

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: P381655

Luminaire Tested: **BMK-70-WCL-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: P381655  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1908-468-2)  
Test Lab: INNOVATIONS CENTER(G2)  
Issue Date: 2/4/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: BMK-70-WCL-UNV-L840-CD-U  
Description: BENCHMARK HIGHBAY LED FIXTURE WITH WIDE CLEAR LENS

Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.    Condition    Description

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 71237.2 lumens  
Efficiency: N/A  
Efficacy: 142.3 lumens/watt  
Spacing Criteria (0/90/45): 1.76 / 1.77 / 1.85  
Luminous Opening: Vertical Cylinder (Dia: 1.33' x H: 0.12')  
CIE Type: Direct

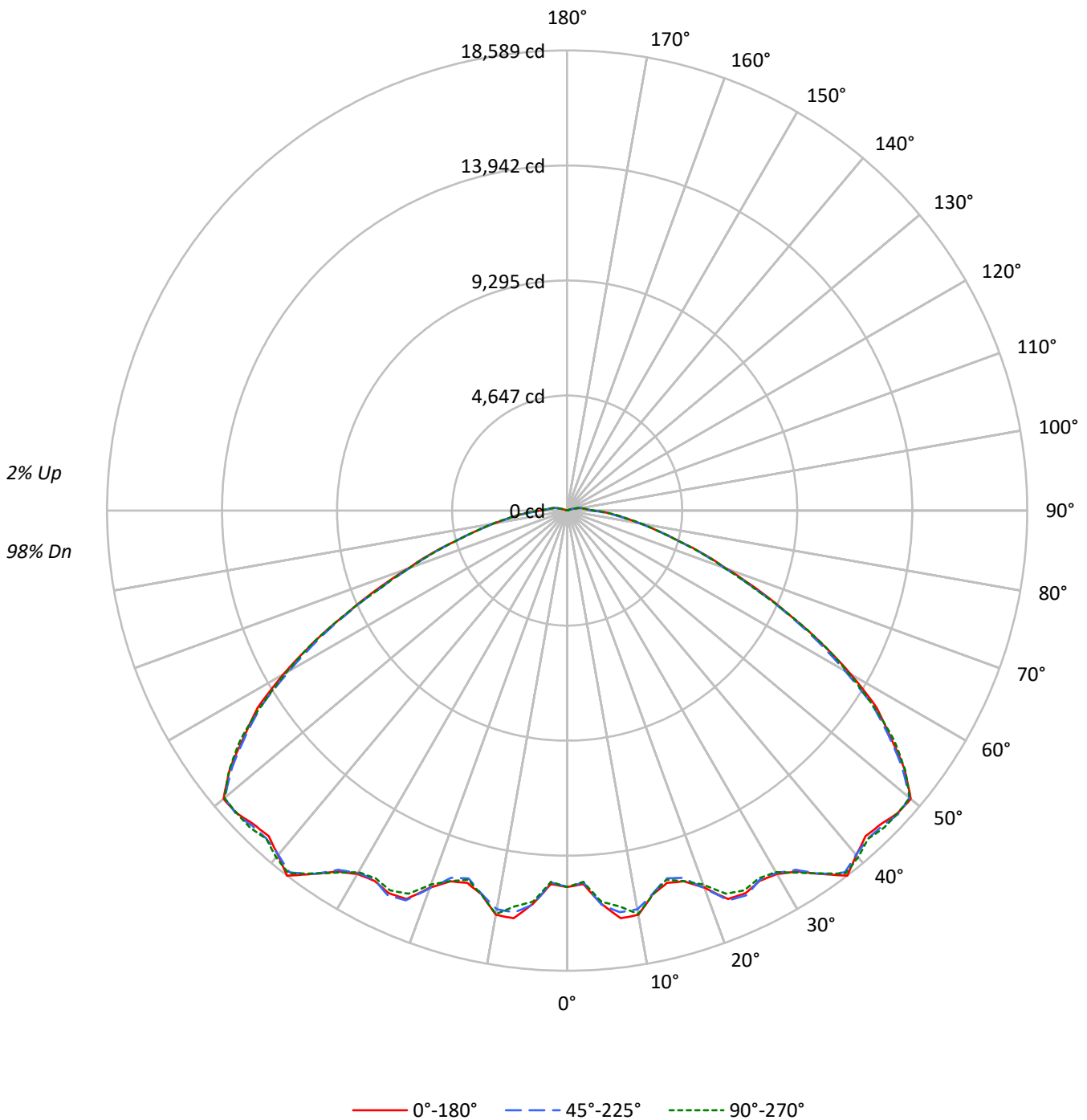
Input Watts (W): 500.7  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	119	119	119	119	116	116	116	116	110	110	110	105	105	105	100	100	100	100	100	100	98	
1	107	102	98	93	104	100	95	92	95	92	88	91	88	85	87	85	82	87	85	82	80	
2	97	88	81	74	94	86	79	73	82	76	71	78	74	69	75	71	68	75	71	68	65	
3	88	76	68	61	85	74	66	60	71	64	59	68	62	57	65	60	56	65	60	56	54	
4	80	67	57	50	77	65	56	50	62	55	49	60	53	48	57	52	47	57	52	47	45	
5	73	59	49	42	70	58	49	42	55	47	41	53	46	41	51	45	40	51	45	40	38	
6	67	52	43	36	64	51	42	36	49	41	35	47	40	35	46	39	34	46	39	34	32	
7	61	47	38	31	59	46	37	31	44	36	31	43	36	30	41	35	30	41	35	30	28	
8	57	43	34	27	55	42	33	27	40	32	27	39	32	27	37	31	26	37	31	26	24	
9	53	39	30	24	51	38	30	24	37	29	24	35	29	24	34	28	23	34	28	23	21	
10	49	35	27	22	48	35	27	22	34	26	21	33	26	21	32	25	21	32	25	21	19	

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	117245	117245	117245
5°	122222	122429	121468
10°	127194	125466	126909
15°	120486	119020	119482
20°	127500	127702	126447
25°	137469	138228	136458
30°	141212	140749	140452
35°	155681	155706	155483
40°	166300	166117	167344
45°	174583	175416	176500
50°	190329	189640	189760
55°	183132	182198	184933
60°	169274	165759	167689
65°	142651	141906	142878
70°	116030	114264	114918
75°	94230	94113	93673
80°	79537	79309	80781
85°	71371	68863	73130



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	1533.5	2.2
10°-20°	4482.8	6.3
20°-30°	7811.2	11.0
30°-40°	11210.8	15.7
40°-50°	13978.1	19.6
50°-60°	14131.7	19.8
60°-70°	9719.8	13.6
70°-80°	4944.3	6.9
80°-90°	2106.5	3.0
90°-100°	842.2	1.2
100°-110°	361.2	0.5
110°-120°	40.6	0.1
120°-130°	18.9	0.0
130°-140°	20.8	0.0
140°-150°	17.5	0.0
150°-160°	9.7	0.0
160°-170°	5.7	0.0
170°-180°	1.9	0.0
0°-30°	13827.5	19.4
0°-40°	25038.3	35.1
0°-60°	53148.1	74.6
0°-90°	69918.7	98.1
90°-120°	1244.0	1.7
90°-150°	1301.2	1.8
90°-180°	1319.0	1.9
0°-180°	71237.2	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	15201	15201	15201	15201	15201	
5°	15951	15890	15978	15938	15852	###
15°	15572	15530	15382	15489	15442	4499
25°	17053	17078	17147	17178	16927	7812
35°	17916	17949	17919	17935	17894	11227
45°	17916	17972	18002	17993	18113	13943
55°	15941	15855	15860	15824	16098	14229
65°	9818	9798	9766	9781	9833	9820
75°	4571	4525	4565	4524	4544	4988
85°	1907	1877	1840	1886	1954	1784
90°	1073	1025	958	1022	1076	619
95°	743	755	775	745	751	579
105°	326	338	336	334	331	359
115°	26	26	26	24	26	41
125°	21	21	21	21	21	19
135°	27	27	27	27	27	21
145°	28	28	28	28	28	18
155°	20	20	20	20	20	10
165°	21	20	20	20	20	6
175°	20	20	20	20	20	2
180°	20	20	20	20	20	



TEST NUMBER: P381655

CATALOG NUMBER: BMK-70-WCL-UNV-L840-CD-U

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	15201.1	15201.1	15201.1	15201.1	15201.1
2.5°	15102.8	14993.0	15037.2	15071.4	15014.4
5°	15950.9	15889.6	15977.9	15938.0	15852.5
7.5°	16609.4	16352.8	16364.2	16301.5	16123.3
10°	16582.3	16384.2	16357.1	16508.2	16545.2
12.5°	15898.1	15838.3	15876.7	15938.0	15916.7
15°	15571.7	15530.4	15382.2	15489.1	15442.0
17.5°	15702.9	15590.3	15550.3	15721.4	15691.5
20°	16208.8	16150.4	16234.5	16247.3	16074.9
22.5°	16982.8	16907.3	17037.0	16895.9	16751.9
25°	17052.6	17078.3	17146.7	17178.1	16927.2
27.5°	16857.4	16904.4	16828.9	16954.3	16749.0
30°	16948.6	16961.4	16893.0	16934.3	16857.4
32.5°	17280.7	17277.8	17209.4	17377.6	17344.8
35°	17916.4	17949.2	17919.2	17934.9	17893.6
37.5°	18589.2	18413.8	18426.7	18443.8	18470.8
40°	18171.5	18231.4	18151.6	18297.0	18285.6
42.5°	17840.9	18034.7	17974.8	17962.0	17986.2
45°	17916.4	17972.0	18001.9	17993.4	18113.1
47.5°	18101.7	18128.8	18143.0	18049.0	18100.3
50°	18118.8	17972.0	18053.2	17976.3	18064.6
52.5°	17182.4	17138.2	17059.8	17252.2	17205.2
55°	15940.9	15855.4	15859.6	15824.0	16097.7
57.5°	14819.2	14539.8	14618.2	14591.1	14639.6
60°	13242.7	12954.8	12967.7	13027.5	13118.7
62.5°	11572.3	11552.3	11391.2	11519.5	11592.2
65°	9817.7	9797.7	9766.4	9780.6	9833.3
67.5°	8309.7	8085.9	8131.5	8098.7	8152.9
70°	6833.0	6743.2	6729.0	6736.1	6767.5
72.5°	5722.7	5628.6	5640.0	5603.0	5654.3
75°	4571.0	4525.4	4565.3	4524.0	4544.0
77.5°	3704.4	3687.3	3697.3	3673.1	3700.2
80°	3003.2	2991.8	2994.6	2997.5	3050.2
82.5°	2397.4	2384.6	2340.4	2390.3	2411.7
85°	1907.1	1877.2	1840.1	1885.7	1954.1
87.5°	1502.3	1443.9	1416.8	1463.8	1509.4
90°	1073.3	1024.8	957.8	1022.0	1076.1
92.5°	866.6	878.0	848.1	860.9	886.6
95°	742.6	755.4	775.4	745.4	751.1
97.5°	667.1	668.5	668.5	667.1	669.9
100°	565.9	571.6	574.4	573.0	568.7
102.5°	471.8	476.1	464.7	468.9	466.1
105°	326.4	337.8	336.4	333.5	330.7
107.5°	212.4	212.4	208.1	212.4	220.9
110°	115.5	112.6	109.8	114.0	118.3



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	52.7	54.2	55.6	52.7	52.7
115°	25.7	25.7	25.7	24.2	25.7
117.5°	17.1	17.1	17.1	17.1	17.1
120°	17.1	17.1	17.1	17.1	18.5
122.5°	18.5	20.0	18.5	20.0	20.0
125°	21.4	21.4	21.4	21.4	21.4
127.5°	22.8	22.8	22.8	22.8	22.8
130°	24.2	24.2	24.2	24.2	24.2
132.5°	25.7	25.7	25.7	25.7	25.7
135°	27.1	27.1	27.1	27.1	27.1
137.5°	28.5	28.5	28.5	28.5	28.5
140°	29.9	28.5	28.5	29.9	28.5
142.5°	29.9	28.5	28.5	29.9	28.5
145°	28.5	28.5	28.5	28.5	28.5
147.5°	27.1	27.1	27.1	27.1	25.7
150°	24.2	24.2	24.2	24.2	24.2
152.5°	22.8	21.4	21.4	21.4	21.4
155°	20.0	20.0	20.0	20.0	20.0
157.5°	20.0	20.0	20.0	20.0	20.0
160°	21.4	20.0	20.0	20.0	20.0
162.5°	21.4	20.0	20.0	20.0	20.0
165°	21.4	20.0	20.0	20.0	20.0
167.5°	21.4	20.0	20.0	20.0	20.0
170°	21.4	20.0	20.0	20.0	20.0
172.5°	20.0	20.0	20.0	20.0	20.0
175°	20.0	20.0	20.0	20.0	20.0
177.5°	20.0	20.0	20.0	20.0	21.4
180°	20.0	20.0	20.0	20.0	20.0

(END OF REPORT)