

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: P381631

Luminaire Tested: **BMK-60-WFL-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: P381631
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1908-468-1)
Test Lab: INNOVATIONS CENTER(G2)
Issue Date: 2/4/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: BMK-60-WFL-UNV-L840-CD-U
Description: BENCHMARK HIGHBAY LED FIXTURE WITH WIDE FROSTED LENS

Light Source: -
Ballast/Driver: -

Luminaire Equipment: Sample No. Condition Description

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 60169.0 lumens
Efficiency: N/A
Efficacy: 148.3 lumens/watt
Spacing Criteria (0/90/45): 1.69 / 1.69 / 1.76
Luminous Opening: Vertical Cylinder (Dia: 1.33' x H: 0.12')
CIE Type: Direct

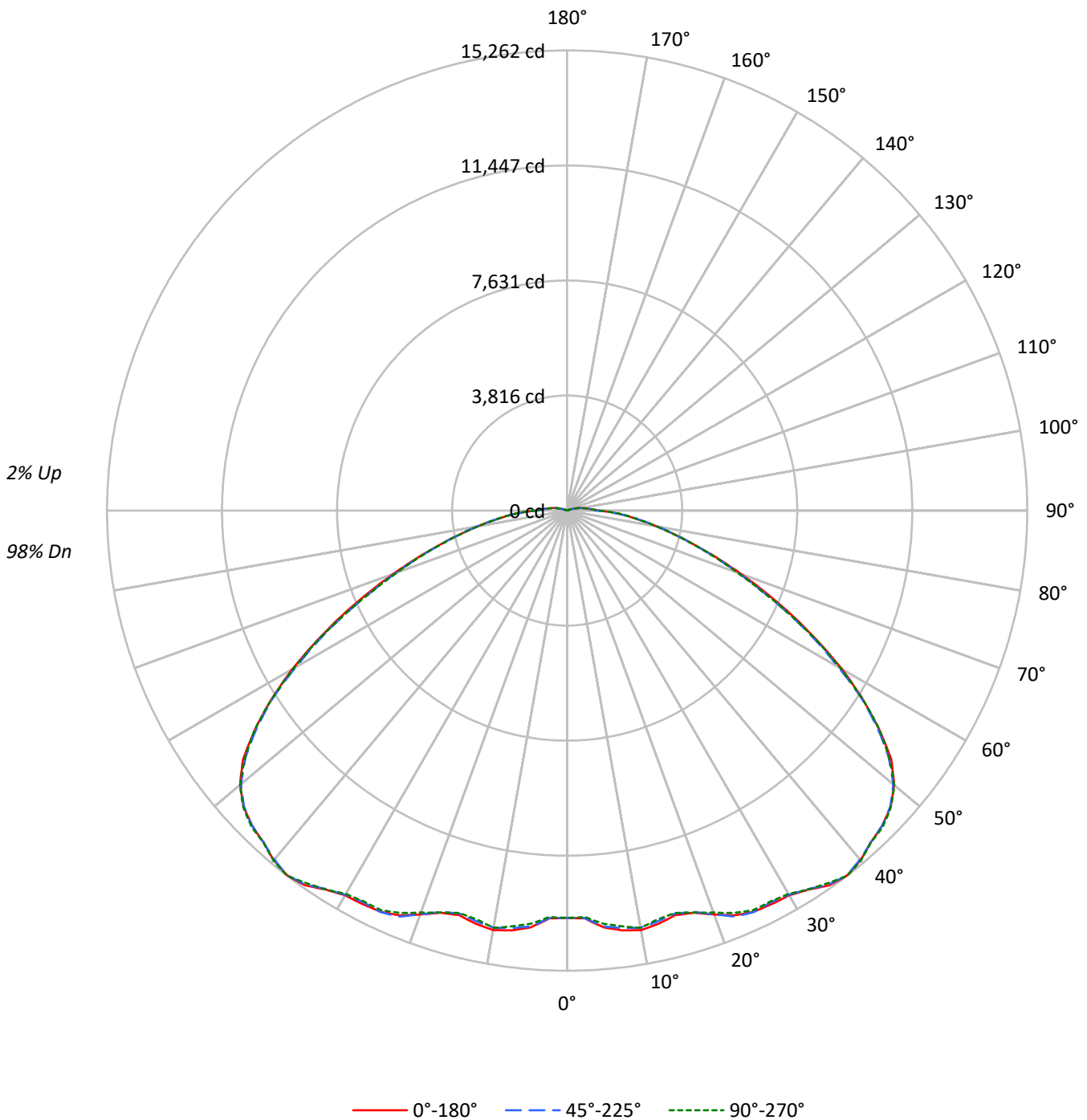
Input Watts (W): 405.7
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	0
RCR																				
0	119	119	119	119	116	116	116	116	110	110	110		105	105	105		100	100	100	98
1	107	102	97	93	104	99	95	91	95	91	88		90	87	85		86	84	82	79
2	96	88	80	74	94	85	79	73	81	76	71		78	73	69		74	70	67	65
3	87	76	67	60	85	74	66	59	71	64	58		68	62	57		65	60	56	53
4	79	66	57	50	77	65	56	49	62	55	48		60	53	48		57	51	47	44
5	73	59	49	42	70	58	49	42	55	47	41		53	46	40		51	45	40	38
6	67	52	43	36	64	51	42	36	49	41	35		47	40	35		46	39	34	32
7	61	47	38	31	59	46	37	31	44	37	31		43	36	30		41	35	30	28
8	57	43	34	28	55	42	33	27	40	33	27		39	32	27		38	31	26	24
9	53	39	30	24	51	38	30	24	37	29	24		36	29	24		34	28	24	22
10	49	36	27	22	48	35	27	22	34	27	22		33	26	21		32	26	21	19

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	104177	104177	104177
5°	106306	106065	105415
10°	108369	107738	107784
15°	107461	107020	106898
20°	112115	112105	111591
25°	118287	118385	117848
30°	122759	122547	122305
35°	131784	131510	131037
40°	138497	138264	138663
45°	143972	144019	144373
50°	148727	148269	148804
55°	144968	144342	145205
60°	134639	132889	133866
65°	119695	117777	118287
70°	103827	102409	101854
75°	89717	89567	89268
80°	79717	80262	79460
85°	73979	74159	74657



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	1325.2	2.2
10°-20°	3963.0	6.6
20°-30°	6752.7	11.2
30°-40°	9463.3	15.7
40°-50°	11392.2	18.9
50°-60°	11156.6	18.5
60°-70°	8087.2	13.4
70°-80°	4658.7	7.7
80°-90°	2182.5	3.6
90°-100°	782.8	1.3
100°-110°	297.5	0.5
110°-120°	42.6	0.1
120°-130°	16.0	0.0
130°-140°	17.7	0.0
140°-150°	15.3	0.0
150°-160°	8.8	0.0
160°-170°	5.2	0.0
170°-180°	1.7	0.0
0°-30°	12040.9	20.0
0°-40°	21504.2	35.7
0°-60°	44053.0	73.2
0°-90°	58981.3	98.0
90°-120°	1122.9	1.9
90°-150°	1172.0	1.9
90°-180°	1188.0	2.0
0°-180°	60169.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	13507	13507	13507	13507	13507	
5°	13874	13808	13842	13830	13758	###
15°	13888	13817	13831	13850	13816	3976
25°	14673	14645	14685	14650	14619	6764
35°	15166	15143	15135	15156	15080	9470
45°	14775	14828	14780	14772	14816	11392
55°	12619	12591	12564	12520	12640	11212
65°	8238	8160	8106	8091	8141	8175
75°	4352	4345	4345	4317	4330	4682
85°	1977	2006	1982	1980	1995	1823
90°	1051	1042	971	1027	1053	612
95°	700	704	701	694	696	528
105°	265	269	274	271	268	295
115°	30	29	29	30	29	43
125°	18	18	18	18	18	16
135°	23	23	23	23	23	18
145°	25	24	25	25	24	16
155°	18	18	18	18	18	9
165°	18	18	18	18	18	5
175°	18	18	18	18	18	2
180°	18	18	18	18	18	



TEST NUMBER: P381631

CATALOG NUMBER: BMK-60-WFL-UNV-L840-CD-U

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	13506.8	13506.8	13506.8	13506.8	13506.8
2.5°	13540.7	13501.9	13528.6	13544.3	13493.4
5°	13873.8	13808.4	13842.3	13830.2	13757.5
7.5°	14040.9	13957.4	13963.4	13969.5	13905.3
10°	14128.1	14056.7	14045.8	14083.3	14051.8
12.5°	14032.5	13939.2	13951.3	13975.5	13883.5
15°	13888.3	13816.8	13831.4	13849.6	13815.6
17.5°	13987.6	13936.8	13951.3	13974.3	13974.3
20°	14252.9	14208.1	14251.7	14231.1	14186.3
22.5°	14529.1	14500.0	14573.9	14508.5	14446.7
25°	14673.2	14645.4	14685.3	14650.2	14618.7
27.5°	14709.5	14675.6	14640.5	14658.7	14615.1
30°	14733.8	14738.6	14708.3	14727.7	14679.3
32.5°	14904.6	14930.0	14882.8	14945.7	14897.3
35°	15166.2	15143.2	15134.7	15156.5	15080.2
37.5°	15254.6	15219.5	15251.0	15252.2	15261.9
40°	15133.5	15093.5	15108.1	15116.5	15151.7
42.5°	14915.5	14937.3	14915.5	14904.6	14920.3
45°	14775.0	14828.3	14779.8	14772.5	14816.1
47.5°	14550.9	14584.8	14537.5	14533.9	14563.0
50°	14158.4	14111.2	14114.8	14129.4	14165.7
52.5°	13549.2	13472.9	13447.4	13429.2	13463.2
55°	12618.9	12591.1	12564.4	12519.6	12639.5
57.5°	11616.0	11527.6	11572.4	11534.8	11603.9
60°	10533.1	10442.3	10396.2	10407.1	10472.6
62.5°	9359.4	9335.2	9269.8	9277.0	9329.1
65°	8237.8	8160.3	8105.8	8091.2	8140.9
67.5°	7136.7	7037.4	7015.6	6974.4	6982.9
70°	6114.4	6057.5	6030.9	6011.5	5998.2
72.5°	5195.1	5163.6	5143.0	5130.9	5132.1
75°	4352.1	4344.8	4344.8	4316.9	4330.3
77.5°	3637.4	3670.1	3643.5	3621.7	3615.6
80°	3010.0	3047.5	3030.6	3010.0	3000.3
82.5°	2451.6	2492.8	2472.2	2463.7	2455.2
85°	1976.8	2005.8	1981.6	1980.4	1994.9
87.5°	1528.6	1539.5	1505.6	1525.0	1560.1
90°	1051.4	1041.7	971.4	1027.1	1052.6
92.5°	833.3	840.6	827.3	824.9	830.9
95°	700.1	703.7	701.3	694.1	696.5
97.5°	583.8	591.1	587.5	583.8	583.8
100°	474.8	478.4	480.9	476.0	474.8
102.5°	371.9	374.3	373.1	374.3	373.1
105°	265.3	268.9	273.7	271.3	267.7
107.5°	180.5	181.7	180.5	182.9	184.1
110°	112.6	110.2	107.8	111.4	113.9



TEST NUMBER: P381631

CATALOG NUMBER: BMK-60-WFL-UNV-L840-CD-U

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	60.6	59.4	61.8	60.6	58.1
115°	30.3	29.1	29.1	30.3	29.1
117.5°	17.0	17.0	15.7	17.0	17.0
120°	14.5	14.5	14.5	14.5	15.7
122.5°	15.7	17.0	15.7	17.0	17.0
125°	18.2	18.2	18.2	18.2	18.2
127.5°	19.4	19.4	19.4	19.4	19.4
130°	20.6	20.6	20.6	20.6	20.6
132.5°	21.8	21.8	21.8	21.8	21.8
135°	23.0	23.0	23.0	23.0	23.0
137.5°	24.2	24.2	24.2	24.2	24.2
140°	25.4	25.4	25.4	25.4	24.2
142.5°	25.4	25.4	25.4	25.4	24.2
145°	25.4	24.2	25.4	25.4	24.2
147.5°	24.2	23.0	23.0	24.2	23.0
150°	21.8	21.8	21.8	21.8	21.8
152.5°	19.4	19.4	19.4	19.4	19.4
155°	18.2	18.2	18.2	18.2	18.2
157.5°	18.2	18.2	18.2	18.2	18.2
160°	18.2	18.2	18.2	18.2	18.2
162.5°	18.2	18.2	18.2	18.2	18.2
165°	18.2	18.2	18.2	18.2	18.2
167.5°	18.2	18.2	18.2	18.2	18.2
170°	18.2	18.2	18.2	18.2	18.2
172.5°	18.2	18.2	18.2	18.2	18.2
175°	18.2	18.2	18.2	18.2	18.2
177.5°	17.0	18.2	18.2	18.2	18.2
180°	18.2	18.2	18.2	18.2	18.2

(END OF REPORT)