

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: P562028

Luminaire Tested: FSR-24-4-LD4-1HI-35-UNV-93-96-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562028  
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-24-4-LD4-1HI-35-UNV-93-96-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR TEMPER  
GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

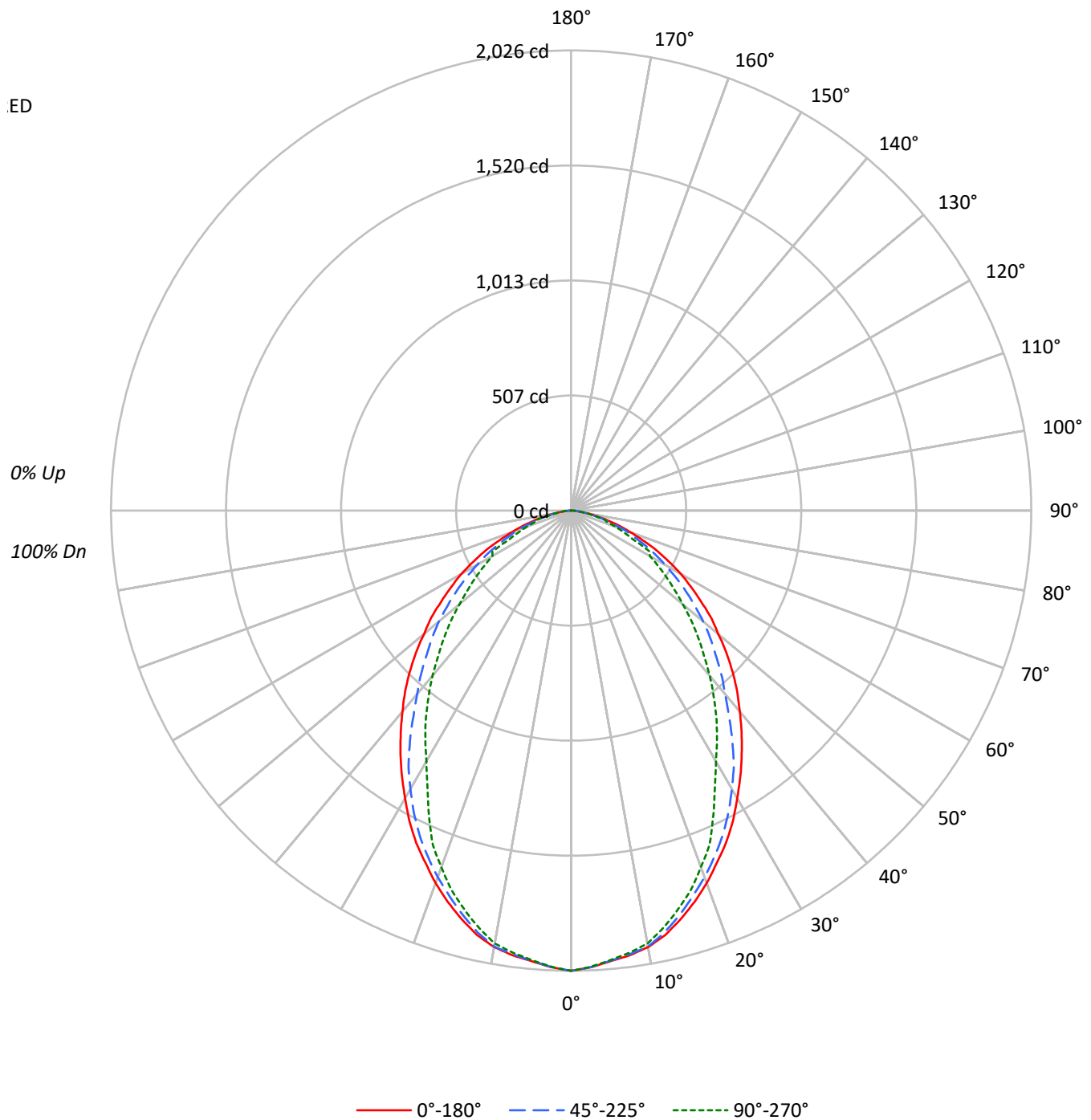
Lumens per Lamp: N/A  
Luminaire Lumens: 3978.0 lumens  
Efficiency: N/A  
Efficacy: 92.1 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 43.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87												87																
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75												75																
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65												65																
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56												56																
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50												50																
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44												44																
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40												40																
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36												36																
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33												33																
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30												30																

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

	0°	45°	90°
0°	2726	2726	2726
5°	2689	2686	2683
10°	2666	2663	2644
15°	2594	2568	2532
20°	2499	2459	2392
25°	2396	2344	2198
30°	2271	2198	1980
35°	2151	2032	1832
40°	2028	1852	1666
45°	1912	1712	1507
50°	1770	1589	1344
55°	1638	1440	1203
60°	1500	1286	1078
65°	1320	1126	955
70°	1087	986	811
75°	865	755	792
80°	581	545	508
85°	361	434	506

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1912 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	188.6	4.7
10°-20°	517.7	13.0
20°-30°	716.7	18.0
30°-40°	764.2	19.2
40°-50°	697.2	17.5
50°-60°	546.2	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°	1423.0	35.8
0°-40°	2187.1	55.0
0°-60°	3430.5	86.2
0°-90°	3978.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3978.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2026	2026	2026	2026	2026	
5°	1991	1989	1989	1986	1986	189
15°	1862	1862	1844	1825	1818	524
25°	1614	1605	1579	1523	1480	741
35°	1310	1300	1237	1143	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°	2026.3	2026.3	2026.3	2026.3	2026.3
2.5°	2012.3	2012.3	2012.3	2009.9	2009.9
5°	1991.2	1988.9	1988.9	1986.5	1986.5
7.5°	1974.8	1972.5	1970.1	1967.8	1963.1
10°	1951.4	1951.4	1949.0	1937.3	1935.0
12.5°	1913.9	1911.6	1902.2	1885.8	1881.1
15°	1862.4	1862.4	1843.6	1824.9	1817.8
17.5°	1806.1	1803.8	1780.4	1761.6	1752.3
20°	1745.2	1740.5	1717.1	1686.7	1670.3
22.5°	1677.3	1677.3	1649.2	1609.4	1593.0
25°	1614.0	1604.7	1578.9	1522.7	1480.5
27.5°	1541.4	1527.4	1499.3	1419.6	1370.4
30°	1461.8	1454.7	1414.9	1311.9	1274.4
32.5°	1386.8	1375.1	1332.9	1225.2	1194.7
35°	1309.5	1300.1	1236.9	1143.2	1115.1
37.5°	1232.2	1220.5	1140.8	1065.9	1030.7
40°	1154.9	1140.8	1054.2	986.2	948.7
42.5°	1082.3	1063.5	979.2	906.6	864.4
45°	1005.0	983.9	899.6	824.6	791.8
47.5°	927.7	908.9	831.6	754.3	716.8
50°	845.7	829.3	759.0	681.7	641.9
52.5°	777.7	752.0	684.0	606.7	573.9
55°	698.1	677.0	613.8	541.1	513.0
57.5°	625.5	604.4	545.8	477.9	454.5
60°	557.5	527.1	477.9	419.3	400.6
62.5°	482.6	459.1	417.0	367.8	391.2
65°	414.6	391.2	353.7	360.8	299.9
67.5°	339.7	328.0	295.2	262.4	253.0
70°	276.4	262.4	250.7	215.5	206.1
72.5°	220.2	206.1	189.7	171.0	164.0
75°	166.3	154.6	145.2	138.2	152.3
77.5°	114.8	110.1	103.1	96.0	93.7
80°	75.0	72.6	70.3	67.9	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)