

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: P590461

Luminaire Tested: FSR-24-2-LD4-3HI-40-UNV-81-84-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590461  
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-40-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 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

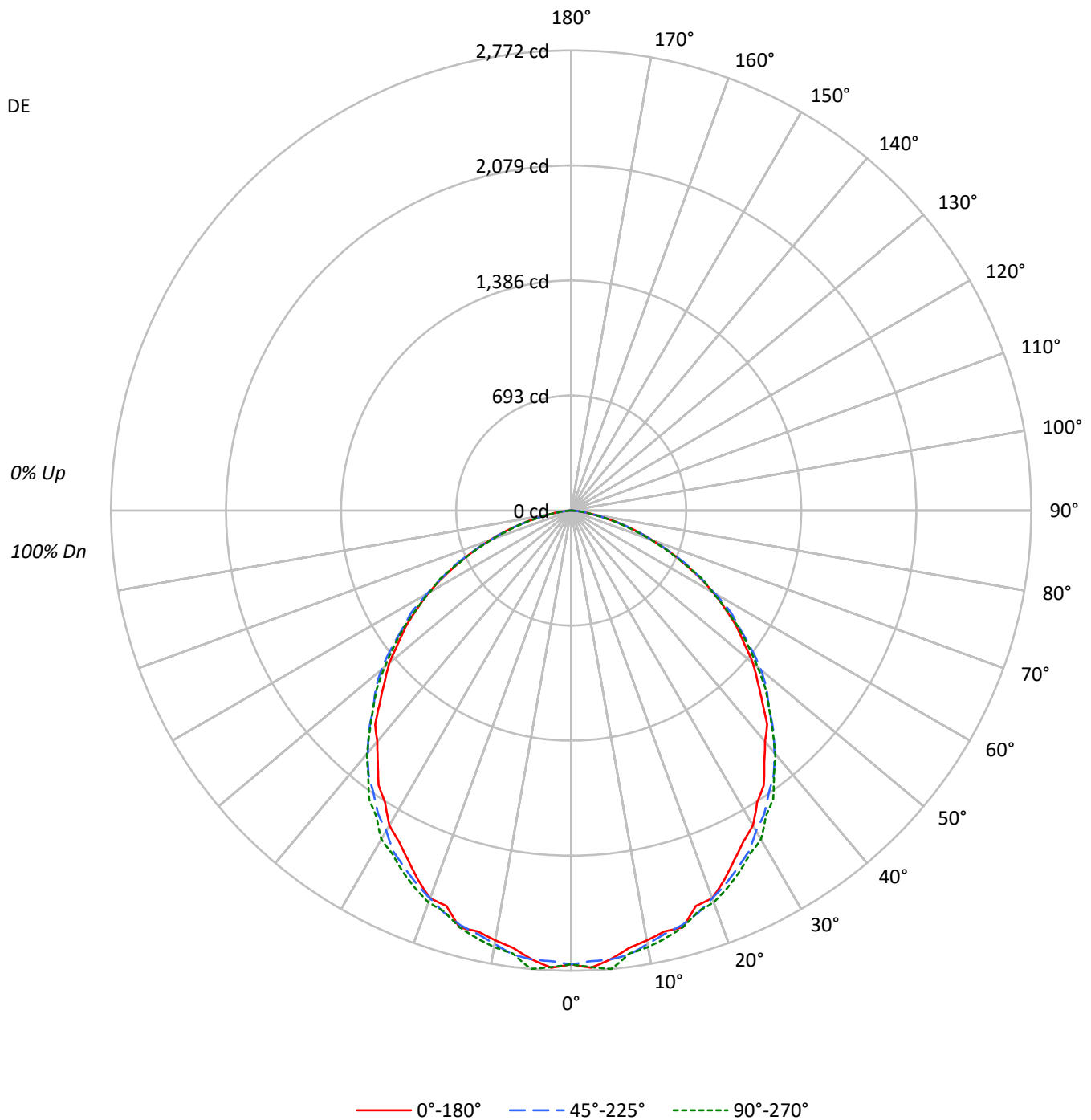
Lumens per Lamp: N/A  
Luminaire Lumens: 6889.0 lumens  
Efficiency: N/A  
Efficacy: 106.3 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 64.8  
Input Voltage (V):  
Input Current (Ain): NR  
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°	7356	7356	7356
5°	7331	7334	7488
10°	7183	7245	7296
15°	7239	7200	7240
20°	7117	7117	7193
25°	6898	7049	7127
30°	6803	6923	7107
35°	6643	6817	6970
40°	6385	6692	6722
45°	6192	6412	6421
50°	5988	6259	6139
55°	5706	5817	5775
60°	5336	5388	5292
65°	4757	4879	4723
70°	4082	4096	3982
75°	3232	3225	3100
80°	2166	2106	2024
85°	1176	1167	1090

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 6577 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	257.1	3.7
10°-20°	728.7	10.6
20°-30°	1091.7	15.8
30°-40°	1293.9	18.8
40°-50°	1296.3	18.8
50°-60°	1100.4	16.0
60°-70°	741.9	10.8
70°-80°	326.0	4.7
80°-90°	53.0	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°	2077.6	30.2
0°-40°	3371.5	48.9
0°-60°	5768.2	83.7
0°-90°	6889.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6889.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2733	2733	2733	2733	2733	
5°	2714	2708	2715	2707	2772	256
15°	2599	2569	2584	2598	2599	724
25°	2323	2336	2374	2405	2400	1074
35°	2022	2028	2075	2123	2122	1256
45°	1627	1657	1685	1728	1687	1259
55°	1216	1208	1240	1231	1231	1082
65°	747	737	766	737	742	743
75°	311	305	310	288	298	333
85°	38	37	38	37	35	55
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2733.4	2733.4	2733.4	2733.4	2733.4
2.5°	2757.0	2736.2	2716.8	2739.4	2753.1
5°	2714.0	2707.6	2715.0	2706.9	2772.2
7.5°	2658.2	2682.6	2696.7	2687.9	2691.7
10°	2628.6	2620.1	2651.5	2673.4	2670.2
12.5°	2596.8	2609.5	2611.3	2634.9	2637.0
15°	2598.6	2568.6	2584.4	2597.9	2598.9
17.5°	2497.6	2530.1	2541.0	2571.7	2533.6
20°	2485.3	2461.6	2485.3	2516.7	2511.7
22.5°	2409.4	2382.9	2433.8	2461.6	2459.9
25°	2323.3	2336.0	2374.1	2405.2	2400.2
27.5°	2247.8	2262.6	2316.9	2359.6	2332.1
30°	2189.5	2182.1	2228.0	2266.1	2287.3
32.5°	2085.4	2112.2	2165.9	2203.6	2183.5
35°	2022.2	2028.2	2075.2	2123.2	2121.8
37.5°	1911.8	1939.7	2005.7	2019.1	2006.7
40°	1817.5	1845.4	1905.1	1919.5	1913.5
42.5°	1748.0	1753.0	1804.1	1820.7	1794.3
45°	1627.0	1657.3	1684.8	1728.3	1687.3
47.5°	1523.9	1538.0	1597.3	1609.0	1587.4
50°	1430.4	1435.3	1495.0	1480.5	1466.4
52.5°	1312.9	1333.7	1367.2	1364.4	1347.8
55°	1216.2	1208.1	1239.8	1231.3	1231.0
57.5°	1100.1	1114.2	1140.3	1126.9	1105.4
60°	991.4	991.7	1001.2	986.1	983.2
62.5°	870.3	874.5	876.7	858.0	888.3
65°	747.1	737.3	766.2	736.9	741.8
67.5°	633.8	638.8	636.0	617.6	624.7
70°	518.8	525.1	520.6	499.7	506.1
72.5°	413.6	405.9	410.8	384.7	396.7
75°	310.9	304.6	310.2	288.3	298.2
77.5°	211.8	216.7	213.2	201.5	208.2
80°	139.8	135.9	135.9	129.2	130.6
82.5°	81.5	77.6	76.6	74.5	77.6
85°	38.1	37.1	37.8	36.7	35.3
87.5°	13.8	14.1	14.1	13.4	12.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)