

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: P239198

Luminaire Tested: **HDF-4-LD4-UNV-2-HI-35-OPL-EDC-1**

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: P239198
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1711-412-5)
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-HI-35-OPL-EDC-1
Description: FAILSAFE HDF LED FIXTURE
4FT, 2-ROW LED BOARDS, OPAL LENS
Light Source: (168) 3500K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

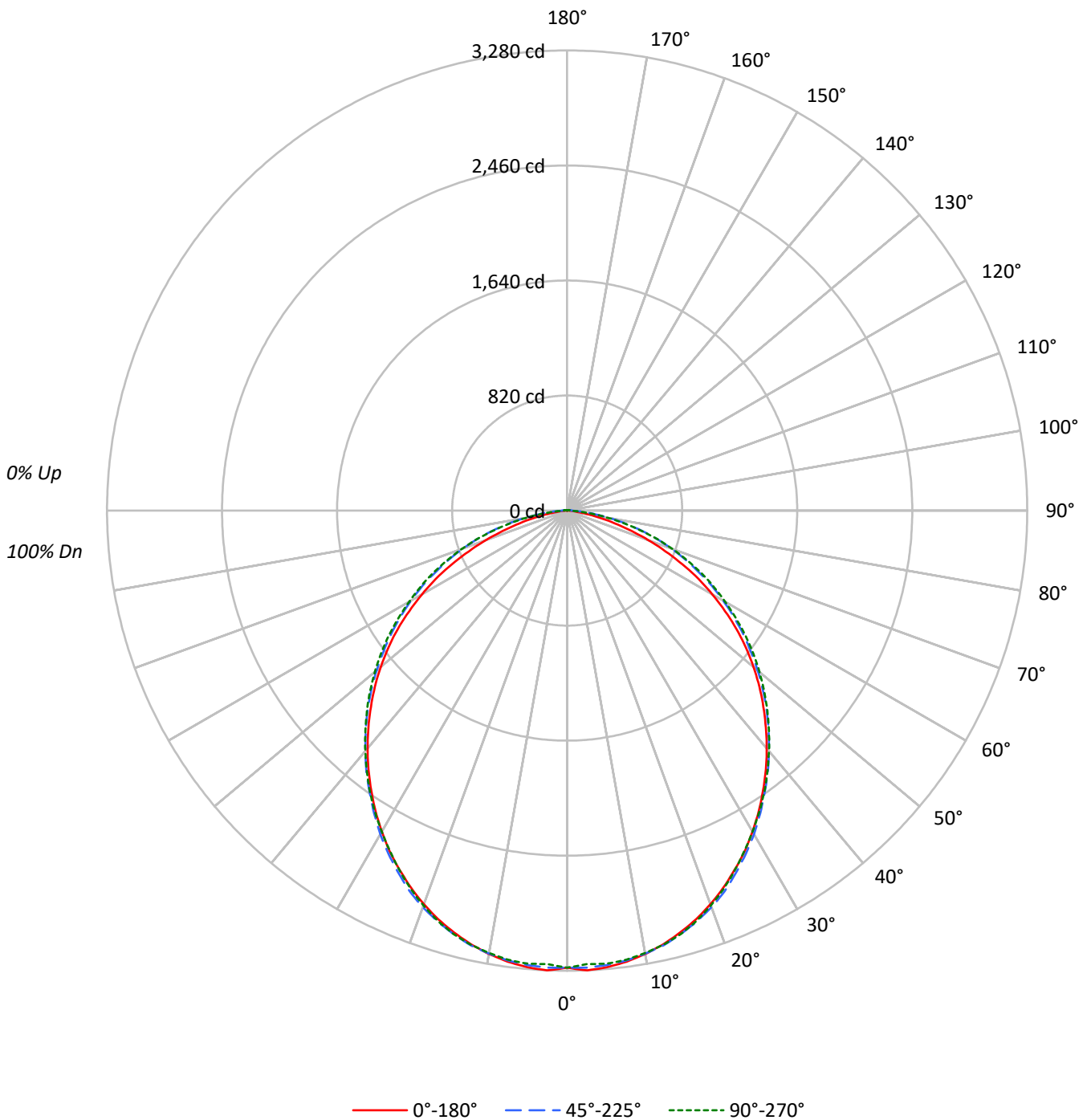
Lumens per Lamp: N/A
Luminaire Lumens: 8614.5 lumens
Efficiency: N/A
Efficacy: 97.1 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.21 / 1.32
Luminous Opening: Rectangular (W 0.58' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 88.7
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	95	92	94	91	89	90	88	86	84
2	99	91	85	79	97	89	83	78	86	81	76	82	78	74	79	76	73	70
3	91	80	72	66	88	79	71	65	76	69	64	73	67	63	70	66	62	60
4	83	71	63	56	81	70	62	56	67	60	55	65	59	54	63	58	53	51
5	77	64	55	48	74	63	54	48	61	53	48	59	52	47	57	51	46	44
6	71	58	49	42	69	57	48	42	55	47	42	53	46	41	51	46	41	39
7	66	52	44	38	64	51	43	37	50	42	37	48	42	37	47	41	36	34
8	61	48	39	34	60	47	39	33	46	38	33	44	38	33	43	37	33	31
9	57	44	36	30	56	43	35	30	42	35	30	41	34	30	40	34	30	28
10	54	41	33	27	52	40	32	27	39	32	27	38	32	27	37	31	27	25

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	15030	15030	15030
5°	15131	15057	15012
10°	15035	15020	14998
15°	14868	14930	14930
20°	14660	14770	14707
25°	14381	14496	14398
30°	14074	14185	14082
35°	13711	13819	13792
40°	13325	13470	13480
45°	12904	13114	13166
50°	12452	12729	12845
55°	11860	12300	12468
60°	11038	11855	12017
65°	9900	11252	11515
70°	8307	10650	10758
75°	6278	9716	9545
80°	3887	8204	7733
85°	1874	6214	5277



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	308.3	3.6
10°-20°	877.9	10.2
20°-30°	1303.1	15.1
30°-40°	1528.0	17.7
40°-50°	1543.2	17.9
50°-60°	1355.8	15.7
60°-70°	997.4	11.6
70°-80°	532.3	6.2
80°-90°	128.2	1.5
90°-100°	20.0	0.2
100°-110°	10.2	0.1
110°-120°	5.0	0.1
120°-130°	3.6	0.0
130°-140°	1.7	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°	2489.2	28.9
0°-40°	4017.3	46.6
0°-60°	6916.2	80.3
0°-90°	8574.2	99.5
90°-120°	35.1	0.4
90°-150°	40.4	0.5
90°-180°	40.0	0.5
0°-180°	8614.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3258	3258	3258	3258	3258	
5°	3268	3232	3252	3240	3242	310
15°	3113	3092	3126	3121	3126	878
25°	2825	2819	2848	2824	2829	1302
35°	2435	2438	2454	2436	2449	1523
45°	1978	1986	2010	2007	2018	1526
55°	1475	1486	1529	1542	1550	1315
65°	907	965	1031	1052	1055	897
75°	352	468	545	545	536	382
85°	35	106	117	108	100	52
90°	0	27	29	24	21	1
95°	0	16	26	22	21	0
105°	2	5	11	14	14	1
115°	2	3	5	6	6	2
125°	3	3	5	5	5	3
135°	3	3	3	3	5	2
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°	3258.0	3258.0	3258.0	3258.0	3258.0
2.5°	3280.5	3245.1	3261.2	3251.5	3235.4
5°	3267.6	3232.2	3251.5	3240.3	3241.9
7.5°	3243.5	3212.9	3233.8	3225.8	3229.0
10°	3209.7	3180.8	3206.5	3200.1	3201.7
12.5°	3166.3	3140.6	3174.3	3166.3	3169.5
15°	3113.2	3092.3	3126.1	3121.3	3126.1
17.5°	3055.3	3037.7	3071.4	3063.4	3066.6
20°	2986.2	2971.7	3008.7	2989.4	2995.8
22.5°	2909.0	2899.4	2936.3	2912.2	2917.0
25°	2825.4	2819.0	2847.9	2823.8	2828.6
27.5°	2740.2	2730.5	2757.9	2732.1	2735.3
30°	2642.1	2638.9	2663.0	2635.6	2643.7
32.5°	2542.4	2542.4	2560.1	2537.5	2548.8
35°	2434.6	2437.8	2453.9	2436.2	2449.1
37.5°	2326.9	2330.1	2349.4	2333.3	2346.2
40°	2212.7	2217.5	2236.8	2227.2	2238.4
42.5°	2096.9	2105.0	2125.9	2119.4	2129.1
45°	1977.9	1986.0	2010.1	2006.9	2018.1
47.5°	1858.9	1865.4	1892.7	1895.9	1905.6
50°	1735.1	1739.9	1773.7	1781.7	1789.8
52.5°	1608.1	1614.5	1649.9	1662.8	1672.4
55°	1474.6	1485.9	1529.3	1542.1	1550.2
57.5°	1334.7	1357.2	1407.1	1418.3	1424.8
60°	1196.4	1222.1	1284.9	1299.3	1302.5
62.5°	1056.5	1096.7	1164.2	1177.1	1180.3
65°	907.0	964.8	1030.8	1051.7	1054.9
67.5°	759.0	836.2	910.2	926.3	926.3
70°	615.9	709.2	789.6	799.2	797.6
72.5°	480.8	586.9	665.7	673.8	670.6
75°	352.2	468.0	545.1	545.1	535.5
77.5°	238.0	358.6	422.9	419.7	413.3
80°	146.3	262.1	308.8	300.7	291.1
82.5°	78.8	180.1	204.2	194.6	184.9
85°	35.4	106.1	117.4	107.7	99.7
87.5°	9.6	54.7	54.7	48.2	45.0
90°	0.0	27.3	28.9	24.1	20.9
92.5°	0.0	20.9	27.3	22.5	20.9
95°	0.0	16.1	25.7	22.5	20.9
97.5°	0.0	11.3	22.5	20.9	19.3
100°	0.0	8.0	17.7	19.3	17.7
102.5°	0.0	6.4	14.5	16.1	16.1
105°	1.6	4.8	11.3	14.5	14.5
107.5°	1.6	4.8	8.0	11.3	11.3
110°	1.6	3.2	6.4	9.6	9.6



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1.6	3.2	6.4	8.0	8.0
115°	1.6	3.2	4.8	6.4	6.4
117.5°	1.6	3.2	4.8	6.4	6.4
120°	3.2	3.2	4.8	4.8	4.8
122.5°	3.2	3.2	4.8	4.8	4.8
125°	3.2	3.2	4.8	4.8	4.8
127.5°	3.2	3.2	3.2	4.8	4.8
130°	3.2	3.2	3.2	3.2	4.8
132.5°	3.2	3.2	3.2	3.2	3.2
135°	3.2	3.2	3.2	3.2	4.8
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)