

Scaled data based on original data using

LM-41-14 Approved Method for Photometric Testing Of Indoor Fluorescent Luminaires

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: METALUX

Report Number: RKS180330002-10

Luminaire Tested: **LHB-18-UNV-L840-CD-U w/out lens**

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-41-14  
Report Number: RKS180330002-10  
Test Lab: BAY AREA COMPLIANCE LABS  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: LHB-18-UNV-L840-CD-U w/out lens  
Description: High Bay Luminaires for Commercial and Industrial Buildings  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment:	<u>Sample No.</u>	<u>Condition</u>	<u>Description</u>
	AS-5443-1	Good	WHITE TWIN R-EVOLVE FLOOD
	AS-5443-2	Good	REFLECTOR
	AS-5443-3	Good	DRIVER
	AS-5443-4	Good	UPPER MODULE
	AS-5443-5	Good	LENS
	AS-5443-6	Good	DRIVER 2
	AS-5443-7	Good	TRIM RING

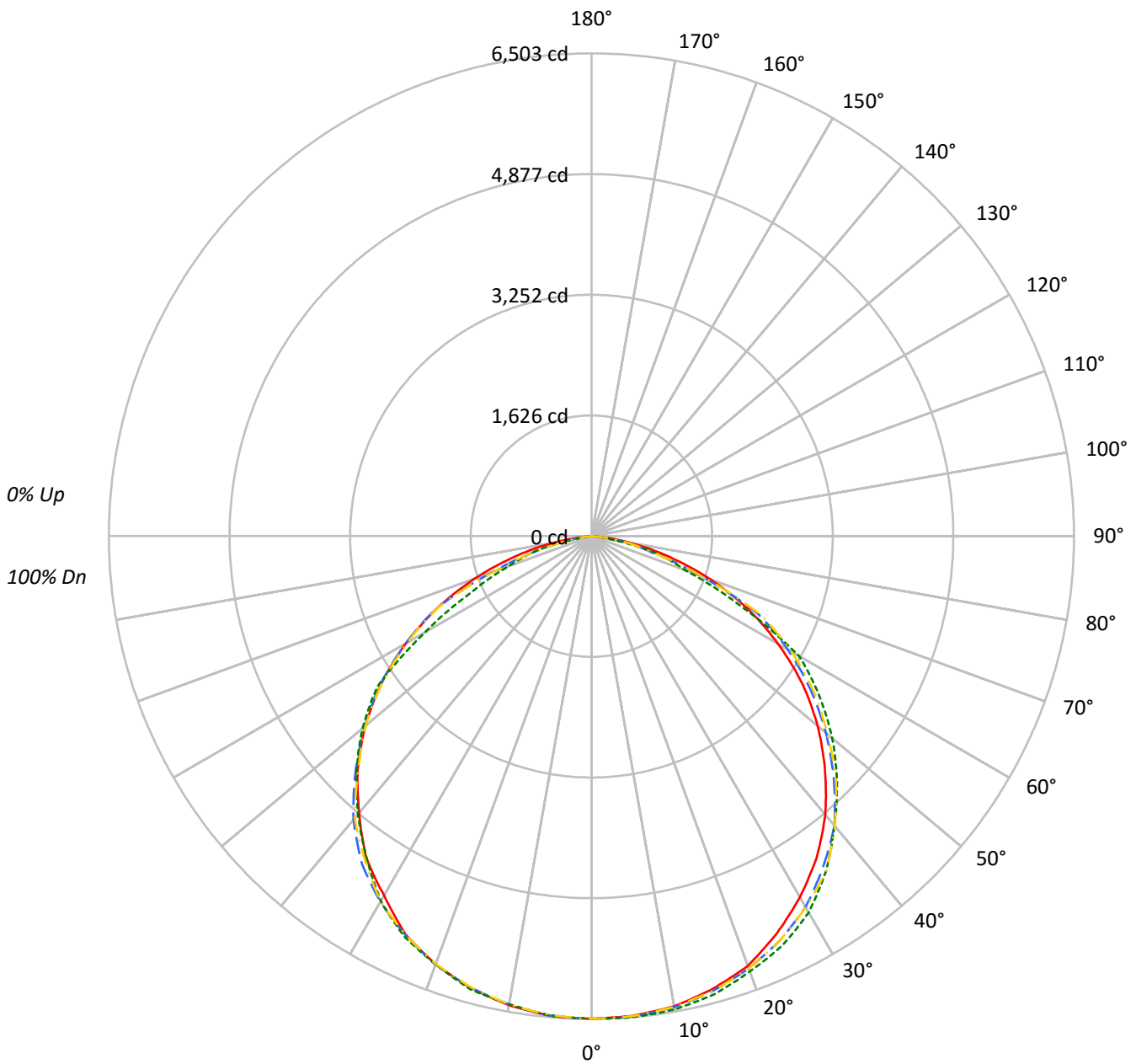
**Summary**

Lumens per Lamp: 18500.5 (1 lamp)  
Luminaire Lumens: 18500.5 lumens  
Efficiency: 100.0%  
Efficacy: 139.7 lumens/watt  
Spacing Criteria (0/90/45): 1.28 / 1.31 / 1.41  
Luminous Opening: Rectangular (W 0.99m x L: 1.92m x H: 0m)  
CIE Type: Direct

Input Watts (W): 132.4  
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

TEST NUMBER: RKS180330002-10  
CATALOG NUMBER: LHB-18-UNV-L840-CD-U w/out lens

### 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	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	109	105	101	97	107	103	99	96	99	96	93	95	92	90	91	89	87	85
2	100	92	85	80	97	90	84	79	86	81	77	83	79	75	80	77	74	71
3	91	81	73	66	89	79	72	66	76	70	65	73	68	64	71	66	62	60
4	83	72	63	56	81	70	62	56	68	61	55	65	59	54	63	58	54	52
5	77	64	55	48	74	63	54	48	61	53	48	59	52	47	57	51	47	45
6	71	57	49	42	69	57	48	42	55	47	42	53	46	41	51	46	41	39
7	65	52	43	37	64	51	43	37	50	42	37	48	42	37	47	41	36	34
8	61	47	39	33	59	47	39	33	45	38	33	44	38	33	43	37	32	31
9	57	44	35	30	55	43	35	30	42	35	30	41	34	29	40	34	29	27
10	53	40	32	27	52	40	32	27	39	32	27	38	31	27	37	31	27	25

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

	0°	90°	180°	270°
0°	3423	3423	3423	3423
5°	3427	3438	3428	3425
10°	3438	3461	3431	3423
15°	3442	3484	3433	3444
20°	3453	3498	3439	3440
25°	3432	3537	3441	3460
30°	3416	3560	3399	3452
35°	3401	3543	3401	3398
40°	3370	3504	3348	3364
45°	3315	3485	3318	3332
50°	3261	3472	3257	3300
55°	3188	3442	3170	3227
60°	3058	3404	3035	2724
65°	2907	2746	2847	2215
70°	2638	2069	2578	1830
75°	2227	1944	2169	1591
80°	1659	863	1602	504
85°	700	155	586	0



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**ZONAL LUMENS:**

**CANDELA DISTRIBUTION:**

Zone	Lumens	% Fixture	% Lamp		0°	90°	180°	270°	360°	Flux
0°-10°	617.0	3.3	3.3	0°	6501	6501	6501	6501	6501	
10°-20°	1784.8	9.6	9.6	5°	6483	6503	6485	6478	6483	617
20°-30°	2748.7	14.9	14.9	15°	6313	6390	6297	6317	6313	1784
30°-40°	3360.4	18.2	18.2	25°	5907	6086	5922	5955	5907	2724
40°-50°	3508.0	19.0	19.0	35°	5289	5511	5291	5285	5289	3307
50°-60°	3177.6	17.2	17.2	45°	4452	4679	4455	4474	4452	3436
60°-70°	2210.5	11.9	11.9	55°	3472	3749	3452	3515	3472	3094
70°-80°	970.9	5.2	5.2	65°	2333	2204	2285	1777	2333	2297
80°-90°	122.6	0.7	0.7	75°	1095	955	1066	782	1095	1173
90°-100°	0.0	0.0	0.0	85°	116	26	97	0	116	204
100°-110°	0.0	0.0	0.0	90°	0	0	0	0	0	16
110°-120°	0.0	0.0	0.0	95°	0	0	0	0	0	0
120°-130°	0.0	0.0	0.0	105°	0	0	0	0	0	0
130°-140°	0.0	0.0	0.0	115°	0	0	0	0	0	0
140°-150°	0.0	0.0	0.0	125°	0	0	0	0	0	0
150°-160°	0.0	0.0	0.0	135°	0	0	0	0	0	0
160°-170°	0.0	0.0	0.0	145°	0	0	0	0	0	0
170°-180°	0.0	0.0	0.0	155°	0	0	0	0	0	0
0°-30°	5150.5	27.8	27.8	165°	0	0	0	0	0	0
0°-40°	8510.9	46.0	46.0	175°	0	0	0	0	0	0
0°-60°	15196.6	82.1	82.1	180°	0	0	0	0	0	0
0°-90°	18500.5	100.0	100.0							
90°-120°	0.0	0.0	0.0							
90°-150°	0.0	0.0	0.0							
90°-180°	0.0	0.0	0.0							
0°-180°	18500.5	100.0	100.0							



TEST NUMBER: RKS180330002-10  
 CATALOG NUMBER: LHB-18-UNV-L840-CD-U w/out lens

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	6500.6	6500.6	6500.6	6500.6	6500.6	6500.6	6500.6	6500.6	6500.6	6500.6	6500.6
5°	6482.6	6489.6	6495.1	6490.5	6502.8	6493.7	6488.9	6483.8	6484.6	6477.4	6484.0
10°	6429.0	6428.5	6440.8	6439.2	6472.3	6444.8	6435.2	6426.7	6415.4	6413.9	6404.8
15°	6313.0	6321.1	6341.2	6348.0	6390.1	6360.0	6337.2	6323.2	6297.1	6291.9	6296.0
20°	6160.8	6171.3	6196.0	6205.8	6241.3	6219.2	6197.3	6173.9	6137.1	6127.6	6141.0
25°	5906.6	5959.6	6009.3	6025.8	6086.4	6042.0	6009.5	5965.8	5922.5	5921.4	5930.2
30°	5617.0	5639.0	5770.9	5818.1	5854.4	5834.0	5773.1	5696.4	5588.9	5625.3	5688.4
35°	5289.4	5353.2	5443.0	5530.0	5511.0	5537.7	5513.6	5358.5	5290.6	5302.6	5390.0
40°	4902.6	4950.9	5094.4	5095.0	5096.5	5107.4	5103.5	5009.3	4870.1	4914.2	4988.0
45°	4451.6	4566.9	4618.1	4692.0	4679.4	4691.7	4658.2	4588.3	4455.1	4498.2	4498.4
50°	3980.9	4104.0	4125.0	4237.6	4237.6	4250.0	4151.6	4130.8	3975.7	4028.1	3982.9
55°	3471.8	3607.5	3604.4	3736.2	3749.0	3762.7	3657.6	3641.6	3452.3	3490.7	3463.9
60°	2903.5	3046.4	3060.0	3191.8	3231.9	3212.3	3110.7	3073.8	2881.5	2886.0	2888.9
65°	2332.6	2370.8	2477.5	2155.4	2204.0	2173.5	2526.3	2425.0	2285.0	2271.3	2306.4
70°	1713.2	1767.1	1555.3	1297.3	1343.7	1314.7	1580.4	1815.0	1674.0	1653.4	1420.6
75°	1094.6	1162.0	834.6	898.6	955.3	907.4	847.8	1188.3	1066.0	1050.6	729.6
80°	547.1	501.9	458.1	304.1	284.4	336.4	471.4	522.1	528.3	352.0	282.2
85°	115.8	110.0	37.2	29.7	25.6	32.1	61.9	127.3	96.9	39.2	16.9
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°	6500.6	6500.6	6500.6	6500.6	6500.6	6500.6
5°	6477.7	6478.3	6478.8	6473.8	6474.2	6482.6
10°	6403.6	6400.6	6407.5	6404.0	6407.8	6429.0
15°	6297.7	6317.1	6298.3	6287.2	6290.5	6313.0
20°	6134.8	6137.4	6136.3	6133.2	6128.9	6160.8
25°	5940.7	5955.3	5946.5	5925.9	5903.9	5906.6
30°	5683.0	5676.5	5687.9	5682.4	5580.9	5617.0
35°	5319.4	5285.4	5334.6	5324.0	5289.6	5289.4
40°	4912.9	4893.4	4927.9	4961.7	4882.5	4902.6
45°	4494.6	4474.4	4497.0	4439.0	4471.8	4451.6
50°	4038.9	4027.6	4020.5	3970.6	4012.7	3980.9
55°	3525.9	3514.8	3509.8	3435.9	3479.4	3471.8
60°	2964.9	2585.9	2967.0	2861.3	2866.2	2903.5
65°	1980.7	1777.4	1984.0	2282.9	2245.4	2332.6
70°	1165.1	1188.3	1153.9	1406.3	1634.2	1713.2
75°	762.7	782.1	756.0	709.6	1026.5	1094.6
80°	190.6	166.2	181.7	265.8	329.2	547.1
85°	0.0	0.0	0.0	14.6	37.6	115.8
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)