

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: P562668

Luminaire Tested: FSR-24-4-LD4-2HI-50-UNV-93-96-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562668  
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-LD4-2HI-50-UNV-93-96-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR TEMPER  
GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

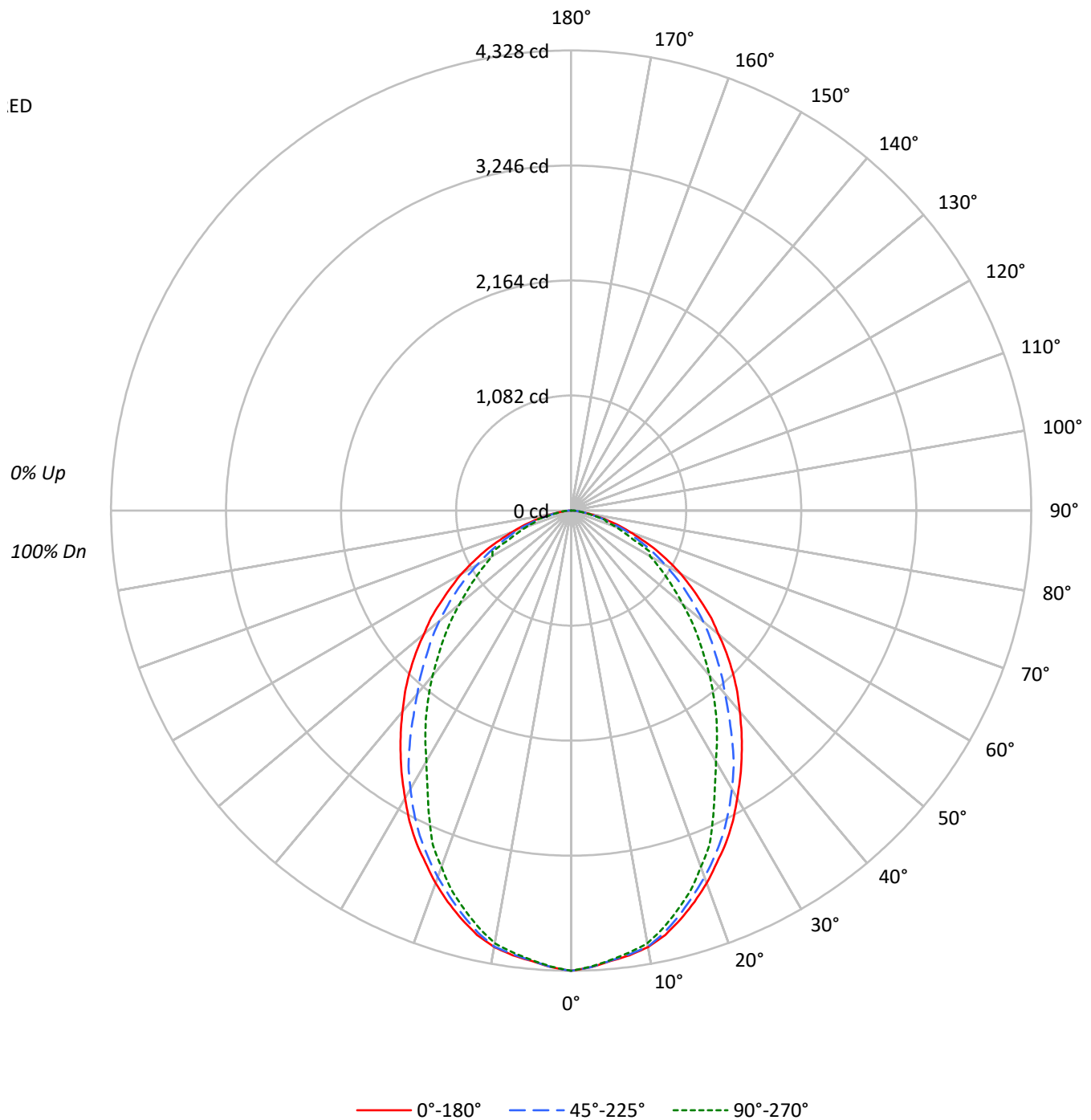
Lumens per Lamp: N/A  
Luminaire Lumens: 8497.0 lumens  
Efficiency: N/A  
Efficacy: 98.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 86.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	5824	5824	5824
5°	5744	5738	5731
10°	5695	5688	5647
15°	5541	5485	5409
20°	5338	5252	5108
25°	5118	5007	4695
30°	4851	4696	4229
35°	4594	4340	3912
40°	4333	3955	3559
45°	4085	3656	3218
50°	3781	3394	2870
55°	3498	3075	2571
60°	3205	2747	2302
65°	2820	2406	2039
70°	2323	2106	1732
75°	1847	1613	1691
80°	1241	1163	1086
85°	772	926	1082

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4085 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	402.9	4.7
10°-20°	1105.7	13.0
20°-30°	1530.8	18.0
30°-40°	1632.3	19.2
40°-50°	1489.1	17.5
50°-60°	1166.6	13.7
60°-70°	760.3	8.9
70°-80°	336.9	4.0
80°-90°	72.3	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°	3039.4	35.8
0°-40°	4671.7	55.0
0°-60°	7327.5	86.2
0°-90°	8497.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	8497.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4328	4328	4328	4328	4328	
5°	4253	4248	4248	4243	4243	404
15°	3978	3978	3938	3898	3883	1118
25°	3448	3428	3372	3252	3162	1583
35°	2797	2777	2642	2442	2382	1749
45°	2147	2102	1921	1761	1691	1654
55°	1491	1446	1311	1156	1096	1337
65°	886	836	756	771	640	873
75°	355	330	310	295	325	381
85°	50	55	60	65	70	69
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4328.3	4328.3	4328.3	4328.3	4328.3
2.5°	4298.2	4298.2	4298.2	4293.2	4293.2
5°	4253.2	4248.2	4248.2	4243.2	4243.2
7.5°	4218.2	4213.2	4208.2	4203.2	4193.2
10°	4168.1	4168.1	4163.1	4138.1	4133.1
12.5°	4088.1	4083.1	4063.1	4028.0	4018.0
15°	3978.0	3978.0	3938.0	3897.9	3882.9
17.5°	3857.9	3852.9	3802.9	3762.8	3742.8
20°	3727.8	3717.8	3667.8	3602.7	3567.7
22.5°	3582.7	3582.7	3522.7	3437.6	3402.6
25°	3447.6	3427.6	3372.5	3252.4	3162.4
27.5°	3292.5	3262.5	3202.4	3032.3	2927.2
30°	3122.4	3107.3	3022.3	2802.1	2722.0
32.5°	2962.2	2937.2	2847.1	2617.0	2551.9
35°	2797.1	2777.1	2642.0	2441.8	2381.8
37.5°	2632.0	2607.0	2436.8	2276.7	2201.7
40°	2466.9	2436.8	2251.7	2106.6	2026.5
42.5°	2311.7	2271.7	2091.6	1936.5	1846.4
45°	2146.6	2101.6	1921.4	1761.3	1691.3
47.5°	1981.5	1941.5	1776.3	1611.2	1531.2
50°	1806.4	1771.3	1621.2	1456.1	1371.0
52.5°	1661.3	1606.2	1461.1	1296.0	1225.9
55°	1491.1	1446.1	1311.0	1155.9	1095.8
57.5°	1336.0	1291.0	1165.9	1020.8	970.7
60°	1190.9	1125.8	1020.8	895.7	855.6
62.5°	1030.8	980.7	890.7	785.6	835.6
65°	885.7	835.6	755.6	770.6	640.5
67.5°	725.5	700.5	630.5	560.4	540.4
70°	590.4	560.4	535.4	460.3	440.3
72.5°	470.4	440.3	405.3	365.3	350.3
75°	355.3	330.2	310.2	295.2	325.2
77.5°	245.2	235.2	220.2	205.2	200.2
80°	160.1	155.1	150.1	145.1	140.1
82.5°	95.1	95.1	95.1	95.1	95.1
85°	50.0	55.0	60.0	65.0	70.1
87.5°	30.0	30.0	35.0	40.0	45.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)