

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: P31493

Luminaire Tested: **FMSC-D24-654T5-UNV-80/84-EB52**

Issue Date: 3/3/2020



**Test Information**

Test Method: LM-79-08  
Report Number: P31493  
Test Lab: INNOVATION CENTER-P3  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: FMSC-D24-654T5-UNV-80/84-EB52  
Description: FAIL-SAFE FMSC CONFINEMENT FLUORESCENT FIXTURE WITH 80/84  
LENS  
Light Source: (6) BIPIN T5 DOUBLE ENDED LINEAR FLUORESCENT LAMP 5000K  
F54W-T5-850 ECO 54 W  
Ballast/Driver: (2) UNIVERSAL ELECTRONIC BALLAST  
B454UNV-E

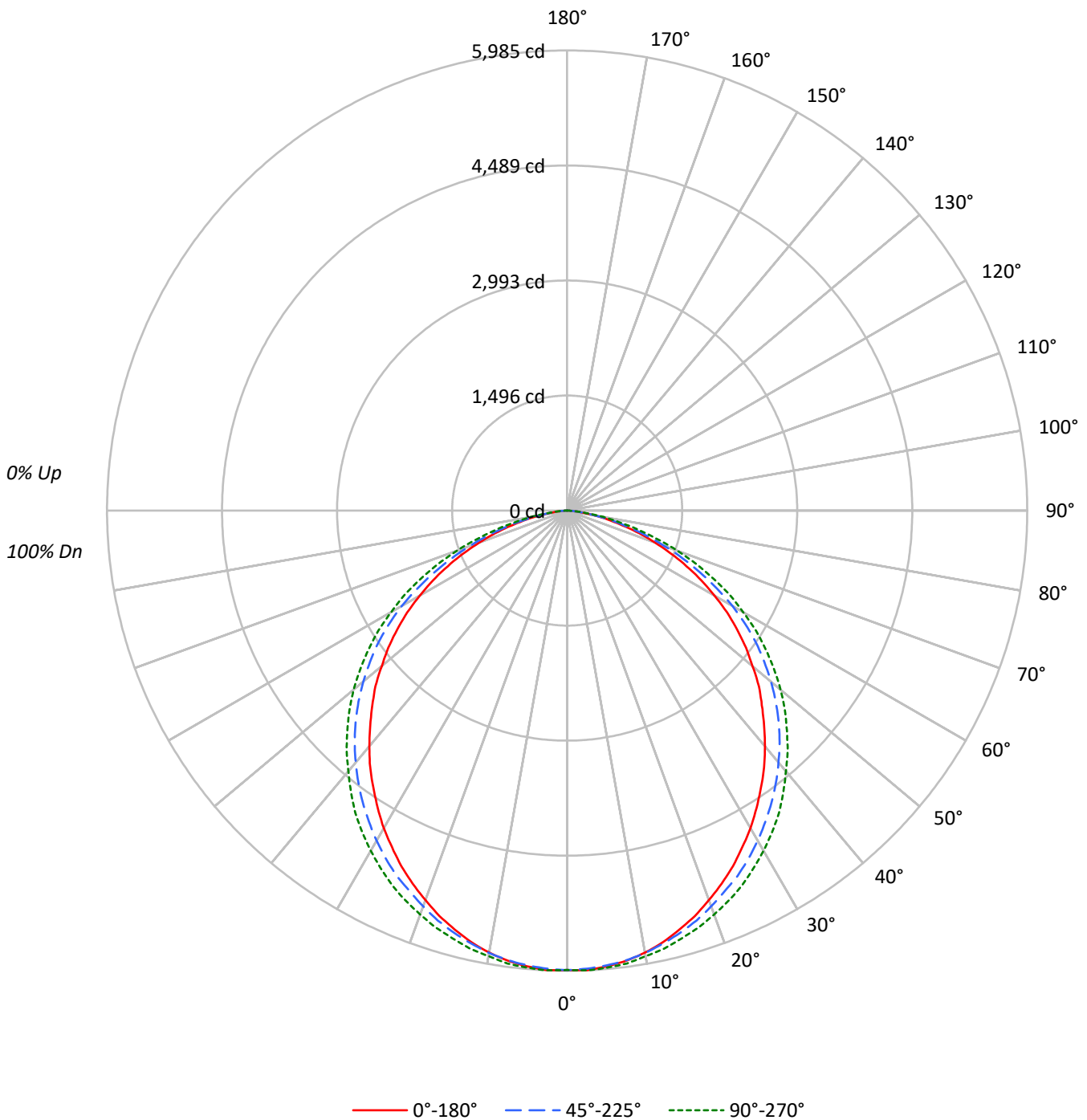
**Summary**

Lumens per Lamp: 4800 (6 lamps)  
Luminaire Lumens: 16043.2 lumens  
Efficiency: 55.7%  
Efficacy: 54.4 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.27 / 1.36  
Luminous Opening: Rectangular (W 1' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 294.8  
Input Voltage (V): 120.03  
Input Current (Ain): 2.4626  
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	58	56	54	59	57	55	53	55	53	52	53	51	50	51	50	48	47
2	56	51	47	44	54	50	47	44	48	45	43	46	44	42	45	43	41	40
3	51	45	41	37	49	44	40	37	42	39	36	41	38	35	39	37	35	34
4	46	40	35	31	45	39	35	31	38	34	31	36	33	30	35	32	30	29
5	43	36	31	27	42	35	30	27	34	30	27	33	29	26	32	29	26	25
6	39	32	27	24	38	32	27	24	31	26	23	30	26	23	29	25	23	22
7	37	29	24	21	36	29	24	21	28	24	21	27	23	21	26	23	20	19
8	34	27	22	19	33	26	22	19	25	21	18	25	21	18	24	21	18	17
9	32	24	20	17	31	24	20	17	23	19	17	23	19	17	22	19	16	15
10	30	23	18	15	29	22	18	15	22	18	15	21	18	15	21	17	15	14

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

	0°	45°	90°
0°	32163	32163	32163
5°	32145	32080	32242
10°	31905	31932	32161
15°	31436	31676	32088
20°	30876	31374	32010
25°	30303	31141	31954
30°	29650	30812	31750
35°	28876	30453	31550
40°	28124	30049	31103
45°	27263	29623	30757
50°	26358	28970	30352
55°	25325	28159	29604
60°	23810	26727	28438
65°	21827	24298	26769
70°	19119	21196	23997
75°	15533	16968	19796
80°	11344	11716	14629
85°	6052	6113	7040



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**ZONAL LUMENS:**

**CANDELA DISTRIBUTION:**

Zone	Lumens	% Fixture	% Lamp		0°	22.5°	45°	67.5°	90°	Flux
0°-10°	564.8	3.5	2.0	0°	5976	5976	5976	5976	5976	
10°-20°	1606.1	10.0	5.6	5°	5950	5939	5938	5950	5968	565
20°-30°	2413.6	15.0	8.4	15°	5642	5647	5685	5732	5759	1591
30°-40°	2885.1	18.0	10.0	25°	5103	5131	5244	5340	5381	2349
40°-50°	2969.7	18.5	10.3	35°	4395	4464	4635	4750	4802	2751
50°-60°	2646.8	16.5	9.2	45°	3582	3690	3892	4011	4041	2766
60°-70°	1900.6	11.8	6.6	55°	2699	2821	3001	3125	3155	2409
70°-80°	904.5	5.6	3.1	65°	1714	1817	1908	2047	2102	1697
80°-90°	152.0	0.9	0.5	75°	747	793	816	919	952	806
90°-100°	0.0	0.0	0.0	85°	98	101	99	109	114	140
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°	4584.5	28.6	15.9							
0°-40°	7469.6	46.6	25.9							
0°-60°	13086.1	81.6	45.4							
0°-90°	16043.2	100.0	55.7							
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°	16043.2	100.0	55.7							



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	5976	5976	5976	5976	5976
2.5°	5983	5973	5964	5973	5985
5°	5950	5939	5938	5950	5968
7.5°	5906	5902	5899	5919	5942
10°	5838	5831	5843	5870	5885
12.5°	5752	5746	5769	5810	5836
15°	5642	5647	5685	5732	5759
17.5°	5529	5545	5591	5650	5686
20°	5391	5410	5478	5563	5589
22.5°	5251	5285	5357	5451	5492
25°	5103	5131	5244	5340	5381
27.5°	4935	4978	5105	5221	5247
30°	4771	4822	4958	5074	5109
32.5°	4585	4645	4798	4919	4960
35°	4395	4464	4635	4750	4802
37.5°	4210	4279	4462	4581	4618
40°	4003	4090	4277	4393	4427
42.5°	3791	3888	4091	4212	4245
45°	3582	3690	3892	4011	4041
47.5°	3383	3476	3681	3809	3841
50°	3148	3256	3460	3602	3625
52.5°	2932	3047	3232	3364	3392
55°	2699	2821	3001	3125	3155
57.5°	2465	2578	2747	2869	2913
60°	2212	2336	2483	2624	2642
62.5°	1970	2073	2198	2347	2393
65°	1714	1817	1908	2047	2102
67.5°	1465	1551	1631	1770	1819
70°	1215	1291	1347	1470	1525
72.5°	982	1037	1072	1186	1229
75°	747	793	816	919	952
77.5°	542	559	585	657	691
80°	366	379	378	429	472
82.5°	203	209	212	247	252
85°	98	101	99	109	114
87.5°	30	34	30	30	31
90°	0	0	0	0	0

(END OF REPORT)