

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: P294469

Luminaire Tested: **BMK-24-WFL-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: P294469  
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-L850-CD-U  
Description: BENCHMARK HIGHBAY LED FIXTURE  
WITH WIDE 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: 24504.0 lumens  
Efficiency: N/A  
Efficacy: 157.6 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

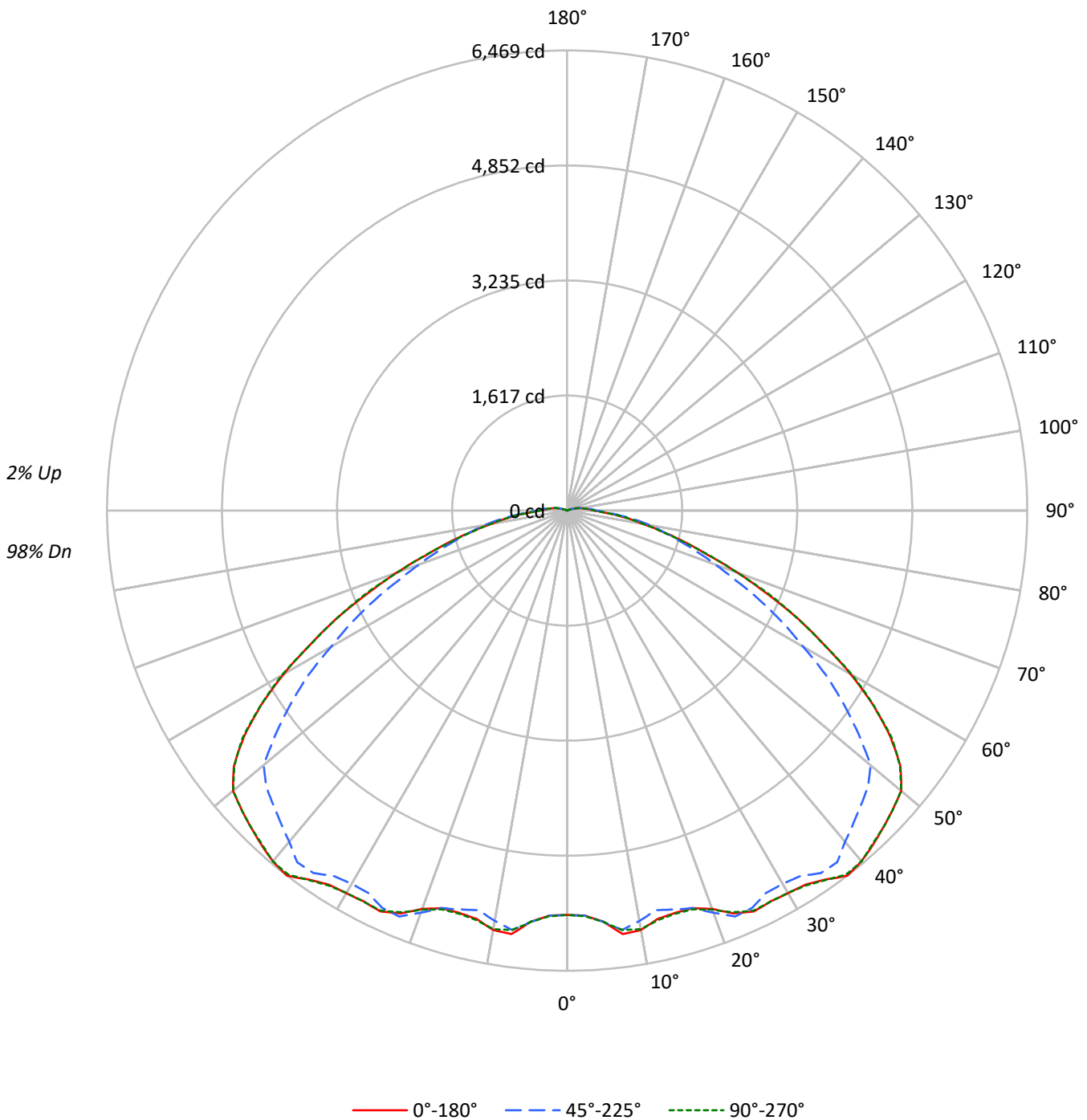
Input Watts (W): 155.5  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P294469

CATALOG NUMBER: BMK-24-WFL-UNV-L850-CD-U

### Luminous Intensity Polar Plot





TEST NUMBER: P294469

CATALOG NUMBER: BMK-24-WFL-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	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°	43818	43818	43818
5°	44411	44442	44436
10°	45903	44908	45794
15°	45280	44893	45369
20°	46856	47297	46946
25°	50088	49631	49990
30°	51723	50451	51666
35°	54999	54019	55052
40°	58883	55602	58870
45°	61269	56939	61275
50°	64375	58460	64339
55°	63717	54487	63966
60°	58875	49011	59203
65°	51757	43518	51709
70°	43223	37571	42936
75°	35368	33557	34631
80°	28771	31024	29129
85°	25144	27343	25521



TEST NUMBER: P294469

CATALOG NUMBER: BMK-24-WFL-UNV-L850-CD-U

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	560.4	2.3
10°-20°	1658.8	6.8
20°-30°	2821.6	11.5
30°-40°	3929.6	16.0
40°-50°	4702.1	19.2
50°-60°	4572.4	18.7
60°-70°	3243.8	13.2
70°-80°	1766.5	7.2
80°-90°	774.2	3.2
90°-100°	321.7	1.3
100°-110°	132.1	0.5
110°-120°	20.3	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°	5040.8	20.6
0°-40°	8970.3	36.6
0°-60°	18244.8	74.5
0°-90°	24029.4	98.1
90°-120°	474.1	1.9
90°-150°	474.6	1.9
90°-180°	475.0	1.9
0°-180°	24504.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	5684	5684	5684	5684	5684	
5°	5799	5789	5803	5791	5802	563
15°	5855	5781	5805	5770	5866	1670
25°	6216	6056	6160	6062	6204	2852
35°	6332	6337	6220	6317	6339	3987
45°	6291	6086	5846	6093	6291	4867
55°	5549	5133	4745	5143	5571	4907
65°	3564	3254	2996	3258	3560	3518
75°	1716	1608	1628	1613	1681	1840
85°	672	671	731	676	682	635
90°	375	404	413	403	380	215
95°	274	288	309	292	278	208
105°	120	121	119	122	120	130
115°	11	15	18	14	12	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: P294469

CATALOG NUMBER: BMK-24-WFL-UNV-L850-CD-U

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	5684.0	5684.0	5684.0	5684.0	5684.0
2.5°	5698.2	5694.8	5698.9	5700.2	5706.3
5°	5798.9	5789.4	5802.9	5791.4	5802.2
7.5°	6004.9	5957.6	5946.1	5942.7	5948.1
10°	5987.3	5953.5	5857.6	5952.2	5973.1
12.5°	5878.6	5843.4	5753.6	5840.1	5898.2
15°	5854.9	5780.6	5804.9	5769.8	5866.4
17.5°	5858.3	5792.1	5859.6	5786.7	5876.5
20°	5959.6	5917.1	6015.7	5912.3	5971.1
22.5°	6128.5	6054.2	6175.8	6031.2	6112.3
25°	6216.3	6055.5	6159.6	6061.6	6204.1
27.5°	6193.3	6086.6	6057.6	6085.9	6196.7
30°	6210.9	6150.8	6058.2	6140.6	6204.1
32.5°	6233.9	6198.1	6093.4	6194.0	6247.4
35°	6332.5	6337.2	6219.7	6316.9	6338.6
37.5°	6468.9	6319.6	6232.5	6309.5	6447.3
40°	6437.2	6236.6	6078.5	6235.9	6435.8
42.5°	6366.9	6181.8	5956.9	6184.5	6355.4
45°	6290.6	6085.9	5846.1	6093.4	6291.3
47.5°	6212.9	6049.5	5737.4	6042.0	6212.9
50°	6131.2	5839.4	5567.8	5840.7	6127.8
52.5°	5909.0	5532.7	5163.9	5532.7	5898.2
55°	5548.9	5132.9	4745.1	5143.0	5570.6
57.5°	5109.9	4743.1	4321.6	4738.4	5115.3
60°	4608.0	4230.4	3836.0	4257.4	4633.7
62.5°	4062.9	3794.1	3420.5	3770.4	4059.5
65°	3563.7	3254.4	2996.4	3257.8	3560.4
67.5°	3024.7	2780.2	2568.1	2776.2	3073.4
70°	2546.5	2342.5	2213.5	2342.5	2529.6
72.5°	2073.0	1969.7	1904.8	1965.6	2096.0
75°	1716.4	1607.6	1628.5	1613.0	1680.6
77.5°	1370.5	1316.5	1394.2	1317.2	1361.7
80°	1086.8	1075.3	1171.9	1072.0	1100.3
82.5°	871.3	858.5	949.7	854.5	880.8
85°	672.1	670.7	730.9	676.1	682.2
87.5°	496.5	514.0	541.7	516.7	497.1
90°	374.9	403.9	412.7	403.3	379.6
92.5°	320.8	340.4	353.3	339.8	326.2
95°	274.2	288.4	308.7	291.8	277.6
97.5°	232.4	245.9	260.1	245.9	234.4
100°	193.2	202.6	216.1	204.0	195.2
102.5°	159.4	161.4	168.2	164.1	158.7
105°	119.6	120.9	118.9	121.6	120.2
107.5°	86.5	85.1	79.7	87.1	85.8
110°	54.0	54.0	52.7	54.7	54.0



TEST NUMBER: P294469

CATALOG NUMBER: BMK-24-WFL-UNV-L850-CD-U

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	28.4	30.4	33.1	30.4	29.7
115°	10.8	14.9	17.6	14.2	11.5
117.5°	4.7	6.8	7.4	6.8	4.7
120°	4.1	4.7	4.1	4.1	4.1
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)