

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: P590423

Luminaire Tested: FSR-24-2-LD4-3HI-35-UNV-80-86-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590423  
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-LD4-3HI-35-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 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

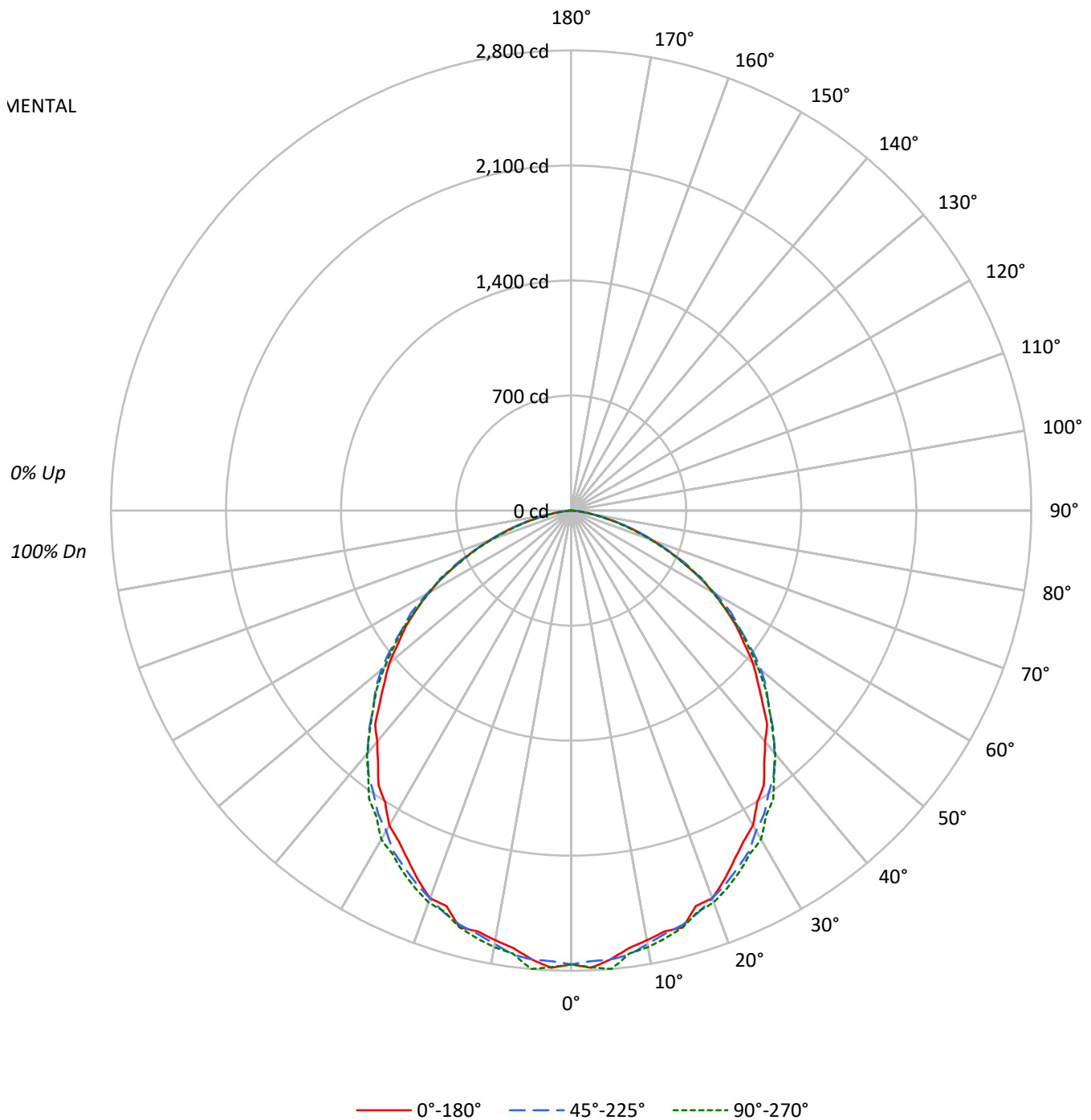
Lumens per Lamp: N/A  
Luminaire Lumens: 6958.0 lumens  
Efficiency: N/A  
Efficacy: 107.4 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 64.8  
Input Voltage (V):  
Input Current (Ain): NR  
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



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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	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					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°	7429	7429	7429
5°	7405	7407	7564
10°	7254	7318	7370
15°	7312	7272	7313
20°	7188	7188	7265
25°	6967	7120	7198
30°	6872	6992	7178
35°	6710	6886	7040
40°	6449	6759	6789
45°	6254	6476	6486
50°	6048	6321	6201
55°	5763	5875	5833
60°	5389	5443	5345
65°	4805	4928	4771
70°	4123	4137	4022
75°	3265	3257	3132
80°	2188	2126	2044
85°	1189	1176	1099

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 6643 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	259.7	3.7
10°-20°	736.0	10.6
20°-30°	1102.7	15.8
30°-40°	1306.9	18.8
40°-50°	1309.3	18.8
50°-60°	1111.4	16.0
60°-70°	749.3	10.8
70°-80°	329.2	4.7
80°-90°	53.5	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°	2098.4	30.2
0°-40°	3405.3	48.9
0°-60°	5826.0	83.7
0°-90°	6958.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6958.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2761	2761	2761	2761	2761	
5°	2741	2735	2742	2734	2800	258
15°	2625	2594	2610	2624	2625	731
25°	2347	2359	2398	2429	2424	1085
35°	2042	2049	2096	2144	2143	1268
45°	1643	1674	1702	1746	1704	1271
55°	1228	1220	1252	1244	1243	1093
65°	755	745	774	744	749	750
75°	314	308	313	291	301	337
85°	38	37	38	37	36	56
90°	0	0	0	0	0	

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2760.8	2760.8	2760.8	2760.8	2760.8
2.5°	2784.6	2763.6	2744.0	2766.8	2780.7
5°	2741.2	2734.7	2742.2	2734.0	2800.0
7.5°	2684.8	2709.4	2723.7	2714.8	2718.7
10°	2654.9	2646.3	2678.1	2700.2	2697.0
12.5°	2622.8	2635.6	2637.4	2661.3	2663.4
15°	2624.6	2594.3	2610.3	2623.9	2624.9
17.5°	2522.6	2555.4	2566.5	2597.5	2559.0
20°	2510.2	2486.3	2510.2	2541.9	2536.9
22.5°	2433.5	2406.8	2458.1	2486.3	2484.5
25°	2346.6	2359.4	2397.9	2429.3	2424.3
27.5°	2270.3	2285.2	2340.1	2383.3	2355.5
30°	2211.5	2204.0	2250.3	2288.8	2310.2
32.5°	2106.3	2133.4	2187.6	2225.7	2205.4
35°	2042.5	2048.6	2096.0	2144.4	2143.0
37.5°	1930.9	1959.1	2025.7	2039.3	2026.8
40°	1835.8	1863.9	1924.2	1938.8	1932.7
42.5°	1765.5	1770.5	1822.2	1839.0	1812.2
45°	1643.3	1673.9	1701.7	1745.6	1704.2
47.5°	1539.2	1553.4	1613.3	1625.1	1603.3
50°	1444.7	1449.7	1510.0	1495.3	1481.1
52.5°	1326.0	1347.1	1380.9	1378.1	1361.3
55°	1228.4	1220.2	1252.2	1243.7	1243.3
57.5°	1111.1	1125.3	1151.7	1138.2	1116.4
60°	1001.3	1001.6	1011.3	995.9	993.1
62.5°	879.0	883.3	885.4	866.5	897.2
65°	754.6	744.6	773.9	744.3	749.3
67.5°	640.2	645.2	642.3	623.8	630.9
70°	524.0	530.4	525.8	504.7	511.2
72.5°	417.8	409.9	414.9	388.5	400.7
75°	314.0	307.6	313.3	291.2	301.2
77.5°	213.9	218.9	215.3	203.5	210.3
80°	141.2	137.2	137.2	130.5	131.9
82.5°	82.3	78.4	77.4	75.2	78.4
85°	38.5	37.4	38.1	37.1	35.6
87.5°	13.9	14.3	14.3	13.5	12.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)