

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-L850-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: RKS180330001-10
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-L850-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

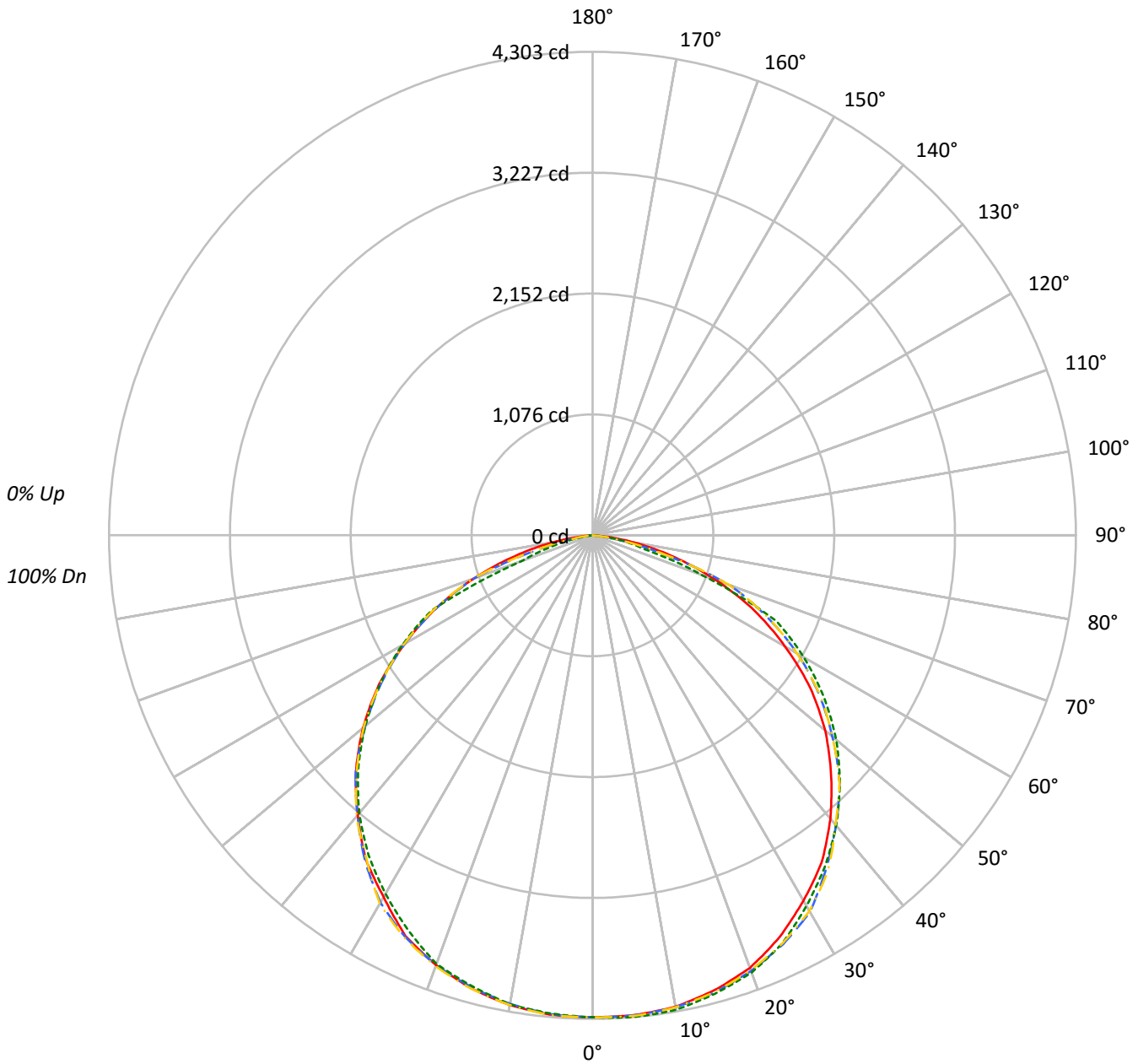
Summary

Lumens per Lamp: 12465.3 (1 lamp)
Luminaire Lumens: 12465.3 lumens
Efficiency: 100.0%
Efficacy: 142.2 lumens/watt
Spacing Criteria (0/90/45): 1.29 / 1.29 / 1.42
Luminous Opening: Rectangular (W 0.99m x L: 1.92m x H: 0m)
CIE Type: Direct

Input Watts (W): 87.66
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

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CATALOG NUMBER: LHB-12-UNV-L850-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	94	92	90	91	89	87	85
2	100	92	85	79	97	90	84	78	86	81	77	83	79	75	80	76	73	71
3	91	80	72	66	88	79	71	65	76	69	64	73	68	63	71	66	62	60
4	83	71	62	56	81	70	62	55	67	60	55	65	59	54	63	58	53	51
5	76	63	55	48	74	62	54	48	60	53	47	58	52	47	56	51	46	44
6	70	57	48	42	68	56	48	42	54	47	41	53	46	41	51	45	40	38
7	65	52	43	37	63	51	43	37	49	42	36	48	41	36	47	40	36	34
8	61	47	39	33	59	46	38	33	45	38	32	44	37	32	43	37	32	30
9	57	43	35	29	55	43	35	29	41	34	29	40	34	29	39	33	29	27
10	53	40	32	27	52	39	32	27	38	31	26	37	31	26	36	30	26	24

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	2259	2259	2259	2259
5°	2266	2275	2264	2258
10°	2278	2293	2270	2266
15°	2285	2302	2276	2263
20°	2296	2320	2281	2275
25°	2291	2326	2287	2254
30°	2283	2317	2260	2240
35°	2286	2317	2262	2233
40°	2265	2320	2234	2219
45°	2237	2320	2219	2196
50°	2216	2320	2183	2163
55°	2173	2312	2131	2120
60°	2086	2288	2034	2061
65°	1988	2251	1912	1966
70°	1805	1604	1729	1026
75°	1548	963	1457	728
80°	1165	810	1036	266
85°	466	0	279	0



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ZONAL LUMENS:

CANDELA DISTRIBUTION:

Zone	Lumens	% Fixture	% Lamp		0°	90°	180°	270°	360°	Flux
0°-10°	407.9	3.3	3.3	0°	4289	4289	4289	4289	4289	
10°-20°	1183.5	9.5	9.5	5°	4286	4303	4282	4272	4286	408
20°-30°	1825.2	14.6	14.6	15°	4192	4222	4174	4152	4192	1184
30°-40°	2229.7	17.9	17.9	25°	3944	4003	3935	3878	3944	1817
40°-50°	2346.8	18.8	18.8	35°	3556	3604	3519	3474	3556	2220
50°-60°	2133.7	17.1	17.1	45°	3004	3115	2979	2949	3004	2319
60°-70°	1584.5	12.7	12.7	55°	2366	2518	2321	2309	2366	2107
70°-80°	672.0	5.4	5.4	65°	1595	1806	1534	1577	1595	1570
80°-90°	82.0	0.7	0.7	75°	761	473	716	358	761	812
90°-100°	0.0	0.0	0.0	85°	77	0	46	0	77	141
100°-110°	0.0	0.0	0.0	90°	0	0	0	0	0	11
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°	3416.7	27.4	27.4	165°	0	0	0	0	0	0
0°-40°	5646.3	45.3	45.3	175°	0	0	0	0	0	0
0°-60°	10126.8	81.2	81.2	180°	0	0	0	0	0	0
0°-90°	12465.3	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°	12465.3	100.0	100.0							



TEST NUMBER: RKS180330001-10
 CATALOG NUMBER: LHB-12-UNV-L850-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°	4289.4	4289.4	4289.4	4289.4	4289.4	4289.4	4289.4	4289.4	4289.4	4289.4	4289.4
5°	4286.2	4286.2	4287.7	4288.5	4303.4	4290.5	4293.4	4284.3	4282.0	4276.2	4277.0
10°	4259.9	4261.1	4264.2	4268.9	4288.4	4268.6	4264.5	4251.1	4244.4	4241.9	4233.6
15°	4191.6	4197.1	4209.9	4219.1	4221.9	4218.4	4206.8	4192.1	4173.7	4170.8	4163.2
20°	4096.9	4099.6	4125.3	4144.3	4140.4	4139.0	4118.9	4098.0	4070.5	4072.4	4070.4
25°	3943.5	3975.3	4014.6	4037.4	4003.3	4029.3	4004.5	3969.6	3935.3	3934.5	3945.0
30°	3754.6	3774.2	3871.7	3857.2	3809.5	3845.9	3860.9	3787.2	3717.0	3725.1	3774.0
35°	3556.5	3591.1	3624.0	3665.1	3603.9	3649.6	3653.2	3579.1	3519.2	3524.0	3531.4
40°	3294.2	3338.2	3371.2	3441.5	3374.1	3421.1	3365.3	3352.0	3249.4	3271.5	3254.6
45°	3003.6	3101.9	3111.5	3183.8	3115.4	3167.6	3111.1	3085.4	2979.4	3000.6	2979.8
50°	2704.4	2780.1	2788.1	2887.5	2832.0	2875.4	2787.5	2761.6	2665.1	2644.9	2639.5
55°	2366.4	2400.9	2461.1	2551.9	2518.4	2544.8	2469.6	2399.2	2320.6	2273.9	2295.7
60°	1980.5	2027.8	2110.4	2205.0	2172.3	2182.4	2102.1	2019.2	1931.2	1906.2	1928.3
65°	1595.3	1634.9	1710.0	1815.8	1806.1	1791.3	1714.9	1636.4	1534.3	1503.7	1531.0
70°	1172.4	1220.6	1305.7	1298.6	1041.5	1359.7	1298.2	1214.5	1122.6	1095.4	1117.0
75°	760.6	805.8	659.3	454.7	473.3	460.2	674.8	804.4	716.3	692.8	522.1
80°	384.0	418.8	232.2	252.1	267.0	262.6	236.7	421.3	341.7	321.1	157.7
85°	77.1	51.1	0.0	0.0	0.0	0.0	11.7	58.5	46.1	20.2	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°	4289.4	4289.4	4289.4	4289.4	4289.4	4289.4
5°	4275.1	4272.0	4277.0	4285.8	4281.5	4286.2
10°	4236.6	4236.6	4239.7	4244.6	4242.5	4259.9
15°	4167.7	4151.6	4172.1	4176.9	4176.4	4191.6
20°	4078.8	4059.4	4086.9	4082.0	4074.0	4096.9
25°	3931.8	3878.5	3937.3	3953.8	3938.3	3943.5
30°	3726.0	3683.6	3731.2	3786.2	3727.3	3754.6
35°	3520.6	3474.0	3525.0	3509.7	3537.1	3556.5
40°	3277.9	3228.2	3285.9	3266.3	3266.3	3294.2
45°	3006.0	2949.1	3005.2	2965.5	3010.2	3003.6
50°	2703.0	2640.0	2693.7	2658.6	2673.7	2704.4
55°	2349.5	2309.3	2354.2	2309.8	2303.1	2366.4
60°	1988.1	1956.5	1986.5	1934.4	1933.5	1980.5
65°	1586.6	1577.4	1593.1	1550.2	1517.9	1595.3
70°	864.1	666.5	874.7	1129.8	1115.8	1172.4
75°	354.2	357.7	351.2	540.2	712.8	760.6
80°	166.7	87.8	174.9	167.8	345.0	384.0
85°	0.0	0.0	0.0	0.0	28.4	77.1
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)