

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: P560809

Luminaire Tested: FSR-12-4-LD4-1HI-35-UNV-93-88-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P560809  
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-LD4-1HI-35-UNV-93-88-EDD  
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

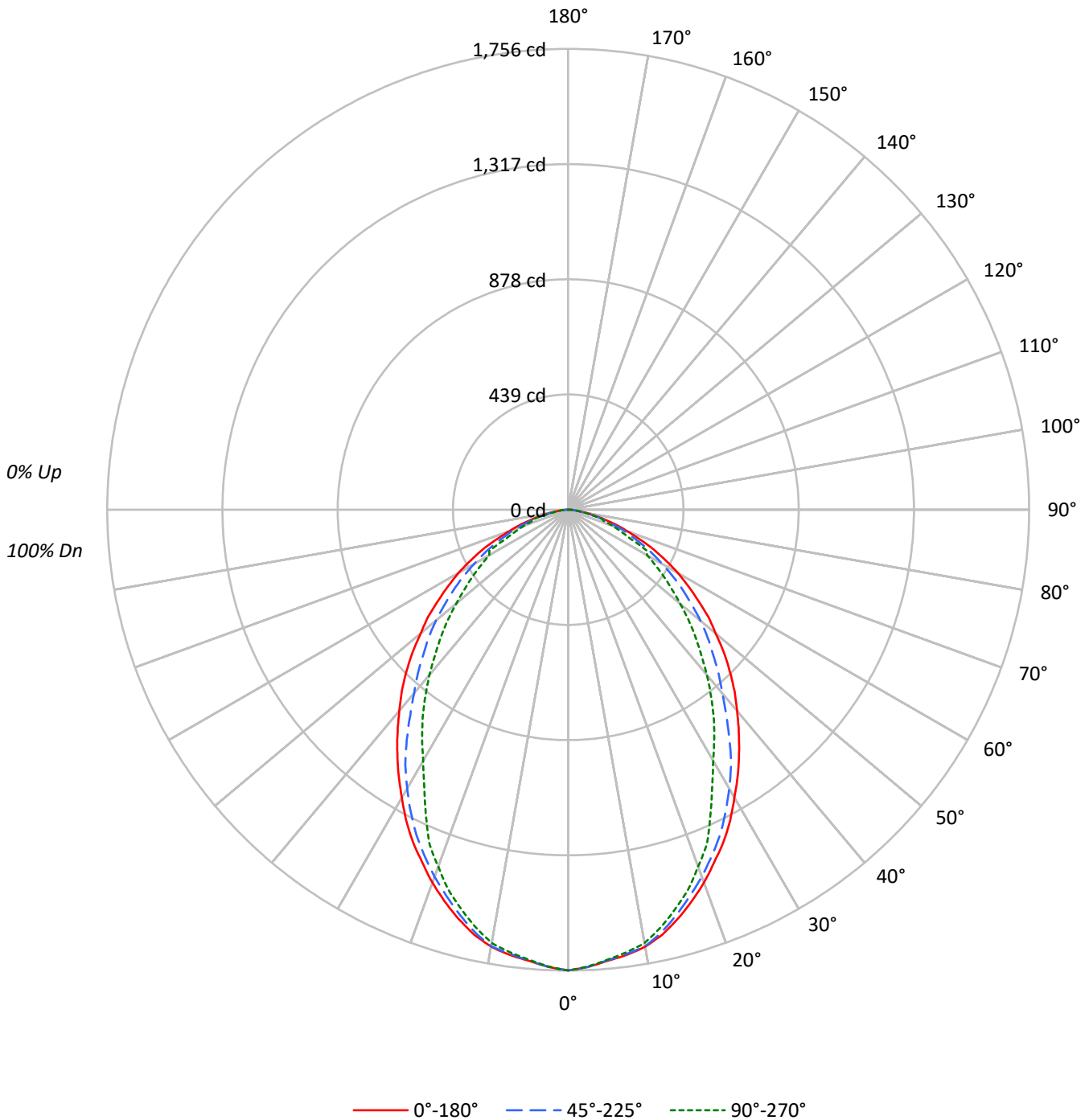
Lumens per Lamp: N/A  
Luminaire Lumens: 3447.0 lumens  
Efficiency: N/A  
Efficacy: 79.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 43.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	4725	4725	4725
5°	4661	4655	4650
10°	4620	4615	4582
15°	4496	4450	4388
20°	4331	4261	4145
25°	4153	4062	3809
30°	3936	3810	3431
35°	3728	3521	3174
40°	3515	3209	2888
45°	3314	2966	2611
50°	3068	2753	2328
55°	2838	2495	2085
60°	2600	2229	1868
65°	2288	1952	1654
70°	1884	1709	1405
75°	1498	1309	1371
80°	1007	944	880
85°	627	753	877

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3314 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	163.4	4.7
10°-20°	448.6	13.0
20°-30°	621.0	18.0
30°-40°	662.2	19.2
40°-50°	604.1	17.5
50°-60°	473.3	13.7
60°-70°	308.4	8.9
70°-80°	136.7	4.0
80°-90°	29.4	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°	1233.0	35.8
0°-40°	1895.2	55.0
0°-60°	2972.6	86.2
0°-90°	3447.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3447.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1756	1756	1756	1756	1756	
5°	1725	1723	1723	1721	1721	164
15°	1614	1614	1598	1581	1575	454
25°	1399	1390	1368	1319	1283	642
35°	1135	1127	1072	991	966	709
45°	871	853	780	714	686	671
55°	605	587	532	469	444	543
65°	359	339	306	313	260	354
75°	144	134	126	120	132	154
85°	20	22	24	26	28	28
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1755.9	1755.9	1755.9	1755.9	1755.9
2.5°	1743.7	1743.7	1743.7	1741.6	1741.6
5°	1725.4	1723.4	1723.4	1721.3	1721.3
7.5°	1711.2	1709.2	1707.1	1705.1	1701.0
10°	1690.9	1690.9	1688.9	1678.7	1676.7
12.5°	1658.4	1656.4	1648.3	1634.1	1630.0
15°	1613.8	1613.8	1597.5	1581.3	1575.2
17.5°	1565.0	1563.0	1542.7	1526.5	1518.4
20°	1512.3	1508.2	1487.9	1461.5	1447.3
22.5°	1453.4	1453.4	1429.0	1394.5	1380.3
25°	1398.6	1390.5	1368.1	1319.4	1282.9
27.5°	1335.7	1323.5	1299.1	1230.1	1187.5
30°	1266.7	1260.6	1226.1	1136.7	1104.3
32.5°	1201.7	1191.5	1155.0	1061.6	1035.2
35°	1134.7	1126.6	1071.8	990.6	966.2
37.5°	1067.7	1057.6	988.6	923.6	893.2
40°	1000.7	988.6	913.5	854.6	822.1
42.5°	937.8	921.6	848.5	785.6	749.0
45°	870.8	852.6	779.5	714.5	686.1
47.5°	803.8	787.6	720.6	653.6	621.1
50°	732.8	718.6	657.7	590.7	556.2
52.5°	673.9	651.6	592.7	525.7	497.3
55°	604.9	586.6	531.8	468.9	444.5
57.5°	542.0	523.7	473.0	414.1	393.8
60°	483.1	456.7	414.1	363.4	347.1
62.5°	418.2	397.9	361.3	318.7	339.0
65°	359.3	339.0	306.5	312.6	259.8
67.5°	294.3	284.2	255.8	227.3	219.2
70°	239.5	227.3	217.2	186.7	178.6
72.5°	190.8	178.6	164.4	148.2	142.1
75°	144.1	134.0	125.9	119.8	131.9
77.5°	99.5	95.4	89.3	83.2	81.2
80°	65.0	62.9	60.9	58.9	56.8
82.5°	38.6	38.6	38.6	38.6	38.6
85°	20.3	22.3	24.4	26.4	28.4
87.5°	12.2	12.2	14.2	16.2	18.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)