

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: P294589

Luminaire Tested: **BMK-36-NCL-UNV-L850-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: P294589  
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-36-NCL-UNV-L850-CD-U  
Description: BENCHMARK HIGHBAY LED FIXTURE  
WITH NARROW CLEAR LENS  
Light Source: (528) 80 CRI 5000K LEDS  
Ballast/Driver: ELECTRONIC DRIVER  
Luminaire Equipment: Sample No.   Condition   Description

**Summary**

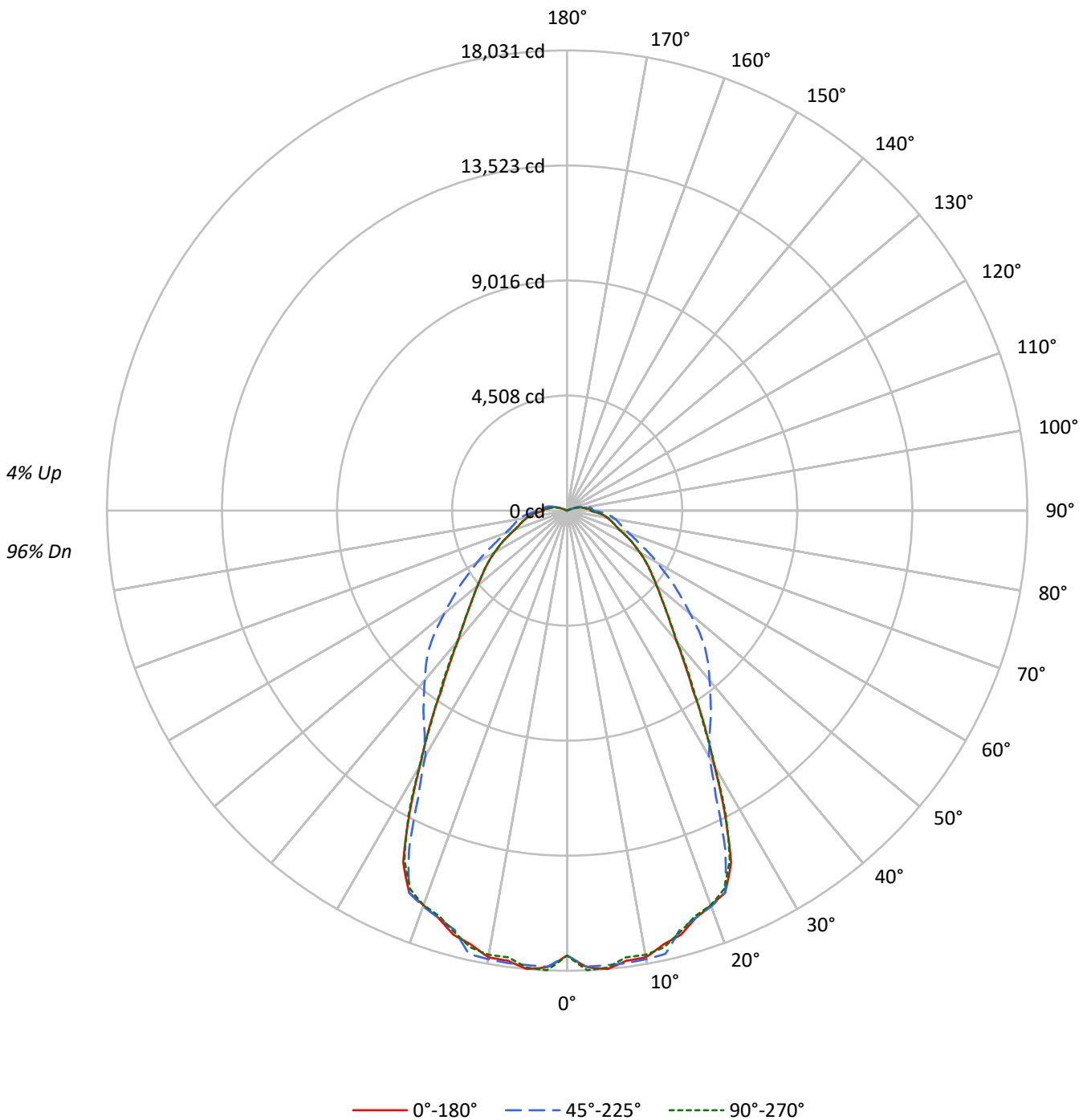
Lumens per Lamp: N/A  
Luminaire Lumens: 36218.0 lumens  
Efficiency: N/A  
Efficacy: 149.0 lumens/watt  
Spacing Criteria (0/90/45): 1.08 / 1.08 / 1.11  
Luminous Opening: Vertical Cylinder (Dia: 1.33' x H: 0.12')  
CIE Type: Direct

Input Watts (W): 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	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°	134421	134421	134421
5°	138089	136929	137702
10°	136254	136823	135525
15°	133058	131565	132208
20°	129409	129783	129362
25°	122500	118098	121496
30°	95940	92502	96361
35°	74675	85173	75320
40°	60882	79356	61099
45°	52994	74486	53022
50°	48116	66015	48147
55°	45051	58727	44812
60°	42082	52024	42082
65°	39382	46498	39382
70°	36900	43756	36849
75°	38432	44676	38311
80°	42222	50636	42143
85°	47777	57777	47665



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	1697.1	4.7
10°-20°	4823.9	13.3
20°-30°	6621.3	18.3
30°-40°	5805.4	16.0
40°-50°	4968.6	13.7
50°-60°	4023.7	11.1
60°-70°	3018.1	8.3
70°-80°	2198.2	6.1
80°-90°	1504.7	4.2
90°-100°	930.3	2.6
100°-110°	540.0	1.5
110°-120°	85.3	0.2
120°-130°	1.2	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°	13142.3	36.3
0°-40°	18947.8	52.3
0°-60°	27940.1	77.1
0°-90°	34661.2	95.7
90°-120°	1555.6	4.3
90°-150°	1556.8	4.3
90°-180°	1557.0	4.3
0°-180°	36218.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	17437	17437	17437	17437	17437	
5°	18031	17864	17879	17915	17980	###
15°	17205	17033	17012	17012	17095	4834
25°	15203	14633	14657	14657	15078	6728
35°	8598	9097	9807	9174	8672	5477
45°	5441	6335	7648	6282	5444	4241
55°	3923	4464	5114	4467	3902	3506
65°	2712	3107	3202	3092	2712	2688
75°	1865	2118	2168	2106	1859	1974
85°	1277	1387	1544	1387	1274	1105
90°	938	974	1022	956	912	532
95°	799	811	962	826	805	632
105°	496	508	636	499	490	501
115°	54	56	74	56	54	83
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: P294589

CATALOG NUMBER: BMK-36-NCL-UNV-L850-CD-U

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	17436.7	17436.7	17436.7	17436.7	17436.7
2.5°	17911.9	17784.1	17891.1	17962.3	18027.7
5°	18030.7	17864.3	17879.2	17914.8	17980.2
7.5°	17793.1	17614.9	17879.2	17748.5	17656.4
10°	17772.3	17484.2	17846.5	17606.0	17677.2
12.5°	17412.9	17383.2	17793.1	17499.0	17525.8
15°	17205.0	17032.7	17012.0	17012.0	17095.1
17.5°	16744.7	16640.7	16735.8	16685.3	16658.5
20°	16459.5	16412.0	16507.1	16554.6	16453.6
22.5°	16189.3	15957.6	16201.2	15999.2	16058.6
25°	15203.2	14633.0	14656.8	14656.8	15078.5
27.5°	13367.8	13035.2	12616.4	13082.7	13468.8
30°	11520.5	11618.5	11107.7	11597.7	11571.0
32.5°	10029.6	10305.8	10388.9	10317.7	9955.3
35°	8598.0	9097.0	9806.8	9174.2	8672.3
37.5°	7543.7	8229.8	9227.7	8214.9	7629.8
40°	6655.7	7472.4	8675.3	7508.1	6679.5
42.5°	5987.4	6884.4	8185.2	6848.7	6005.3
45°	5441.0	6334.9	7647.7	6281.5	5443.9
47.5°	4971.7	5827.1	7006.1	5830.0	4971.7
50°	4582.7	5277.6	6287.4	5274.7	4585.6
52.5°	4217.3	4864.8	5675.6	4829.2	4229.2
55°	3923.3	4463.9	5114.3	4466.8	3902.5
57.5°	3599.6	4098.6	4544.0	4092.6	3614.4
60°	3293.7	3739.2	4071.8	3706.5	3293.7
62.5°	2993.7	3412.5	3626.3	3415.5	2999.7
65°	2711.6	3106.6	3201.6	3091.7	2711.6
67.5°	2423.5	2809.6	2854.1	2791.8	2438.3
70°	2174.0	2560.1	2577.9	2533.4	2171.0
72.5°	2004.7	2316.6	2337.4	2322.5	2004.7
75°	1865.1	2117.6	2168.1	2105.7	1859.2
77.5°	1719.6	1927.5	2043.3	1930.5	1731.5
80°	1594.9	1749.3	1912.7	1752.3	1591.9
82.5°	1464.2	1580.0	1761.2	1586.0	1476.1
85°	1277.1	1387.0	1544.4	1387.0	1274.1
87.5°	1039.5	1176.1	1274.1	1167.2	1021.7
90°	938.5	974.1	1021.7	956.3	911.8
92.5°	965.2	911.8	992.0	905.8	926.6
95°	798.9	810.8	962.3	825.7	804.9
97.5°	721.7	754.4	914.7	739.5	718.7
100°	635.6	689.0	822.7	677.2	638.5
102.5°	579.1	614.8	754.4	623.7	588.1
105°	496.0	507.9	635.6	499.0	490.0
107.5°	371.2	371.2	418.8	374.2	365.3
110°	246.5	234.6	252.4	228.7	246.5



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	130.7	124.7	145.5	121.8	127.7
115°	53.5	56.4	74.2	56.4	53.5
117.5°	14.8	23.8	26.7	23.8	14.8
120°	8.9	11.9	8.9	11.9	8.9
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)