

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: P560758

Luminaire Tested: FSR-12-4-LD4-1HI-35-UNV-80-87-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P560758  
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-80-87-EDD-90  
Description: 1X4 FSR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .375 CLEAR PC ENVIRON  
SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

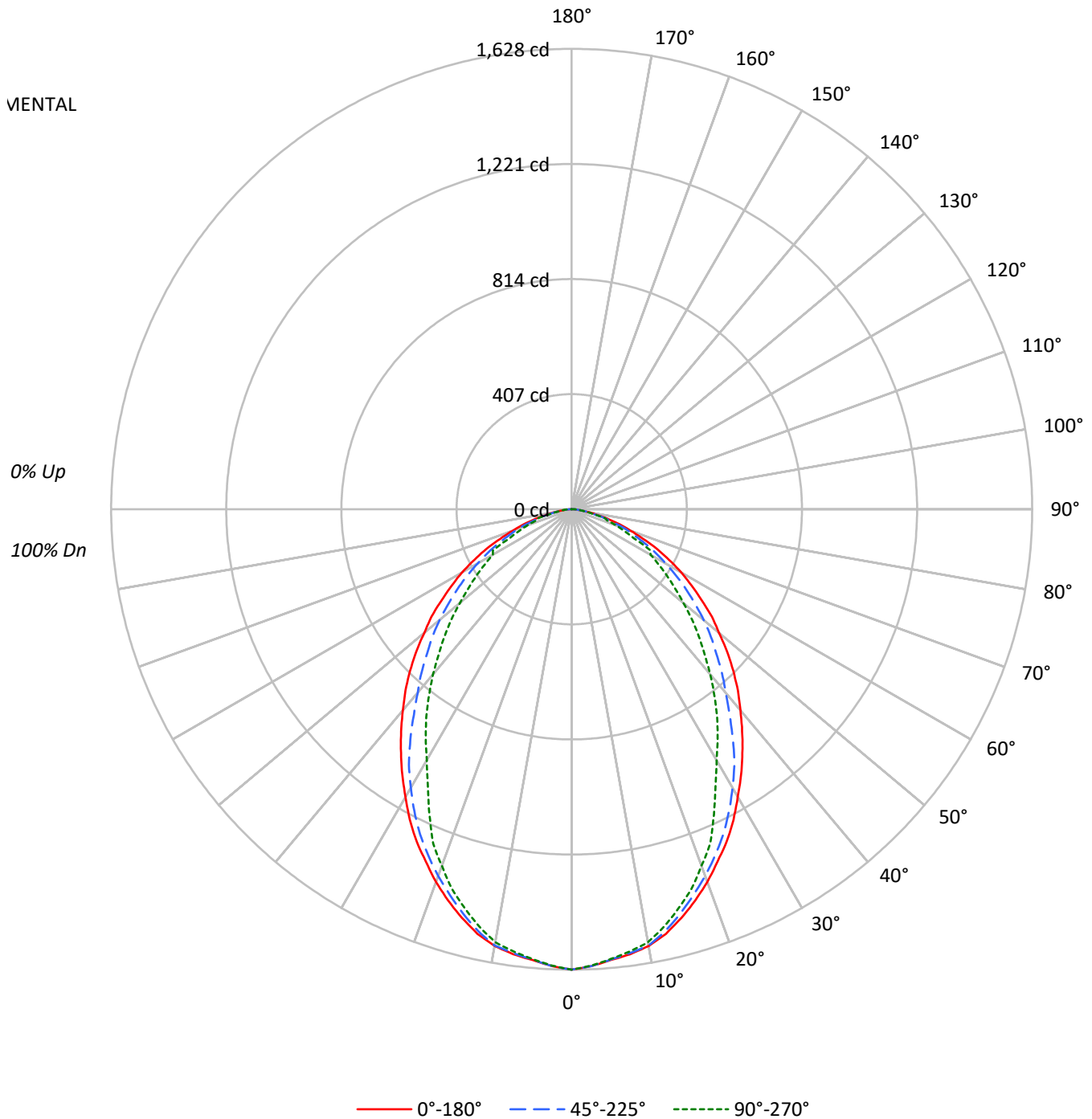
Lumens per Lamp: N/A  
Luminaire Lumens: 3196.0 lumens  
Efficiency: N/A  
Efficacy: 74.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 43.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	4381	4381	4381
5°	4321	4316	4311
10°	4284	4279	4248
15°	4169	4126	4069
20°	4015	3951	3843
25°	3850	3766	3532
30°	3649	3532	3182
35°	3456	3264	2943
40°	3260	2975	2677
45°	3073	2750	2421
50°	2844	2553	2159
55°	2632	2313	1934
60°	2411	2066	1732
65°	2121	1810	1534
70°	1747	1585	1303
75°	1389	1213	1272
80°	933	876	817
85°	580	698	812

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3073 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	151.5	4.7
10°-20°	415.9	13.0
20°-30°	575.8	18.0
30°-40°	614.0	19.2
40°-50°	560.1	17.5
50°-60°	438.8	13.7
60°-70°	286.0	8.9
70°-80°	126.7	4.0
80°-90°	27.2	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°	1143.2	35.8
0°-40°	1757.2	55.0
0°-60°	2756.1	86.2
0°-90°	3196.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3196.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1628	1628	1628	1628	1628	
5°	1600	1598	1598	1596	1596	152
15°	1496	1496	1481	1466	1460	421
25°	1297	1289	1268	1223	1190	595
35°	1052	1045	994	918	896	658
45°	807	790	723	662	636	622
55°	561	544	493	435	412	503
65°	333	314	284	290	241	328
75°	134	124	117	111	122	143
85°	19	21	23	24	26	26
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1628.0	1628.0	1628.0	1628.0	1628.0
2.5°	1616.7	1616.7	1616.7	1614.8	1614.8
5°	1599.8	1597.9	1597.9	1596.0	1596.0
7.5°	1586.6	1584.7	1582.8	1580.9	1577.2
10°	1567.8	1567.8	1565.9	1556.5	1554.6
12.5°	1537.7	1535.8	1528.2	1515.1	1511.3
15°	1496.3	1496.3	1481.2	1466.1	1460.5
17.5°	1451.1	1449.2	1430.4	1415.3	1407.8
20°	1402.2	1398.4	1379.6	1355.1	1341.9
22.5°	1347.6	1347.6	1325.0	1293.0	1279.8
25°	1296.8	1289.2	1268.5	1223.4	1189.5
27.5°	1238.4	1227.1	1204.5	1140.5	1101.0
30°	1174.4	1168.8	1136.8	1054.0	1023.9
32.5°	1114.2	1104.8	1070.9	984.3	959.9
35°	1052.1	1044.6	993.7	918.5	895.9
37.5°	990.0	980.6	916.6	856.3	828.1
40°	927.9	916.6	846.9	792.4	762.2
42.5°	869.5	854.5	786.7	728.4	694.5
45°	807.4	790.5	722.7	662.5	636.1
47.5°	745.3	730.2	668.1	606.0	575.9
50°	679.4	666.3	609.8	547.7	515.7
52.5°	624.9	604.1	549.6	487.5	461.1
55°	560.9	543.9	493.1	434.8	412.2
57.5°	502.5	485.6	438.5	383.9	365.1
60°	447.9	423.5	383.9	336.9	321.8
62.5°	387.7	368.9	335.0	295.5	314.3
65°	333.1	314.3	284.2	289.8	240.9
67.5°	272.9	263.5	237.1	210.8	203.3
70°	222.1	210.8	201.4	173.2	165.6
72.5°	176.9	165.6	152.4	137.4	131.7
75°	133.6	124.2	116.7	111.0	122.3
77.5°	92.2	88.5	82.8	77.2	75.3
80°	60.2	58.3	56.5	54.6	52.7
82.5°	35.8	35.8	35.8	35.8	35.8
85°	18.8	20.7	22.6	24.5	26.3
87.5°	11.3	11.3	13.2	15.1	16.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)