

Scaled data based on original data using  
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State  
Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions  
(formerly Eaton)

Brand: FAIL-SAFE

Report Number: P239176

Luminaire Tested: **HDF-4-LD4-UNV-2-HI-50-EDC-1**

Issue Date: 3/3/2020



**Test Information**

Test Method: LM-79-08  
Report Number: P239176  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1711-412-3)  
Test Lab: INNOVATION CENTER(G2)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: HDF-4-LD4-UNV-2-HI-50-EDC-1  
Description: FAILSAFE HDF LED FIXTURE  
4FT, 2-ROW LED BOARDS, NON-OVERLAY  
Light Source: (168) 5000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

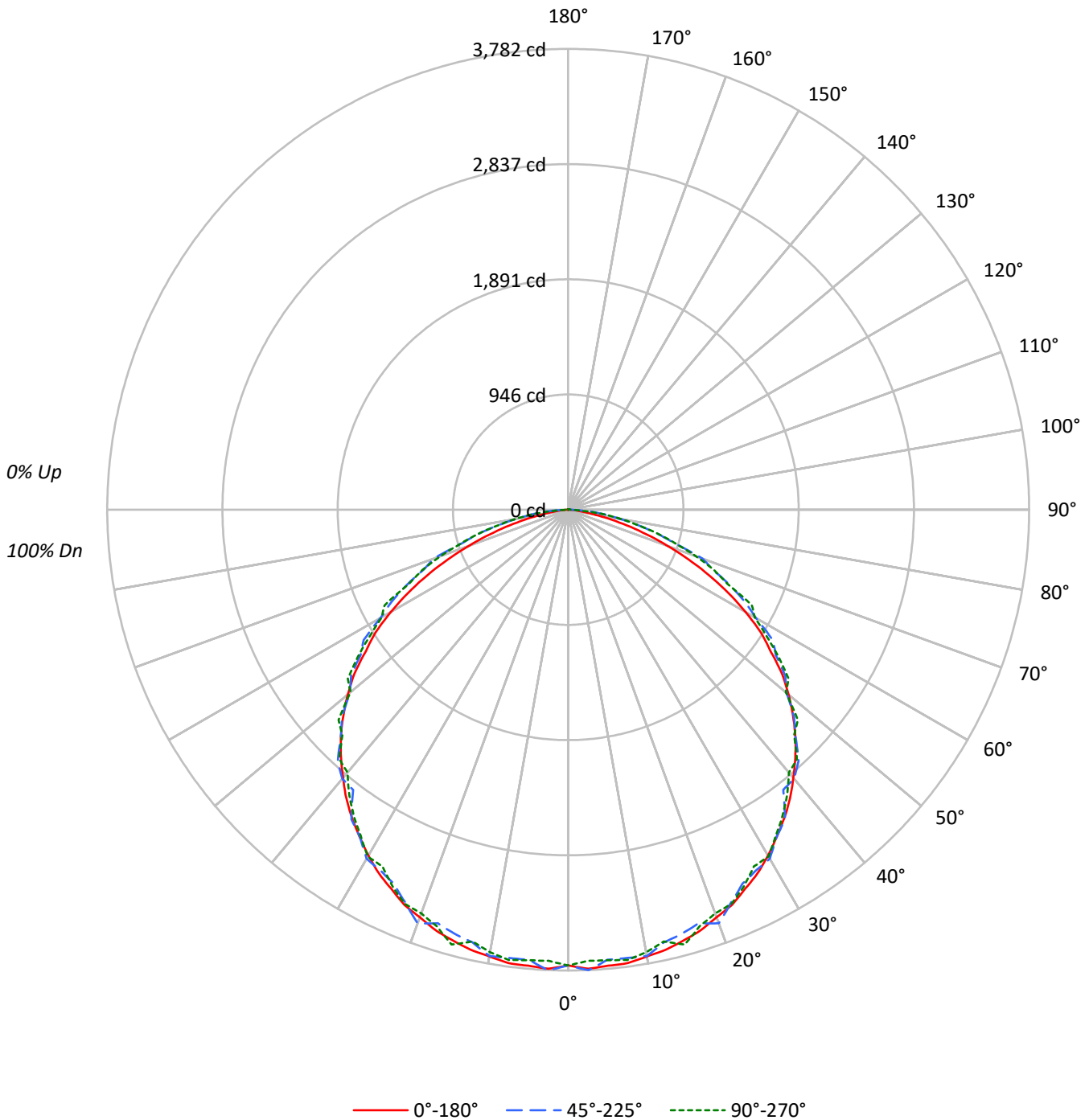
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 11108.7 lumens  
Efficiency: N/A  
Efficacy: 125.2 lumens/watt  
Spacing Criteria (0/90/45): 1.3 / 1.29 / 1.41  
Luminous Opening: Rectangular (W 0.58' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 88.7  
Input Voltage (V): 120  
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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### Luminous Intensity Polar Plot





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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	104	100	96	106	102	98	94	97	94	91	93	91	88	90	88	86	83
2	99	90	84	78	96	89	82	77	85	80	75	82	77	73	78	75	72	69
3	90	79	71	64	87	78	70	64	75	68	63	72	66	62	69	64	60	58
4	82	70	61	54	80	69	60	54	66	59	53	64	58	52	62	56	52	50
5	75	62	53	47	73	61	53	46	59	52	46	57	51	45	55	49	45	43
6	70	56	47	41	68	55	47	40	53	46	40	52	45	40	50	44	39	37
7	65	51	42	36	63	50	42	36	48	41	35	47	40	35	46	39	35	33
8	60	46	38	32	58	46	37	32	44	37	32	43	36	31	42	36	31	29
9	56	42	34	29	55	42	34	29	41	33	28	40	33	28	39	32	28	26
10	52	39	31	26	51	39	31	26	38	31	26	37	30	26	36	30	25	24

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

	0°	45°	90°
0°	17253	17253	17253
5°	17398	17168	17185
10°	17439	17423	17271
15°	17479	17210	17650
20°	17473	17732	17305
25°	17474	17232	17361
30°	17461	17616	17506
35°	17404	17462	17270
40°	17307	17358	16958
45°	17204	17215	17093
50°	16944	16784	16723
55°	16315	16726	16945
60°	15507	16403	16294
65°	13956	15965	15723
70°	11726	15819	15036
75°	8871	13428	13612
80°	5297	11275	11819
85°	2345	9654	7849



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	354.9	3.2
10°-20°	1023.3	9.2
20°-30°	1566.7	14.1
30°-40°	1917.5	17.3
40°-50°	2028.1	18.3
50°-60°	1854.3	16.7
60°-70°	1398.2	12.6
70°-80°	750.7	6.8
80°-90°	181.0	1.6
90°-100°	15.2	0.1
100°-110°	8.4	0.1
110°-120°	5.3	0.0
120°-130°	3.5	0.0
130°-140°	1.7	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	2944.8	26.5
0°-40°	4862.4	43.8
0°-60°	8744.8	78.7
0°-90°	11074.7	99.7
90°-120°	28.8	0.3
90°-150°	34.0	0.3
90°-180°	34.0	0.3
0°-180°	11108.7	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3740	3740	3740	3740	3740	
5°	3757	3750	3708	3721	3711	358
15°	3660	3602	3604	3674	3696	1034
25°	3433	3384	3385	3394	3411	1585
35°	3090	3104	3101	3068	3067	1933
45°	2637	2647	2639	2656	2620	2030
55°	2028	1993	2080	2115	2107	1818
65°	1278	1343	1463	1500	1440	1262
75°	498	656	753	772	764	538
85°	44	143	182	165	148	69
90°	0	27	24	20	17	2
95°	0	15	17	15	12	0
105°	0	5	10	10	8	0
115°	2	3	7	7	7	2
125°	2	2	5	5	5	2
135°	3	3	3	3	3	2
145°	0	0	0	0	0	0
155°	0	0	0	0	0	0
165°	0	0	0	0	0	0
175°	0	0	0	0	0	0
180°	0	0	0	0	0	0



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3739.9	3739.9	3739.9	3739.9	3739.9
2.5°	3770.6	3738.2	3782.5	3746.7	3705.8
5°	3757.0	3750.2	3707.5	3721.2	3711.0
7.5°	3753.6	3682.0	3711.0	3729.7	3726.3
10°	3722.9	3671.7	3719.5	3647.9	3687.1
12.5°	3699.0	3647.9	3635.9	3583.1	3629.1
15°	3659.8	3601.9	3603.6	3673.5	3695.6
17.5°	3618.9	3584.8	3559.2	3584.8	3584.8
20°	3559.2	3509.8	3612.1	3484.2	3525.1
22.5°	3511.5	3421.2	3491.1	3463.8	3501.3
25°	3433.1	3383.7	3385.4	3393.9	3410.9
27.5°	3364.9	3266.0	3337.6	3347.9	3300.1
30°	3278.0	3191.0	3307.0	3162.1	3286.5
32.5°	3184.2	3172.3	3182.5	3165.5	3170.6
35°	3090.5	3104.1	3100.7	3068.3	3066.6
37.5°	2989.9	2947.3	2897.9	2937.1	2950.7
40°	2874.0	2816.0	2882.5	2850.1	2816.0
42.5°	2758.1	2706.9	2797.3	2689.9	2778.5
45°	2637.0	2647.3	2638.7	2655.8	2620.0
47.5°	2502.4	2521.1	2512.6	2481.9	2555.2
50°	2360.9	2360.9	2338.7	2415.4	2330.2
52.5°	2210.9	2239.9	2245.0	2188.7	2279.1
55°	2028.5	1992.7	2079.6	2115.4	2106.9
57.5°	1873.4	1880.2	1989.3	1965.4	1929.6
60°	1680.8	1781.3	1777.9	1759.2	1766.0
62.5°	1483.0	1541.0	1633.0	1602.3	1699.5
65°	1278.5	1343.2	1462.6	1500.1	1440.4
67.5°	1070.5	1176.2	1280.2	1275.1	1293.8
70°	869.4	1019.4	1172.8	1099.5	1114.8
72.5°	675.0	830.1	912.0	975.0	922.2
75°	497.7	656.3	753.4	772.2	763.7
77.5°	335.8	497.7	586.4	593.2	584.7
80°	199.4	366.5	424.4	458.5	444.9
82.5°	102.3	242.1	306.8	305.1	296.6
85°	44.3	143.2	182.4	165.3	148.3
87.5°	13.6	76.7	59.7	37.5	30.7
90°	0.0	27.3	23.9	20.5	17.0
92.5°	0.0	18.8	18.8	17.0	13.6
95°	0.0	15.3	17.0	15.3	11.9
97.5°	0.0	11.9	15.3	13.6	11.9
100°	0.0	8.5	13.6	13.6	10.2
102.5°	0.0	6.8	11.9	11.9	10.2
105°	0.0	5.1	10.2	10.2	8.5
107.5°	0.0	5.1	8.5	10.2	8.5
110°	1.7	3.4	8.5	8.5	8.5



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	1.7	3.4	6.8	8.5	6.8
115°	1.7	3.4	6.8	6.8	6.8
117.5°	1.7	3.4	5.1	6.8	6.8
120°	1.7	3.4	5.1	5.1	5.1
122.5°	1.7	3.4	5.1	5.1	5.1
125°	1.7	1.7	5.1	5.1	5.1
127.5°	1.7	1.7	3.4	5.1	5.1
130°	3.4	1.7	3.4	5.1	5.1
132.5°	3.4	1.7	3.4	3.4	5.1
135°	3.4	3.4	3.4	3.4	3.4
137.5°	0.0	0.0	0.0	0.0	0.0
140°	0.0	0.0	0.0	0.0	0.0
142.5°	0.0	0.0	0.0	0.0	0.0
145°	0.0	0.0	0.0	0.0	0.0
147.5°	0.0	0.0	0.0	0.0	0.0
150°	0.0	0.0	0.0	0.0	0.0
152.5°	0.0	0.0	0.0	0.0	0.0
155°	0.0	0.0	0.0	0.0	0.0
157.5°	0.0	0.0	0.0	0.0	0.0
160°	0.0	0.0	0.0	0.0	0.0
162.5°	0.0	0.0	0.0	0.0	0.0
165°	0.0	0.0	0.0	0.0	0.0
167.5°	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0
172.5°	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.0
180°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)