

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: P564181

Luminaire Tested: FSR-24-4-LD4-4STD-50-UNV-82-86-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P564181  
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-LD4-4STD-50-UNV-82-86-EDD  
Description: 2X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

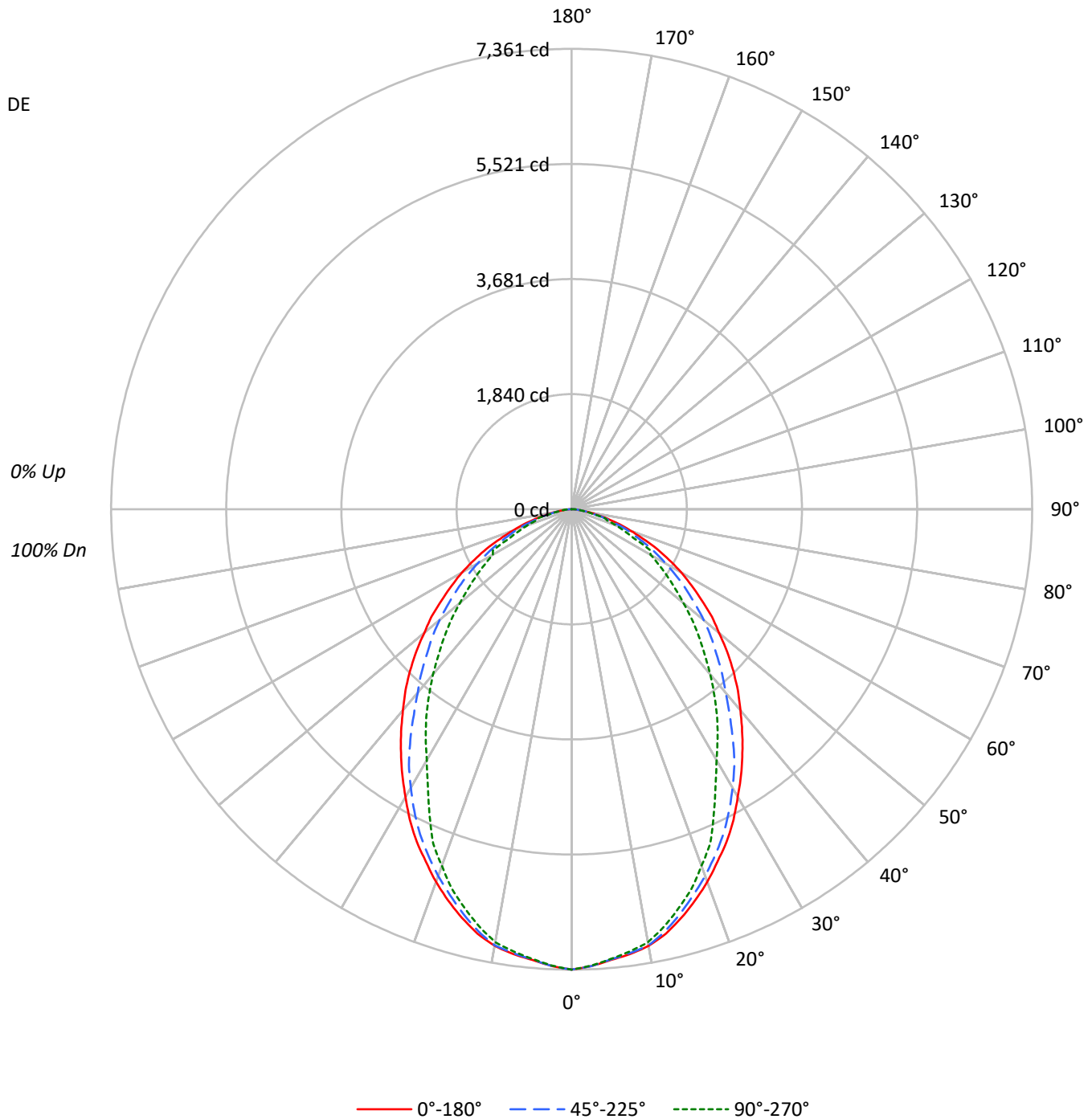
Lumens per Lamp: N/A  
Luminaire Lumens: 14450.0 lumens  
Efficiency: N/A  
Efficacy: 108.5 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 133.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	9904	9904	9904
5°	9769	9758	9746
10°	9684	9673	9603
15°	9423	9328	9198
20°	9077	8931	8687
25°	8704	8515	7984
30°	8250	7985	7192
35°	7813	7380	6653
40°	7368	6726	6053
45°	6946	6218	5473
50°	6430	5771	4881
55°	5948	5230	4372
60°	5450	4671	3916
65°	4795	4091	3468
70°	3950	3582	2946
75°	3141	2743	2875
80°	2110	1978	1846
85°	1314	1576	1839

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 6946 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	685.2	4.7
10°-20°	1880.4	13.0
20°-30°	2603.3	18.0
30°-40°	2775.9	19.2
40°-50°	2532.4	17.5
50°-60°	1983.9	13.7
60°-70°	1293.0	8.9
70°-80°	572.9	4.0
80°-90°	123.0	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°	5168.9	35.8
0°-40°	7944.8	55.0
0°-60°	12461.1	86.2
0°-90°	14450.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	14450.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	7361	7361	7361	7361	7361	
5°	7233	7224	7224	7216	7216	687
15°	6765	6765	6697	6629	6603	1902
25°	5863	5829	5735	5531	5378	2692
35°	4757	4723	4493	4153	4050	2974
45°	3650	3574	3268	2995	2876	2812
55°	2536	2459	2230	1966	1864	2274
65°	1506	1421	1285	1310	1089	1484
75°	604	562	528	502	553	648
85°	85	94	102	111	119	118
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	7360.6	7360.6	7360.6	7360.6	7360.6
2.5°	7309.6	7309.6	7309.6	7301.1	7301.1
5°	7233.0	7224.5	7224.5	7216.0	7216.0
7.5°	7173.4	7164.9	7156.4	7147.9	7130.9
10°	7088.3	7088.3	7079.8	7037.3	7028.8
12.5°	6952.2	6943.7	6909.6	6850.1	6833.1
15°	6765.0	6765.0	6696.9	6628.8	6603.3
17.5°	6560.8	6552.2	6467.1	6399.1	6365.0
20°	6339.5	6322.5	6237.4	6126.8	6067.2
22.5°	6092.7	6092.7	5990.6	5846.0	5786.4
25°	5863.0	5828.9	5735.3	5531.1	5377.9
27.5°	5599.2	5548.1	5446.0	5156.7	4978.0
30°	5309.9	5284.3	5139.7	4765.3	4629.1
32.5°	5037.6	4995.0	4841.9	4450.4	4339.8
35°	4756.8	4722.7	4493.0	4152.6	4050.5
37.5°	4475.9	4433.4	4144.1	3871.8	3744.1
40°	4195.1	4144.1	3829.2	3582.5	3446.3
42.5°	3931.3	3863.3	3556.9	3293.1	3140.0
45°	3650.5	3574.0	3267.6	2995.3	2876.2
47.5°	3369.7	3301.6	3020.8	2740.0	2603.9
50°	3071.9	3012.3	2757.0	2476.2	2331.6
52.5°	2825.1	2731.5	2484.7	2203.9	2084.8
55°	2535.8	2459.2	2229.5	1965.7	1863.6
57.5°	2272.0	2195.4	1982.7	1735.9	1650.8
60°	2025.2	1914.6	1735.9	1523.2	1455.1
62.5°	1752.9	1667.8	1514.7	1336.0	1421.1
65°	1506.2	1421.1	1284.9	1310.4	1089.2
67.5°	1233.9	1191.3	1072.2	953.1	919.0
70°	1004.1	953.1	910.5	782.9	748.8
72.5°	799.9	748.8	689.3	621.2	595.7
75°	604.2	561.6	527.6	502.1	553.1
77.5°	417.0	399.9	374.4	348.9	340.4
80°	272.3	263.8	255.3	246.8	238.3
82.5°	161.7	161.7	161.7	161.7	161.7
85°	85.1	93.6	102.1	110.6	119.1
87.5°	51.1	51.1	59.6	68.1	76.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)