

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: P563372

Luminaire Tested: FSR-24-4-LD4-3LO-40-UNV-93-96-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563372  
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-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**

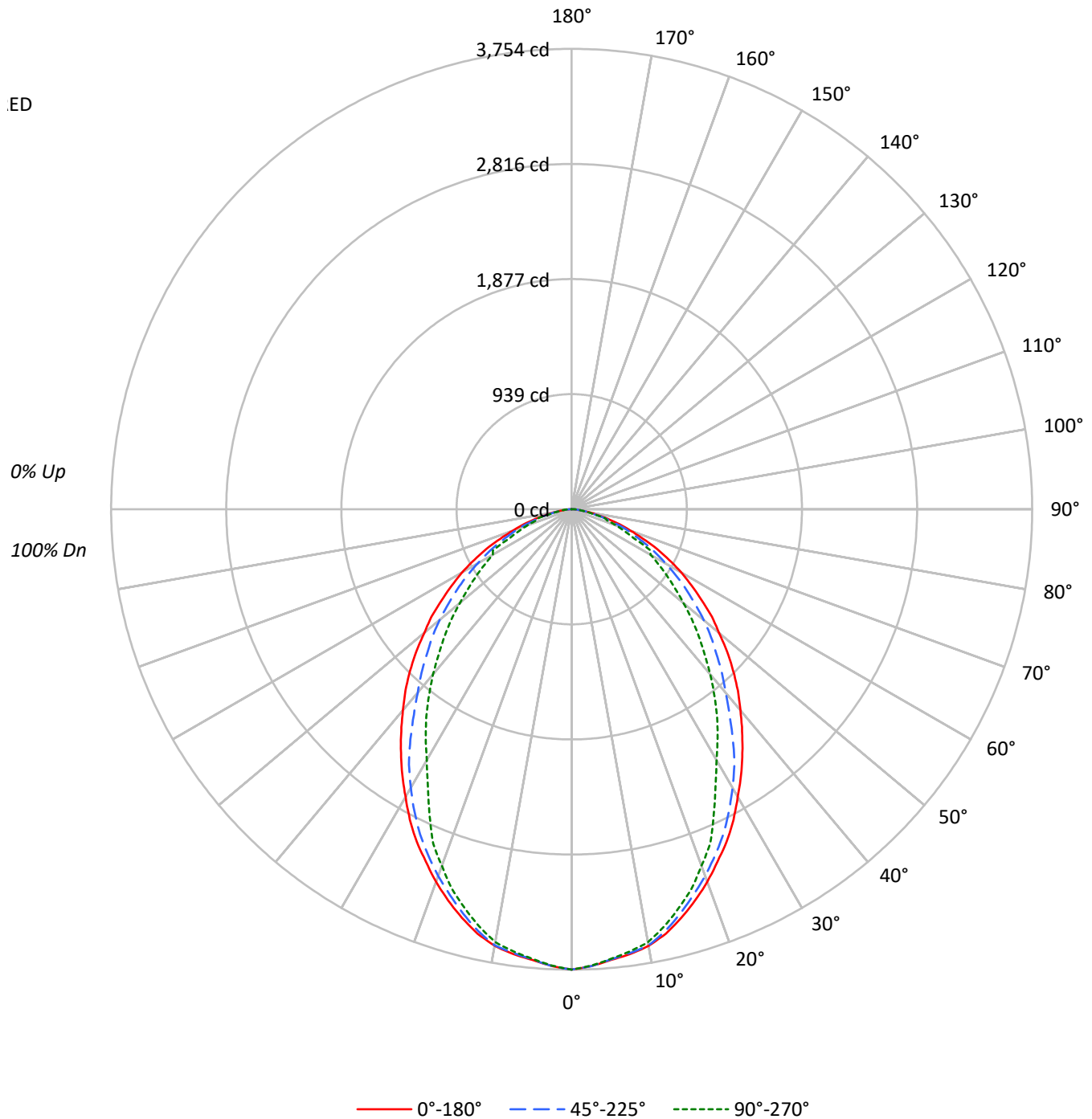
Lumens per Lamp: N/A  
Luminaire Lumens: 7369.0 lumens  
Efficiency: N/A  
Efficacy: 105.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 70.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	5051	5051	5051
5°	4982	4976	4970
10°	4939	4933	4897
15°	4806	4757	4691
20°	4629	4555	4430
25°	4439	4342	4072
30°	4207	4072	3668
35°	3984	3764	3393
40°	3758	3430	3087
45°	3542	3171	2791
50°	3279	2943	2489
55°	3034	2667	2229
60°	2779	2382	1997
65°	2445	2086	1769
70°	2015	1827	1502
75°	1602	1398	1467
80°	1076	1009	941
85°	670	804	939

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3542 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	349.4	4.7
10°-20°	958.9	13.0
20°-30°	1327.6	18.0
30°-40°	1415.6	19.2
40°-50°	1291.4	17.5
50°-60°	1011.7	13.7
60°-70°	659.4	8.9
70°-80°	292.1	4.0
80°-90°	62.7	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°	2636.0	35.8
0°-40°	4051.6	55.0
0°-60°	6354.7	86.2
0°-90°	7369.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7369.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3754	3754	3754	3754	3754	
5°	3689	3684	3684	3680	3680	350
15°	3450	3450	3415	3380	3368	970
25°	2990	2973	2925	2821	2743	1373
35°	2426	2408	2291	2118	2066	1517
45°	1862	1823	1666	1528	1467	1434
55°	1293	1254	1137	1002	950	1160
65°	768	725	655	668	556	757
75°	308	286	269	256	282	330
85°	43	48	52	56	61	60
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3753.7	3753.7	3753.7	3753.7	3753.7
2.5°	3727.6	3727.6	3727.6	3723.3	3723.3
5°	3688.6	3684.2	3684.2	3679.9	3679.9
7.5°	3658.2	3653.9	3649.5	3645.2	3636.5
10°	3614.8	3614.8	3610.5	3588.8	3584.4
12.5°	3545.4	3541.0	3523.7	3493.3	3484.6
15°	3449.9	3449.9	3415.2	3380.5	3367.5
17.5°	3345.8	3341.4	3298.0	3263.3	3245.9
20°	3232.9	3224.3	3180.9	3124.4	3094.1
22.5°	3107.1	3107.1	3055.0	2981.2	2950.9
25°	2989.9	2972.6	2924.8	2820.7	2742.6
27.5°	2855.4	2829.4	2777.3	2629.7	2538.6
30°	2707.8	2694.8	2621.1	2430.1	2360.7
32.5°	2569.0	2547.3	2469.2	2269.6	2213.1
35°	2425.8	2408.4	2291.3	2117.7	2065.6
37.5°	2282.6	2260.9	2113.3	1974.5	1909.4
40°	2139.4	2113.3	1952.8	1826.9	1757.5
42.5°	2004.9	1970.1	1813.9	1679.4	1601.3
45°	1861.6	1822.6	1666.4	1527.5	1466.8
47.5°	1718.4	1683.7	1540.5	1397.3	1327.9
50°	1566.6	1536.2	1406.0	1262.8	1189.0
52.5°	1440.7	1393.0	1267.1	1123.9	1063.2
55°	1293.2	1254.1	1136.9	1002.4	950.4
57.5°	1158.6	1119.6	1011.1	885.3	841.9
60°	1032.8	976.4	885.3	776.8	742.1
62.5°	893.9	850.5	772.4	681.3	724.7
65°	768.1	724.7	655.3	668.3	555.5
67.5°	629.2	607.5	546.8	486.0	468.7
70°	512.1	486.0	464.3	399.2	381.9
72.5°	407.9	381.9	351.5	316.8	303.8
75°	308.1	286.4	269.0	256.0	282.1
77.5°	212.6	204.0	190.9	177.9	173.6
80°	138.9	134.5	130.2	125.8	121.5
82.5°	82.5	82.5	82.5	82.5	82.5
85°	43.4	47.7	52.1	56.4	60.8
87.5°	26.0	26.0	30.4	34.7	39.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)