

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: P560798

Luminaire Tested: FSR-12-4-LD4-1HI-35-UNV-82-97-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P560798  
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-82-97-EDD-90  
Description: 1X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .375 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

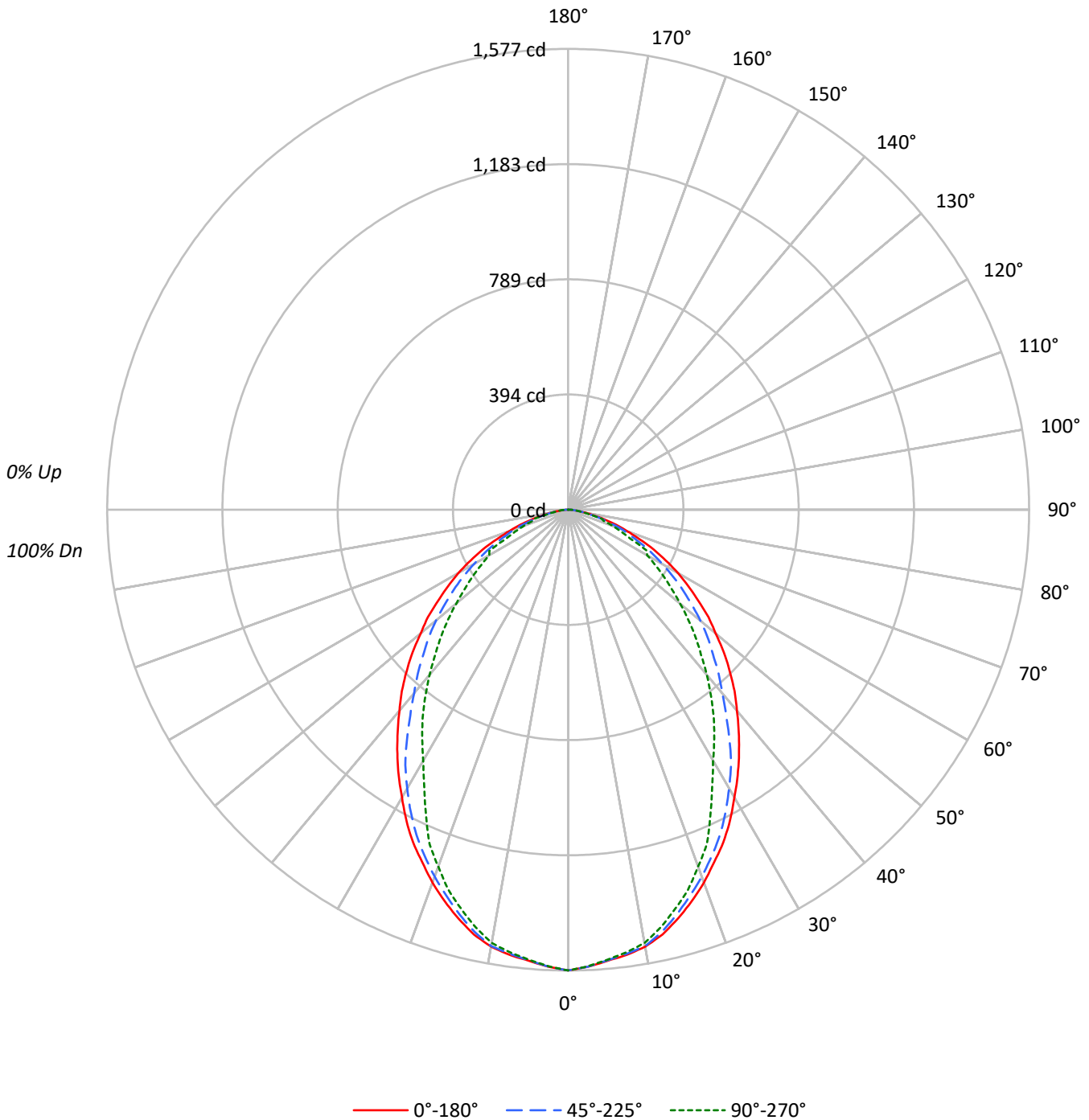
Lumens per Lamp: N/A  
Luminaire Lumens: 3095.0 lumens  
Efficiency: N/A  
Efficacy: 71.6 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 43.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	4243	4243	4243
5°	4185	4180	4175
10°	4148	4144	4114
15°	4037	3996	3940
20°	3888	3826	3721
25°	3729	3647	3420
30°	3534	3421	3081
35°	3347	3161	2850
40°	3156	2881	2593
45°	2976	2664	2344
50°	2755	2472	2091
55°	2548	2240	1873
60°	2335	2001	1678
65°	2054	1752	1486
70°	1692	1534	1262
75°	1345	1175	1232
80°	903	848	790
85°	562	676	787

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2976 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	146.8	4.7
10°-20°	402.8	13.0
20°-30°	557.6	18.0
30°-40°	594.6	19.2
40°-50°	542.4	17.5
50°-60°	424.9	13.7
60°-70°	276.9	8.9
70°-80°	122.7	4.0
80°-90°	26.3	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°	1107.1	35.8
0°-40°	1701.7	55.0
0°-60°	2669.0	86.2
0°-90°	3095.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3095.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1577	1577	1577	1577	1577	
5°	1549	1547	1547	1546	1546	147
15°	1449	1449	1434	1420	1414	407
25°	1256	1248	1228	1185	1152	577
35°	1019	1012	962	889	868	637
45°	782	766	700	642	616	602
55°	543	527	478	421	399	487
65°	323	304	275	281	233	318
75°	129	120	113	108	118	139
85°	18	20	22	24	26	25
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1576.6	1576.6	1576.6	1576.6	1576.6
2.5°	1565.6	1565.6	1565.6	1563.8	1563.8
5°	1549.2	1547.4	1547.4	1545.6	1545.6
7.5°	1536.5	1534.6	1532.8	1531.0	1527.3
10°	1518.2	1518.2	1516.4	1507.3	1505.5
12.5°	1489.1	1487.2	1480.0	1467.2	1463.6
15°	1449.0	1449.0	1434.4	1419.8	1414.3
17.5°	1405.2	1403.4	1385.2	1370.6	1363.3
20°	1357.8	1354.2	1336.0	1312.3	1299.5
22.5°	1305.0	1305.0	1283.1	1252.1	1239.4
25°	1255.8	1248.5	1228.4	1184.7	1151.9
27.5°	1199.3	1188.3	1166.5	1104.5	1066.2
30°	1137.3	1131.8	1100.9	1020.7	991.5
32.5°	1079.0	1069.9	1037.1	953.2	929.5
35°	1018.8	1011.5	962.3	889.4	867.6
37.5°	958.7	949.6	887.6	829.3	801.9
40°	898.5	887.6	820.2	767.3	738.2
42.5°	842.0	827.5	761.8	705.3	672.5
45°	781.9	765.5	699.9	641.6	616.0
47.5°	721.8	707.2	647.0	586.9	557.7
50°	658.0	645.2	590.5	530.4	499.4
52.5°	605.1	585.1	532.2	472.1	446.5
55°	543.1	526.7	477.5	421.0	399.2
57.5°	486.6	470.2	424.7	371.8	353.6
60°	433.8	410.1	371.8	326.2	311.7
62.5°	375.5	357.2	324.4	286.1	304.4
65°	322.6	304.4	275.2	280.7	233.3
67.5°	264.3	255.2	229.6	204.1	196.8
70°	215.1	204.1	195.0	167.7	160.4
72.5°	171.3	160.4	147.6	133.1	127.6
75°	129.4	120.3	113.0	107.5	118.5
77.5°	89.3	85.7	80.2	74.7	72.9
80°	58.3	56.5	54.7	52.9	51.0
82.5°	34.6	34.6	34.6	34.6	34.6
85°	18.2	20.0	21.9	23.7	25.5
87.5°	10.9	10.9	12.8	14.6	16.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)