

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: P295480

Luminaire Tested: **BMK-36-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: P295480
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-36-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

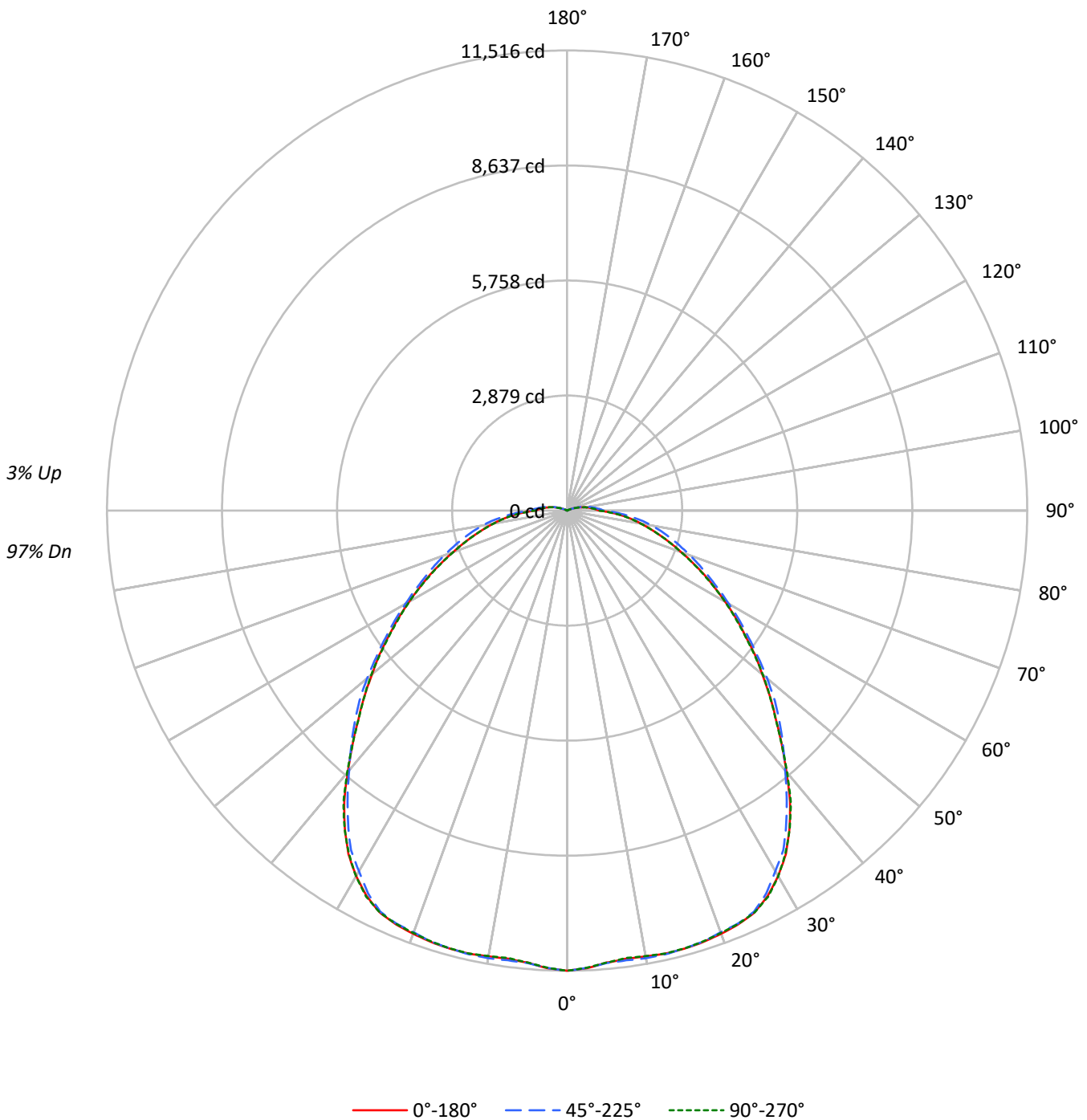
Lumens per Lamp: N/A
Luminaire Lumens: 35313.0 lumens
Efficiency: N/A
Efficacy: 145.3 lumens/watt
Spacing Criteria (0/90/45): 1.33 / 1.33 / 1.36
Luminous Opening: Vertical Cylinder (Dia: 1.33' x H: 0.12')
CIE Type: Direct

Input Watts (W): 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	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	97	
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	81	75	94	86	80	74	82	77	72	78	74	70	75	71	68	75	71	68	65	
3	89	78	69	63	86	76	68	62	72	66	60	69	64	59	66	62	58	66	62	58	55	
4	81	69	60	53	79	67	59	53	64	57	52	62	56	51	59	54	49	59	54	49	47	
5	75	62	53	46	72	60	52	45	58	50	45	56	49	44	53	48	43	53	48	43	41	
6	69	56	47	40	67	54	46	40	52	45	39	50	44	39	48	43	38	48	43	38	36	
7	64	50	42	35	62	49	41	35	48	40	35	46	39	34	44	38	34	44	38	34	32	
8	60	46	38	32	58	45	37	31	44	36	31	42	36	31	41	35	30	41	35	30	28	
9	56	42	34	28	54	42	34	28	40	33	28	39	32	28	38	32	27	38	32	27	26	
10	52	39	31	26	51	38	31	26	37	30	25	36	30	25	35	29	25	35	29	25	23	

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	88779	88779	88779
5°	86972	87027	86961
10°	86841	87209	86796
15°	87769	87702	87712
20°	88599	88302	88450
25°	89417	89218	89394
30°	87935	86772	88020
35°	84244	83019	84370
40°	78071	77646	78351
45°	71981	73313	71896
50°	66893	68603	67214
55°	62370	63690	62203
60°	58361	59680	58305
65°	54829	56794	54513
70°	51439	55438	51390
75°	49774	55436	49714
80°	49741	56748	49624
85°	51301	57885	51140



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	1084.3	3.1
10°-20°	3210.9	9.1
20°-30°	5078.5	14.4
30°-40°	6006.4	17.0
40°-50°	5773.6	16.3
50°-60°	4933.7	14.0
60°-70°	3828.0	10.8
70°-80°	2700.3	7.6
80°-90°	1563.3	4.4
90°-100°	734.1	2.1
100°-110°	338.0	1.0
110°-120°	60.9	0.2
120°-130°	0.9	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°	9373.7	26.5
0°-40°	15380.1	43.6
0°-60°	26087.4	73.9
0°-90°	34179.0	96.8
90°-120°	1133.0	3.2
90°-150°	1133.9	3.2
90°-180°	1134.0	3.2
0°-180°	35313.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	11516	11516	11516	11516	11516	
5°	11356	11359	11363	11347	11355	###
15°	11349	11360	11340	11347	11342	3211
25°	11097	11070	11073	11068	11094	5092
35°	9700	9636	9559	9647	9714	6038
45°	7390	7491	7527	7473	7382	5723
55°	5432	5507	5546	5513	5417	4880
65°	3775	3858	3910	3851	3753	3744
75°	2416	2535	2690	2544	2413	2569
85°	1371	1422	1547	1422	1367	1217
90°	803	880	920	877	800	465
95°	628	662	721	660	631	481
105°	307	311	334	313	305	326
115°	36	46	61	46	36	53
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°	11516.1	11516.1	11516.1	11516.1	11516.1
2.5°	11460.9	11449.2	11453.6	11440.5	11449.2
5°	11356.2	11359.1	11363.4	11347.4	11354.7
7.5°	11311.1	11325.6	11351.8	11318.4	11292.2
10°	11327.1	11351.8	11375.1	11338.7	11321.3
12.5°	11357.6	11364.9	11373.6	11356.2	11354.7
15°	11348.9	11360.5	11340.2	11347.4	11341.6
17.5°	11321.3	11325.6	11311.1	11318.4	11309.6
20°	11268.9	11261.6	11231.1	11254.4	11250.0
22.5°	11206.4	11196.2	11187.5	11200.6	11193.3
25°	11097.3	11069.7	11072.6	11068.2	11094.4
27.5°	10870.5	10825.4	10794.8	10816.6	10892.3
30°	10559.2	10498.2	10419.6	10493.8	10569.4
32.5°	10189.9	10143.3	10072.1	10139.0	10171.0
35°	9699.8	9635.8	9558.7	9647.4	9714.3
37.5°	9166.1	9126.8	9026.5	9122.5	9193.7
40°	8534.9	8543.7	8488.4	8564.0	8565.5
42.5°	7947.4	8007.1	8002.7	8002.7	7947.4
45°	7390.5	7490.8	7527.2	7473.3	7381.7
47.5°	6884.4	6984.7	7047.3	6976.0	6880.0
50°	6371.0	6477.2	6533.9	6464.1	6401.6
52.5°	5917.3	5965.3	6020.6	5959.5	5892.6
55°	5431.6	5507.2	5546.5	5513.0	5417.0
57.5°	5008.4	5062.2	5108.7	5075.3	4979.3
60°	4567.8	4627.4	4671.0	4644.8	4563.4
62.5°	4157.7	4244.9	4276.9	4234.8	4147.5
65°	3775.2	3858.1	3910.5	3850.8	3753.4
67.5°	3394.2	3503.3	3586.2	3514.9	3382.6
70°	3030.6	3174.6	3266.2	3157.2	3027.7
72.5°	2722.3	2851.8	2969.6	2847.4	2710.7
75°	2415.5	2534.7	2690.3	2543.5	2412.6
77.5°	2137.7	2251.2	2421.3	2246.8	2124.6
80°	1878.9	1969.0	2143.6	1963.2	1874.5
82.5°	1625.8	1692.7	1862.9	1689.8	1620.0
85°	1371.3	1422.2	1547.3	1422.2	1367.0
87.5°	1073.2	1156.1	1227.4	1153.2	1057.2
90°	802.7	879.8	920.5	876.9	799.8
92.5°	715.5	754.8	820.2	754.8	715.5
95°	628.2	661.7	721.3	660.2	631.1
97.5°	545.3	571.5	628.2	568.6	548.2
100°	469.7	482.8	535.2	485.7	466.8
102.5°	388.3	397.0	434.8	394.1	388.3
105°	306.8	311.2	334.5	312.7	305.4
107.5°	224.0	228.3	239.9	226.9	222.5
110°	148.3	151.2	165.8	151.2	149.8



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	85.8	93.1	107.6	93.1	85.8
115°	36.4	46.5	61.1	46.5	36.4
117.5°	11.6	18.9	23.3	18.9	10.2
120°	7.3	8.7	7.3	8.7	7.3
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)