

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: P381682

Luminaire Tested: **BMK-60-NFL-UNV-L740-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: P381682  
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-60-NFL-UNV-L740-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: 62165.4 lumens  
Efficiency: N/A  
Efficacy: 153.2 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

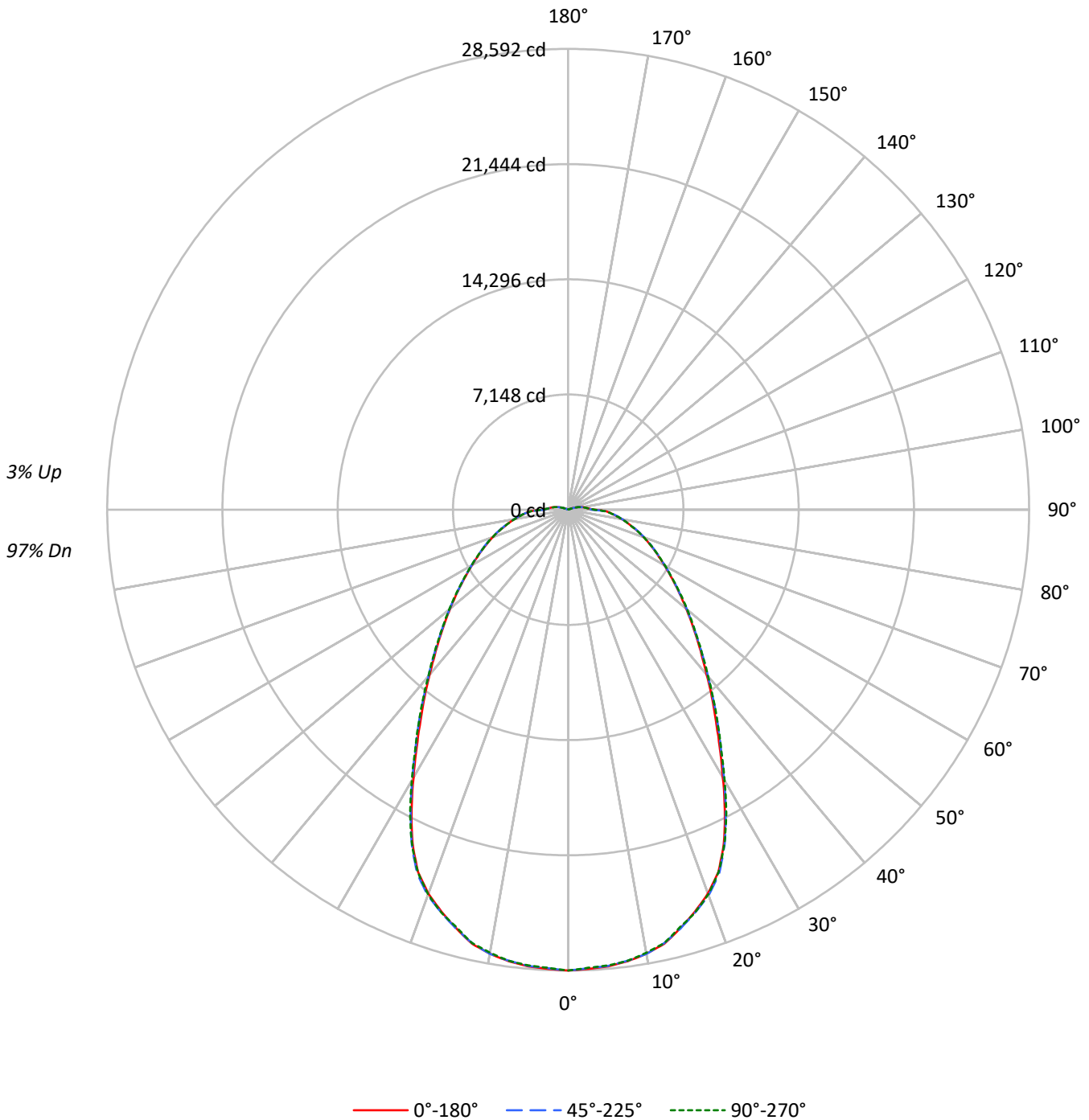
Input Watts (W): 405.7  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P381682

CATALOG NUMBER: BMK-60-NFL-UNV-L740-CD-U

### Luminous Intensity Polar Plot





TEST NUMBER: P381682

CATALOG NUMBER: BMK-60-NFL-UNV-L740-CD-U

**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	50	30	10	0	
RCR																						
0	118	118	118	118	115	115	115	115	109	109	109	104	104	104	99	99	99	99	99	99	97	
1	107	102	98	94	104	100	96	92	95	91	88	90	88	85	86	84	82	86	84	82	80	
2	98	90	83	77	95	88	81	76	84	78	74	80	75	72	76	73	70	76	73	70	67	
3	90	80	72	65	87	78	70	65	74	68	63	71	66	61	68	64	60	68	64	60	58	
4	83	71	63	56	80	70	62	56	67	60	55	64	58	54	62	57	52	62	57	52	50	
5	77	64	56	49	75	63	55	49	61	54	48	58	52	47	56	51	46	56	51	46	44	
6	71	59	50	44	69	57	49	43	55	48	43	53	47	42	51	46	42	51	46	42	39	
7	67	54	45	39	65	53	45	39	51	44	38	49	43	38	47	42	37	47	42	37	36	
8	62	49	41	35	61	48	41	35	47	40	35	45	39	34	44	38	34	44	38	34	32	
9	58	46	38	32	57	45	37	32	43	37	32	42	36	31	41	35	31	41	35	31	29	
10	55	42	35	30	54	42	34	30	40	34	29	39	33	29	38	33	29	38	33	29	27	

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

	0°	45°	90°
0°	220529	220529	220529
5°	217957	217648	217439
10°	214535	214634	214065
15°	207984	208145	207451
20°	199366	200298	199755
25°	184130	185031	184811
30°	159824	160962	161493
35°	138591	140309	140399
40°	122285	123297	123511
45°	109819	110592	110757
50°	100307	100813	101168
55°	93051	93454	93633
60°	87886	88368	88634
65°	85328	85875	85554
70°	84763	85182	84675
75°	85096	85980	85176
80°	89548	90340	89373
85°	101220	101853	100734



TEST NUMBER: P381682

CATALOG NUMBER: BMK-60-NFL-UNV-L740-CD-U

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	2697.3	4.3
10°-20°	7563.8	12.2
20°-30°	10417.0	16.8
30°-40°	10102.0	16.3
40°-50°	8791.1	14.1
50°-60°	7313.0	11.8
60°-70°	5869.8	9.4
70°-80°	4406.2	7.1
80°-90°	2877.2	4.6
90°-100°	1299.8	2.1
100°-110°	616.8	1.0
110°-120°	98.9	0.2
120°-130°	27.5	0.0
130°-140°	30.5	0.0
140°-150°	26.6	0.0
150°-160°	15.4	0.0
160°-170°	9.3	0.0
170°-180°	3.2	0.0
0°-30°	20678.1	33.3
0°-40°	30780.1	49.5
0°-60°	46884.2	75.4
0°-90°	60037.4	96.6
90°-120°	2015.4	3.2
90°-150°	2100.1	3.4
90°-180°	2128.0	3.4
0°-180°	62165.4	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	28592	28592	28592	28592	28592	
5°	28445	28351	28405	28452	28378	###
15°	26880	26790	26901	26920	26811	7562
25°	22841	22839	22952	22990	22925	10383
35°	15950	16002	16147	16147	16158	10029
45°	11270	11317	11349	11366	11366	8740
55°	8100	8115	8135	8154	8150	7282
65°	5872	5889	5910	5913	5888	5839
75°	4128	4151	4171	4153	4132	4395
85°	2705	2728	2722	2686	2692	2347
90°	1651	1598	1465	1572	1607	958
95°	1181	1185	1181	1156	1164	908
105°	592	588	584	576	575	625
115°	70	69	69	66	65	101
125°	30	31	30	31	32	27
135°	39	40	39	40	40	30
145°	44	43	43	43	43	27
155°	31	32	31	31	31	15
165°	34	34	32	32	32	10
175°	32	34	32	34	34	3
180°	34	34	34	34	34	



TEST NUMBER: P381682

CATALOG NUMBER: BMK-60-NFL-UNV-L740-CD-U

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	28592.1	28592.1	28592.1	28592.1	28592.1
2.5°	28520.6	28443.8	28472.4	28521.9	28447.7
5°	28445.1	28351.4	28404.8	28451.6	28377.5
7.5°	28259.1	28162.8	28229.2	28304.6	28229.2
10°	27969.0	27881.8	27982.0	27991.1	27907.8
12.5°	27578.7	27482.4	27537.1	27570.9	27539.7
15°	26880.1	26790.3	26900.9	26920.4	26811.1
17.5°	26142.4	26111.2	26193.2	26240.0	26198.4
20°	25345.0	25367.1	25463.4	25473.8	25394.4
22.5°	24327.6	24309.4	24448.6	24431.7	24360.2
25°	22840.7	22839.4	22952.5	22990.3	22925.2
27.5°	21040.1	20997.2	21159.8	21159.8	21239.2
30°	19182.4	19156.4	19319.0	19329.4	19382.7
32.5°	17473.0	17517.2	17642.1	17669.4	17665.5
35°	15949.6	16001.6	16147.3	16147.3	16157.7
37.5°	14617.4	14657.7	14744.9	14790.4	14770.9
40°	13362.0	13415.3	13472.6	13524.6	13496.0
42.5°	12253.6	12286.1	12373.3	12408.4	12372.0
45°	11270.1	11316.9	11349.4	11366.3	11366.3
47.5°	10372.4	10380.2	10437.5	10438.8	10457.0
50°	9548.9	9528.1	9597.1	9577.5	9630.9
52.5°	8794.4	8798.3	8826.9	8838.6	8875.0
55°	8099.7	8115.3	8134.8	8154.3	8150.4
57.5°	7460.9	7485.6	7512.9	7527.3	7505.1
60°	6875.5	6921.0	6913.2	6947.0	6934.0
62.5°	6351.2	6394.1	6398.0	6414.9	6396.7
65°	5872.5	5889.4	5910.2	5912.8	5888.1
67.5°	5419.7	5435.3	5465.3	5458.8	5426.2
70°	4991.7	4998.2	5016.4	5019.0	4986.5
72.5°	4566.3	4570.2	4583.2	4580.6	4558.5
75°	4127.9	4151.3	4170.8	4152.6	4131.8
77.5°	3759.7	3762.3	3776.6	3749.3	3753.2
80°	3381.2	3396.8	3411.1	3369.4	3374.6
82.5°	3042.9	3059.8	3068.9	3018.2	3024.7
85°	2704.7	2728.1	2721.6	2686.4	2691.7
87.5°	2363.8	2337.8	2319.6	2305.3	2311.8
90°	1650.9	1597.6	1464.9	1571.5	1606.7
92.5°	1324.4	1343.9	1325.7	1304.8	1324.4
95°	1181.3	1185.2	1181.3	1156.5	1164.3
97.5°	1042.1	1052.5	1042.1	1017.3	1026.4
100°	895.0	897.7	891.1	875.5	882.0
102.5°	748.0	750.6	741.5	731.1	733.7
105°	591.9	588.0	584.1	576.3	575.0
107.5°	426.7	426.7	420.2	412.4	417.6
110°	279.7	275.8	261.5	264.1	266.7



TEST NUMBER: P381682

CATALOG NUMBER: BMK-60-NFL-UNV-L740-CD-U

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	148.3	149.6	152.2	144.4	139.2
115°	70.3	68.9	68.9	66.3	65.0
117.5°	31.2	31.2	28.6	29.9	31.2
120°	24.7	26.0	24.7	24.7	27.3
122.5°	27.3	28.6	27.3	28.6	29.9
125°	29.9	31.2	29.9	31.2	32.5
127.5°	32.5	33.8	32.5	33.8	33.8
130°	35.1	36.4	35.1	35.1	36.4
132.5°	36.4	37.7	37.7	37.7	37.7
135°	39.0	40.3	39.0	40.3	40.3
137.5°	41.6	41.6	41.6	41.6	41.6
140°	42.9	42.9	42.9	42.9	42.9
142.5°	44.2	44.2	44.2	44.2	42.9
145°	44.2	42.9	42.9	42.9	42.9
147.5°	41.6	41.6	41.6	41.6	40.3
150°	37.7	37.7	37.7	37.7	37.7
152.5°	33.8	35.1	33.8	33.8	33.8
155°	31.2	32.5	31.2	31.2	31.2
157.5°	32.5	32.5	31.2	31.2	32.5
160°	32.5	32.5	32.5	32.5	32.5
162.5°	33.8	33.8	32.5	32.5	32.5
165°	33.8	33.8	32.5	32.5	32.5
167.5°	33.8	33.8	32.5	32.5	32.5
170°	33.8	33.8	32.5	32.5	32.5
172.5°	33.8	33.8	33.8	33.8	33.8
175°	32.5	33.8	32.5	33.8	33.8
177.5°	32.5	32.5	32.5	33.8	35.1
180°	33.8	33.8	33.8	33.8	33.8

(END OF REPORT)