

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: P31802

Luminaire Tested: **FUSL-D16-354T5-UNV-80/86-EB52**

Issue Date: 3/3/2020



**Test Information**

Test Method: LM-79-08  
Report Number: P31802  
Test Lab: INNOVATION CENTER-P3  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: FUSL-D16-354T5-UNV-80/86-EB52  
Description: FAIL-SAFE 1X4 FLUORESCENT 16 GAUGE CONFINEMENT-CORRECTIONAL  
FIXTURE WITH A 0.125 PRISMATIC LENS FIXTURE SIDE, A 0.250  
CLEAR POLYCARBONATE LENS ENVIRONMENTAL SIDE  
Light Source: (3) GE BIPIN T5 DOUBLE ENDED LINEAR FLUORESCENT LAMP 3500K  
F54W-T5-835-ECO  
Ballast/Driver: (2) UNIVERSAL BALLAST  
B254PUNV-D

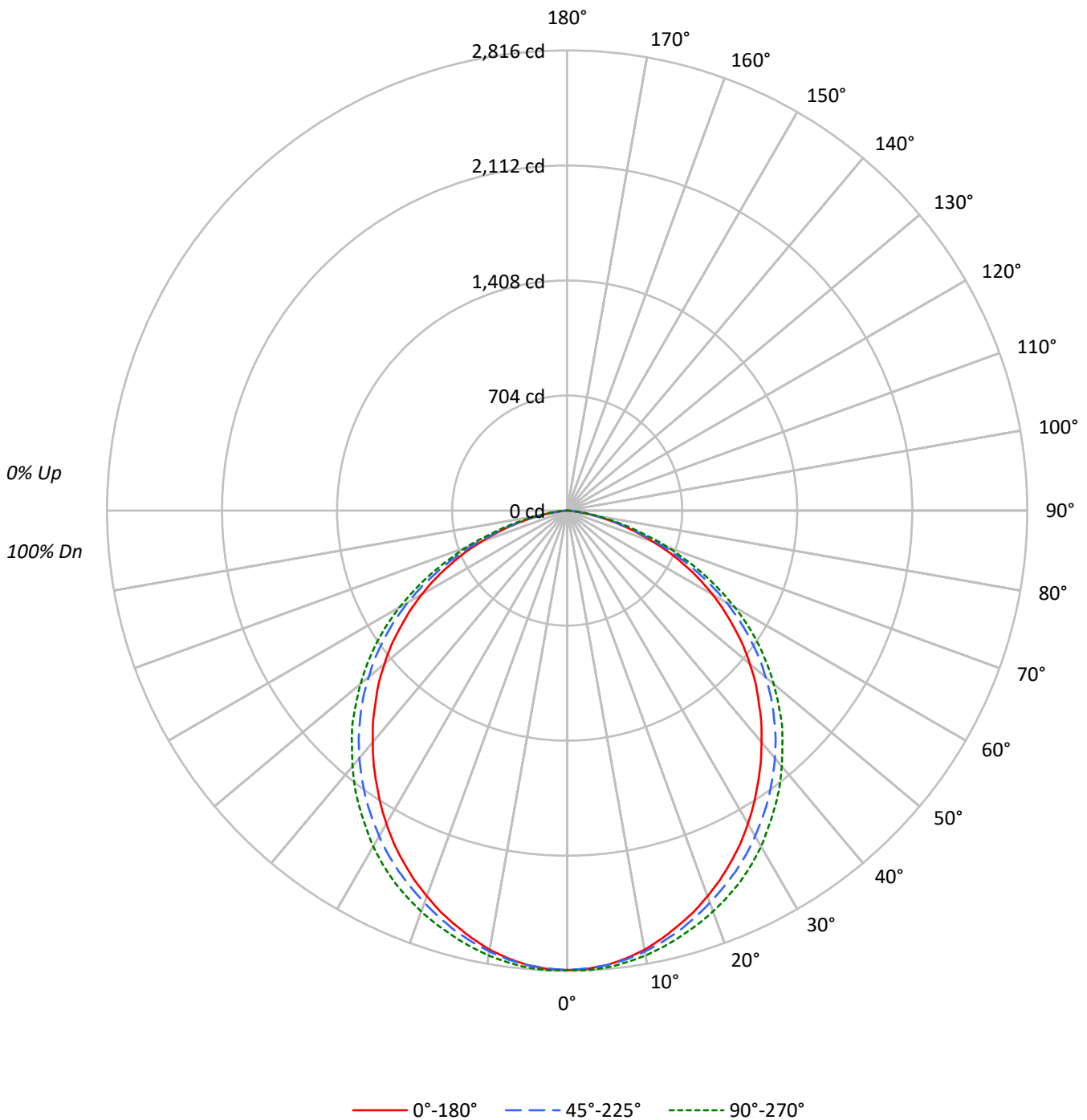
**Summary**

Lumens per Lamp: 4400 (3 lamps)  
Luminaire Lumens: 7365.7 lumens  
Efficiency: 55.8%  
Efficacy: 49.0 lumens/watt  
Spacing Criteria (0/90/45): 1.18 / 1.25 / 1.35  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 150.3  
Input Voltage (V): 120.06  
Input Current (Ain): 1.255  
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	66	66	66	66	65	65	65	65	62	62	62		59	59	59		57	57	57	56
1	61	59	56	54	60	57	55	53	55	53	52		53	51	50		51	50	49	48
2	56	51	48	45	54	50	47	44	48	46	43		47	44	42		45	43	41	40
3	51	45	41	37	50	44	40	37	43	39	36		41	38	36		40	37	35	34
4	47	40	35	32	45	39	35	31	38	34	31		37	33	31		36	33	30	29
5	43	36	31	27	42	35	31	27	34	30	27		33	29	27		32	29	26	25
6	40	32	27	24	39	32	27	24	31	27	24		30	26	23		29	26	23	22
7	37	29	25	21	36	29	24	21	28	24	21		27	24	21		27	23	21	20
8	34	27	22	19	33	26	22	19	26	22	19		25	21	19		24	21	18	17
9	32	25	20	17	31	24	20	17	24	20	17		23	19	17		22	19	17	16
10	30	23	18	15	29	22	18	15	22	18	15		21	18	15		21	18	15	14

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

	0°	45°	90°
0°	7567	7567	7567
5°	7542	7542	7582
10°	7457	7487	7555
15°	7324	7408	7511
20°	7191	7314	7477
25°	7043	7236	7441
30°	6876	7150	7377
35°	6685	7056	7280
40°	6499	6948	7177
45°	6306	6812	7078
50°	6108	6635	6908
55°	5846	6404	6714
60°	5533	6060	6372
65°	5068	5501	5858
70°	4422	4736	5169
75°	3535	3701	4138
80°	2356	2433	2805
85°	1050	1142	1359



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**ZONAL LUMENS:**

**CANDELA DISTRIBUTION:**

Zone	Lumens	% Fixture	% Lamp		0°	22.5°	45°	67.5°	90°	Flux
0°-10°	265.3	3.6	2.0	0°	2812	2812	2812	2812	2812	
10°-20°	750.9	10.2	5.7	5°	2792	2796	2792	2801	2807	264
20°-30°	1123.7	15.3	8.5	15°	2629	2643	2659	2686	2696	741
30°-40°	1337.0	18.2	10.1	25°	2372	2395	2437	2486	2506	1093
40°-50°	1369.4	18.6	10.4	35°	2035	2074	2148	2201	2216	1274
50°-60°	1210.3	16.4	9.2	45°	1657	1710	1790	1846	1860	1281
60°-70°	855.5	11.6	6.5	55°	1246	1294	1365	1424	1431	1115
70°-80°	392.7	5.3	3.0	65°	796	823	864	913	920	789
80°-90°	61.0	0.8	0.5	75°	340	348	356	386	398	365
90°-100°	0.0	0.0	0.0	85°	34	37	37	45	44	54
100°-110°	0.0	0.0	0.0	90°	0	0	0	0	0	
110°-120°	0.0	0.0	0.0							
120°-130°	0.0	0.0	0.0							
130°-140°	0.0	0.0	0.0							
140°-150°	0.0	0.0	0.0							
150°-160°	0.0	0.0	0.0							
160°-170°	0.0	0.0	0.0							
170°-180°	0.0	0.0	0.0							
0°-30°	2139.9	29.1	16.2							
0°-40°	3476.8	47.2	26.3							
0°-60°	6056.5	82.2	45.9							
0°-90°	7365.7	100.0	55.8							
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°	7365.7	100.0	55.8							



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2812	2812	2812	2812	2812
2.5°	2807	2809	2804	2812	2816
5°	2792	2796	2792	2801	2807
7.5°	2764	2770	2771	2783	2788
10°	2729	2736	2740	2757	2765
12.5°	2682	2692	2702	2724	2733
15°	2629	2643	2659	2686	2696
17.5°	2575	2587	2609	2641	2656
20°	2511	2525	2554	2593	2611
22.5°	2445	2462	2497	2543	2560
25°	2372	2395	2437	2486	2506
27.5°	2297	2320	2373	2426	2442
30°	2213	2244	2301	2355	2374
32.5°	2127	2160	2226	2282	2294
35°	2035	2074	2148	2201	2216
37.5°	1947	1985	2064	2118	2135
40°	1850	1896	1978	2029	2043
42.5°	1759	1802	1888	1940	1950
45°	1657	1710	1790	1846	1860
47.5°	1565	1612	1693	1749	1754
50°	1459	1511	1585	1646	1650
52.5°	1358	1404	1482	1539	1542
55°	1246	1294	1365	1424	1431
57.5°	1139	1188	1250	1305	1311
60°	1028	1069	1126	1180	1184
62.5°	916	948	998	1048	1054
65°	796	823	864	913	920
67.5°	684	701	734	780	783
70°	562	579	602	643	657
72.5°	449	462	471	517	516
75°	340	348	356	386	398
77.5°	241	246	247	274	282
80°	152	158	157	177	181
82.5°	83	86	86	99	102
85°	34	37	37	45	44
87.5°	7	10	12	14	15
90°	0	0	0	0	0

(END OF REPORT)