

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: P381680

Luminaire Tested: **BMK-50-NFL-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: P381680  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1908-468-4)  
Test Lab: INNOVATIONS CENTER(G2)  
Issue Date: 2/4/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: BMK-50-NFL-UNV-L850-CD-U  
Description: BENCHMARK HIGHBAY LED FIXTURE WITH NARROW FROSTED LENS

Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.    Condition    Description

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 49325.6 lumens  
Efficiency: N/A  
Efficacy: 148.3 lumens/watt  
Spacing Criteria (0/90/45): 1.06 / 1.07 / 1.1  
Luminous Opening: Vertical Cylinder (Dia: 1.33' x H: 0.12')  
CIE Type: Direct

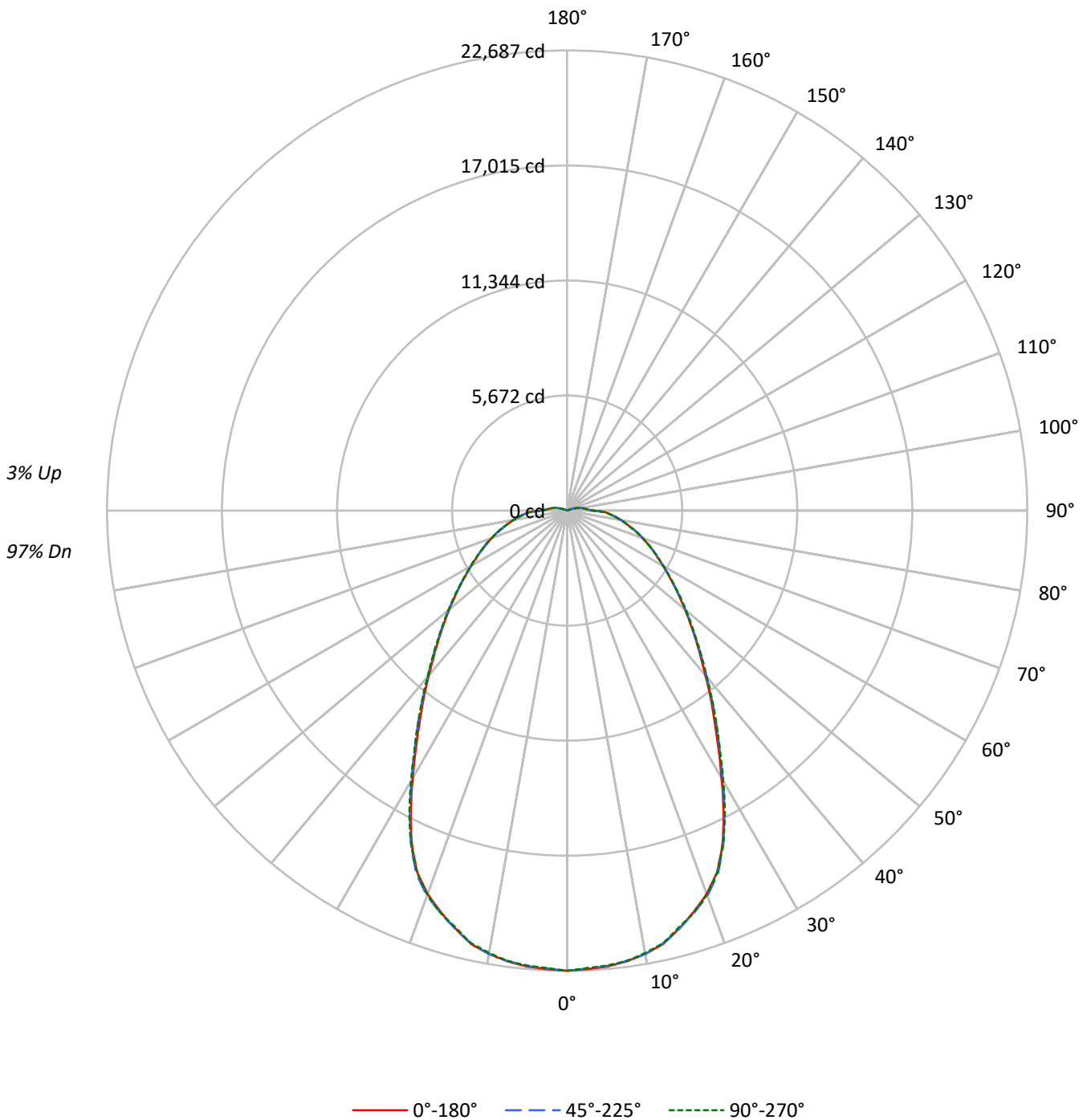
Input Watts (W): 332.5  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	102	98	94	104	100	96	92	95	91	88	90	88	85	86	84	82	80
2	98	90	83	77	95	88	81	76	84	78	74	80	75	72	76	73	70	67
3	90	80	72	65	87	78	70	65	74	68	63	71	66	61	68	64	60	58
4	83	71	63	56	80	70	62	56	67	60	55	64	58	54	62	57	52	50
5	77	64	56	49	75	63	55	49	61	54	48	58	52	47	56	51	46	44
6	71	59	50	44	69	57	49	43	55	48	43	53	47	42	51	46	42	39
7	67	54	45	39	65	53	45	39	51	44	38	49	43	38	47	42	37	36
8	62	49	41	35	61	48	41	35	47	40	35	45	39	34	44	38	34	32
9	58	46	38	32	57	45	37	32	43	37	32	42	36	31	41	35	31	29
10	55	42	35	30	54	42	34	30	40	34	29	39	33	29	38	33	29	27

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

	0°	45°	90°
0°	174980	174980	174980
5°	172940	172694	172528
10°	170224	170303	169851
15°	165027	165154	164603
20°	158188	158928	158497
25°	146099	146814	146640
30°	126813	127716	128138
35°	109966	111329	111401
40°	97028	97830	98001
45°	87137	87750	87881
50°	79590	79990	80272
55°	73831	74152	74294
60°	69733	70116	70327
65°	67703	68139	67883
70°	67256	67589	67186
75°	67519	68222	67583
80°	71051	71679	70914
85°	80311	80813	79926



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	2140.2	4.3
10°-20°	6001.6	12.2
20°-30°	8265.4	16.8
30°-40°	8015.5	16.3
40°-50°	6975.3	14.1
50°-60°	5802.6	11.8
60°-70°	4657.5	9.4
70°-80°	3496.1	7.1
80°-90°	2282.9	4.6
90°-100°	1031.3	2.1
100°-110°	489.4	1.0
110°-120°	78.5	0.2
120°-130°	21.8	0.0
130°-140°	24.3	0.0
140°-150°	21.1	0.0
150°-160°	12.2	0.0
160°-170°	7.4	0.0
170°-180°	2.5	0.0
0°-30°	16407.2	33.3
0°-40°	24422.7	49.5
0°-60°	37200.6	75.4
0°-90°	47637.1	96.6
90°-120°	1599.2	3.2
90°-150°	1666.4	3.4
90°-180°	1689.0	3.4
0°-180°	49325.6	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	22687	22687	22687	22687	22687	
5°	22570	22496	22538	22575	22516	###
15°	21328	21257	21345	21360	21274	6000
25°	18123	18122	18212	18242	18190	8239
35°	12655	12697	12812	12812	12820	7958
45°	8942	8980	9005	9019	9019	6935
55°	6427	6439	6455	6470	6467	5778
65°	4660	4673	4690	4692	4672	4633
75°	3275	3294	3309	3295	3278	3487
85°	2146	2165	2159	2132	2136	1862
90°	1310	1268	1162	1247	1275	760
95°	937	940	937	918	924	721
105°	470	467	464	457	456	496
115°	56	55	55	53	52	80
125°	24	25	24	25	26	21
135°	31	32	31	32	32	24
145°	35	34	34	34	34	21
155°	25	26	25	25	25	12
165°	27	27	26	26	26	8
175°	26	27	26	27	27	3
180°	27	27	27	27	27	



TEST NUMBER: P381680

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

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	22686.6	22686.6	22686.6	22686.6	22686.6
2.5°	22629.8	22568.9	22591.6	22630.9	22572.0
5°	22570.0	22495.6	22538.0	22575.1	22516.3
7.5°	22422.3	22346.0	22398.6	22458.5	22398.6
10°	22192.2	22123.0	22202.5	22209.7	22143.6
12.5°	21882.5	21806.1	21849.5	21876.3	21851.5
15°	21328.2	21256.9	21344.7	21360.2	21273.5
17.5°	20742.9	20718.1	20783.1	20820.3	20787.3
20°	20110.1	20127.7	20204.1	20212.3	20149.4
22.5°	19302.9	19288.5	19398.9	19385.5	19328.7
25°	18123.1	18122.0	18211.8	18241.8	18190.2
27.5°	16694.4	16660.4	16789.4	16789.4	16852.4
30°	15220.4	15199.8	15328.8	15337.0	15379.4
32.5°	13864.0	13899.1	13998.2	14019.9	14016.8
35°	12655.3	12696.6	12812.2	12812.2	12820.4
37.5°	11598.3	11630.3	11699.4	11735.6	11720.1
40°	10602.2	10644.5	10689.9	10731.2	10708.5
42.5°	9722.7	9748.5	9817.6	9845.5	9816.6
45°	8942.3	8979.5	9005.3	9018.7	9018.7
47.5°	8230.1	8236.3	8281.7	8282.7	8297.2
50°	7576.7	7560.1	7614.8	7599.4	7641.7
52.5°	6978.0	6981.0	7003.8	7013.0	7042.0
55°	6426.7	6439.1	6454.6	6470.1	6467.0
57.5°	5919.9	5939.5	5961.2	5972.5	5955.0
60°	5455.4	5491.5	5485.3	5512.2	5501.8
62.5°	5039.4	5073.5	5076.6	5090.0	5075.5
65°	4659.5	4673.0	4689.5	4691.5	4671.9
67.5°	4300.3	4312.7	4336.4	4331.3	4305.5
70°	3960.7	3965.9	3980.3	3982.4	3956.6
72.5°	3623.2	3626.3	3636.6	3634.5	3617.0
75°	3275.3	3293.9	3309.4	3294.9	3278.4
77.5°	2983.2	2985.2	2996.6	2974.9	2978.0
80°	2682.8	2695.2	2706.5	2673.5	2677.6
82.5°	2414.4	2427.8	2435.1	2394.8	2400.0
85°	2146.0	2164.6	2159.4	2131.6	2135.7
87.5°	1875.6	1854.9	1840.5	1829.1	1834.3
90°	1309.9	1267.6	1162.3	1246.9	1274.8
92.5°	1050.8	1066.3	1051.9	1035.3	1050.8
95°	937.3	940.4	937.3	917.7	923.9
97.5°	826.8	835.1	826.8	807.2	814.4
100°	710.2	712.2	707.1	694.7	699.9
102.5°	593.5	595.6	588.4	580.1	582.2
105°	469.7	466.6	463.5	457.3	456.3
107.5°	338.6	338.6	333.4	327.2	331.3
110°	221.9	218.8	207.5	209.5	211.6



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	117.7	118.7	120.8	114.6	110.4
115°	55.7	54.7	54.7	52.6	51.6
117.5°	24.8	24.8	22.7	23.7	24.8
120°	19.6	20.6	19.6	19.6	21.7
122.5°	21.7	22.7	21.7	22.7	23.7
125°	23.7	24.8	23.7	24.8	25.8
127.5°	25.8	26.8	25.8	26.8	26.8
130°	27.9	28.9	27.9	27.9	28.9
132.5°	28.9	29.9	29.9	29.9	29.9
135°	31.0	32.0	31.0	32.0	32.0
137.5°	33.0	33.0	33.0	33.0	33.0
140°	34.1	34.1	34.1	34.1	34.1
142.5°	35.1	35.1	35.1	35.1	34.1
145°	35.1	34.1	34.1	34.1	34.1
147.5°	33.0	33.0	33.0	33.0	32.0
150°	29.9	29.9	29.9	29.9	29.9
152.5°	26.8	27.9	26.8	26.8	26.8
155°	24.8	25.8	24.8	24.8	24.8
157.5°	25.8	25.8	24.8	24.8	25.8
160°	25.8	25.8	25.8	25.8	25.8
162.5°	26.8	26.8	25.8	25.8	25.8
165°	26.8	26.8	25.8	25.8	25.8
167.5°	26.8	26.8	25.8	25.8	25.8
170°	26.8	26.8	25.8	25.8	25.8
172.5°	26.8	26.8	26.8	26.8	26.8
175°	25.8	26.8	25.8	26.8	26.8
177.5°	25.8	25.8	25.8	26.8	27.9
180°	26.8	26.8	26.8	26.8	26.8

(END OF REPORT)