

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-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: 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-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

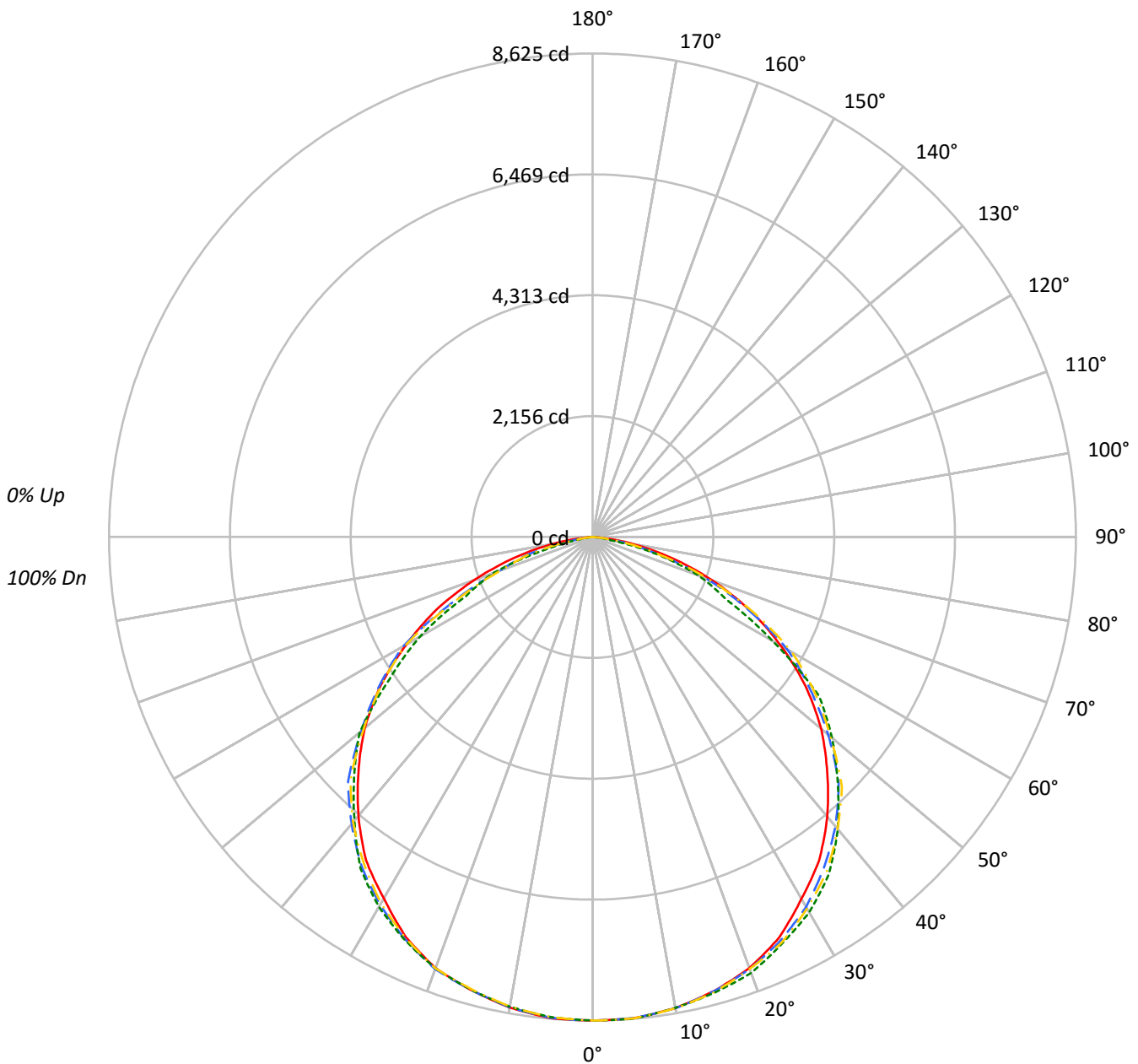
Summary

Lumens per Lamp: 24578.5 (1 lamp)
Luminaire Lumens: 24578.5 lumens
Efficiency: 100.0%
Efficacy: 140.6 lumens/watt
Spacing Criteria (0/90/45): 1.28 / 1.32 / 1.42
Luminous Opening: Rectangular (W 0.99' x L: 1.62' x H: 0')
CIE Type: Direct

Input Watts (W): 174.84
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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CATALOG NUMBER: LHB-24-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	75	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	66	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°	57945	57945	57945	57945
5°	58099	58137	58096	57959
10°	58204	58175	58127	58034
15°	58308	58531	58189	58155
20°	58500	59176	58514	58535
25°	58445	59331	58383	58784
30°	57831	59983	57748	59102
35°	57819	60282	57767	59172
40°	57165	59728	56970	57940
45°	56287	58772	56100	57092
50°	55673	58323	55429	56694
55°	54390	57772	54012	51791
60°	52102	49820	51470	47813
65°	49384	41751	48875	39521
70°	44815	39702	43983	36958
75°	38479	30879	37571	22453
80°	29083	12427	27767	6043
85°	13829	3053	11308	833



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ZONAL LUMENS:

CANDELA DISTRIBUTION:

Zone	Lumens	% Fixture	% Lamp		0°	90°	180°	270°	360°	Flux
0°-10°	818.7	3.3	3.3	0°	8625	8625	8625	8625	8625	
10°-20°	2369.1	9.6	9.6	5°	8615	8621	8615	8594	8615	819
20°-30°	3653.0	14.9	14.9	15°	8383	8415	8366	8361	8383	2369
30°-40°	4481.8	18.2	18.2	25°	7884	8004	7876	7930	7884	3626
40°-50°	4690.8	19.1	19.1	35°	7050	7350	7044	7215	7050	4400
50°-60°	4191.5	17.1	17.1	45°	5924	6186	5905	6009	5924	4577
60°-70°	2888.5	11.8	11.8	55°	4644	4932	4611	4422	4644	4138
70°-80°	1327.4	5.4	5.4	65°	3106	2626	3074	2486	3106	3062
80°-90°	157.6	0.6	0.6	75°	1482	1190	1447	865	1482	1582
90°-100°	0.0	0.0	0.0	85°	179	40	147	11	179	290
100°-110°	0.0	0.0	0.0	90°	0	0	0	0	0	25
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°	6840.9	27.8	27.8	165°	0	0	0	0	0	0
0°-40°	11322.7	46.1	46.1	175°	0	0	0	0	0	0
0°-60°	20205.0	82.2	82.2	180°	0	0	0	0	0	0
0°-90°	24578.5	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°	24578.5	100.0	100.0							



TEST NUMBER: RKS180330003-10
 CATALOG NUMBER: LHB-24-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°	8625.0	8625.0	8625.0	8625.0	8625.0	8625.0	8625.0	8625.0	8625.0	8625.0	8625.0
5°	8615.0	8607.9	8610.9	8610.8	8620.6	8607.7	8616.2	8608.6	8614.6	8603.6	8607.2
10°	8531.9	8531.9	8533.9	8539.1	8527.6	8539.9	8537.5	8534.5	8520.6	8515.9	8517.8
15°	8383.2	8387.8	8387.3	8407.7	8415.3	8409.0	8403.1	8396.9	8366.2	8359.7	8364.9
20°	8182.4	8179.3	8202.2	8275.2	8277.0	8258.4	8200.3	8168.5	8184.4	8181.3	8204.2
25°	7884.3	7908.4	7942.4	7985.6	8003.8	7993.5	7984.8	7931.4	7875.9	7883.7	7915.0
30°	7454.7	7490.0	7620.4	7688.9	7732.2	7709.0	7654.0	7537.7	7444.0	7466.0	7575.9
35°	7049.8	7088.4	7200.0	7312.8	7350.1	7331.0	7286.3	7133.3	7043.5	7065.0	7179.2
40°	6518.2	6569.0	6742.7	6880.3	6810.4	6891.6	6801.3	6644.4	6495.9	6535.3	6683.1
45°	5924.3	6039.5	6212.8	6204.1	6185.8	6221.1	6293.2	6108.5	5904.6	6009.2	6166.3
50°	5326.6	5412.0	5489.4	5595.2	5580.2	5610.6	5539.7	5474.4	5303.3	5382.0	5381.0
55°	4643.6	4759.5	4743.3	4905.8	4932.3	4942.4	4843.2	4829.2	4611.3	4725.5	4649.6
60°	3877.6	4032.6	4015.2	3672.8	3707.8	3693.7	4106.5	4097.6	3830.6	3986.6	3897.4
65°	3106.5	3200.9	3062.9	2863.2	2626.4	2940.8	3156.0	3283.2	3074.5	3102.2	2750.2
70°	2281.5	2312.2	2152.4	1956.9	2021.2	1982.0	2207.4	2404.3	2239.1	2255.5	1762.8
75°	1482.4	1513.2	1233.5	1348.3	1189.6	1364.8	1273.6	1590.2	1447.4	1412.5	1164.6
80°	751.7	602.5	555.0	326.4	321.2	338.8	594.6	642.5	717.7	548.8	364.9
85°	179.4	130.8	61.6	49.3	39.6	48.6	71.7	149.9	146.7	70.4	25.8
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	6.8	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°	8625.0	8625.0	8625.0	8625.0	8625.0	8625.0
5°	8599.3	8594.2	8592.9	8594.8	8593.2	8615.0
10°	8515.1	8506.9	8498.4	8500.9	8510.1	8531.9
15°	8372.5	8361.2	8349.6	8348.1	8346.5	8383.2
20°	8208.3	8187.4	8177.8	8189.6	8170.2	8182.4
25°	7923.8	7930.0	7900.7	7889.6	7851.6	7884.3
30°	7625.1	7618.6	7608.1	7545.4	7419.2	7454.7
35°	7225.3	7214.8	7204.8	7110.0	7021.4	7049.8
40°	6701.2	6606.5	6665.6	6644.8	6491.2	6518.2
45°	6049.7	6009.0	6025.0	6099.8	5943.9	5924.3
50°	5437.4	5424.3	5412.5	5331.9	5328.4	5326.6
55°	4745.0	4421.7	4712.9	4586.2	4678.6	4643.6
60°	3546.8	3558.4	3508.4	3843.1	3927.0	3877.6
65°	2458.7	2486.1	2426.1	2697.1	3010.3	3106.5
70°	1857.5	1881.5	1814.6	1714.7	2180.2	2281.5
75°	1037.7	865.0	1014.8	1122.8	1216.5	1482.4
80°	157.1	156.2	148.8	291.3	512.6	751.7
85°	21.0	10.8	21.3	29.8	64.1	179.4
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)