

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: P562858

Luminaire Tested: FSR-24-4-LD4-2LO-50-UNV-93-94-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562858  
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-24-4-LD4-2LO-50-UNV-93-94-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187 CLEAR TEMPER  
GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

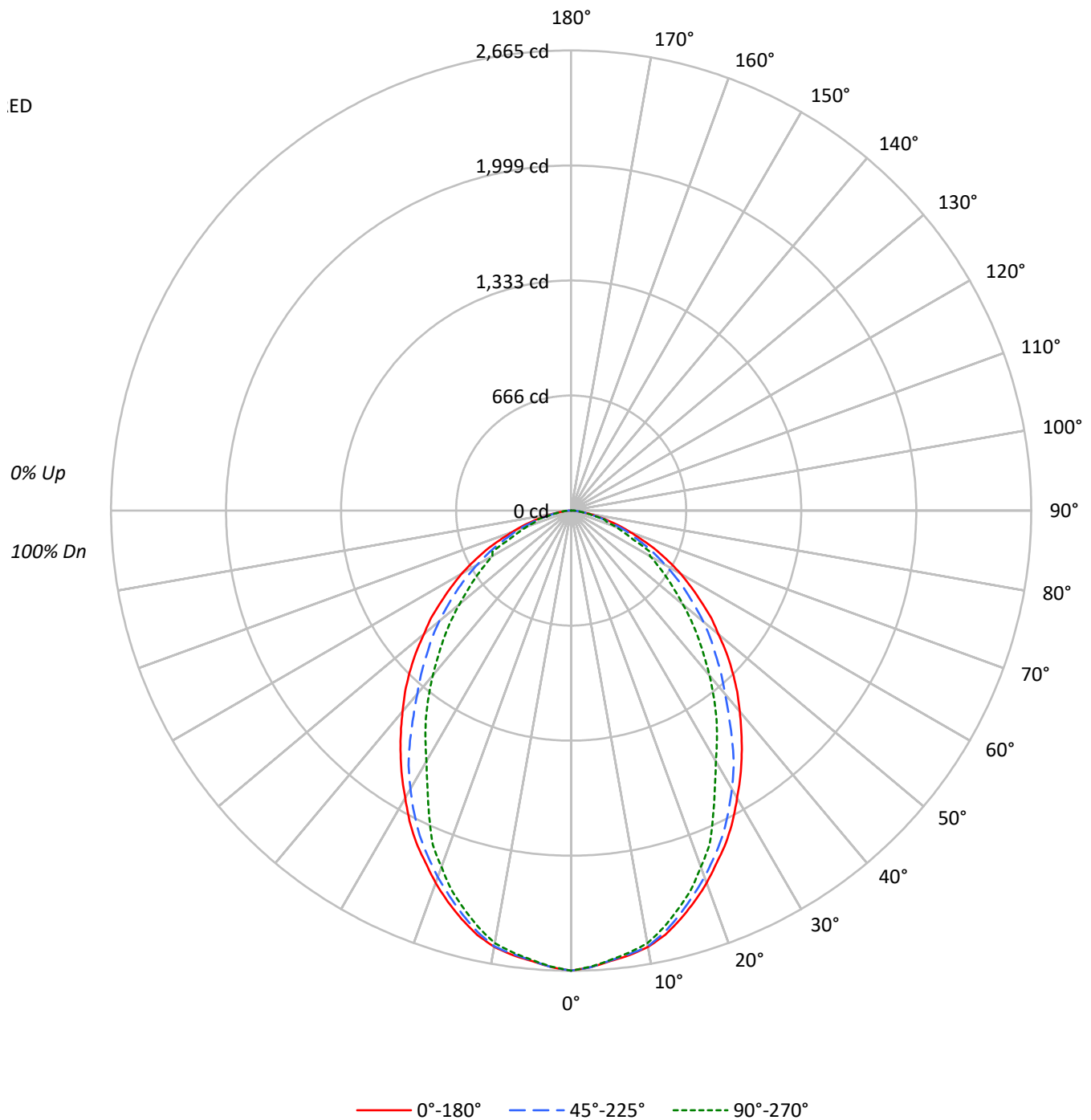
Lumens per Lamp: N/A  
Luminaire Lumens: 5231.0 lumens  
Efficiency: N/A  
Efficacy: 111.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 46.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	3585	3585	3585
5°	3536	3532	3528
10°	3506	3502	3476
15°	3411	3377	3330
20°	3286	3233	3145
25°	3151	3082	2890
30°	2986	2891	2604
35°	2828	2672	2408
40°	2667	2435	2191
45°	2515	2251	1981
50°	2328	2089	1767
55°	2153	1893	1582
60°	1973	1691	1418
65°	1736	1481	1255
70°	1430	1297	1066
75°	1137	993	1041
80°	764	716	669
85°	475	571	665

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2515 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	248.0	4.7
10°-20°	680.7	13.0
20°-30°	942.4	18.0
30°-40°	1004.9	19.2
40°-50°	916.7	17.5
50°-60°	718.2	13.7
60°-70°	468.1	8.9
70°-80°	207.4	4.0
80°-90°	44.5	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°	1871.2	35.8
0°-40°	2876.1	55.0
0°-60°	4511.0	86.2
0°-90°	5231.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5231.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2665	2665	2665	2665	2665	
5°	2618	2615	2615	2612	2612	249
15°	2449	2449	2424	2400	2390	688
25°	2122	2110	2076	2002	1947	974
35°	1722	1710	1626	1503	1466	1077
45°	1322	1294	1183	1084	1041	1018
55°	918	890	807	712	675	823
65°	545	514	465	474	394	537
75°	219	203	191	182	200	234
85°	31	34	37	40	43	43
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2664.6	2664.6	2664.6	2664.6	2664.6
2.5°	2646.1	2646.1	2646.1	2643.0	2643.0
5°	2618.4	2615.3	2615.3	2612.2	2612.2
7.5°	2596.8	2593.8	2590.7	2587.6	2581.4
10°	2566.0	2566.0	2562.9	2547.5	2544.5
12.5°	2516.7	2513.7	2501.3	2479.8	2473.6
15°	2449.0	2449.0	2424.3	2399.7	2390.4
17.5°	2375.0	2372.0	2341.2	2316.5	2304.2
20°	2294.9	2288.8	2258.0	2217.9	2196.4
22.5°	2205.6	2205.6	2168.6	2116.3	2094.7
25°	2122.4	2110.1	2076.2	2002.3	1946.9
27.5°	2026.9	2008.5	1971.5	1866.8	1802.1
30°	1922.2	1913.0	1860.6	1725.1	1675.8
32.5°	1823.6	1808.2	1752.8	1611.1	1571.0
35°	1722.0	1709.7	1626.5	1503.3	1466.3
37.5°	1620.3	1604.9	1500.2	1401.6	1355.4
40°	1518.7	1500.2	1386.2	1296.9	1247.6
42.5°	1423.2	1398.5	1287.6	1192.1	1136.7
45°	1321.5	1293.8	1182.9	1084.3	1041.2
47.5°	1219.9	1195.2	1093.6	991.9	942.6
50°	1112.0	1090.5	998.1	896.4	844.0
52.5°	1022.7	988.8	899.5	797.8	754.7
55°	918.0	890.3	807.1	711.6	674.6
57.5°	822.5	794.8	717.7	628.4	597.6
60°	733.2	693.1	628.4	551.4	526.8
62.5°	634.6	603.8	548.3	483.6	514.4
65°	545.2	514.4	465.2	474.4	394.3
67.5°	446.7	431.3	388.1	345.0	332.7
70°	363.5	345.0	329.6	283.4	271.1
72.5°	289.6	271.1	249.5	224.9	215.6
75°	218.7	203.3	191.0	181.7	200.2
77.5°	150.9	144.8	135.5	126.3	123.2
80°	98.6	95.5	92.4	89.3	86.3
82.5°	58.5	58.5	58.5	58.5	58.5
85°	30.8	33.9	37.0	40.0	43.1
87.5°	18.5	18.5	21.6	24.6	27.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)