

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: P563540

Luminaire Tested: FSR-24-4-LD4-3STD-40-UNV-82-86-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563540  
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-LD4-3STD-40-UNV-82-86-EDD-90  
Description: 2X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

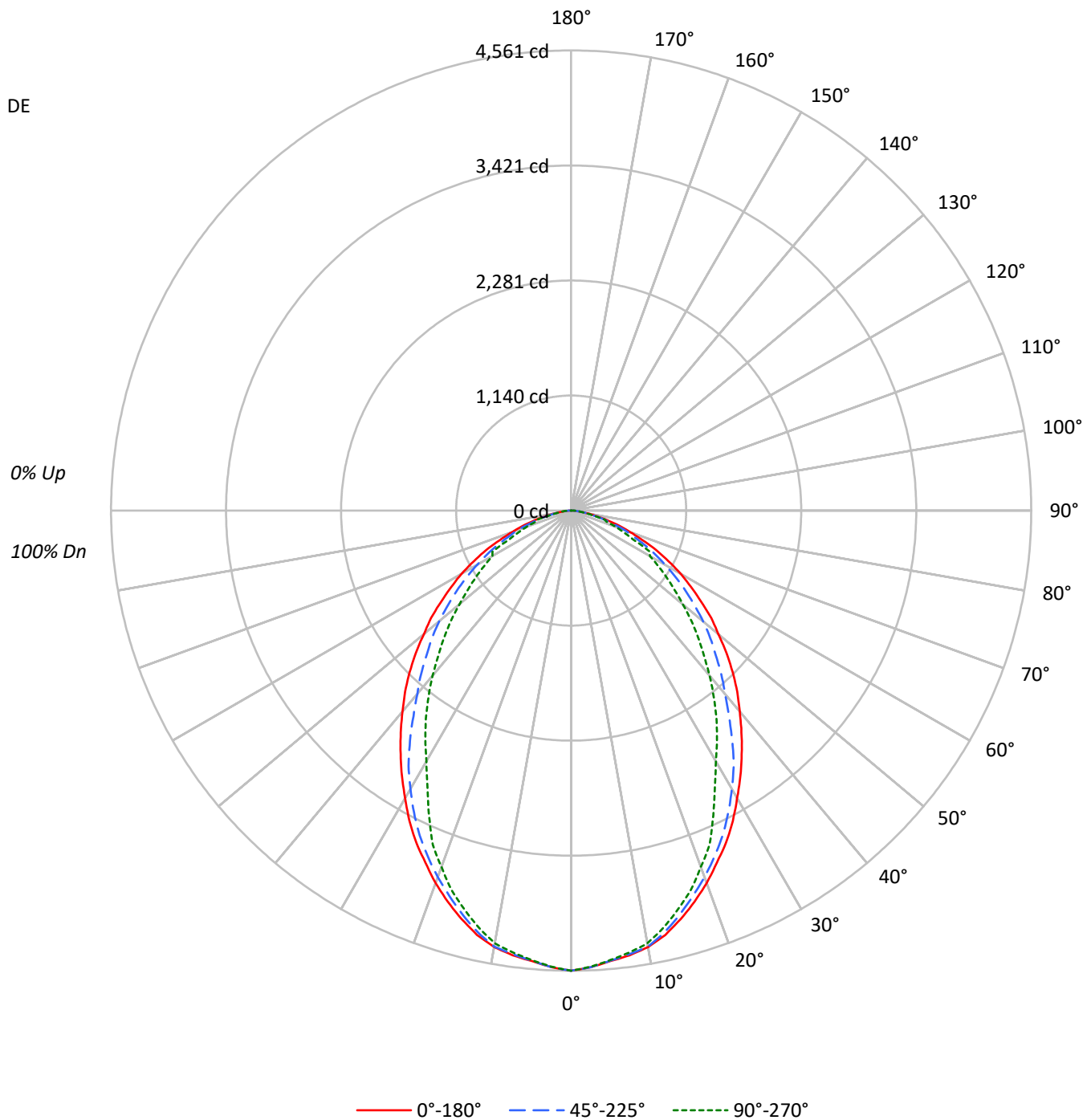
Lumens per Lamp: N/A  
Luminaire Lumens: 8954.0 lumens  
Efficiency: N/A  
Efficacy: 89.6 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 99.9  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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																												
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°	6137	6137	6137
5°	6054	6046	6039
10°	6001	5994	5951
15°	5839	5780	5700
20°	5625	5534	5383
25°	5393	5276	4947
30°	5112	4948	4457
35°	4841	4573	4123
40°	4566	4168	3751
45°	4304	3853	3391
50°	3984	3576	3024
55°	3686	3241	2709
60°	3377	2895	2426
65°	2971	2535	2149
70°	2448	2220	1825
75°	1946	1699	1782
80°	1307	1226	1144
85°	814	977	1139

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4304 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	424.6	4.7
10°-20°	1165.2	13.0
20°-30°	1613.1	18.0
30°-40°	1720.1	19.2
40°-50°	1569.2	17.5
50°-60°	1229.4	13.7
60°-70°	801.2	8.9
70°-80°	355.0	4.0
80°-90°	76.2	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°	3202.9	35.8
0°-40°	4923.0	55.0
0°-60°	7721.6	86.2
0°-90°	8954.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	8954.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4561	4561	4561	4561	4561	
5°	4482	4477	4477	4471	4471	425
15°	4192	4192	4150	4108	4092	1178
25°	3633	3612	3554	3427	3332	1668
35°	2948	2926	2784	2573	2510	1843
45°	2262	2215	2025	1856	1782	1742
55°	1571	1524	1382	1218	1155	1409
65°	933	881	796	812	675	920
75°	374	348	327	311	343	401
85°	53	58	63	68	74	73
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4561.0	4561.0	4561.0	4561.0	4561.0
2.5°	4529.4	4529.4	4529.4	4524.1	4524.1
5°	4482.0	4476.7	4476.7	4471.4	4471.4
7.5°	4445.0	4439.8	4434.5	4429.2	4418.7
10°	4392.3	4392.3	4387.0	4360.7	4355.4
12.5°	4307.9	4302.7	4281.6	4244.7	4234.1
15°	4191.9	4191.9	4149.8	4107.6	4091.8
17.5°	4065.4	4060.1	4007.4	3965.2	3944.1
20°	3928.3	3917.8	3865.0	3796.5	3759.6
22.5°	3775.4	3775.4	3712.1	3622.5	3585.6
25°	3633.0	3611.9	3553.9	3427.4	3332.5
27.5°	3469.6	3437.9	3374.6	3195.4	3084.6
30°	3290.3	3274.5	3184.8	2952.8	2868.5
32.5°	3121.5	3095.2	3000.3	2757.7	2689.2
35°	2947.5	2926.5	2784.1	2573.2	2509.9
37.5°	2773.5	2747.2	2567.9	2399.2	2320.1
40°	2599.5	2567.9	2372.8	2219.9	2135.5
42.5°	2436.1	2393.9	2204.1	2040.6	1945.7
45°	2262.1	2214.6	2024.8	1856.1	1782.2
47.5°	2088.1	2045.9	1871.9	1697.9	1613.5
50°	1903.5	1866.6	1708.4	1534.4	1444.8
52.5°	1750.6	1692.6	1539.7	1365.7	1291.9
55°	1571.3	1523.9	1381.5	1218.0	1154.8
57.5°	1407.9	1360.4	1228.6	1075.7	1022.9
60°	1254.9	1186.4	1075.7	943.8	901.7
62.5°	1086.2	1033.5	938.6	827.8	880.6
65°	933.3	880.6	796.2	812.0	674.9
67.5°	764.6	738.2	664.4	590.6	569.5
70°	622.2	590.6	564.2	485.1	464.0
72.5°	495.7	464.0	427.1	384.9	369.1
75°	374.4	348.0	326.9	311.1	342.7
77.5°	258.4	247.8	232.0	216.2	210.9
80°	168.7	163.5	158.2	152.9	147.6
82.5°	100.2	100.2	100.2	100.2	100.2
85°	52.7	58.0	63.3	68.5	73.8
87.5°	31.6	31.6	36.9	42.2	47.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)