

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: P562988

Luminaire Tested: FSR-24-4-LD4-2STD-40-UNV-93-96-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562988  
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-LD4-2STD-40-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 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

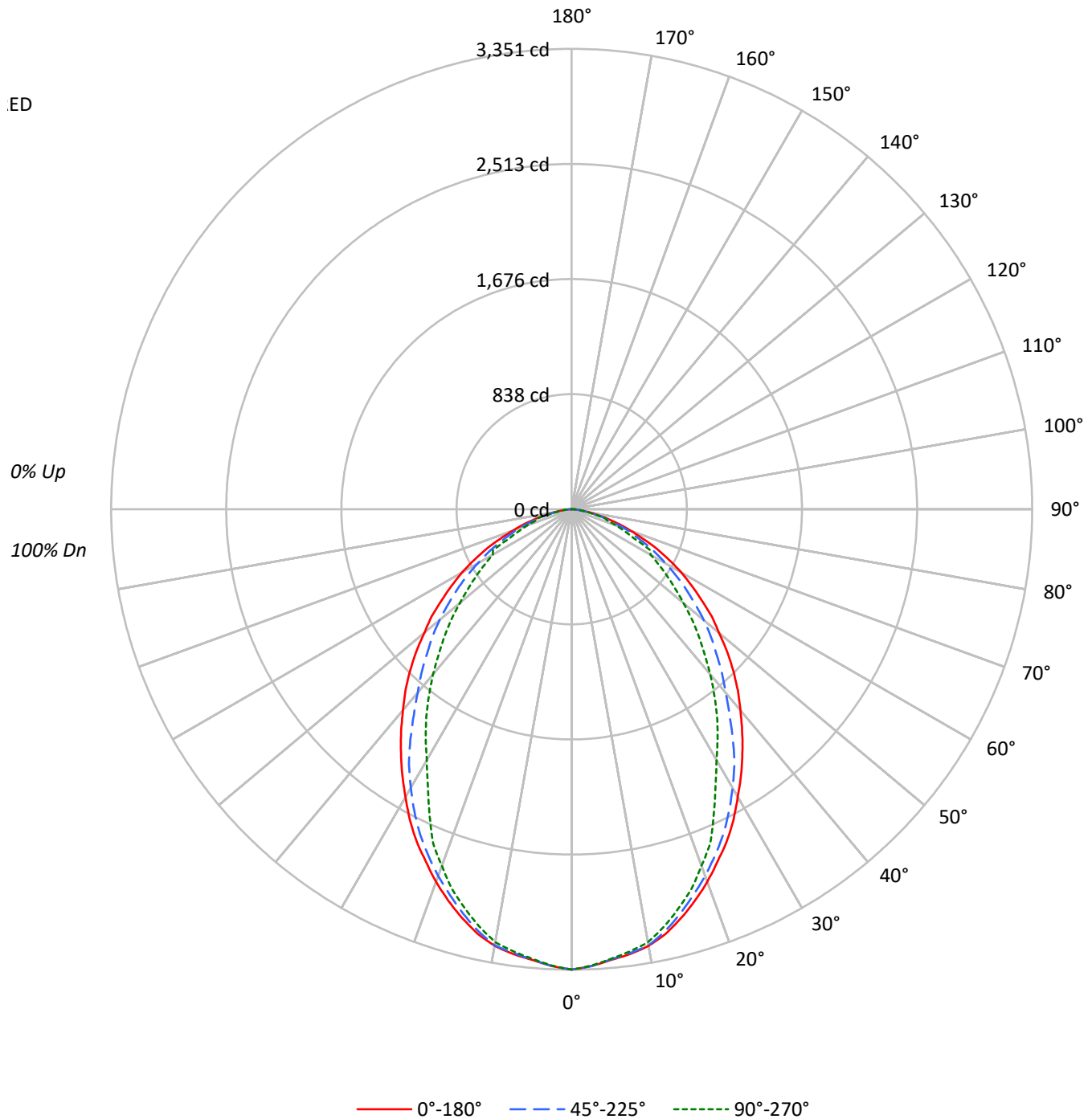
Lumens per Lamp: N/A  
Luminaire Lumens: 6578.0 lumens  
Efficiency: N/A  
Efficacy: 98.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 66.6  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	4508	4508	4508
5°	4447	4442	4437
10°	4409	4403	4372
15°	4290	4247	4187
20°	4132	4066	3955
25°	3962	3876	3635
30°	3755	3635	3274
35°	3557	3359	3029
40°	3354	3062	2755
45°	3162	2830	2491
50°	2927	2627	2222
55°	2708	2381	1990
60°	2481	2126	1783
65°	2183	1862	1578
70°	1798	1631	1341
75°	1430	1249	1309
80°	961	900	841
85°	597	718	837

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3162 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	311.9	4.7
10°-20°	856.0	13.0
20°-30°	1185.1	18.0
30°-40°	1263.6	19.2
40°-50°	1152.8	17.5
50°-60°	903.1	13.7
60°-70°	588.6	8.9
70°-80°	260.8	4.0
80°-90°	56.0	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°	2353.0	35.8
0°-40°	3616.7	55.0
0°-60°	5672.6	86.2
0°-90°	6578.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6578.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3351	3351	3351	3351	3351	
5°	3293	3289	3289	3285	3285	313
15°	3080	3080	3049	3018	3006	866
25°	2669	2654	2611	2518	2448	1225
35°	2165	2150	2045	1890	1844	1354
45°	1662	1627	1488	1364	1309	1280
55°	1154	1120	1015	895	848	1035
65°	686	647	585	596	496	676
75°	275	256	240	228	252	295
85°	39	43	46	50	54	54
90°	0	0	0	0	0	

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3350.7	3350.7	3350.7	3350.7	3350.7
2.5°	3327.5	3327.5	3327.5	3323.6	3323.6
5°	3292.6	3288.8	3288.8	3284.9	3284.9
7.5°	3265.5	3261.7	3257.8	3253.9	3246.2
10°	3226.8	3226.8	3222.9	3203.5	3199.7
12.5°	3164.8	3160.9	3145.4	3118.3	3110.6
15°	3079.6	3079.6	3048.6	3017.6	3006.0
17.5°	2986.6	2982.7	2944.0	2913.0	2897.5
20°	2885.9	2878.2	2839.4	2789.1	2761.9
22.5°	2773.6	2773.6	2727.1	2661.2	2634.1
25°	2669.0	2653.5	2610.9	2517.9	2448.2
27.5°	2548.9	2525.6	2479.2	2347.5	2266.1
30°	2417.2	2405.6	2339.7	2169.3	2107.3
32.5°	2293.2	2273.9	2204.1	2025.9	1975.6
35°	2165.4	2149.9	2045.3	1890.4	1843.9
37.5°	2037.6	2018.2	1886.5	1762.5	1704.4
40°	1909.7	1886.5	1743.2	1630.8	1568.8
42.5°	1789.6	1758.7	1619.2	1499.1	1429.4
45°	1661.8	1627.0	1487.5	1363.5	1309.3
47.5°	1534.0	1503.0	1375.2	1247.3	1185.4
50°	1398.4	1371.3	1255.1	1127.2	1061.4
52.5°	1286.1	1243.5	1131.1	1003.3	949.1
55°	1154.4	1119.5	1014.9	894.8	848.3
57.5°	1034.3	999.4	902.6	790.2	751.5
60°	921.9	871.6	790.2	693.4	662.4
62.5°	798.0	759.2	689.5	608.2	646.9
65°	685.6	646.9	584.9	596.5	495.8
67.5°	561.7	542.3	488.1	433.9	418.4
70°	457.1	433.9	414.5	356.4	340.9
72.5°	364.1	340.9	313.8	282.8	271.2
75°	275.0	255.7	240.2	228.5	251.8
77.5°	189.8	182.1	170.4	158.8	154.9
80°	124.0	120.1	116.2	112.3	108.5
82.5°	73.6	73.6	73.6	73.6	73.6
85°	38.7	42.6	46.5	50.4	54.2
87.5°	23.2	23.2	27.1	31.0	34.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)