

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: P563520

Luminaire Tested: FSR-24-4-LD4-3STD-40-UNV-81-84-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563520  
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-81-84-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

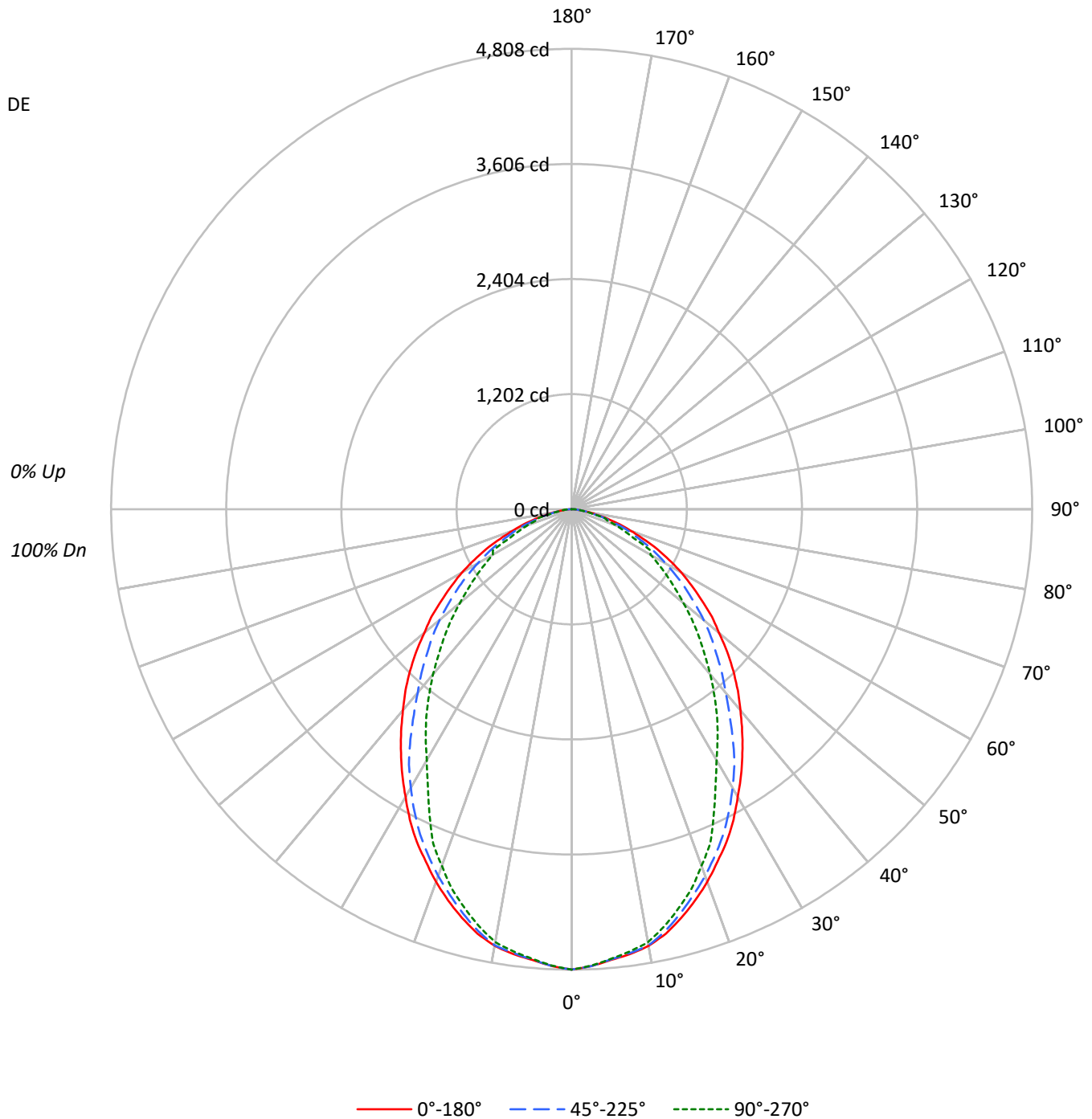
Lumens per Lamp: N/A  
Luminaire Lumens: 9438.0 lumens  
Efficiency: N/A  
Efficacy: 94.5 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 99.9  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	6469	6469	6469
5°	6381	6373	6366
10°	6325	6318	6272
15°	6155	6093	6008
20°	5929	5833	5674
25°	5685	5561	5215
30°	5388	5216	4697
35°	5103	4820	4346
40°	4813	4393	3954
45°	4537	4061	3575
50°	4200	3769	3188
55°	3885	3416	2855
60°	3560	3051	2558
65°	3132	2672	2265
70°	2580	2340	1924
75°	2051	1791	1878
80°	1378	1292	1206
85°	858	1030	1201

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4537 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	447.5	4.7
10°-20°	1228.2	13.0
20°-30°	1700.3	18.0
30°-40°	1813.1	19.2
40°-50°	1654.0	17.5
50°-60°	1295.8	13.7
60°-70°	844.5	8.9
70°-80°	374.2	4.0
80°-90°	80.3	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°	3376.0	35.8
0°-40°	5189.1	55.0
0°-60°	8139.0	86.2
0°-90°	9438.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	9438.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4808	4808	4808	4808	4808	
5°	4724	4719	4719	4713	4713	448
15°	4418	4418	4374	4330	4313	1242
25°	3829	3807	3746	3613	3513	1758
35°	3107	3085	2935	2712	2646	1942
45°	2384	2334	2134	1956	1879	1837
55°	1656	1606	1456	1284	1217	1486
65°	984	928	839	856	711	969
75°	395	367	345	328	361	423
85°	56	61	67	72	78	77
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4807.6	4807.6	4807.6	4807.6	4807.6
2.5°	4774.2	4774.2	4774.2	4768.7	4768.7
5°	4724.2	4718.7	4718.7	4713.1	4713.1
7.5°	4685.3	4679.8	4674.2	4668.6	4657.5
10°	4629.7	4629.7	4624.2	4596.4	4590.8
12.5°	4540.8	4535.3	4513.0	4474.1	4463.0
15°	4418.5	4418.5	4374.1	4329.6	4312.9
17.5°	4285.1	4279.6	4224.0	4179.5	4157.3
20°	4140.6	4129.5	4073.9	4001.7	3962.8
22.5°	3979.5	3979.5	3912.8	3818.3	3779.4
25°	3829.4	3807.2	3746.0	3612.6	3512.6
27.5°	3657.1	3623.8	3557.1	3368.1	3251.4
30°	3468.1	3451.5	3357.0	3112.4	3023.5
32.5°	3290.3	3262.5	3162.5	2906.8	2834.5
35°	3106.9	3084.6	2934.6	2712.3	2645.6
37.5°	2923.5	2895.7	2706.7	2528.8	2445.5
40°	2740.0	2706.7	2501.1	2339.9	2251.0
42.5°	2567.8	2523.3	2323.2	2150.9	2050.9
45°	2384.3	2334.3	2134.2	1956.4	1878.6
47.5°	2200.9	2156.5	1973.1	1789.6	1700.7
50°	2006.4	1967.5	1800.8	1617.4	1522.9
52.5°	1845.2	1784.1	1622.9	1439.5	1361.7
55°	1656.3	1606.2	1456.2	1283.9	1217.2
57.5°	1484.0	1433.9	1295.0	1133.8	1078.2
60°	1322.8	1250.5	1133.8	994.9	950.4
62.5°	1144.9	1089.4	989.3	872.6	928.2
65°	983.7	928.2	839.2	855.9	711.4
67.5°	805.9	778.1	700.3	622.5	600.3
70°	655.8	622.5	594.7	511.3	489.1
72.5°	522.4	489.1	450.2	405.7	389.1
75°	394.6	366.8	344.6	327.9	361.3
77.5°	272.3	261.2	244.5	227.9	222.3
80°	177.9	172.3	166.7	161.2	155.6
82.5°	105.6	105.6	105.6	105.6	105.6
85°	55.6	61.1	66.7	72.3	77.8
87.5°	33.3	33.3	38.9	44.5	50.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)