

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: P239218

Luminaire Tested: **HDF-4-LD4-UNV-1-LO-35-EDC-1**

Issue Date: 3/3/2020



**Test Information**

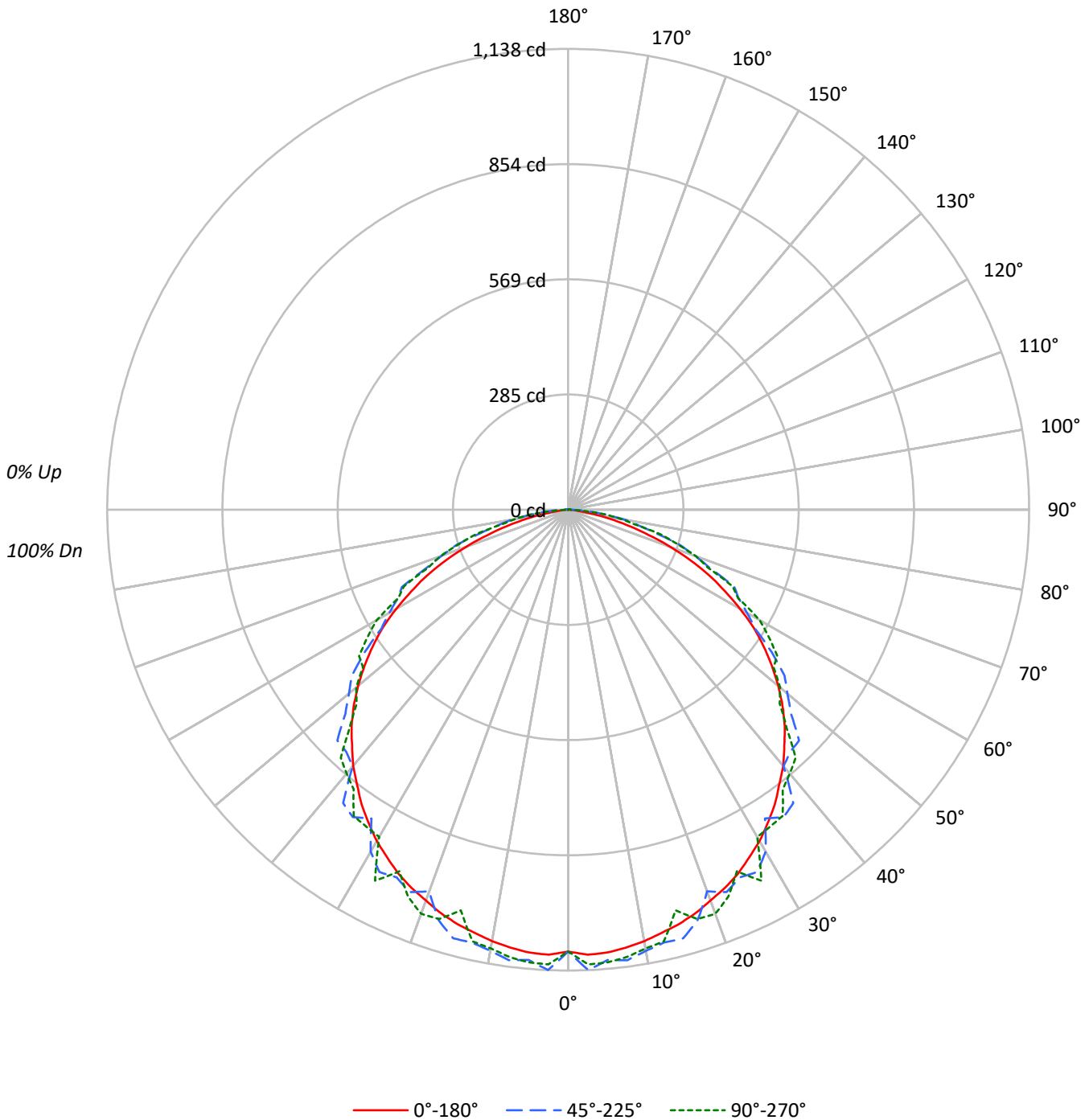
Test Method: LM-79-08  
Report Number: P239218  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1711-412-8)  
Test Lab: INNOVATION CENTER(G2)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: HDF-4-LD4-UNV-1-LO-35-EDC-1  
Description: FAILSAFE HDF LED FIXTURE  
4FT, 1-ROW LED BOARDS, NON-OVERLAY  
Light Source: (84) 3500K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3281.0 lumens  
Efficiency: N/A  
Efficacy: 139.0 lumens/watt  
Spacing Criteria (0/90/45): 1.28 / 1.3 / 1.44  
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	94	97	94	91	93	91	88	90	87	86	83
2	99	90	83	78	96	88	82	77	85	79	75	81	77	73	78	75	71	69
3	90	79	71	64	87	78	70	64	75	68	63	72	66	61	69	64	60	58
4	82	70	61	54	80	69	60	54	66	59	53	64	57	52	61	56	52	49
5	75	62	53	47	73	61	53	46	59	52	46	57	50	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	64	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	53	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°	5032	5032	5032
5°	5084	5167	5195
10°	5068	5180	5152
15°	5057	5234	4890
20°	5041	4923	5213
25°	5049	5100	5013
30°	5033	5193	4969
35°	5006	5220	5197
40°	4974	4980	5124
45°	4931	5258	4977
50°	4858	5066	4901
55°	4736	4929	5066
60°	4520	4704	5037
65°	4192	4944	4878
70°	3628	4478	4518
75°	2798	3993	4242
80°	1700	3772	3507
85°	794	2805	2594



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	106.0	3.2
10°-20°	302.7	9.2
20°-30°	464.6	14.2
30°-40°	562.2	17.1
40°-50°	596.1	18.2
50°-60°	541.9	16.5
60°-70°	417.5	12.7
70°-80°	224.3	6.8
80°-90°	55.2	1.7
90°-100°	4.7	0.1
100°-110°	2.7	0.1
110°-120°	1.7	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°	873.3	26.6
0°-40°	1435.5	43.8
0°-60°	2573.5	78.4
0°-90°	3270.4	99.7
90°-120°	9.1	0.3
90°-150°	10.6	0.3
90°-180°	11.0	0.3
0°-180°	3281.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1091	1091	1091	1091	1091	
5°	1098	1133	1116	1119	1122	104
15°	1059	1085	1096	1034	1024	299
25°	992	1011	1002	980	985	457
35°	889	853	927	894	923	556
45°	756	793	806	794	763	582
55°	589	619	613	596	630	526
65°	384	398	453	440	447	378
75°	157	193	224	233	238	168
85°	15	46	53	49	49	22
90°	0	9	8	6	5	1
95°	0	5	5	4	4	0
105°	0	2	3	3	3	0
115°	1	1	2	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°	1090.9	1090.9	1090.9	1090.9	1090.9
2.5°	1099.9	1111.9	1137.9	1131.9	1123.9
5°	1097.9	1132.9	1115.9	1118.9	1121.9
7.5°	1090.9	1099.9	1121.9	1110.9	1113.9
10°	1081.9	1099.9	1105.9	1101.9	1099.9
12.5°	1069.9	1095.9	1094.9	1111.9	1091.9
15°	1058.9	1084.9	1095.9	1033.9	1023.9
17.5°	1044.9	1066.9	1062.9	1046.9	1059.9
20°	1026.9	1056.9	1002.9	1039.9	1061.9
22.5°	1010.9	1030.9	1021.9	1040.9	1033.9
25°	991.9	1010.9	1001.9	979.9	984.9
27.5°	967.9	1000.9	1008.9	971.9	1032.9
30°	944.9	957.9	974.9	1005.9	932.9
32.5°	916.9	899.9	903.9	904.9	927.9
35°	888.9	852.9	926.9	893.9	922.9
37.5°	855.9	853.9	912.9	897.9	869.9
40°	825.9	843.9	826.9	836.9	850.9
42.5°	789.9	814.9	810.9	810.9	830.9
45°	755.9	792.9	805.9	793.9	762.9
47.5°	717.9	730.9	745.9	732.9	707.9
50°	676.9	656.9	705.9	667.9	682.9
52.5°	633.9	671.9	672.9	635.9	638.9
55°	588.9	618.9	612.9	595.9	629.9
57.5°	543.9	540.9	546.9	590.9	587.9
60°	489.9	507.9	509.9	536.9	545.9
62.5°	436.9	476.9	473.9	497.9	472.9
65°	384.0	398.0	452.9	439.9	446.9
67.5°	327.0	353.0	381.0	388.0	373.0
70°	269.0	300.0	332.0	330.0	335.0
72.5°	209.0	233.0	288.0	264.0	282.0
75°	157.0	193.0	224.0	233.0	238.0
77.5°	107.0	153.0	176.0	185.0	168.0
80°	64.0	114.0	142.0	131.0	132.0
82.5°	33.0	68.0	90.0	86.0	95.0
85°	15.0	46.0	53.0	49.0	49.0
87.5°	5.0	21.0	22.0	16.0	14.0
90°	0.0	9.0	8.0	6.0	5.0
92.5°	0.0	6.0	6.0	5.0	4.0
95°	0.0	5.0	5.0	4.0	4.0
97.5°	0.0	4.0	5.0	4.0	3.0
100°	0.0	3.0	4.0	4.0	3.0
102.5°	0.0	2.0	4.0	4.0	3.0
105°	0.0	2.0	3.0	3.0	3.0
107.5°	0.0	2.0	3.0	3.0	3.0
110°	0.0	1.0	3.0	3.0	2.0



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	1.0	1.0	2.0	3.0	2.0
115°	1.0	1.0	2.0	2.0	2.0
117.5°	1.0	1.0	2.0	2.0	2.0
120°	1.0	1.0	1.0	2.0	2.0
122.5°	1.0	1.0	1.0	2.0	2.0
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)