

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: P590471

Luminaire Tested: FSR-24-2-LD4-3HI-40-UNV-82-86-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590471  
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-82-86-EDD  
Description: 2X2 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

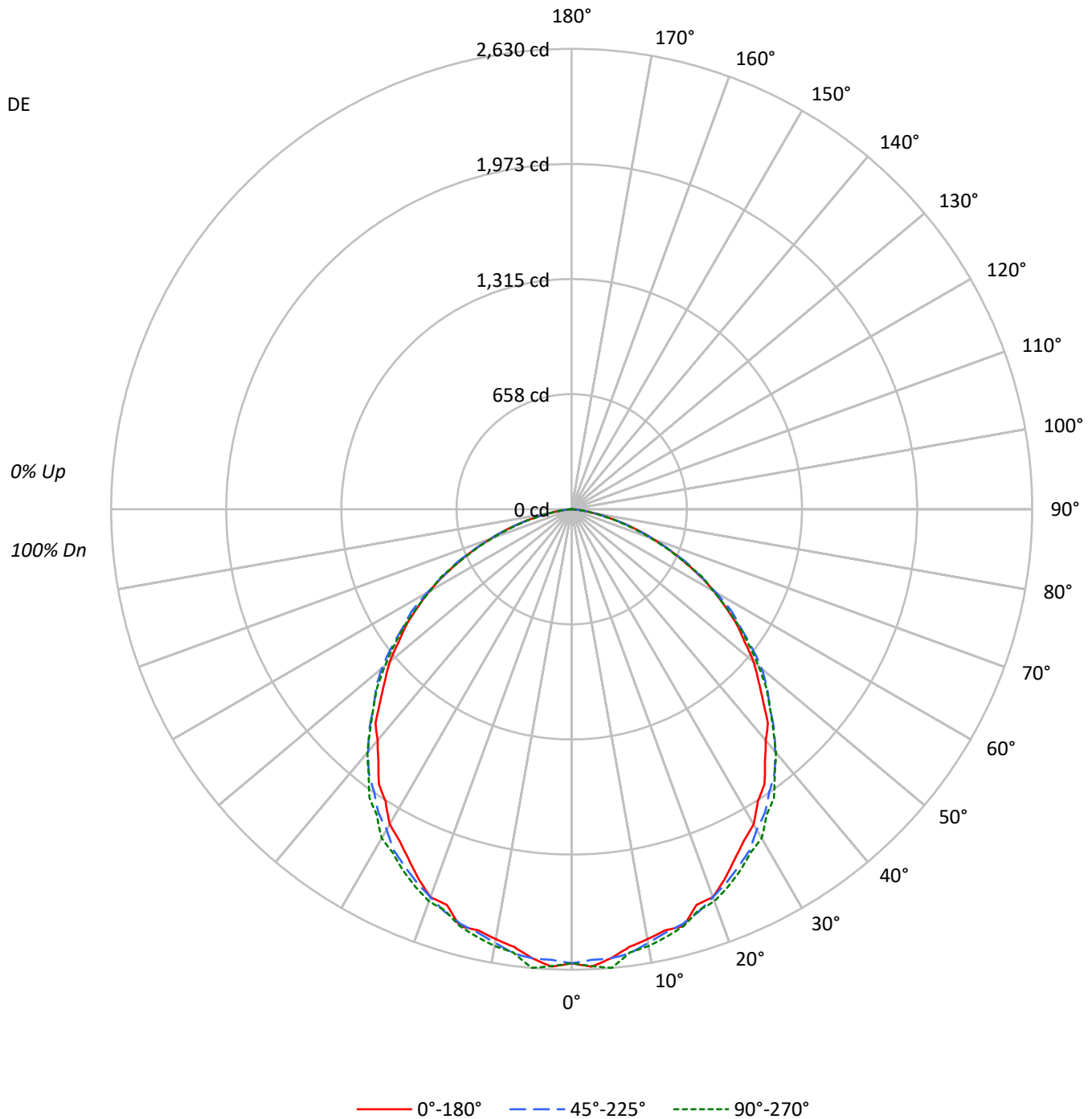
Lumens per Lamp: N/A  
Luminaire Lumens: 6535.0 lumens  
Efficiency: N/A  
Efficacy: 100.8 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 64.8  
Input Voltage (V):  
Input Current (Ain): NR  
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	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	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°	6977	6977	6977
5°	6954	6957	7103
10°	6813	6873	6921
15°	6867	6830	6868
20°	6751	6751	6823
25°	6544	6687	6760
30°	6454	6567	6742
35°	6302	6467	6612
40°	6057	6348	6376
45°	5874	6083	6091
50°	5681	5937	5823
55°	5413	5518	5478
60°	5061	5112	5020
65°	4513	4628	4481
70°	3872	3885	3777
75°	3066	3060	2941
80°	2055	1998	1920
85°	1118	1105	1034

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 6239 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	243.9	3.7
10°-20°	691.3	10.6
20°-30°	1035.6	15.8
30°-40°	1227.4	18.8
40°-50°	1229.7	18.8
50°-60°	1043.8	16.0
60°-70°	703.8	10.8
70°-80°	309.2	4.7
80°-90°	50.3	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°	1970.8	30.2
0°-40°	3198.2	48.9
0°-60°	5471.8	83.7
0°-90°	6535.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6535.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2593	2593	2593	2593	2593	
5°	2574	2568	2576	2568	2630	243
15°	2465	2437	2452	2464	2465	687
25°	2204	2216	2252	2282	2277	1019
35°	1918	1924	1968	2014	2013	1191
45°	1543	1572	1598	1640	1601	1194
55°	1154	1146	1176	1168	1168	1026
65°	709	699	727	699	704	705
75°	295	289	294	274	283	316
85°	36	35	36	35	34	52
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2592.9	2592.9	2592.9	2592.9	2592.9
2.5°	2615.4	2595.6	2577.2	2598.6	2611.7
5°	2574.5	2568.5	2575.5	2567.8	2629.7
7.5°	2521.6	2544.7	2558.1	2549.7	2553.4
10°	2493.5	2485.5	2515.3	2536.0	2533.0
12.5°	2463.4	2475.4	2477.1	2499.5	2501.5
15°	2465.0	2436.6	2451.6	2464.4	2465.4
17.5°	2369.3	2400.1	2410.5	2439.6	2403.4
20°	2357.6	2335.1	2357.6	2387.4	2382.7
22.5°	2285.6	2260.5	2308.7	2335.1	2333.5
25°	2203.9	2216.0	2252.1	2281.6	2276.9
27.5°	2132.3	2146.3	2197.9	2238.4	2212.3
30°	2077.0	2070.0	2113.5	2149.7	2169.8
32.5°	1978.3	2003.7	2054.6	2090.4	2071.3
35°	1918.3	1924.0	1968.5	2014.1	2012.7
37.5°	1813.5	1840.0	1902.6	1915.3	1903.6
40°	1724.2	1750.6	1807.2	1820.9	1815.2
42.5°	1658.2	1662.9	1711.4	1727.2	1702.1
45°	1543.4	1572.2	1598.3	1639.5	1600.6
47.5°	1445.6	1459.0	1515.2	1526.3	1505.9
50°	1356.9	1361.6	1418.2	1404.4	1391.0
52.5°	1245.4	1265.2	1297.0	1294.3	1278.6
55°	1153.7	1146.0	1176.1	1168.1	1167.7
57.5°	1043.5	1056.9	1081.7	1069.0	1048.6
60°	940.4	940.8	949.8	935.4	932.7
62.5°	825.6	829.6	831.6	813.9	842.7
65°	708.7	699.4	726.8	699.0	703.7
67.5°	601.3	606.0	603.3	585.9	592.6
70°	492.1	498.2	493.8	474.1	480.1
72.5°	392.4	385.0	389.7	364.9	376.3
75°	294.9	288.9	294.3	273.5	282.9
77.5°	200.9	205.6	202.2	191.2	197.5
80°	132.6	128.9	128.9	122.5	123.9
82.5°	77.3	73.7	72.6	70.6	73.7
85°	36.2	35.2	35.8	34.8	33.5
87.5°	13.1	13.4	13.4	12.7	12.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)