

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: P590987

Luminaire Tested: FSR-24-2-LD4-4STD-50-UNV-82-96-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590987  
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-LD4-4STD-50-UNV-82-96-EDD  
Description: 2X2 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .250 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

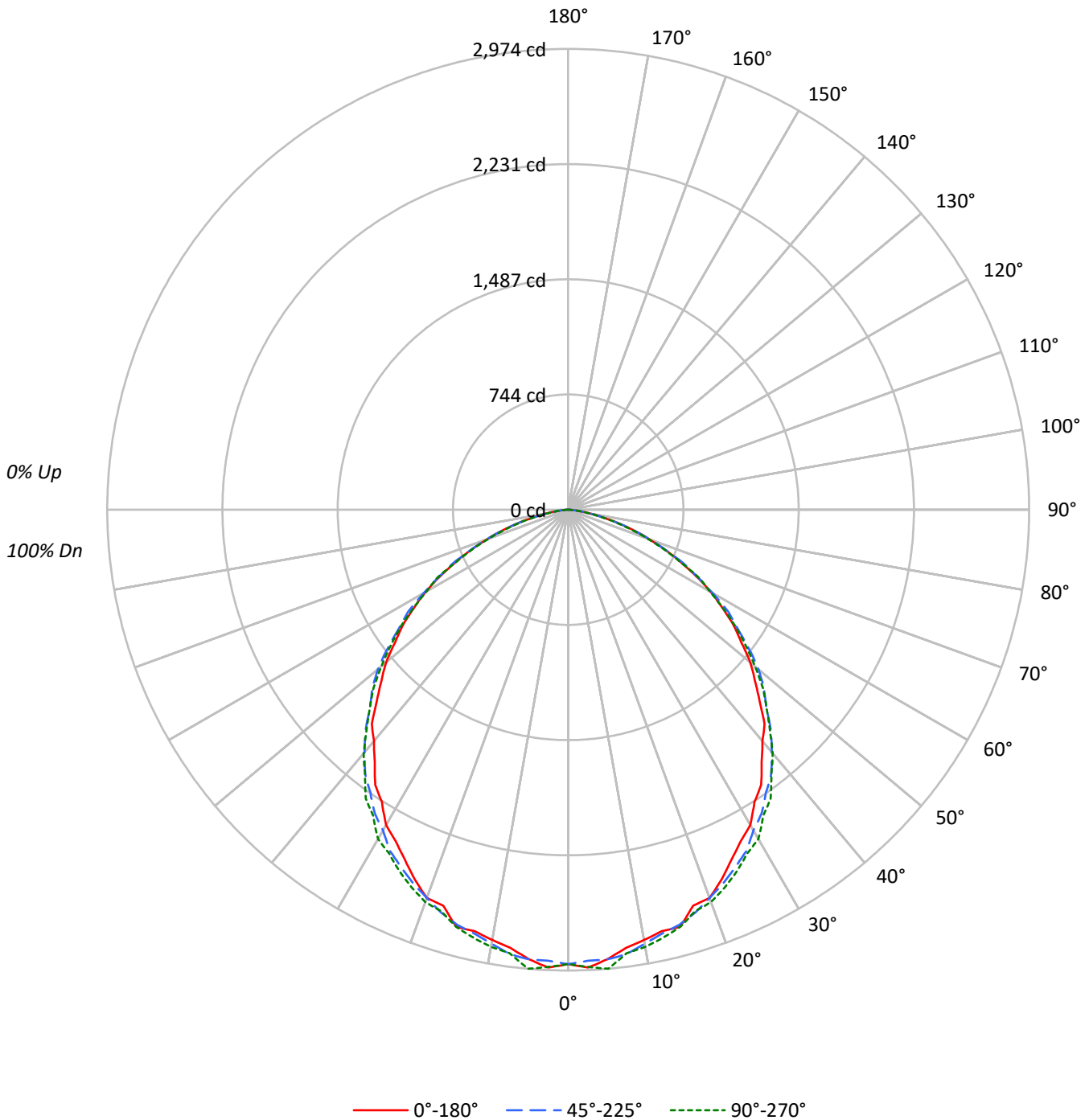
Lumens per Lamp: N/A  
Luminaire Lumens: 7390.0 lumens  
Efficiency: N/A  
Efficacy: 111.0 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 66.6  
Input Voltage (V):  
Input Current (Ain): NR  
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°	7890	7890	7890
5°	7864	7867	8033
10°	7705	7772	7827
15°	7766	7724	7767
20°	7635	7635	7716
25°	7400	7562	7645
30°	7298	7426	7624
35°	7126	7313	7477
40°	6849	7179	7211
45°	6642	6878	6888
50°	6424	6714	6585
55°	6121	6240	6195
60°	5724	5781	5676
65°	5103	5233	5067
70°	4378	4393	4271
75°	3467	3460	3326
80°	2323	2259	2171
85°	1263	1250	1170

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 7055 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	275.8	3.7
10°-20°	781.7	10.6
20°-30°	1171.1	15.8
30°-40°	1388.0	18.8
40°-50°	1390.6	18.8
50°-60°	1180.4	16.0
60°-70°	795.8	10.8
70°-80°	349.7	4.7
80°-90°	56.8	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°	2228.6	30.2
0°-40°	3616.7	48.9
0°-60°	6187.7	83.7
0°-90°	7390.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7390.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2932	2932	2932	2932	2932	
5°	2911	2904	2912	2904	2974	274
15°	2788	2755	2772	2787	2788	777
25°	2492	2506	2547	2580	2575	1152
35°	2169	2176	2226	2278	2276	1347
45°	1745	1778	1807	1854	1810	1350
55°	1305	1296	1330	1321	1320	1161
65°	802	791	822	790	796	797
75°	334	327	333	309	320	357
85°	41	40	40	39	38	59
90°	0	0	0	0	0	

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2932.2	2932.2	2932.2	2932.2	2932.2
2.5°	2957.5	2935.2	2914.4	2938.6	2953.4
5°	2911.3	2904.5	2912.5	2903.8	2973.8
7.5°	2851.5	2877.6	2892.8	2883.3	2887.5
10°	2819.7	2810.6	2844.3	2867.8	2864.4
12.5°	2785.7	2799.3	2801.2	2826.5	2828.8
15°	2787.5	2755.4	2772.4	2786.8	2787.9
17.5°	2679.3	2714.1	2725.8	2758.8	2717.9
20°	2666.0	2640.7	2666.0	2699.7	2694.4
22.5°	2584.6	2556.2	2610.7	2640.7	2638.8
25°	2492.2	2505.9	2546.8	2580.1	2574.8
27.5°	2411.2	2427.1	2485.4	2531.2	2501.7
30°	2348.8	2340.8	2390.0	2430.9	2453.6
32.5°	2237.1	2265.9	2323.4	2363.9	2342.3
35°	2169.3	2175.7	2226.1	2277.6	2276.1
37.5°	2050.8	2080.7	2151.5	2165.9	2152.7
40°	1949.7	1979.6	2043.6	2059.1	2052.7
42.5°	1875.1	1880.4	1935.3	1953.1	1924.7
45°	1745.3	1777.9	1807.4	1853.9	1810.0
47.5°	1634.7	1649.9	1713.5	1726.0	1702.9
50°	1534.4	1539.7	1603.7	1588.2	1573.0
52.5°	1408.3	1430.7	1466.7	1463.6	1445.8
55°	1304.6	1295.9	1330.0	1320.9	1320.5
57.5°	1180.1	1195.2	1223.2	1208.8	1185.7
60°	1063.5	1063.8	1074.1	1057.8	1054.7
62.5°	933.6	938.1	940.4	920.3	952.9
65°	801.5	790.9	821.9	790.5	795.8
67.5°	679.9	685.2	682.2	662.5	670.1
70°	556.5	563.3	558.4	536.1	542.9
72.5°	443.7	435.4	440.7	412.7	425.5
75°	333.5	326.7	332.8	309.3	319.9
77.5°	227.2	232.5	228.7	216.2	223.4
80°	149.9	145.8	145.8	138.6	140.1
82.5°	87.5	83.3	82.2	79.9	83.3
85°	40.9	39.8	40.5	39.4	37.9
87.5°	14.8	15.1	15.1	14.4	13.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)