

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: P239193

Luminaire Tested: **HDF-4-LD4-UNV-2-LO-30-IK12-EDC-1**

Issue Date: 3/3/2020



**Test Information**

Test Method: LM-79-08  
Report Number: P239193  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1711-412-4)  
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-LO-30-IK12-EDC-1  
Description: FAILSAFE HDF LED FIXTURE  
4FT, 2-ROW LED BOARDS, CLEAR LENS  
Light Source: (168) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

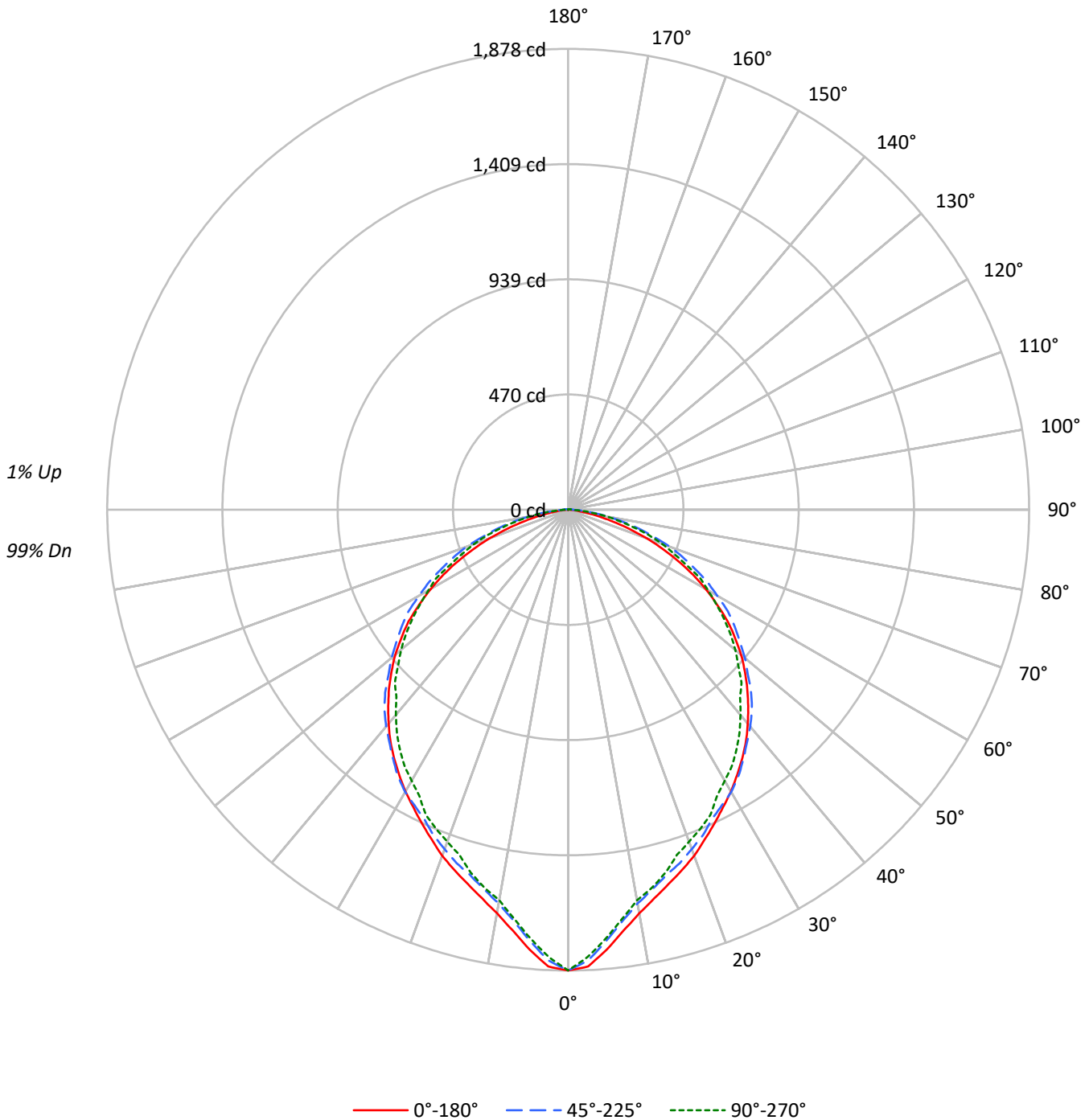
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4426.1 lumens  
Efficiency: N/A  
Efficacy: 93.8 lumens/watt  
Spacing Criteria (0/90/45): 1.06 / 1.02 / 1.25  
Luminous Opening: Rectangular (W 0.58' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 47.2  
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	99
1	109	104	100	96	106	102	98	95	97	94	91	93	91	89	90	88	86	84
2	99	91	84	78	96	89	83	77	85	80	76	82	78	74	79	75	72	70
3	90	80	72	65	88	78	71	65	75	69	63	72	67	62	70	65	61	59
4	83	71	62	55	80	69	61	55	67	60	54	64	58	53	62	57	53	50
5	76	63	54	48	74	62	54	47	60	53	47	58	51	46	56	50	46	44
6	70	57	48	42	68	56	48	42	54	47	41	52	46	41	51	45	40	38
7	65	52	43	37	63	51	43	37	49	42	36	48	41	36	46	40	36	34
8	61	47	39	33	59	47	38	33	45	38	33	44	37	32	43	37	32	30
9	57	43	35	30	55	43	35	30	42	34	29	40	34	29	39	33	29	27
10	53	40	32	27	52	40	32	27	39	32	27	38	31	27	37	31	26	25

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

	0°	45°	90°
0°	8662	8662	8662
5°	8334	8174	8125
10°	7822	7633	7570
15°	7543	7364	7314
20°	7367	7225	7069
25°	7178	7070	6982
30°	7061	7076	6794
35°	6961	6999	6728
40°	6853	6946	6575
45°	6733	6878	6514
50°	6600	6745	6379
55°	6383	6654	6236
60°	5973	6461	6071
65°	5387	6205	5764
70°	4567	5929	5475
75°	3395	5297	4885
80°	2120	4397	4192
85°	969	3308	3054



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	164.2	3.7
10°-20°	435.9	9.8
20°-30°	640.7	14.5
30°-40°	765.6	17.3
40°-50°	791.0	17.9
50°-60°	716.4	16.2
60°-70°	535.3	12.1
70°-80°	285.8	6.5
80°-90°	68.7	1.6
90°-100°	11.1	0.3
100°-110°	5.6	0.1
110°-120°	2.8	0.1
120°-130°	2.0	0.0
130°-140°	1.0	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°	1240.8	28.0
0°-40°	2006.4	45.3
0°-60°	3513.8	79.4
0°-90°	4403.6	99.5
90°-120°	19.6	0.4
90°-150°	22.6	0.5
90°-180°	23.0	0.5
0°-180°	4426.1	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1878	1878	1878	1878	1878	
5°	1800	1763	1765	1754	1755	168
15°	1580	1550	1542	1530	1531	446
25°	1410	1400	1389	1378	1372	651
35°	1236	1231	1243	1213	1195	773
45°	1032	1032	1054	1001	998	796
55°	794	802	827	797	775	705
65°	494	529	568	556	528	488
75°	190	255	297	294	274	209
85°	18	53	62	61	58	28
90°	0	15	16	14	14	1
95°	0	9	14	12	12	0
105°	1	3	6	8	8	1
115°	1	2	3	4	4	1
125°	2	2	2	2	3	2
135°	2	2	2	2	2	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°	1877.7	1877.7	1877.7	1877.7	1877.7
2.5°	1863.3	1836.3	1839.2	1833.4	1823.8
5°	1799.8	1763.2	1765.1	1753.6	1754.6
7.5°	1729.5	1692.0	1691.1	1672.8	1681.4
10°	1669.9	1641.0	1629.5	1613.2	1616.0
12.5°	1621.8	1589.1	1584.3	1564.1	1577.6
15°	1579.5	1549.7	1542.0	1529.5	1531.4
17.5°	1540.0	1516.0	1510.2	1493.9	1474.6
20°	1500.6	1474.6	1471.7	1442.9	1440.0
22.5°	1454.4	1441.9	1435.2	1416.0	1407.3
25°	1410.2	1399.6	1389.0	1377.5	1371.7
27.5°	1366.9	1355.4	1357.3	1340.9	1314.0
30°	1325.5	1315.0	1328.4	1291.9	1275.5
32.5°	1281.3	1274.6	1289.9	1256.3	1239.9
35°	1236.1	1231.3	1242.8	1213.0	1194.7
37.5°	1189.9	1180.3	1195.7	1158.2	1146.6
40°	1138.0	1133.2	1153.4	1105.3	1091.8
42.5°	1085.1	1079.3	1108.1	1050.4	1036.0
45°	1032.1	1032.1	1054.3	1001.4	998.5
47.5°	976.4	978.3	991.7	966.7	938.8
50°	919.6	921.5	939.8	908.1	888.8
52.5°	856.1	861.9	880.2	856.1	833.0
55°	793.6	802.2	827.3	797.4	775.3
57.5°	718.6	739.7	771.5	740.7	713.8
60°	647.4	674.3	700.3	679.1	658.0
62.5°	572.3	604.1	638.7	617.6	607.0
65°	493.5	529.1	568.5	556.0	528.1
67.5°	415.6	451.1	504.1	485.8	464.6
70°	338.6	384.8	439.6	418.4	405.9
72.5°	262.6	319.4	362.6	357.8	343.4
75°	190.5	254.9	297.2	294.3	274.1
77.5°	131.8	195.3	230.9	220.3	209.7
80°	79.8	140.4	165.5	158.7	157.8
82.5°	42.3	90.4	108.7	105.8	102.0
85°	18.3	52.9	62.5	60.6	57.7
87.5°	5.8	26.9	30.8	27.9	26.0
90°	0.0	15.4	16.4	14.4	13.5
92.5°	0.0	11.5	14.4	12.5	11.5
95°	0.0	8.7	13.5	12.5	11.5
97.5°	1.0	6.7	12.5	11.5	11.5
100°	0.0	4.8	9.6	10.6	9.6
102.5°	1.0	3.8	7.7	8.7	8.7
105°	1.0	2.9	5.8	7.7	7.7
107.5°	1.0	1.9	4.8	6.7	6.7
110°	1.0	1.9	3.8	4.8	5.8



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	1.0	1.9	3.8	3.8	4.8
115°	1.0	1.9	2.9	3.8	3.8
117.5°	1.0	1.9	2.9	2.9	3.8
120°	1.9	1.9	2.9	2.9	2.9
122.5°	1.9	1.9	2.9	2.9	2.9
125°	1.9	1.9	1.9	1.9	2.9
127.5°	1.9	1.9	1.9	1.9	2.9
130°	1.9	1.9	1.9	1.9	2.9
132.5°	1.9	1.9	1.9	1.9	2.9
135°	1.9	1.9	1.9	1.9	1.9
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)