

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: P560754

Luminaire Tested: FSR-12-4-LD4-1HI-35-UNV-80-85-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P560754  
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-80-85-EDD-90  
Description: 1X4 FSR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .187 CLEAR PC ENVIRONM  
SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

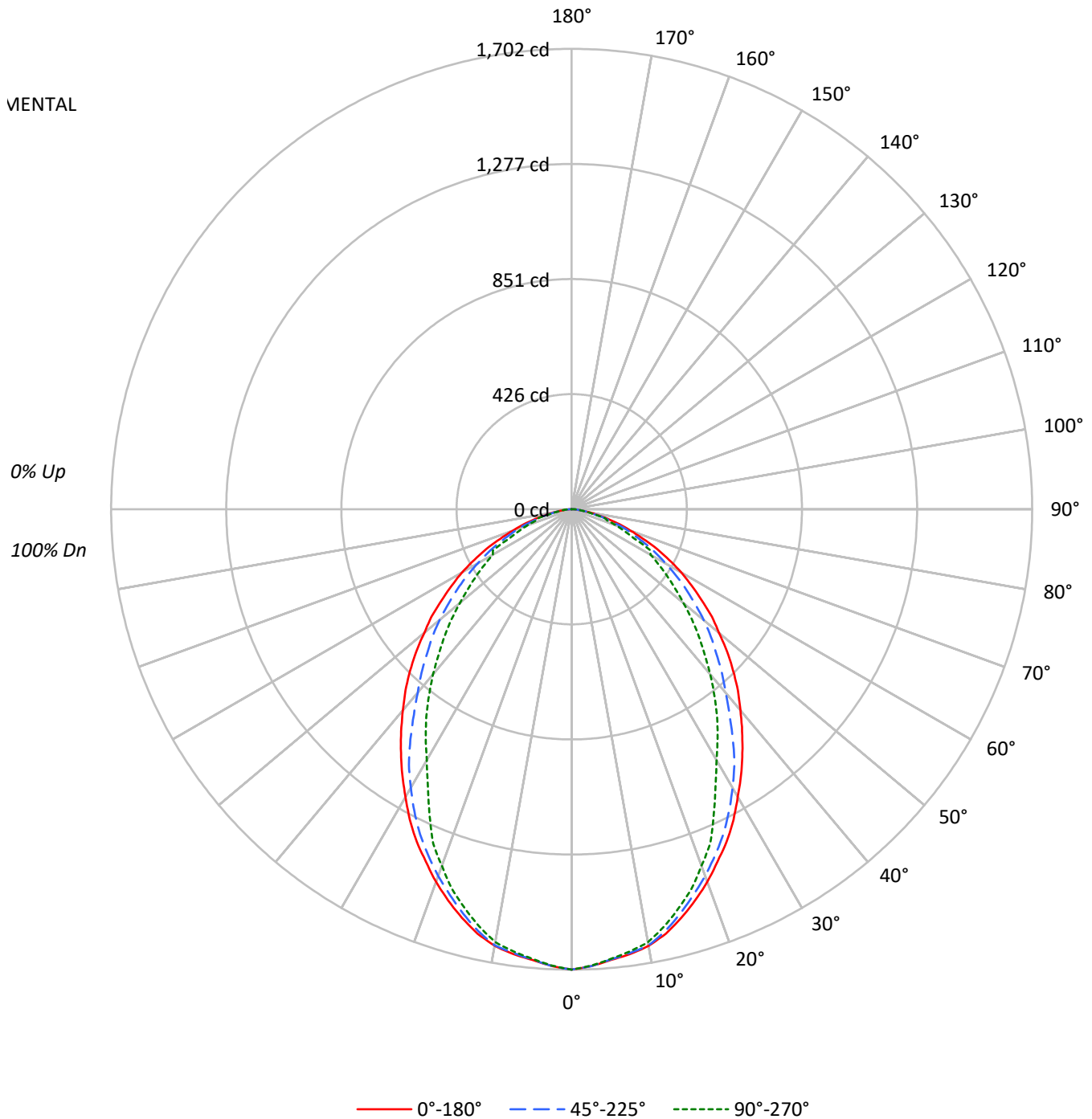
Lumens per Lamp: N/A  
Luminaire Lumens: 3341.0 lumens  
Efficiency: N/A  
Efficacy: 77.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 43.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	4580	4580	4580
5°	4517	4512	4507
10°	4478	4473	4441
15°	4357	4314	4254
20°	4198	4130	4017
25°	4025	3937	3692
30°	3815	3693	3326
35°	3613	3413	3076
40°	3407	3110	2799
45°	3212	2875	2531
50°	2974	2669	2257
55°	2751	2419	2022
60°	2520	2160	1810
65°	2217	1892	1603
70°	1827	1656	1362
75°	1452	1268	1330
80°	976	914	854
85°	608	729	849

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3212 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	158.4	4.7
10°-20°	434.8	13.0
20°-30°	601.9	18.0
30°-40°	641.8	19.2
40°-50°	585.5	17.5
50°-60°	458.7	13.7
60°-70°	299.0	8.9
70°-80°	132.5	4.0
80°-90°	28.4	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°	1195.1	35.8
0°-40°	1836.9	55.0
0°-60°	2881.2	86.2
0°-90°	3341.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3341.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1702	1702	1702	1702	1702	
5°	1672	1670	1670	1668	1668	159
15°	1564	1564	1548	1533	1527	440
25°	1356	1348	1326	1279	1243	622
35°	1100	1092	1039	960	936	688
45°	844	826	756	692	665	650
55°	586	569	516	454	431	526
65°	348	329	297	303	252	343
75°	140	130	122	116	128	150
85°	20	22	24	26	28	27
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1701.9	1701.9	1701.9	1701.9	1701.9
2.5°	1690.1	1690.1	1690.1	1688.1	1688.1
5°	1672.3	1670.4	1670.4	1668.4	1668.4
7.5°	1658.6	1656.6	1654.6	1652.7	1648.7
10°	1638.9	1638.9	1636.9	1627.1	1625.1
12.5°	1607.4	1605.5	1597.6	1583.8	1579.9
15°	1564.1	1564.1	1548.4	1532.7	1526.8
17.5°	1516.9	1515.0	1495.3	1479.5	1471.7
20°	1465.8	1461.8	1442.2	1416.6	1402.8
22.5°	1408.7	1408.7	1385.1	1351.7	1337.9
25°	1355.6	1347.7	1326.1	1278.9	1243.4
27.5°	1294.6	1282.8	1259.2	1192.3	1151.0
30°	1227.7	1221.8	1188.4	1101.8	1070.3
32.5°	1164.7	1154.9	1119.5	1029.0	1003.4
35°	1099.8	1091.9	1038.8	960.1	936.5
37.5°	1034.9	1025.1	958.2	895.2	865.7
40°	970.0	958.2	885.4	828.3	796.8
42.5°	909.0	893.2	822.4	761.4	726.0
45°	844.0	826.3	755.5	692.5	665.0
47.5°	779.1	763.4	698.5	633.5	602.0
50°	710.3	696.5	637.5	572.5	539.1
52.5°	653.2	631.6	574.5	509.6	482.0
55°	586.3	568.6	515.5	454.5	430.9
57.5°	525.3	507.6	458.4	401.4	381.7
60°	468.3	442.7	401.4	352.2	336.4
62.5°	405.3	385.6	350.2	308.9	328.6
65°	348.2	328.6	297.1	303.0	251.8
67.5°	285.3	275.4	247.9	220.4	212.5
70°	232.2	220.4	210.5	181.0	173.1
72.5°	184.9	173.1	159.4	143.6	137.7
75°	139.7	129.9	122.0	116.1	127.9
77.5°	96.4	92.5	86.6	80.7	78.7
80°	63.0	61.0	59.0	57.1	55.1
82.5°	37.4	37.4	37.4	37.4	37.4
85°	19.7	21.6	23.6	25.6	27.5
87.5°	11.8	11.8	13.8	15.7	17.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)