

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: P563404

Luminaire Tested: FSR-24-4-LD4-3LO-50-UNV-81-96-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563404  
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-81-96-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .250 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

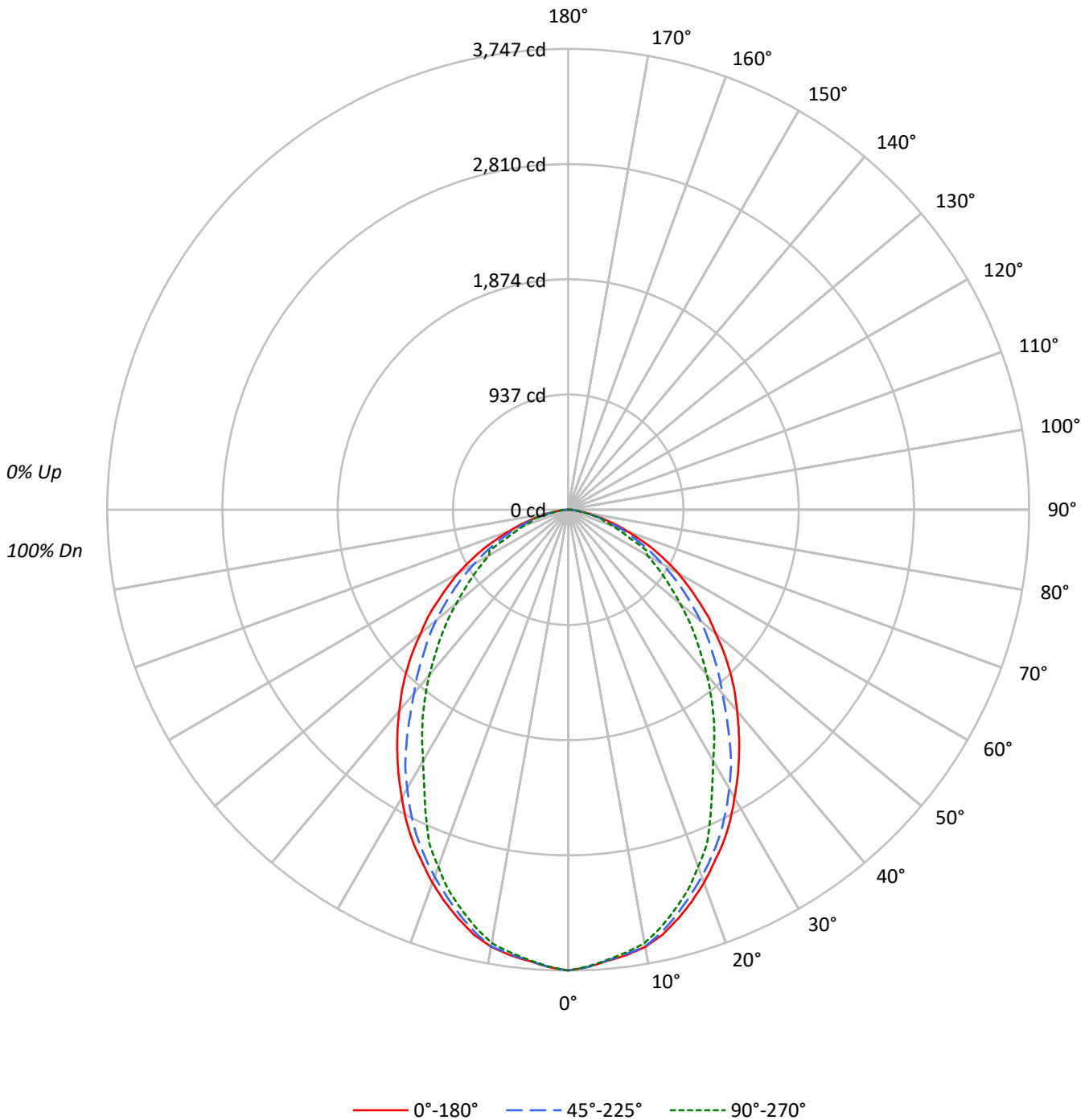
Lumens per Lamp: N/A  
Luminaire Lumens: 7356.0 lumens  
Efficiency: N/A  
Efficacy: 104.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 70.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	5042	5042	5042
5°	4973	4967	4961
10°	4930	4924	4889
15°	4797	4749	4682
20°	4621	4546	4422
25°	4431	4335	4064
30°	4200	4065	3661
35°	3977	3757	3387
40°	3751	3424	3081
45°	3536	3165	2786
50°	3273	2938	2484
55°	3028	2662	2225
60°	2774	2378	1993
65°	2441	2082	1765
70°	2011	1823	1500
75°	1599	1396	1464
80°	1074	1007	940
85°	668	803	936

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3536 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	348.8	4.7
10°-20°	957.2	13.0
20°-30°	1325.3	18.0
30°-40°	1413.1	19.2
40°-50°	1289.2	17.5
50°-60°	1010.0	13.7
60°-70°	658.2	8.9
70°-80°	291.6	4.0
80°-90°	62.6	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°	2631.3	35.8
0°-40°	4044.4	55.0
0°-60°	6343.5	86.2
0°-90°	7356.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7356.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3747	3747	3747	3747	3747	
5°	3682	3678	3678	3673	3673	350
15°	3444	3444	3409	3374	3362	968
25°	2985	2967	2920	2816	2738	1370
35°	2422	2404	2287	2114	2062	1514
45°	1858	1819	1663	1525	1464	1431
55°	1291	1252	1135	1001	949	1158
65°	767	723	654	667	554	756
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°	3747.0	3747.0	3747.0	3747.0	3747.0
2.5°	3721.1	3721.1	3721.1	3716.7	3716.7
5°	3682.1	3677.7	3677.7	3673.4	3673.4
7.5°	3651.7	3647.4	3643.1	3638.8	3630.1
10°	3608.4	3608.4	3604.1	3582.4	3578.1
12.5°	3539.1	3534.8	3517.5	3487.1	3478.5
15°	3443.8	3443.8	3409.2	3374.5	3361.5
17.5°	3339.9	3335.5	3292.2	3257.5	3240.2
20°	3227.2	3218.6	3175.2	3118.9	3088.6
22.5°	3101.6	3101.6	3049.6	2976.0	2945.7
25°	2984.6	2967.3	2919.7	2815.7	2737.7
27.5°	2850.4	2824.4	2772.4	2625.1	2534.1
30°	2703.1	2690.1	2616.4	2425.8	2356.5
32.5°	2564.5	2542.8	2464.8	2265.6	2209.2
35°	2421.5	2404.2	2287.2	2113.9	2062.0
37.5°	2278.6	2256.9	2109.6	1971.0	1906.0
40°	2135.6	2109.6	1949.3	1823.7	1754.4
42.5°	2001.3	1966.7	1810.7	1676.4	1598.5
45°	1858.4	1819.4	1663.4	1524.8	1464.2
47.5°	1715.4	1680.8	1537.8	1394.9	1325.5
50°	1563.8	1533.5	1403.5	1260.6	1186.9
52.5°	1438.2	1390.5	1264.9	1121.9	1061.3
55°	1290.9	1251.9	1134.9	1000.7	948.7
57.5°	1156.6	1117.6	1009.3	883.7	840.4
60°	1031.0	974.7	883.7	775.4	740.7
62.5°	892.4	849.0	771.1	680.1	723.4
65°	766.7	723.4	654.1	667.1	554.5
67.5°	628.1	606.5	545.8	485.2	467.8
70°	511.2	485.2	463.5	398.5	381.2
72.5°	407.2	381.2	350.9	316.2	303.2
75°	307.6	285.9	268.6	255.6	281.6
77.5°	212.3	203.6	190.6	177.6	173.3
80°	138.6	134.3	130.0	125.6	121.3
82.5°	82.3	82.3	82.3	82.3	82.3
85°	43.3	47.7	52.0	56.3	60.6
87.5°	26.0	26.0	30.3	34.7	39.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)