

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: P381705

Luminaire Tested: **BMK-70-MFL-UNV-L735-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: P381705  
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-70-MFL-UNV-L735-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: 71946.6 lumens  
Efficiency: N/A  
Efficacy: 143.7 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

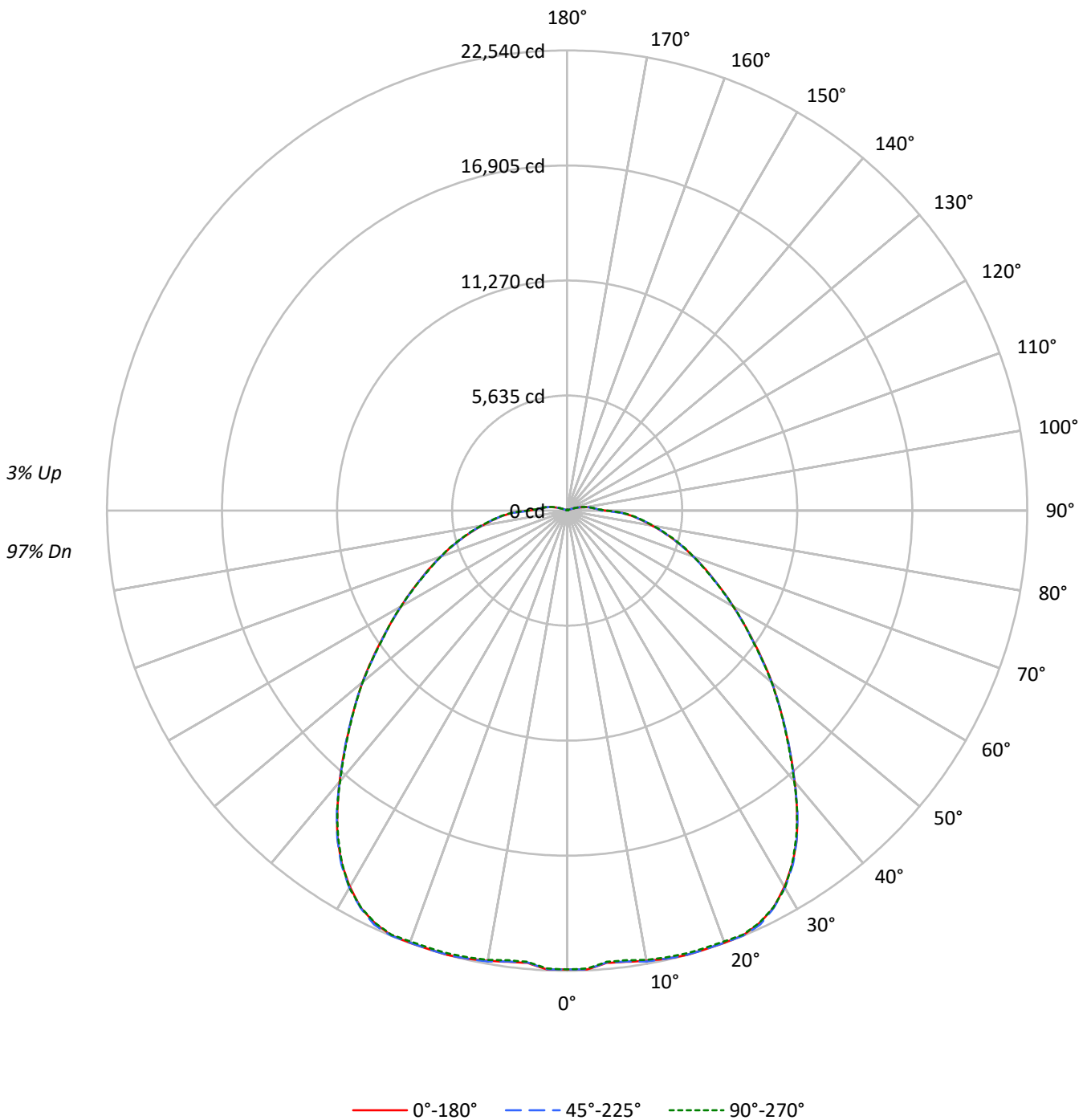
Input Watts (W): 500.7  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	173341	173341	173341
5°	170398	170259	170028
10°	171772	172027	171412
15°	174407	174384	173799
20°	177164	177128	176641
25°	179724	180370	179590
30°	177292	177695	177732
35°	170432	170445	169947
40°	158691	158650	158290
45°	147076	147267	146929
50°	137474	137362	137204
55°	127696	127366	127140
60°	120123	120027	120123
65°	114726	114484	114023
70°	111756	111499	111832
75°	110474	110569	111596
80°	111638	112639	113680
85°	120830	121395	123487



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	2130.0	3.0
10°-20°	6374.9	8.9
20°-30°	10243.7	14.2
30°-40°	12196.2	17.0
40°-50°	11682.7	16.2
50°-60°	9967.4	13.9
60°-70°	7839.7	10.9
70°-80°	5689.7	7.9
80°-90°	3477.0	4.8
90°-100°	1467.0	2.0
100°-110°	658.6	0.9
110°-120°	99.6	0.1
120°-130°	30.2	0.0
130°-140°	33.5	0.0
140°-150°	28.5	0.0
150°-160°	15.7	0.0
160°-170°	9.1	0.0
170°-180°	3.1	0.0
0°-30°	18748.6	26.1
0°-40°	30944.8	43.0
0°-60°	52594.9	73.1
0°-90°	69601.3	96.7
90°-120°	2225.2	3.1
90°-150°	2317.4	3.2
90°-180°	2345.0	3.3
0°-180°	71946.6	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	22474	22474	22474	22474	22474	
5°	22238	22193	22220	22246	22190	###
15°	22540	22464	22538	22571	22462	6379
25°	22294	22288	22374	22355	22278	10238
35°	19614	19585	19616	19637	19558	12193
45°	15094	15142	15113	15119	15078	11682
55°	11115	11120	11087	11076	11067	9986
65°	7896	7878	7879	7862	7847	7859
75°	5359	5386	5364	5356	5413	5677
85°	3229	3277	3244	3242	3300	2830
90°	1860	1863	1685	1831	1902	1087
95°	1308	1337	1322	1313	1326	1002
105°	606	621	616	618	626	650
115°	65	68	68	66	65	97
125°	33	35	33	33	35	30
135°	44	44	44	44	44	33
145°	47	47	47	47	45	29
155°	32	33	32	32	32	16
165°	33	32	32	32	32	9
175°	32	32	32	32	33	3
180°	32	32	32	32	32	



TEST NUMBER: P381705

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	22474.0	22474.0	22474.0	22474.0	22474.0
2.5°	22498.2	22440.8	22489.1	22505.8	22445.3
5°	22238.3	22193.0	22220.2	22245.9	22190.0
7.5°	22292.7	22221.7	22276.1	22289.7	22209.6
10°	22394.0	22390.9	22427.2	22412.1	22347.1
12.5°	22477.1	22442.3	22481.6	22487.6	22416.6
15°	22540.5	22463.5	22537.5	22570.7	22462.0
17.5°	22520.9	22440.8	22525.4	22570.7	22457.4
20°	22522.4	22427.2	22517.9	22551.1	22455.9
22.5°	22514.8	22457.4	22534.5	22572.2	22486.1
25°	22294.2	22288.2	22374.3	22354.7	22277.6
27.5°	21912.0	21880.3	21930.1	21949.8	21896.9
30°	21279.0	21257.8	21327.3	21365.1	21331.8
32.5°	20535.6	20532.6	20576.4	20543.2	20506.9
35°	19614.0	19585.3	19615.5	19636.6	19558.1
37.5°	18489.9	18492.9	18532.2	18473.3	18503.5
40°	17340.1	17358.3	17335.6	17319.0	17296.3
42.5°	16193.4	16210.0	16194.9	16190.4	16137.5
45°	15093.5	15141.8	15113.1	15119.2	15078.4
47.5°	14069.1	14084.2	14081.2	14058.6	14051.0
50°	13087.1	13076.5	13076.5	13020.6	13061.4
52.5°	12085.4	12088.4	12028.0	12009.8	12056.7
55°	11115.4	11119.9	11086.7	11076.1	11067.0
57.5°	10221.0	10213.4	10221.0	10189.2	10242.1
60°	9397.5	9393.0	9390.0	9362.8	9397.5
62.5°	8630.0	8614.9	8607.4	8592.3	8608.9
65°	7895.8	7877.6	7879.1	7862.5	7847.4
67.5°	7224.9	7211.3	7203.8	7200.8	7185.6
70°	6581.3	6572.2	6566.2	6551.1	6585.8
72.5°	5964.9	5969.4	5948.3	5934.7	6007.2
75°	5359.0	5386.2	5363.6	5356.0	5413.4
77.5°	4775.8	4821.2	4794.0	4790.9	4839.3
80°	4215.3	4268.2	4253.1	4239.5	4292.4
82.5°	3706.1	3765.1	3743.9	3725.8	3772.6
85°	3228.7	3277.1	3243.8	3242.3	3299.7
87.5°	2709.0	2752.8	2681.8	2719.5	2767.9
90°	1859.9	1862.9	1684.6	1831.2	1902.2
92.5°	1500.3	1529.0	1495.8	1503.3	1518.4
95°	1308.4	1337.1	1322.0	1312.9	1326.5
97.5°	1136.2	1160.3	1145.2	1143.7	1155.8
100°	963.9	980.5	967.0	971.5	980.5
102.5°	793.2	808.3	800.8	803.8	815.9
105°	605.9	621.0	616.4	617.9	625.5
107.5°	430.6	438.1	430.6	433.6	444.2
110°	268.9	276.5	264.4	272.0	285.6



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	139.0	148.1	151.1	148.1	143.5
115°	65.0	68.0	68.0	66.5	65.0
117.5°	31.7	31.7	30.2	31.7	31.7
120°	27.2	28.7	27.2	27.2	28.7
122.5°	30.2	31.7	30.2	30.2	31.7
125°	33.2	34.7	33.2	33.2	34.7
127.5°	36.3	37.8	36.3	36.3	37.8
130°	39.3	39.3	39.3	39.3	39.3
132.5°	40.8	42.3	40.8	40.8	42.3
135°	43.8	43.8	43.8	43.8	43.8
137.5°	45.3	45.3	45.3	45.3	46.8
140°	46.8	46.8	46.8	46.8	46.8
142.5°	48.3	46.8	46.8	48.3	46.8
145°	46.8	46.8	46.8	46.8	45.3
147.5°	43.8	43.8	43.8	43.8	43.8
150°	39.3	39.3	39.3	39.3	39.3
152.5°	34.7	34.7	34.7	34.7	34.7
155°	31.7	33.2	31.7	31.7	31.7
157.5°	33.2	33.2	31.7	31.7	31.7
160°	33.2	33.2	31.7	31.7	31.7
162.5°	33.2	33.2	31.7	31.7	31.7
165°	33.2	31.7	31.7	31.7	31.7
167.5°	33.2	31.7	31.7	31.7	31.7
170°	33.2	33.2	31.7	31.7	31.7
172.5°	31.7	33.2	31.7	31.7	31.7
175°	31.7	31.7	31.7	31.7	33.2
177.5°	30.2	30.2	31.7	31.7	33.2
180°	31.7	31.7	31.7	31.7	31.7

(END OF REPORT)