

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: P560939

Luminaire Tested: FSR-12-4-LD4-1HI-50-UNV-93-94-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P560939  
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-93-94-EDD  
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187 CLEAR TEMPER  
GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

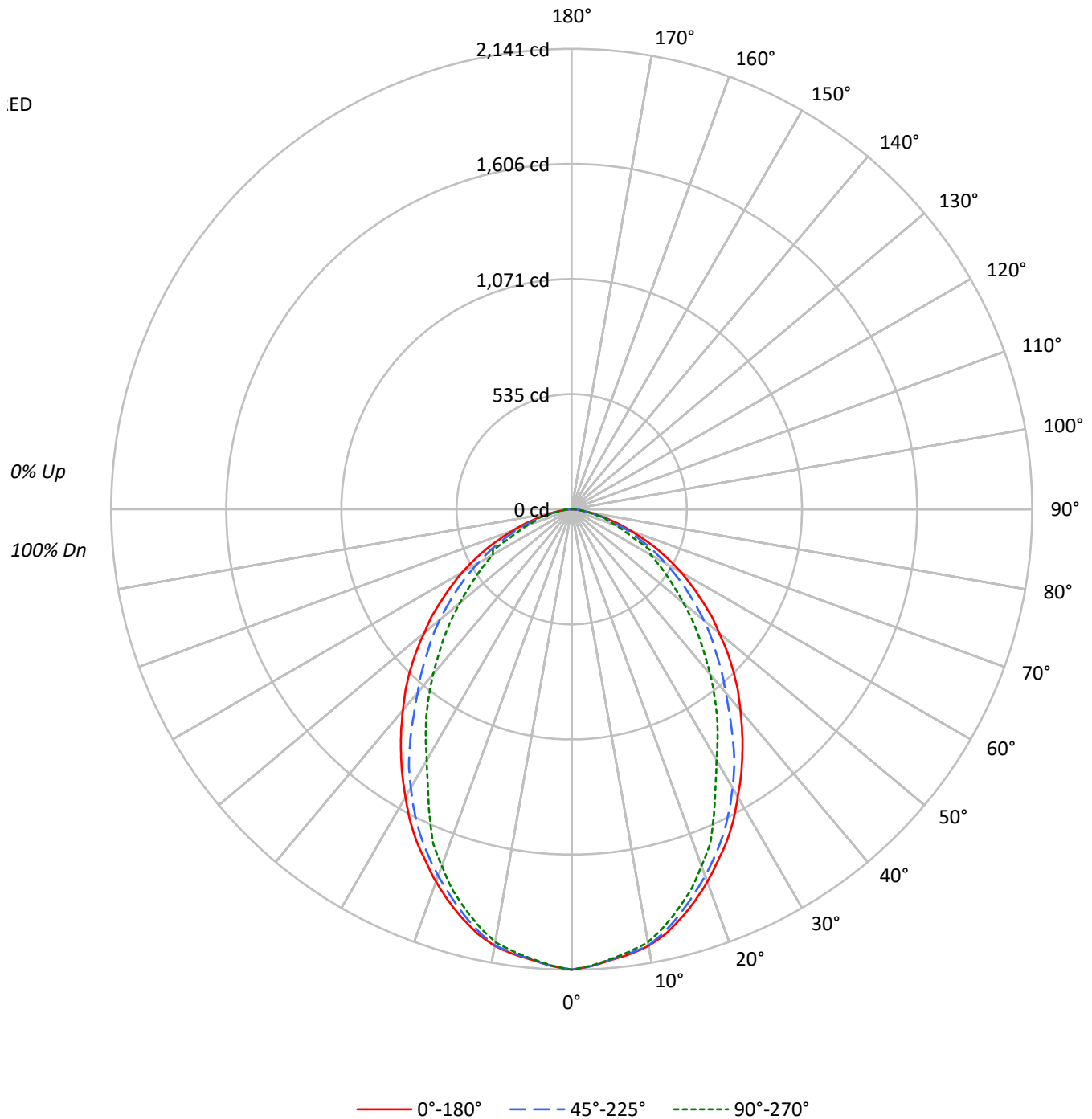
Lumens per Lamp: N/A  
Luminaire Lumens: 4203.0 lumens  
Efficiency: N/A  
Efficacy: 97.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 43.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	5761	5761	5761
5°	5683	5676	5670
10°	5634	5627	5586
15°	5482	5427	5351
20°	5280	5195	5054
25°	5063	4953	4645
30°	4799	4645	4184
35°	4545	4293	3870
40°	4286	3913	3521
45°	4041	3617	3184
50°	3741	3357	2839
55°	3461	3042	2543
60°	3171	2717	2278
65°	2790	2379	2017
70°	2298	2083	1714
75°	1827	1596	1673
80°	1227	1151	1074
85°	766	917	1071

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4041 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	199.3	4.7
10°-20°	546.9	13.0
20°-30°	757.2	18.0
30°-40°	807.4	19.2
40°-50°	736.6	17.5
50°-60°	577.1	13.7
60°-70°	376.1	8.9
70°-80°	166.6	4.0
80°-90°	35.8	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°	1503.5	35.8
0°-40°	2310.9	55.0
0°-60°	3624.5	86.2
0°-90°	4203.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4203.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2141	2141	2141	2141	2141	
5°	2104	2101	2101	2099	2099	200
15°	1968	1968	1948	1928	1921	553
25°	1705	1695	1668	1609	1564	783
35°	1384	1374	1307	1208	1178	865
45°	1062	1040	950	871	837	818
55°	738	715	648	572	542	662
65°	438	413	374	381	317	432
75°	176	163	154	146	161	188
85°	25	27	30	32	35	34
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2141.0	2141.0	2141.0	2141.0	2141.0
2.5°	2126.1	2126.1	2126.1	2123.6	2123.6
5°	2103.8	2101.4	2101.4	2098.9	2098.9
7.5°	2086.5	2084.0	2081.5	2079.1	2074.1
10°	2061.7	2061.7	2059.3	2046.9	2044.4
12.5°	2022.1	2019.7	2009.8	1992.4	1987.5
15°	1967.7	1967.7	1947.9	1928.1	1920.7
17.5°	1908.3	1905.8	1881.1	1861.3	1851.4
20°	1843.9	1839.0	1814.2	1782.1	1764.7
22.5°	1772.2	1772.2	1742.5	1700.4	1683.1
25°	1705.3	1695.4	1668.2	1608.8	1564.3
27.5°	1628.6	1613.8	1584.1	1499.9	1447.9
30°	1544.5	1537.0	1495.0	1386.0	1346.4
32.5°	1465.3	1452.9	1408.3	1294.5	1262.3
35°	1383.6	1373.7	1306.8	1207.8	1178.1
37.5°	1301.9	1289.5	1205.4	1126.2	1089.0
40°	1220.2	1205.4	1113.8	1042.0	1002.4
42.5°	1143.5	1123.7	1034.6	957.9	913.3
45°	1061.8	1039.5	950.4	871.2	836.6
47.5°	980.1	960.3	878.7	797.0	757.4
50°	893.5	876.2	801.9	720.3	678.2
52.5°	821.7	794.5	722.7	641.0	606.4
55°	737.6	715.3	648.5	571.7	542.0
57.5°	660.8	638.6	576.7	504.9	480.2
60°	589.1	556.9	504.9	443.0	423.2
62.5°	509.9	485.1	440.6	388.6	413.3
65°	438.1	413.3	373.7	381.2	316.8
67.5°	358.9	346.5	311.9	277.2	267.3
70°	292.1	277.2	264.8	227.7	217.8
72.5°	232.7	217.8	200.5	180.7	173.3
75°	175.7	163.4	153.5	146.0	160.9
77.5°	121.3	116.3	108.9	101.5	99.0
80°	79.2	76.7	74.3	71.8	69.3
82.5°	47.0	47.0	47.0	47.0	47.0
85°	24.8	27.2	29.7	32.2	34.7
87.5°	14.9	14.9	17.3	19.8	22.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)