

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: 105P135

Luminaire Tested: **CFDFA-432A-277V**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: 105P135  
Test Lab:  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: CF DFA-432A-277V  
Description: 2 X 4 Recessed Troffer with a .095 pattern 12  
acrylic lens.  
Light Source: Four - F032/35K - 2850 Lumens ea. - 32 Watts ea.  
Ballast/Driver: Motorola M4-IN-T8-GP-D-120 Electronic - L.O.B.F. = 87.1%

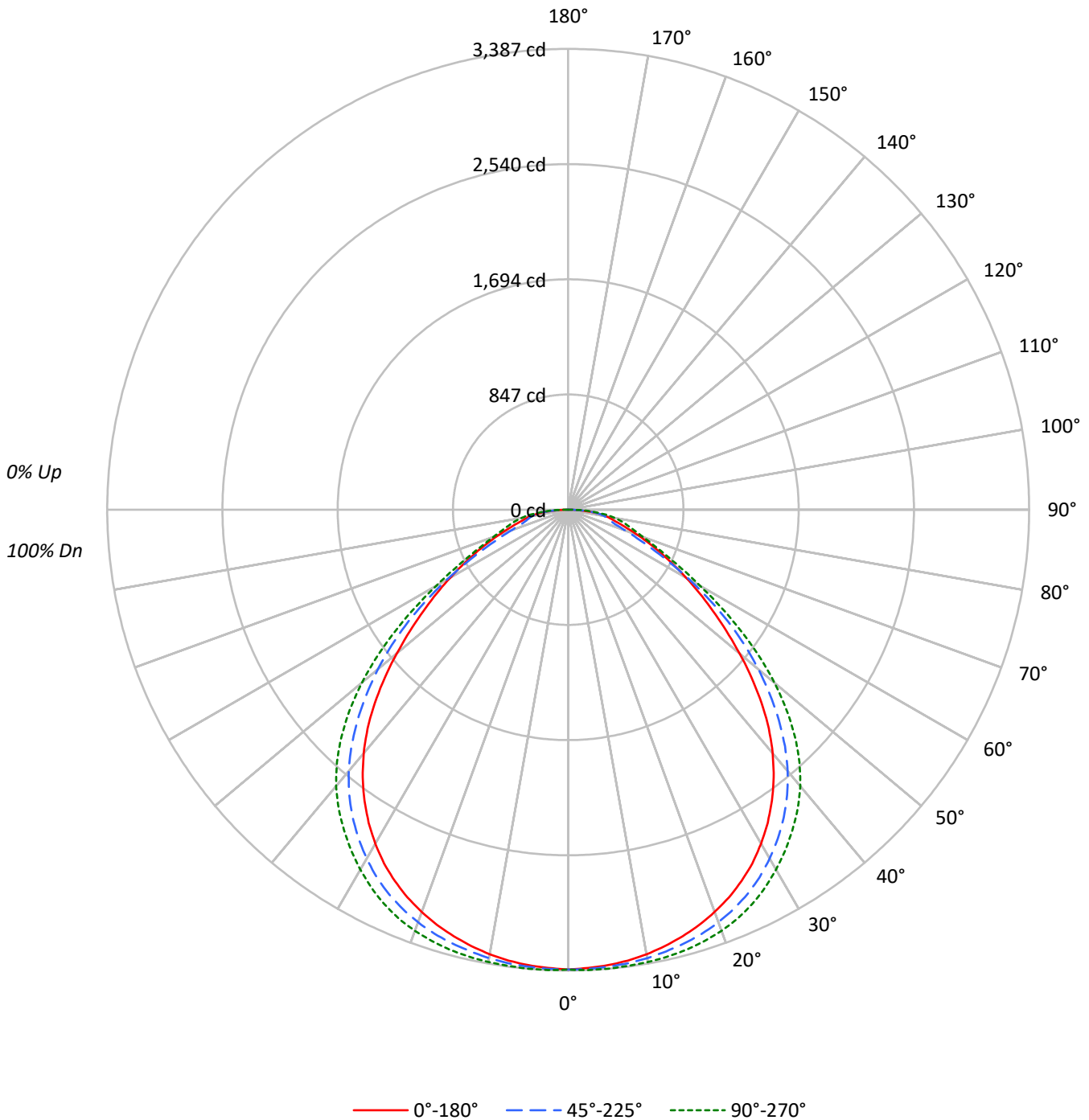
**Summary**

Lumens per Lamp: 2850 (4 lamps)  
Luminaire Lumens: 8677.1 lumens  
Efficiency: 76.1%  
Efficacy: 80.3 lumens/watt  
Spacing Criteria (0/90/45): 1.24 / 1.33 / 1.37  
Luminous Opening: Rectangular (W 1.79' x L: 3.81' x H: 0')  
CIE Type: Direct

Input Watts (W): 108  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): 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	91	91	91	91	89	89	89	89	85	85	85	81	81	81	78	78	78	76
1	83	80	77	74	81	78	75	73	75	73	71	72	70	68	69	68	66	65
2	76	70	66	62	74	69	65	61	66	63	59	64	61	58	62	59	57	55
3	70	62	57	52	68	61	56	51	59	54	51	57	53	50	55	52	49	47
4	64	56	49	45	63	55	49	44	53	48	44	51	47	43	50	46	43	41
5	59	50	44	39	58	49	43	39	48	42	38	46	41	38	45	41	37	36
6	55	45	39	34	54	45	38	34	43	38	34	42	37	33	41	36	33	32
7	51	41	35	30	50	41	34	30	39	34	30	38	33	30	37	33	29	28
8	48	38	31	27	46	37	31	27	36	31	27	35	30	27	34	30	27	25
9	45	35	29	24	43	34	28	24	33	28	24	33	28	24	32	27	24	23
10	42	32	26	22	41	32	26	22	31	26	22	30	25	22	29	25	22	21

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

	0°	45°	90°
0°	5335	5335	5335
5°	5325	5342	5365
10°	5318	5364	5409
15°	5304	5391	5472
20°	5284	5420	5533
25°	5245	5428	5571
30°	5165	5396	5566
35°	5029	5320	5536
40°	4817	5169	5466
45°	4489	4886	5259
50°	4034	4481	4859
55°	3574	3946	4254
60°	3160	3248	3535
65°	2797	2547	2962
70°	2501	2049	2686
75°	2354	1970	2769
80°	2572	2463	3154
85°	2771	2970	3531



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**ZONAL LUMENS:**

**CANDELA DISTRIBUTION:**

Zone	Lumens	% Fixture	% Lamp		0°	22.5°	45°	67.5°	90°	Flux
0°-10°	321.1	3.7	2.8	0°	3380	3380	3380	3380	3380	
10°-20°	931.7	10.7	8.2	5°	3361	3364	3372	3379	3386	319
20°-30°	1432.3	16.5	12.6	15°	3246	3263	3299	3332	3349	916
30°-40°	1716.3	19.8	15.1	25°	3012	3049	3117	3173	3199	1386
40°-50°	1676.1	19.3	14.7	35°	2610	2661	2761	2835	2873	1628
50°-60°	1267.4	14.6	11.1	45°	2011	2069	2189	2297	2356	1543
60°-70°	738.6	8.5	6.5	55°	1299	1329	1434	1488	1546	1167
70°-80°	417.8	4.8	3.7	65°	749	688	682	775	793	749
80°-90°	175.9	2.0	1.5	75°	386	374	323	437	454	418
90°-100°	0.0	0.0	0.0	85°	153	152	164	189	195	152
100°-110°	0.0	0.0	0.0	90°	0	0	0	0	0	11
110°-120°	0.0	0.0	0.0	95°	0	0	0	0	0	0
120°-130°	0.0	0.0	0.0	105°	0	0	0	0	0	0
130°-140°	0.0	0.0	0.0	115°	0	0	0	0	0	0
140°-150°	0.0	0.0	0.0	125°	0	0	0	0	0	0
150°-160°	0.0	0.0	0.0	135°	0	0	0	0	0	0
160°-170°	0.0	0.0	0.0	145°	0	0	0	0	0	0
170°-180°	0.0	0.0	0.0	155°	0	0	0	0	0	0
0°-30°	2685.1	30.9	23.6	165°	0	0	0	0	0	0
0°-40°	4401.3	50.7	38.6	175°	0	0	0	0	0	0
0°-60°	7344.8	84.6	64.4	180°	0	0	0	0	0	0
0°-90°	8677.1	100.0	76.1							
90°-120°	0.0	0.0	0.0							
90°-150°	0.0	0.0	0.0							
90°-180°	0.0	0.0	0.0							
0°-180°	8677.1	100.0	76.1							



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3380	3380	3380	3380	3380
2.5°	3371	3373	3378	3382	3387
5°	3361	3364	3372	3379	3386
7.5°	3343	3349	3362	3373	3381
10°	3318	3326	3347	3364	3375
12.5°	3285	3298	3325	3350	3365
15°	3246	3263	3299	3332	3349
17.5°	3201	3222	3268	3306	3326
20°	3146	3173	3227	3273	3294
22.5°	3085	3115	3177	3229	3253
25°	3012	3049	3117	3173	3199
27.5°	2931	2971	3046	3104	3132
30°	2834	2881	2961	3022	3054
32.5°	2728	2778	2866	2932	2968
35°	2610	2661	2761	2835	2873
37.5°	2480	2533	2643	2726	2770
40°	2338	2392	2509	2603	2653
42.5°	2181	2238	2357	2462	2516
45°	2011	2069	2189	2297	2356
47.5°	1827	1889	2010	2110	2175
50°	1643	1704	1825	1912	1979
52.5°	1464	1519	1633	1702	1768
55°	1299	1329	1434	1488	1546
57.5°	1144	1140	1228	1280	1325
60°	1001	965	1029	1086	1120
62.5°	868	812	844	916	941
65°	749	688	682	775	793
67.5°	641	586	548	662	674
70°	542	502	444	575	582
72.5°	454	432	369	502	511
75°	386	374	323	437	454
77.5°	332	322	297	377	403
80°	283	269	271	320	347
82.5°	223	212	228	261	279
85°	153	152	164	189	195
87.5°	82	84	89	101	102
90°	0	0	0	0	0
92.5°	0	0	0	0	0
95°	0	0	0	0	0
97.5°	0	0	0	0	0
100°	0	0	0	0	0
102.5°	0	0	0	0	0
105°	0	0	0	0	0
107.5°	0	0	0	0	0
110°	0	0	0	0	0



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	0	0	0	0	0
115°	0	0	0	0	0
117.5°	0	0	0	0	0
120°	0	0	0	0	0
122.5°	0	0	0	0	0
125°	0	0	0	0	0
127.5°	0	0	0	0	0
130°	0	0	0	0	0
132.5°	0	0	0	0	0
135°	0	0	0	0	0
137.5°	0	0	0	0	0
140°	0	0	0	0	0
142.5°	0	0	0	0	0
145°	0	0	0	0	0
147.5°	0	0	0	0	0
150°	0	0	0	0	0
152.5°	0	0	0	0	0
155°	0	0	0	0	0
157.5°	0	0	0	0	0
160°	0	0	0	0	0
162.5°	0	0	0	0	0
165°	0	0	0	0	0
167.5°	0	0	0	0	0
170°	0	0	0	0	0
172.5°	0	0	0	0	0
175°	0	0	0	0	0
177.5°	0	0	0	0	0
180°	0	0	0	0	0

(END OF REPORT)