

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: P381691

Luminaire Tested: **BMK-70-NFL-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: P381691
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1908-468-4)
Test Lab: INNOVATIONS CENTER(G2)
Issue Date: 2/4/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: BMK-70-NFL-UNV-L840-CD-U
Description: BENCHMARK HIGHBAY LED FIXTURE WITH NARROW FROSTED LENS

Light Source: -
Ballast/Driver: -

Luminaire Equipment: Sample No. Condition Description

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 68108.6 lumens
Efficiency: N/A
Efficacy: 136.0 lumens/watt
Spacing Criteria (0/90/45): 1.06 / 1.07 / 1.1
Luminous Opening: Vertical Cylinder (Dia: 1.33' x H: 0.12')
CIE Type: Direct

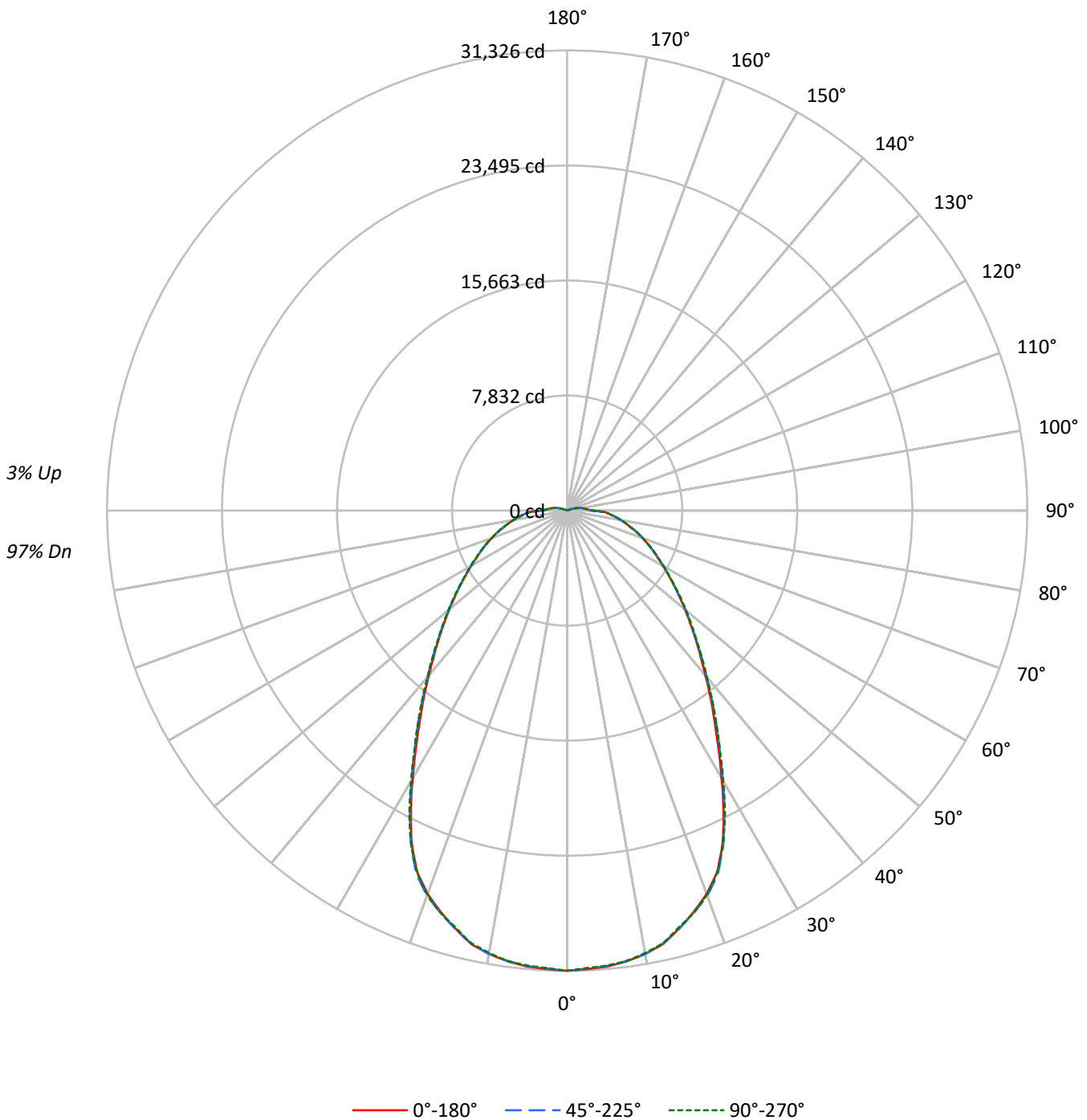
Input Watts (W): 500.7
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	97
1	107	102	98	94	104	100	96	92	95	91	88		90	88	85		86	84	82	80
2	98	90	83	77	95	88	81	76	84	78	74		80	75	72		76	73	70	67
3	90	80	72	65	87	78	70	65	74	68	63		71	66	61		68	64	60	58
4	83	71	63	56	80	70	62	56	67	60	55		64	58	54		62	57	52	50
5	77	64	56	49	75	63	55	49	61	54	48		58	52	47		56	51	46	44
6	71	59	50	44	69	57	49	43	55	48	43		53	47	42		51	46	42	39
7	67	54	45	39	65	53	45	39	51	44	38		49	43	38		47	42	37	36
8	62	49	41	35	61	48	41	35	47	40	35		45	39	34		44	38	34	32
9	58	46	38	32	57	45	37	32	43	37	32		42	36	31		41	35	31	29
10	55	42	35	30	54	42	34	30	40	34	29		39	33	29		38	33	29	27

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	241612	241612	241612
5°	238794	238455	238226
10°	235044	235154	234530
15°	227867	228044	227283
20°	218426	219446	218852
25°	201732	202720	202479
30°	175103	176350	176932
35°	151840	153723	153822
40°	133975	135083	135318
45°	120318	121165	121346
50°	109896	110450	110839
55°	101946	102389	102585
60°	96288	96816	97107
65°	93485	94085	93733
70°	92866	93326	92769
75°	93230	94201	93319
80°	98107	98976	97919
85°	110894	111590	110363



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	2955.1	4.3
10°-20°	8287.0	12.2
20°-30°	11412.9	16.8
30°-40°	11067.7	16.3
40°-50°	9631.5	14.1
50°-60°	8012.2	11.8
60°-70°	6431.0	9.4
70°-80°	4827.4	7.1
80°-90°	3152.3	4.6
90°-100°	1424.0	2.1
100°-110°	675.7	1.0
110°-120°	108.4	0.2
120°-130°	30.1	0.0
130°-140°	33.5	0.0
140°-150°	29.1	0.0
150°-160°	16.9	0.0
160°-170°	10.2	0.0
170°-180°	3.5	0.0
0°-30°	22654.9	33.3
0°-40°	33722.7	49.5
0°-60°	51366.4	75.4
0°-90°	65777.1	96.6
90°-120°	2208.2	3.2
90°-150°	2300.9	3.4
90°-180°	2332.0	3.4
0°-180°	68108.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	31326	31326	31326	31326	31326	
5°	31164	31062	31120	31172	31090	###
15°	29450	29352	29473	29494	29374	8285
25°	25024	25023	25147	25188	25117	11376
35°	17474	17531	17691	17691	17702	10988
45°	12348	12399	12434	12453	12453	9576
55°	8874	8891	8912	8934	8930	7978
65°	6434	6452	6475	6478	6451	6397
75°	4522	4548	4570	4550	4527	4815
85°	2963	2989	2982	2943	2949	2571
90°	1809	1750	1605	1722	1760	1049
95°	1294	1298	1294	1267	1276	995
105°	648	644	640	631	630	685
115°	77	76	76	73	71	111
125°	33	34	33	34	36	29
135°	43	44	43	44	44	33
145°	48	47	47	47	47	29
155°	34	36	34	34	34	17
165°	37	37	36	36	36	10
175°	36	37	36	37	37	3
180°	37	37	37	37	37	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	31325.5	31325.5	31325.5	31325.5	31325.5
2.5°	31247.1	31163.1	31194.4	31248.6	31167.3
5°	31164.5	31061.9	31120.3	31171.6	31090.4
7.5°	30960.7	30855.2	30927.9	31010.5	30927.9
10°	30642.8	30547.3	30657.1	30667.0	30575.8
12.5°	30215.2	30109.7	30169.6	30206.7	30172.5
15°	29449.8	29351.5	29472.6	29494.0	29374.3
17.5°	28641.7	28607.5	28697.3	28748.6	28703.0
20°	27768.0	27792.2	27897.7	27909.1	27822.1
22.5°	26653.4	26633.4	26785.9	26767.4	26689.0
25°	25024.2	25022.8	25146.8	25188.1	25116.9
27.5°	23051.6	23004.6	23182.7	23182.7	23269.7
30°	21016.2	20987.7	21165.9	21177.3	21235.7
32.5°	19143.4	19191.8	19328.7	19358.6	19354.3
35°	17474.3	17531.4	17691.0	17691.0	17702.4
37.5°	16014.8	16059.0	16154.5	16204.4	16183.0
40°	14639.4	14697.8	14760.5	14817.6	14786.2
42.5°	13425.0	13460.7	13556.2	13594.6	13554.7
45°	12347.5	12398.8	12434.4	12453.0	12453.0
47.5°	11364.0	11372.6	11435.3	11436.7	11456.7
50°	10461.8	10439.0	10514.5	10493.2	10551.6
52.5°	9635.1	9639.4	9670.8	9683.6	9723.5
55°	8874.0	8891.1	8912.5	8933.9	8929.6
57.5°	8174.2	8201.3	8231.2	8246.9	8222.6
60°	7532.8	7582.7	7574.1	7611.2	7596.9
62.5°	6958.4	7005.4	7009.7	7028.2	7008.3
65°	6433.9	6452.4	6475.2	6478.0	6451.0
67.5°	5937.9	5955.0	5987.7	5980.6	5945.0
70°	5468.9	5476.1	5496.0	5498.9	5463.2
72.5°	5002.8	5007.1	5021.4	5018.5	4994.3
75°	4522.5	4548.2	4569.6	4549.6	4526.8
77.5°	4119.2	4122.0	4137.7	4107.8	4112.0
80°	3704.4	3721.5	3737.2	3691.6	3697.3
82.5°	3333.8	3352.3	3362.3	3306.7	3313.9
85°	2963.2	2988.9	2981.8	2943.3	2949.0
87.5°	2589.8	2561.3	2541.3	2525.7	2532.8
90°	1808.7	1750.3	1604.9	1721.8	1760.3
92.5°	1451.0	1472.3	1452.4	1429.6	1451.0
95°	1294.2	1298.5	1294.2	1267.1	1275.7
97.5°	1141.7	1153.1	1141.7	1114.6	1124.6
100°	980.6	983.5	976.3	959.2	966.4
102.5°	819.6	822.4	812.4	801.0	803.9
105°	648.5	644.2	640.0	631.4	630.0
107.5°	467.5	467.5	460.4	451.8	457.5
110°	306.4	302.2	286.5	289.3	292.2



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	162.5	163.9	166.8	158.2	152.5
115°	77.0	75.5	75.5	72.7	71.3
117.5°	34.2	34.2	31.4	32.8	34.2
120°	27.1	28.5	27.1	27.1	29.9
122.5°	29.9	31.4	29.9	31.4	32.8
125°	32.8	34.2	32.8	34.2	35.6
127.5°	35.6	37.1	35.6	37.1	37.1
130°	38.5	39.9	38.5	38.5	39.9
132.5°	39.9	41.3	41.3	41.3	41.3
135°	42.8	44.2	42.8	44.2	44.2
137.5°	45.6	45.6	45.6	45.6	45.6
140°	47.0	47.0	47.0	47.0	47.0
142.5°	48.5	48.5	48.5	48.5	47.0
145°	48.5	47.0	47.0	47.0	47.0
147.5°	45.6	45.6	45.6	45.6	44.2
150°	41.3	41.3	41.3	41.3	41.3
152.5°	37.1	38.5	37.1	37.1	37.1
155°	34.2	35.6	34.2	34.2	34.2
157.5°	35.6	35.6	34.2	34.2	35.6
160°	35.6	35.6	35.6	35.6	35.6
162.5°	37.1	37.1	35.6	35.6	35.6
165°	37.1	37.1	35.6	35.6	35.6
167.5°	37.1	37.1	35.6	35.6	35.6
170°	37.1	37.1	35.6	35.6	35.6
172.5°	37.1	37.1	37.1	37.1	37.1
175°	35.6	37.1	35.6	37.1	37.1
177.5°	35.6	35.6	35.6	37.1	38.5
180°	37.1	37.1	37.1	37.1	37.1

(END OF REPORT)