

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: P561524

Luminaire Tested: FSR-12-4-LD4-2LO-35-UNV-80-86-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561524  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-5)  
Test Lab: INNOVATION CENTER  
Issue Date: 7/20/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: FAIL-SAFE  
Catalog Number: FSR-12-4-LD4-2LO-35-UNV-80-86-EDD-90  
Description: 1X4 FSR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .250 CLEAR PC ENVIRONM  
SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

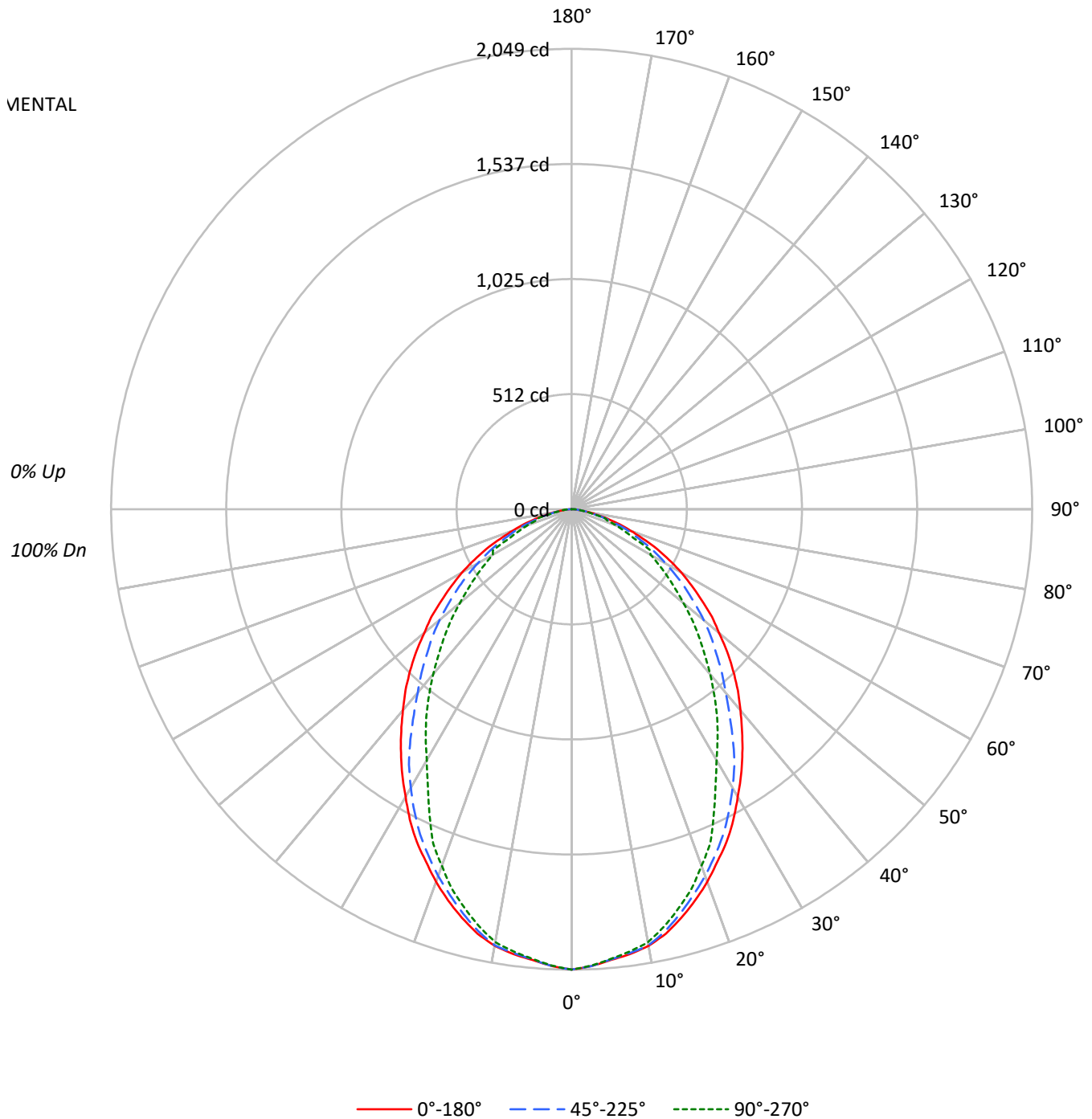
Lumens per Lamp: N/A  
Luminaire Lumens: 4022.0 lumens  
Efficiency: N/A  
Efficacy: 85.9 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 46.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87																												
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75																												
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65																												
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56																												
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50																												
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44																												
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40																												
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36																												
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33																												
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30																												

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

	0°	45°	90°
0°	5513	5513	5513
5°	5438	5432	5425
10°	5391	5385	5346
15°	5246	5193	5120
20°	5053	4972	4836
25°	4845	4740	4445
30°	4592	4445	4004
35°	4349	4108	3704
40°	4102	3744	3370
45°	3867	3461	3047
50°	3579	3213	2717
55°	3311	2911	2434
60°	3034	2601	2180
65°	2669	2277	1931
70°	2199	1994	1640
75°	1749	1526	1601
80°	1175	1102	1027
85°	732	877	1025

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3867 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	190.7	4.7
10°-20°	523.4	13.0
20°-30°	724.6	18.0
30°-40°	772.6	19.2
40°-50°	704.9	17.5
50°-60°	552.2	13.7
60°-70°	359.9	8.9
70°-80°	159.4	4.0
80°-90°	34.2	0.9
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°	1438.7	35.8
0°-40°	2211.3	55.0
0°-60°	3468.4	86.2
0°-90°	4022.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4022.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2049	2049	2049	2049	2049	
5°	2013	2011	2011	2008	2008	191
15°	1883	1883	1864	1845	1838	529
25°	1632	1622	1596	1540	1497	749
35°	1324	1314	1251	1156	1127	828
45°	1016	995	910	834	801	783
55°	706	684	620	547	519	633
65°	419	396	358	365	303	413
75°	168	156	147	140	154	180
85°	24	26	28	31	33	33
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2048.8	2048.8	2048.8	2048.8	2048.8
2.5°	2034.5	2034.5	2034.5	2032.2	2032.2
5°	2013.2	2010.9	2010.9	2008.5	2008.5
7.5°	1996.6	1994.3	1991.9	1989.5	1984.8
10°	1973.0	1973.0	1970.6	1958.8	1956.4
12.5°	1935.1	1932.7	1923.2	1906.6	1901.9
15°	1883.0	1883.0	1864.0	1845.1	1838.0
17.5°	1826.1	1823.7	1800.1	1781.1	1771.6
20°	1764.5	1759.8	1736.1	1705.3	1688.7
22.5°	1695.8	1695.8	1667.4	1627.2	1610.6
25°	1631.9	1622.4	1596.4	1539.5	1496.9
27.5°	1558.5	1544.3	1515.8	1435.3	1385.6
30°	1477.9	1470.8	1430.6	1326.4	1288.5
32.5°	1402.2	1390.3	1347.7	1238.7	1207.9
35°	1324.0	1314.5	1250.6	1155.8	1127.4
37.5°	1245.8	1234.0	1153.5	1077.7	1042.1
40°	1167.7	1153.5	1065.8	997.1	959.2
42.5°	1094.2	1075.3	990.0	916.6	874.0
45°	1016.1	994.8	909.5	833.7	800.6
47.5°	937.9	919.0	840.8	762.7	724.8
50°	855.0	838.4	767.4	689.2	649.0
52.5°	786.3	760.3	691.6	613.4	580.3
55°	705.8	684.5	620.5	547.1	518.7
57.5°	632.4	611.1	551.9	483.2	459.5
60°	563.7	532.9	483.2	424.0	405.0
62.5°	487.9	464.2	421.6	371.9	395.5
65°	419.2	395.5	357.6	364.7	303.2
67.5°	343.4	331.6	298.4	265.3	255.8
70°	279.5	265.3	253.4	217.9	208.4
72.5°	222.6	208.4	191.8	172.9	165.8
75°	168.2	156.3	146.8	139.7	154.0
77.5°	116.1	111.3	104.2	97.1	94.7
80°	75.8	73.4	71.1	68.7	66.3
82.5°	45.0	45.0	45.0	45.0	45.0
85°	23.7	26.1	28.4	30.8	33.2
87.5°	14.2	14.2	16.6	18.9	21.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)