

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: P295504

Luminaire Tested: **BMK-24-MCL-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: P295504  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1904-251-5)  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: BMK-24-MCL-UNV-L840-CD-U  
Description: BENCHMARK HIGHBAY LED FIXTURE  
WITH MEDIUM CLEAR 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: 24629.0 lumens  
Efficiency: N/A  
Efficacy: 158.4 lumens/watt  
Spacing Criteria (0/90/45): 1.37 / 1.37 / 1.37  
Luminous Opening: Vertical Cylinder (Dia: 1.33' x H: 0.12')  
CIE Type: Direct

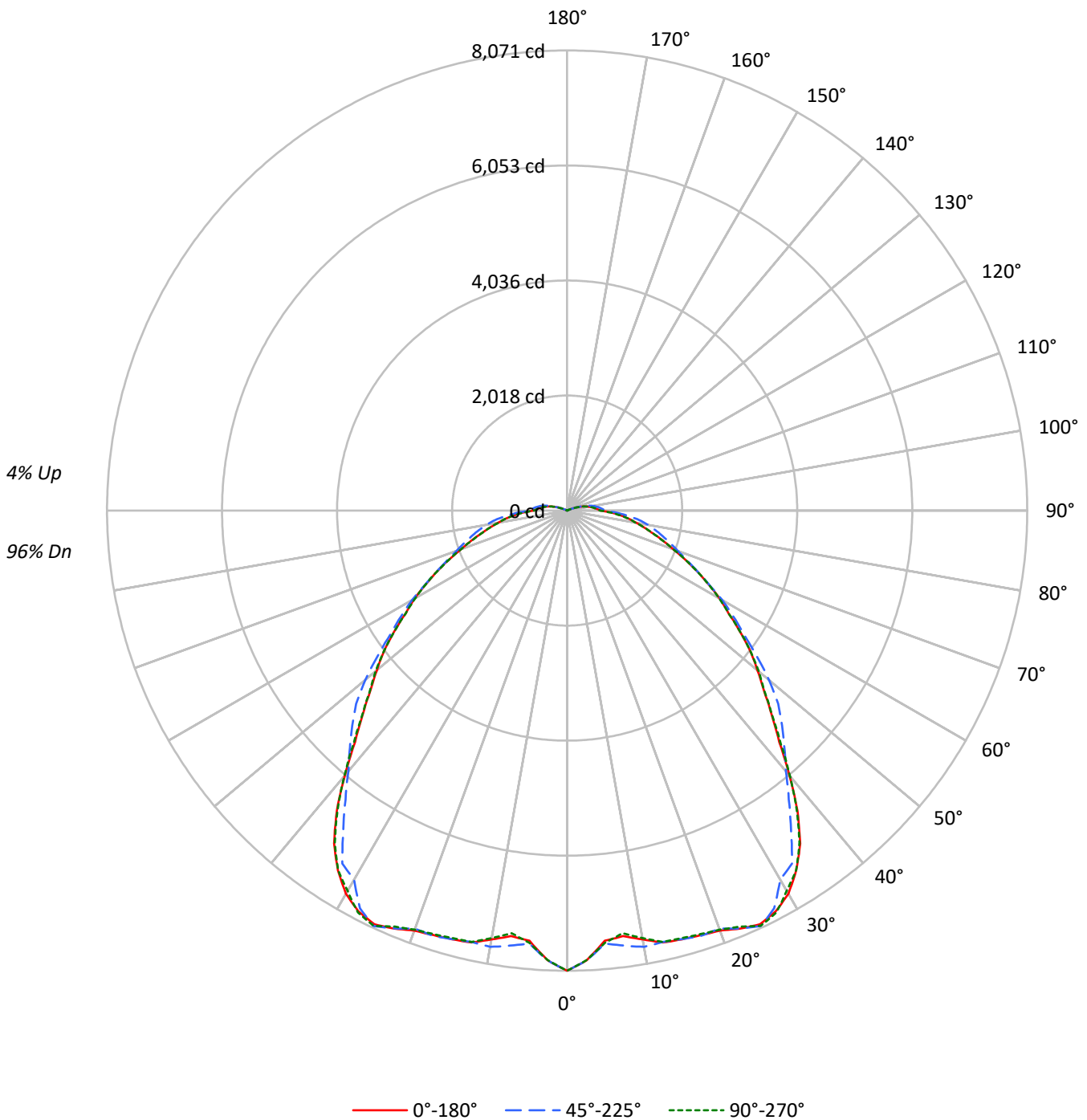
Input Watts (W): 155.5  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	50	30	10	0	
RCR																						
0	118	118	118	118	115	115	115	115	109	109	109	104	104	104	99	99	99	99	99	99	96	
1	107	102	97	93	104	99	95	91	94	91	88	90	87	84	86	83	81	86	83	81	79	
2	97	89	82	76	94	87	80	75	82	77	72	79	74	70	75	71	68	75	71	68	66	
3	89	78	70	63	86	76	69	62	73	66	61	69	64	59	66	62	58	66	62	58	55	
4	81	69	61	54	79	68	60	53	65	58	52	62	56	51	59	54	50	59	54	50	48	
5	75	62	53	46	73	61	52	46	58	51	45	56	49	44	54	48	44	54	48	44	41	
6	69	56	47	41	67	55	46	40	53	45	40	51	44	39	49	43	38	49	43	38	36	
7	64	51	42	36	62	50	42	36	48	41	35	46	40	35	45	39	34	45	39	34	32	
8	60	46	38	32	58	46	37	32	44	37	31	42	36	31	41	35	31	41	35	31	29	
9	56	43	34	29	54	42	34	29	40	33	28	39	33	28	38	32	28	38	32	28	26	
10	52	39	31	26	51	39	31	26	37	30	26	36	30	25	35	29	25	35	29	25	23	

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

	0°	45°	90°
0°	62219	62219	62219
5°	58005	58376	58269
10°	58551	59566	58377
15°	60201	60178	60040
20°	61637	61342	61489
25°	64514	64783	64736
30°	64629	62243	64143
35°	61911	59457	61704
40°	55528	54606	55617
45°	49415	51898	49560
50°	45761	48531	46021
55°	42515	43422	42549
60°	39505	40111	39341
65°	36485	36585	36455
70°	33551	34994	33668
75°	32121	35766	32224
80°	32507	38183	32218
85°	34848	40246	34702



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	733.1	3.0
10°-20°	2210.0	9.0
20°-30°	3651.8	14.8
30°-40°	4346.4	17.6
40°-50°	4053.6	16.5
50°-60°	3378.0	13.7
60°-70°	2527.4	10.3
70°-80°	1754.8	7.1
80°-90°	1063.5	4.3
90°-100°	569.1	2.3
100°-110°	295.8	1.2
110°-120°	44.9	0.2
120°-130°	0.7	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°	6594.9	26.8
0°-40°	10941.2	44.4
0°-60°	18372.8	74.6
0°-90°	23718.5	96.3
90°-120°	909.8	3.7
90°-150°	910.5	3.7
90°-180°	911.0	3.7
0°-180°	24629.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	8071	8071	8071	8071	8071	
5°	7574	7630	7622	7611	7608	728
15°	7784	7838	7781	7820	7764	2205
25°	8007	8003	8040	8017	8034	3664
35°	7128	7012	6846	7016	7105	4402
45°	5074	5253	5328	5262	5088	3947
55°	3702	3761	3782	3764	3705	3316
65°	2512	2541	2519	2540	2510	2490
75°	1559	1648	1736	1651	1564	1669
85°	932	958	1076	958	928	823
90°	589	628	659	623	580	340
95°	484	516	577	513	489	380
105°	272	277	309	274	274	284
115°	26	30	38	31	27	43
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: P295504

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

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	8070.8	8070.8	8070.8	8070.8	8070.8
2.5°	7895.9	7902.8	7894.9	7874.2	7889.0
5°	7573.9	7630.2	7622.3	7611.4	7608.4
7.5°	7527.4	7612.4	7697.4	7604.5	7476.1
10°	7637.1	7722.1	7769.5	7715.1	7614.4
12.5°	7760.6	7756.6	7751.7	7747.7	7747.7
15°	7784.3	7837.6	7781.3	7819.8	7763.5
17.5°	7806.0	7844.5	7819.8	7838.6	7789.2
20°	7839.6	7879.1	7802.1	7860.4	7820.8
22.5°	7935.4	7964.1	7932.5	7961.1	7898.9
25°	8006.6	8002.6	8040.1	8017.4	8034.2
27.5°	7924.6	7899.9	7866.3	7858.4	7948.3
30°	7760.6	7628.2	7474.1	7599.6	7702.3
32.5°	7481.0	7487.9	7340.7	7496.8	7477.1
35°	7128.4	7011.8	6845.8	7015.7	7104.6
37.5°	6634.4	6546.5	6387.5	6545.5	6614.7
40°	6070.4	6085.2	5969.6	6082.2	6080.2
42.5°	5505.3	5650.5	5638.7	5626.8	5547.8
45°	5073.6	5253.4	5328.5	5262.3	5088.4
47.5°	4684.4	4935.3	5018.3	4937.3	4695.3
50°	4358.4	4524.4	4622.2	4523.4	4383.1
52.5°	4047.2	4105.5	4186.5	4123.3	4052.2
55°	3702.5	3760.8	3781.5	3763.7	3705.4
57.5°	3359.7	3451.6	3455.5	3444.6	3357.7
60°	3092.0	3129.5	3139.4	3142.4	3079.1
62.5°	2784.8	2836.1	2800.6	2836.1	2791.7
65°	2512.1	2540.8	2519.0	2539.8	2510.1
67.5°	2231.6	2310.6	2276.0	2306.6	2238.5
70°	1976.7	2077.5	2061.7	2079.4	1983.6
72.5°	1767.3	1856.2	1892.7	1849.3	1758.4
75°	1558.8	1647.7	1735.7	1650.7	1563.8
77.5°	1393.9	1461.0	1585.5	1467.0	1391.9
80°	1227.9	1290.1	1442.3	1285.2	1217.0
82.5°	1093.6	1122.2	1275.3	1128.1	1087.6
85°	931.5	958.2	1075.8	958.2	927.6
87.5°	765.6	785.3	863.4	795.2	754.7
90°	588.8	628.3	658.9	623.3	579.9
92.5°	538.4	567.0	620.4	562.1	534.4
95°	484.0	515.7	576.9	512.7	489.0
97.5°	443.5	459.4	519.6	458.4	440.6
100°	393.2	409.0	470.2	404.0	387.2
102.5°	334.9	343.8	400.1	346.7	335.9
105°	271.7	276.6	309.2	273.6	273.6
107.5°	202.5	199.5	210.4	196.6	201.5
110°	130.4	121.5	131.4	121.5	132.4



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

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	71.1	64.2	77.1	65.2	70.1
115°	25.7	29.6	38.5	30.6	26.7
117.5°	6.9	11.9	13.8	11.9	6.9
120°	5.9	6.9	5.9	6.9	5.9
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)