

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: P239232

Luminaire Tested: **HDF-4-LD4-UNV-1-LO-50-IK12-EDC-1**

Issue Date: 3/3/2020



**Test Information**

Test Method: LM-79-08  
Report Number: P239232  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1711-412-9)  
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-1-LO-50-IK12-EDC-1  
Description: FAILSAFE HDF LED FIXTURE  
4FT, 1-ROW LED BOARDS, CLEAR LENS  
Light Source: (84) 5000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

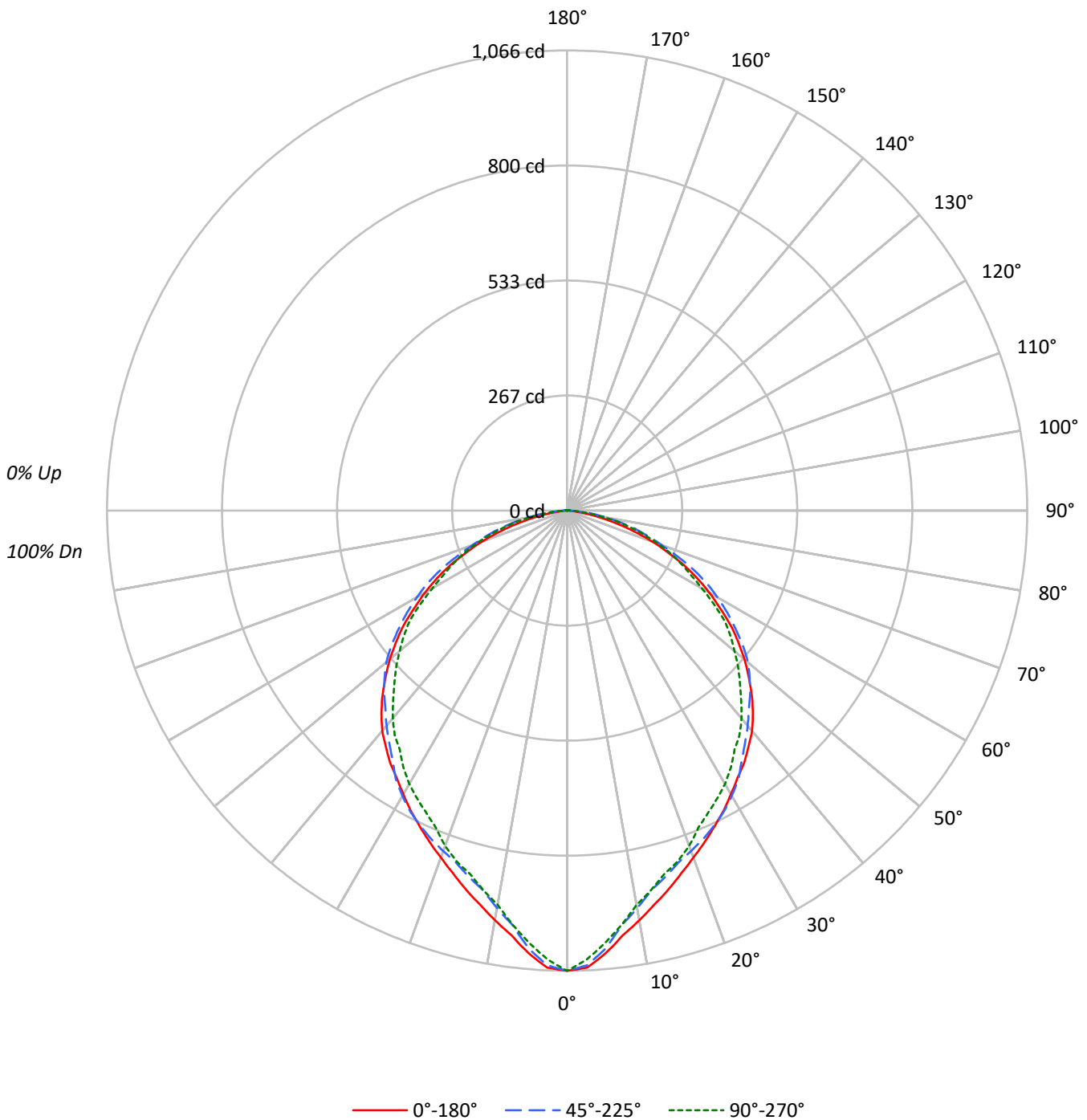
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2521.8 lumens  
Efficiency: N/A  
Efficacy: 106.9 lumens/watt  
Spacing Criteria (0/90/45): 1.07 / 1.02 / 1.25  
Luminous Opening: Rectangular (W 0.58' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 23.6  
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	95	98	94	92	94	91	89	90	88	86	84
2	99	91	84	79	96	89	83	78	85	80	76	82	78	74	79	75	72	70
3	90	80	72	66	88	78	71	65	75	69	64	73	67	63	70	65	61	59
4	83	71	62	56	81	70	61	55	67	60	54	65	59	54	62	57	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	64	51	43	37	49	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	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°	45°	90°
0°	4918	4918	4918
5°	4765	4716	4657
10°	4512	4378	4344
15°	4337	4196	4160
20°	4198	4120	4058
25°	4110	4099	3932
30°	4042	4064	3895
35°	4023	3969	3808
40°	4014	3919	3784
45°	3948	3913	3692
50°	3848	3924	3635
55°	3716	3827	3580
60°	3510	3705	3324
65°	3251	3517	3181
70°	2830	3131	3016
75°	2210	2889	2720
80°	1408	2394	2197
85°	619	1683	1572



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	94.3	3.7
10°-20°	249.2	9.9
20°-30°	367.0	14.6
30°-40°	437.7	17.4
40°-50°	450.9	17.9
50°-60°	412.9	16.4
60°-70°	303.0	12.0
70°-80°	158.9	6.3
80°-90°	36.4	1.4
90°-100°	5.6	0.2
100°-110°	2.8	0.1
110°-120°	1.5	0.1
120°-130°	1.0	0.0
130°-140°	0.5	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°	710.5	28.2
0°-40°	1148.2	45.5
0°-60°	2012.0	79.8
0°-90°	2510.4	99.5
90°-120°	9.9	0.4
90°-150°	11.4	0.5
90°-180°	11.0	0.4
0°-180°	2521.8	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1066	1066	1066	1066	1066	
5°	1029	1018	1018	1008	1006	96
15°	908	890	878	872	871	256
25°	808	799	805	784	772	373
35°	714	706	705	690	676	447
45°	605	582	600	566	566	466
55°	462	466	476	463	445	411
65°	298	302	322	306	291	293
75°	124	142	162	159	153	134
85°	12	26	32	32	30	18
90°	0	7	7	6	5	0
95°	0	4	7	6	5	0
105°	0	1	3	4	4	0
115°	1	1	1	2	2	1
125°	1	1	1	1	1	1
135°	1	1	1	1	1	1
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°	1066.1	1066.1	1066.1	1066.1	1066.1
2.5°	1059.7	1052.3	1054.4	1047.0	1040.6
5°	1029.0	1018.4	1018.4	1007.8	1005.7
7.5°	991.9	972.8	968.6	966.5	967.5
10°	963.3	937.9	934.7	922.0	927.3
12.5°	934.7	914.5	900.8	889.1	899.7
15°	908.2	890.2	878.5	872.1	871.1
17.5°	880.6	865.8	855.2	855.2	852.0
20°	855.2	841.4	839.3	835.1	826.6
22.5°	831.9	818.1	823.4	811.7	794.8
25°	807.5	799.0	805.4	784.2	772.5
27.5°	784.2	782.1	786.3	761.9	752.4
30°	758.8	759.8	763.0	740.7	731.2
32.5°	734.4	735.4	738.6	718.5	705.8
35°	714.3	705.8	704.7	689.9	676.1
37.5°	689.9	675.0	677.2	659.1	656.0
40°	666.6	646.4	650.7	628.4	628.4
42.5°	636.9	611.5	623.1	599.8	596.6
45°	605.1	581.8	599.8	565.9	565.9
47.5°	570.1	551.1	573.3	538.3	537.3
50°	536.2	524.6	546.8	515.0	506.5
52.5°	499.1	498.1	512.9	485.4	476.9
55°	462.0	466.3	475.8	463.1	445.1
57.5°	419.6	431.3	439.8	431.3	402.7
60°	380.4	391.0	401.6	386.8	360.3
62.5°	340.2	347.6	364.5	346.5	323.2
65°	297.8	302.0	322.2	306.3	291.4
67.5°	251.2	257.5	275.5	271.3	259.6
70°	209.8	214.1	232.1	237.4	223.6
72.5°	166.4	177.0	196.0	193.9	188.6
75°	124.0	142.0	162.1	159.0	152.6
77.5°	85.8	106.0	125.0	122.9	119.7
80°	53.0	72.1	90.1	89.0	82.7
82.5°	26.5	46.6	60.4	57.2	51.9
85°	11.7	26.5	31.8	31.8	29.7
87.5°	3.2	12.7	15.9	13.8	12.7
90°	0.0	7.4	7.4	6.4	5.3
92.5°	0.0	6.4	7.4	6.4	5.3
95°	0.0	4.2	7.4	6.4	5.3
97.5°	0.0	3.2	6.4	6.4	5.3
100°	0.0	2.1	5.3	5.3	5.3
102.5°	0.0	2.1	4.2	4.2	4.2
105°	0.0	1.1	3.2	4.2	4.2
107.5°	0.0	1.1	2.1	3.2	3.2
110°	0.0	1.1	2.1	2.1	3.2



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	0.0	1.1	2.1	2.1	2.1
115°	1.1	1.1	1.1	2.1	2.1
117.5°	1.1	1.1	1.1	2.1	2.1
120°	1.1	1.1	1.1	1.1	2.1
122.5°	1.1	1.1	1.1	1.1	1.1
125°	1.1	1.1	1.1	1.1	1.1
127.5°	1.1	1.1	1.1	1.1	1.1
130°	1.1	1.1	1.1	1.1	1.1
132.5°	1.1	1.1	1.1	1.1	1.1
135°	1.1	1.1	1.1	1.1	1.1
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)