

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: P563328

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

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563328  
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-LD4-3LO-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**

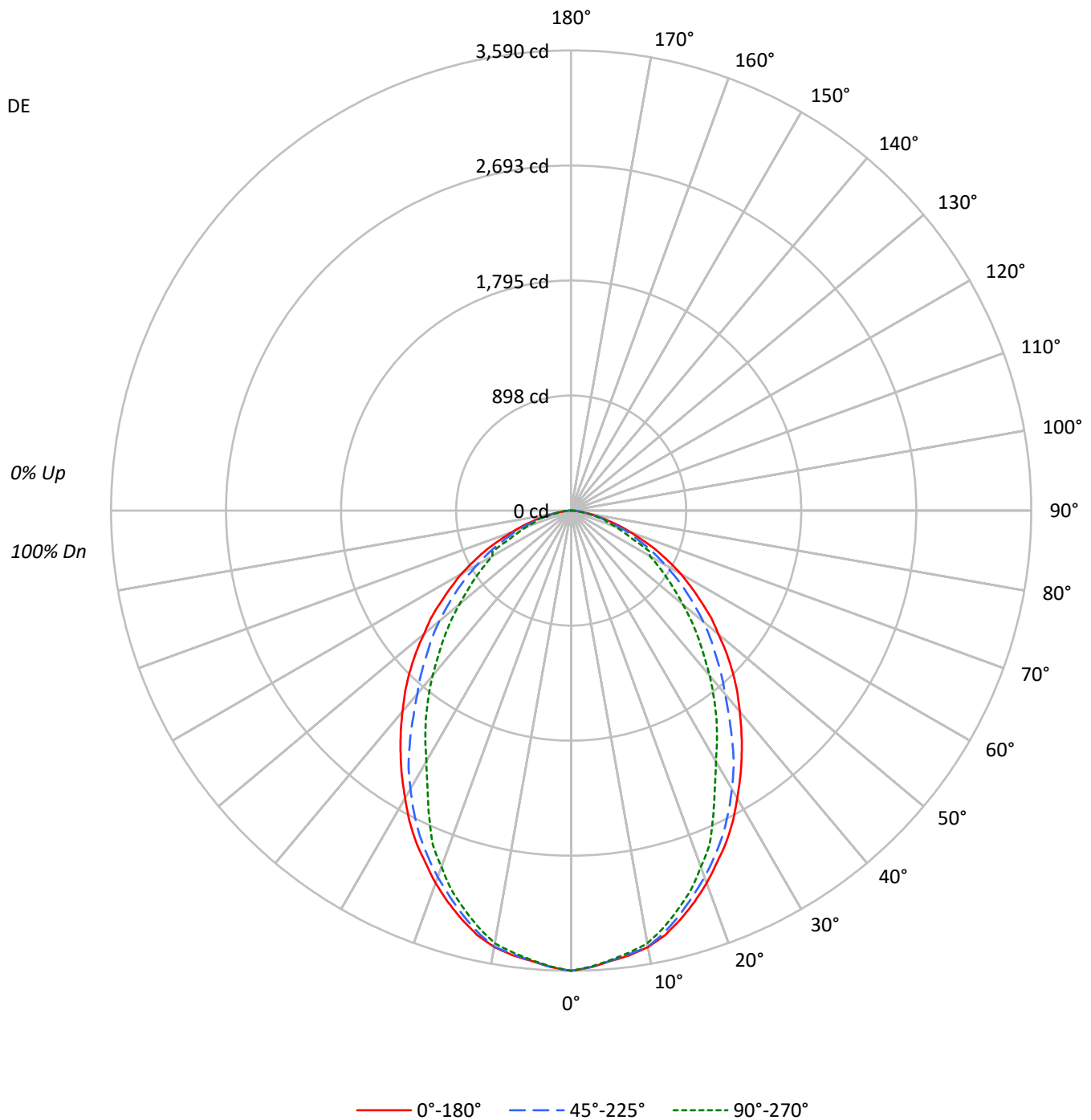
Lumens per Lamp: N/A  
Luminaire Lumens: 7048.0 lumens  
Efficiency: N/A  
Efficacy: 100.4 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 70.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	4831	4831	4831
5°	4765	4759	4754
10°	4724	4718	4684
15°	4596	4550	4486
20°	4427	4356	4237
25°	4245	4153	3894
30°	4024	3895	3508
35°	3811	3599	3245
40°	3594	3280	2952
45°	3388	3033	2669
50°	3136	2815	2380
55°	2901	2551	2132
60°	2658	2278	1910
65°	2339	1995	1691
70°	1927	1747	1437
75°	1532	1338	1403
80°	1029	965	900
85°	641	769	897

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3388 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	334.2	4.7
10°-20°	917.2	13.0
20°-30°	1269.8	18.0
30°-40°	1353.9	19.2
40°-50°	1235.2	17.5
50°-60°	967.7	13.7
60°-70°	630.7	8.9
70°-80°	279.4	4.0
80°-90°	60.0	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°	2521.1	35.8
0°-40°	3875.1	55.0
0°-60°	6077.9	86.2
0°-90°	7048.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7048.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3590	3590	3590	3590	3590	
5°	3528	3524	3524	3520	3520	335
15°	3300	3300	3266	3233	3221	928
25°	2860	2843	2797	2698	2623	1313
35°	2320	2304	2191	2025	1976	1450
45°	1781	1743	1594	1461	1403	1372
55°	1237	1200	1087	959	909	1109
65°	735	693	627	639	531	724
75°	295	274	257	245	270	316
85°	42	46	50	54	58	58
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3590.2	3590.2	3590.2	3590.2	3590.2
2.5°	3565.3	3565.3	3565.3	3561.1	3561.1
5°	3527.9	3523.7	3523.7	3519.6	3519.6
7.5°	3498.8	3494.7	3490.5	3486.4	3478.1
10°	3457.3	3457.3	3453.2	3432.4	3428.3
12.5°	3390.9	3386.8	3370.2	3341.1	3332.8
15°	3299.6	3299.6	3266.4	3233.2	3220.8
17.5°	3200.0	3195.9	3154.4	3121.2	3104.6
20°	3092.1	3083.8	3042.3	2988.3	2959.3
22.5°	2971.7	2971.7	2921.9	2851.4	2822.3
25°	2859.7	2843.1	2797.4	2697.8	2623.1
27.5°	2731.0	2706.1	2656.3	2515.2	2428.0
30°	2589.9	2577.4	2506.9	2324.3	2257.9
32.5°	2457.1	2436.3	2361.6	2170.7	2116.7
35°	2320.1	2303.5	2191.4	2025.4	1975.6
37.5°	2183.1	2162.4	2021.3	1888.5	1826.2
40°	2046.2	2021.3	1867.7	1747.3	1680.9
42.5°	1917.5	1884.3	1734.9	1606.2	1531.5
45°	1780.6	1743.2	1593.8	1461.0	1402.9
47.5°	1643.6	1610.4	1473.4	1336.5	1270.0
50°	1498.3	1469.3	1344.8	1207.8	1137.2
52.5°	1378.0	1332.3	1211.9	1075.0	1016.9
55°	1236.8	1199.5	1087.4	958.8	909.0
57.5°	1108.2	1070.8	967.1	846.7	805.2
60°	987.8	933.9	846.7	742.9	709.7
62.5°	855.0	813.5	738.8	651.6	693.1
65°	734.6	693.1	626.7	639.2	531.3
67.5°	601.8	581.1	523.0	464.9	448.3
70°	489.8	464.9	444.1	381.8	365.2
72.5°	390.1	365.2	336.2	303.0	290.5
75°	294.7	273.9	257.3	244.9	269.8
77.5°	203.4	195.1	182.6	170.2	166.0
80°	132.8	128.7	124.5	120.4	116.2
82.5°	78.9	78.9	78.9	78.9	78.9
85°	41.5	45.7	49.8	54.0	58.1
87.5°	24.9	24.9	29.1	33.2	37.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)