

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: P563426

Luminaire Tested: FSR-24-4-LD4-3LO-50-UNV-93-85-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563426  
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-50-UNV-93-85-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

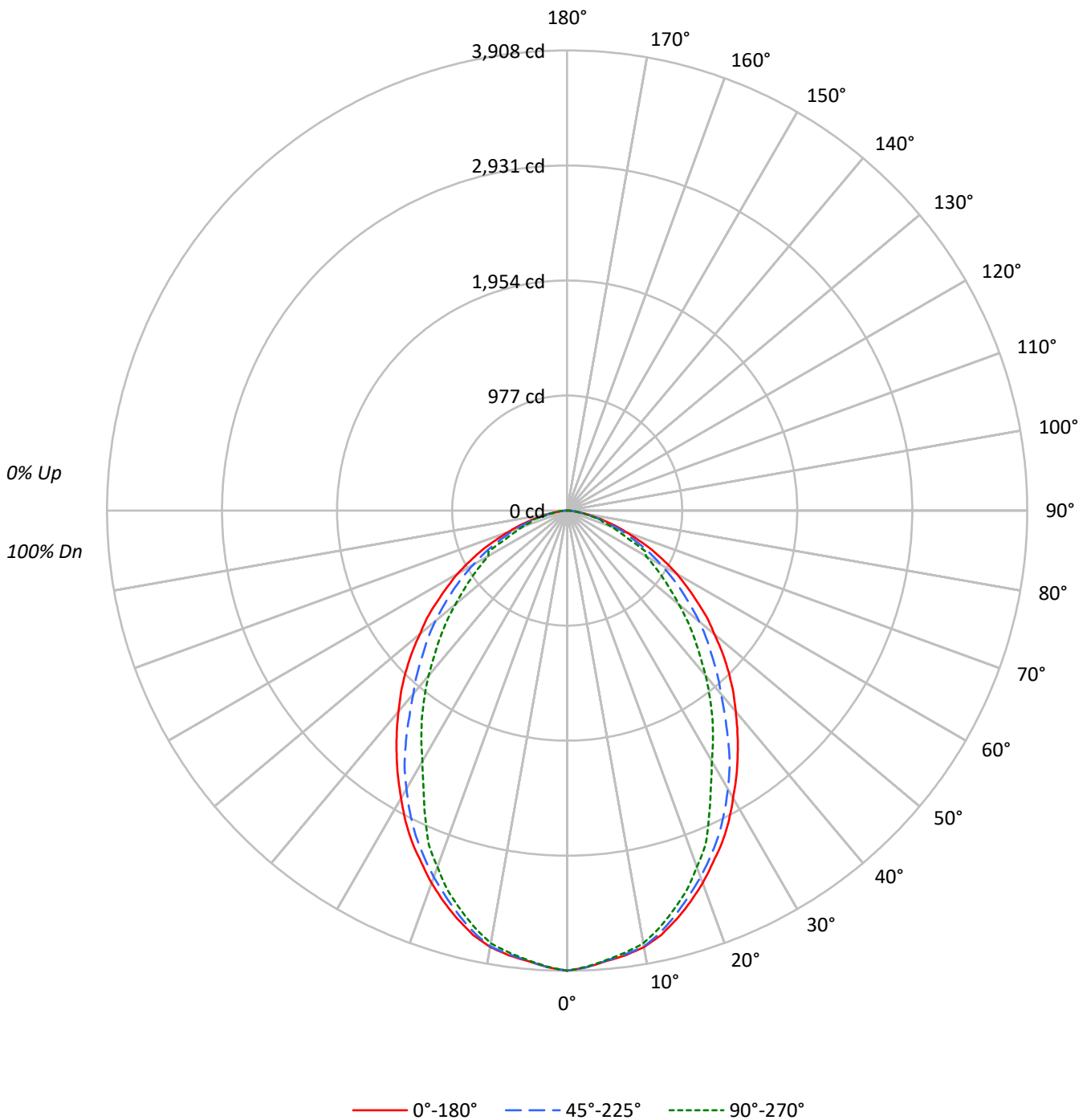
Lumens per Lamp: N/A  
Luminaire Lumens: 7672.0 lumens  
Efficiency: N/A  
Efficacy: 109.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 70.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	5258	5258	5258
5°	5187	5181	5175
10°	5142	5136	5099
15°	5003	4953	4884
20°	4819	4742	4612
25°	4621	4521	4239
30°	4380	4240	3819
35°	4148	3918	3532
40°	3912	3571	3214
45°	3688	3301	2906
50°	3414	3064	2591
55°	3158	2777	2321
60°	2894	2480	2079
65°	2546	2172	1841
70°	2097	1902	1564
75°	1668	1456	1527
80°	1120	1050	980
85°	698	837	977

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3688 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	363.8	4.7
10°-20°	998.4	13.0
20°-30°	1382.2	18.0
30°-40°	1473.8	19.2
40°-50°	1344.5	17.5
50°-60°	1053.3	13.7
60°-70°	686.5	8.9
70°-80°	304.2	4.0
80°-90°	65.3	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°	2744.3	35.8
0°-40°	4218.1	55.0
0°-60°	6616.0	86.2
0°-90°	7672.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7672.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3908	3908	3908	3908	3908	
5°	3840	3836	3836	3831	3831	365
15°	3592	3592	3556	3520	3506	1010
25°	3113	3095	3045	2937	2855	1429
35°	2526	2508	2386	2205	2150	1579
45°	1938	1898	1735	1590	1527	1493
55°	1346	1306	1184	1044	989	1208
65°	800	754	682	696	578	788
75°	321	298	280	267	294	344
85°	45	50	54	59	63	63
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3908.0	3908.0	3908.0	3908.0	3908.0
2.5°	3880.9	3880.9	3880.9	3876.4	3876.4
5°	3840.2	3835.7	3835.7	3831.2	3831.2
7.5°	3808.6	3804.1	3799.6	3795.1	3786.0
10°	3763.4	3763.4	3758.9	3736.3	3731.8
12.5°	3691.2	3686.6	3668.6	3636.9	3627.9
15°	3591.8	3591.8	3555.6	3519.5	3505.9
17.5°	3483.3	3478.8	3433.6	3397.5	3379.4
20°	3365.9	3356.8	3311.6	3252.9	3221.3
22.5°	3234.8	3234.8	3180.6	3103.8	3072.2
25°	3112.9	3094.8	3045.1	2936.7	2855.3
27.5°	2972.8	2945.7	2891.5	2737.9	2643.0
30°	2819.2	2805.6	2728.8	2530.0	2457.8
32.5°	2674.6	2652.0	2570.7	2362.9	2304.1
35°	2525.5	2507.5	2385.5	2204.8	2150.5
37.5°	2376.4	2353.8	2200.2	2055.7	1987.9
40°	2227.3	2200.2	2033.1	1902.1	1829.8
42.5°	2087.3	2051.1	1888.5	1748.4	1667.1
45°	1938.2	1897.5	1734.9	1590.3	1527.1
47.5°	1789.1	1753.0	1603.9	1454.8	1382.5
50°	1631.0	1599.3	1463.8	1314.7	1237.9
52.5°	1500.0	1450.3	1319.2	1170.1	1106.9
55°	1346.3	1305.7	1183.7	1043.6	989.4
57.5°	1206.3	1165.6	1052.7	921.7	876.5
60°	1075.3	1016.5	921.7	808.7	772.6
62.5°	930.7	885.5	804.2	709.3	754.5
65°	799.7	754.5	682.2	695.8	578.3
67.5°	655.1	632.5	569.3	506.0	487.9
70°	533.1	506.0	483.4	415.7	397.6
72.5°	424.7	397.6	366.0	329.8	316.3
75°	320.8	298.2	280.1	266.6	293.7
77.5°	221.4	212.3	198.8	185.2	180.7
80°	144.6	140.1	135.5	131.0	126.5
82.5°	85.8	85.8	85.8	85.8	85.8
85°	45.2	49.7	54.2	58.7	63.3
87.5°	27.1	27.1	31.6	36.1	40.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)