

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: RKS180330003-10

Luminaire Tested: **LHB-24-UNV-L850-CD-U without 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: RKS180330003-10  
Test Lab: BAY AREA COMPLIANCE LABS  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: LHB-24-UNV-L850-CD-U without lens  
Description: High Bay Luminaires for Commercial and Industrial Buildings  
Light Source: -  
Ballast/Driver: -

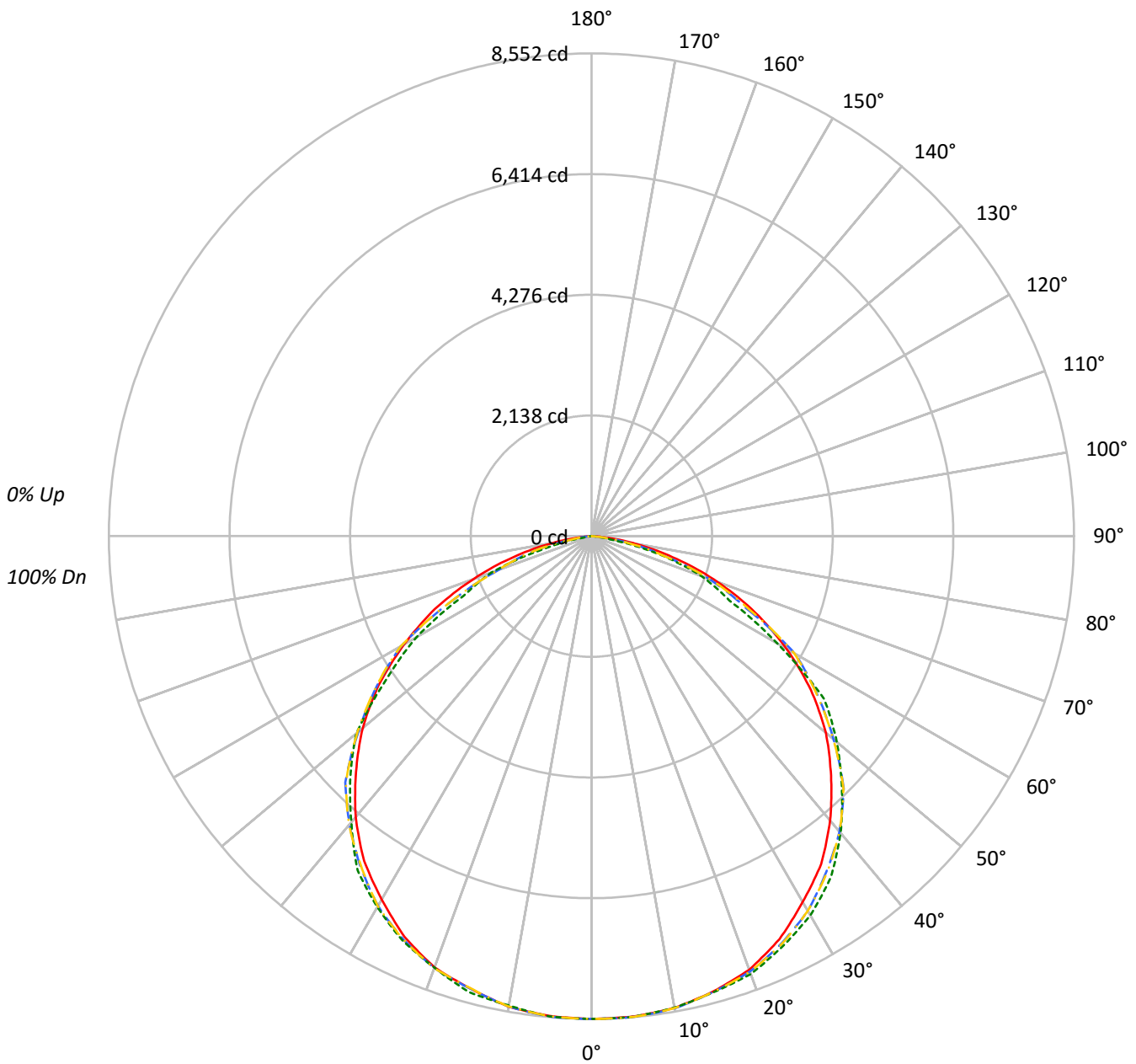
Luminaire Equipment:	<u>Sample No.</u>	<u>Condition</u>	<u>Description</u>
	AS-5443-1	Good	WHITE TWIN R-EVOLVE FLOOD
	AS-5443-2	Good	REFLECTOR
	AS-5443-3	Good	DRIVER
	AS-5443-4	Good	UPPER MODULE
	AS-5443-5	Good	LENS
	AS-5443-6	Good	DRIVER 2
	AS-5443-7	Good	TRIM RING

**Summary**

Lumens per Lamp: 24735 (1 lamp)  
Luminaire Lumens: 24735.0 lumens  
Efficiency: 100.0%  
Efficacy: 140.7 lumens/watt  
Spacing Criteria (0/90/45): 1.29 / 1.33 / 1.43  
Luminous Opening: Rectangular (W 0.99' x L: 1.92' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 175.78  
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: RKS180330003-10  
CATALOG NUMBER: LHB-24-UNV-L850-CD-U without lens

### Luminous Intensity Polar Plot



0% Up  
100% Dn

— 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	98	95	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	73	71
3	91	81	73	66	88	79	72	66	76	70	65	73	68	63	71	66	62	60
4	83	71	63	56	81	70	62	56	68	61	55	65	59	54	63	58	54	51
5	76	64	55	48	74	63	54	48	61	53	48	59	52	47	57	51	46	44
6	71	57	48	42	69	56	48	42	55	47	42	53	46	41	51	45	41	39
7	65	52	43	37	64	51	43	37	50	42	37	48	41	36	47	41	36	34
8	61	47	39	33	59	47	39	33	45	38	33	44	37	32	43	37	32	30
9	57	43	35	30	55	43	35	30	42	34	29	41	34	29	40	34	29	27
10	53	40	32	27	52	39	32	27	38	31	27	38	31	27	37	31	26	25

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

	0°	90°	180°	270°
0°	48480	48480	48480	48480
5°	48602	48633	48552	48586
10°	48850	48807	48714	48597
15°	49007	49084	48686	49093
20°	49301	49794	49044	49076
25°	49287	50150	49003	49473
30°	49000	50783	48642	49679
35°	49100	51149	48608	50008
40°	48695	50836	48092	48982
45°	48135	50310	47290	48429
50°	47842	50071	46667	47962
55°	46916	49793	45468	43944
60°	45269	43098	43392	40577
65°	42956	36171	41072	33461
70°	39495	34541	36860	31238
75°	34256	27513	31208	18989
80°	26383	11292	22518	4642
85°	13827	2367	8527	507



TEST NUMBER: RKS180330003-10

CATALOG NUMBER: LHB-24-UNV-L850-CD-U without lens

**ZONAL LUMENS:**

**CANDELA DISTRIBUTION:**

Zone	Lumens	% Fixture	% Lamp		0°	90°	180°	270°	360°	Flux
0°-10°	813.2	3.3	3.3	0°	8552	8552	8552	8552	8552	
10°-20°	2359.0	9.5	9.5	5°	8541	8547	8533	8538	8541	814
20°-30°	3651.2	14.8	14.8	15°	8351	8364	8296	8365	8351	2361
30°-40°	4496.0	18.2	18.2	25°	7880	8018	7835	7910	7880	3628
40°-50°	4729.8	19.1	19.1	35°	7095	7392	7024	7226	7095	4429
50°-60°	4244.4	17.2	17.2	45°	6004	6276	5899	6041	6004	4640
60°-70°	2922.7	11.8	11.8	55°	4747	5038	4601	4446	4747	4232
70°-80°	1355.5	5.5	5.5	65°	3203	2697	3062	2495	3203	3164
80°-90°	163.1	0.7	0.7	75°	1564	1256	1425	867	1564	1666
90°-100°	0.0	0.0	0.0	85°	213	36	131	8	213	321
100°-110°	0.0	0.0	0.0	90°	0	0	0	0	0	29
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°	6823.5	27.6	27.6	165°	0	0	0	0	0	0
0°-40°	11319.5	45.8	45.8	175°	0	0	0	0	0	0
0°-60°	20293.6	82.0	82.0	180°	0	0	0	0	0	0
0°-90°	24735.0	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°	24735.0	100.0	100.0							



TEST NUMBER: RKS180330003-10

CATALOG NUMBER: LHB-24-UNV-L850-CD-U without lens

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	8552.4	8552.4	8552.4	8552.4	8552.4	8552.4	8552.4	8552.4	8552.4	8552.4	8552.4
5°	8541.4	8553.1	8550.4	8555.2	8546.7	8555.2	8550.8	8553.8	8532.6	8543.0	8544.7
10°	8486.7	8493.3	8495.1	8500.7	8479.3	8500.1	8490.7	8480.9	8463.2	8463.4	8460.1
15°	8350.9	8365.3	8358.6	8371.4	8364.0	8357.0	8357.5	8352.8	8296.2	8287.7	8300.6
20°	8172.8	8202.8	8209.6	8248.2	8254.5	8246.1	8212.1	8192.2	8130.2	8126.5	8142.8
25°	7880.1	7933.0	7965.5	8011.4	8018.1	8006.8	7978.0	7927.4	7834.8	7857.8	7885.2
30°	7486.0	7526.2	7668.8	7733.7	7758.5	7734.8	7667.4	7518.1	7431.4	7442.6	7564.6
35°	7095.3	7150.3	7259.5	7376.4	7391.5	7382.2	7278.9	7136.4	7024.2	7056.3	7140.5
40°	6580.6	6644.1	6837.4	6945.6	6870.0	6951.8	6839.4	6632.7	6499.1	6528.5	6667.2
45°	6004.4	6150.3	6323.3	6303.8	6275.8	6307.2	6316.9	6135.7	5899.1	6009.9	6170.2
50°	5425.0	5525.5	5602.8	5716.8	5677.8	5705.8	5599.2	5513.3	5291.8	5389.4	5387.4
55°	4747.2	4879.5	4881.7	5036.2	5038.3	5009.9	4871.4	4861.1	4600.7	4725.3	4650.8
60°	3993.0	4153.3	4168.7	3793.9	3801.5	3777.5	4149.6	4123.8	3827.4	3993.0	3891.2
65°	3202.6	3342.7	3033.9	2832.6	2696.7	2922.1	3103.0	3291.5	3062.1	3077.0	2745.0
70°	2383.0	2441.4	2226.4	2051.9	2084.1	2023.2	2249.3	2406.7	2224.0	2231.5	1744.3
75°	1564.1	1620.5	1314.8	1425.5	1256.2	1405.5	1289.1	1591.5	1424.9	1266.1	1137.2
80°	808.2	653.7	605.2	382.5	345.9	387.2	595.6	632.4	689.8	531.4	337.8
85°	212.6	149.5	75.5	47.3	36.4	47.9	67.8	140.1	131.1	65.2	28.7
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°	8552.4	8552.4	8552.4	8552.4	8552.4	8552.4
5°	8536.8	8538.5	8539.9	8537.9	8546.4	8541.4
10°	8452.4	8442.9	8452.5	8460.4	8460.7	8486.7
15°	8373.1	8365.4	8358.3	8290.0	8320.6	8350.9
20°	8156.3	8135.4	8152.3	8143.3	8139.1	8172.8
25°	7896.4	7909.9	7899.7	7886.0	7861.6	7880.1
30°	7614.3	7589.8	7614.8	7568.2	7447.2	7486.0
35°	7222.6	7226.5	7224.5	7122.7	7065.2	7095.3
40°	6701.6	6619.4	6707.7	6683.6	6545.6	6580.6
45°	6054.0	6041.1	6074.4	6152.4	6017.0	6004.4
50°	5448.3	5438.7	5448.8	5413.0	5400.1	5425.0
55°	4750.4	4446.5	4755.6	4662.9	4739.4	4747.2
60°	3554.6	3579.1	3562.3	3899.6	3999.8	3993.0
65°	2450.4	2494.7	2447.5	2752.2	3115.7	3202.6
70°	1844.7	1884.8	1831.4	1747.4	2247.7	2383.0
75°	1017.8	867.0	1020.3	1146.8	1346.8	1564.1
80°	142.2	142.2	144.2	369.7	535.3	808.2
85°	15.6	7.8	16.0	32.7	70.6	212.6
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)