

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: P590282

Luminaire Tested: FSR-24-2-LD4-2LO-40-UNV-82-94-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590282  
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-40-UNV-82-94-EDD  
Description: 2X2 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .187 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

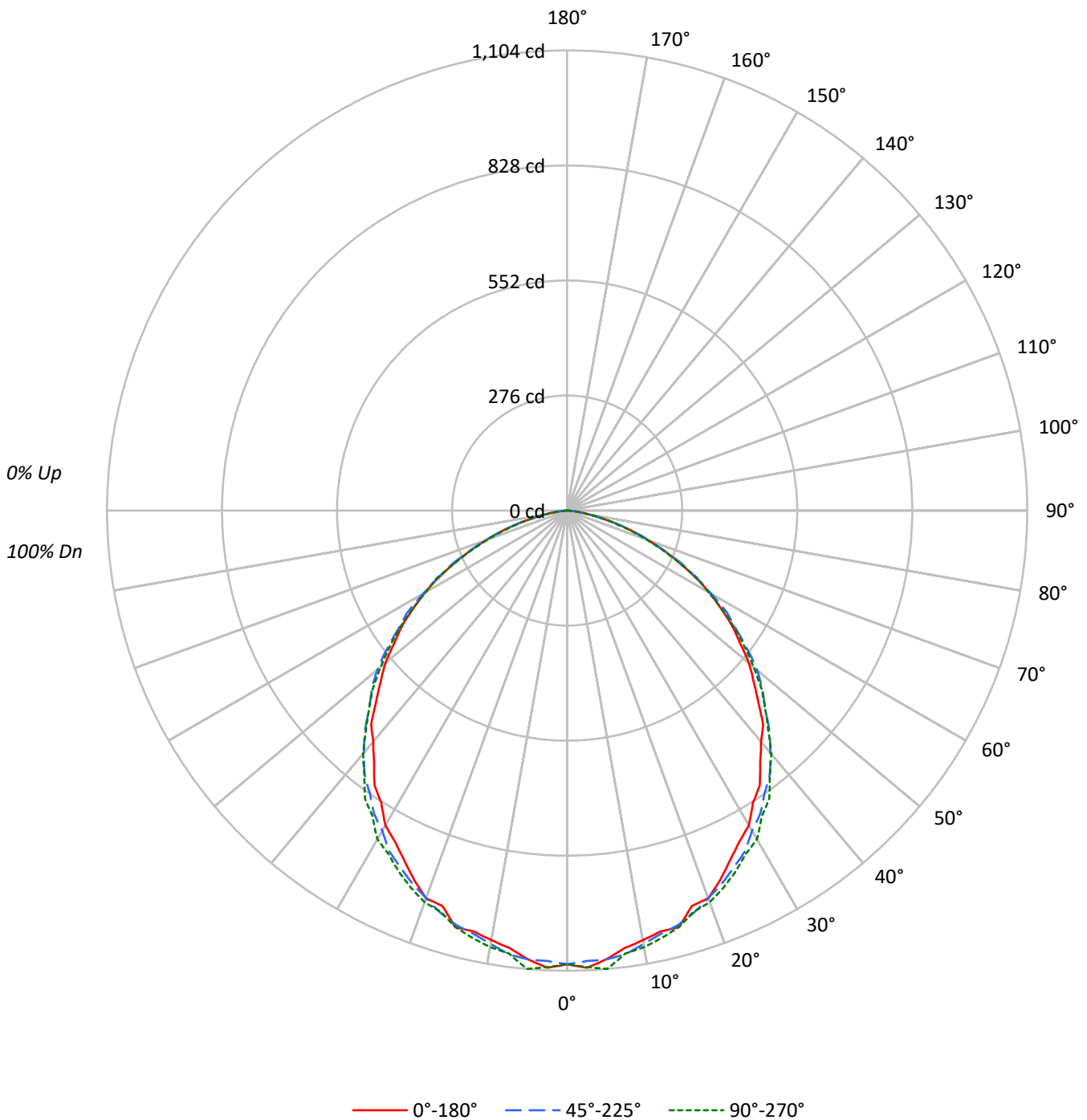
Lumens per Lamp: N/A  
Luminaire Lumens: 2743.0 lumens  
Efficiency: N/A  
Efficacy: 117.2 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 23.4  
Input Voltage (V):  
Input Current (Ain): NR  
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	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°	2929	2929	2929
5°	2919	2920	2982
10°	2860	2885	2905
15°	2883	2867	2883
20°	2834	2834	2864
25°	2747	2807	2838
30°	2709	2756	2830
35°	2645	2714	2775
40°	2542	2664	2676
45°	2465	2553	2557
50°	2384	2492	2444
55°	2272	2316	2299
60°	2124	2146	2107
65°	1894	1943	1881
70°	1626	1631	1585
75°	1287	1284	1234
80°	862	838	806
85°	469	463	435

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 2619 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	102.4	3.7
10°-20°	290.1	10.6
20°-30°	434.7	15.8
30°-40°	515.2	18.8
40°-50°	516.2	18.8
50°-60°	438.1	16.0
60°-70°	295.4	10.8
70°-80°	129.8	4.7
80°-90°	21.1	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°	827.2	30.2
0°-40°	1342.4	48.9
0°-60°	2296.7	83.7
0°-90°	2743.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2743.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1088	1088	1088	1088	1088	
5°	1081	1078	1081	1078	1104	102
15°	1035	1023	1029	1034	1035	288
25°	925	930	945	958	956	428
35°	805	808	826	845	845	500
45°	648	660	671	688	672	501
55°	484	481	494	490	490	431
65°	298	294	305	293	295	296
75°	124	121	124	115	119	133
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°	1088.4	1088.4	1088.4	1088.4	1088.4
2.5°	1097.8	1089.5	1081.7	1090.7	1096.2
5°	1080.6	1078.1	1081.0	1077.8	1103.8
7.5°	1058.4	1068.1	1073.7	1070.2	1071.8
10°	1046.6	1043.2	1055.8	1064.5	1063.2
12.5°	1034.0	1039.0	1039.7	1049.1	1050.0
15°	1034.7	1022.7	1029.1	1034.4	1034.8
17.5°	994.5	1007.4	1011.8	1024.0	1008.8
20°	989.6	980.2	989.6	1002.1	1000.1
22.5°	959.4	948.8	969.0	980.2	979.4
25°	925.1	930.1	945.3	957.7	955.7
27.5°	895.0	900.9	922.5	939.5	928.6
30°	871.8	868.9	887.1	902.3	910.7
32.5°	830.4	841.0	862.4	877.4	869.4
35°	805.2	807.6	826.3	845.4	844.8
37.5°	761.2	772.3	798.6	803.9	799.0
40°	723.7	734.8	758.5	764.3	761.9
42.5°	696.0	698.0	718.4	725.0	714.4
45°	647.8	659.9	670.9	688.1	671.8
47.5°	606.8	612.4	636.0	640.6	632.1
50°	569.5	571.5	595.3	589.5	583.9
52.5°	522.7	531.0	544.4	543.3	536.7
55°	484.2	481.0	493.7	490.3	490.1
57.5°	438.0	443.6	454.0	448.7	440.1
60°	394.7	394.9	398.7	392.6	391.5
62.5°	346.5	348.2	349.1	341.6	353.7
65°	297.5	293.6	305.1	293.4	295.4
67.5°	252.4	254.3	253.2	245.9	248.7
70°	206.6	209.1	207.3	199.0	201.5
72.5°	164.7	161.6	163.6	153.2	157.9
75°	123.8	121.3	123.5	114.8	118.7
77.5°	84.3	86.3	84.9	80.2	82.9
80°	55.6	54.1	54.1	51.4	52.0
82.5°	32.5	30.9	30.5	29.7	30.9
85°	15.2	14.8	15.0	14.6	14.1
87.5°	5.5	5.6	5.6	5.3	5.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)