

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: P294468

Luminaire Tested: **BMK-24-WFL-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: P294468  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1901-103-3)  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: BMK-24-WFL-UNV-L840-CD-U  
Description: BENCHMARK HIGHBAY LED FIXTURE  
WITH WIDE 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: 24382.0 lumens  
Efficiency: N/A  
Efficacy: 156.8 lumens/watt  
Spacing Criteria (0/90/45): 1.7 / 1.7 / 1.72  
Luminous Opening: Vertical Cylinder (Dia: 1.33' x H: 0.12')  
CIE Type: Direct

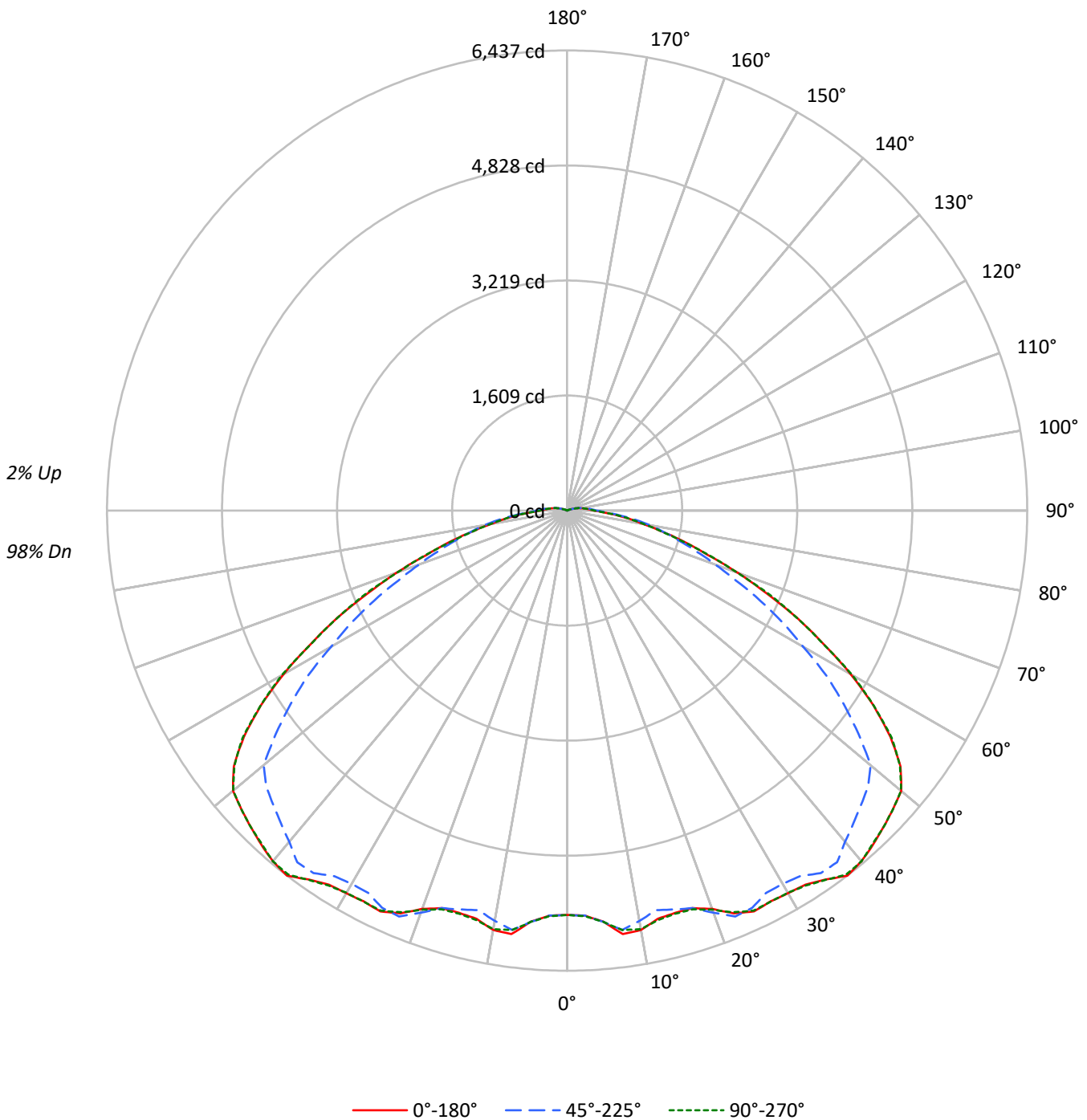
Input Watts (W): 155.5  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P294468

CATALOG NUMBER: BMK-24-WFL-UNV-L840-CD-U

### Luminous Intensity Polar Plot





TEST NUMBER: P294468

CATALOG NUMBER: BMK-24-WFL-UNV-L840-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	119	119	119	119	116	116	116	116	110	110	110		105	105	105		100	100	100	98
1	107	102	97	93	104	100	95	92	95	91	88		91	88	85		87	84	82	80
2	97	88	81	75	94	86	79	74	82	76	72		78	74	70		75	71	68	65
3	88	77	68	61	85	75	67	60	71	65	59		68	62	58		65	61	56	54
4	80	67	58	51	77	66	57	50	63	55	49		60	54	48		58	52	47	45
5	73	59	50	43	71	58	49	43	56	48	42		53	47	41		51	45	41	38
6	67	53	44	37	65	52	43	37	50	42	36		48	41	36		46	40	35	33
7	62	48	38	32	60	47	38	32	45	37	31		43	36	31		42	35	31	29
8	57	43	34	28	56	42	34	28	41	33	28		39	32	27		38	32	27	25
9	53	39	31	25	52	39	30	25	37	30	25		36	29	24		35	29	24	22
10	50	36	28	22	48	35	28	22	34	27	22		33	27	22		32	26	22	20

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

	0°	45°	90°
0°	43600	43600	43600
5°	44190	44221	44215
10°	45674	44685	45566
15°	45055	44670	45143
20°	46622	47061	46713
25°	49838	49384	49741
30°	51466	50201	51409
35°	54724	53750	54777
40°	58589	55325	58578
45°	60964	56656	60970
50°	64055	58169	64019
55°	63400	54216	63647
60°	58582	48767	58908
65°	51500	43300	51451
70°	43007	37384	42722
75°	35191	33390	34457
80°	28628	30871	28986
85°	25016	27205	25394



TEST NUMBER: P294468

CATALOG NUMBER: BMK-24-WFL-UNV-L840-CD-U

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	557.6	2.3
10°-20°	1650.5	6.8
20°-30°	2807.5	11.5
30°-40°	3910.0	16.0
40°-50°	4678.7	19.2
50°-60°	4549.7	18.7
60°-70°	3227.7	13.2
70°-80°	1757.7	7.2
80°-90°	770.4	3.2
90°-100°	320.1	1.3
100°-110°	131.4	0.5
110°-120°	20.2	0.1
120°-130°	0.5	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°	5015.7	20.6
0°-40°	8925.7	36.6
0°-60°	18154.0	74.5
0°-90°	23909.8	98.1
90°-120°	471.7	1.9
90°-150°	472.2	1.9
90°-180°	472.0	1.9
0°-180°	24382.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	5656	5656	5656	5656	5656	
5°	5770	5761	5774	5763	5773	560
15°	5826	5752	5776	5741	5837	1661
25°	6185	6025	6129	6031	6173	2838
35°	6301	6306	6189	6286	6307	3967
45°	6259	6056	5817	6063	6260	4843
55°	5521	5107	4722	5117	5543	4883
65°	3546	3238	2981	3242	3543	3500
75°	1708	1600	1620	1605	1672	1830
85°	669	667	727	673	679	632
90°	373	402	411	401	378	214
95°	273	287	307	290	276	207
105°	119	120	118	121	120	129
115°	11	15	18	14	11	18
125°	0	0	0	0	0	0
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: P294468

CATALOG NUMBER: BMK-24-WFL-UNV-L840-CD-U

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	5655.7	5655.7	5655.7	5655.7	5655.7
2.5°	5669.8	5666.5	5670.5	5671.9	5677.9
5°	5770.0	5760.6	5774.0	5762.6	5773.3
7.5°	5975.0	5927.9	5916.5	5913.1	5918.5
10°	5957.5	5923.9	5828.5	5922.6	5943.4
12.5°	5849.3	5814.3	5725.0	5811.0	5868.8
15°	5825.8	5751.8	5776.0	5741.1	5837.2
17.5°	5829.1	5763.3	5830.5	5757.9	5847.3
20°	5929.9	5887.6	5985.7	5882.9	5941.4
22.5°	6098.0	6024.0	6145.0	6001.2	6081.8
25°	6185.3	6025.4	6128.9	6031.4	6173.2
27.5°	6162.5	6056.3	6027.4	6055.6	6165.9
30°	6180.0	6120.2	6028.1	6110.1	6173.2
32.5°	6202.8	6167.2	6063.0	6163.2	6216.3
35°	6300.9	6305.7	6188.7	6285.5	6307.0
37.5°	6436.7	6288.2	6201.5	6278.1	6415.2
40°	6405.1	6205.5	6048.2	6204.8	6403.8
42.5°	6335.2	6151.1	5927.3	6153.8	6323.8
45°	6259.3	6055.6	5817.0	6063.0	6259.9
47.5°	6182.0	6019.3	5708.8	6011.9	6182.0
50°	6100.7	5810.3	5540.1	5811.7	6097.3
52.5°	5879.5	5505.2	5138.2	5505.2	5868.8
55°	5521.3	5107.3	4721.5	5117.4	5542.8
57.5°	5084.4	4719.5	4300.1	4714.8	5089.8
60°	4585.1	4209.4	3816.9	4236.3	4610.6
62.5°	4042.7	3775.2	3403.5	3751.7	4039.3
65°	3546.0	3238.2	2981.4	3241.5	3542.6
67.5°	3009.7	2766.4	2555.3	2762.3	3058.1
70°	2533.8	2330.8	2202.5	2330.8	2517.0
72.5°	2062.7	1959.8	1895.3	1955.8	2085.5
75°	1707.8	1599.6	1620.4	1605.0	1672.2
77.5°	1363.7	1309.9	1387.2	1310.6	1355.0
80°	1081.4	1070.0	1166.1	1066.6	1094.9
82.5°	867.0	854.2	945.0	850.2	876.4
85°	668.7	667.4	727.2	672.8	678.8
87.5°	494.0	511.5	539.0	514.2	494.7
90°	373.0	401.9	410.7	401.2	377.7
92.5°	319.2	338.7	351.5	338.1	324.6
95°	272.9	287.0	307.2	290.3	276.2
97.5°	231.2	244.6	258.8	244.6	233.2
100°	192.2	201.6	215.1	203.0	194.2
102.5°	158.6	160.6	167.4	163.3	157.9
105°	119.0	120.3	118.3	121.0	119.6
107.5°	86.0	84.7	79.3	86.7	85.4
110°	53.8	53.8	52.4	54.4	53.8



TEST NUMBER: P294468

CATALOG NUMBER: BMK-24-WFL-UNV-L840-CD-U

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	28.2	30.2	32.9	30.2	29.6
115°	10.8	14.8	17.5	14.1	11.4
117.5°	4.7	6.7	7.4	6.7	4.7
120°	4.0	4.7	4.0	4.0	4.0
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)