

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: P562535

Luminaire Tested: FSR-24-4-LD4-2HI-35-UNV-93-87-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562535  
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-35-UNV-93-87-EDD  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

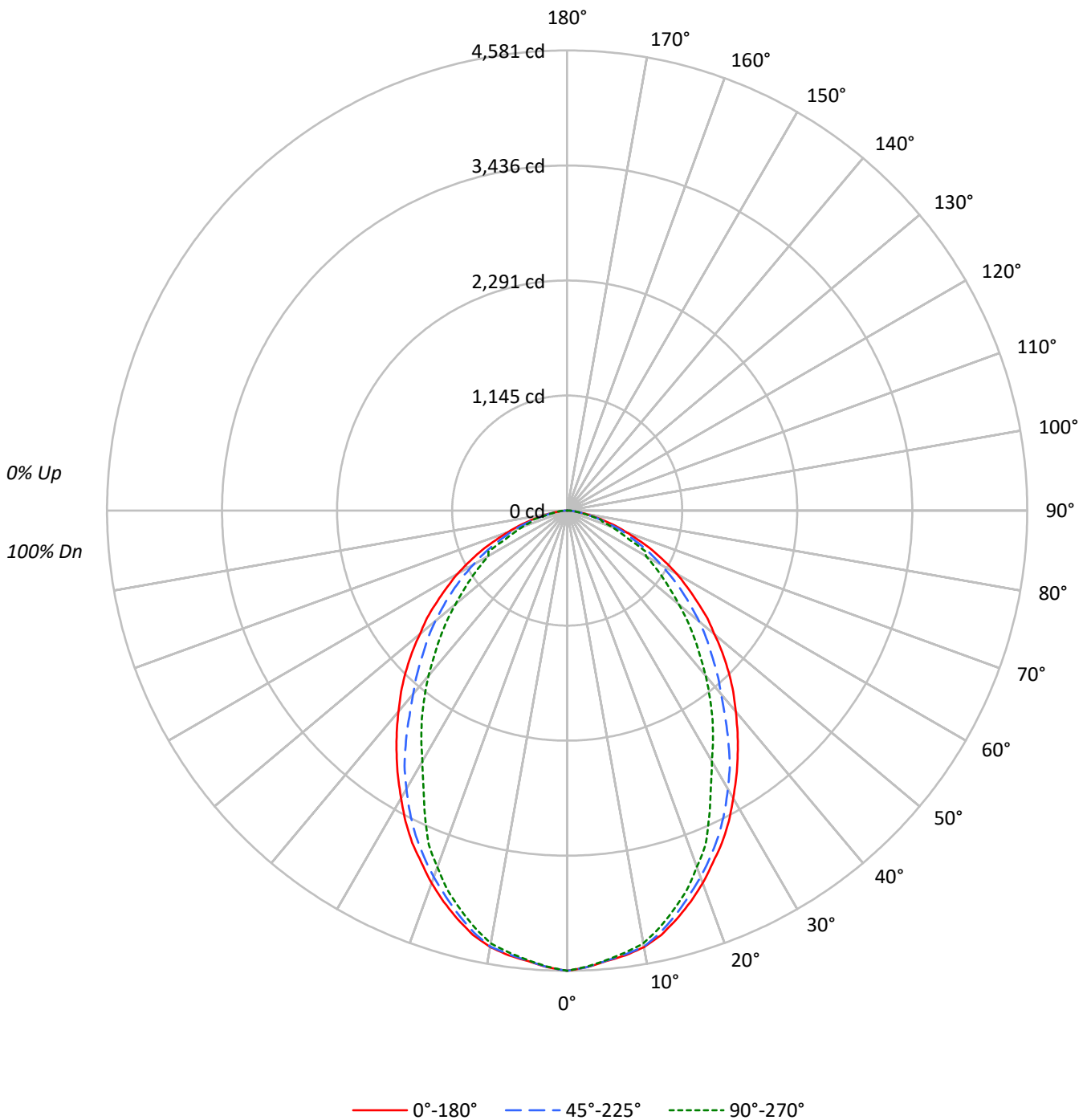
Lumens per Lamp: N/A  
Luminaire Lumens: 8994.0 lumens  
Efficiency: N/A  
Efficacy: 104.1 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 86.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	6164	6164	6164
5°	6081	6073	6066
10°	6028	6020	5977
15°	5865	5806	5725
20°	5650	5559	5407
25°	5418	5300	4969
30°	5135	4970	4476
35°	4863	4593	4141
40°	4586	4186	3768
45°	4324	3870	3406
50°	4002	3592	3038
55°	3702	3255	2721
60°	3392	2908	2437
65°	2985	2546	2158
70°	2459	2229	1834
75°	1955	1707	1790
80°	1313	1231	1149
85°	818	982	1145

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4324 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	426.5	4.7
10°-20°	1170.4	13.0
20°-30°	1620.4	18.0
30°-40°	1727.8	19.2
40°-50°	1576.2	17.5
50°-60°	1234.9	13.7
60°-70°	804.8	8.9
70°-80°	356.6	4.0
80°-90°	76.6	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°	3217.2	35.8
0°-40°	4945.0	55.0
0°-60°	7756.1	86.2
0°-90°	8994.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	8994.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4581	4581	4581	4581	4581	
5°	4502	4497	4497	4491	4491	427
15°	4211	4211	4168	4126	4110	1184
25°	3649	3628	3570	3443	3347	1675
35°	2961	2940	2796	2585	2521	1851
45°	2272	2224	2034	1864	1790	1750
55°	1578	1531	1388	1224	1160	1416
65°	938	884	800	816	678	924
75°	376	350	328	312	344	403
85°	53	58	64	69	74	73
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4581.4	4581.4	4581.4	4581.4	4581.4
2.5°	4549.6	4549.6	4549.6	4544.3	4544.3
5°	4502.0	4496.7	4496.7	4491.4	4491.4
7.5°	4464.9	4459.6	4454.3	4449.0	4438.4
10°	4411.9	4411.9	4406.6	4380.2	4374.9
12.5°	4327.2	4321.9	4300.7	4263.6	4253.0
15°	4210.7	4210.7	4168.3	4125.9	4110.0
17.5°	4083.6	4078.3	4025.3	3982.9	3961.7
20°	3945.9	3935.3	3882.3	3813.4	3776.4
22.5°	3792.3	3792.3	3728.7	3638.7	3601.6
25°	3649.2	3628.1	3569.8	3442.7	3347.4
27.5°	3485.1	3453.3	3389.7	3209.6	3098.4
30°	3305.0	3289.1	3199.1	2966.0	2881.3
32.5°	3135.5	3109.0	3013.7	2770.0	2701.2
35°	2960.7	2939.5	2796.5	2584.7	2521.1
37.5°	2785.9	2759.4	2579.4	2409.9	2330.4
40°	2611.1	2579.4	2383.4	2229.8	2145.1
42.5°	2447.0	2404.6	2213.9	2049.7	1954.4
45°	2272.2	2224.5	2033.8	1864.3	1790.2
47.5°	2097.4	2055.0	1880.2	1705.5	1620.7
50°	1912.0	1874.9	1716.0	1541.3	1451.2
52.5°	1758.4	1700.2	1546.6	1371.8	1297.6
55°	1578.3	1530.7	1387.7	1223.5	1159.9
57.5°	1414.2	1366.5	1234.1	1080.5	1027.5
60°	1260.6	1191.7	1080.5	948.1	905.7
62.5°	1091.1	1038.1	942.8	831.5	884.5
65°	937.5	884.5	799.8	815.7	677.9
67.5°	768.0	741.5	667.4	593.2	572.0
70°	625.0	593.2	566.7	487.3	466.1
72.5°	497.9	466.1	429.0	386.6	370.8
75°	376.0	349.6	328.4	312.5	344.3
77.5°	259.5	248.9	233.0	217.2	211.9
80°	169.5	164.2	158.9	153.6	148.3
82.5°	100.6	100.6	100.6	100.6	100.6
85°	53.0	58.3	63.6	68.9	74.2
87.5°	31.8	31.8	37.1	42.4	47.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)