

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: P295486

Luminaire Tested: **BMK-12-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: P295486
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-12-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: 12254.0 lumens
Efficiency: N/A
Efficacy: 164.9 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

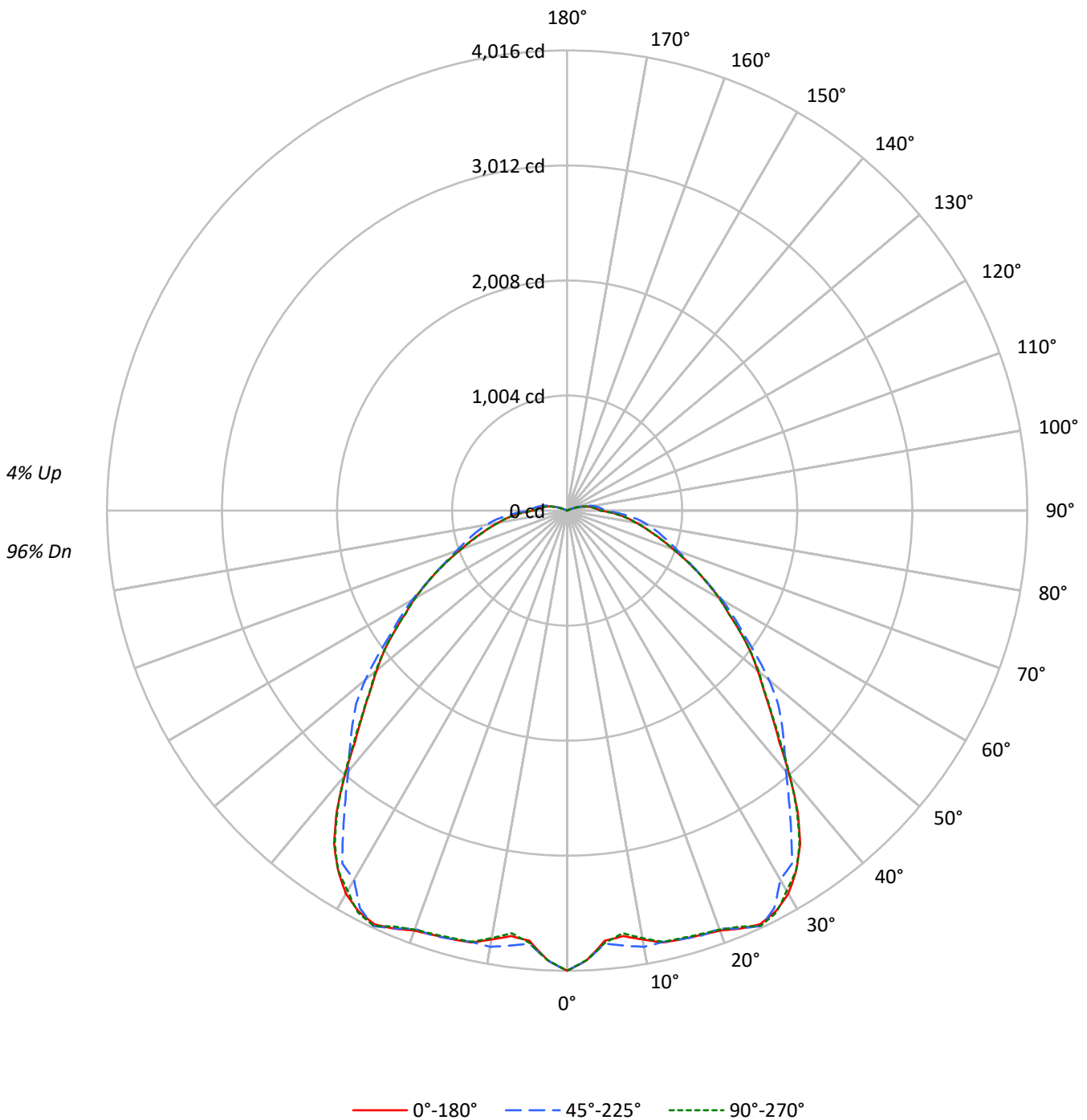
Input Watts (W): 74.3
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	30957	30957	30957
5°	28860	29044	28991
10°	29132	29636	29045
15°	29953	29941	29873
20°	30667	30521	30594
25°	32098	32233	32209
30°	32155	30968	31914
35°	30804	29582	30701
40°	27628	27168	27672
45°	24586	25822	24658
50°	22768	24146	22898
55°	21153	21605	21170
60°	19656	19957	19574
65°	18153	18202	18138
70°	16693	17411	16751
75°	15982	17795	16031
80°	16173	18997	16030
85°	17340	20022	17265



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	364.7	3.0
10°-20°	1099.6	9.0
20°-30°	1816.9	14.8
30°-40°	2162.5	17.6
40°-50°	2016.9	16.5
50°-60°	1680.7	13.7
60°-70°	1257.5	10.3
70°-80°	873.1	7.1
80°-90°	529.2	4.3
90°-100°	283.1	2.3
100°-110°	147.2	1.2
110°-120°	22.3	0.2
120°-130°	0.4	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°	3281.2	26.8
0°-40°	5443.7	44.4
0°-60°	9141.3	74.6
0°-90°	11801.0	96.3
90°-120°	452.7	3.7
90°-150°	453.0	3.7
90°-180°	453.0	3.7
0°-180°	12254.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4016	4016	4016	4016	4016	
5°	3768	3796	3792	3787	3786	362
15°	3873	3900	3872	3891	3863	1097
25°	3984	3982	4000	3989	3997	1823
35°	3547	3489	3406	3491	3535	2190
45°	2524	2614	2651	2618	2532	1964
55°	1842	1871	1882	1873	1844	1650
65°	1250	1264	1253	1264	1249	1239
75°	776	820	864	821	778	830
85°	464	477	535	477	462	409
90°	293	313	328	310	288	169
95°	241	257	287	255	243	189
105°	135	138	154	136	136	141
115°	13	15	19	15	13	22
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: P295486

CATALOG NUMBER: BMK-12-MCL-UNV-L840-CD-U

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4015.6	4015.6	4015.6	4015.6	4015.6
2.5°	3928.6	3932.0	3928.1	3917.7	3925.1
5°	3768.3	3796.3	3792.4	3787.0	3785.5
7.5°	3745.2	3787.5	3829.8	3783.6	3719.7
10°	3799.8	3842.1	3865.6	3838.6	3788.5
12.5°	3861.2	3859.3	3856.8	3854.8	3854.8
15°	3873.0	3899.6	3871.5	3890.7	3862.7
17.5°	3883.8	3903.0	3890.7	3900.1	3875.5
20°	3900.5	3920.2	3881.9	3910.9	3891.2
22.5°	3948.2	3962.5	3946.7	3961.0	3930.0
25°	3983.6	3981.6	4000.3	3989.0	3997.4
27.5°	3942.8	3930.5	3913.8	3909.9	3954.6
30°	3861.2	3795.4	3718.7	3781.1	3832.2
32.5°	3722.1	3725.6	3652.3	3730.0	3720.2
35°	3546.7	3488.7	3406.1	3490.6	3534.9
37.5°	3300.9	3257.2	3178.0	3256.7	3291.1
40°	3020.3	3027.6	2970.1	3026.2	3025.2
42.5°	2739.1	2811.4	2805.5	2799.6	2760.3
45°	2524.3	2613.8	2651.2	2618.2	2531.7
47.5°	2330.7	2455.5	2496.8	2456.5	2336.1
50°	2168.5	2251.1	2299.7	2250.6	2180.8
52.5°	2013.7	2042.7	2083.0	2051.5	2016.1
55°	1842.1	1871.1	1881.5	1872.6	1843.6
57.5°	1671.6	1717.3	1719.3	1713.9	1670.6
60°	1538.4	1557.1	1562.0	1563.5	1532.0
62.5°	1385.5	1411.1	1393.4	1411.1	1389.0
65°	1249.9	1264.1	1253.3	1263.6	1248.9
67.5°	1110.3	1149.6	1132.4	1147.7	1113.7
70°	983.5	1033.6	1025.8	1034.6	986.9
72.5°	879.3	923.5	941.7	920.1	874.9
75°	775.6	819.8	863.6	821.3	778.0
77.5°	693.5	726.9	788.9	729.9	692.5
80°	610.9	641.9	717.6	639.4	605.5
82.5°	544.1	558.3	634.5	561.3	541.1
85°	463.5	476.8	535.2	476.8	461.5
87.5°	380.9	390.7	429.6	395.7	375.5
90°	292.9	312.6	327.8	310.1	288.5
92.5°	267.9	282.1	308.7	279.7	265.9
95°	240.8	256.6	287.0	255.1	243.3
97.5°	220.7	228.5	258.5	228.1	219.2
100°	195.6	203.5	234.0	201.0	192.7
102.5°	166.6	171.0	199.1	172.5	167.1
105°	135.2	137.6	153.8	136.1	136.1
107.5°	100.8	99.3	104.7	97.8	100.3
110°	64.9	60.5	65.4	60.5	65.9



TEST NUMBER: P295486

CATALOG NUMBER: BMK-12-MCL-UNV-L840-CD-U

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	35.4	31.9	38.3	32.4	34.9
115°	12.8	14.7	19.2	15.2	13.3
117.5°	3.4	5.9	6.9	5.9	3.4
120°	2.9	3.4	2.9	3.4	2.9
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)