

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: P561506

Luminaire Tested: FSR-12-4-LD4-2HI-50-UNV-93-85-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561506  
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-LD4-2HI-50-UNV-93-85-EDD-90  
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

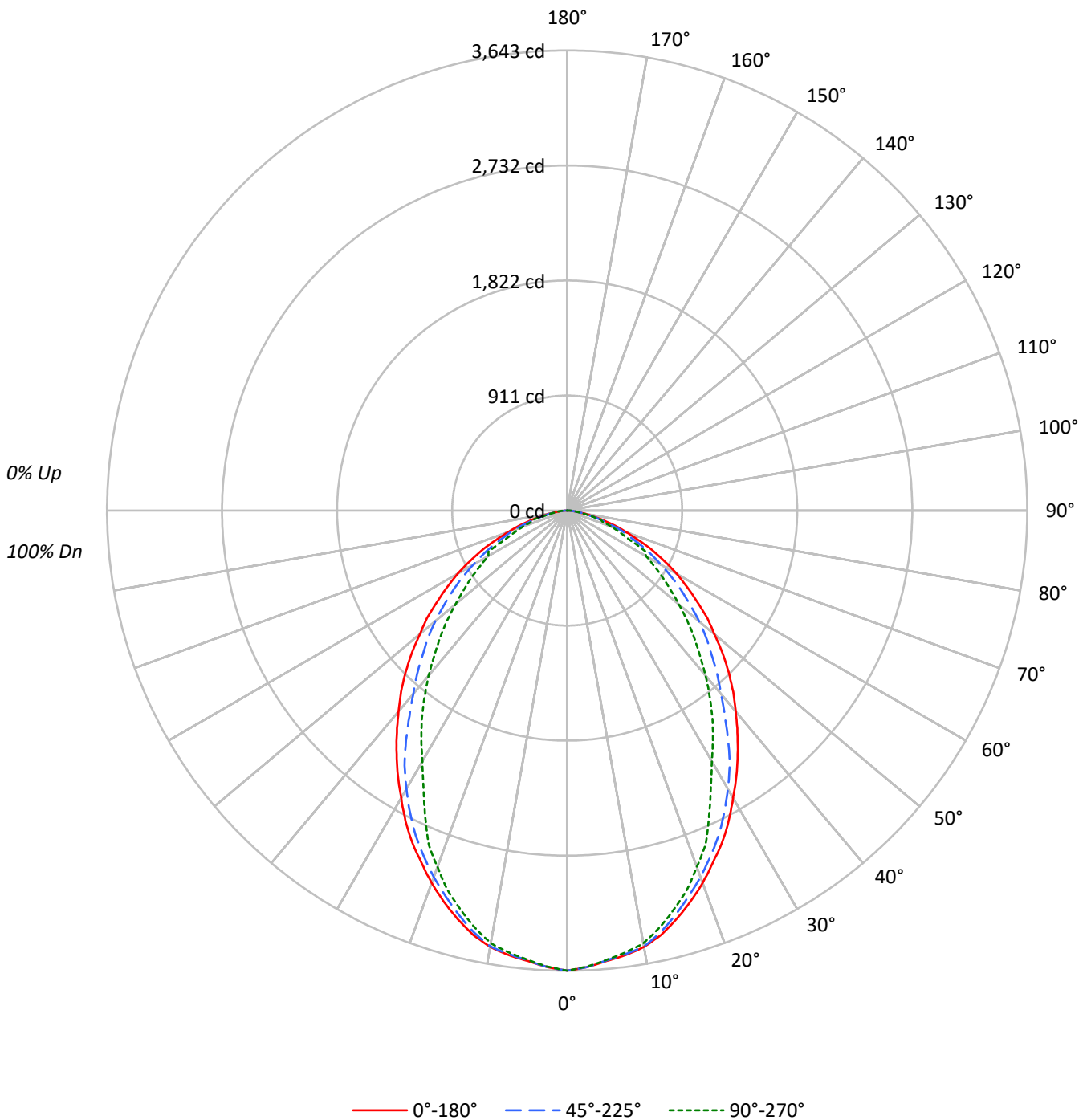
Lumens per Lamp: N/A  
Luminaire Lumens: 7151.0 lumens  
Efficiency: N/A  
Efficacy: 82.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 86.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	9802	9802	9802
5°	9669	9658	9646
10°	9585	9574	9505
15°	9327	9233	9104
20°	8984	8840	8598
25°	8615	8427	7902
30°	8165	7903	7118
35°	7733	7304	6585
40°	7293	6657	5991
45°	6875	6154	5417
50°	6364	5712	4830
55°	5887	5176	4327
60°	5394	4624	3876
65°	4746	4049	3432
70°	3910	3545	2916
75°	3109	2715	2846
80°	2089	1957	1827
85°	1300	1559	1822

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 6875 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	339.1	4.7
10°-20°	930.6	13.0
20°-30°	1288.3	18.0
30°-40°	1373.7	19.2
40°-50°	1253.2	17.5
50°-60°	981.8	13.7
60°-70°	639.9	8.9
70°-80°	283.5	4.0
80°-90°	60.9	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°	2558.0	35.8
0°-40°	3931.7	55.0
0°-60°	6166.7	86.2
0°-90°	7151.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7151.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3643	3643	3643	3643	3643	
5°	3580	3575	3575	3571	3571	340
15°	3348	3348	3314	3280	3268	941
25°	2902	2885	2838	2737	2661	1332
35°	2354	2337	2224	2055	2004	1472
45°	1807	1769	1617	1482	1423	1392
55°	1255	1217	1103	973	922	1126
65°	745	703	636	648	539	735
75°	299	278	261	248	274	320
85°	42	46	50	55	59	58
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3642.6	3642.6	3642.6	3642.6	3642.6
2.5°	3617.4	3617.4	3617.4	3613.1	3613.1
5°	3579.5	3575.2	3575.2	3571.0	3571.0
7.5°	3550.0	3545.8	3541.6	3537.3	3528.9
10°	3507.9	3507.9	3503.7	3482.6	3478.4
12.5°	3440.5	3436.3	3419.4	3390.0	3381.5
15°	3347.8	3347.8	3314.2	3280.5	3267.8
17.5°	3246.8	3242.6	3200.5	3166.8	3149.9
20°	3137.3	3128.9	3086.8	3032.0	3002.5
22.5°	3015.2	3015.2	2964.6	2893.0	2863.6
25°	2901.5	2884.6	2838.3	2737.2	2661.4
27.5°	2770.9	2745.7	2695.1	2551.9	2463.5
30°	2627.7	2615.1	2543.5	2358.2	2290.9
32.5°	2493.0	2471.9	2396.1	2202.4	2147.7
35°	2354.0	2337.2	2223.5	2055.0	2004.5
37.5°	2215.1	2194.0	2050.8	1916.1	1852.9
40°	2076.1	2050.8	1895.0	1772.9	1705.5
42.5°	1945.5	1911.9	1760.3	1629.7	1553.9
45°	1806.6	1768.7	1617.1	1482.3	1423.4
47.5°	1667.6	1633.9	1494.9	1356.0	1288.6
50°	1520.2	1490.7	1364.4	1225.4	1153.8
52.5°	1398.1	1351.8	1229.6	1090.7	1031.7
55°	1254.9	1217.0	1103.3	972.8	922.2
57.5°	1124.4	1086.5	981.2	859.1	817.0
60°	1002.2	947.5	859.1	753.8	720.1
62.5°	867.5	825.4	749.6	661.1	703.3
65°	745.4	703.3	635.9	648.5	539.0
67.5°	610.6	589.6	530.6	471.6	454.8
70°	496.9	471.6	450.6	387.4	370.6
72.5°	395.8	370.6	341.1	307.4	294.8
75°	299.0	277.9	261.1	248.5	273.7
77.5°	206.3	197.9	185.3	172.7	168.4
80°	134.8	130.5	126.3	122.1	117.9
82.5°	80.0	80.0	80.0	80.0	80.0
85°	42.1	46.3	50.5	54.7	59.0
87.5°	25.3	25.3	29.5	33.7	37.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)