

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: P411988

Luminaire Tested: **LHB-24-UNV-L840-CD-U**

Issue Date: 09/28/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P411988  
Test Lab: BAY AREA COMPLIANCE LABS  
Issue Date: 09/28/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: LHB-24-UNV-L840-CD-U  
Description: High Bay Luminaires for Commercial and Industrial Buildings  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA ( RKS180522018-10)  
Light Source: 4000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 23759.8 lumens  
Efficiency: N/A  
Efficacy: 138.3 lumens/watt  
Spacing Criteria (0/90/45): 1.23 / 1.23 / 1.32  
Luminous Opening: Rectangular (W 0.99' x L: 1.92' x H: 0')  
CIE Type: Direct

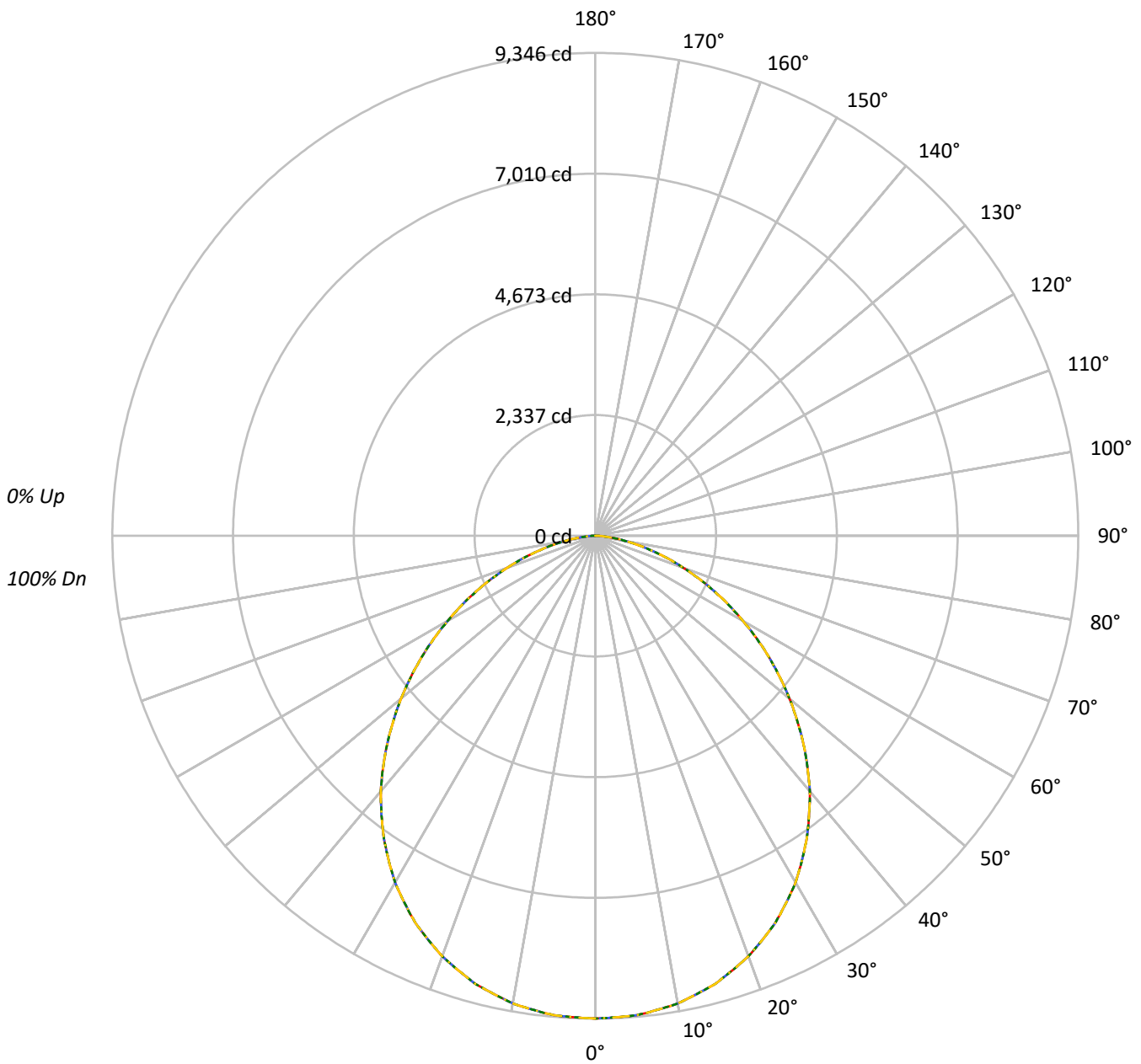
Input Watts (W): 171.8  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot



— 0°-180°    - - 45°-225°    - - - 90°-270°    - - - 135°-315°



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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	50	30	10	0		
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100					100			
1	110	105	101	98	107	103	99	96	99	96	93	95	92	90	91	89	87	85					85			
2	100	92	86	80	98	90	85	80	87	82	78	84	80	76	81	77	74	72					72			
3	92	82	74	68	89	80	73	67	77	71	66	74	69	65	72	67	64	61					61			
4	84	73	64	58	82	71	63	57	69	62	57	67	61	56	64	59	55	53					53			
5	78	65	56	50	75	64	56	50	62	55	49	60	54	49	58	53	48	46					46			
6	72	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	43	41					41			
7	67	53	45	39	65	53	45	39	51	44	38	50	43	38	48	42	38	36					36			
8	62	49	41	35	61	48	40	35	47	40	35	46	39	34	44	39	34	32					32			
9	58	45	37	31	57	44	37	31	43	36	31	42	36	31	41	35	31	29					29			
10	54	41	34	29	53	41	34	28	40	33	28	39	33	28	38	32	28	26					26			

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

	0°	90°	180°	270°
0°	52976	52976	52976	52976
5°	53001	53001	53001	53001
10°	52913	52913	52913	52913
15°	52682	52682	52682	52682
20°	52256	52256	52256	52256
25°	51636	51636	51636	51636
30°	50730	50730	50730	50730
35°	49388	49388	49388	49388
40°	47785	47785	47785	47785
45°	45661	45661	45661	45661
50°	43250	43250	43250	43250
55°	40548	40548	40548	40548
60°	37391	37391	37391	37391
65°	34021	34021	34021	34021
70°	29911	29911	29911	29911
75°	25239	25239	25239	25239
80°	19557	19557	19557	19557
85°	11831	11831	11831	11831



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	885.1	3.7
10°-20°	2531.6	10.7
20°-30°	3800.0	16.0
30°-40°	4460.4	18.8
40°-50°	4392.3	18.5
50°-60°	3669.2	15.4
60°-70°	2517.6	10.6
70°-80°	1241.6	5.2
80°-90°	262.0	1.1
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	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°	7216.7	30.4
0°-40°	11677.1	49.1
0°-60°	19738.6	83.1
0°-90°	23759.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	23759.8	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	9346	9346	9346	9346	9346	
5°	9314	9314	9314	9314	9314	885
15°	8977	8977	8977	8977	8977	2532
25°	8256	8256	8256	8256	8256	3800
35°	7137	7137	7137	7137	7137	4460
45°	5696	5696	5696	5696	5696	4392
55°	4103	4103	4103	4103	4103	3669
65°	2536	2536	2536	2536	2536	2518
75°	1152	1152	1152	1152	1152	1242
85°	182	182	182	182	182	250
90°	0	0	0	0	0	25
95°	0	0	0	0	0	0
105°	0	0	0	0	0	0
115°	0	0	0	0	0	0
125°	0	0	0	0	0	0
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°	112.5°	135°	157.5°	180°	202.5°	225°
0°	9345.6	9345.6	9345.6	9345.6	9345.6	9345.6	9345.6	9345.6	9345.6	9345.6	9345.6
5°	9314.4	9314.4	9314.4	9314.4	9314.4	9314.4	9314.4	9314.4	9314.4	9314.4	9314.4
10°	9192.7	9192.7	9192.7	9192.7	9192.7	9192.7	9192.7	9192.7	9192.7	9192.7	9192.7
15°	8977.1	8977.1	8977.1	8977.1	8977.1	8977.1	8977.1	8977.1	8977.1	8977.1	8977.1
20°	8662.6	8662.6	8662.6	8662.6	8662.6	8662.6	8662.6	8662.6	8662.6	8662.6	8662.6
25°	8255.7	8255.7	8255.7	8255.7	8255.7	8255.7	8255.7	8255.7	8255.7	8255.7	8255.7
30°	7750.4	7750.4	7750.4	7750.4	7750.4	7750.4	7750.4	7750.4	7750.4	7750.4	7750.4
35°	7136.9	7136.9	7136.9	7136.9	7136.9	7136.9	7136.9	7136.9	7136.9	7136.9	7136.9
40°	6457.6	6457.6	6457.6	6457.6	6457.6	6457.6	6457.6	6457.6	6457.6	6457.6	6457.6
45°	5695.9	5695.9	5695.9	5695.9	5695.9	5695.9	5695.9	5695.9	5695.9	5695.9	5695.9
50°	4904.4	4904.4	4904.4	4904.4	4904.4	4904.4	4904.4	4904.4	4904.4	4904.4	4904.4
55°	4102.9	4102.9	4102.9	4102.9	4102.9	4102.9	4102.9	4102.9	4102.9	4102.9	4102.9
60°	3298.1	3298.1	3298.1	3298.1	3298.1	3298.1	3298.1	3298.1	3298.1	3298.1	3298.1
65°	2536.4	2536.4	2536.4	2536.4	2536.4	2536.4	2536.4	2536.4	2536.4	2536.4	2536.4
70°	1804.7	1804.7	1804.7	1804.7	1804.7	1804.7	1804.7	1804.7	1804.7	1804.7	1804.7
75°	1152.4	1152.4	1152.4	1152.4	1152.4	1152.4	1152.4	1152.4	1152.4	1152.4	1152.4
80°	599.1	599.1	599.1	599.1	599.1	599.1	599.1	599.1	599.1	599.1	599.1
85°	181.9	181.9	181.9	181.9	181.9	181.9	181.9	181.9	181.9	181.9	181.9
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
95°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
100°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
105°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
110°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
115°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
120°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
125°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
130°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
135°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
140°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
145°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
150°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
155°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
160°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
165°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
180°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	9345.6	9345.6	9345.6	9345.6	9345.6	9345.6
5°	9314.4	9314.4	9314.4	9314.4	9314.4	9314.4
10°	9192.7	9192.7	9192.7	9192.7	9192.7	9192.7
15°	8977.1	8977.1	8977.1	8977.1	8977.1	8977.1
20°	8662.6	8662.6	8662.6	8662.6	8662.6	8662.6
25°	8255.7	8255.7	8255.7	8255.7	8255.7	8255.7
30°	7750.4	7750.4	7750.4	7750.4	7750.4	7750.4
35°	7136.9	7136.9	7136.9	7136.9	7136.9	7136.9
40°	6457.6	6457.6	6457.6	6457.6	6457.6	6457.6
45°	5695.9	5695.9	5695.9	5695.9	5695.9	5695.9
50°	4904.4	4904.4	4904.4	4904.4	4904.4	4904.4
55°	4102.9	4102.9	4102.9	4102.9	4102.9	4102.9
60°	3298.1	3298.1	3298.1	3298.1	3298.1	3298.1
65°	2536.4	2536.4	2536.4	2536.4	2536.4	2536.4
70°	1804.7	1804.7	1804.7	1804.7	1804.7	1804.7
75°	1152.4	1152.4	1152.4	1152.4	1152.4	1152.4
80°	599.1	599.1	599.1	599.1	599.1	599.1
85°	181.9	181.9	181.9	181.9	181.9	181.9
90°	0.0	0.0	0.0	0.0	0.0	0.0
95°	0.0	0.0	0.0	0.0	0.0	0.0
100°	0.0	0.0	0.0	0.0	0.0	0.0
105°	0.0	0.0	0.0	0.0	0.0	0.0
110°	0.0	0.0	0.0	0.0	0.0	0.0
115°	0.0	0.0	0.0	0.0	0.0	0.0
120°	0.0	0.0	0.0	0.0	0.0	0.0
125°	0.0	0.0	0.0	0.0	0.0	0.0
130°	0.0	0.0	0.0	0.0	0.0	0.0
135°	0.0	0.0	0.0	0.0	0.0	0.0
140°	0.0	0.0	0.0	0.0	0.0	0.0
145°	0.0	0.0	0.0	0.0	0.0	0.0
150°	0.0	0.0	0.0	0.0	0.0	0.0
155°	0.0	0.0	0.0	0.0	0.0	0.0
160°	0.0	0.0	0.0	0.0	0.0	0.0
165°	0.0	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0	0.0
180°	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)