

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: P563472

Luminaire Tested: FSR-24-4-LD4-3STD-35-UNV-82-84-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563472  
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-35-UNV-82-84-EDD-90  
Description: 2X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

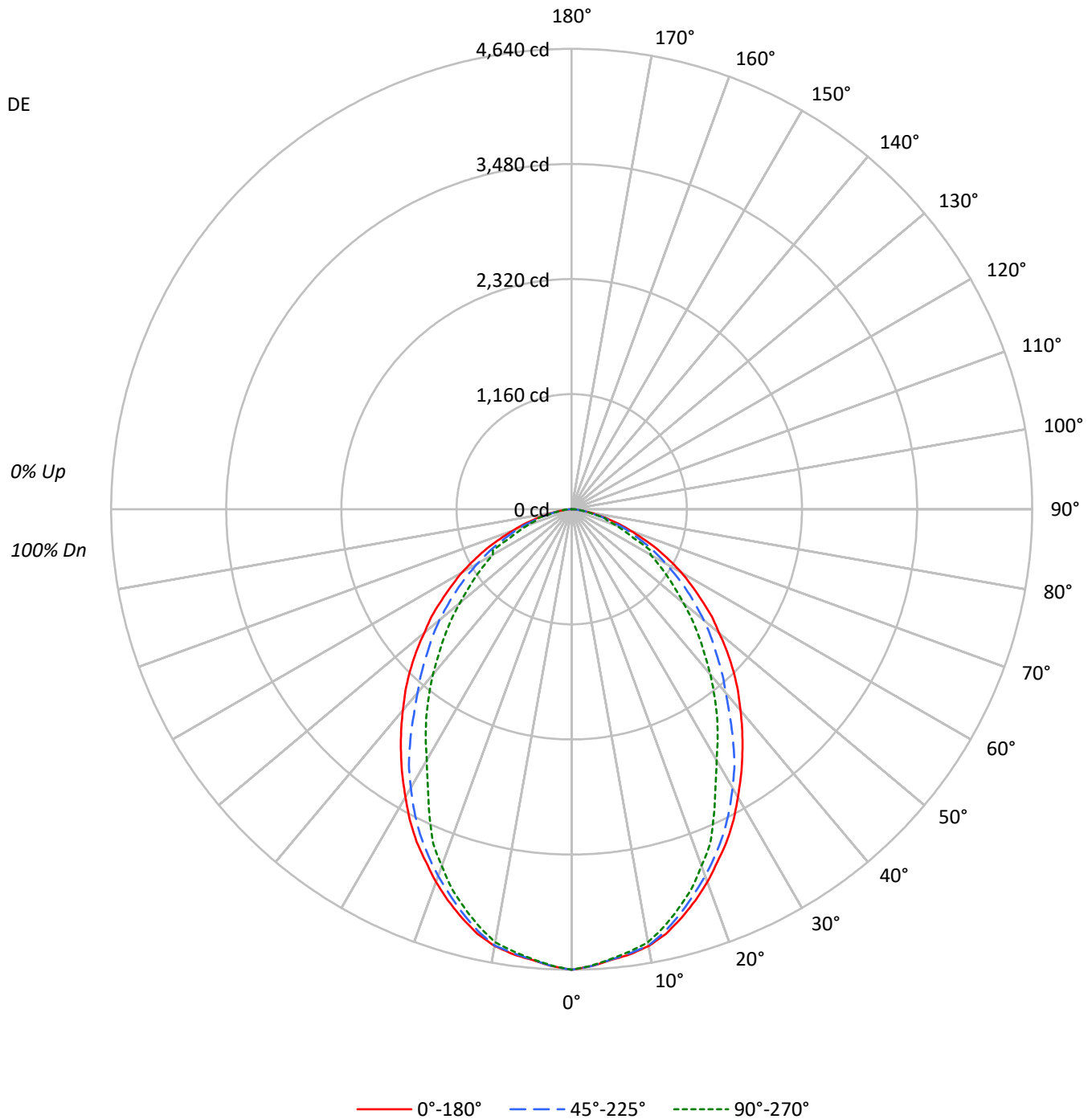
Lumens per Lamp: N/A  
Luminaire Lumens: 9110.0 lumens  
Efficiency: N/A  
Efficacy: 91.2 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 99.9  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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																			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°	6244	6244	6244
5°	6159	6152	6144
10°	6105	6098	6054
15°	5941	5881	5799
20°	5723	5631	5477
25°	5487	5368	5033
30°	5201	5034	4534
35°	4926	4653	4194
40°	4645	4240	3816
45°	4379	3920	3450
50°	4054	3638	3077
55°	3750	3297	2756
60°	3436	2945	2469
65°	3023	2579	2186
70°	2490	2258	1857
75°	1980	1729	1813
80°	1330	1247	1164
85°	827	994	1159

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4379 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	432.0	4.7
10°-20°	1185.5	13.0
20°-30°	1641.2	18.0
30°-40°	1750.0	19.2
40°-50°	1596.6	17.5
50°-60°	1250.8	13.7
60°-70°	815.2	8.9
70°-80°	361.2	4.0
80°-90°	77.5	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°	3258.7	35.8
0°-40°	5008.8	55.0
0°-60°	7856.1	86.2
0°-90°	9110.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	9110.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4640	4640	4640	4640	4640	
5°	4560	4555	4555	4549	4549	433
15°	4265	4265	4222	4179	4163	1199
25°	3696	3675	3616	3487	3390	1697
35°	2999	2977	2833	2618	2554	1875
45°	2302	2253	2060	1888	1813	1773
55°	1599	1550	1406	1239	1175	1434
65°	950	896	810	826	687	936
75°	381	354	333	316	349	408
85°	54	59	64	70	75	74
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4640.5	4640.5	4640.5	4640.5	4640.5
2.5°	4608.3	4608.3	4608.3	4603.0	4603.0
5°	4560.0	4554.7	4554.7	4549.3	4549.3
7.5°	4522.5	4517.1	4511.8	4506.4	4495.7
10°	4468.8	4468.8	4463.5	4436.7	4431.3
12.5°	4383.0	4377.6	4356.2	4318.6	4307.9
15°	4265.0	4265.0	4222.1	4179.1	4163.0
17.5°	4136.2	4130.9	4077.2	4034.3	4012.8
20°	3996.7	3986.0	3932.4	3862.6	3825.1
22.5°	3841.2	3841.2	3776.8	3685.6	3648.0
25°	3696.3	3674.9	3615.8	3487.1	3390.5
27.5°	3530.0	3497.8	3433.4	3251.0	3138.4
30°	3347.6	3331.5	3240.3	3004.3	2918.4
32.5°	3175.9	3149.1	3052.5	2805.8	2736.0
35°	2998.9	2977.4	2832.6	2618.0	2553.6
37.5°	2821.9	2795.0	2612.6	2441.0	2360.5
40°	2644.8	2612.6	2414.1	2258.6	2172.7
42.5°	2478.5	2435.6	2242.5	2076.2	1979.6
45°	2301.5	2253.2	2060.1	1888.4	1813.3
47.5°	2124.4	2081.5	1904.5	1727.5	1641.6
50°	1936.7	1899.1	1738.2	1561.1	1469.9
52.5°	1781.1	1722.1	1566.5	1389.5	1314.4
55°	1598.7	1550.4	1405.6	1239.3	1174.9
57.5°	1432.4	1384.1	1250.0	1094.4	1040.8
60°	1276.8	1207.1	1094.4	960.3	917.4
62.5°	1105.1	1051.5	954.9	842.3	895.9
65°	949.6	895.9	810.1	826.2	686.7
67.5°	777.9	751.1	676.0	600.9	579.4
70°	633.0	600.9	574.0	493.6	472.1
72.5°	504.3	472.1	434.5	391.6	375.5
75°	380.9	354.1	332.6	316.5	348.7
77.5°	262.9	252.1	236.0	220.0	214.6
80°	171.7	166.3	160.9	155.6	150.2
82.5°	101.9	101.9	101.9	101.9	101.9
85°	53.6	59.0	64.4	69.7	75.1
87.5°	32.2	32.2	37.6	42.9	48.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)