

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: P560940

Luminaire Tested: FSR-12-4-LD4-1HI-50-UNV-93-96-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P560940  
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-50-UNV-93-96-EDD-90  
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR TEMPER  
GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

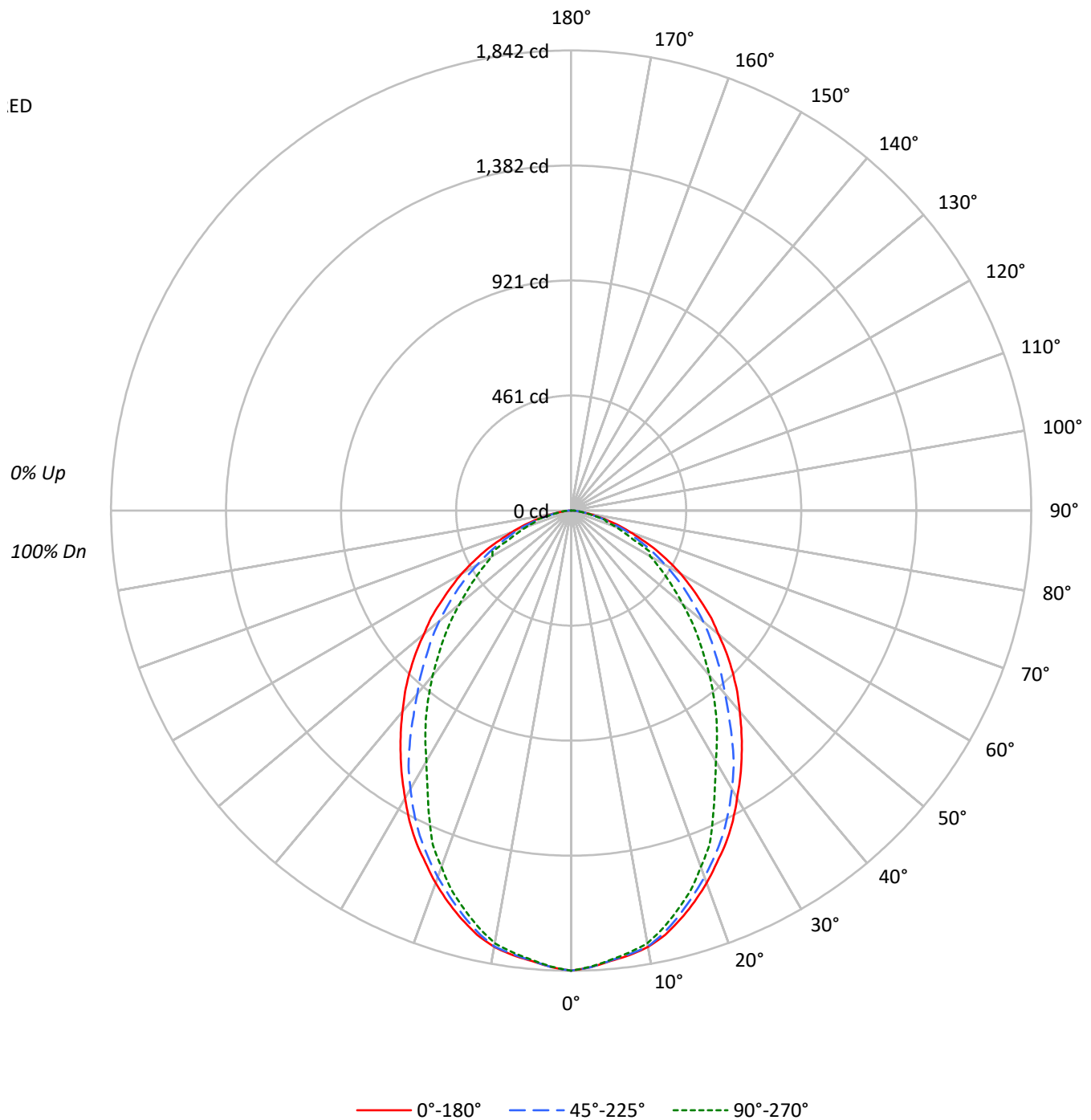
Lumens per Lamp: N/A  
Luminaire Lumens: 3616.0 lumens  
Efficiency: N/A  
Efficacy: 83.7 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 43.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	4957	4957	4957
5°	4889	4884	4878
10°	4847	4841	4806
15°	4716	4669	4603
20°	4543	4470	4348
25°	4356	4261	3996
30°	4129	3997	3599
35°	3910	3693	3330
40°	3688	3366	3029
45°	3476	3112	2739
50°	3218	2888	2443
55°	2977	2617	2188
60°	2728	2338	1960
65°	2400	2047	1736
70°	1977	1792	1474
75°	1572	1372	1439
80°	1055	990	924
85°	658	790	920

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3476 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	171.5	4.7
10°-20°	470.6	13.0
20°-30°	651.5	18.0
30°-40°	694.6	19.2
40°-50°	633.7	17.5
50°-60°	496.5	13.7
60°-70°	323.6	8.9
70°-80°	143.4	4.0
80°-90°	30.8	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°	1293.5	35.8
0°-40°	1988.1	55.0
0°-60°	3118.3	86.2
0°-90°	3616.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3616.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1842	1842	1842	1842	1842	
5°	1810	1808	1808	1806	1806	172
15°	1693	1693	1676	1659	1652	476
25°	1467	1459	1435	1384	1346	674
35°	1190	1182	1124	1039	1014	744
45°	914	894	818	750	720	704
55°	635	615	558	492	466	569
65°	377	356	322	328	273	371
75°	151	140	132	126	138	162
85°	21	23	26	28	30	30
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1841.9	1841.9	1841.9	1841.9	1841.9
2.5°	1829.2	1829.2	1829.2	1827.0	1827.0
5°	1810.0	1807.9	1807.9	1805.7	1805.7
7.5°	1795.1	1793.0	1790.8	1788.7	1784.4
10°	1773.8	1773.8	1771.7	1761.0	1758.9
12.5°	1739.7	1737.6	1729.1	1714.2	1709.9
15°	1692.9	1692.9	1675.8	1658.8	1652.4
17.5°	1641.8	1639.6	1618.4	1601.3	1592.8
20°	1586.4	1582.2	1560.9	1533.2	1518.3
22.5°	1524.7	1524.7	1499.1	1462.9	1448.0
25°	1467.2	1458.6	1435.2	1384.1	1345.8
27.5°	1401.2	1388.4	1362.8	1290.4	1245.7
30°	1328.8	1322.4	1286.2	1192.5	1158.4
32.5°	1260.6	1250.0	1211.6	1113.7	1086.0
35°	1190.3	1181.8	1124.3	1039.2	1013.6
37.5°	1120.1	1109.4	1037.0	968.9	936.9
40°	1049.8	1037.0	958.2	896.5	862.4
42.5°	983.8	966.8	890.1	824.1	785.8
45°	913.5	894.4	817.7	749.6	719.7
47.5°	843.2	826.2	755.9	685.7	651.6
50°	768.7	753.8	689.9	619.7	583.5
52.5°	707.0	683.5	621.8	551.5	521.7
55°	634.6	615.4	557.9	491.9	466.3
57.5°	568.6	549.4	496.2	434.4	413.1
60°	506.8	479.1	434.4	381.2	364.1
62.5°	438.7	417.4	379.0	334.3	355.6
65°	376.9	355.6	321.5	327.9	272.6
67.5°	308.8	298.1	268.3	238.5	230.0
70°	251.3	238.5	227.8	195.9	187.4
72.5°	200.2	187.4	172.5	155.4	149.1
75°	151.2	140.5	132.0	125.6	138.4
77.5°	104.3	100.1	93.7	87.3	85.2
80°	68.1	66.0	63.9	61.8	59.6
82.5°	40.5	40.5	40.5	40.5	40.5
85°	21.3	23.4	25.6	27.7	29.8
87.5°	12.8	12.8	14.9	17.0	19.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)