

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: P590444

Luminaire Tested: FSR-24-2-LD4-3HI-35-UNV-82-97-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590444  
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-82-97-EDD  
Description: 2X2 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .375 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

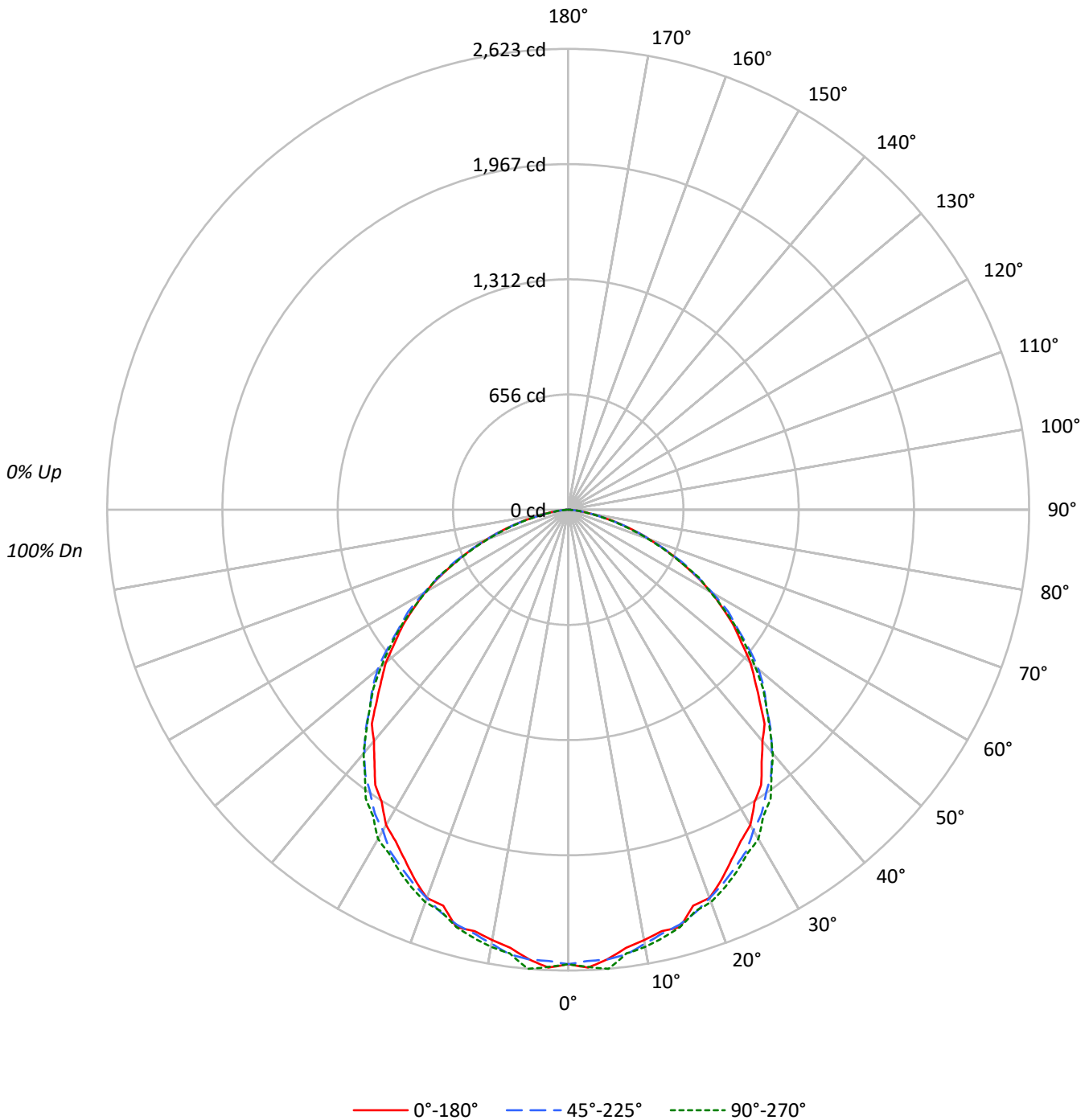
Lumens per Lamp: N/A  
Luminaire Lumens: 6519.0 lumens  
Efficiency: N/A  
Efficacy: 100.6 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 64.8  
Input Voltage (V):  
Input Current (Ain): NR  
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					86			
2	100	93	86	81	98	91	85	80	87	82	78	84	80	76	81	78	75	73					73			
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64	62					62			
4	84	73	64	58	82	71	64	58	69	62	57	67	61	56	65	59	55	53					53			
5	78	65	57	50	76	64	56	50	62	55	49	60	54	49	58	53	48	46					46			
6	72	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	43	41					41			
7	67	53	45	39	65	53	45	39	51	44	39	50	43	38	48	42	38	36					36			
8	62	49	41	35	61	48	40	35	47	40	34	46	39	34	44	39	34	32					32			
9	58	45	37	31	57	44	37	31	43	36	31	42	36	31	41	35	31	29					29			
10	54	41	34	29	53	41	33	28	40	33	28	39	33	28	38	32	28	26					26			

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

	0°	45°	90°
0°	6960	6960	6960
5°	6937	6940	7086
10°	6797	6856	6904
15°	6851	6813	6851
20°	6735	6735	6806
25°	6528	6671	6744
30°	6438	6551	6725
35°	6286	6451	6596
40°	6042	6333	6361
45°	5859	6068	6076
50°	5667	5923	5809
55°	5400	5504	5465
60°	5049	5099	5007
65°	4502	4616	4470
70°	3862	3876	3768
75°	3059	3053	2934
80°	2050	1993	1915
85°	1115	1102	1031

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 6224 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	243.3	3.7
10°-20°	689.6	10.6
20°-30°	1033.1	15.8
30°-40°	1224.4	18.8
40°-50°	1226.7	18.8
50°-60°	1041.3	16.0
60°-70°	702.0	10.8
70°-80°	308.5	4.7
80°-90°	50.1	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°	1966.0	30.2
0°-40°	3190.4	48.9
0°-60°	5458.4	83.7
0°-90°	6519.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6519.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2587	2587	2587	2587	2587	
5°	2568	2562	2569	2562	2623	242
15°	2459	2431	2446	2458	2459	685
25°	2198	2210	2247	2276	2271	1016
35°	1914	1919	1964	2009	2008	1188
45°	1540	1568	1594	1635	1597	1191
55°	1151	1143	1173	1165	1165	1024
65°	707	698	725	697	702	703
75°	294	288	294	273	282	315
85°	36	35	36	35	33	52
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2586.6	2586.6	2586.6	2586.6	2586.6
2.5°	2609.0	2589.2	2570.9	2592.3	2605.3
5°	2568.2	2562.2	2569.2	2561.5	2623.3
7.5°	2515.4	2538.5	2551.8	2543.5	2547.2
10°	2487.4	2479.4	2509.1	2529.8	2526.8
12.5°	2457.3	2469.4	2471.0	2493.4	2495.4
15°	2459.0	2430.6	2445.6	2458.3	2459.3
17.5°	2363.5	2394.2	2404.6	2433.6	2397.5
20°	2351.8	2329.4	2351.8	2381.5	2376.8
22.5°	2280.0	2254.9	2303.0	2329.4	2327.8
25°	2198.5	2210.5	2246.6	2276.0	2271.3
27.5°	2127.0	2141.1	2192.5	2232.9	2206.9
30°	2071.9	2064.9	2108.3	2144.4	2164.4
32.5°	1973.4	1998.8	2049.6	2085.3	2066.3
35°	1913.6	1919.3	1963.7	2009.1	2007.8
37.5°	1809.1	1835.5	1897.9	1910.6	1898.9
40°	1719.9	1746.3	1802.8	1816.4	1810.8
42.5°	1654.1	1658.8	1707.2	1722.9	1697.9
45°	1539.6	1568.3	1594.4	1635.4	1596.7
47.5°	1442.1	1455.4	1511.5	1522.6	1502.2
50°	1353.6	1358.2	1414.7	1401.0	1387.6
52.5°	1242.4	1262.1	1293.8	1291.1	1275.4
55°	1150.9	1143.2	1173.2	1165.2	1164.9
57.5°	1041.0	1054.3	1079.0	1066.4	1046.0
60°	938.1	938.4	947.5	933.1	930.4
62.5°	823.6	827.6	829.6	811.9	840.6
65°	707.0	697.7	725.0	697.3	702.0
67.5°	599.8	604.5	601.8	584.4	591.1
70°	490.9	496.9	492.6	472.9	478.9
72.5°	391.4	384.1	388.7	364.0	375.4
75°	294.2	288.2	293.6	272.9	282.2
77.5°	200.4	205.1	201.7	190.7	197.0
80°	132.3	128.6	128.6	122.2	123.6
82.5°	77.1	73.5	72.5	70.5	73.5
85°	36.1	35.1	35.7	34.7	33.4
87.5°	13.0	13.4	13.4	12.7	12.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)