

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: P563353

Luminaire Tested: FSR-24-4-LD4-3LO-40-UNV-82-88-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563353  
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-LD4-3LO-40-UNV-82-88-EDD  
Description: 2X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

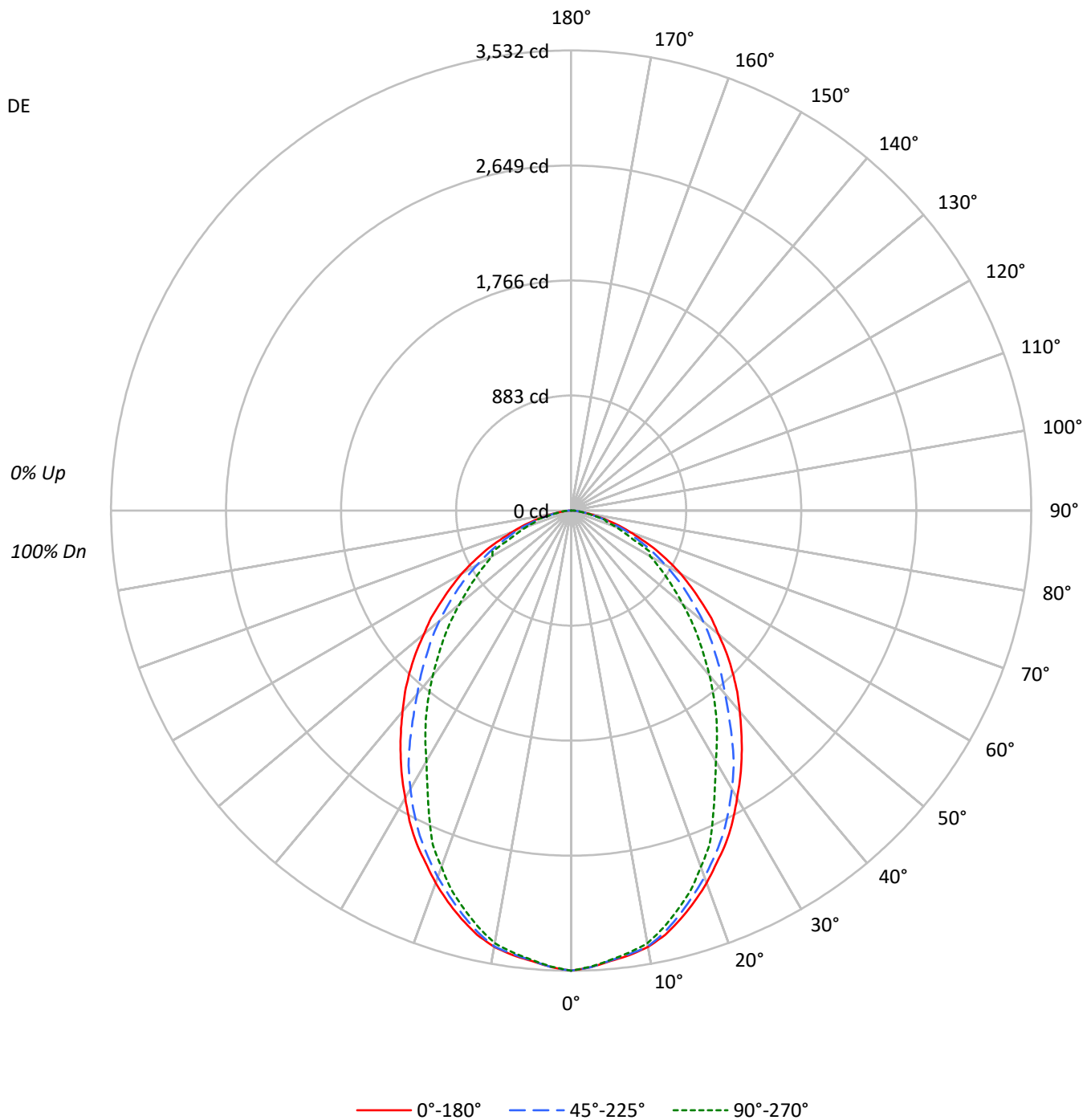
Lumens per Lamp: N/A  
Luminaire Lumens: 6933.0 lumens  
Efficiency: N/A  
Efficacy: 98.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 70.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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				
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°	4752	4752	4752
5°	4687	4682	4676
10°	4646	4641	4608
15°	4521	4476	4413
20°	4355	4285	4168
25°	4176	4085	3831
30°	3958	3831	3451
35°	3749	3541	3192
40°	3535	3227	2904
45°	3333	2983	2626
50°	3085	2769	2342
55°	2854	2509	2097
60°	2615	2241	1879
65°	2301	1963	1664
70°	1895	1719	1413
75°	1507	1316	1380
80°	1012	949	886
85°	630	756	883

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3333 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	328.7	4.7
10°-20°	902.2	13.0
20°-30°	1249.0	18.0
30°-40°	1331.8	19.2
40°-50°	1215.0	17.5
50°-60°	951.9	13.7
60°-70°	620.4	8.9
70°-80°	274.9	4.0
80°-90°	59.0	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°	2480.0	35.8
0°-40°	3811.8	55.0
0°-60°	5978.8	86.2
0°-90°	6933.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6933.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3532	3532	3532	3532	3532	
5°	3470	3466	3466	3462	3462	329
15°	3246	3246	3213	3180	3168	912
25°	2813	2797	2752	2654	2580	1291
35°	2282	2266	2156	1992	1943	1427
45°	1752	1715	1568	1437	1380	1349
55°	1217	1180	1070	943	894	1091
65°	723	682	616	629	523	712
75°	290	270	253	241	265	311
85°	41	45	49	53	57	57
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3531.6	3531.6	3531.6	3531.6	3531.6
2.5°	3507.1	3507.1	3507.1	3503.0	3503.0
5°	3470.3	3466.3	3466.3	3462.2	3462.2
7.5°	3441.8	3437.7	3433.6	3429.5	3421.3
10°	3400.9	3400.9	3396.8	3376.4	3372.4
12.5°	3335.6	3331.5	3315.2	3286.6	3278.4
15°	3245.8	3245.8	3213.1	3180.5	3168.2
17.5°	3147.8	3143.7	3102.9	3070.2	3053.9
20°	3041.6	3033.5	2992.7	2939.6	2911.0
22.5°	2923.2	2923.2	2874.3	2804.8	2776.3
25°	2813.0	2796.7	2751.8	2653.8	2580.3
27.5°	2686.4	2662.0	2613.0	2474.1	2388.4
30°	2547.6	2535.4	2466.0	2286.3	2221.0
32.5°	2417.0	2396.6	2323.1	2135.3	2082.2
35°	2282.3	2265.9	2155.7	1992.4	1943.4
37.5°	2147.5	2127.1	1988.3	1857.7	1796.4
40°	2012.8	1988.3	1837.2	1718.8	1653.5
42.5°	1886.2	1853.6	1706.6	1580.0	1506.5
45°	1751.5	1714.8	1567.8	1437.1	1380.0
47.5°	1616.8	1584.1	1449.4	1314.6	1249.3
50°	1473.9	1445.3	1322.8	1188.1	1118.7
52.5°	1355.5	1310.6	1192.2	1057.4	1000.3
55°	1216.7	1179.9	1069.7	943.1	894.1
57.5°	1090.1	1053.3	951.3	832.9	792.1
60°	971.7	918.6	832.9	730.8	698.2
62.5°	841.0	800.2	726.7	641.0	681.8
65°	722.6	681.8	616.5	628.7	522.6
67.5°	592.0	571.6	514.4	457.3	440.9
70°	481.8	457.3	436.9	375.6	359.3
72.5°	383.8	359.3	330.7	298.0	285.8
75°	289.9	269.5	253.1	240.9	265.4
77.5°	200.1	191.9	179.6	167.4	163.3
80°	130.6	126.6	122.5	118.4	114.3
82.5°	77.6	77.6	77.6	77.6	77.6
85°	40.8	44.9	49.0	53.1	57.2
87.5°	24.5	24.5	28.6	32.7	36.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)