

Scaled data based on original data using  
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions

Brand: FAIL-SAFE

Report Number: P590935

Luminaire Tested: FSR-24-2-LD4-4STD-40-UNV-80-86-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590935  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-1)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/8/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: FAIL-SAFE  
Catalog Number: FSR-24-2-LD4-4STD-40-UNV-80-86-EDD  
Description: 2X2 FSR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .250 CLEAR PC ENVIRON  
SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

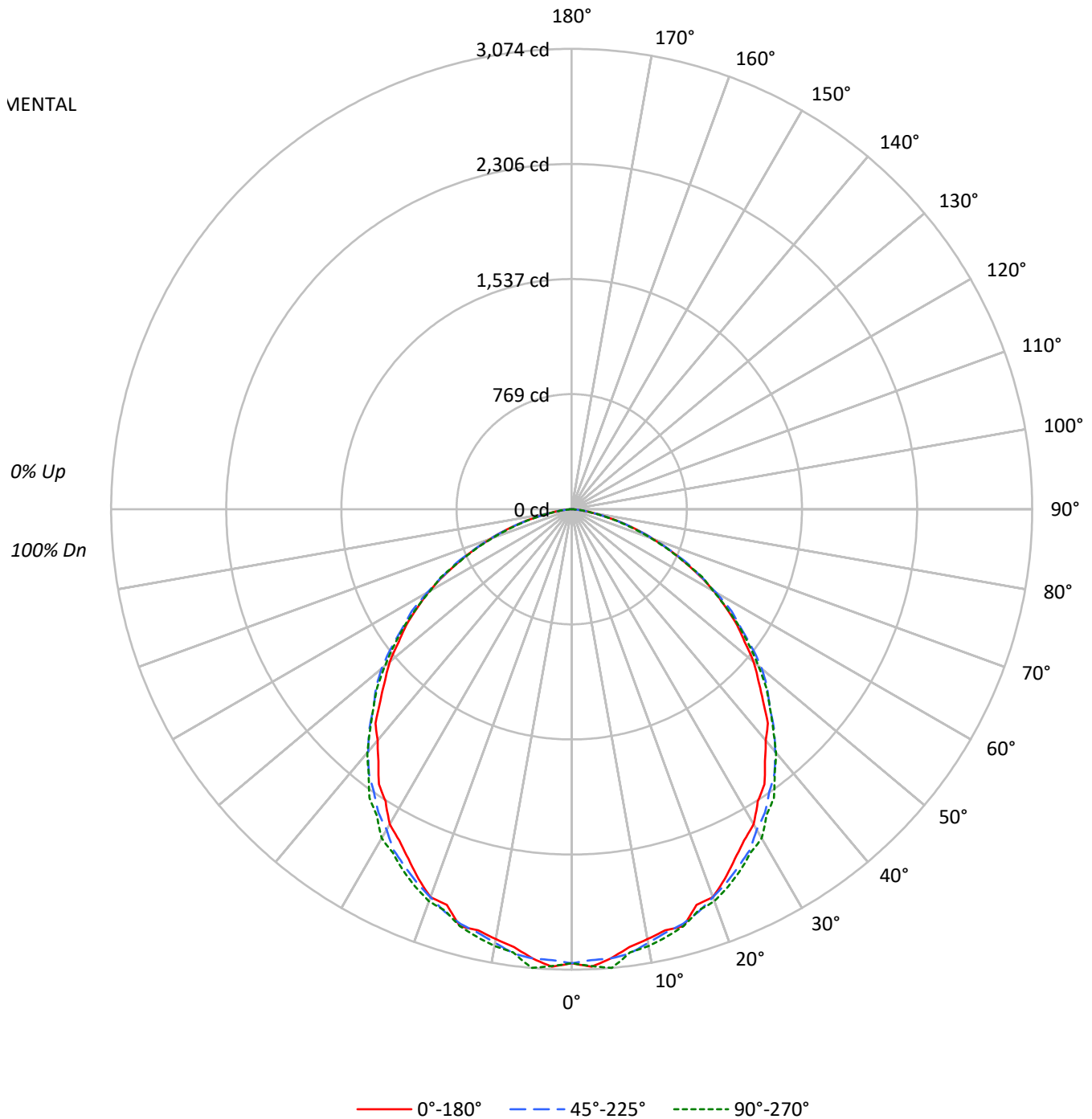
Lumens per Lamp: N/A  
Luminaire Lumens: 7639.0 lumens  
Efficiency: N/A  
Efficacy: 114.7 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 66.6  
Input Voltage (V):  
Input Current (Ain): NR  
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: 24 FT



TEST NUMBER: P590935

CATALOG NUMBER: FSR-24-2-LD4-4STD-40-UNV-80-86-EDD

### Luminous Intensity Polar Plot





TEST NUMBER: P590935

CATALOG NUMBER: FSR-24-2-LD4-4STD-40-UNV-80-86-EDD

**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	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	110	105	101	98	107	103	100	96	99	96	93	95	93	90	91	90	88	86																												
2	100	93	86	81	98	91	85	80	87	82	78	84	80	76	81	78	75	73																												
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64	62																												
4	84	73	64	58	82	71	64	58	69	62	57	67	61	56	65	59	55	53																												
5	78	65	57	50	76	64	56	50	62	55	49	60	54	49	58	53	48	46																												
6	72	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	43	41																												
7	67	53	45	39	65	53	45	39	51	44	39	50	43	38	48	42	38	36																												
8	62	49	41	35	61	48	40	35	47	40	34	46	39	34	44	39	34	32																												
9	58	45	37	31	57	44	37	31	43	36	31	42	36	31	41	35	31	29																												
10	54	41	34	29	53	41	33	28	40	33	28	39	33	28	38	32	28	26																												

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

	0°	45°	90°
0°	8156	8156	8156
5°	8129	8132	8304
10°	7964	8034	8091
15°	8028	7984	8029
20°	7892	7892	7976
25°	7649	7817	7902
30°	7544	7677	7881
35°	7366	7559	7729
40°	7080	7421	7454
45°	6866	7110	7120
50°	6640	6940	6807
55°	6327	6450	6404
60°	5916	5975	5868
65°	5275	5410	5238
70°	4526	4541	4415
75°	3585	3577	3438
80°	2402	2335	2244
85°	1306	1294	1207

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 7293 cd/sqm



TEST NUMBER: P590935

CATALOG NUMBER: FSR-24-2-LD4-4STD-40-UNV-80-86-EDD

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	285.1	3.7
10°-20°	808.0	10.6
20°-30°	1210.6	15.8
30°-40°	1434.8	18.8
40°-50°	1437.5	18.8
50°-60°	1220.2	16.0
60°-70°	822.6	10.8
70°-80°	361.5	4.7
80°-90°	58.8	0.8
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	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°	2303.7	30.2
0°-40°	3738.5	48.9
0°-60°	6396.2	83.7
0°-90°	7639.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7639.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3031	3031	3031	3031	3031	
5°	3009	3002	3011	3002	3074	284
15°	2882	2848	2866	2881	2882	803
25°	2576	2590	2633	2667	2662	1191
35°	2242	2249	2301	2354	2353	1392
45°	1804	1838	1868	1916	1871	1396
55°	1349	1340	1375	1365	1365	1200
65°	828	818	850	817	823	824
75°	345	338	344	320	331	370
85°	42	41	42	41	39	61
90°	0	0	0	0	0	



TEST NUMBER: P590935

CATALOG NUMBER: FSR-24-2-LD4-4STD-40-UNV-80-86-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3031.0	3031.0	3031.0	3031.0	3031.0
2.5°	3057.2	3034.1	3012.6	3037.6	3052.9
5°	3009.4	3002.4	3010.6	3001.6	3074.0
7.5°	2947.6	2974.6	2990.3	2980.5	2984.8
10°	2914.7	2905.3	2940.2	2964.4	2960.9
12.5°	2879.5	2893.6	2895.6	2921.8	2924.1
15°	2881.5	2848.2	2865.8	2880.7	2881.9
17.5°	2769.5	2805.5	2817.7	2851.7	2809.5
20°	2755.8	2729.6	2755.8	2790.7	2785.2
22.5°	2671.7	2642.4	2698.7	2729.6	2727.7
25°	2576.2	2590.3	2632.6	2667.0	2661.5
27.5°	2492.5	2508.9	2569.2	2616.5	2586.0
30°	2427.9	2419.7	2470.6	2512.8	2536.3
32.5°	2312.5	2342.2	2401.7	2443.6	2421.2
35°	2242.4	2249.1	2301.1	2354.3	2352.8
37.5°	2119.9	2150.8	2224.0	2238.9	2225.2
40°	2015.4	2046.3	2112.5	2128.5	2121.9
42.5°	1938.3	1943.8	2000.6	2018.9	1989.6
45°	1804.1	1837.8	1868.3	1916.4	1871.0
47.5°	1689.8	1705.5	1771.2	1784.1	1760.3
50°	1586.1	1591.6	1657.7	1641.7	1626.0
52.5°	1455.8	1478.9	1516.1	1512.9	1494.5
55°	1348.6	1339.6	1374.8	1365.4	1365.0
57.5°	1219.8	1235.5	1264.4	1249.6	1225.7
60°	1099.3	1099.7	1110.2	1093.4	1090.3
62.5°	965.1	969.8	972.1	951.4	985.0
65°	828.5	817.5	849.6	817.1	822.6
67.5°	702.9	708.3	705.2	684.9	692.7
70°	575.3	582.3	577.2	554.1	561.2
72.5°	458.7	450.0	455.5	426.6	439.9
75°	344.8	337.7	344.0	319.7	330.7
77.5°	234.8	240.3	236.4	223.5	230.9
80°	155.0	150.7	150.7	143.2	144.8
82.5°	90.4	86.1	84.9	82.6	86.1
85°	42.3	41.1	41.9	40.7	39.1
87.5°	15.3	15.7	15.7	14.9	14.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)