

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: P563333

Luminaire Tested: FSR-24-4-LD4-3LO-40-UNV-81-86-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563333  
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-81-86-EDD  
Description: 2X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

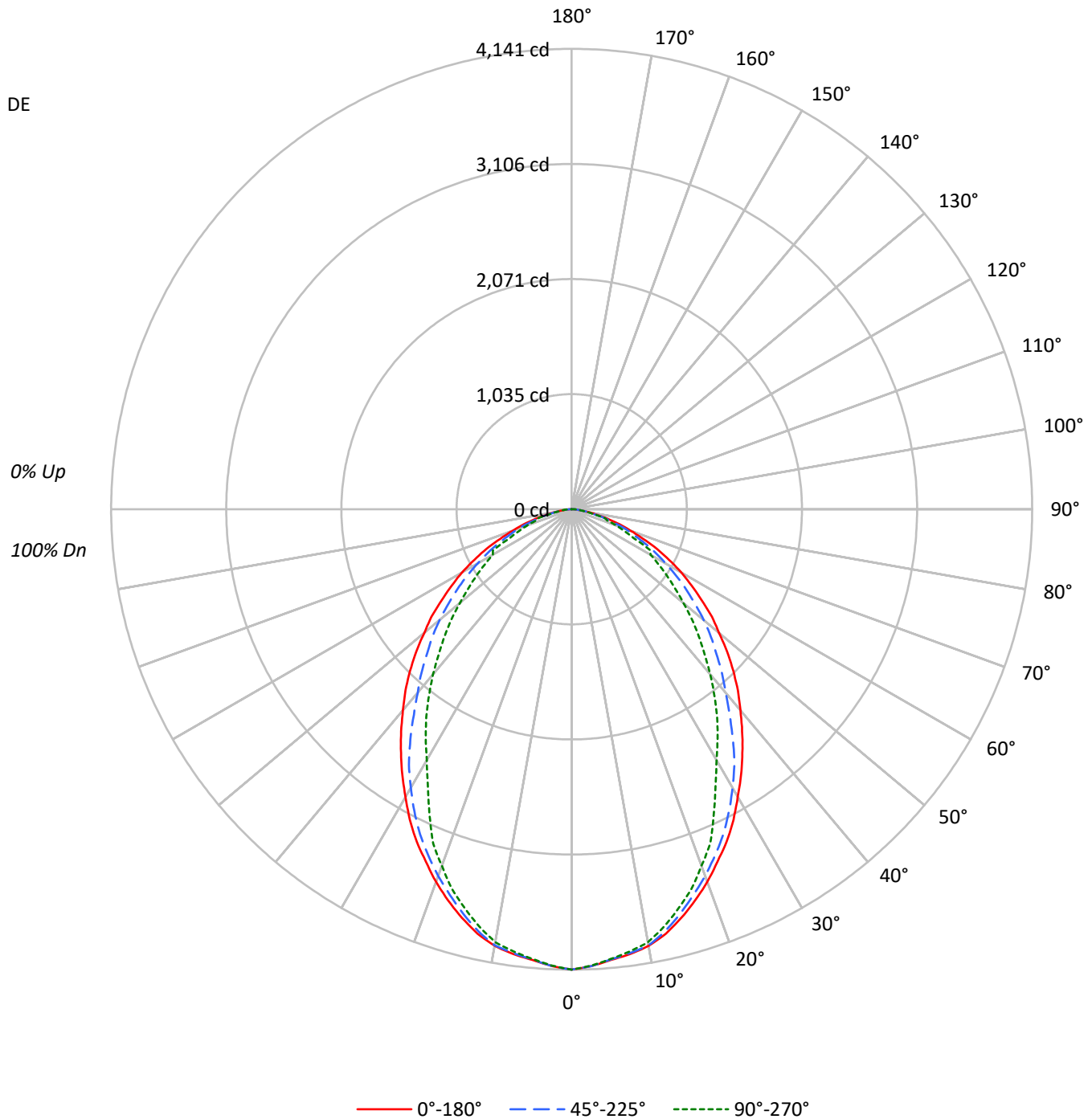
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 8129.0 lumens  
Efficiency: N/A  
Efficacy: 115.8 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°	5571	5571	5571
5°	5496	5489	5483
10°	5448	5441	5402
15°	5301	5248	5175
20°	5107	5024	4887
25°	4897	4790	4491
30°	4641	4492	4046
35°	4395	4152	3743
40°	4145	3784	3405
45°	3908	3498	3079
50°	3617	3247	2746
55°	3346	2942	2459
60°	3066	2628	2203
65°	2698	2301	1951
70°	2222	2015	1657
75°	1767	1543	1618
80°	1187	1113	1038
85°	739	886	1034

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3908 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	385.5	4.7
10°-20°	1057.8	13.0
20°-30°	1464.5	18.0
30°-40°	1561.6	19.2
40°-50°	1424.6	17.5
50°-60°	1116.1	13.7
60°-70°	727.4	8.9
70°-80°	322.3	4.0
80°-90°	69.2	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°	2907.8	35.8
0°-40°	4469.4	55.0
0°-60°	7010.1	86.2
0°-90°	8129.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	8129.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4141	4141	4141	4141	4141	
5°	4069	4064	4064	4059	4059	386
15°	3806	3806	3767	3729	3715	1070
25°	3298	3279	3226	3112	3025	1514
35°	2676	2657	2528	2336	2279	1673
45°	2054	2011	1838	1685	1618	1582
55°	1426	1384	1254	1106	1048	1279
65°	847	799	723	737	613	835
75°	340	316	297	282	311	364
85°	48	53	57	62	67	66
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4140.8	4140.8	4140.8	4140.8	4140.8
2.5°	4112.1	4112.1	4112.1	4107.3	4107.3
5°	4069.0	4064.2	4064.2	4059.4	4059.4
7.5°	4035.5	4030.7	4025.9	4021.1	4011.6
10°	3987.6	3987.6	3982.8	3958.9	3954.1
12.5°	3911.0	3906.2	3887.1	3853.6	3844.0
15°	3805.7	3805.7	3767.4	3729.1	3714.8
17.5°	3690.8	3686.0	3638.2	3599.9	3580.7
20°	3566.4	3556.8	3508.9	3446.7	3413.2
22.5°	3427.5	3427.5	3370.1	3288.7	3255.2
25°	3298.3	3279.1	3226.5	3111.6	3025.4
27.5°	3149.9	3121.2	3063.7	2901.0	2800.4
30°	2987.1	2972.8	2891.4	2680.8	2604.2
32.5°	2833.9	2810.0	2723.8	2503.6	2441.4
35°	2676.0	2656.8	2527.6	2336.1	2278.6
37.5°	2518.0	2494.1	2331.3	2178.1	2106.3
40°	2360.0	2331.3	2154.2	2015.4	1938.8
42.5°	2211.6	2173.3	2001.0	1852.6	1766.4
45°	2053.6	2010.6	1838.2	1685.0	1618.0
47.5°	1895.7	1857.4	1699.4	1541.4	1464.8
50°	1728.1	1694.6	1551.0	1393.0	1311.7
52.5°	1589.3	1536.6	1397.8	1239.8	1172.8
55°	1426.5	1383.5	1254.2	1105.8	1048.4
57.5°	1278.1	1235.1	1115.4	976.6	928.7
60°	1139.3	1077.1	976.6	856.9	818.6
62.5°	986.1	938.3	852.1	751.6	799.4
65°	847.3	799.4	722.8	737.2	612.7
67.5°	694.1	670.2	603.2	536.2	517.0
70°	564.9	536.2	512.2	440.4	421.3
72.5°	450.0	421.3	387.8	349.5	335.1
75°	339.9	315.9	296.8	282.4	311.2
77.5°	234.6	225.0	210.6	196.3	191.5
80°	153.2	148.4	143.6	138.8	134.0
82.5°	91.0	91.0	91.0	91.0	91.0
85°	47.9	52.7	57.4	62.2	67.0
87.5°	28.7	28.7	33.5	38.3	43.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)