

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: P294558

Luminaire Tested: **BMK-12-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: P294558
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-12-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

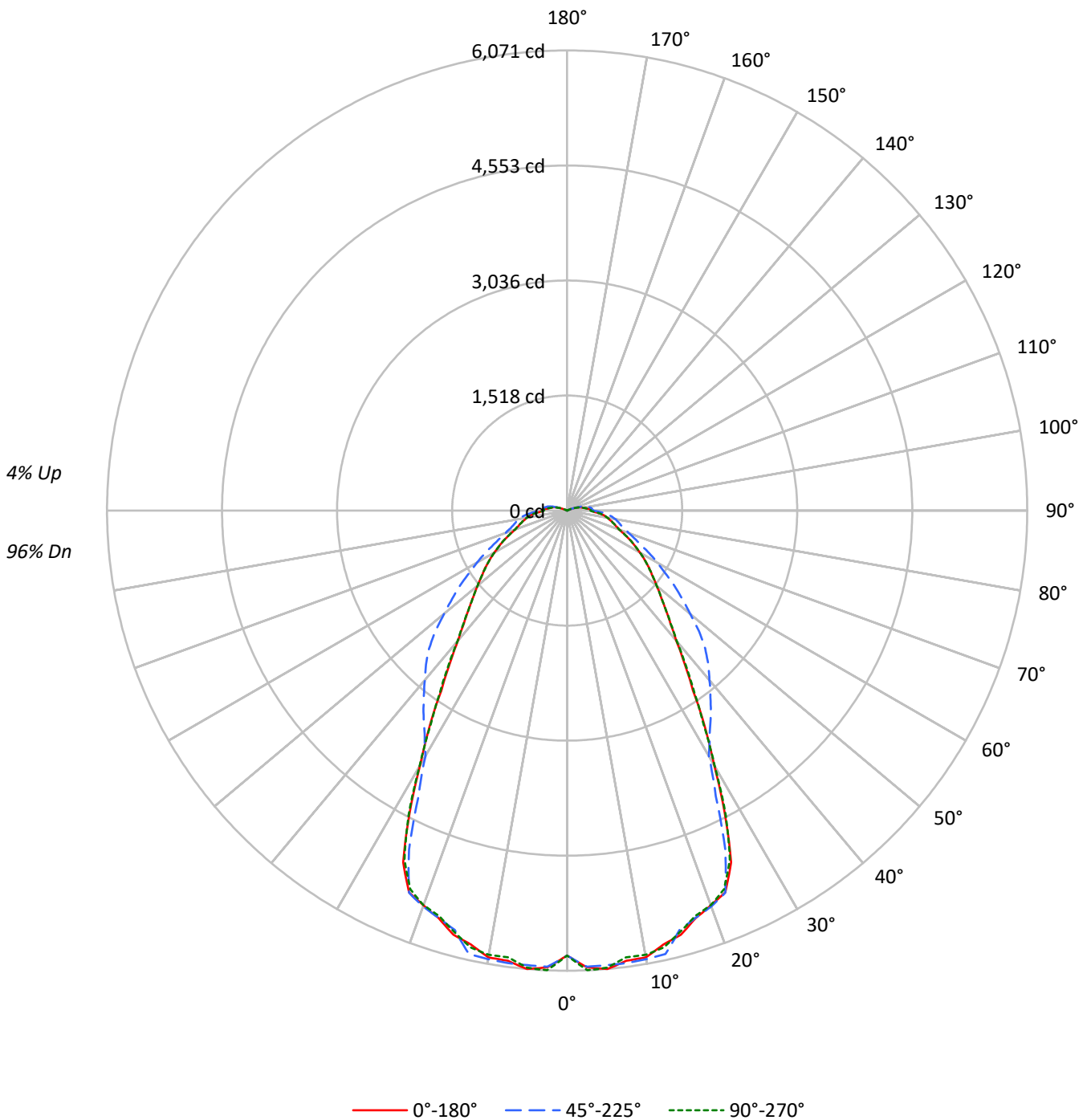
Lumens per Lamp: N/A
Luminaire Lumens: 12194.9 lumens
Efficiency: N/A
Efficacy: 164.1 lumens/watt
Spacing Criteria (0/90/45): 1.08 / 1.08 / 1.11
Luminous Opening: Vertical Cylinder (Dia: 1.33' x H: 0.12')
CIE Type: Direct

Input Watts (W): 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	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°	45261	45261	45261
5°	46496	46105	46366
10°	45878	46070	45633
15°	44802	44299	44516
20°	43573	43699	43558
25°	41247	39765	40909
30°	32304	31147	32446
35°	25144	28679	25361
40°	20499	26720	20572
45°	17843	25081	17853
50°	16201	22228	16211
55°	15169	19774	15088
60°	14169	17517	14169
65°	13260	15656	13260
70°	12424	14733	12408
75°	12941	15042	12899
80°	14216	17049	14190
85°	16086	19453	16049



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	571.4	4.7
10°-20°	1624.3	13.3
20°-30°	2229.5	18.3
30°-40°	1954.8	16.0
40°-50°	1673.0	13.7
50°-60°	1354.8	11.1
60°-70°	1016.2	8.3
70°-80°	740.2	6.1
80°-90°	506.6	4.2
90°-100°	313.2	2.6
100°-110°	181.8	1.5
110°-120°	28.7	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°	4425.2	36.3
0°-40°	6379.9	52.3
0°-60°	9407.7	77.1
0°-90°	11670.7	95.7
90°-120°	523.8	4.3
90°-150°	524.2	4.3
90°-180°	524.0	4.3
0°-180°	12194.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	5871	5871	5871	5871	5871	
5°	6071	6015	6020	6032	6054	574
15°	5793	5735	5728	5728	5756	1628
25°	5119	4927	4935	4935	5077	2265
35°	2895	3063	3302	3089	2920	1844
45°	1832	2133	2575	2115	1833	1428
55°	1321	1503	1722	1504	1314	1180
65°	913	1046	1078	1041	913	905
75°	628	713	730	709	626	665
85°	430	467	520	467	429	372
90°	316	328	344	322	307	179
95°	269	273	324	278	271	213
105°	167	171	214	168	165	169
115°	18	19	25	19	18	28
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



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	5871.1	5871.1	5871.1	5871.1	5871.1
2.5°	6031.1	5988.1	6024.1	6048.1	6070.1
5°	6071.1	6015.1	6020.1	6032.1	6054.1
7.5°	5991.1	5931.1	6020.1	5976.1	5945.1
10°	5984.1	5887.1	6009.1	5928.1	5952.1
12.5°	5863.1	5853.1	5991.1	5892.1	5901.1
15°	5793.1	5735.1	5728.1	5728.1	5756.1
17.5°	5638.1	5603.1	5635.1	5618.1	5609.1
20°	5542.1	5526.1	5558.1	5574.1	5540.1
22.5°	5451.1	5373.1	5455.1	5387.1	5407.1
25°	5119.1	4927.1	4935.1	4935.1	5077.1
27.5°	4501.1	4389.1	4248.1	4405.1	4535.1
30°	3879.1	3912.1	3740.1	3905.1	3896.1
32.5°	3377.1	3470.1	3498.1	3474.1	3352.1
35°	2895.1	3063.1	3302.1	3089.1	2920.1
37.5°	2540.1	2771.1	3107.1	2766.1	2569.1
40°	2241.0	2516.1	2921.1	2528.1	2249.0
42.5°	2016.0	2318.0	2756.1	2306.0	2022.0
45°	1832.0	2133.0	2575.1	2115.0	1833.0
47.5°	1674.0	1962.0	2359.0	1963.0	1674.0
50°	1543.0	1777.0	2117.0	1776.0	1544.0
52.5°	1420.0	1638.0	1911.0	1626.0	1424.0
55°	1321.0	1503.0	1722.0	1504.0	1314.0
57.5°	1212.0	1380.0	1530.0	1378.0	1217.0
60°	1109.0	1259.0	1371.0	1248.0	1109.0
62.5°	1008.0	1149.0	1221.0	1150.0	1010.0
65°	913.0	1046.0	1078.0	1041.0	913.0
67.5°	816.0	946.0	961.0	940.0	821.0
70°	732.0	862.0	868.0	853.0	731.0
72.5°	675.0	780.0	787.0	782.0	675.0
75°	628.0	713.0	730.0	709.0	626.0
77.5°	579.0	649.0	688.0	650.0	583.0
80°	537.0	589.0	644.0	590.0	536.0
82.5°	493.0	532.0	593.0	534.0	497.0
85°	430.0	467.0	520.0	467.0	429.0
87.5°	350.0	396.0	429.0	393.0	344.0
90°	316.0	328.0	344.0	322.0	307.0
92.5°	325.0	307.0	334.0	305.0	312.0
95°	269.0	273.0	324.0	278.0	271.0
97.5°	243.0	254.0	308.0	249.0	242.0
100°	214.0	232.0	277.0	228.0	215.0
102.5°	195.0	207.0	254.0	210.0	198.0
105°	167.0	171.0	214.0	168.0	165.0
107.5°	125.0	125.0	141.0	126.0	123.0
110°	83.0	79.0	85.0	77.0	83.0



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	44.0	42.0	49.0	41.0	43.0
115°	18.0	19.0	25.0	19.0	18.0
117.5°	5.0	8.0	9.0	8.0	5.0
120°	3.0	4.0	3.0	4.0	3.0
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)