

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: P590242

Luminaire Tested: FSR-24-2-LD4-2LO-35-UNV-81-94-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590242  
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-LD4-2LO-35-UNV-81-94-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .187 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

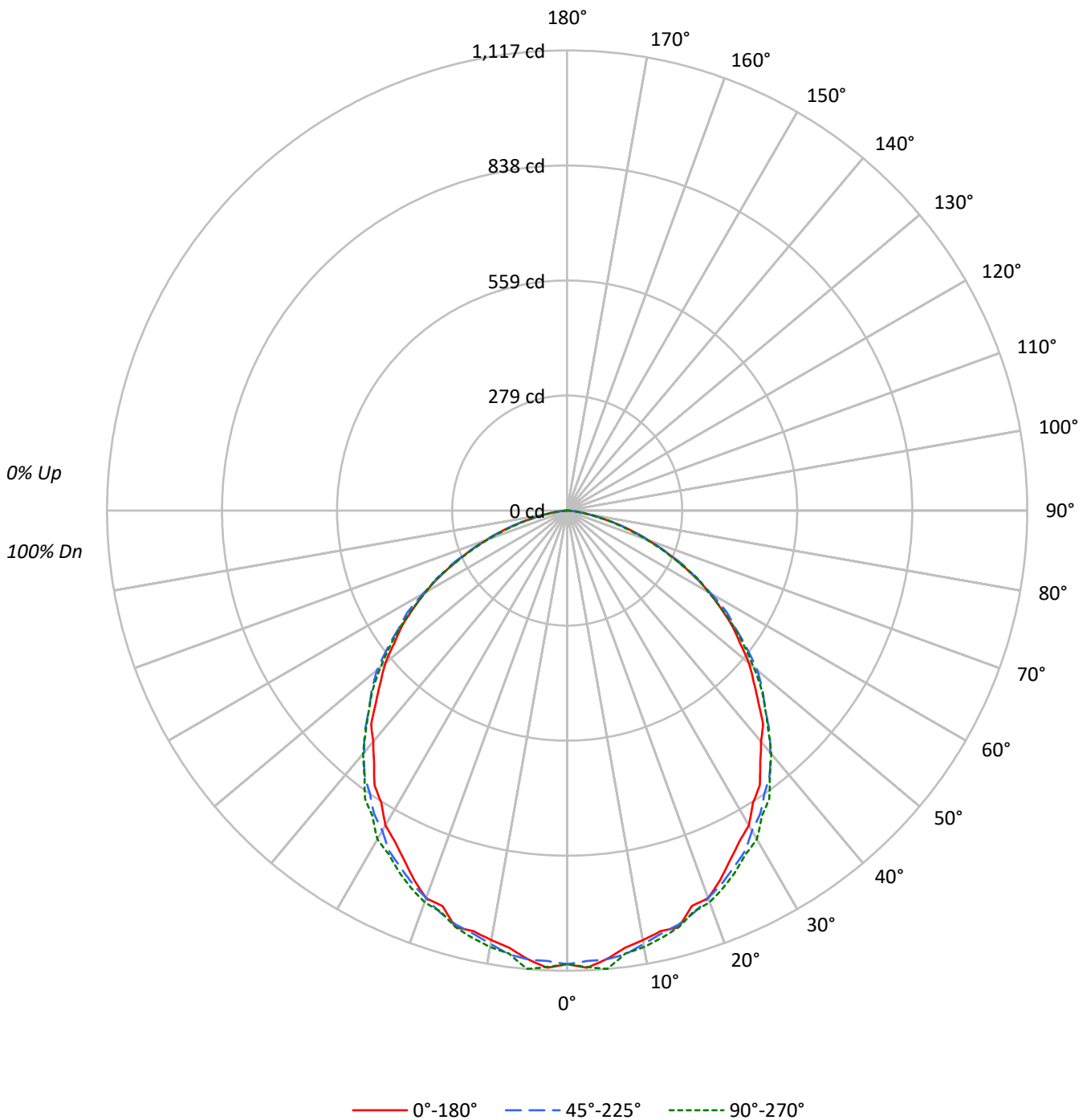
Lumens per Lamp: N/A  
Luminaire Lumens: 2775.0 lumens  
Efficiency: N/A  
Efficacy: 118.6 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 23.4  
Input Voltage (V):  
Input Current (Ain): NR  
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°	2963	2963	2963
5°	2953	2954	3016
10°	2893	2919	2939
15°	2916	2900	2917
20°	2867	2867	2897
25°	2779	2839	2871
30°	2741	2789	2863
35°	2676	2746	2808
40°	2572	2696	2708
45°	2494	2583	2587
50°	2412	2521	2473
55°	2298	2343	2327
60°	2149	2171	2132
65°	1917	1965	1903
70°	1644	1650	1604
75°	1302	1300	1249
80°	872	848	815
85°	475	469	438

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 2649 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	103.6	3.7
10°-20°	293.5	10.6
20°-30°	439.8	15.8
30°-40°	521.2	18.8
40°-50°	522.2	18.8
50°-60°	443.2	16.0
60°-70°	298.8	10.8
70°-80°	131.3	4.7
80°-90°	21.3	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°	836.9	30.2
0°-40°	1358.1	48.9
0°-60°	2323.5	83.7
0°-90°	2775.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2775.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1101	1101	1101	1101	1101	
5°	1093	1091	1094	1090	1117	103
15°	1047	1035	1041	1046	1047	292
25°	936	941	956	969	967	433
35°	815	817	836	855	855	506
45°	655	668	679	696	680	507
55°	490	487	499	496	496	436
65°	301	297	309	297	299	299
75°	125	123	125	116	120	134
85°	15	15	15	15	14	22
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1101.0	1101.0	1101.0	1101.0	<i>1101.0</i>
2.5°	1110.6	1102.2	1094.4	1103.5	<i>1109.0</i>
5°	<i>1093.2</i>	<i>1090.7</i>	<i>1093.7</i>	<i>1090.4</i>	<i>1116.7</i>
7.5°	1070.8	1080.6	1086.3	1082.7	<i>1084.3</i>
10°	1058.8	1055.4	1068.1	1076.9	<i>1075.6</i>
12.5°	1046.0	1051.2	1051.9	1061.4	<i>1062.2</i>
15°	1046.7	1034.7	1041.1	1046.5	<i>1046.9</i>
17.5°	1006.1	1019.2	1023.6	1035.9	<i>1020.6</i>
20°	1001.1	991.6	1001.1	1013.8	<i>1011.8</i>
22.5°	970.5	959.9	980.4	991.6	<i>990.9</i>
25°	935.9	941.0	956.3	968.8	<i>966.8</i>
27.5°	905.4	911.4	933.3	950.5	<i>939.4</i>
30°	882.0	879.0	897.5	912.8	<i>921.4</i>
32.5°	840.0	850.8	872.5	887.7	<i>879.6</i>
35°	814.6	817.0	835.9	855.3	<i>854.7</i>
37.5°	770.1	781.3	807.9	813.3	<i>808.3</i>
40°	732.1	743.4	767.4	773.2	<i>770.8</i>
42.5°	704.1	706.1	726.7	733.4	<i>722.8</i>
45°	655.4	667.6	678.7	696.2	<i>679.7</i>
47.5°	613.9	619.5	643.4	648.1	<i>639.4</i>
50°	576.2	578.2	602.2	596.4	<i>590.7</i>
52.5°	528.8	537.2	550.7	549.6	<i>542.9</i>
55°	489.9	486.6	499.4	496.0	<i>495.9</i>
57.5°	443.1	448.8	459.3	453.9	<i>445.3</i>
60°	399.3	399.5	403.3	397.2	<i>396.1</i>
62.5°	350.6	352.3	353.1	345.6	<i>357.8</i>
65°	301.0	297.0	308.6	296.8	<i>298.8</i>
67.5°	255.3	257.3	256.2	248.8	<i>251.6</i>
70°	209.0	211.5	209.7	201.3	<i>203.9</i>
72.5°	166.6	163.5	165.5	155.0	<i>159.8</i>
75°	125.2	122.7	125.0	116.1	<i>120.1</i>
77.5°	85.3	87.3	85.9	81.2	<i>83.9</i>
80°	56.3	54.7	54.7	52.0	<i>52.6</i>
82.5°	32.8	31.3	30.8	30.0	<i>31.3</i>
85°	15.4	14.9	15.2	14.8	<i>14.2</i>
87.5°	5.5	5.7	5.7	5.4	<i>5.1</i>
90°	0.0	0.0	0.0	0.0	<i>0.0</i>

(END OF REPORT)