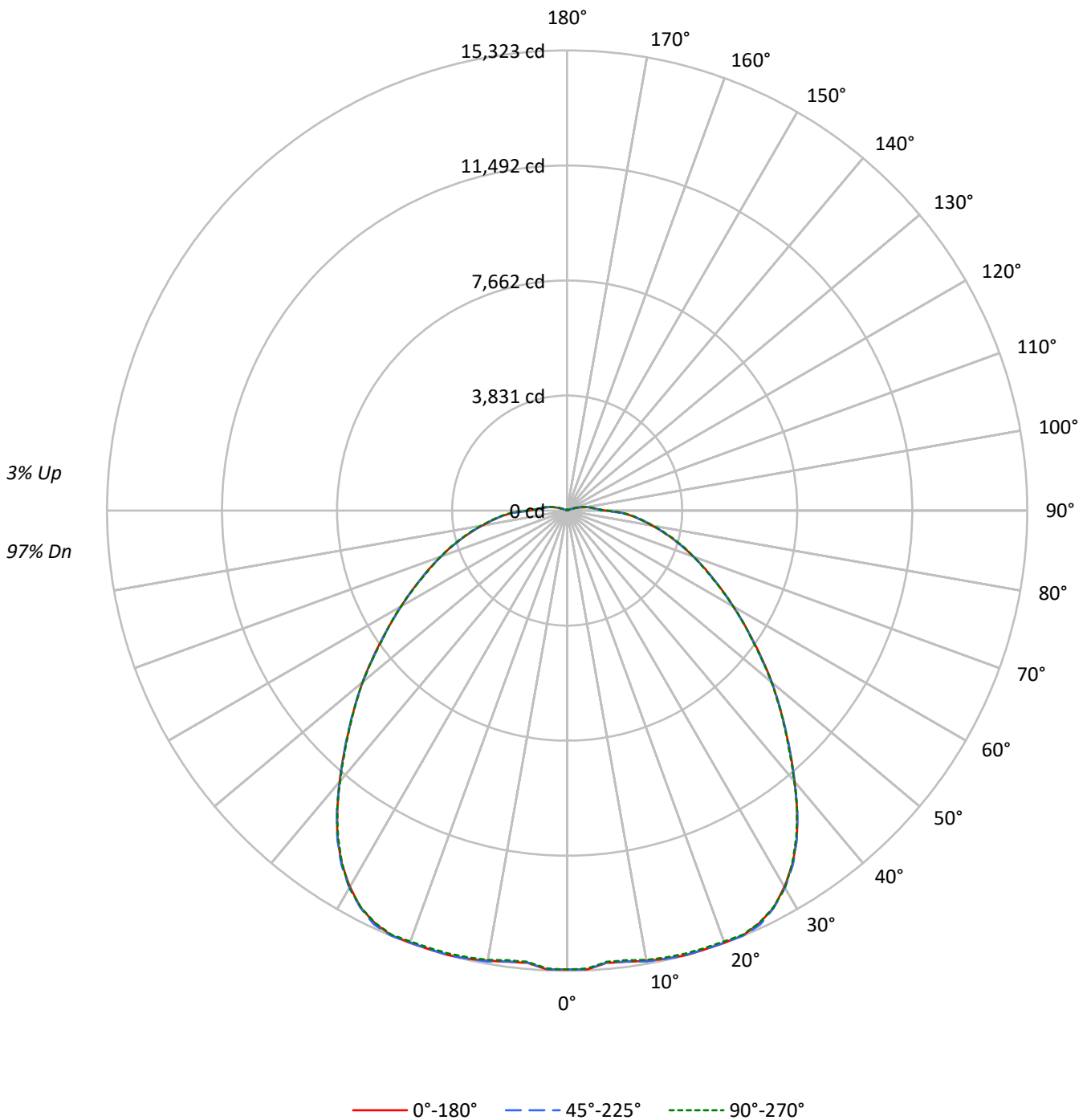
Input Watts (W): 332.5
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	97
1	107	101	97	92	104	99	95	91	94	90	87	89	87	84	85	83	81	78
2	97	88	81	75	94	86	79	74	82	76	71	78	73	69	75	71	67	65
3	88	77	69	62	85	76	68	61	72	65	60	69	63	58	66	61	57	55
4	81	69	60	53	78	67	59	52	64	57	51	61	55	50	59	53	49	47
5	74	61	52	45	72	60	51	45	57	50	44	55	49	43	53	47	43	40
6	69	55	46	40	67	54	46	39	52	44	39	50	43	38	48	42	38	35
7	64	50	41	35	62	49	41	35	47	40	34	46	39	34	44	38	33	31
8	59	46	37	31	58	45	37	31	43	36	31	42	35	30	40	34	30	28
9	55	42	34	28	54	41	33	28	40	33	28	39	32	27	37	31	27	25
10	52	39	31	25	51	38	30	25	37	30	25	36	29	25	35	29	25	23

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	117838	117838	117838
5°	115837	115742	115585
10°	116770	116944	116526
15°	118562	118546	118149
20°	120436	120412	120081
25°	122177	122616	122086
30°	120524	120797	120823
35°	115860	115869	115530
40°	107878	107851	107606
45°	99983	100112	99882
50°	93454	93379	93271
55°	86808	86583	86430
60°	81661	81594	81661
65°	77990	77826	77513
70°	75972	75797	76025
75°	75102	75163	75862
80°	75893	76571	77278
85°	82141	82527	83949



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	1448.0	3.0
10°-20°	4333.7	8.9
20°-30°	6963.7	14.2
30°-40°	8291.0	17.0
40°-50°	7941.9	16.2
50°-60°	6775.9	13.9
60°-70°	5329.4	10.9
70°-80°	3867.9	7.9
80°-90°	2363.7	4.8
90°-100°	997.2	2.0
100°-110°	447.7	0.9
110°-120°	67.7	0.1
120°-130°	20.5	0.0
130°-140°	22.8	0.0
140°-150°	19.4	0.0
150°-160°	10.7	0.0
160°-170°	6.2	0.0
170°-180°	2.1	0.0
0°-30°	12745.3	26.1
0°-40°	21036.3	43.0
0°-60°	35754.1	73.1
0°-90°	47315.0	96.7
90°-120°	1512.7	3.1
90°-150°	1575.4	3.2
90°-180°	1594.0	3.3
0°-180°	48909.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	15278	15278	15278	15278	15278	
5°	15118	15087	15105	15123	15085	###
15°	15323	15271	15321	15344	15270	4337
25°	15156	15152	15210	15197	15144	6960
35°	13334	13314	13335	13349	13296	8289
45°	10261	10293	10274	10278	10250	7941
55°	7556	7559	7537	7530	7523	6788
65°	5368	5355	5356	5345	5335	5342
75°	3643	3662	3646	3641	3680	3859
85°	2195	2228	2205	2204	2243	1924
90°	1264	1266	1145	1245	1293	739
95°	890	909	899	892	902	681
105°	412	422	419	420	425	442
115°	44	46	46	45	44	66
125°	23	24	23	23	24	20
135°	30	30	30	30	30	23
145°	32	32	32	32	31	20
155°	22	23	22	22	22	11
165°	23	22	22	22	22	6
175°	22	22	22	22	23	2
180°	22	22	22	22	22	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	15277.9	15277.9	15277.9	15277.9	15277.9
2.5°	15294.3	15255.3	15288.2	15299.4	15258.4
5°	15117.7	15086.8	15105.3	15122.8	15084.8
7.5°	15154.6	15106.4	15143.3	15152.6	15098.1
10°	15223.4	15221.4	15246.0	15235.8	15191.6
12.5°	15279.9	15256.3	15283.0	15287.1	15238.9
15°	15323.1	15270.7	15321.0	15343.6	15269.7
17.5°	15309.7	15255.3	15312.8	15343.6	15266.6
20°	15310.7	15246.0	15307.7	15330.3	15265.6
22.5°	15305.6	15266.6	15319.0	15344.6	15286.1
25°	15155.7	15151.5	15210.1	15196.7	15144.4
27.5°	14895.8	14874.2	14908.1	14921.5	14885.5
30°	14465.5	14451.1	14498.3	14524.0	14501.4
32.5°	13960.1	13958.1	13987.9	13965.3	13940.6
35°	13333.6	13314.1	13334.6	13349.0	13295.6
37.5°	12569.5	12571.5	12598.2	12558.2	12578.7
40°	11787.8	11800.2	11784.8	11773.5	11758.1
42.5°	11008.3	11019.6	11009.3	11006.2	10970.3
45°	10260.6	10293.4	10273.9	10278.0	10250.3
47.5°	9564.2	9574.5	9572.4	9557.0	9551.9
50°	8896.6	8889.4	8889.4	8851.4	8879.1
52.5°	8215.6	8217.7	8176.6	8164.3	8196.1
55°	7556.3	7559.3	7536.7	7529.6	7523.4
57.5°	6948.2	6943.1	6948.2	6926.7	6962.6
60°	6388.5	6385.4	6383.3	6364.8	6388.5
62.5°	5866.7	5856.4	5851.3	5841.0	5852.3
65°	5367.5	5355.2	5356.2	5344.9	5334.7
67.5°	4911.5	4902.3	4897.1	4895.1	4884.8
70°	4474.0	4467.8	4463.7	4453.4	4477.1
72.5°	4054.9	4058.0	4043.6	4034.4	4083.7
75°	3643.1	3661.6	3646.1	3641.0	3680.0
77.5°	3246.6	3277.4	3258.9	3256.9	3289.8
80°	2865.6	2901.5	2891.2	2882.0	2917.9
82.5°	2519.4	2559.5	2545.1	2532.8	2564.6
85°	2194.9	2227.7	2205.2	2204.1	2243.2
87.5°	1841.6	1871.3	1823.1	1848.8	1881.6
90°	1264.3	1266.4	1145.2	1244.8	1293.1
92.5°	1019.9	1039.4	1016.8	1021.9	1032.2
95°	889.5	909.0	898.7	892.5	901.8
97.5°	772.4	788.8	778.5	777.5	785.7
100°	655.3	666.6	657.3	660.4	666.6
102.5°	539.2	549.5	544.4	546.4	554.6
105°	411.9	422.1	419.1	420.1	425.2
107.5°	292.7	297.9	292.7	294.8	302.0
110°	182.8	188.0	179.7	184.9	194.1



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	94.5	100.7	102.7	100.7	97.6
115°	44.2	46.2	46.2	45.2	44.2
117.5°	21.6	21.6	20.5	21.6	21.6
120°	18.5	19.5	18.5	18.5	19.5
122.5°	20.5	21.6	20.5	20.5	21.6
125°	22.6	23.6	22.6	22.6	23.6
127.5°	24.7	25.7	24.7	24.7	25.7
130°	26.7	26.7	26.7	26.7	26.7
132.5°	27.7	28.8	27.7	27.7	28.8
135°	29.8	29.8	29.8	29.8	29.8
137.5°	30.8	30.8	30.8	30.8	31.8
140°	31.8	31.8	31.8	31.8	31.8
142.5°	32.9	31.8	31.8	32.9	31.8
145°	31.8	31.8	31.8	31.8	30.8
147.5°	29.8	29.8	29.8	29.8	29.8
150°	26.7	26.7	26.7	26.7	26.7
152.5°	23.6	23.6	23.6	23.6	23.6
155°	21.6	22.6	21.6	21.6	21.6
157.5°	22.6	22.6	21.6	21.6	21.6
160°	22.6	22.6	21.6	21.6	21.6
162.5°	22.6	22.6	21.6	21.6	21.6
165°	22.6	21.6	21.6	21.6	21.6
167.5°	22.6	21.6	21.6	21.6	21.6
170°	22.6	22.6	21.6	21.6	21.6
172.5°	21.6	22.6	21.6	21.6	21.6
175°	21.6	21.6	21.6	21.6	22.6
177.5°	20.5	20.5	21.6	21.6	22.6
180°	21.6	21.6	21.6	21.6	21.6

(END OF REPORT)