

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: P294553

Luminaire Tested: **BMK-36-NFL-UNV-L850-CD-U**

Issue Date: 3/3/2020

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: P294553
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1901-103-7)
Test Lab: INNOVATION CENTER(G3)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: BMK-36-NFL-UNV-L850-CD-U
Description: BENCHMARK HIGHBAY LED FIXTURE
WITH NARROW FROSTED LENS
Light Source: (528) 80 CRI 5000K LEDS
Ballast/Driver: ELECTRONIC DRIVER
Luminaire Equipment: Sample No. Condition Description

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 35855.0 lumens
Efficiency: N/A
Efficacy: 147.6 lumens/watt
Spacing Criteria (0/90/45): 1.06 / 1.06 / 1.11
Luminous Opening: Vertical Cylinder (Dia: 1.33' x H: 0.12')
CIE Type: Direct

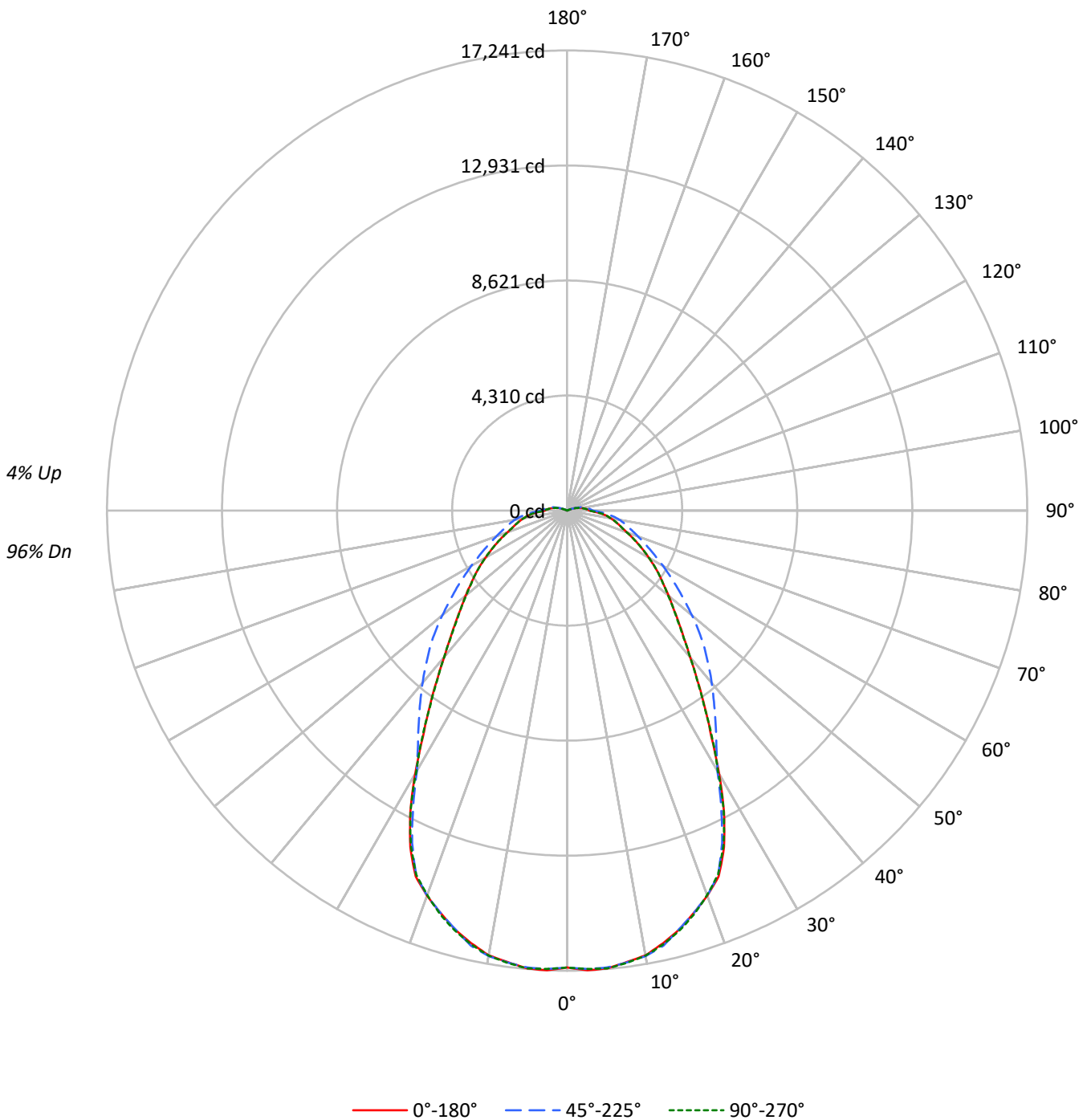
Input Watts (W): 243
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P294553

CATALOG NUMBER: BMK-36-NFL-UNV-L850-CD-U

Luminous Intensity Polar Plot





TEST NUMBER: P294553

CATALOG NUMBER: BMK-36-NFL-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	104	104	104	99	99	99	96
1	108	103	98	95	105	100	96	93	95	92	89	91	88	86	87	84	82	80
2	99	91	84	78	96	88	82	77	84	79	75	80	76	72	77	73	70	68
3	91	80	73	66	88	79	71	66	75	69	64	72	67	62	69	65	61	59
4	84	72	64	57	81	71	63	57	68	61	56	65	59	55	62	58	53	51
5	77	65	57	50	75	64	56	50	61	55	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	41
7	67	54	46	40	65	53	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	35	45	39	35	33
9	59	46	39	33	58	46	38	33	44	38	33	43	37	32	42	36	32	30
10	56	43	36	31	54	42	35	30	41	35	30	40	34	30	39	34	30	28

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	131953	131953	131953
5°	131849	131618	131849
10°	129711	129951	129779
15°	125621	125477	125974
20°	120743	120643	120491
25°	112077	110704	111622
30°	94845	93693	94229
35°	78054	84185	77827
40°	65492	77105	65563
45°	57473	70862	57037
50°	52184	64032	51827
55°	48419	57887	48396
60°	45104	53015	45217
65°	42561	49419	42320
70°	40403	47856	40239
75°	40926	48810	40946
80°	43893	52759	43919
85°	48043	57182	48622



TEST NUMBER: P294553

CATALOG NUMBER: BMK-36-NFL-UNV-L850-CD-U

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	1630.1	4.5
10°-20°	4566.6	12.7
20°-30°	6242.8	17.4
30°-40°	5863.7	16.4
40°-50°	5055.7	14.1
50°-60°	4148.2	11.6
60°-70°	3196.2	8.9
70°-80°	2341.9	6.5
80°-90°	1500.7	4.2
90°-100°	811.5	2.3
100°-110°	420.2	1.2
110°-120°	76.0	0.2
120°-130°	1.2	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	12439.6	34.7
0°-40°	18303.3	51.0
0°-60°	27507.2	76.7
0°-90°	34546.1	96.3
90°-120°	1307.7	3.6
90°-150°	1308.9	3.7
90°-180°	1309.0	3.7
0°-180°	35855.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	17117	17117	17117	17117	17117	
5°	17216	17204	17186	17178	17216	###
15°	16243	16206	16225	16215	16289	4568
25°	13910	13757	13739	13703	13853	6292
35°	8987	9309	9693	9289	8961	5655
45°	5901	6478	7276	6458	5856	4588
55°	4217	4609	5041	4605	4215	3778
65°	2930	3258	3403	3251	2914	2908
75°	1986	2234	2369	2228	1987	2109
85°	1284	1377	1528	1372	1300	1123
90°	833	899	961	909	832	479
95°	706	725	819	724	706	545
105°	381	386	450	388	383	397
115°	43	56	73	57	44	66
125°	0	0	0	0	0	1
135°	0	0	0	0	0	0
145°	0	0	0	0	0	0
155°	0	0	0	0	0	0
165°	0	0	0	0	0	0
175°	0	0	0	0	0	0
180°	0	0	0	0	0	0



TEST NUMBER: P294553

CATALOG NUMBER: BMK-36-NFL-UNV-L850-CD-U

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	17116.6	17116.6	17116.6	17116.6	17116.6
2.5°	17241.2	17209.1	17191.5	17172.1	17188.6
5°	17215.9	17204.2	17185.7	17177.9	17215.9
7.5°	17064.0	17053.3	17077.6	17036.7	17094.2
10°	16918.9	16883.9	16950.1	16812.8	16927.7
12.5°	16600.6	16624.9	16695.0	16597.6	16642.4
15°	16243.3	16206.3	16224.8	16215.0	16289.0
17.5°	15797.4	15774.0	15795.4	15770.1	15848.0
20°	15357.3	15328.1	15344.6	15330.0	15325.2
22.5°	14835.5	14742.0	14780.0	14675.8	14767.3
25°	13909.6	13756.7	13739.2	13703.2	13853.1
27.5°	12730.6	12578.7	12493.0	12530.0	12712.1
30°	11389.0	11380.2	11250.7	11335.4	11315.0
32.5°	10057.1	10313.2	10396.9	10308.3	10116.5
35°	8987.1	9309.4	9693.0	9289.0	8960.9
37.5°	8015.5	8473.1	9032.9	8431.2	7990.2
40°	7159.7	7716.6	8429.3	7678.6	7167.5
42.5°	6468.5	7056.5	7826.6	7046.8	6460.7
45°	5900.9	6478.2	7275.6	6457.8	5856.1
47.5°	5381.0	5962.2	6695.3	5951.5	5380.0
50°	4970.1	5446.2	6098.5	5445.2	4936.1
52.5°	4559.3	5009.1	5537.7	5017.8	4541.8
55°	4216.6	4608.9	5041.2	4605.0	4214.6
57.5°	3872.9	4247.7	4571.0	4242.9	3877.8
60°	3530.2	3894.3	4149.4	3883.6	3539.0
62.5°	3216.7	3572.1	3745.4	3553.6	3224.5
65°	2930.5	3257.6	3402.7	3250.8	2913.9
67.5°	2646.2	2968.5	3099.9	2971.4	2637.4
70°	2380.4	2710.5	2819.5	2706.6	2370.7
72.5°	2162.3	2472.9	2581.0	2464.1	2162.3
75°	1986.1	2234.4	2368.7	2227.6	1987.1
77.5°	1815.7	2018.2	2179.9	2012.4	1829.4
80°	1658.0	1814.8	1992.9	1797.2	1659.0
82.5°	1492.5	1594.7	1771.9	1586.9	1500.3
85°	1284.2	1376.6	1528.5	1371.8	1299.7
87.5°	1040.8	1146.9	1232.6	1146.9	1054.4
90°	833.4	898.6	960.9	909.3	832.4
92.5°	789.6	811.0	891.8	813.9	791.5
95°	705.8	725.3	818.8	724.3	705.8
97.5°	627.0	645.5	739.9	642.6	623.1
100°	543.3	559.8	650.4	564.7	540.3
102.5°	467.3	480.0	556.9	480.9	466.3
105°	380.7	385.5	449.8	387.5	382.6
107.5°	282.3	288.2	321.3	292.1	287.2
110°	188.9	193.7	216.1	197.6	193.7



TEST NUMBER: P294553

CATALOG NUMBER: BMK-36-NFL-UNV-L850-CD-U

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	107.1	112.9	141.2	113.9	105.1
115°	42.8	56.5	73.0	57.4	43.8
117.5°	11.7	21.4	26.3	21.4	12.7
120°	9.7	10.7	9.7	10.7	8.8
122.5°	0.0	0.0	0.0	0.0	0.0
125°	0.0	0.0	0.0	0.0	0.0
127.5°	0.0	0.0	0.0	0.0	0.0
130°	0.0	0.0	0.0	0.0	0.0
132.5°	0.0	0.0	0.0	0.0	0.0
135°	0.0	0.0	0.0	0.0	0.0
137.5°	0.0	0.0	0.0	0.0	0.0
140°	0.0	0.0	0.0	0.0	0.0
142.5°	0.0	0.0	0.0	0.0	0.0
145°	0.0	0.0	0.0	0.0	0.0
147.5°	0.0	0.0	0.0	0.0	0.0
150°	0.0	0.0	0.0	0.0	0.0
152.5°	0.0	0.0	0.0	0.0	0.0
155°	0.0	0.0	0.0	0.0	0.0
157.5°	0.0	0.0	0.0	0.0	0.0
160°	0.0	0.0	0.0	0.0	0.0
162.5°	0.0	0.0	0.0	0.0	0.0
165°	0.0	0.0	0.0	0.0	0.0
167.5°	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0
172.5°	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.0
180°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)