

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: P294552

Luminaire Tested: **BMK-36-NFL-UNV-L840-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: P294552
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-L840-CD-U
Description: BENCHMARK HIGHBAY LED FIXTURE
WITH NARROW FROSTED LENS
Light Source: (528) 80 CRI 4000K LEDS
Ballast/Driver: ELECTRONIC DRIVER
Luminaire Equipment: Sample No. Condition Description

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 35677.0 lumens
Efficiency: N/A
Efficacy: 146.8 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

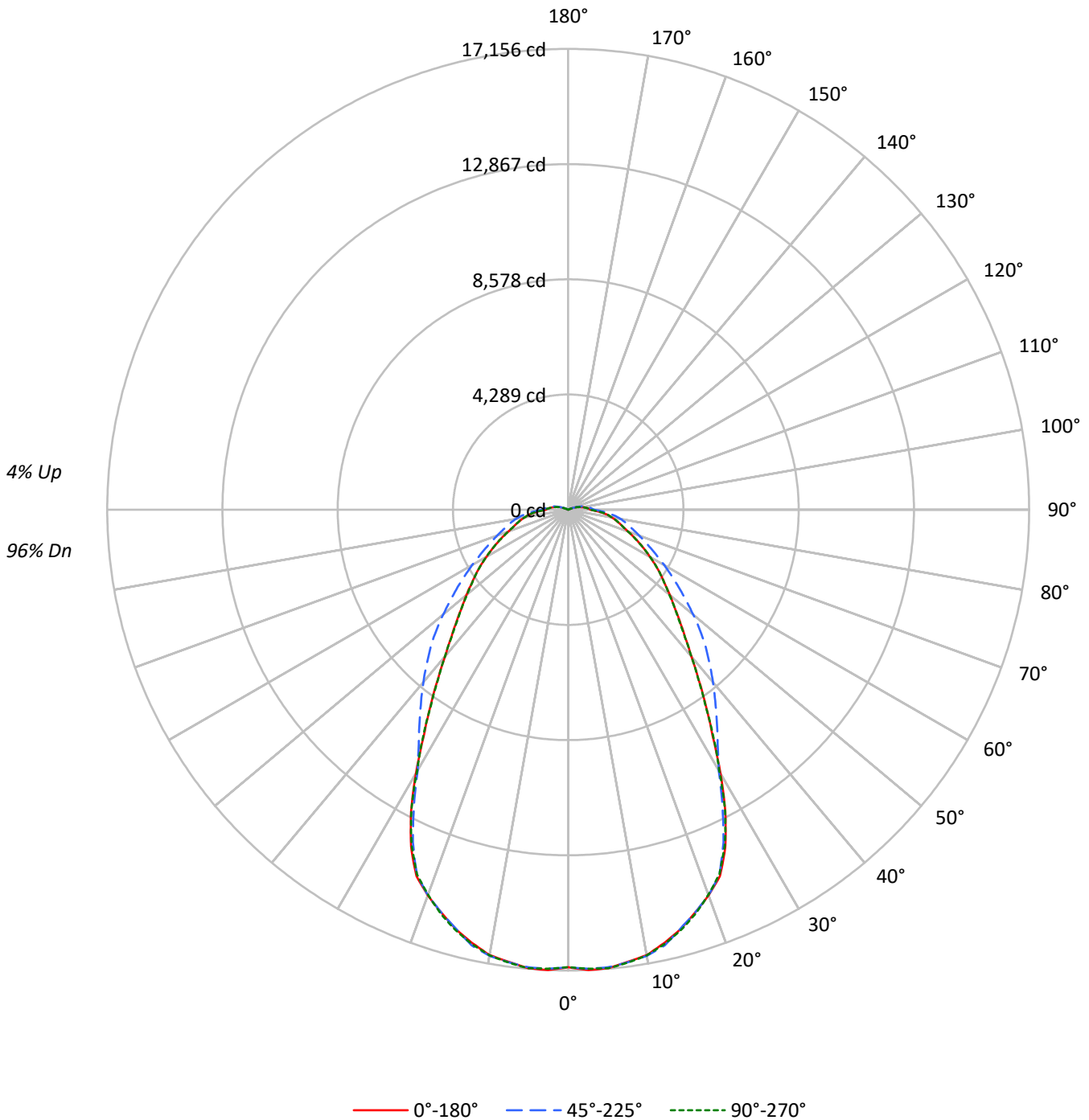
Input Watts (W): 243
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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°	131298	131298	131298
5°	131194	130964	131194
10°	129067	129305	129134
15°	124996	124854	125348
20°	120144	120045	119892
25°	111520	110155	111068
30°	94374	93229	93761
35°	77667	83767	77440
40°	65167	76722	65238
45°	57188	70511	56753
50°	51926	63714	51570
55°	48179	57600	48156
60°	44880	52752	44992
65°	42349	49174	42111
70°	40203	47619	40038
75°	40722	48568	40742
80°	43676	52497	43700
85°	47803	56898	48383



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	1622.0	4.5
10°-20°	4544.0	12.7
20°-30°	6211.8	17.4
30°-40°	5834.6	16.4
40°-50°	5030.6	14.1
50°-60°	4127.6	11.6
60°-70°	3180.4	8.9
70°-80°	2330.3	6.5
80°-90°	1493.3	4.2
90°-100°	807.4	2.3
100°-110°	418.2	1.2
110°-120°	75.6	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°	12377.8	34.7
0°-40°	18212.4	51.0
0°-60°	27370.7	76.7
0°-90°	34374.6	96.3
90°-120°	1301.2	3.6
90°-150°	1302.4	3.7
90°-180°	1302.0	3.6
0°-180°	35677.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	17032	17032	17032	17032	17032	
5°	17130	17119	17100	17093	17130	###
15°	16163	16126	16144	16134	16208	4545
25°	13840	13688	13671	13635	13784	6261
35°	8942	9263	9645	9243	8916	5627
45°	5872	6446	7240	6426	5827	4565
55°	4196	4586	5016	4582	4194	3759
65°	2916	3241	3386	3235	2900	2894
75°	1976	2223	2357	2216	1977	2098
85°	1278	1370	1521	1365	1293	1118
90°	829	894	956	905	828	477
95°	702	722	815	721	702	542
105°	379	384	448	386	381	395
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



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	17031.6	17031.6	17031.6	17031.6	17031.6
2.5°	17155.6	17123.6	17106.2	17086.8	17103.3
5°	17130.4	17118.8	17100.4	17092.6	17130.4
7.5°	16979.3	16968.6	16992.8	16952.1	17009.3
10°	16834.9	16800.1	16865.9	16729.3	16843.6
12.5°	16518.1	16542.4	16612.1	16515.2	16559.8
15°	16162.6	16125.8	16144.2	16134.5	16208.1
17.5°	15718.9	15695.7	15717.0	15691.8	15769.3
20°	15281.1	15252.0	15268.5	15253.9	15249.1
22.5°	14761.8	14668.8	14706.6	14602.9	14694.0
25°	13840.5	13688.4	13671.0	13635.2	13784.3
27.5°	12667.4	12516.2	12431.0	12467.8	12649.0
30°	11332.4	11323.7	11194.9	11279.2	11258.8
32.5°	10007.2	10262.0	10345.3	10257.1	10066.3
35°	8942.5	9263.2	9644.9	9242.8	8916.4
37.5°	7975.7	8431.0	8988.1	8389.4	7950.5
40°	7124.2	7678.3	8387.4	7640.5	7131.9
42.5°	6436.4	7021.5	7787.8	7011.8	6428.6
45°	5871.6	6446.1	7239.5	6425.7	5827.0
47.5°	5354.3	5932.6	6662.1	5922.0	5353.3
50°	4945.5	5419.2	6068.2	5418.2	4911.6
52.5°	4536.7	4984.2	5510.2	4992.9	4519.2
55°	4195.7	4586.1	5016.2	4582.2	4193.7
57.5°	3853.7	4226.7	4548.3	4221.8	3858.5
60°	3512.7	3875.0	4128.8	3864.3	3521.4
62.5°	3200.7	3554.3	3726.8	3535.9	3208.5
65°	2915.9	3241.4	3385.8	3234.7	2899.5
67.5°	2633.1	2953.7	3084.5	2956.6	2624.3
70°	2368.6	2697.0	2805.5	2693.1	2358.9
72.5°	2151.6	2460.6	2568.2	2451.9	2151.6
75°	1976.2	2223.3	2357.0	2216.5	1977.2
77.5°	1806.7	2008.2	2169.0	2002.4	1820.3
80°	1649.8	1805.7	1983.0	1788.3	1650.7
82.5°	1485.1	1586.8	1763.1	1579.1	1492.8
85°	1277.8	1369.8	1520.9	1365.0	1293.3
87.5°	1035.6	1141.2	1226.4	1141.2	1049.2
90°	829.2	894.2	956.2	904.8	828.3
92.5°	785.7	807.0	887.4	809.9	787.6
95°	702.3	721.7	814.7	720.7	702.3
97.5°	623.9	642.3	736.2	639.4	620.0
100°	540.6	557.0	647.1	561.9	537.7
102.5°	465.0	477.6	554.1	478.6	464.0
105°	378.8	383.6	447.6	385.6	380.7
107.5°	280.9	286.7	319.7	290.6	285.8
110°	187.9	192.8	215.1	196.7	192.8



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	106.6	112.4	140.5	113.3	104.6
115°	42.6	56.2	72.7	57.2	43.6
117.5°	11.6	21.3	26.2	21.3	12.6
120°	9.7	10.7	9.7	10.7	8.7
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)