

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: P590493

Luminaire Tested: FSR-24-2-LD4-3HI-50-UNV-81-84-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590493  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-1)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/8/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: FAIL-SAFE  
Catalog Number: FSR-24-2-LD4-3HI-50-UNV-81-84-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

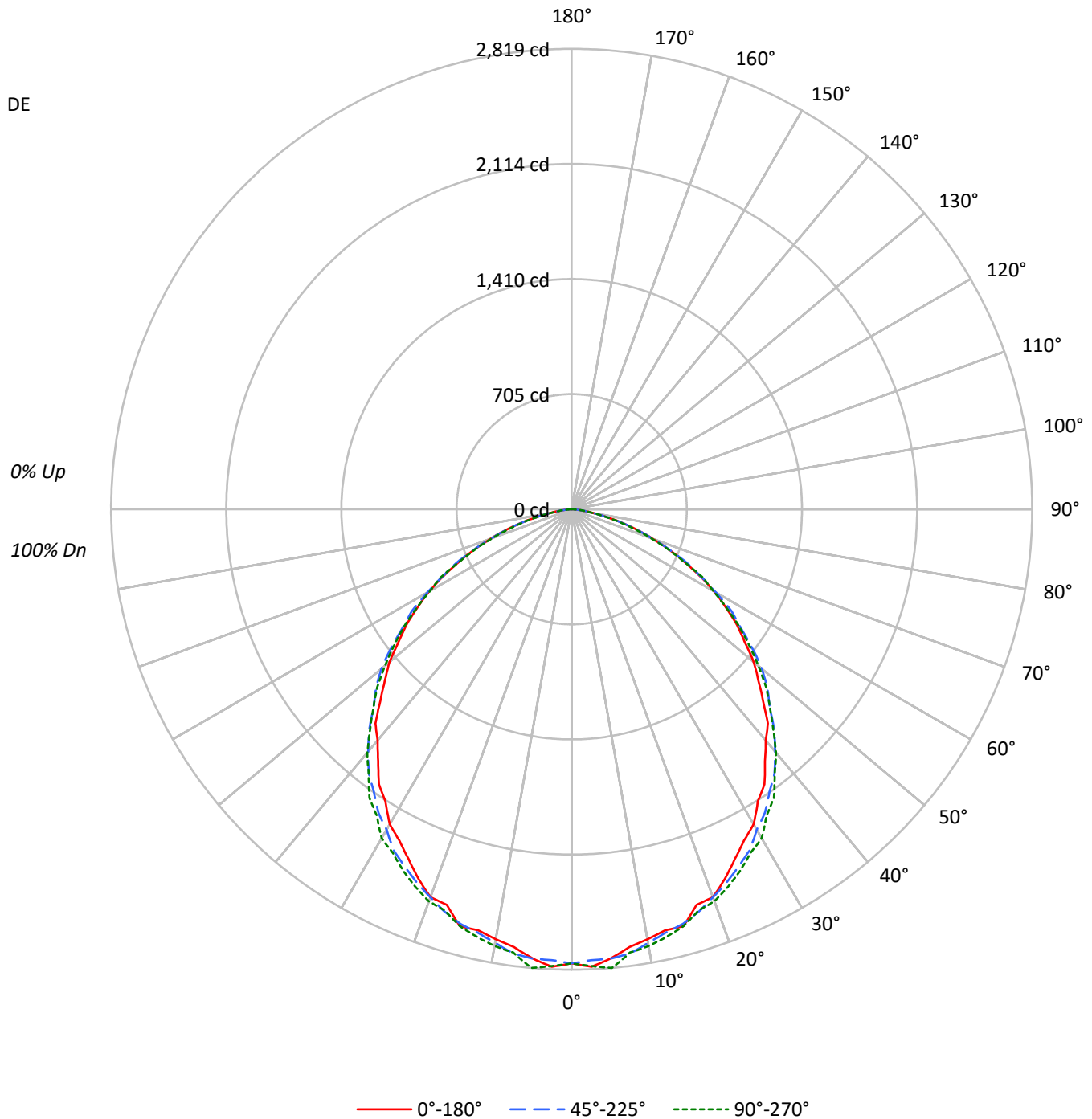
Lumens per Lamp: N/A  
Luminaire Lumens: 7006.0 lumens  
Efficiency: N/A  
Efficacy: 108.1 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 64.8  
Input Voltage (V):  
Input Current (Ain): NR  
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	105	101	98	107	103	100	96	99	96	93	95	93	90	91	90	88	86
2	100	93	86	81	98	91	85	80	87	82	78	84	80	76	81	78	75	73
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64	62
4	84	73	64	58	82	71	64	58	69	62	57	67	61	56	65	59	55	53
5	78	65	57	50	76	64	56	50	62	55	49	60	54	49	58	53	48	46
6	72	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	43	41
7	67	53	45	39	65	53	45	39	51	44	39	50	43	38	48	42	38	36
8	62	49	41	35	61	48	40	35	47	40	34	46	39	34	44	39	34	32
9	58	45	37	31	57	44	37	31	43	36	31	42	36	31	41	35	31	29
10	54	41	34	29	53	41	33	28	40	33	28	39	33	28	38	32	28	26

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	7480	7480	7480
5°	7456	7458	7616
10°	7304	7368	7420
15°	7362	7322	7363
20°	7238	7238	7315
25°	7015	7169	7248
30°	6919	7040	7228
35°	6756	6933	7089
40°	6493	6806	6836
45°	6297	6521	6530
50°	6090	6365	6243
55°	5803	5916	5873
60°	5426	5480	5381
65°	4838	4961	4804
70°	4151	4165	4050
75°	3288	3280	3153
80°	2202	2142	2058
85°	1198	1186	1108

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 6689 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	261.5	3.7
10°-20°	741.1	10.6
20°-30°	1110.3	15.8
30°-40°	1315.9	18.8
40°-50°	1318.3	18.8
50°-60°	1119.1	16.0
60°-70°	754.5	10.8
70°-80°	331.5	4.7
80°-90°	53.9	0.8
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°	2112.8	30.2
0°-40°	3428.7	48.9
0°-60°	5866.1	83.7
0°-90°	7006.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7006.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2780	2780	2780	2780	2780	
5°	2760	2754	2761	2753	2819	260
15°	2643	2612	2628	2642	2643	736
25°	2363	2376	2414	2446	2441	1092
35°	2057	2063	2110	2159	2158	1277
45°	1655	1686	1714	1758	1716	1280
55°	1237	1229	1261	1252	1252	1100
65°	760	750	779	749	754	756
75°	316	310	316	293	303	339
85°	39	38	38	37	36	56
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2779.8	2779.8	2779.8	2779.8	2779.8
2.5°	2803.9	2782.7	2762.9	2785.9	2799.9
5°	2760.1	2753.6	2761.1	2752.9	2819.3
7.5°	2703.4	2728.1	2742.5	2733.5	2737.5
10°	2673.2	2664.6	2696.5	2718.8	2715.6
12.5°	2640.9	2653.8	2655.6	2679.7	2681.8
15°	2642.7	2612.2	2628.3	2642.0	2643.1
17.5°	2540.0	2573.1	2584.2	2615.4	2576.7
20°	2527.5	2503.4	2527.5	2559.4	2554.4
22.5°	2450.3	2423.4	2475.1	2503.4	2501.6
25°	2362.7	2375.7	2414.4	2446.0	2441.0
27.5°	2285.9	2301.0	2356.3	2399.7	2371.7
30°	2226.7	2219.2	2265.8	2304.6	2326.1
32.5°	2120.8	2148.1	2202.7	2241.1	2220.6
35°	2056.6	2062.7	2110.4	2159.2	2157.8
37.5°	1944.2	1972.6	2039.7	2053.4	2040.8
40°	1848.4	1876.8	1937.4	1952.1	1946.0
42.5°	1777.7	1782.7	1834.8	1851.6	1824.7
45°	1654.6	1685.5	1713.5	1757.6	1716.0
47.5°	1549.8	1564.2	1624.5	1636.3	1614.4
50°	1454.7	1459.7	1520.4	1505.7	1491.3
52.5°	1335.2	1356.3	1390.4	1387.6	1370.7
55°	1236.8	1228.6	1260.9	1252.3	1251.9
57.5°	1118.7	1133.1	1159.7	1146.0	1124.1
60°	1008.2	1008.6	1018.2	1002.8	999.9
62.5°	885.1	889.4	891.5	872.5	903.4
65°	759.8	749.8	779.2	749.4	754.4
67.5°	644.6	649.6	646.8	628.1	635.3
70°	527.6	534.1	529.4	508.2	514.7
72.5°	420.6	412.8	417.8	391.2	403.4
75°	316.2	309.7	315.5	293.2	303.3
77.5°	215.3	220.4	216.8	204.9	211.8
80°	142.1	138.2	138.2	131.4	132.8
82.5°	82.9	79.0	77.9	75.7	79.0
85°	38.8	37.7	38.4	37.3	35.9
87.5°	14.0	14.4	14.4	13.6	12.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)