

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: P562703

Luminaire Tested: FSR-24-4-LD4-2LO-35-UNV-81-97-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562703  
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-35-UNV-81-97-EDD  
Description: 2X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .375 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

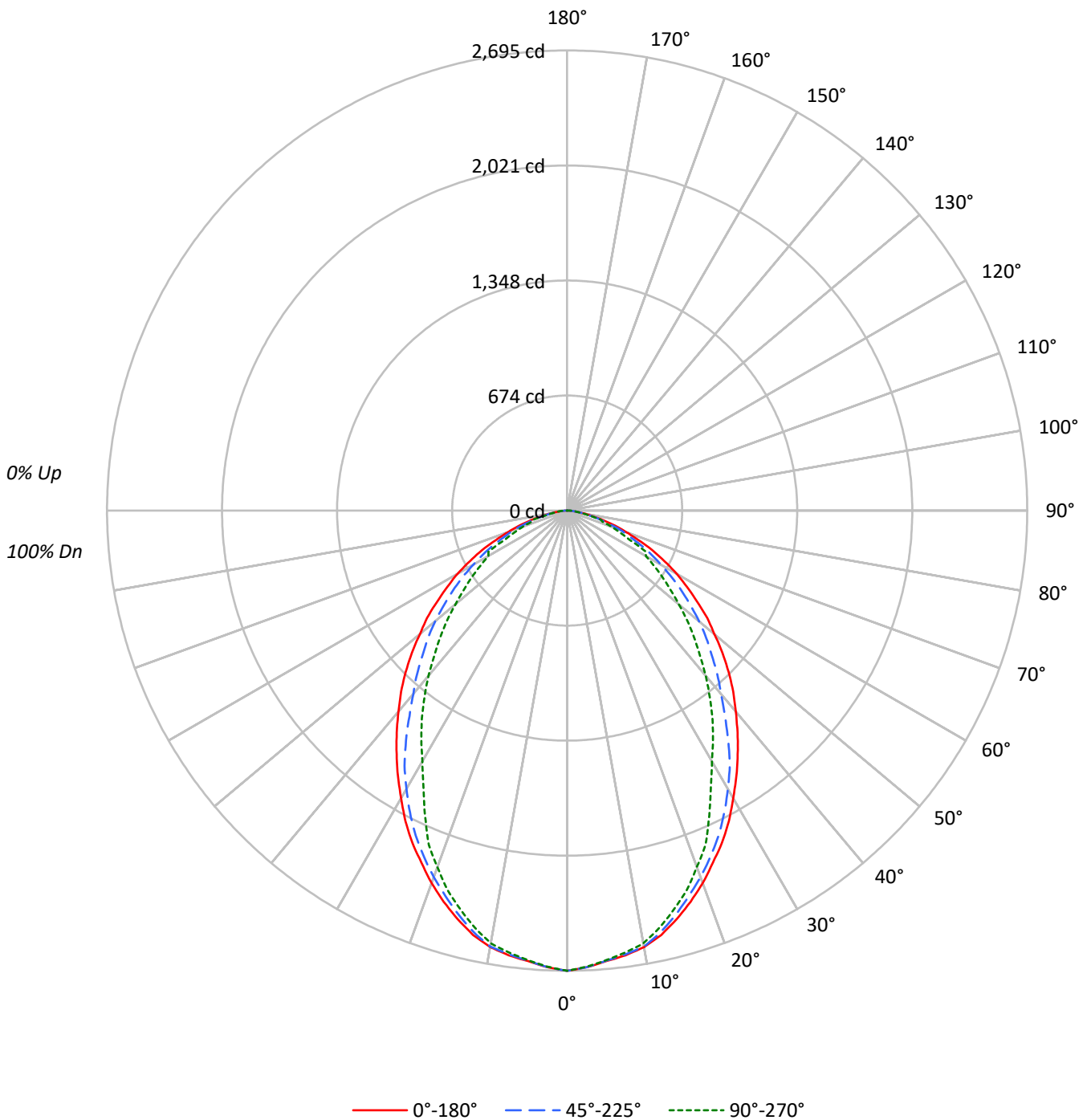
Lumens per Lamp: N/A  
Luminaire Lumens: 5291.0 lumens  
Efficiency: N/A  
Efficacy: 113.1 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 46.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	3626	3626	3626
5°	3577	3573	3569
10°	3546	3542	3516
15°	3450	3416	3368
20°	3324	3270	3181
25°	3187	3118	2923
30°	3021	2924	2633
35°	2861	2702	2436
40°	2698	2463	2216
45°	2543	2277	2004
50°	2354	2113	1787
55°	2178	1915	1601
60°	1996	1710	1434
65°	1756	1498	1270
70°	1447	1312	1079
75°	1150	1004	1053
80°	773	724	676
85°	482	577	673

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2543 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	250.9	4.7
10°-20°	688.5	13.0
20°-30°	953.2	18.0
30°-40°	1016.4	19.2
40°-50°	927.3	17.5
50°-60°	726.4	13.7
60°-70°	473.5	8.9
70°-80°	209.8	4.0
80°-90°	45.0	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°	1892.6	35.8
0°-40°	2909.0	55.0
0°-60°	4562.8	86.2
0°-90°	5291.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5291.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2695	2695	2695	2695	2695	
5°	2648	2645	2645	2642	2642	251
15°	2477	2477	2452	2427	2418	696
25°	2147	2134	2100	2025	1969	986
35°	1742	1729	1645	1520	1483	1089
45°	1337	1309	1196	1097	1053	1030
55°	928	900	816	720	682	833
65°	552	520	470	480	399	544
75°	221	206	193	184	202	237
85°	31	34	37	40	44	43
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2695.2	2695.2	2695.2	2695.2	2695.2
2.5°	2676.5	2676.5	2676.5	2673.4	2673.4
5°	2648.4	2645.3	2645.3	2642.2	2642.2
7.5°	2626.6	2623.5	2620.4	2617.3	2611.0
10°	2595.5	2595.5	2592.3	2576.8	2573.6
12.5°	2545.6	2542.5	2530.0	2508.2	2502.0
15°	2477.1	2477.1	2452.1	2427.2	2417.9
17.5°	2402.3	2399.2	2368.0	2343.1	2330.6
20°	2321.3	2315.0	2283.9	2243.4	2221.6
22.5°	2230.9	2230.9	2193.5	2140.6	2118.7
25°	2146.8	2134.3	2100.0	2025.3	1969.2
27.5°	2050.2	2031.5	1994.1	1888.2	1822.7
30°	1944.3	1934.9	1881.9	1744.8	1695.0
32.5°	1844.6	1829.0	1772.9	1629.6	1589.1
35°	1741.7	1729.3	1645.1	1520.5	1483.1
37.5°	1638.9	1623.3	1517.4	1417.7	1371.0
40°	1536.1	1517.4	1402.1	1311.8	1261.9
42.5°	1439.5	1414.6	1302.4	1205.8	1149.7
45°	1336.7	1308.6	1196.5	1096.8	1053.1
47.5°	1233.9	1208.9	1106.1	1003.3	953.4
50°	1124.8	1103.0	1009.5	906.7	853.7
52.5°	1034.4	1000.2	909.8	807.0	763.4
55°	928.5	900.5	816.3	719.7	682.4
57.5°	831.9	803.9	726.0	635.6	604.5
60°	741.6	701.1	635.6	557.7	532.8
62.5°	641.9	610.7	554.6	489.2	520.3
65°	551.5	520.3	470.5	479.8	398.8
67.5°	451.8	436.2	392.6	349.0	336.5
70°	367.7	349.0	333.4	286.7	274.2
72.5°	292.9	274.2	252.4	227.5	218.1
75°	221.2	205.6	193.2	183.8	202.5
77.5°	152.7	146.4	137.1	127.7	124.6
80°	99.7	96.6	93.5	90.4	87.2
82.5°	59.2	59.2	59.2	59.2	59.2
85°	31.2	34.3	37.4	40.5	43.6
87.5°	18.7	18.7	21.8	24.9	28.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)