

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: P561545

Luminaire Tested: FSR-12-4-LD4-2LO-35-UNV-81-88-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561545  
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-81-88-EDD  
Description: 1X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

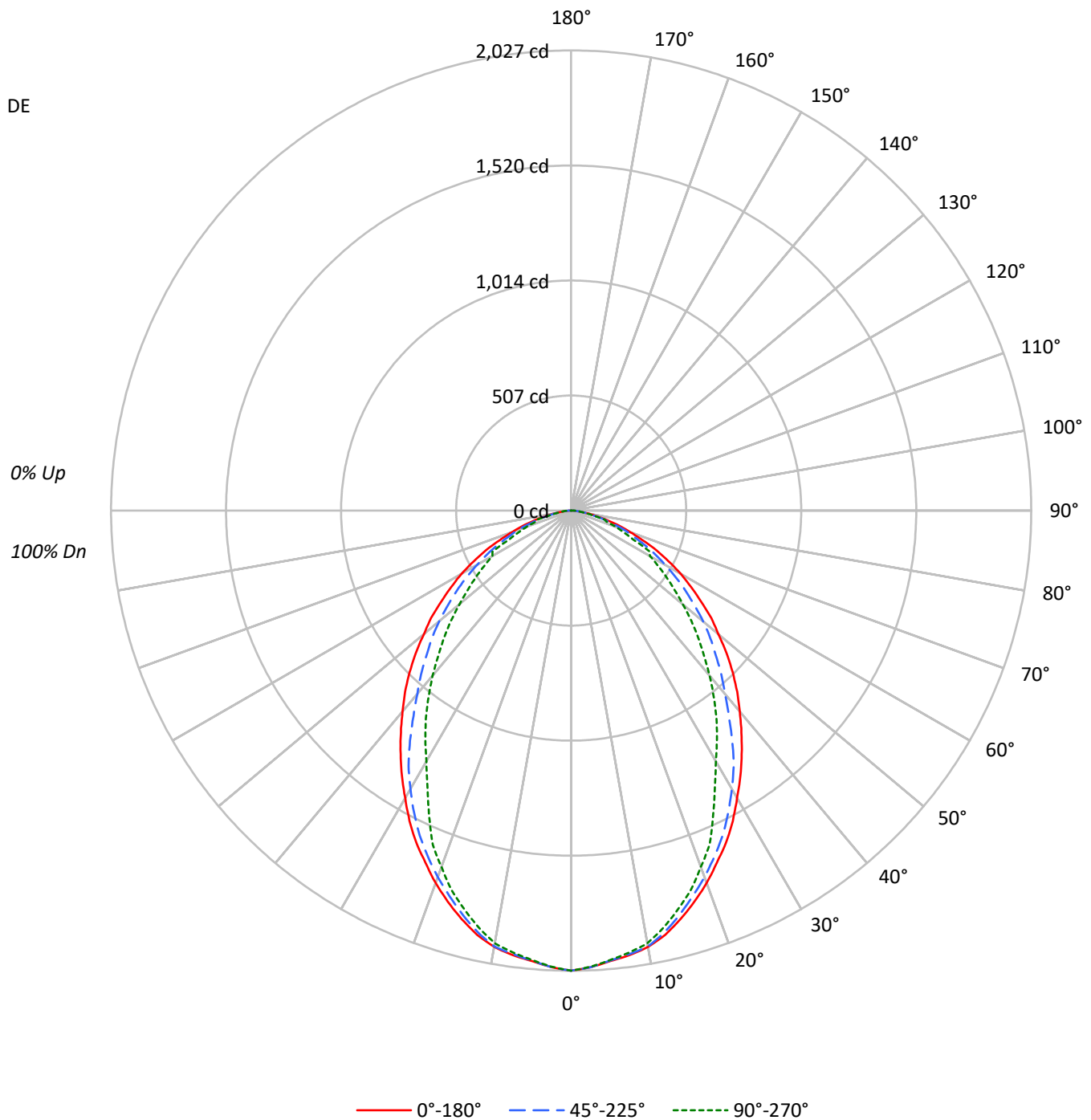
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3979.0 lumens  
Efficiency: N/A  
Efficacy: 85.0 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	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°	5454	5454	5454
5°	5380	5374	5367
10°	5334	5327	5289
15°	5190	5137	5066
20°	4999	4918	4784
25°	4794	4689	4397
30°	4543	4398	3961
35°	4303	4064	3664
40°	4058	3704	3334
45°	3825	3424	3014
50°	3541	3178	2688
55°	3276	2880	2408
60°	3002	2573	2157
65°	2641	2253	1910
70°	2175	1972	1622
75°	1730	1511	1583
80°	1162	1089	1017
85°	722	868	1013

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3825 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	188.7	4.7
10°-20°	517.8	13.0
20°-30°	716.9	18.0
30°-40°	764.4	19.2
40°-50°	697.3	17.5
50°-60°	546.3	13.7
60°-70°	356.0	8.9
70°-80°	157.7	4.0
80°-90°	33.9	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°	1423.3	35.8
0°-40°	2187.7	55.0
0°-60°	3431.3	86.2
0°-90°	3979.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3979.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2027	2027	2027	2027	2027	
5°	1992	1989	1989	1987	1987	189
15°	1863	1863	1844	1825	1818	524
25°	1614	1605	1579	1523	1481	741
35°	1310	1300	1237	1144	1115	819
45°	1005	984	900	825	792	774
55°	698	677	614	541	513	626
65°	415	391	354	361	300	409
75°	166	155	145	138	152	178
85°	23	26	28	30	33	33
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2026.8	2026.8	2026.8	2026.8	2026.8
2.5°	2012.8	2012.8	2012.8	2010.4	2010.4
5°	1991.7	1989.4	1989.4	1987.0	1987.0
7.5°	1975.3	1973.0	1970.6	1968.3	1963.6
10°	1951.9	1951.9	1949.5	1937.8	1935.5
12.5°	1914.4	1912.0	1902.7	1886.3	1881.6
15°	1862.8	1862.8	1844.1	1825.3	1818.3
17.5°	1806.6	1804.2	1780.8	1762.1	1752.7
20°	1745.7	1741.0	1717.5	1687.1	1670.7
22.5°	1677.7	1677.7	1649.6	1609.8	1593.4
25°	1614.5	1605.1	1579.3	1523.1	1480.9
27.5°	1541.8	1527.8	1499.6	1420.0	1370.8
30°	1462.1	1455.1	1415.3	1312.2	1274.7
32.5°	1387.2	1375.4	1333.3	1225.5	1195.0
35°	1309.8	1300.5	1237.2	1143.5	1115.4
37.5°	1232.5	1220.8	1141.1	1066.1	1031.0
40°	1155.2	1141.1	1054.4	986.5	949.0
42.5°	1082.5	1063.8	979.4	906.8	864.6
45°	1005.2	984.1	899.8	824.8	792.0
47.5°	927.9	909.2	831.8	754.5	717.0
50°	845.9	829.5	759.2	681.9	642.0
52.5°	777.9	752.2	684.2	606.9	574.1
55°	698.3	677.2	613.9	541.3	513.2
57.5°	625.6	604.5	546.0	478.0	454.6
60°	557.7	527.2	478.0	419.4	400.7
62.5°	482.7	459.3	417.1	367.9	391.3
65°	414.7	391.3	353.8	360.8	299.9
67.5°	339.8	328.0	295.2	262.4	253.1
70°	276.5	262.4	250.7	215.6	206.2
72.5°	220.3	206.2	189.8	171.1	164.0
75°	166.4	154.6	145.3	138.2	152.3
77.5°	114.8	110.1	103.1	96.1	93.7
80°	75.0	72.6	70.3	68.0	65.6
82.5°	44.5	44.5	44.5	44.5	44.5
85°	23.4	25.8	28.1	30.5	32.8
87.5°	14.1	14.1	16.4	18.7	21.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)