

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: P590825

Luminaire Tested: FSR-24-2-LD4-4LO-35-UNV-82-88-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590825  
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-LD4-4LO-35-UNV-82-88-EDD  
Description: 2X2 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

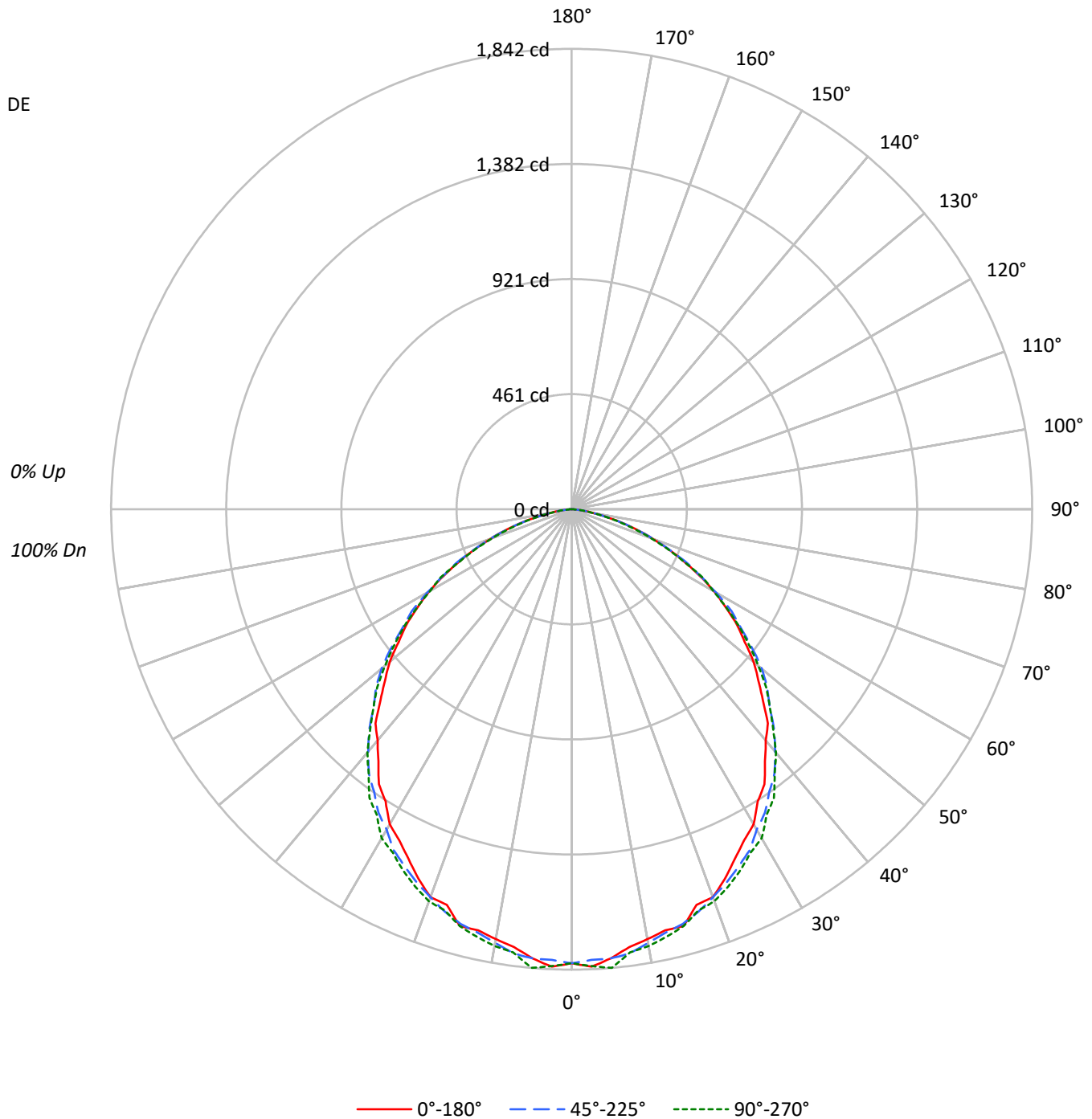
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4577.0 lumens  
Efficiency: N/A  
Efficacy: 97.8 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): 46.8  
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					86			
2	100	93	86	81	98	91	85	80	87	82	78	84	80	76	81	78	75	73					73			
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64	62					62			
4	84	73	64	58	82	71	64	58	69	62	57	67	61	56	65	59	55	53					53			
5	78	65	57	50	76	64	56	50	62	55	49	60	54	49	58	53	48	46					46			
6	72	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	43	41					41			
7	67	53	45	39	65	53	45	39	51	44	39	50	43	38	48	42	38	36					36			
8	62	49	41	35	61	48	40	35	47	40	34	46	39	34	44	39	34	32					32			
9	58	45	37	31	57	44	37	31	43	36	31	42	36	31	41	35	31	29					29			
10	54	41	34	29	53	41	33	28	40	33	28	39	33	28	38	32	28	26					26			

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

	0°	45°	90°
0°	4887	4887	4887
5°	4871	4873	4975
10°	4772	4814	4848
15°	4810	4784	4810
20°	4729	4729	4779
25°	4583	4683	4735
30°	4520	4600	4722
35°	4414	4529	4631
40°	4242	4446	4466
45°	4113	4260	4266
50°	3978	4158	4079
55°	3791	3864	3837
60°	3545	3580	3516
65°	3161	3242	3138
70°	2712	2722	2645
75°	2148	2143	2060
80°	1440	1399	1345
85°	781	775	722

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 4370 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	170.8	3.7
10°-20°	484.1	10.6
20°-30°	725.3	15.8
30°-40°	859.7	18.8
40°-50°	861.3	18.8
50°-60°	731.1	16.0
60°-70°	492.9	10.8
70°-80°	216.6	4.7
80°-90°	35.2	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°	1380.3	30.2
0°-40°	2240.0	48.9
0°-60°	3832.3	83.7
0°-90°	4577.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4577.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1816	1816	1816	1816	1816	
5°	1803	1799	1804	1798	1842	170
15°	1726	1706	1717	1726	1727	481
25°	1544	1552	1577	1598	1595	714
35°	1344	1348	1379	1411	1410	834
45°	1081	1101	1119	1148	1121	836
55°	808	803	824	818	818	719
65°	496	490	509	490	493	494
75°	207	202	206	192	198	221
85°	25	25	25	24	23	37
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1816.0	1816.0	1816.0	1816.0	1816.0
2.5°	1831.7	1817.9	1805.0	1820.0	1829.2
5°	1803.1	1798.9	1803.8	1798.5	1841.8
7.5°	1766.1	1782.3	1791.7	1785.8	1788.4
10°	1746.4	1740.8	1761.6	1776.2	1774.1
12.5°	1725.3	1733.7	1734.9	1750.6	1752.0
15°	1726.5	1706.5	1717.1	1726.0	1726.7
17.5°	1659.4	1681.0	1688.2	1708.6	1683.3
20°	1651.2	1635.5	1651.2	1672.1	1668.8
22.5°	1600.8	1583.2	1617.0	1635.5	1634.3
25°	1543.6	1552.0	1577.3	1598.0	1594.7
27.5°	1493.4	1503.2	1539.4	1567.7	1549.4
30°	1454.7	1449.8	1480.3	1505.6	1519.7
32.5°	1385.5	1403.4	1439.0	1464.1	1450.7
35°	1343.6	1347.5	1378.7	1410.6	1409.7
37.5°	1270.2	1288.7	1332.5	1341.5	1333.2
40°	1207.6	1226.1	1265.7	1275.3	1271.3
42.5°	1161.4	1164.7	1198.7	1209.7	1192.1
45°	1080.9	1101.1	1119.4	1148.2	1121.0
47.5°	1012.5	1021.9	1061.3	1069.0	1054.7
50°	950.3	953.6	993.3	983.6	974.3
52.5°	872.3	886.1	908.4	906.5	895.5
55°	808.0	802.6	823.7	818.1	817.9
57.5°	730.9	740.2	757.6	748.7	734.4
60°	658.7	658.9	665.2	655.1	653.3
62.5°	578.2	581.0	582.4	570.0	590.2
65°	496.4	489.8	509.1	489.6	492.9
67.5°	421.1	424.4	422.5	410.3	415.0
70°	344.7	348.9	345.9	332.0	336.2
72.5°	274.8	269.7	272.9	255.6	263.6
75°	206.6	202.4	206.1	191.6	198.1
77.5°	140.7	144.0	141.6	133.9	138.3
80°	92.9	90.3	90.3	85.8	86.8
82.5°	54.2	51.6	50.9	49.5	51.6
85°	25.3	24.6	25.1	24.4	23.4
87.5°	9.1	9.4	9.4	8.9	8.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)