

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: P561687

Luminaire Tested: FSR-12-4-LD4-2LO-50-UNV-82-87-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561687  
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-50-UNV-82-87-EDD  
Description: 1X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

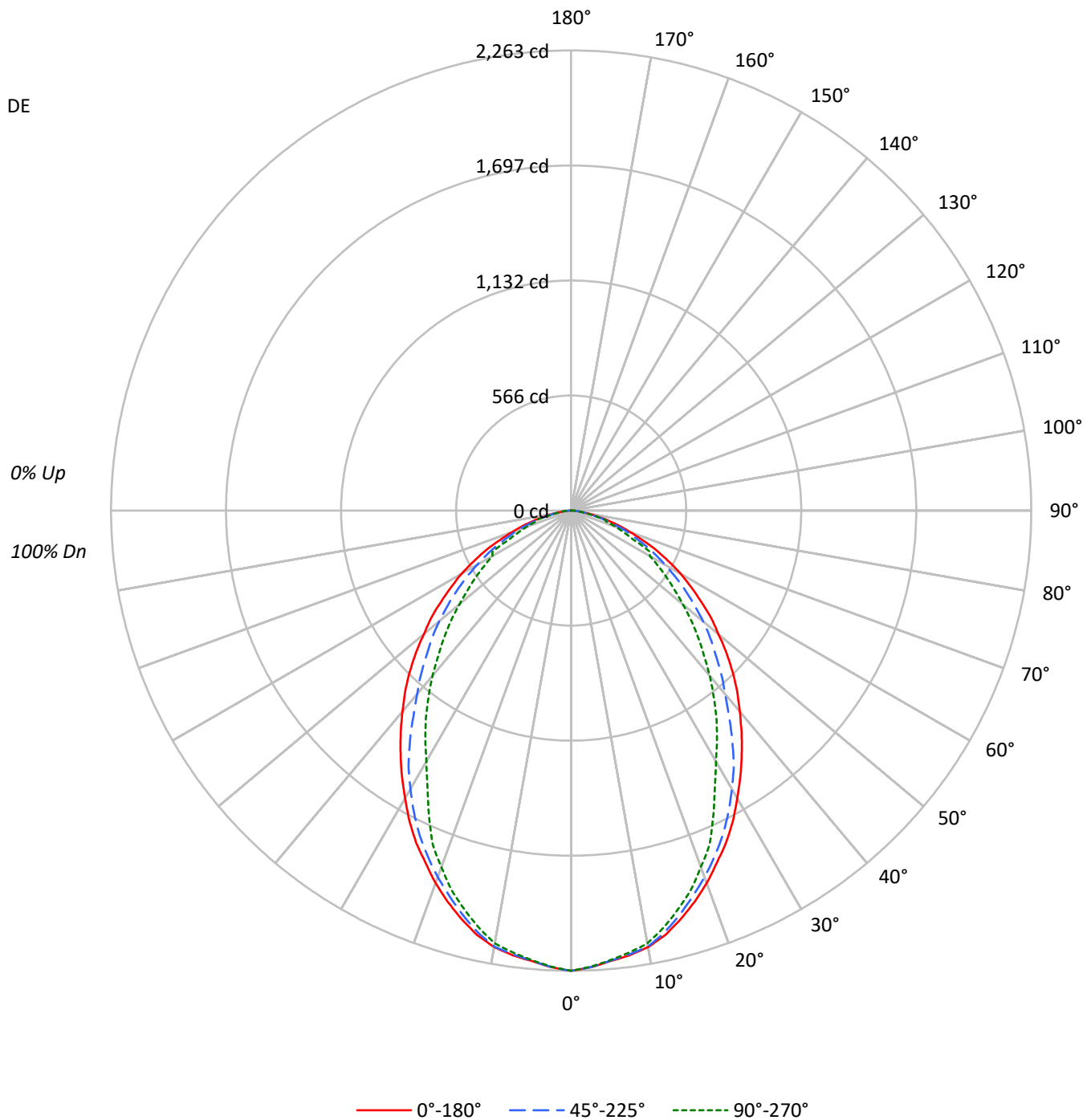
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4443.0 lumens  
Efficiency: N/A  
Efficacy: 94.9 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	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°	6090	6090	6090
5°	6008	6000	5993
10°	5955	5948	5905
15°	5795	5736	5656
20°	5582	5492	5342
25°	5353	5236	4910
30°	5073	4910	4423
35°	4805	4538	4091
40°	4531	4136	3723
45°	4271	3824	3366
50°	3954	3549	3001
55°	3658	3216	2688
60°	3351	2873	2408
65°	2949	2516	2132
70°	2429	2203	1811
75°	1932	1686	1769
80°	1297	1216	1136
85°	809	969	1130

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4271 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	210.7	4.7
10°-20°	578.2	13.0
20°-30°	800.4	18.0
30°-40°	853.5	19.2
40°-50°	778.7	17.5
50°-60°	610.0	13.7
60°-70°	397.6	8.9
70°-80°	176.1	4.0
80°-90°	37.8	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°	1589.3	35.8
0°-40°	2442.8	55.0
0°-60°	3831.5	86.2
0°-90°	4443.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4443.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2263	2263	2263	2263	2263	
5°	2224	2221	2221	2219	2219	211
15°	2080	2080	2059	2038	2030	585
25°	1803	1792	1764	1701	1654	828
35°	1463	1452	1382	1277	1245	914
45°	1122	1099	1005	921	884	865
55°	780	756	686	604	573	699
65°	463	437	395	403	335	456
75°	186	173	162	154	170	199
85°	26	29	31	34	37	36
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2263.2	2263.2	2263.2	2263.2	2263.2
2.5°	2247.5	2247.5	2247.5	2244.9	2244.9
5°	2224.0	2221.3	2221.3	2218.7	2218.7
7.5°	2205.6	2203.0	2200.4	2197.8	2192.6
10°	2179.5	2179.5	2176.9	2163.8	2161.2
12.5°	2137.6	2135.0	2124.5	2106.2	2101.0
15°	2080.1	2080.1	2059.1	2038.2	2030.3
17.5°	2017.3	2014.6	1988.5	1967.5	1957.1
20°	1949.2	1944.0	1917.8	1883.8	1865.5
22.5°	1873.4	1873.4	1842.0	1797.5	1779.2
25°	1802.7	1792.2	1763.5	1700.7	1653.6
27.5°	1721.6	1705.9	1674.5	1585.6	1530.6
30°	1632.6	1624.8	1580.3	1465.2	1423.3
32.5°	1548.9	1535.8	1488.7	1368.4	1334.4
35°	1462.6	1452.1	1381.5	1276.8	1245.4
37.5°	1376.2	1363.2	1274.2	1190.5	1151.2
40°	1289.9	1274.2	1177.4	1101.5	1059.7
42.5°	1208.8	1187.9	1093.7	1012.6	965.5
45°	1122.4	1098.9	1004.7	921.0	884.4
47.5°	1036.1	1015.2	928.8	842.5	800.6
50°	944.5	926.2	847.7	761.4	716.9
52.5°	868.7	839.9	764.0	677.7	641.0
55°	779.7	756.1	685.5	604.4	573.0
57.5°	698.6	675.0	609.6	533.8	507.6
60°	622.7	588.7	533.8	468.3	447.4
62.5°	539.0	512.8	465.7	410.8	436.9
65°	463.1	436.9	395.1	402.9	334.9
67.5°	379.4	366.3	329.7	293.0	282.6
70°	308.7	293.0	280.0	240.7	230.2
72.5°	245.9	230.2	211.9	191.0	183.1
75°	185.8	172.7	162.2	154.4	170.1
77.5°	128.2	123.0	115.1	107.3	104.7
80°	83.7	81.1	78.5	75.9	73.3
82.5°	49.7	49.7	49.7	49.7	49.7
85°	26.2	28.8	31.4	34.0	36.6
87.5°	15.7	15.7	18.3	20.9	23.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)