

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: P561590

Luminaire Tested: FSR-12-4-LD4-2LO-40-UNV-80-87-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561590  
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-40-UNV-80-87-EDD-90  
Description: 1X4 FSR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .375 CLEAR PC ENVIRONM  
SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

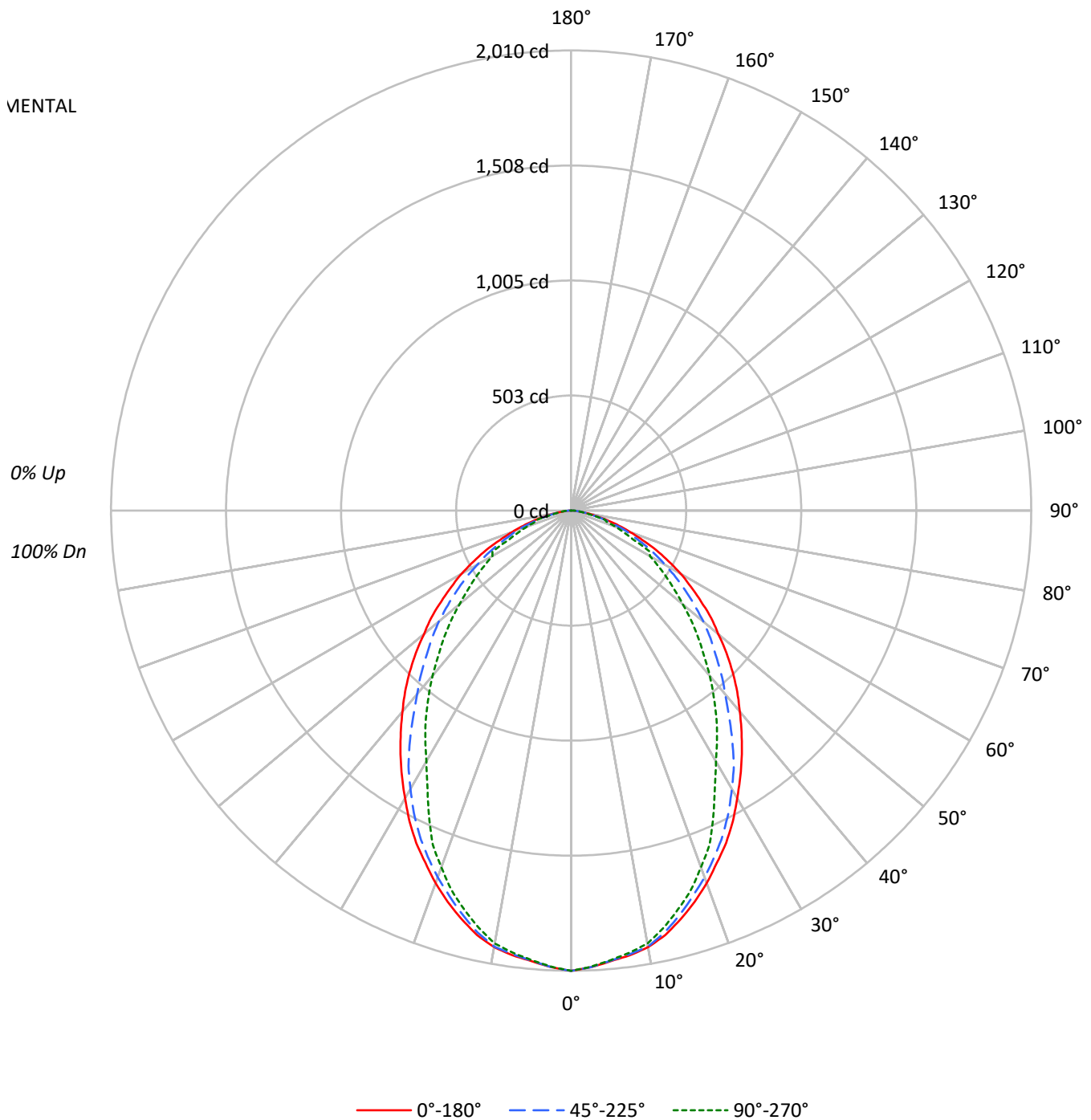
Lumens per Lamp: N/A  
Luminaire Lumens: 3947.0 lumens  
Efficiency: N/A  
Efficacy: 84.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 46.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	5410	5410	5410
5°	5337	5331	5324
10°	5291	5284	5246
15°	5148	5096	5025
20°	4959	4879	4746
25°	4755	4651	4362
30°	4507	4362	3929
35°	4268	4031	3635
40°	4025	3674	3307
45°	3795	3397	2990
50°	3513	3153	2666
55°	3250	2857	2388
60°	2977	2552	2139
65°	2620	2235	1894
70°	2158	1957	1609
75°	1716	1498	1571
80°	1153	1080	1009
85°	716	861	1003

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3795 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	187.2	4.7
10°-20°	513.6	13.0
20°-30°	711.1	18.0
30°-40°	758.2	19.2
40°-50°	691.7	17.5
50°-60°	541.9	13.7
60°-70°	353.2	8.9
70°-80°	156.5	4.0
80°-90°	33.6	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°	1411.9	35.8
0°-40°	2170.1	55.0
0°-60°	3403.7	86.2
0°-90°	3947.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3947.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2010	2010	2010	2010	2010	
5°	1976	1973	1973	1971	1971	188
15°	1848	1848	1829	1811	1804	519
25°	1602	1592	1567	1511	1469	735
35°	1299	1290	1227	1134	1106	812
45°	997	976	892	818	786	768
55°	693	672	609	537	509	621
65°	411	388	351	358	298	405
75°	165	153	144	137	151	177
85°	23	26	28	30	32	32
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2010.5	2010.5	2010.5	2010.5	2010.5
2.5°	1996.6	1996.6	1996.6	1994.3	1994.3
5°	1975.7	1973.4	1973.4	1971.0	1971.0
7.5°	1959.4	1957.1	1954.8	1952.4	1947.8
10°	1936.2	1936.2	1933.8	1922.2	1919.9
12.5°	1899.0	1896.7	1887.4	1871.1	1866.4
15°	1847.8	1847.8	1829.3	1810.7	1803.7
17.5°	1792.1	1789.7	1766.5	1747.9	1738.6
20°	1731.6	1727.0	1703.7	1673.5	1657.3
22.5°	1664.2	1664.2	1636.3	1596.8	1580.5
25°	1601.5	1592.2	1566.6	1510.8	1469.0
27.5°	1529.4	1515.5	1487.6	1408.5	1359.7
30°	1450.4	1443.4	1403.9	1301.6	1264.4
32.5°	1376.0	1364.4	1322.5	1215.6	1185.4
35°	1299.3	1290.0	1227.2	1134.3	1106.4
37.5°	1222.6	1211.0	1132.0	1057.6	1022.7
40°	1145.9	1132.0	1046.0	978.5	941.4
42.5°	1073.8	1055.2	971.6	899.5	857.7
45°	997.1	976.2	892.5	818.2	785.6
47.5°	920.4	901.8	825.1	748.4	711.2
50°	839.1	822.8	753.1	676.4	636.9
52.5°	771.7	746.1	678.7	602.0	569.5
55°	692.7	671.7	609.0	536.9	509.0
57.5°	620.6	599.7	541.6	474.2	450.9
60°	553.2	523.0	474.2	416.1	397.5
62.5°	478.8	455.6	413.7	364.9	388.2
65°	411.4	388.2	351.0	357.9	297.5
67.5°	337.0	325.4	292.9	260.3	251.0
70°	274.3	260.3	248.7	213.8	204.5
72.5°	218.5	204.5	188.3	169.7	162.7
75°	165.0	153.4	144.1	137.1	151.1
77.5°	113.9	109.2	102.3	95.3	93.0
80°	74.4	72.1	69.7	67.4	65.1
82.5°	44.2	44.2	44.2	44.2	44.2
85°	23.2	25.6	27.9	30.2	32.5
87.5°	13.9	13.9	16.3	18.6	20.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)