

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: P561684

Luminaire Tested: FSR-12-4-LD4-2LO-50-UNV-82-86-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561684  
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-82-86-EDD-90  
Description: 1X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

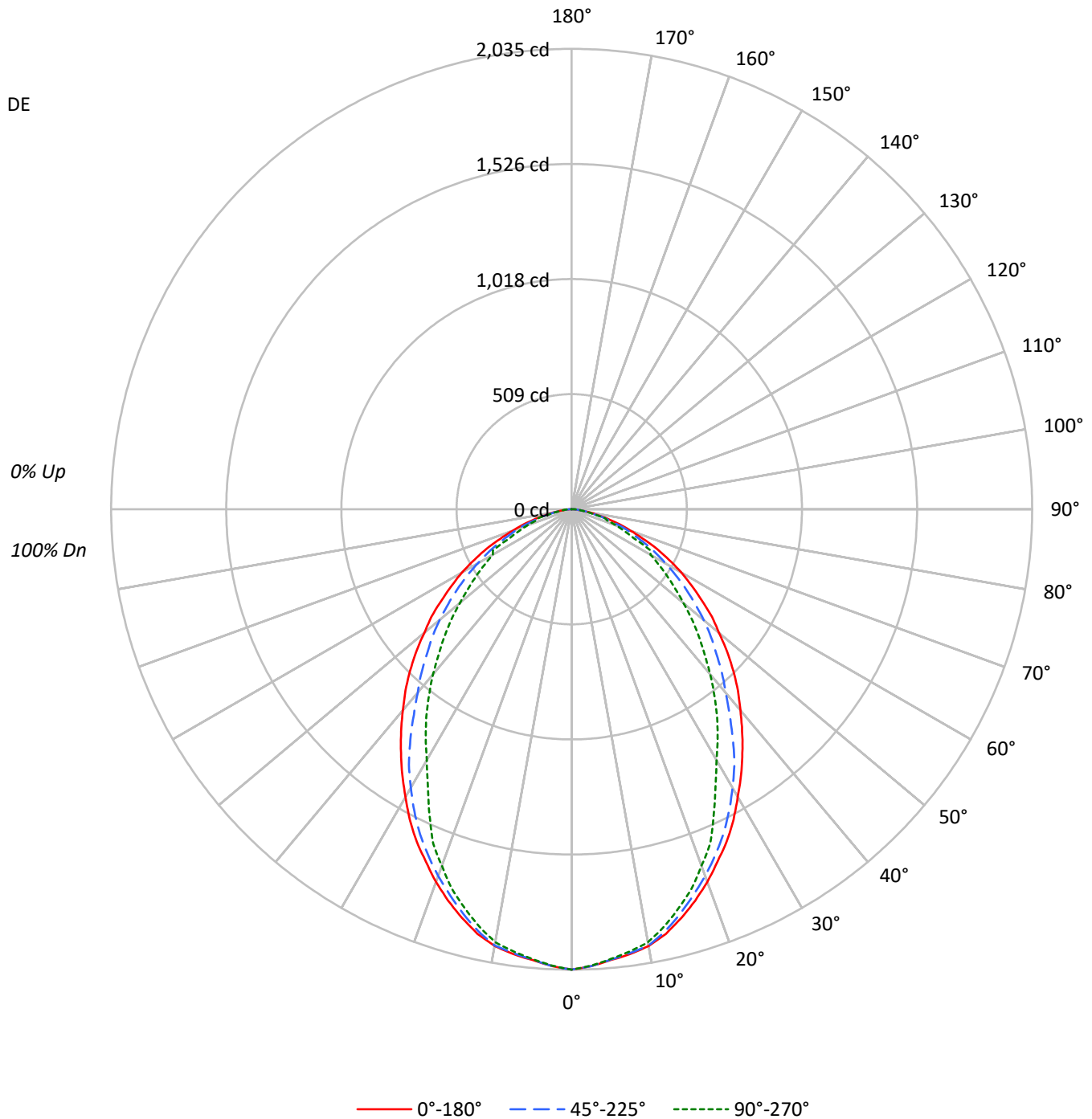
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3995.0 lumens  
Efficiency: N/A  
Efficacy: 85.4 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	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				
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°	5476	5476	5476
5°	5402	5395	5389
10°	5355	5349	5310
15°	5210	5158	5086
20°	5019	4938	4804
25°	4813	4708	4415
30°	4561	4415	3977
35°	4320	4081	3679
40°	4074	3719	3347
45°	3841	3438	3026
50°	3556	3191	2699
55°	3289	2892	2417
60°	3013	2583	2165
65°	2651	2262	1917
70°	2184	1980	1629
75°	1736	1517	1590
80°	1167	1094	1021
85°	726	871	1016

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3841 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	189.4	4.7
10°-20°	519.9	13.0
20°-30°	719.7	18.0
30°-40°	767.4	19.2
40°-50°	700.1	17.5
50°-60°	548.5	13.7
60°-70°	357.5	8.9
70°-80°	158.4	4.0
80°-90°	34.0	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°	1429.0	35.8
0°-40°	2196.5	55.0
0°-60°	3445.1	86.2
0°-90°	3995.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3995.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2035	2035	2035	2035	2035	
5°	2000	1997	1997	1995	1995	190
15°	1870	1870	1852	1833	1826	526
25°	1621	1612	1586	1529	1487	744
35°	1315	1306	1242	1148	1120	822
45°	1009	988	903	828	795	777
55°	701	680	616	544	515	629
65°	416	393	355	362	301	410
75°	167	155	146	139	153	179
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°	2035.0	2035.0	2035.0	2035.0	2035.0
2.5°	2020.9	2020.9	2020.9	2018.5	2018.5
5°	1999.7	1997.4	1997.4	1995.0	1995.0
7.5°	1983.2	1980.9	1978.5	1976.2	1971.5
10°	1959.7	1959.7	1957.4	1945.6	1943.2
12.5°	1922.1	1919.7	1910.3	1893.8	1889.1
15°	1870.3	1870.3	1851.5	1832.7	1825.6
17.5°	1813.9	1811.5	1788.0	1769.2	1759.7
20°	1752.7	1748.0	1724.5	1693.9	1677.4
22.5°	1684.5	1684.5	1656.2	1616.2	1599.8
25°	1620.9	1611.5	1585.7	1529.2	1486.8
27.5°	1548.0	1533.9	1505.7	1425.7	1376.3
30°	1468.0	1461.0	1421.0	1317.5	1279.8
32.5°	1392.7	1381.0	1338.6	1230.4	1199.8
35°	1315.1	1305.7	1242.2	1148.1	1119.8
37.5°	1237.5	1225.7	1145.7	1070.4	1035.1
40°	1159.8	1145.7	1058.7	990.4	952.8
42.5°	1086.9	1068.1	983.4	910.5	868.1
45°	1009.3	988.1	903.4	828.1	795.2
47.5°	931.6	912.8	835.2	757.5	719.9
50°	849.3	832.8	762.2	684.6	644.6
52.5°	781.1	755.2	687.0	609.3	576.4
55°	701.1	679.9	616.4	543.5	515.2
57.5°	628.1	607.0	548.2	479.9	456.4
60°	559.9	529.3	479.9	421.1	402.3
62.5°	484.6	461.1	418.8	369.4	392.9
65°	416.4	392.9	355.2	362.3	301.1
67.5°	341.1	329.4	296.4	263.5	254.1
70°	277.6	263.5	251.7	216.4	207.0
72.5°	221.1	207.0	190.6	171.7	164.7
75°	167.0	155.3	145.9	138.8	152.9
77.5°	115.3	110.6	103.5	96.5	94.1
80°	75.3	72.9	70.6	68.2	65.9
82.5°	44.7	44.7	44.7	44.7	44.7
85°	23.5	25.9	28.2	30.6	32.9
87.5°	14.1	14.1	16.5	18.8	21.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)