

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: P381668

Luminaire Tested: **BMK-60-NCL-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: P381668
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1908-468-3)
Test Lab: INNOVATIONS CENTER(G2)
Issue Date: 2/4/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: BMK-60-NCL-UNV-L850-CD-U
Description: BENCHMARK HIGHBAY LED FIXTURE WITH NARROW CLEAR LENS

Light Source: -
Ballast/Driver: -

Luminaire Equipment: Sample No. Condition Description

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 58957.2 lumens
Efficiency: N/A
Efficacy: 145.3 lumens/watt
Spacing Criteria (0/90/45): 1.07 / 1.07 / 1.07
Luminous Opening: Vertical Cylinder (Dia: 1.33' x H: 0.12')
CIE Type: Direct

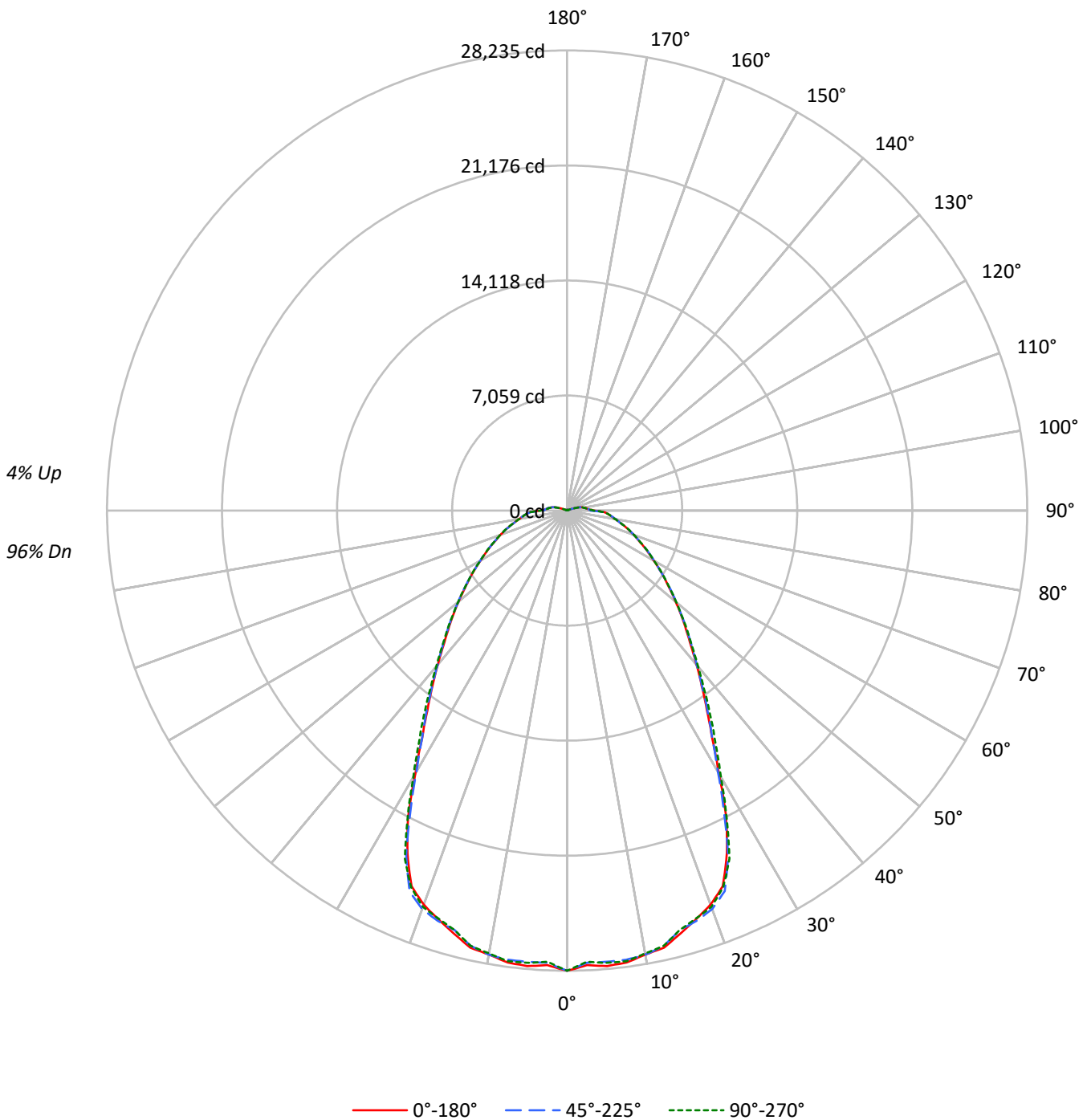
Input Watts (W): 405.7
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P381668

CATALOG NUMBER: BMK-60-NCL-UNV-L850-CD-U

Luminous Intensity Polar Plot





TEST NUMBER: P381668

CATALOG NUMBER: BMK-60-NCL-UNV-L850-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	0
RCR																				
0	118	118	118	118	115	115	115	115	109	109	109		103	103	103		98	98	98	96
1	107	103	98	94	104	100	96	92	95	92	89		90	88	85		86	84	82	80
2	98	90	84	78	95	88	82	77	84	79	74		80	76	72		76	73	70	68
3	91	80	73	66	88	79	71	65	75	69	64		72	67	62		69	64	61	58
4	84	72	64	57	81	71	63	57	68	61	56		65	59	54		62	57	53	51
5	77	65	57	50	75	64	56	50	61	54	49		59	53	48		57	52	47	45
6	72	59	51	45	70	58	50	45	56	49	44		54	48	43		52	47	43	40
7	67	54	46	40	65	54	46	40	52	45	40		50	44	39		48	43	38	37
8	63	50	42	37	61	49	42	36	48	41	36		46	40	36		45	39	35	33
9	59	46	39	33	58	46	38	33	44	38	33		43	37	33		42	36	32	30
10	56	43	36	31	54	43	35	31	41	35	30		40	34	30		39	34	30	28

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	217778	217778	217778
5°	214942	212964	213440
10°	212142	212227	211620
15°	207864	206273	206178
20°	202367	204665	203554
25°	186931	188393	189954
30°	155052	154018	157203
35°	129845	130639	133029
40°	113091	113302	114361
45°	100533	101399	101517
50°	91343	91637	91842
55°	84121	84316	84331
60°	78488	78863	78659
65°	75069	75351	75688
70°	73799	74026	74211
75°	74409	74182	74710
80°	79441	79796	79150
85°	94716	94349	95172



TEST NUMBER: P381668

CATALOG NUMBER: BMK-60-NCL-UNV-L850-CD-U

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	2656.0	4.5
10°-20°	7567.5	12.8
20°-30°	10524.1	17.9
30°-40°	9487.2	16.1
40°-50°	8040.8	13.6
50°-60°	6580.9	11.2
60°-70°	5173.1	8.8
70°-80°	3847.5	6.5
80°-90°	2679.5	4.5
90°-100°	1386.8	2.4
100°-110°	776.0	1.3
110°-120°	113.5	0.2
120°-130°	30.7	0.1
130°-140°	34.1	0.1
140°-150°	29.4	0.0
150°-160°	16.8	0.0
160°-170°	9.9	0.0
170°-180°	3.4	0.0
0°-30°	20747.6	35.2
0°-40°	30234.8	51.3
0°-60°	44856.6	76.1
0°-90°	56556.6	95.9
90°-120°	2276.3	3.9
90°-150°	2370.5	4.0
90°-180°	2401.0	4.1
0°-180°	58957.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	28235	28235	28235	28235	28235	
5°	28052	27804	27794	27937	27856	###
15°	26865	26711	26659	26850	26647	7575
25°	23188	23254	23370	23586	23563	10479
35°	14943	14924	15034	15079	15310	9435
45°	10317	10337	10406	10343	10418	8007
55°	7322	7287	7339	7339	7341	6577
65°	5166	5163	5186	5243	5209	5142
75°	3610	3622	3598	3623	3624	3843
85°	2531	2537	2521	2513	2543	2161
90°	1657	1576	1443	1556	1622	957
95°	1238	1249	1279	1220	1214	982
105°	782	774	767	749	758	781
115°	76	74	74	71	73	116
125°	34	35	34	34	35	30
135°	44	45	44	44	45	34
145°	49	48	49	48	48	30
155°	34	35	34	34	34	17
165°	36	35	35	35	35	10
175°	35	35	35	35	36	3
180°	35	35	35	35	35	



TEST NUMBER: P381668

CATALOG NUMBER: BMK-60-NCL-UNV-L850-CD-U

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	28235.4	28235.4	28235.4	28235.4	28235.4
2.5°	27917.7	27781.3	27771.6	27811.7	27705.8
5°	28051.6	27804.4	27793.5	27937.1	27855.6
7.5°	27966.3	27760.6	27794.7	27961.5	27884.8
10°	27657.1	27573.1	27668.1	27809.3	27589.0
12.5°	27466.0	27349.1	27349.1	27369.8	27358.9
15°	26864.6	26711.3	26658.9	26850.0	26646.7
17.5°	26296.1	26162.2	26391.1	26333.9	26248.7
20°	25726.4	25803.1	26018.6	25901.7	25877.4
22.5°	24949.7	24977.7	25268.7	25273.6	25016.7
25°	23188.2	23254.0	23369.6	23586.3	23563.2
27.5°	21113.8	20859.4	20848.5	21330.5	21179.6
30°	18609.7	18540.4	18485.6	18847.1	18867.8
32.5°	16557.3	16630.3	16553.6	16750.8	16934.7
35°	14943.1	14923.6	15034.4	15079.4	15309.5
37.5°	13569.9	13552.8	13596.7	13734.2	13797.5
40°	12357.4	12357.4	12380.5	12518.1	12496.2
42.5°	11228.9	11336.0	11329.9	11368.9	11371.3
45°	10317.1	10336.6	10406.0	10342.7	10418.1
47.5°	9478.3	9445.5	9534.3	9461.3	9528.3
50°	8695.6	8638.4	8723.6	8644.5	8743.1
52.5°	7964.0	7901.9	8013.9	7933.5	8005.3
55°	7322.4	7287.1	7339.4	7339.4	7340.7
57.5°	6714.9	6707.6	6708.9	6757.6	6749.0
60°	6140.3	6169.6	6169.6	6203.7	6153.7
62.5°	5633.9	5644.9	5682.6	5702.1	5659.5
65°	5166.5	5162.8	5185.9	5243.2	5209.1
67.5°	4722.1	4736.7	4753.8	4813.4	4748.9
70°	4346.0	4342.3	4359.4	4398.3	4370.3
72.5°	3980.8	3973.5	3986.8	4006.3	4005.1
75°	3609.5	3621.6	3598.5	3622.9	3624.1
77.5°	3286.9	3284.4	3283.2	3271.0	3295.4
80°	2999.6	2997.1	3013.0	2981.3	2988.6
82.5°	2759.7	2756.1	2774.4	2731.7	2739.1
85°	2530.9	2537.0	2521.1	2512.6	2543.1
87.5°	2295.9	2280.1	2263.1	2269.2	2274.0
90°	1656.8	1576.5	1442.6	1555.8	1621.5
92.5°	1370.7	1409.7	1357.4	1347.6	1397.5
95°	1238.1	1249.0	1279.4	1219.8	1213.7
97.5°	1162.6	1189.4	1180.8	1141.9	1140.7
100°	1039.6	1054.2	1046.9	1032.3	1033.5
102.5°	930.1	961.7	927.6	920.3	931.3
105°	781.5	774.2	766.9	748.7	758.4
107.5°	542.9	550.2	534.4	530.8	546.6
110°	334.8	329.9	314.1	317.7	327.5



TEST NUMBER: P381668

CATALOG NUMBER: BMK-60-NCL-UNV-L850-CD-U

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	166.8	170.4	170.4	164.3	161.9
115°	75.5	74.3	74.3	70.6	73.0
117.5°	35.3	34.1	31.7	34.1	36.5
120°	28.0	29.2	26.8	28.0	30.4
122.5°	30.4	32.9	30.4	31.7	32.9
125°	34.1	35.3	34.1	34.1	35.3
127.5°	36.5	37.7	36.5	36.5	37.7
130°	39.0	40.2	39.0	40.2	40.2
132.5°	41.4	42.6	41.4	41.4	42.6
135°	43.8	45.0	43.8	43.8	45.0
137.5°	46.3	47.5	46.3	46.3	46.3
140°	48.7	48.7	47.5	48.7	47.5
142.5°	49.9	48.7	48.7	48.7	47.5
145°	48.7	47.5	48.7	47.5	47.5
147.5°	46.3	45.0	45.0	45.0	45.0
150°	41.4	41.4	40.2	41.4	41.4
152.5°	37.7	37.7	36.5	36.5	37.7
155°	34.1	35.3	34.1	34.1	34.1
157.5°	35.3	35.3	34.1	34.1	35.3
160°	35.3	35.3	34.1	34.1	35.3
162.5°	35.3	35.3	34.1	34.1	35.3
165°	36.5	35.3	35.3	35.3	35.3
167.5°	36.5	35.3	35.3	34.1	35.3
170°	36.5	36.5	35.3	34.1	35.3
172.5°	36.5	36.5	35.3	35.3	35.3
175°	35.3	35.3	35.3	35.3	36.5
177.5°	34.1	34.1	34.1	35.3	36.5
180°	35.3	35.3	35.3	35.3	35.3

(END OF REPORT)