

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: P294576

Luminaire Tested: **BMK-24-NCL-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: P294576
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1903-198-7)
Test Lab: INNOVATION CENTER(G3)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: BMK-24-NCL-UNV-L840-CD-U
Description: BENCHMARK HIGHBAY LED FIXTURE
WITH NARROW 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: 24511.0 lumens
Efficiency: N/A
Efficacy: 157.6 lumens/watt
Spacing Criteria (0/90/45): 1.08 / 1.08 / 1.11
Luminous Opening: Vertical Cylinder (Dia: 1.33' x H: 0.12')
CIE Type: Direct

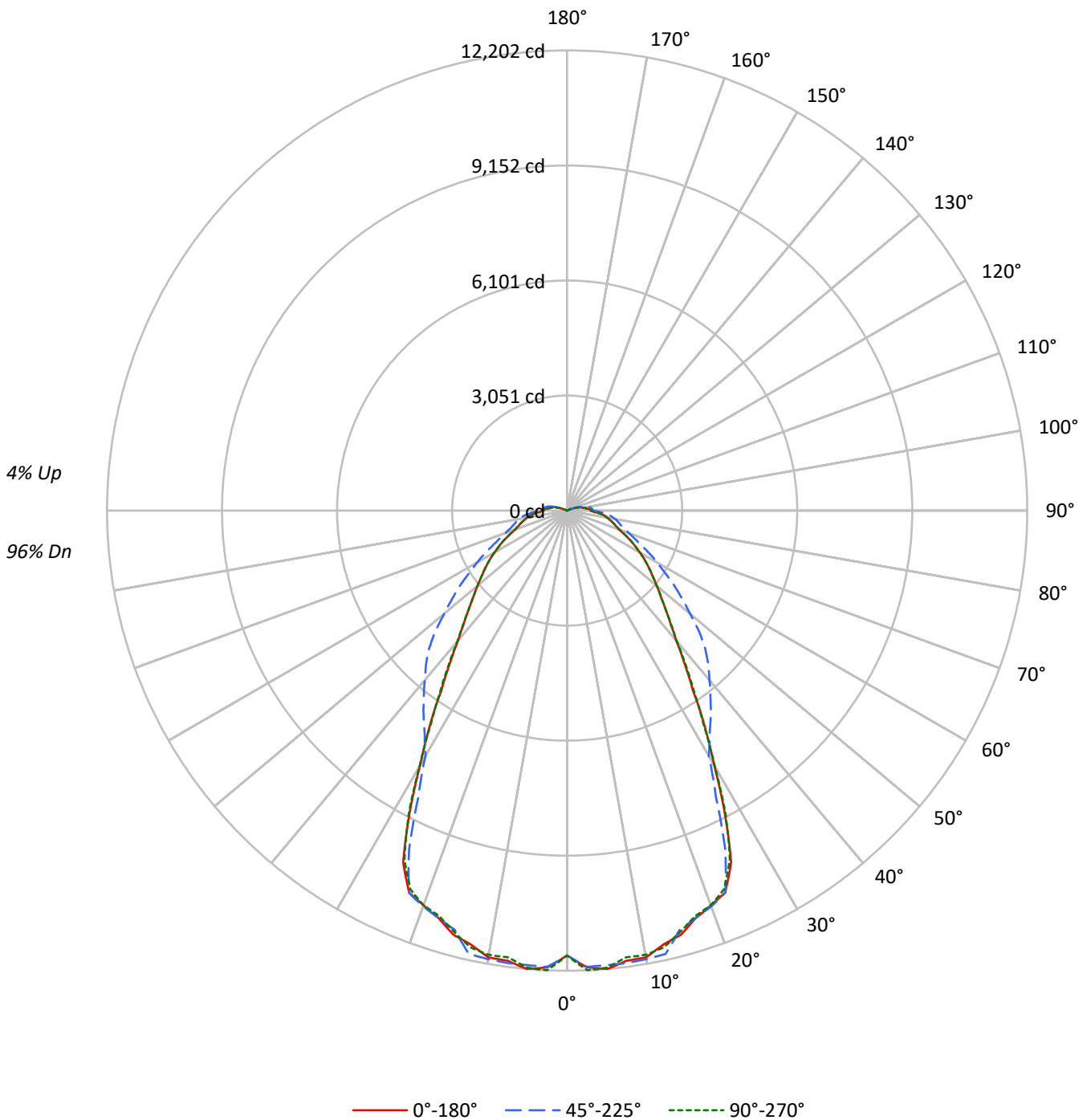
Input Watts (W): 155.5
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	103	103	103	98	98	98	96				
1	108	103	99	95	105	100	96	93	95	92	89	91	88	86	86	84	82	80				
2	99	91	84	79	96	89	83	78	84	79	75	81	76	73	77	74	71	68				
3	91	81	73	67	88	79	72	66	76	70	65	72	67	63	69	65	61	59				
4	84	73	65	58	82	71	64	58	68	62	56	65	60	55	63	58	54	52				
5	78	66	58	51	76	65	57	51	62	55	50	60	54	49	58	52	48	46				
6	73	60	52	46	71	59	51	45	57	50	45	55	49	44	53	48	43	41				
7	68	55	47	41	66	54	46	41	52	45	40	51	44	40	49	43	39	37				
8	64	51	43	37	62	50	42	37	48	42	37	47	41	36	45	40	36	34				
9	60	47	39	34	58	46	39	34	45	38	34	44	38	33	42	37	33	31				
10	56	44	36	31	55	43	36	31	42	35	31	41	35	31	40	34	30	29				

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	90971	90971	90971
5°	93454	92669	93192
10°	92211	92597	91718
15°	90049	89039	89473
20°	87579	87832	87548
25°	82904	79924	82224
30°	64928	62602	65213
35°	50537	57642	50974
40°	41202	53705	41349
45°	35865	50410	35884
50°	32563	44677	32584
55°	30489	39745	30327
60°	28479	35209	28479
65°	26652	31468	26652
70°	24973	29612	24939
75°	26011	30235	25927
80°	28573	34267	28520
85°	32334	39101	32259



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	1148.6	4.7
10°-20°	3264.7	13.3
20°-30°	4481.1	18.3
30°-40°	3928.9	16.0
40°-50°	3362.6	13.7
50°-60°	2723.1	11.1
60°-70°	2042.5	8.3
70°-80°	1487.7	6.1
80°-90°	1018.3	4.2
90°-100°	629.6	2.6
100°-110°	365.5	1.5
110°-120°	57.7	0.2
120°-130°	0.8	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°	8894.3	36.3
0°-40°	12823.2	52.3
0°-60°	18908.9	77.1
0°-90°	23457.4	95.7
90°-120°	1052.8	4.3
90°-150°	1053.6	4.3
90°-180°	1054.0	4.3
0°-180°	24511.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	11800	11800	11800	11800	11800	
5°	12202	12090	12100	12124	12168	###
15°	11644	11527	11513	11513	11569	3271
25°	10289	9903	9919	9919	10205	4553
35°	5819	6156	6637	6209	5869	3707
45°	3682	4287	5176	4251	3684	2870
55°	2655	3021	3461	3023	2641	2373
65°	1835	2102	2167	2092	1835	1819
75°	1262	1433	1467	1425	1258	1336
85°	864	939	1045	939	862	748
90°	635	659	691	647	617	360
95°	541	549	651	559	545	428
105°	336	344	430	338	332	339
115°	36	38	50	38	36	56
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°	11800.5	11800.5	11800.5	11800.5	11800.5
2.5°	12122.1	12035.7	12108.0	12156.3	12200.5
5°	12202.5	12089.9	12100.0	12124.1	12168.3
7.5°	12041.7	11921.1	12100.0	12011.5	11949.2
10°	12027.6	11832.6	12077.9	11915.1	11963.3
12.5°	11784.4	11764.3	12041.7	11842.7	11860.8
15°	11643.7	11527.1	11513.1	11513.1	11569.3
17.5°	11332.2	11261.8	11326.1	11292.0	11273.9
20°	11139.2	11107.1	11171.4	11203.5	11135.2
22.5°	10956.3	10799.5	10964.3	10827.7	10867.9
25°	10289.0	9903.1	9919.2	9919.2	10204.6
27.5°	9046.8	8821.7	8538.3	8853.9	9115.2
30°	7796.6	7863.0	7517.3	7848.9	7830.8
32.5°	6787.6	6974.6	7030.8	6982.6	6737.4
35°	5818.8	6156.5	6636.9	6208.8	5869.1
37.5°	5105.3	5569.6	6245.0	5559.6	5163.6
40°	4504.3	5057.1	5871.1	5081.2	4520.4
42.5°	4052.1	4659.1	5539.5	4635.0	4064.1
45°	3682.3	4287.2	5175.7	4251.1	3684.3
47.5°	3364.7	3943.5	4741.5	3945.6	3364.7
50°	3101.4	3571.7	4255.1	3569.7	3103.4
52.5°	2854.1	3292.3	3841.0	3268.2	2862.2
55°	2655.2	3021.0	3461.2	3023.0	2641.1
57.5°	2436.1	2773.7	3075.2	2769.7	2446.1
60°	2229.0	2530.5	2755.7	2508.4	2229.0
62.5°	2026.0	2309.4	2454.2	2311.5	2030.1
65°	1835.1	2102.4	2166.7	2092.4	1835.1
67.5°	1640.1	1901.4	1931.6	1889.4	1650.2
70°	1471.3	1732.6	1744.6	1714.5	1469.3
72.5°	1356.7	1567.8	1581.8	1571.8	1356.7
75°	1262.3	1433.1	1467.3	1425.1	1258.2
77.5°	1163.8	1304.5	1382.9	1306.5	1171.8
80°	1079.3	1183.9	1294.4	1185.9	1077.3
82.5°	990.9	1069.3	1191.9	1073.3	999.0
85°	864.3	938.7	1045.2	938.7	862.3
87.5°	703.5	795.9	862.3	789.9	691.4
90°	635.1	659.3	691.4	647.2	617.1
92.5°	653.2	617.1	671.3	613.0	627.1
95°	540.7	548.7	651.2	558.8	544.7
97.5°	488.4	510.5	619.1	500.5	486.4
100°	430.1	466.3	556.8	458.3	432.1
102.5°	391.9	416.1	510.5	422.1	398.0
105°	335.7	343.7	430.1	337.7	331.6
107.5°	251.2	251.2	283.4	253.3	247.2
110°	166.8	158.8	170.8	154.8	166.8



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	88.4	84.4	98.5	82.4	86.4
115°	36.2	38.2	50.2	38.2	36.2
117.5°	10.0	16.1	18.1	16.1	10.0
120°	6.0	8.0	6.0	8.0	6.0
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)