

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: P381685

Luminaire Tested: **BMK-60-NFL-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: P381685  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1908-468-4)  
Test Lab: INNOVATIONS CENTER(G2)  
Issue Date: 2/4/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: BMK-60-NFL-UNV-L840-CD-U  
Description: BENCHMARK HIGHBAY LED FIXTURE WITH NARROW FROSTED LENS

Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.    Condition    Description

**Summary**

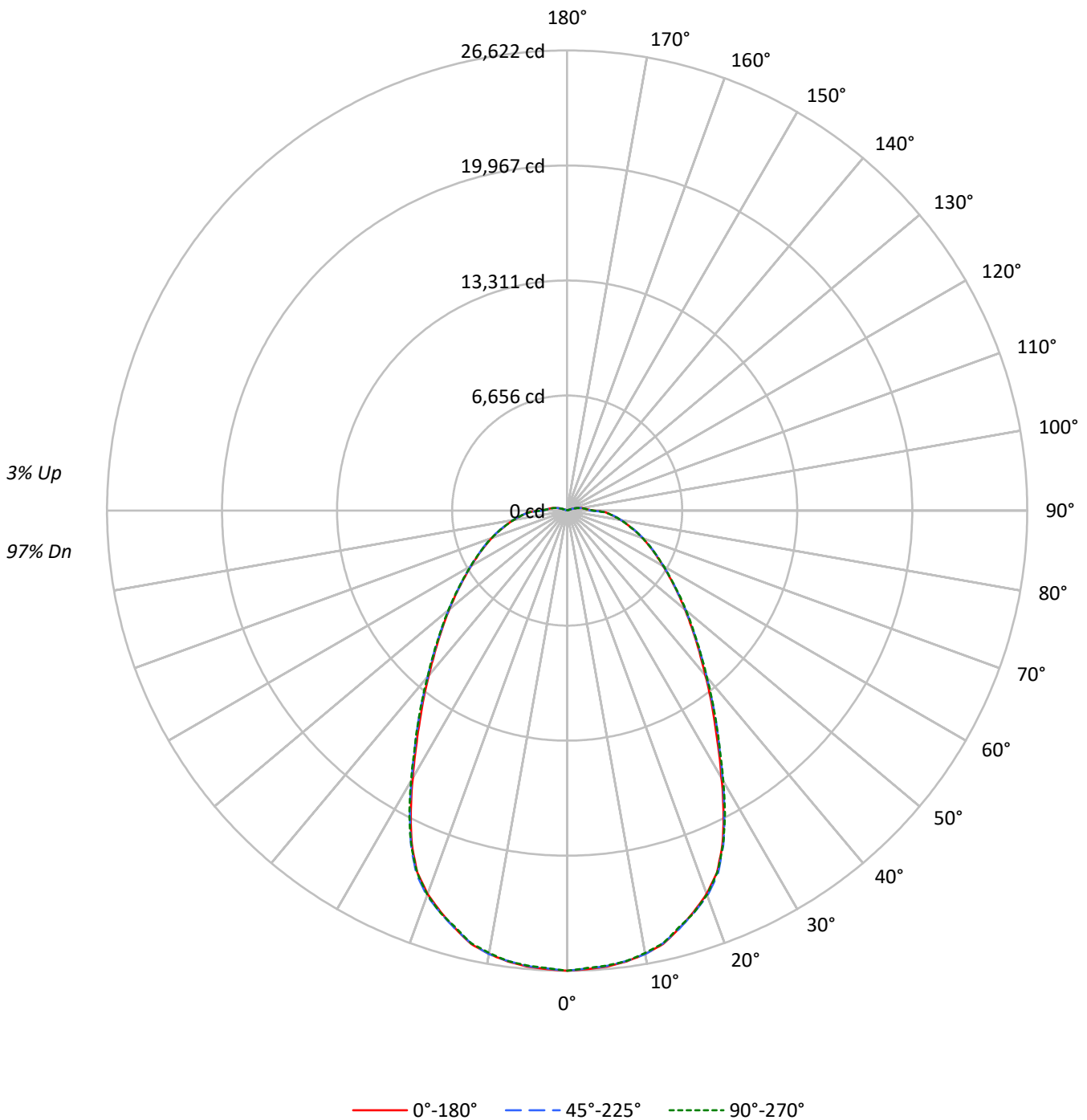
Lumens per Lamp: N/A  
Luminaire Lumens: 57880.9 lumens  
Efficiency: N/A  
Efficacy: 142.7 lumens/watt  
Spacing Criteria (0/90/45): 1.06 / 1.07 / 1.1  
Luminous Opening: Vertical Cylinder (Dia: 1.33' x H: 0.12')  
CIE Type: Direct

Input Watts (W): 405.7  
Input Voltage (V): NR  
Input Current (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	104	104	104	99	99	99	99	99	99	97	
1	107	102	98	94	104	100	96	92	95	91	88	90	88	85	86	84	82	86	84	82	80	
2	98	90	83	77	95	88	81	76	84	78	74	80	75	72	76	73	70	76	73	70	67	
3	90	80	72	65	87	78	70	65	74	68	63	71	66	61	68	64	60	68	64	60	58	
4	83	71	63	56	80	70	62	56	67	60	55	64	58	54	62	57	52	62	57	52	50	
5	77	64	56	49	75	63	55	49	61	54	48	58	52	47	56	51	46	56	51	46	44	
6	71	59	50	44	69	57	49	43	55	48	43	53	47	42	51	46	42	51	46	42	39	
7	67	54	45	39	65	53	45	39	51	44	38	49	43	38	47	42	37	47	42	37	36	
8	62	49	41	35	61	48	41	35	47	40	35	45	39	34	44	38	34	44	38	34	32	
9	58	46	38	32	57	45	37	32	43	37	32	42	36	31	41	35	31	41	35	31	29	
10	55	42	35	30	54	42	34	30	40	34	29	39	33	29	38	33	29	38	33	29	27	

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

	0°	45°	90°
0°	205330	205330	205330
5°	202935	202647	202452
10°	199748	199841	199311
15°	193649	193799	193152
20°	185625	186492	185987
25°	171438	172278	172073
30°	148808	149868	150362
35°	129039	130639	130723
40°	113856	114799	114998
45°	102250	102970	103123
50°	93394	93864	94195
55°	86637	87013	87180
60°	81828	82277	82525
65°	79446	79956	79657
70°	78922	79312	78838
75°	79231	80055	79305
80°	83374	84113	83215
85°	94241	94832	93788



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	2511.4	4.3
10°-20°	7042.5	12.2
20°-30°	9699.0	16.8
30°-40°	9405.7	16.3
40°-50°	8185.2	14.1
50°-60°	6809.0	11.8
60°-70°	5465.3	9.4
70°-80°	4102.5	7.1
80°-90°	2678.9	4.6
90°-100°	1210.2	2.1
100°-110°	574.3	1.0
110°-120°	92.1	0.2
120°-130°	25.6	0.0
130°-140°	28.5	0.0
140°-150°	24.8	0.0
150°-160°	14.4	0.0
160°-170°	8.7	0.0
170°-180°	3.0	0.0
0°-30°	19252.9	33.3
0°-40°	28658.6	49.5
0°-60°	43652.8	75.4
0°-90°	55899.5	96.6
90°-120°	1876.6	3.2
90°-150°	1955.4	3.4
90°-180°	1981.0	3.4
0°-180°	57880.9	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	26622	26622	26622	26622	26622	
5°	26485	26397	26447	26491	26422	###
15°	25027	24944	25047	25065	24963	7041
25°	21266	21265	21371	21406	21345	9668
35°	14850	14899	15034	15034	15044	9338
45°	10493	10537	10567	10583	10583	8138
55°	7541	7556	7574	7592	7589	6780
65°	5468	5484	5503	5505	5482	5436
75°	3843	3865	3883	3866	3847	4092
85°	2518	2540	2534	2501	2506	2185
90°	1537	1487	1364	1463	1496	892
95°	1100	1104	1100	1077	1084	845
105°	551	548	544	537	535	582
115°	65	64	64	62	61	94
125°	28	29	28	29	30	25
135°	36	38	36	38	38	28
145°	41	40	40	40	40	25
155°	29	30	29	29	29	14
165°	32	32	30	30	30	9
175°	30	32	30	32	32	3
180°	32	32	32	32	32	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	26621.5	26621.5	26621.5	26621.5	26621.5
2.5°	26554.8	26483.4	26510.0	26556.1	26487.0
5°	26484.6	26397.4	26447.0	26490.6	26421.6
7.5°	26311.4	26221.7	26283.5	26353.8	26283.5
10°	26041.3	25960.1	26053.4	26061.9	25984.3
12.5°	25677.9	25588.2	25639.1	25670.6	25641.5
15°	25027.4	24943.8	25046.8	25065.0	24963.2
17.5°	24340.6	24311.6	24387.9	24431.5	24392.7
20°	23598.1	23618.7	23708.3	23718.0	23644.1
22.5°	22650.9	22633.9	22763.5	22747.8	22681.2
25°	21266.4	21265.2	21370.6	21405.7	21345.1
27.5°	19590.0	19550.0	19701.4	19701.4	19775.3
30°	17860.3	17836.1	17987.5	17997.2	18046.8
32.5°	16268.7	16309.9	16426.1	16451.6	16447.9
35°	14850.3	14898.7	15034.4	15034.4	15044.1
37.5°	13609.9	13647.5	13728.6	13771.0	13752.8
40°	12441.0	12490.7	12544.0	12592.4	12565.8
42.5°	11409.0	11439.3	11520.5	11553.2	11519.3
45°	10493.3	10536.9	10567.2	10582.9	10582.9
47.5°	9657.5	9664.8	9718.1	9719.3	9736.3
50°	8890.8	8871.4	8935.6	8917.4	8967.1
52.5°	8188.2	8191.9	8218.5	8229.4	8263.3
55°	7541.4	7556.0	7574.1	7592.3	7588.7
57.5°	6946.7	6969.7	6995.1	7008.5	6987.9
60°	6401.6	6444.0	6436.7	6468.2	6456.1
62.5°	5913.5	5953.4	5957.1	5972.8	5955.9
65°	5467.7	5483.5	5502.8	5505.3	5482.2
67.5°	5046.2	5060.7	5088.6	5082.5	5052.2
70°	4647.7	4653.7	4670.7	4673.1	4642.8
72.5°	4251.6	4255.2	4267.3	4264.9	4244.3
75°	3843.4	3865.2	3883.4	3866.4	3847.0
77.5°	3500.6	3503.0	3516.3	3490.9	3494.5
80°	3148.1	3162.6	3176.0	3137.2	3142.1
82.5°	2833.2	2848.9	2857.4	2810.2	2816.2
85°	2518.2	2540.0	2534.0	2501.3	2506.1
87.5°	2200.9	2176.7	2159.7	2146.4	2152.4
90°	1537.1	1487.4	1363.9	1463.2	1495.9
92.5°	1233.1	1251.2	1234.3	1214.9	1233.1
95°	1099.8	1103.5	1099.8	1076.8	1084.1
97.5°	970.2	979.9	970.2	947.2	955.7
100°	833.4	835.8	829.7	815.2	821.2
102.5°	696.5	698.9	690.4	680.7	683.2
105°	551.1	547.5	543.9	536.6	535.4
107.5°	397.3	397.3	391.2	384.0	388.8
110°	260.4	256.8	243.5	245.9	248.3



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	138.1	139.3	141.7	134.5	129.6
115°	65.4	64.2	64.2	61.8	60.6
117.5°	29.1	29.1	26.6	27.9	29.1
120°	23.0	24.2	23.0	23.0	25.4
122.5°	25.4	26.6	25.4	26.6	27.9
125°	27.9	29.1	27.9	29.1	30.3
127.5°	30.3	31.5	30.3	31.5	31.5
130°	32.7	33.9	32.7	32.7	33.9
132.5°	33.9	35.1	35.1	35.1	35.1
135°	36.3	37.5	36.3	37.5	37.5
137.5°	38.8	38.8	38.8	38.8	38.8
140°	40.0	40.0	40.0	40.0	40.0
142.5°	41.2	41.2	41.2	41.2	40.0
145°	41.2	40.0	40.0	40.0	40.0
147.5°	38.8	38.8	38.8	38.8	37.5
150°	35.1	35.1	35.1	35.1	35.1
152.5°	31.5	32.7	31.5	31.5	31.5
155°	29.1	30.3	29.1	29.1	29.1
157.5°	30.3	30.3	29.1	29.1	30.3
160°	30.3	30.3	30.3	30.3	30.3
162.5°	31.5	31.5	30.3	30.3	30.3
165°	31.5	31.5	30.3	30.3	30.3
167.5°	31.5	31.5	30.3	30.3	30.3
170°	31.5	31.5	30.3	30.3	30.3
172.5°	31.5	31.5	31.5	31.5	31.5
175°	30.3	31.5	30.3	31.5	31.5
177.5°	30.3	30.3	30.3	31.5	32.7
180°	31.5	31.5	31.5	31.5	31.5

(END OF REPORT)