

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: RKS180330001-10

Luminaire Tested: **LHB-12-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: RKSB180330001-10
Test Lab: BAY AREA COMPLIANCE LABS
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: LHB-12-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

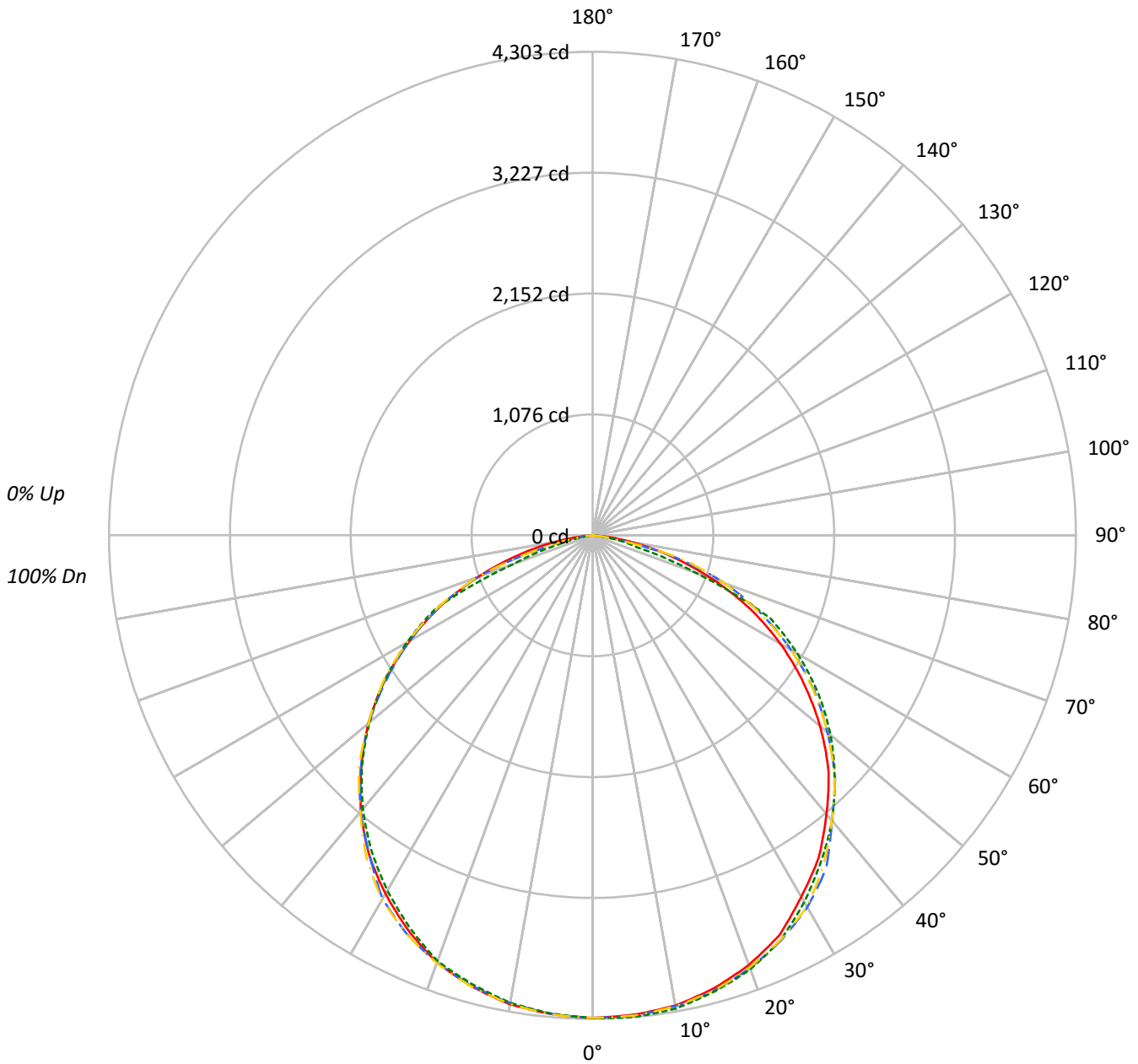
Summary

Lumens per Lamp: 12249.4 (1 lamp)
Luminaire Lumens: 12249.4 lumens
Efficiency: 100.0%
Efficacy: 140.4 lumens/watt
Spacing Criteria (0/90/45): 1.28 / 1.28 / 1.4
Luminous Opening: Rectangular (W 0.99m x L: 1.92m x H: 0m)
CIE Type: Direct

Input Watts (W): 87.24
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: RKS180330001-10
CATALOG NUMBER: LHB-12-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	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	64	73	68	63	71	66	62	60
4	83	71	63	56	81	70	62	56	68	61	55	65	59	54	63	58	53	51
5	76	64	55	48	74	63	54	48	60	53	47	58	52	47	57	51	46	44
6	71	57	48	42	69	56	48	42	55	47	41	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	33	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°	2262	2262	2262	2262
5°	2263	2275	2261	2258
10°	2272	2287	2266	2258
15°	2276	2291	2266	2254
20°	2280	2303	2268	2260
25°	2284	2307	2254	2238
30°	2259	2291	2240	2219
35°	2255	2280	2230	2204
40°	2228	2281	2206	2186
45°	2214	2272	2166	2160
50°	2168	2268	2133	2121
55°	2109	2253	2076	2076
60°	2036	2218	1980	2008
65°	1931	2175	1862	1915
70°	1741	1522	1664	1160
75°	1480	824	1391	634
80°	1097	651	990	277
85°	423	0	273	0



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ZONAL LUMENS:

CANDELA DISTRIBUTION:

Zone	Lumens	% Fixture	% Lamp		0°	90°	180°	270°	360°	Flux
0°-10°	407.5	3.3	3.3	0°	4294	4294	4294	4294	4294	
10°-20°	1178.3	9.6	9.6	5°	4281	4303	4276	4271	4281	408
20°-30°	1810.3	14.8	14.8	15°	4174	4202	4156	4135	4174	1179
30°-40°	2202.0	18.0	18.0	25°	3930	3970	3879	3851	3930	1806
40°-50°	2305.6	18.8	18.8	35°	3508	3547	3469	3428	3508	2190
50°-60°	2084.7	17.0	17.0	45°	2973	3050	2908	2900	2973	2286
60°-70°	1541.5	12.6	12.6	55°	2297	2454	2261	2261	2297	2053
70°-80°	648.3	5.3	5.3	65°	1550	1745	1494	1536	1550	1525
80°-90°	71.2	0.6	0.6	75°	728	405	684	311	728	777
90°-100°	0.0	0.0	0.0	85°	70	0	45	0	70	132
100°-110°	0.0	0.0	0.0	90°	0	0	0	0	0	10
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°	3396.2	27.7	27.7	165°	0	0	0	0	0	0
0°-40°	5598.1	45.7	45.7	175°	0	0	0	0	0	0
0°-60°	9988.5	81.5	81.5	180°	0	0	0	0	0	0
0°-90°	12249.4	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°	12249.4	100.0	100.0							



TEST NUMBER: RKS180330001-10
 CATALOG NUMBER: LHB-12-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°	4294.4	4294.4	4294.4	4294.4	4294.4	4294.4	4294.4	4294.4	4294.4	4294.4	4294.4
5°	4281.3	4285.3	4289.4	4289.8	4303.1	4294.0	4289.2	4283.2	4276.2	4276.0	4274.3
10°	4248.3	4253.1	4255.3	4259.5	4276.2	4262.2	4254.6	4243.9	4237.7	4235.0	4226.2
15°	4174.1	4181.7	4192.3	4199.5	4202.2	4201.0	4192.0	4175.7	4155.5	4155.6	4149.6
20°	4068.7	4078.0	4099.1	4114.1	4109.7	4114.2	4090.7	4075.6	4047.1	4047.4	4048.0
25°	3930.0	3942.9	3974.9	4006.0	3969.9	4005.5	3969.1	3936.2	3878.7	3902.5	3913.0
30°	3715.5	3769.6	3822.9	3814.4	3768.2	3810.1	3816.7	3725.0	3684.4	3685.4	3736.6
35°	3508.1	3538.5	3623.6	3606.3	3546.6	3602.9	3585.4	3534.5	3468.8	3485.8	3461.3
40°	3240.6	3320.5	3313.8	3379.3	3318.2	3369.7	3314.4	3278.4	3208.4	3213.0	3212.6
45°	2973.0	3034.1	3054.2	3114.8	3050.2	3107.2	3051.0	3027.5	2908.5	2954.2	2915.6
50°	2646.7	2712.7	2729.7	2823.1	2768.2	2805.8	2729.0	2710.4	2604.1	2608.7	2597.4
55°	2296.6	2364.8	2408.5	2494.6	2453.8	2466.4	2397.4	2340.3	2261.4	2240.9	2238.2
60°	1933.2	1985.6	2044.3	2133.6	2106.3	2113.9	2042.0	1967.1	1879.8	1865.4	1876.0
65°	1549.5	1577.0	1662.8	1746.7	1745.1	1729.9	1648.2	1589.8	1494.2	1462.0	1494.6
70°	1130.6	1168.2	1261.2	1352.6	988.7	1334.5	1250.1	1173.4	1080.8	1069.4	1086.2
75°	727.6	768.8	766.5	402.9	404.9	395.1	831.8	776.1	683.8	672.8	495.1
80°	361.7	398.8	201.0	214.8	214.7	206.5	185.1	401.3	326.6	311.3	125.9
85°	70.0	38.8	0.0	0.0	0.0	0.0	0.0	32.1	45.1	0.0	0.0
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°	4294.4	4294.4	4294.4	4294.4	4294.4	4294.4
5°	4274.2	4271.0	4276.8	4279.4	4278.2	4281.3
10°	4223.8	4222.7	4229.8	4233.1	4233.4	4248.3
15°	4148.7	4135.1	4155.2	4158.3	4156.8	4174.1
20°	4049.8	4032.2	4056.1	4050.8	4049.2	4068.7
25°	3901.6	3851.2	3909.2	3914.7	3911.6	3930.0
30°	3684.5	3649.8	3694.3	3743.9	3716.7	3715.5
35°	3477.3	3428.2	3480.7	3506.3	3487.7	3508.1
40°	3232.9	3179.8	3237.4	3213.4	3249.2	3240.6
45°	2956.3	2900.4	2960.0	2941.6	2964.0	2973.0
50°	2643.1	2589.3	2647.3	2602.9	2622.2	2646.7
55°	2294.2	2260.9	2308.2	2274.4	2254.4	2296.6
60°	1936.8	1906.6	1942.9	1901.6	1876.5	1933.2
65°	1547.8	1536.4	1553.4	1511.7	1486.2	1549.5
70°	827.9	753.1	841.6	1098.8	1077.1	1130.6
75°	307.8	311.4	311.2	516.9	679.8	727.6
80°	137.8	91.3	140.0	137.1	324.3	361.7
85°	0.0	0.0	0.0	0.0	19.2	70.0
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)