

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: P294571

Luminaire Tested: **BMK-18-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: P294571
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-18-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

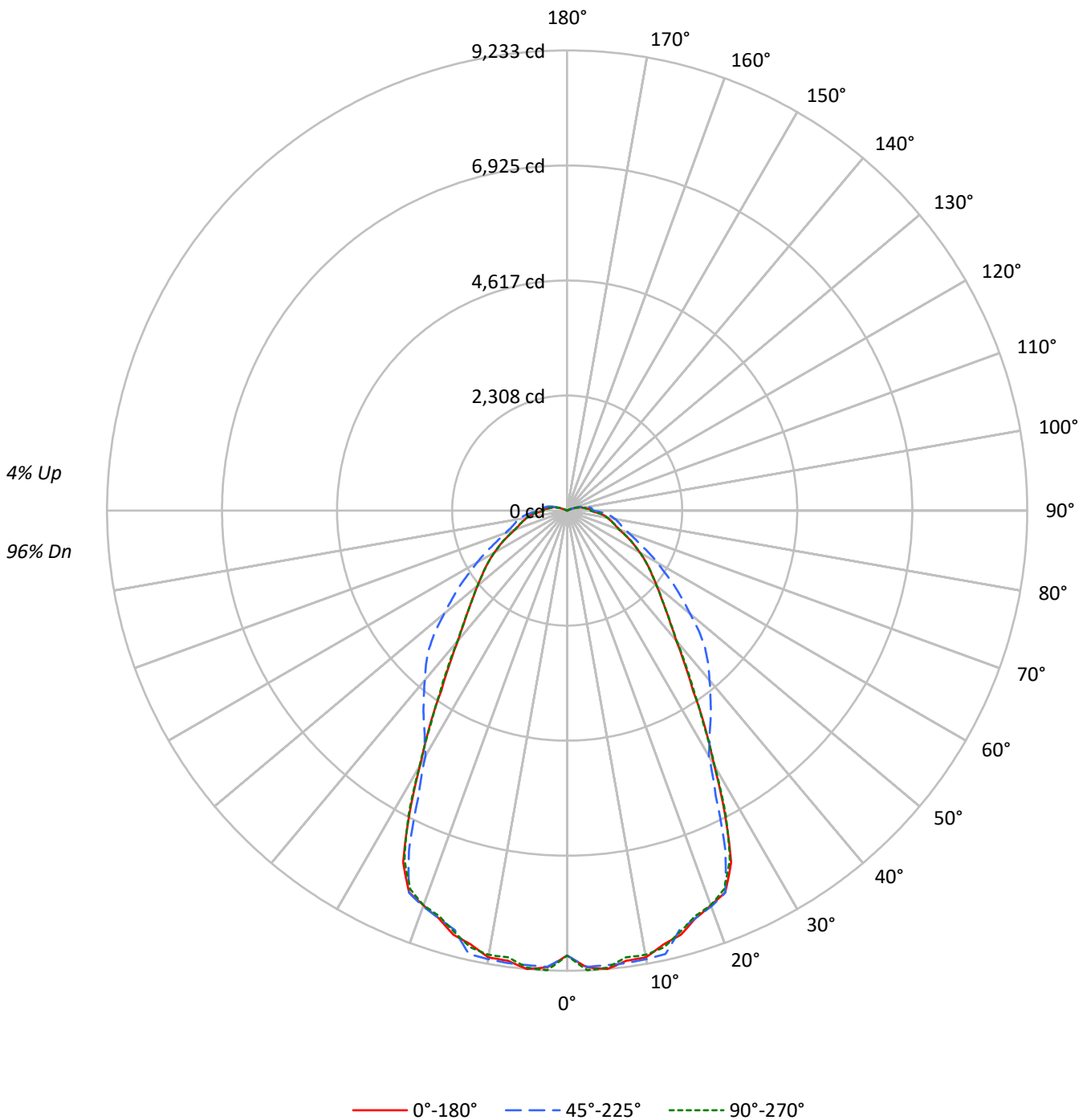
Lumens per Lamp: N/A
Luminaire Lumens: 18547.0 lumens
Efficiency: N/A
Efficacy: 163.0 lumens/watt
Spacing Criteria (0/90/45): 1.08 / 1.08 / 1.11
Luminous Opening: Vertical Cylinder (Dia: 1.33' x H: 0.12')
CIE Type: Direct

Input Watts (W): 113.8
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°	68836	68836	68836
5°	70715	70120	70516
10°	69775	70066	69402
15°	68138	67374	67703
20°	66269	66461	66246
25°	62732	60477	62217
30°	49131	47370	49345
35°	38241	43617	38571
40°	31177	40637	31288
45°	27138	38144	27152
50°	24639	33806	24656
55°	23070	30074	22949
60°	21550	26642	21550
65°	20167	23811	20167
70°	18896	22407	18871
75°	19681	22879	19619
80°	21621	25931	21581
85°	24466	29588	24410



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	869.1	4.7
10°-20°	2470.3	13.3
20°-30°	3390.7	18.3
30°-40°	2972.9	16.0
40°-50°	2544.4	13.7
50°-60°	2060.5	11.1
60°-70°	1545.5	8.3
70°-80°	1125.7	6.1
80°-90°	770.6	4.2
90°-100°	476.4	2.6
100°-110°	276.5	1.5
110°-120°	43.7	0.2
120°-130°	0.6	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°	6730.1	36.3
0°-40°	9703.0	52.3
0°-60°	14307.9	77.1
0°-90°	17749.8	95.7
90°-120°	796.6	4.3
90°-150°	797.3	4.3
90°-180°	797.0	4.3
0°-180°	18547.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	8929	8929	8929	8929	8929	
5°	9233	9148	9156	9174	9208	873
15°	8811	8722	8712	8712	8754	2475
25°	7786	7494	7506	7506	7722	3445
35°	4403	4658	5022	4698	4441	2805
45°	2786	3244	3916	3217	2788	2172
55°	2009	2286	2619	2287	1998	1795
65°	1389	1591	1640	1583	1389	1377
75°	955	1084	1110	1078	952	1011
85°	654	710	791	710	652	566
90°	481	499	523	490	467	272
95°	409	415	493	423	412	324
105°	254	260	326	256	251	256
115°	27	29	38	29	27	42
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



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	8929.2	8929.2	8929.2	8929.2	8929.2
2.5°	9172.5	9107.1	9161.9	9198.4	9231.9
5°	9233.4	9148.2	9155.8	9174.1	9207.5
7.5°	9111.7	9020.5	9155.8	9088.9	9041.7
10°	9101.1	8953.5	9139.1	9015.9	9052.4
12.5°	8917.0	8901.8	9111.7	8961.1	8974.8
15°	8810.6	8722.4	8711.7	8711.7	8754.3
17.5°	8574.8	8521.6	8570.3	8544.4	8530.7
20°	8428.8	8404.5	8453.2	8477.5	8425.8
22.5°	8290.4	8171.8	8296.5	8193.1	8223.5
25°	7785.5	7493.5	7505.6	7505.6	7721.6
27.5°	6845.6	6675.2	6460.8	6699.6	6897.3
30°	5899.6	5949.8	5688.2	5939.1	5925.4
32.5°	5136.1	5277.5	5320.1	5283.6	5098.1
35°	4403.0	4658.5	5022.0	4698.1	4441.0
37.5°	3863.1	4214.4	4725.4	4206.8	3907.2
40°	3408.3	3826.6	4442.5	3844.8	3420.5
42.5°	3066.1	3525.4	4191.6	3507.2	3075.3
45°	2786.3	3244.1	3916.3	3216.7	2787.8
47.5°	2546.0	2984.0	3587.8	2985.5	2546.0
50°	2346.7	2702.6	3219.7	2701.1	2348.3
52.5°	2159.7	2491.2	2906.4	2473.0	2165.8
55°	2009.1	2285.9	2619.0	2287.4	1998.5
57.5°	1843.3	2098.8	2327.0	2095.8	1850.9
60°	1686.7	1914.8	2085.2	1898.1	1686.7
62.5°	1533.1	1747.5	1857.0	1749.0	1536.1
65°	1388.6	1590.9	1639.5	1583.3	1388.6
67.5°	1241.1	1438.8	1461.6	1429.6	1248.7
70°	1113.3	1311.0	1320.1	1297.3	1111.8
72.5°	1026.6	1186.3	1196.9	1189.3	1026.6
75°	955.1	1084.4	1110.3	1078.3	952.1
77.5°	880.6	987.1	1046.4	988.6	886.7
80°	816.7	895.8	979.5	897.3	815.2
82.5°	749.8	809.1	901.9	812.2	755.9
85°	654.0	710.3	790.9	710.3	652.5
87.5°	532.3	602.3	652.5	597.7	523.2
90°	480.6	498.9	523.2	489.7	466.9
92.5°	494.3	466.9	508.0	463.9	474.5
95°	409.1	415.2	492.8	422.8	412.2
97.5°	369.6	386.3	468.4	378.7	368.1
100°	325.5	352.8	421.3	346.8	327.0
102.5°	296.6	314.8	386.3	319.4	301.1
105°	254.0	260.1	325.5	255.5	250.9
107.5°	190.1	190.1	214.4	191.6	187.1
110°	126.2	120.2	129.3	117.1	126.2



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	66.9	63.9	74.5	62.4	65.4
115°	27.4	28.9	38.0	28.9	27.4
117.5°	7.6	12.2	13.7	12.2	7.6
120°	4.6	6.1	4.6	6.1	4.6
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)