

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: P381673

Luminaire Tested: **BMK-70-NCL-UNV-L840-CD-U**

Issue Date: 2/4/2020

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: P381673
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1908-468-3)
Test Lab: INNOVATIONS CENTER(G2)
Issue Date: 2/4/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: BMK-70-NCL-UNV-L840-CD-U
Description: BENCHMARK HIGHBAY LED FIXTURE WITH NARROW CLEAR LENS

Light Source: -
Ballast/Driver: -

Luminaire Equipment: Sample No. Condition Description

Summary

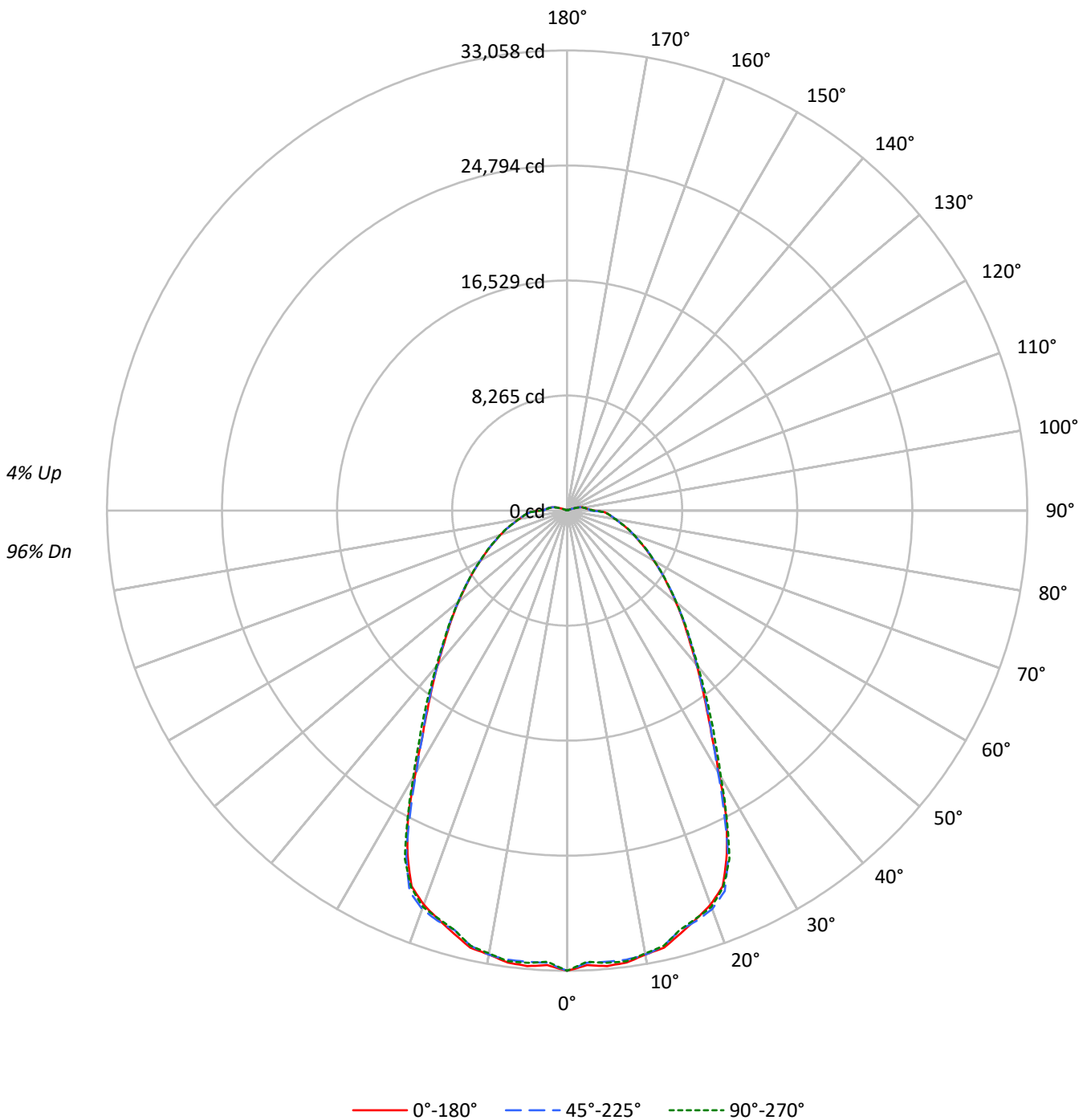
Lumens per Lamp: N/A
Luminaire Lumens: 69027.9 lumens
Efficiency: N/A
Efficacy: 137.9 lumens/watt
Spacing Criteria (0/90/45): 1.07 / 1.07 / 1.07
Luminous Opening: Vertical Cylinder (Dia: 1.33' x H: 0.12')
CIE Type: Direct

Input Watts (W): 500.7
Input Voltage (V): NR
Input Current (A_{in}): 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	103	103	103	98	98	98	96
1	107	103	98	94	104	100	96	92	95	92	89	90	88	85	86	84	82	80
2	98	90	84	78	95	88	82	77	84	79	74	80	76	72	76	73	70	68
3	91	80	73	66	88	79	71	65	75	69	64	72	67	62	69	64	61	58
4	84	72	64	57	81	71	63	57	68	61	56	65	59	54	62	57	53	51
5	77	65	57	50	75	64	56	50	61	54	49	59	53	48	57	52	47	45
6	72	59	51	45	70	58	50	45	56	49	44	54	48	43	52	47	43	40
7	67	54	46	40	65	54	46	40	52	45	40	50	44	39	48	43	38	37
8	63	50	42	37	61	49	42	36	48	41	36	46	40	36	45	39	35	33
9	59	46	39	33	58	46	38	33	44	38	33	43	37	33	42	36	32	30
10	56	43	36	31	54	43	35	31	41	35	30	40	34	30	39	34	30	28

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	254978	254978	254978
5°	251657	249341	249898
10°	248380	248478	247768
15°	243371	241507	241397
20°	236934	239624	238324
25°	218862	220574	222401
30°	181538	180327	184055
35°	152025	152954	155753
40°	132408	132656	133895
45°	117705	118720	118858
50°	106945	107290	107529
55°	98491	98719	98736
60°	91896	92333	92096
65°	87892	88223	88617
70°	86403	86670	86887
75°	87118	86854	87470
80°	93009	93425	92670
85°	110894	110467	111429



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	3109.7	4.5
10°-20°	8860.1	12.8
20°-30°	12321.7	17.9
30°-40°	11107.8	16.1
40°-50°	9414.3	13.6
50°-60°	7705.0	11.2
60°-70°	6056.7	8.8
70°-80°	4504.7	6.5
80°-90°	3137.2	4.5
90°-100°	1623.7	2.4
100°-110°	908.5	1.3
110°-120°	132.9	0.2
120°-130°	35.9	0.1
130°-140°	39.9	0.1
140°-150°	34.4	0.0
150°-160°	19.6	0.0
160°-170°	11.6	0.0
170°-180°	4.0	0.0
0°-30°	24291.6	35.2
0°-40°	35399.4	51.3
0°-60°	52518.7	76.1
0°-90°	66217.3	95.9
90°-120°	2665.2	3.9
90°-150°	2775.4	4.0
90°-180°	2811.0	4.1
0°-180°	69027.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	33058	33058	33058	33058	33058	
5°	32843	32554	32541	32709	32614	###
15°	31454	31274	31213	31436	31198	8869
25°	27149	27226	27362	27615	27588	12270
35°	17496	17473	17602	17655	17925	11046
45°	12079	12102	12184	12109	12198	9374
55°	8573	8532	8593	8593	8595	7700
65°	6049	6045	6072	6139	6099	6020
75°	4226	4240	4213	4242	4243	4499
85°	2963	2970	2952	2942	2978	2530
90°	1940	1846	1689	1822	1898	1120
95°	1450	1462	1498	1428	1421	1150
105°	915	906	898	877	888	914
115°	88	87	87	83	86	135
125°	40	41	40	40	41	35
135°	51	53	51	51	53	40
145°	57	56	57	56	56	35
155°	40	41	40	40	40	20
165°	43	41	41	41	41	12
175°	41	41	41	41	43	4
180°	41	41	41	41	41	



TEST NUMBER: P381673

CATALOG NUMBER: BMK-70-NCL-UNV-L840-CD-U

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	33058.4	33058.4	33058.4	33058.4	33058.4
2.5°	32686.4	32526.8	32515.4	32562.4	32438.4
5°	32843.2	32553.9	32541.0	32709.2	32613.7
7.5°	32743.4	32502.5	32542.5	32737.7	32647.9
10°	32381.4	32283.0	32394.2	32559.6	32301.6
12.5°	32157.6	32020.8	32020.8	32045.0	32032.2
15°	31453.5	31273.9	31212.6	31436.4	31198.4
17.5°	30787.9	30631.1	30899.1	30832.1	30732.3
20°	30120.9	30210.7	30462.9	30326.1	30297.6
22.5°	29211.5	29244.3	29585.0	29590.7	29289.9
25°	27149.1	27226.1	27361.5	27615.2	27588.1
27.5°	24720.4	24422.5	24409.7	24974.1	24797.4
30°	21788.6	21707.3	21643.2	22066.5	22090.7
32.5°	19385.5	19471.0	19381.2	19612.1	19827.3
35°	17495.6	17472.8	17602.5	17655.2	17924.6
37.5°	15887.8	15867.9	15919.2	16080.2	16154.4
40°	14468.2	14468.2	14495.3	14656.4	14630.7
42.5°	13147.0	13272.4	13265.3	13310.9	13313.7
45°	12079.4	12102.2	12183.5	12109.3	12197.7
47.5°	11097.4	11058.9	11162.9	11077.4	11155.8
50°	10180.9	10113.9	10213.7	10121.1	10236.5
52.5°	9324.3	9251.6	9382.8	9288.7	9372.8
55°	8573.2	8531.8	8593.1	8593.1	8594.6
57.5°	7862.0	7853.4	7854.8	7911.8	7901.9
60°	7189.2	7223.4	7223.4	7263.3	7204.9
62.5°	6596.3	6609.1	6653.3	6676.1	6626.2
65°	6049.0	6044.7	6071.8	6138.8	6098.9
67.5°	5528.7	5545.8	5565.8	5635.6	5560.1
70°	5088.3	5084.0	5104.0	5149.6	5116.8
72.5°	4660.7	4652.2	4667.9	4690.7	4689.2
75°	4226.0	4240.3	4213.2	4241.7	4243.1
77.5°	3848.3	3845.5	3844.0	3829.8	3858.3
80°	3511.9	3509.1	3527.6	3490.6	3499.1
82.5°	3231.2	3226.9	3248.3	3198.4	3206.9
85°	2963.2	2970.3	2951.8	2941.8	2977.5
87.5°	2688.1	2669.6	2649.6	2656.8	2662.5
90°	1939.8	1845.8	1689.0	1821.5	1898.5
92.5°	1604.9	1650.5	1589.2	1577.8	1636.2
95°	1449.5	1462.4	1498.0	1428.2	1421.0
97.5°	1361.2	1392.5	1382.5	1336.9	1335.5
100°	1217.2	1234.3	1225.8	1208.7	1210.1
102.5°	1088.9	1126.0	1086.1	1077.5	1090.4
105°	915.0	906.5	897.9	876.6	888.0
107.5°	635.7	644.2	625.7	621.4	640.0
110°	392.0	386.3	367.7	372.0	383.4



TEST NUMBER: P381673

CATALOG NUMBER: BMK-70-NCL-UNV-L840-CD-U

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	195.3	199.5	199.5	192.4	189.6
115°	88.4	86.9	86.9	82.7	85.5
117.5°	41.3	39.9	37.1	39.9	42.8
120°	32.8	34.2	31.4	32.8	35.6
122.5°	35.6	38.5	35.6	37.1	38.5
125°	39.9	41.3	39.9	39.9	41.3
127.5°	42.8	44.2	42.8	42.8	44.2
130°	45.6	47.0	45.6	47.0	47.0
132.5°	48.5	49.9	48.5	48.5	49.9
135°	51.3	52.7	51.3	51.3	52.7
137.5°	54.2	55.6	54.2	54.2	54.2
140°	57.0	57.0	55.6	57.0	55.6
142.5°	58.4	57.0	57.0	57.0	55.6
145°	57.0	55.6	57.0	55.6	55.6
147.5°	54.2	52.7	52.7	52.7	52.7
150°	48.5	48.5	47.0	48.5	48.5
152.5°	44.2	44.2	42.8	42.8	44.2
155°	39.9	41.3	39.9	39.9	39.9
157.5°	41.3	41.3	39.9	39.9	41.3
160°	41.3	41.3	39.9	39.9	41.3
162.5°	41.3	41.3	39.9	39.9	41.3
165°	42.8	41.3	41.3	41.3	41.3
167.5°	42.8	41.3	41.3	39.9	41.3
170°	42.8	42.8	41.3	39.9	41.3
172.5°	42.8	42.8	41.3	41.3	41.3
175°	41.3	41.3	41.3	41.3	42.8
177.5°	39.9	39.9	39.9	41.3	42.8
180°	41.3	41.3	41.3	41.3	41.3

(END OF REPORT)