

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: P294564

Luminaire Tested: **BMK-15-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: P294564
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-15-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

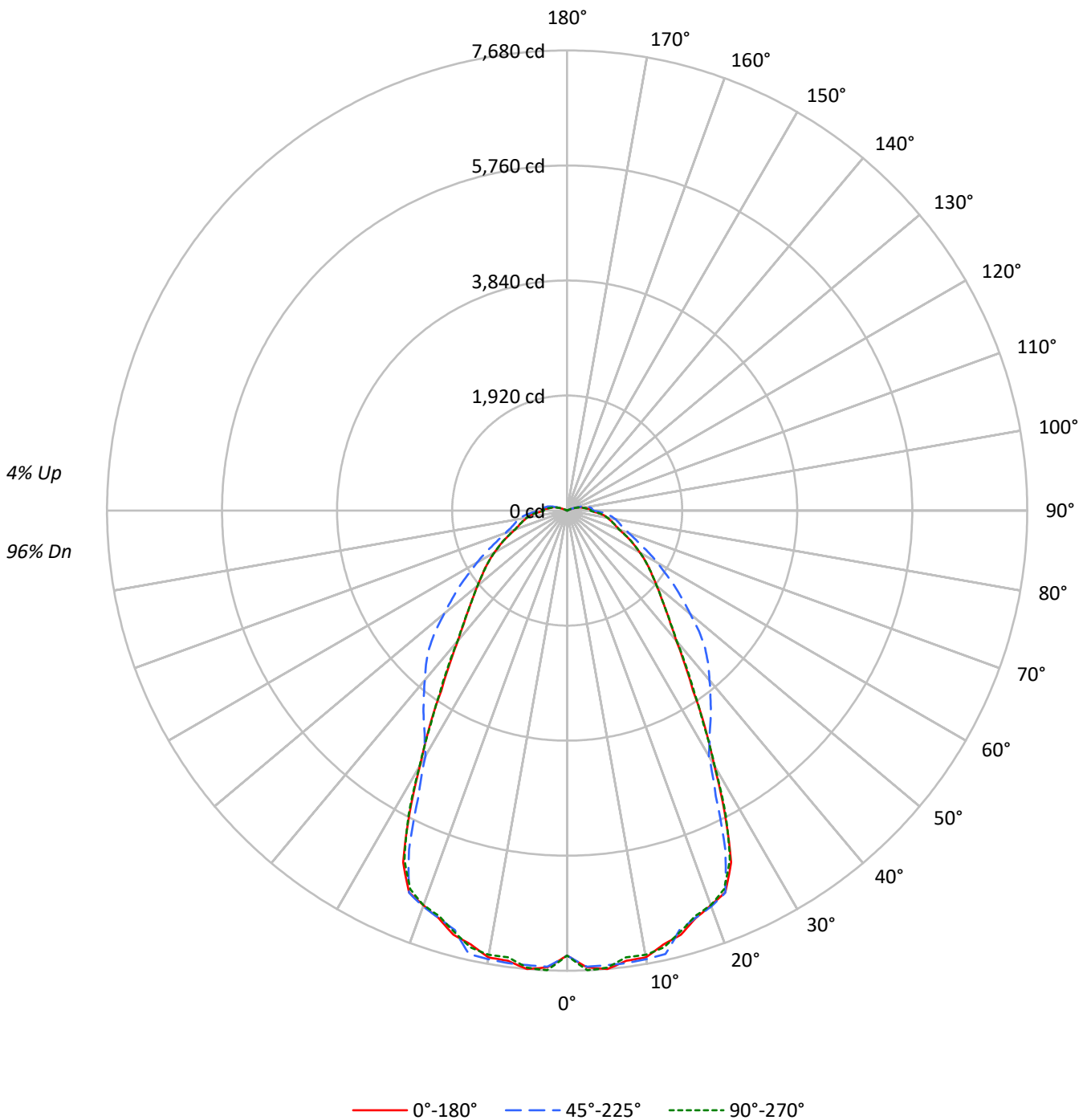
Lumens per Lamp: N/A
Luminaire Lumens: 15427.0 lumens
Efficiency: N/A
Efficacy: 164.5 lumens/watt
Spacing Criteria (0/90/45): 1.08 / 1.08 / 1.11
Luminous Opening: Vertical Cylinder (Dia: 1.33' x H: 0.12')
CIE Type: Direct

Input Watts (W): 93.8
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°	57256	57256	57256
5°	58818	58325	58654
10°	58037	58280	57727
15°	56676	56040	56314
20°	55122	55281	55102
25°	52179	50303	51751
30°	40865	39401	41044
35°	31808	36280	32083
40°	25933	33801	26025
45°	22573	31727	22584
50°	20495	28119	20508
55°	19189	25014	19088
60°	17924	22160	17924
65°	16775	19806	16775
70°	15717	18638	15697
75°	16371	19030	16318
80°	17983	21568	17952
85°	20351	24609	20303



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	722.9	4.7
10°-20°	2054.7	13.3
20°-30°	2820.3	18.3
30°-40°	2472.8	16.0
40°-50°	2116.4	13.7
50°-60°	1713.9	11.1
60°-70°	1285.5	8.3
70°-80°	936.3	6.1
80°-90°	640.9	4.2
90°-100°	396.2	2.6
100°-110°	230.0	1.5
110°-120°	36.3	0.2
120°-130°	0.5	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°	5598.0	36.3
0°-40°	8070.8	52.3
0°-60°	11901.1	77.1
0°-90°	14763.9	95.7
90°-120°	662.6	4.3
90°-150°	663.1	4.3
90°-180°	663.0	4.3
0°-180°	15427.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	7427	7427	7427	7427	7427	
5°	7680	7609	7616	7631	7659	726
15°	7328	7255	7246	7246	7282	2059
25°	6476	6233	6243	6243	6423	2866
35°	3662	3875	4177	3908	3694	2333
45°	2318	2698	3258	2676	2319	1807
55°	1671	1901	2178	1903	1662	1493
65°	1155	1323	1364	1317	1155	1145
75°	794	902	924	897	792	841
85°	544	591	658	591	543	471
90°	400	415	435	407	388	227
95°	340	345	410	352	343	269
105°	211	216	271	212	209	213
115°	23	24	32	24	23	35
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°	7427.1	7427.1	7427.1	7427.1	7427.1
2.5°	7629.5	7575.1	7620.7	7651.0	7678.9
5°	7680.1	7609.3	7615.6	7630.8	7658.6
7.5°	7578.9	7503.0	7615.6	7559.9	7520.7
10°	7570.1	7447.4	7601.7	7499.2	7529.6
12.5°	7417.0	7404.3	7578.9	7453.7	7465.1
15°	7328.4	7255.1	7246.2	7246.2	7281.6
17.5°	7132.4	7088.1	7128.6	7107.1	7095.7
20°	7010.9	6990.7	7031.2	7051.4	7008.4
22.5°	6895.8	6797.1	6900.9	6814.8	6840.1
25°	6475.8	6232.9	6243.0	6243.0	6422.7
27.5°	5694.0	5552.3	5373.9	5572.6	5737.0
30°	4907.1	4948.9	4731.3	4940.0	4928.6
32.5°	4272.1	4389.7	4425.2	4394.8	4240.5
35°	3662.3	3874.9	4177.2	3907.7	3694.0
37.5°	3213.2	3505.5	3930.5	3499.1	3249.9
40°	2835.0	3182.9	3695.2	3198.1	2845.1
42.5°	2550.3	2932.4	3486.5	2917.2	2557.9
45°	2317.6	2698.4	3257.5	2675.6	2318.8
47.5°	2117.7	2482.0	2984.3	2483.3	2117.7
50°	1952.0	2248.0	2678.1	2246.7	1953.2
52.5°	1796.4	2072.2	2417.5	2057.0	1801.4
55°	1671.1	1901.4	2178.4	1902.6	1662.3
57.5°	1533.2	1745.8	1935.5	1743.2	1539.6
60°	1402.9	1592.7	1734.4	1578.8	1402.9
62.5°	1275.2	1453.5	1544.6	1454.8	1277.7
65°	1155.0	1323.2	1363.7	1316.9	1155.0
67.5°	1032.3	1196.7	1215.7	1189.1	1038.6
70°	926.0	1090.5	1098.1	1079.1	924.8
72.5°	853.9	986.7	995.6	989.3	853.9
75°	794.5	902.0	923.5	896.9	791.9
77.5°	732.5	821.0	870.4	822.3	737.5
80°	679.3	745.1	814.7	746.4	678.1
82.5°	623.7	673.0	750.2	675.5	628.7
85°	544.0	590.8	657.8	590.8	542.7
87.5°	442.8	501.0	542.7	497.2	435.2
90°	399.8	414.9	435.2	407.3	388.4
92.5°	411.1	388.4	422.5	385.8	394.7
95°	340.3	345.4	409.9	351.7	342.8
97.5°	307.4	321.3	389.6	315.0	306.1
100°	270.7	293.5	350.4	288.4	272.0
102.5°	246.7	261.9	321.3	265.7	250.5
105°	211.3	216.3	270.7	212.5	208.7
107.5°	158.1	158.1	178.4	159.4	155.6
110°	105.0	99.9	107.5	97.4	105.0



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	55.7	53.1	62.0	51.9	54.4
115°	22.8	24.0	31.6	24.0	22.8
117.5°	6.3	10.1	11.4	10.1	6.3
120°	3.8	5.1	3.8	5.1	3.8
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)