

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: P564037

Luminaire Tested: FSR-24-4-LD4-4STD-35-UNV-81-86-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P564037  
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-35-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 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

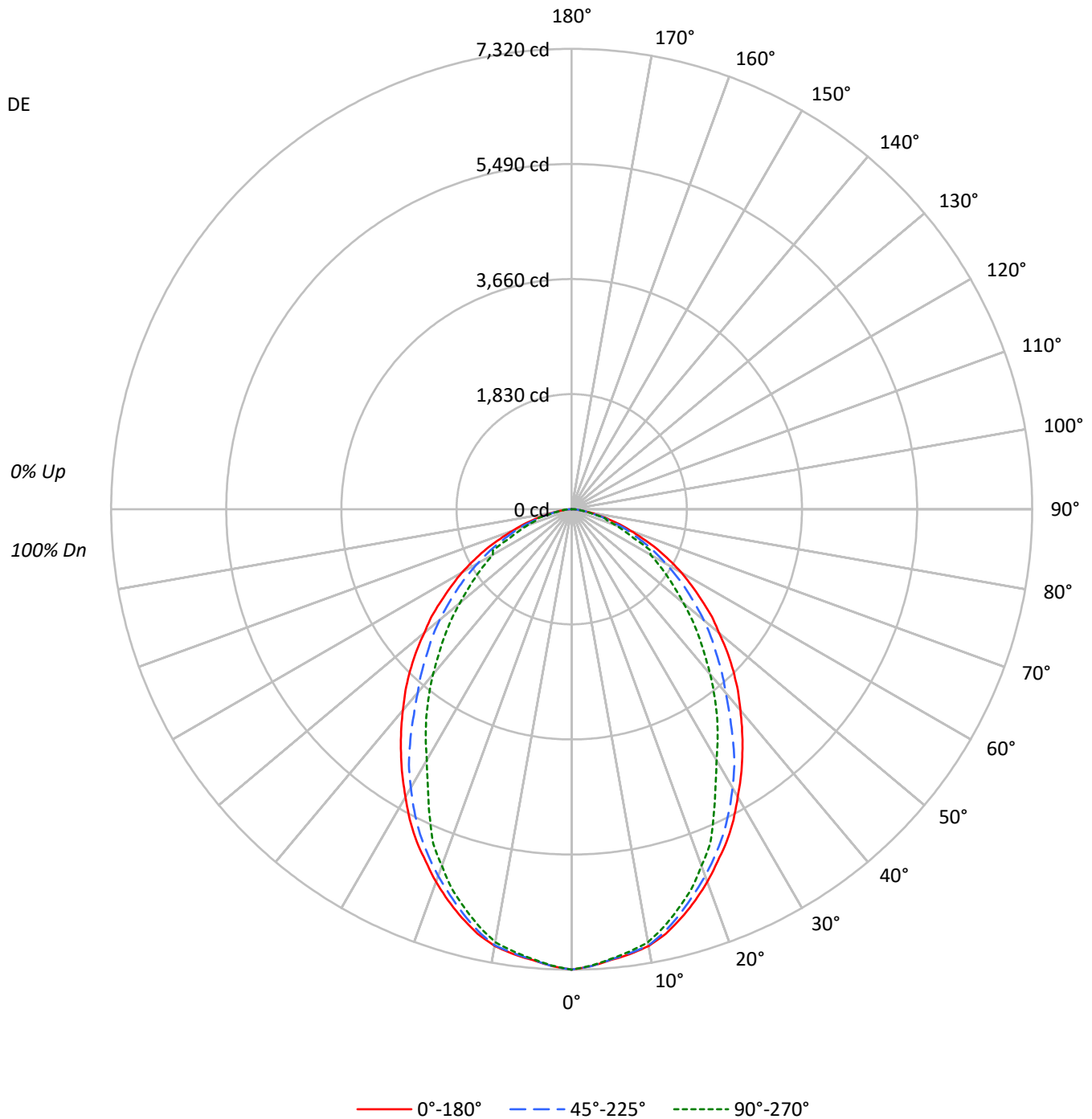
Lumens per Lamp: N/A  
Luminaire Lumens: 14370.0 lumens  
Efficiency: N/A  
Efficacy: 107.9 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 133.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
RCR																	
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	9849	9849	9849
5°	9715	9704	9692
10°	9631	9619	9550
15°	9371	9277	9147
20°	9027	8882	8639
25°	8656	8467	7940
30°	8204	7941	7152
35°	7770	7339	6616
40°	7328	6688	6020
45°	6908	6183	5443
50°	6395	5739	4854
55°	5916	5201	4347
60°	5420	4645	3894
65°	4769	4068	3449
70°	3928	3562	2930
75°	3123	2728	2859
80°	2098	1967	1836
85°	1306	1567	1829

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 6908 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	681.4	4.7
10°-20°	1870.0	13.0
20°-30°	2588.9	18.0
30°-40°	2760.5	19.2
40°-50°	2518.4	17.5
50°-60°	1973.0	13.7
60°-70°	1285.9	8.9
70°-80°	569.7	4.0
80°-90°	122.3	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°	5140.3	35.8
0°-40°	7900.8	55.0
0°-60°	12392.1	86.2
0°-90°	14370.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	14370.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	7320	7320	7320	7320	7320	
5°	7193	7184	7184	7176	7176	683
15°	6728	6728	6660	6592	6567	1891
25°	5830	5797	5704	5500	5348	2677
35°	4730	4697	4468	4130	4028	2957
45°	3630	3554	3250	2979	2860	2796
55°	2522	2446	2217	1955	1853	2262
65°	1498	1413	1278	1303	1083	1476
75°	601	558	525	499	550	644
85°	85	93	102	110	118	117
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	7319.9	7319.9	7319.9	7319.9	7319.9
2.5°	7269.1	7269.1	7269.1	7260.6	7260.6
5°	7193.0	7184.5	7184.5	7176.0	7176.0
7.5°	7133.7	7125.3	7116.8	7108.3	7091.4
10°	7049.1	7049.1	7040.6	6998.3	6989.9
12.5°	6913.7	6905.2	6871.4	6812.1	6795.2
15°	6727.5	6727.5	6659.8	6592.1	6566.7
17.5°	6524.4	6516.0	6431.3	6363.6	6329.8
20°	6304.4	6287.5	6202.9	6092.9	6033.6
22.5°	6059.0	6059.0	5957.5	5813.6	5754.4
25°	5830.5	5796.7	5703.6	5500.5	5348.2
27.5°	5568.2	5517.4	5415.9	5128.2	4950.4
30°	5280.5	5255.1	5111.2	4738.9	4603.5
32.5°	5009.7	4967.4	4815.0	4425.8	4315.8
35°	4730.4	4696.6	4468.1	4129.6	4028.1
37.5°	4451.2	4408.9	4121.1	3850.3	3723.4
40°	4171.9	4121.1	3808.0	3562.6	3427.2
42.5°	3909.6	3841.9	3537.2	3274.9	3122.6
45°	3630.3	3554.2	3249.5	2978.7	2860.3
47.5°	3351.1	3283.4	3004.1	2724.9	2589.5
50°	3054.9	2995.7	2741.8	2462.5	2318.7
52.5°	2809.5	2716.4	2471.0	2191.7	2073.3
55°	2521.8	2445.6	2217.1	1954.8	1853.2
57.5°	2259.4	2183.3	1971.7	1726.3	1641.7
60°	2014.0	1904.0	1726.3	1514.8	1447.1
62.5°	1743.2	1658.6	1506.3	1328.6	1413.2
65°	1497.8	1413.2	1277.8	1303.2	1083.2
67.5°	1227.0	1184.7	1066.2	947.8	913.9
70°	998.6	947.8	905.5	778.5	744.7
72.5°	795.5	744.7	685.4	617.7	592.4
75°	600.8	558.5	524.7	499.3	550.0
77.5°	414.7	397.7	372.3	347.0	338.5
80°	270.8	262.3	253.9	245.4	236.9
82.5°	160.8	160.8	160.8	160.8	160.8
85°	84.6	93.1	101.5	110.0	118.5
87.5°	50.8	50.8	59.2	67.7	76.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)