

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: P294588

Luminaire Tested: **BMK-36-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: P294588
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-36-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: 36038.0 lumens
Efficiency: N/A
Efficacy: 148.3 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

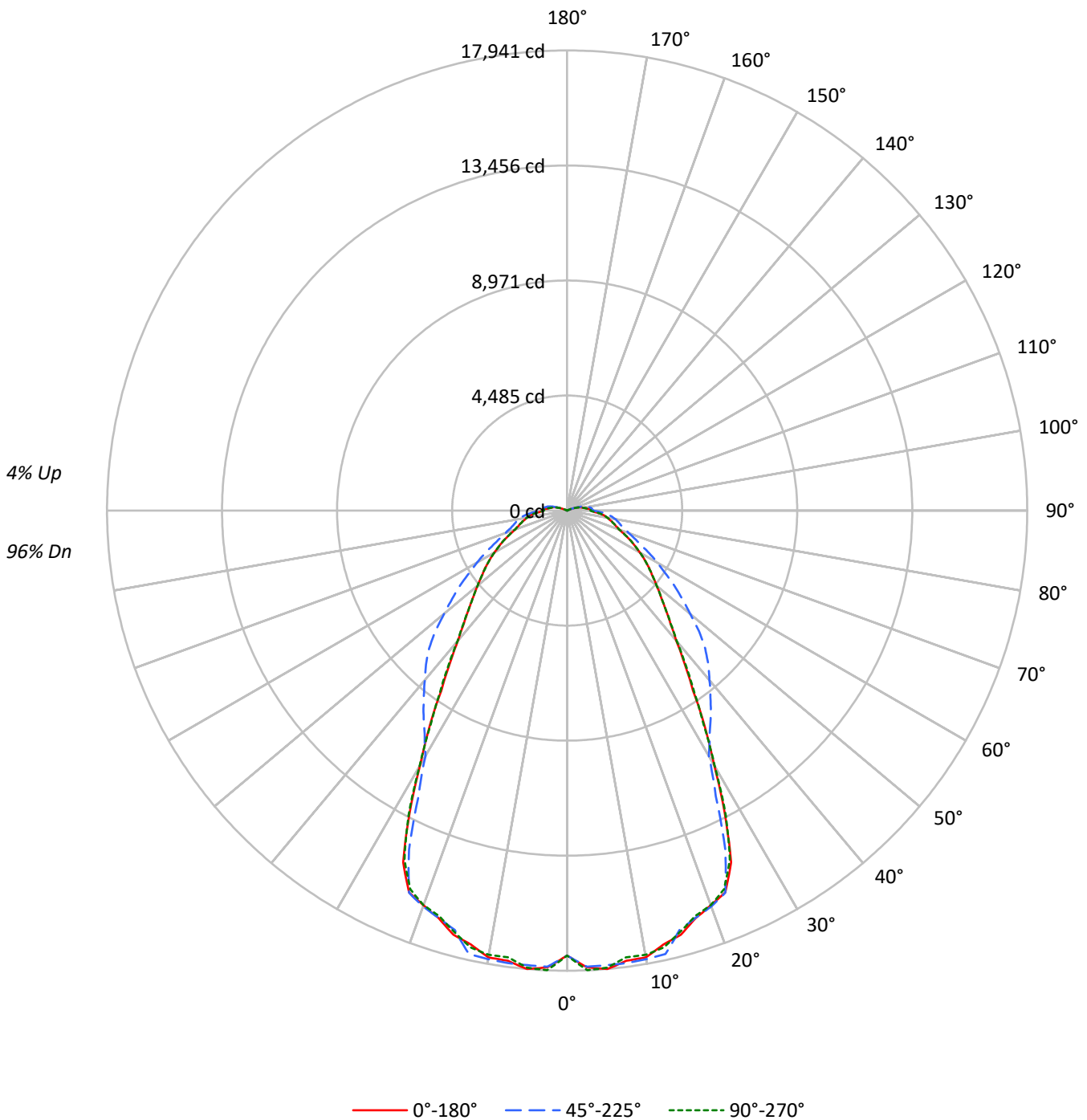
Input Watts (W): 243
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	133753	133753	133753
5°	137402	136248	137018
10°	135576	136143	134852
15°	132397	130911	131551
20°	128766	129138	128719
25°	121892	117510	120892
30°	95463	92043	95882
35°	74304	84751	74946
40°	60579	78961	60796
45°	52730	74116	52759
50°	47877	65688	47908
55°	44827	58435	44589
60°	41873	51766	41873
65°	39186	46268	39186
70°	36717	43538	36668
75°	38243	44453	38121
80°	42011	50384	41934
85°	47537	57489	47429



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	1688.7	4.7
10°-20°	4799.9	13.3
20°-30°	6588.4	18.3
30°-40°	5776.6	16.0
40°-50°	4943.9	13.7
50°-60°	4003.7	11.1
60°-70°	3003.1	8.3
70°-80°	2187.3	6.1
80°-90°	1497.3	4.2
90°-100°	925.6	2.6
100°-110°	537.3	1.5
110°-120°	84.9	0.2
120°-130°	1.2	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°	13077.0	36.3
0°-40°	18853.6	52.3
0°-60°	27801.3	77.1
0°-90°	34488.9	95.7
90°-120°	1547.9	4.3
90°-150°	1549.1	4.3
90°-180°	1549.0	4.3
0°-180°	36038.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	17350	17350	17350	17350	17350	
5°	17941	17776	17790	17826	17891	###
15°	17120	16948	16927	16927	17010	4810
25°	15128	14560	14584	14584	15004	6694
35°	8555	9052	9758	9129	8629	5450
45°	5414	6304	7610	6250	5417	4220
55°	3904	4442	5089	4445	3883	3488
65°	2698	3091	3186	3076	2698	2675
75°	1856	2107	2157	2095	1850	1965
85°	1271	1380	1537	1380	1268	1099
90°	934	969	1017	952	907	529
95°	795	807	958	822	801	629
105°	494	505	632	496	488	498
115°	53	56	74	56	53	82
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



TEST NUMBER: P294588

CATALOG NUMBER: BMK-36-NCL-UNV-L840-CD-U

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	17350.0	17350.0	17350.0	17350.0	17350.0
2.5°	17822.8	17695.8	17802.2	17873.1	17938.1
5°	17941.0	17775.6	17790.3	17825.8	17890.8
7.5°	17704.6	17527.3	17790.3	17660.3	17568.7
10°	17683.9	17397.3	17757.8	17518.5	17589.4
12.5°	17326.4	17296.8	17704.6	17412.1	17438.7
15°	17119.5	16948.1	16927.4	16927.4	17010.2
17.5°	16661.4	16558.0	16652.6	16602.3	16575.7
20°	16377.7	16330.5	16425.0	16472.3	16371.8
22.5°	16108.8	15878.3	16120.6	15919.7	15978.8
25°	15127.7	14560.3	14583.9	14583.9	15003.6
27.5°	13301.4	12970.4	12553.7	13017.7	13401.9
30°	11463.2	11560.8	11052.5	11540.1	11513.5
32.5°	9979.7	10254.6	10337.3	10266.4	9905.8
35°	8555.3	9051.8	9758.1	9128.6	8629.2
37.5°	7506.2	8188.9	9181.8	8174.1	7591.9
40°	6622.6	7435.3	8632.2	7470.8	6646.3
42.5°	5957.7	6850.2	8144.5	6814.7	5975.4
45°	5413.9	6303.5	7609.7	6250.3	5416.9
47.5°	4947.0	5798.1	6971.3	5801.1	4947.0
50°	4559.9	5251.4	6256.2	5248.4	4562.8
52.5°	4196.4	4840.6	5647.4	4805.2	4208.2
55°	3903.8	4441.7	5088.9	4444.6	3883.1
57.5°	3581.7	4078.2	4521.5	4072.3	3596.5
60°	3277.3	3720.6	4051.6	3688.1	3277.3
62.5°	2978.8	3395.5	3608.3	3398.5	2984.8
65°	2698.1	3091.1	3185.7	3076.4	2698.1
67.5°	2411.4	2795.6	2840.0	2777.9	2426.2
70°	2163.2	2547.4	2565.1	2520.8	2160.3
72.5°	1994.8	2305.1	2325.7	2311.0	1994.8
75°	1855.9	2107.1	2157.3	2095.2	1850.0
77.5°	1711.1	1917.9	2033.2	1920.9	1722.9
80°	1586.9	1740.6	1903.2	1743.6	1584.0
82.5°	1456.9	1572.2	1752.4	1578.1	1468.7
85°	1270.7	1380.1	1536.7	1380.1	1267.8
87.5°	1034.3	1170.3	1267.8	1161.4	1016.6
90°	933.8	969.3	1016.6	951.6	907.2
92.5°	960.4	907.2	987.0	901.3	922.0
95°	794.9	806.8	957.5	821.5	800.9
97.5°	718.1	750.6	910.2	735.8	715.2
100°	632.4	685.6	818.6	673.8	635.4
102.5°	576.3	611.7	750.6	620.6	585.1
105°	493.5	505.3	632.4	496.5	487.6
107.5°	369.4	369.4	416.7	372.4	363.5
110°	245.3	233.5	251.2	227.6	245.3



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	130.0	124.1	144.8	121.2	127.1
115°	53.2	56.1	73.9	56.1	53.2
117.5°	14.8	23.6	26.6	23.6	14.8
120°	8.9	11.8	8.9	11.8	8.9
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)