

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: P295468

Luminaire Tested: **BMK-24-MFL-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: P295468
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1904-251-3)
Test Lab: INNOVATION CENTER(G3)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: BMK-24-MFL-UNV-L840-CD-U
Description: BENCHMARK HIGHBAY LED FIXTURE
WITH MEDIUM 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: 24017.0 lumens
Efficiency: N/A
Efficacy: 154.5 lumens/watt
Spacing Criteria (0/90/45): 1.33 / 1.33 / 1.36
Luminous Opening: Vertical Cylinder (Dia: 1.33' x H: 0.12')
CIE Type: Direct

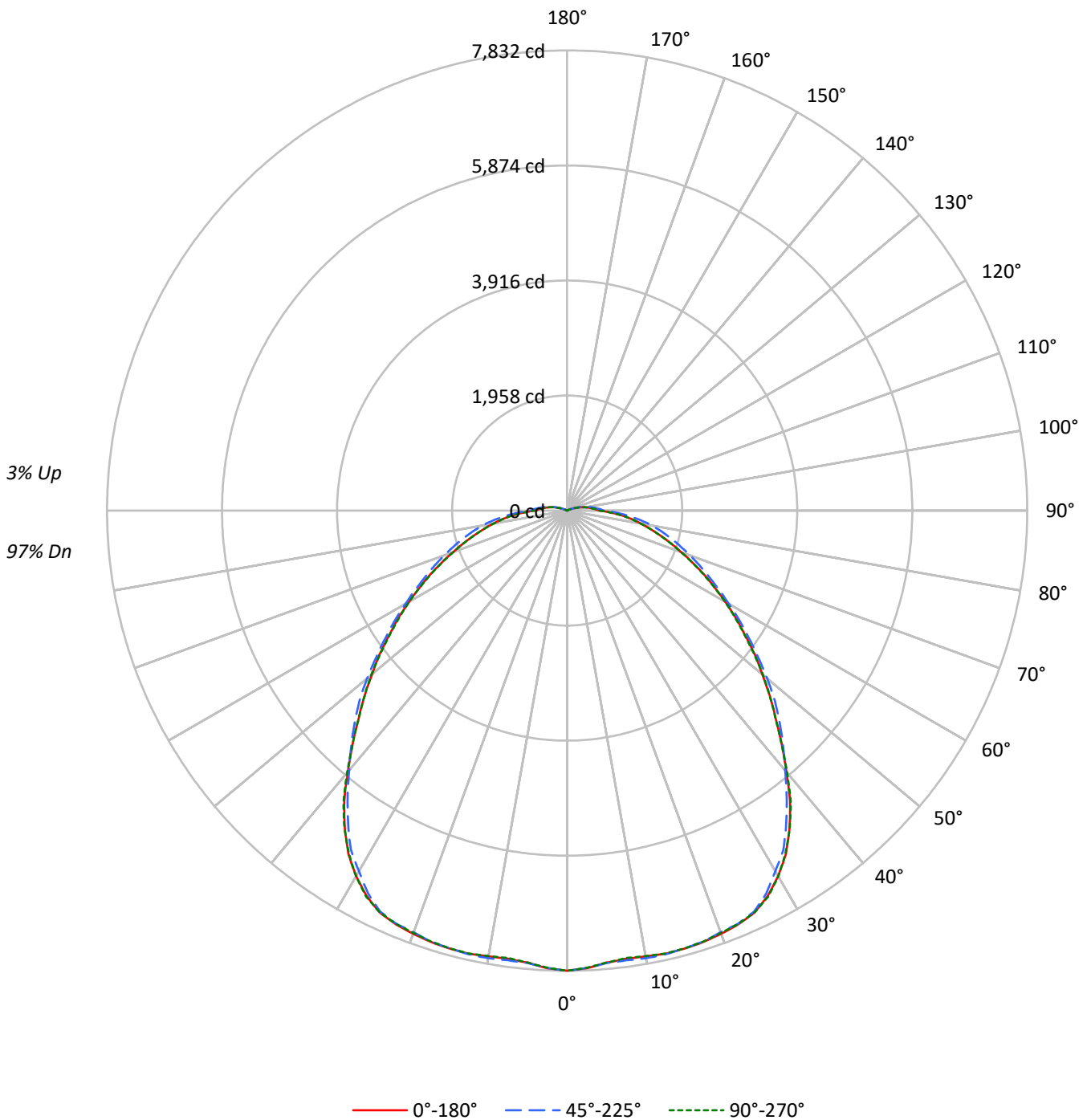
Input Watts (W): 155.5
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	0
RCR																		
0	118	118	118	118	115	115	115	115	109	109	109	104	104	104	99	99	99	97
1	107	102	97	93	104	99	95	91	94	91	88	90	87	84	86	83	81	79
2	97	89	81	75	94	86	80	74	82	77	72	78	74	70	75	71	68	65
3	89	78	69	63	86	76	68	62	72	66	60	69	64	59	66	62	58	55
4	81	69	60	53	79	67	59	53	64	57	52	62	56	51	59	54	49	47
5	75	62	53	46	72	60	52	45	58	50	45	56	49	44	53	48	43	41
6	69	56	47	40	67	54	46	40	52	45	39	50	44	39	48	43	38	36
7	64	50	42	35	62	49	41	35	48	40	35	46	39	34	44	38	34	32
8	60	46	38	32	58	45	37	31	44	36	31	42	36	31	41	35	30	28
9	56	42	34	28	54	42	34	28	40	33	28	39	32	28	38	32	27	26
10	52	39	31	26	51	38	31	26	37	30	25	36	30	25	35	29	25	23

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	60380	60380	60380
5°	59151	59189	59143
10°	59062	59312	59032
15°	59693	59648	59655
20°	60258	60056	60157
25°	60814	60679	60798
30°	59806	59016	59864
35°	57296	56463	57382
40°	53098	52808	53288
45°	48956	49860	48897
50°	45496	46658	45713
55°	42419	43317	42305
60°	39692	40589	39655
65°	37291	38627	37076
70°	34985	37705	34952
75°	33852	37705	33810
80°	33830	38596	33751
85°	34893	39371	34781



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	737.4	3.1
10°-20°	2183.8	9.1
20°-30°	3454.0	14.4
30°-40°	4085.1	17.0
40°-50°	3926.7	16.3
50°-60°	3355.5	14.0
60°-70°	2603.5	10.8
70°-80°	1836.5	7.6
80°-90°	1063.3	4.4
90°-100°	499.3	2.1
100°-110°	229.9	1.0
110°-120°	41.4	0.2
120°-130°	0.6	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°	6375.2	26.5
0°-40°	10460.3	43.6
0°-60°	17742.5	73.9
0°-90°	23245.8	96.8
90°-120°	770.6	3.2
90°-150°	771.2	3.2
90°-180°	771.0	3.2
0°-180°	24017.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	7832	7832	7832	7832	7832	
5°	7724	7726	7728	7718	7722	737
15°	7719	7726	7713	7718	7714	2184
25°	7548	7529	7531	7528	7546	3463
35°	6597	6554	6501	6561	6607	4106
45°	5026	5095	5119	5083	5020	3892
55°	3694	3746	3772	3750	3684	3319
65°	2568	2624	2660	2619	2553	2546
75°	1643	1724	1830	1730	1641	1747
85°	933	967	1052	967	930	828
90°	546	598	626	596	544	316
95°	427	450	491	449	429	327
105°	209	212	228	213	208	222
115°	25	32	42	32	25	36
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°	7832.3	7832.3	7832.3	7832.3	7832.3
2.5°	7794.7	7786.8	7789.8	7780.9	7786.8
5°	7723.5	7725.5	7728.5	7717.6	7722.5
7.5°	7692.9	7702.8	7720.6	7697.8	7680.0
10°	7703.8	7720.6	7736.4	7711.7	7699.8
12.5°	7724.5	7729.5	7735.4	7723.5	7722.5
15°	7718.6	7726.5	7712.7	7717.6	7713.6
17.5°	7699.8	7702.8	7692.9	7697.8	7691.9
20°	7664.2	7659.2	7638.5	7654.3	7651.3
22.5°	7621.7	7614.7	7608.8	7617.7	7612.8
25°	7547.5	7528.7	7530.7	7527.7	7545.5
27.5°	7393.2	7362.5	7341.8	7356.6	7408.0
30°	7181.5	7140.0	7086.6	7137.0	7188.5
32.5°	6930.3	6898.7	6850.2	6895.7	6917.5
35°	6597.0	6553.5	6501.1	6561.4	6606.9
37.5°	6234.0	6207.3	6139.1	6204.3	6252.8
40°	5804.8	5810.7	5773.1	5824.5	5825.5
42.5°	5405.2	5445.7	5442.8	5442.8	5405.2
45°	5026.4	5094.6	5119.3	5082.8	5020.4
47.5°	4682.2	4750.4	4793.0	4744.5	4679.2
50°	4333.1	4405.3	4443.8	4396.4	4353.8
52.5°	4024.5	4057.1	4094.7	4053.1	4007.7
55°	3694.1	3745.6	3772.3	3749.5	3684.2
57.5°	3406.3	3442.9	3474.6	3451.8	3386.5
60°	3106.6	3147.2	3176.8	3159.0	3103.7
62.5°	2827.7	2887.1	2908.8	2880.1	2820.8
65°	2567.6	2624.0	2659.6	2619.0	2552.8
67.5°	2308.5	2382.6	2439.0	2390.5	2300.5
70°	2061.2	2159.1	2221.4	2147.2	2059.2
72.5°	1851.5	1939.5	2019.7	1936.6	1843.6
75°	1642.8	1723.9	1829.8	1729.9	1640.8
77.5°	1453.9	1531.1	1646.8	1528.1	1445.0
80°	1277.9	1339.2	1457.9	1335.2	1274.9
82.5°	1105.8	1151.3	1267.0	1149.3	1101.8
85°	932.7	967.3	1052.4	967.3	929.7
87.5°	729.9	786.3	834.8	784.3	719.0
90°	546.0	598.4	626.1	596.4	544.0
92.5°	486.6	513.3	557.8	513.3	486.6
95°	427.3	450.0	490.6	449.0	429.2
97.5°	370.9	388.7	427.3	386.7	372.9
100°	319.5	328.4	364.0	330.3	317.5
102.5°	264.1	270.0	295.7	268.0	264.1
105°	208.7	211.7	227.5	212.6	207.7
107.5°	152.3	155.3	163.2	154.3	151.3
110°	100.9	102.9	112.8	102.9	101.9



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	58.4	63.3	73.2	63.3	58.4
115°	24.7	31.6	41.5	31.6	24.7
117.5°	7.9	12.9	15.8	12.9	6.9
120°	4.9	5.9	4.9	5.9	4.9
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)