

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: P239229

Luminaire Tested: **HDF-4-LD4-UNV-1-LO-30-IK12-EDC-1**

Issue Date: 3/3/2020



**Test Information**

Test Method: LM-79-08  
Report Number: P239229  
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-30-IK12-EDC-1  
Description: FAILSAFE HDF LED FIXTURE  
4FT, 1-ROW LED BOARDS, CLEAR LENS  
Light Source: (84) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

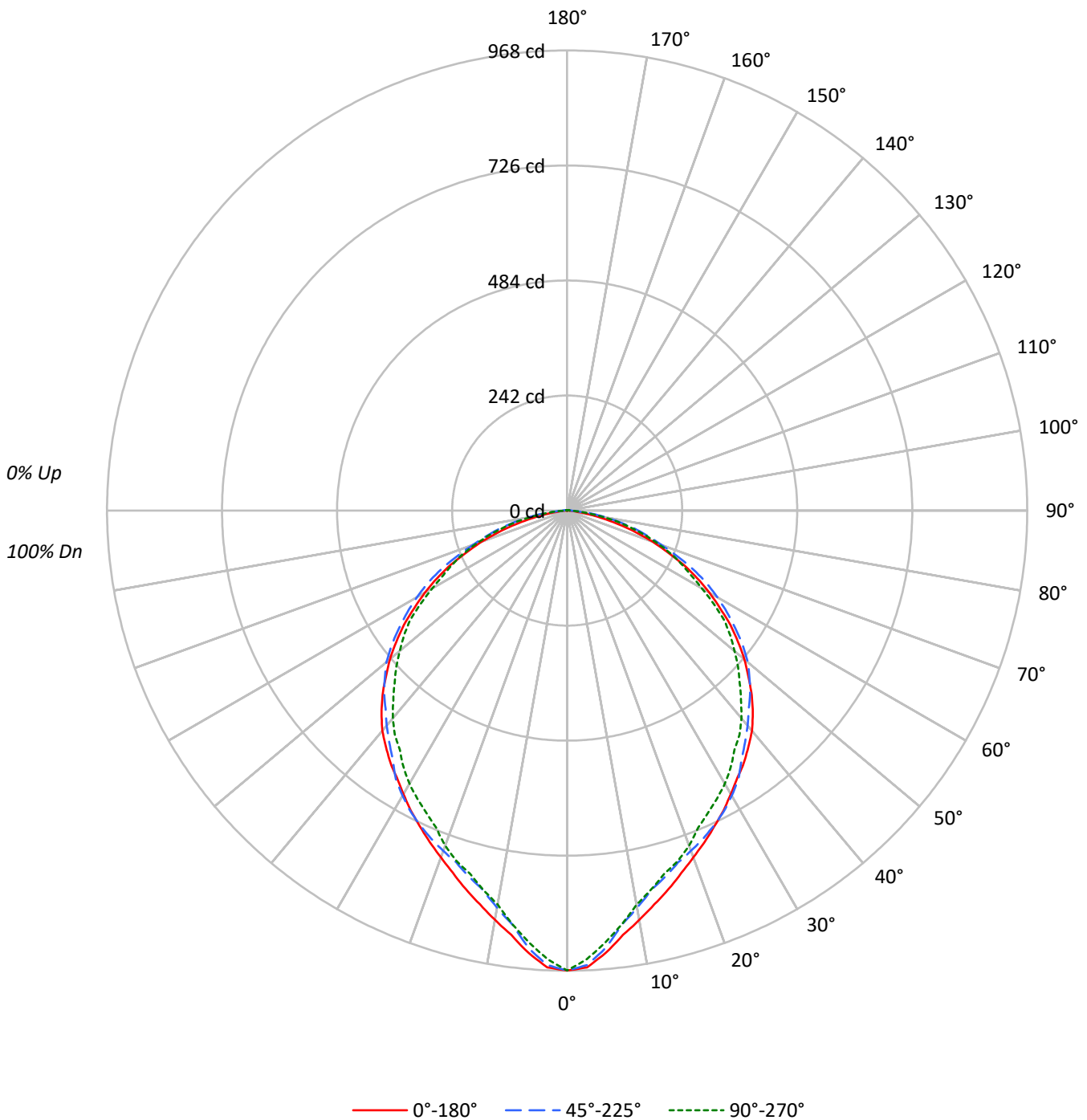
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2288.6 lumens  
Efficiency: N/A  
Efficacy: 97.0 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

TEST NUMBER: P239229

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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°	4463	4463	4463
5°	4325	4280	4226
10°	4095	3974	3942
15°	3936	3808	3776
20°	3810	3739	3683
25°	3730	3720	3569
30°	3668	3689	3535
35°	3650	3602	3456
40°	3643	3556	3434
45°	3583	3551	3351
50°	3492	3562	3299
55°	3372	3473	3248
60°	3186	3363	3017
65°	2950	3192	2887
70°	2568	2841	2737
75°	2005	2622	2469
80°	1278	2170	1992
85°	561	1530	1424



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	85.6	3.7
10°-20°	226.2	9.9
20°-30°	333.1	14.6
30°-40°	397.3	17.4
40°-50°	409.2	17.9
50°-60°	374.8	16.4
60°-70°	275.0	12.0
70°-80°	144.2	6.3
80°-90°	33.1	1.4
90°-100°	5.1	0.2
100°-110°	2.5	0.1
110°-120°	1.4	0.1
120°-130°	0.9	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°	644.8	28.2
0°-40°	1042.1	45.5
0°-60°	1826.0	79.8
0°-90°	2278.3	99.5
90°-120°	8.9	0.4
90°-150°	10.4	0.5
90°-180°	10.0	0.4
0°-180°	2288.6	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	968	968	968	968	968	
5°	934	924	924	915	913	87
15°	824	808	797	792	791	232
25°	733	725	731	712	701	338
35°	648	640	640	626	614	405
45°	549	528	544	514	514	423
55°	419	423	432	420	404	373
65°	270	274	292	278	264	266
75°	112	129	147	144	138	121
85°	11	24	29	29	27	16
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	0
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°	967.5	967.5	967.5	967.5	967.5
2.5°	961.7	955.0	956.9	950.2	944.4
5°	933.9	924.2	924.2	914.6	912.7
7.5°	900.2	882.9	879.0	877.1	878.1
10°	874.2	851.1	848.3	836.7	841.5
12.5°	848.3	830.0	817.5	806.9	816.5
15°	824.2	807.9	797.3	791.5	790.6
17.5°	799.2	785.7	776.1	776.1	773.2
20°	776.1	763.6	761.7	757.9	750.2
22.5°	755.0	742.5	747.3	736.7	721.3
25°	732.8	725.2	730.9	711.7	701.1
27.5°	711.7	709.8	713.6	691.5	682.8
30°	688.6	689.6	692.5	672.3	663.6
32.5°	666.5	667.5	670.3	652.1	640.5
35°	648.2	640.5	639.6	626.1	613.6
37.5°	626.1	612.6	614.6	598.2	595.3
40°	604.9	586.7	590.5	570.3	570.3
42.5°	578.0	554.9	565.5	544.3	541.5
45°	549.2	528.0	544.3	513.6	513.6
47.5°	517.4	500.1	520.3	488.6	487.6
50°	486.6	476.1	496.3	467.4	459.7
52.5°	453.0	452.0	465.5	440.5	432.8
55°	419.3	423.2	431.8	420.3	403.9
57.5°	380.9	391.4	399.1	391.4	365.5
60°	345.3	354.9	364.5	351.0	327.0
62.5°	308.7	315.5	330.8	314.5	293.3
65°	270.3	274.1	292.4	277.9	264.5
67.5°	227.9	233.7	250.1	246.2	235.6
70°	190.4	194.3	210.6	215.4	202.9
72.5°	151.0	160.6	177.9	176.0	171.2
75°	112.5	128.9	147.1	144.3	138.5
77.5°	77.9	96.2	113.5	111.6	108.7
80°	48.1	65.4	81.7	80.8	75.0
82.5°	24.0	42.3	54.8	51.9	47.1
85°	10.6	24.0	28.9	28.9	26.9
87.5°	2.9	11.5	14.4	12.5	11.5
90°	0.0	6.7	6.7	5.8	4.8
92.5°	0.0	5.8	6.7	5.8	4.8
95°	0.0	3.8	6.7	5.8	4.8
97.5°	0.0	2.9	5.8	5.8	4.8
100°	0.0	1.9	4.8	4.8	4.8
102.5°	0.0	1.9	3.8	3.8	3.8
105°	0.0	1.0	2.9	3.8	3.8
107.5°	0.0	1.0	1.9	2.9	2.9
110°	0.0	1.0	1.9	1.9	2.9



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	0.0	1.0	1.9	1.9	1.9
115°	1.0	1.0	1.0	1.9	1.9
117.5°	1.0	1.0	1.0	1.9	1.9
120°	1.0	1.0	1.0	1.0	1.9
122.5°	1.0	1.0	1.0	1.0	1.0
125°	1.0	1.0	1.0	1.0	1.0
127.5°	1.0	1.0	1.0	1.0	1.0
130°	1.0	1.0	1.0	1.0	1.0
132.5°	1.0	1.0	1.0	1.0	1.0
135°	1.0	1.0	1.0	1.0	1.0
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)