

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: P239210

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

Issue Date: 3/3/2020



**Test Information**

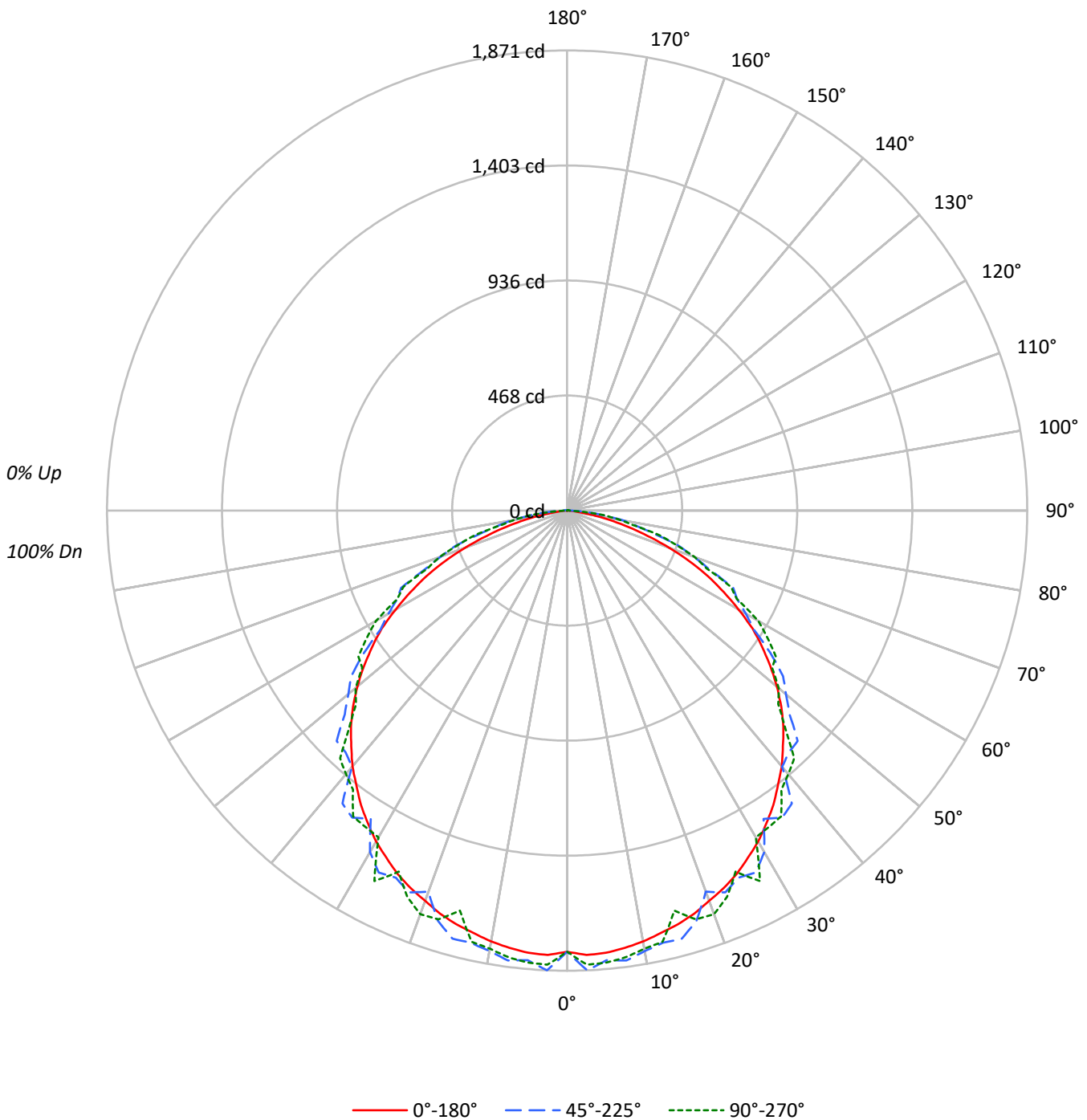
Test Method: LM-79-08  
Report Number: P239210  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1711-412-8)  
Test Lab: INNOVATION CENTER(G2)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: HDF-4-LD4-UNV-1-HI-35-EDC-1  
Description: 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: 5394.9 lumens  
Efficiency: N/A  
Efficacy: 121.2 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): 44.5  
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°	8275	8275	8275
5°	8359	8496	8542
10°	8333	8518	8472
15°	8315	8606	8041
20°	8289	8095	8572
25°	8302	8385	8243
30°	8276	8539	8171
35°	8231	8583	8546
40°	8178	8188	8425
45°	8109	8646	8184
50°	7988	8330	8059
55°	7789	8105	8331
60°	7433	7736	8282
65°	6891	8130	8022
70°	5966	7362	7429
75°	4600	6564	6974
80°	2795	6203	5765
85°	1307	4610	4266



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	174.3	3.2
10°-20°	497.7	9.2
20°-30°	763.9	14.2
30°-40°	924.4	17.1
40°-50°	980.2	18.2
50°-60°	891.1	16.5
60°-70°	686.4	12.7
70°-80°	368.8	6.8
80°-90°	90.8	1.7
90°-100°	7.7	0.1
100°-110°	4.4	0.1
110°-120°	2.8	0.1
120°-130°	1.7	0.0
130°-140°	0.8	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°	1435.9	26.6
0°-40°	2360.3	43.8
0°-60°	4231.6	78.4
0°-90°	5377.6	99.7
90°-120°	14.9	0.3
90°-150°	17.3	0.3
90°-180°	17.0	0.3
0°-180°	5394.9	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1794	1794	1794	1794	1794	
5°	1805	1863	1835	1840	1845	171
15°	1741	1784	1802	1700	1684	491
25°	1631	1662	1647	1611	1620	751
35°	1462	1402	1524	1470	1518	914
45°	1243	1304	1325	1305	1254	957
55°	968	1018	1008	980	1036	864
65°	631	654	745	723	735	621
75°	258	317	368	383	391	277
85°	25	76	87	81	81	37
90°	0	15	13	10	8	1
95°	0	8	8	7	7	0
105°	0	3	5	5	5	0
115°	2	2	3	3	3	1
125°	2	2	2	2	2	1
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



TEST NUMBER: P239210

CATALOG NUMBER: HDF-4-LD4-UNV-1-HI-35-EDC-1

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1793.7	1793.7	1793.7	1793.7	1793.7
2.5°	1808.5	1828.3	1871.0	1861.1	1848.0
5°	1805.2	1862.8	1834.8	1839.8	1844.7
7.5°	1793.7	1808.5	1844.7	1826.6	1831.5
10°	1778.9	1808.5	1818.4	1811.8	1808.5
12.5°	1759.2	1802.0	1800.3	1828.3	1795.4
15°	1741.1	1783.9	1802.0	1700.0	1683.6
17.5°	1718.1	1754.3	1747.7	1721.4	1742.8
20°	1688.5	1737.8	1649.0	1709.9	1746.1
22.5°	1662.2	1695.1	1680.3	1711.5	1700.0
25°	1631.0	1662.2	1647.4	1611.2	1619.5
27.5°	1591.5	1645.8	1658.9	1598.1	1698.4
30°	1553.7	1575.1	1603.0	1654.0	1534.0
32.5°	1507.7	1479.7	1486.3	1487.9	1525.7
35°	1461.6	1402.4	1524.1	1469.8	1517.5
37.5°	1407.4	1404.1	1501.1	1476.4	1430.4
40°	1358.0	1387.6	1359.7	1376.1	1399.1
42.5°	1298.9	1340.0	1333.4	1333.4	1366.3
45°	1243.0	1303.8	1325.2	1305.4	1254.5
47.5°	1180.5	1201.8	1226.5	1205.1	1164.0
50°	1113.1	1080.2	1160.7	1098.3	1122.9
52.5°	1042.4	1104.8	1106.5	1045.7	1050.6
55°	968.4	1017.7	1007.8	979.9	1035.8
57.5°	894.4	889.5	899.3	971.7	966.7
60°	805.6	835.2	838.5	882.9	897.7
62.5°	718.5	784.2	779.3	818.8	777.7
65°	631.3	654.4	744.8	723.4	734.9
67.5°	537.6	580.4	626.4	637.9	613.3
70°	442.3	493.2	545.8	542.6	550.8
72.5°	343.6	383.1	473.5	434.0	463.6
75°	258.1	317.3	368.3	383.1	391.3
77.5°	175.9	251.5	289.4	304.2	276.2
80°	105.2	187.4	233.5	215.4	217.0
82.5°	54.3	111.8	148.0	141.4	156.2
85°	24.7	75.6	87.1	80.6	80.6
87.5°	8.2	34.5	36.2	26.3	23.0
90°	0.0	14.8	13.2	9.9	8.2
92.5°	0.0	9.9	9.9	8.2	6.6
95°	0.0	8.2	8.2	6.6	6.6
97.5°	0.0	6.6	8.2	6.6	4.9
100°	0.0	4.9	6.6	6.6	4.9
102.5°	0.0	3.3	6.6	6.6	4.9
105°	0.0	3.3	4.9	4.9	4.9
107.5°	0.0	3.3	4.9	4.9	4.9
110°	0.0	1.6	4.9	4.9	3.3



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	1.6	1.6	3.3	4.9	3.3
115°	1.6	1.6	3.3	3.3	3.3
117.5°	1.6	1.6	3.3	3.3	3.3
120°	1.6	1.6	1.6	3.3	3.3
122.5°	1.6	1.6	1.6	3.3	3.3
125°	1.6	1.6	1.6	1.6	1.6
127.5°	1.6	1.6	1.6	1.6	1.6
130°	1.6	1.6	1.6	1.6	1.6
132.5°	1.6	1.6	1.6	1.6	1.6
135°	1.6	1.6	1.6	1.6	1.6
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)