

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: P590431

Luminaire Tested: FSR-24-2-LD4-3HI-35-UNV-81-86-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590431  
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-35-UNV-81-86-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

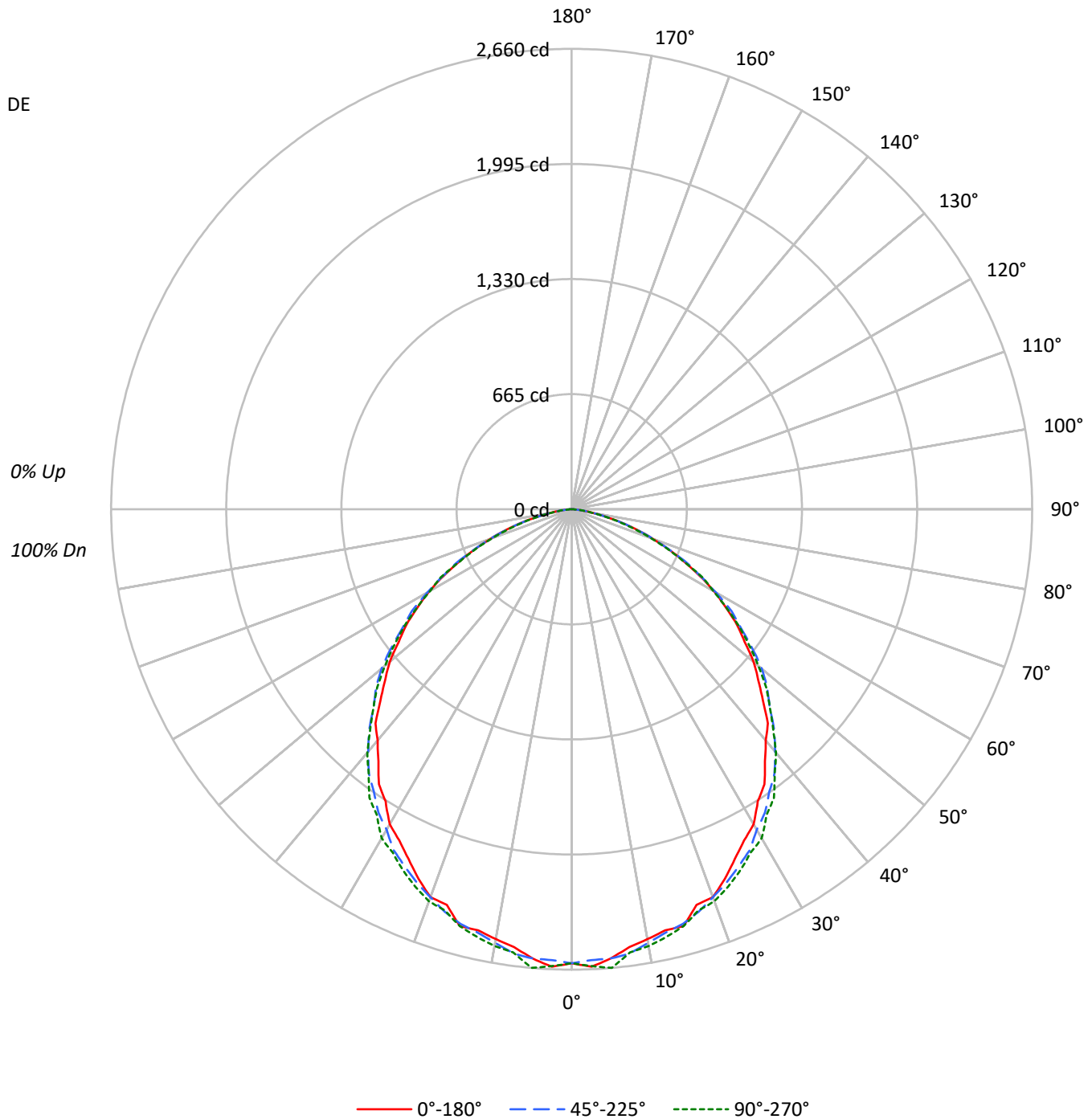
Lumens per Lamp: N/A  
Luminaire Lumens: 6610.0 lumens  
Efficiency: N/A  
Efficacy: 102.0 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 64.8  
Input Voltage (V):  
Input Current (Ain): NR  
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°	7058	7058	7058
5°	7034	7037	7185
10°	6892	6952	7001
15°	6946	6908	6947
20°	6829	6829	6901
25°	6619	6764	6838
30°	6528	6643	6820
35°	6374	6541	6688
40°	6126	6421	6450
45°	5941	6152	6161
50°	5746	6005	5890
55°	5475	5581	5541
60°	5119	5170	5077
65°	4565	4681	4532
70°	3917	3930	3821
75°	3101	3095	2975
80°	2078	2021	1942
85°	1130	1118	1047

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 6311 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	246.7	3.7
10°-20°	699.2	10.6
20°-30°	1047.5	15.8
30°-40°	1241.5	18.8
40°-50°	1243.8	18.8
50°-60°	1055.8	16.0
60°-70°	711.8	10.8
70°-80°	312.8	4.7
80°-90°	50.8	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°	1993.4	30.2
0°-40°	3234.9	48.9
0°-60°	5534.6	83.7
0°-90°	6610.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6610.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2623	2623	2623	2623	2623	
5°	2604	2598	2605	2597	2660	246
15°	2493	2464	2480	2493	2494	695
25°	2229	2241	2278	2308	2303	1031
35°	1940	1946	1991	2037	2036	1205
45°	1561	1590	1617	1658	1619	1208
55°	1167	1159	1190	1182	1181	1038
65°	717	707	735	707	712	713
75°	298	292	298	277	286	320
85°	37	36	36	35	34	53
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2622.7	2622.7	2622.7	2622.7	2622.7
2.5°	2645.4	2625.4	2606.8	2628.4	2641.6
5°	2604.1	2598.0	2605.1	2597.3	2659.9
7.5°	2550.6	2573.9	2587.5	2579.0	2582.7
10°	2522.1	2514.0	2544.1	2565.1	2562.1
12.5°	2491.6	2503.8	2505.5	2528.2	2530.2
15°	2493.3	2464.5	2479.8	2492.6	2493.7
17.5°	2396.5	2427.6	2438.1	2467.6	2431.0
20°	2384.6	2361.9	2384.6	2414.8	2410.0
22.5°	2311.8	2286.4	2335.2	2361.9	2360.2
25°	2229.2	2241.4	2278.0	2307.8	2303.0
27.5°	2156.7	2171.0	2223.1	2264.1	2237.7
30°	2100.9	2093.7	2137.8	2174.3	2194.7
32.5°	2001.0	2026.7	2078.2	2114.4	2095.1
35°	1940.3	1946.1	1991.1	2037.2	2035.8
37.5°	1834.4	1861.1	1924.4	1937.3	1925.4
40°	1743.9	1770.7	1827.9	1841.8	1836.0
42.5°	1677.2	1682.0	1731.1	1747.0	1721.6
45°	1561.1	1590.2	1616.6	1658.3	1619.0
47.5°	1462.2	1475.7	1532.6	1543.8	1523.2
50°	1372.5	1377.2	1434.4	1420.5	1407.0
52.5°	1259.7	1279.7	1311.8	1309.1	1293.2
55°	1166.9	1159.1	1189.6	1181.5	1181.1
57.5°	1055.5	1069.1	1094.1	1081.2	1060.6
60°	951.2	951.5	960.7	946.1	943.4
62.5°	835.1	839.1	841.2	823.2	852.3
65°	716.9	707.4	735.2	707.1	711.8
67.5°	608.2	612.9	610.2	592.6	599.4
70°	497.8	503.9	499.5	479.5	485.6
72.5°	396.9	389.4	394.2	369.1	380.6
75°	298.3	292.2	297.7	276.7	286.1
77.5°	203.2	207.9	204.5	193.4	199.8
80°	134.1	130.4	130.4	123.9	125.3
82.5°	78.2	74.5	73.5	71.5	74.5
85°	36.6	35.6	36.2	35.2	33.9
87.5°	13.2	13.5	13.5	12.9	12.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)