

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: P564033

Luminaire Tested: FSR-24-4-LD4-4STD-35-UNV-81-84-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P564033  
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-81-84-EDD  
Description: 2X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

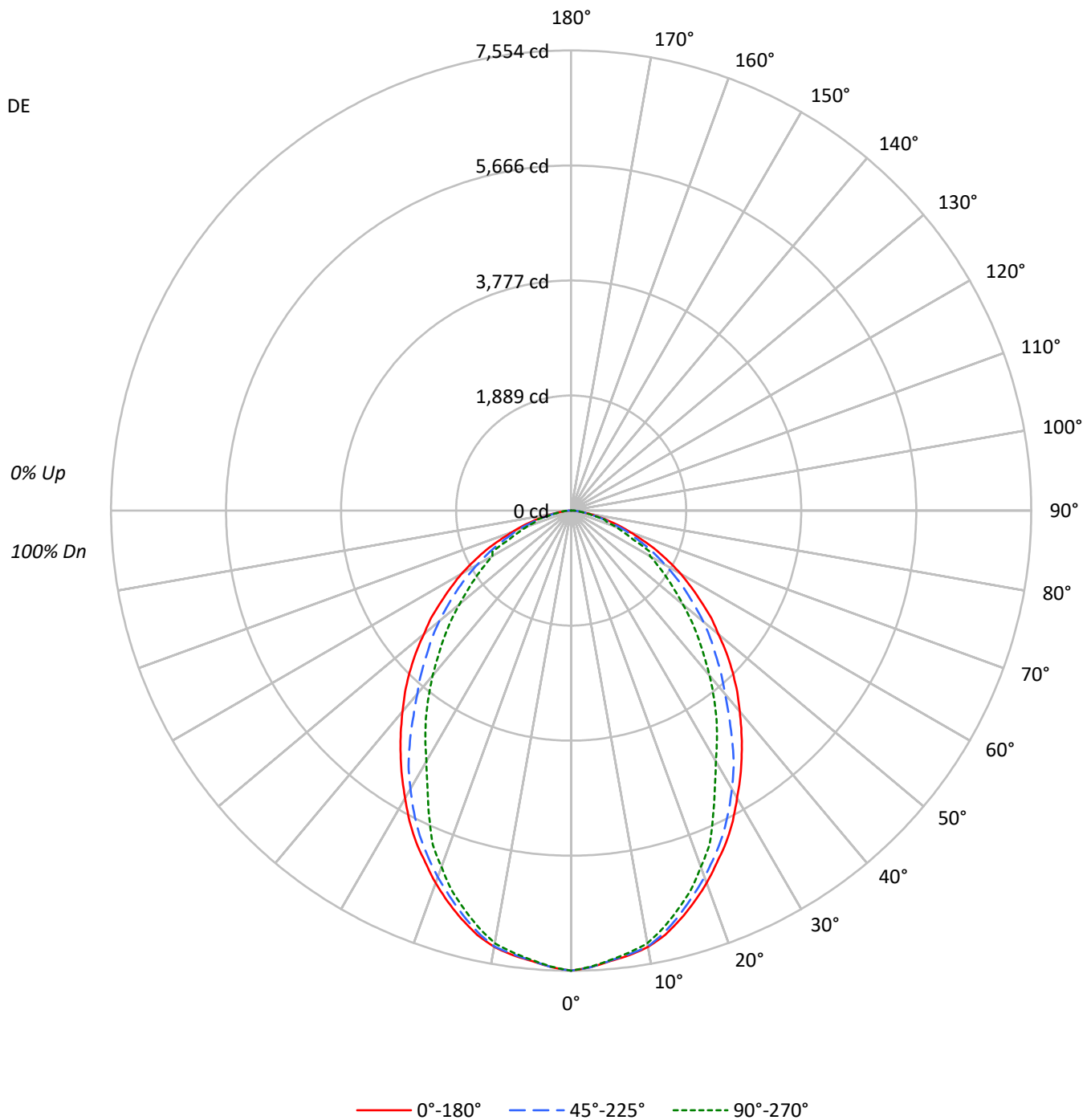
Lumens per Lamp: N/A  
Luminaire Lumens: 14829.0 lumens  
Efficiency: N/A  
Efficacy: 111.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 133.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	10163	10163	10163
5°	10025	10014	10002
10°	9938	9926	9855
15°	9670	9573	9439
20°	9315	9165	8915
25°	8932	8738	8193
30°	8466	8195	7381
35°	8018	7573	6828
40°	7562	6902	6212
45°	7128	6381	5616
50°	6599	5923	5008
55°	6104	5367	4486
60°	5593	4794	4018
65°	4921	4198	3559
70°	4054	3676	3023
75°	3223	2815	2951
80°	2165	2030	1894
85°	1348	1618	1888

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 7128 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	703.1	4.7
10°-20°	1929.7	13.0
20°-30°	2671.6	18.0
30°-40°	2848.7	19.2
40°-50°	2598.8	17.5
50°-60°	2036.0	13.7
60°-70°	1326.9	8.9
70°-80°	587.9	4.0
80°-90°	126.2	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°	5304.5	35.8
0°-40°	8153.1	55.0
0°-60°	12787.9	86.2
0°-90°	14829.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	14829.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	7554	7554	7554	7554	7554	
5°	7423	7414	7414	7405	7405	705
15°	6942	6942	6873	6803	6776	1952
25°	6017	5982	5886	5676	5519	2762
35°	4882	4847	4611	4262	4157	3052
45°	3746	3668	3353	3074	2952	2886
55°	2602	2524	2288	2017	1912	2334
65°	1546	1458	1319	1345	1118	1523
75°	620	576	541	515	568	664
85°	87	96	105	114	122	121
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	7553.7	7553.7	7553.7	7553.7	7553.7
2.5°	7501.3	7501.3	7501.3	7492.6	7492.6
5°	7422.7	7414.0	7414.0	7405.2	7405.2
7.5°	7361.6	7352.8	7344.1	7335.4	7317.9
10°	7274.3	7274.3	7265.5	7221.9	7213.1
12.5°	7134.5	7125.8	7090.9	7029.7	7012.3
15°	6942.4	6942.4	6872.6	6802.7	6776.5
17.5°	6732.8	6724.1	6636.8	6566.9	6532.0
20°	6505.8	6488.3	6401.0	6287.5	6226.3
22.5°	6252.5	6252.5	6147.7	5999.3	5938.2
25°	6016.8	5981.8	5885.8	5676.2	5519.0
27.5°	5746.0	5693.7	5588.9	5292.0	5108.6
30°	5449.1	5422.9	5274.5	4890.3	4750.5
32.5°	5169.7	5126.0	4968.8	4567.1	4453.6
35°	4881.5	4846.6	4610.8	4261.5	4156.7
37.5°	4593.3	4549.7	4252.8	3973.3	3842.3
40°	4305.2	4252.8	3929.7	3676.4	3536.7
42.5°	4034.5	3964.6	3650.2	3379.5	3222.3
45°	3746.3	3667.7	3353.3	3073.9	2951.6
47.5°	3458.1	3388.2	3100.1	2811.9	2672.2
50°	3152.5	3091.3	2829.4	2541.2	2392.7
52.5°	2899.2	2803.2	2549.9	2261.7	2139.5
55°	2602.3	2523.7	2287.9	2017.2	1912.4
57.5°	2331.6	2253.0	2034.7	1781.4	1694.1
60°	2078.4	1964.8	1781.4	1563.1	1493.3
62.5°	1798.9	1711.6	1554.4	1371.0	1458.3
65°	1545.7	1458.3	1318.6	1344.8	1117.8
67.5°	1266.2	1222.6	1100.3	978.1	943.1
70°	1030.4	978.1	934.4	803.4	768.5
72.5°	820.9	768.5	707.3	637.5	611.3
75°	620.0	576.4	541.4	515.2	567.6
77.5°	427.9	410.4	384.2	358.0	349.3
80°	279.4	270.7	262.0	253.2	244.5
82.5°	165.9	165.9	165.9	165.9	165.9
85°	87.3	96.1	104.8	113.5	122.3
87.5°	52.4	52.4	61.1	69.9	78.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)