

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: P590291

Luminaire Tested: FSR-24-2-LD4-2LO-40-UNV-93-96-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590291  
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-93-96-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR TEMPER  
GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

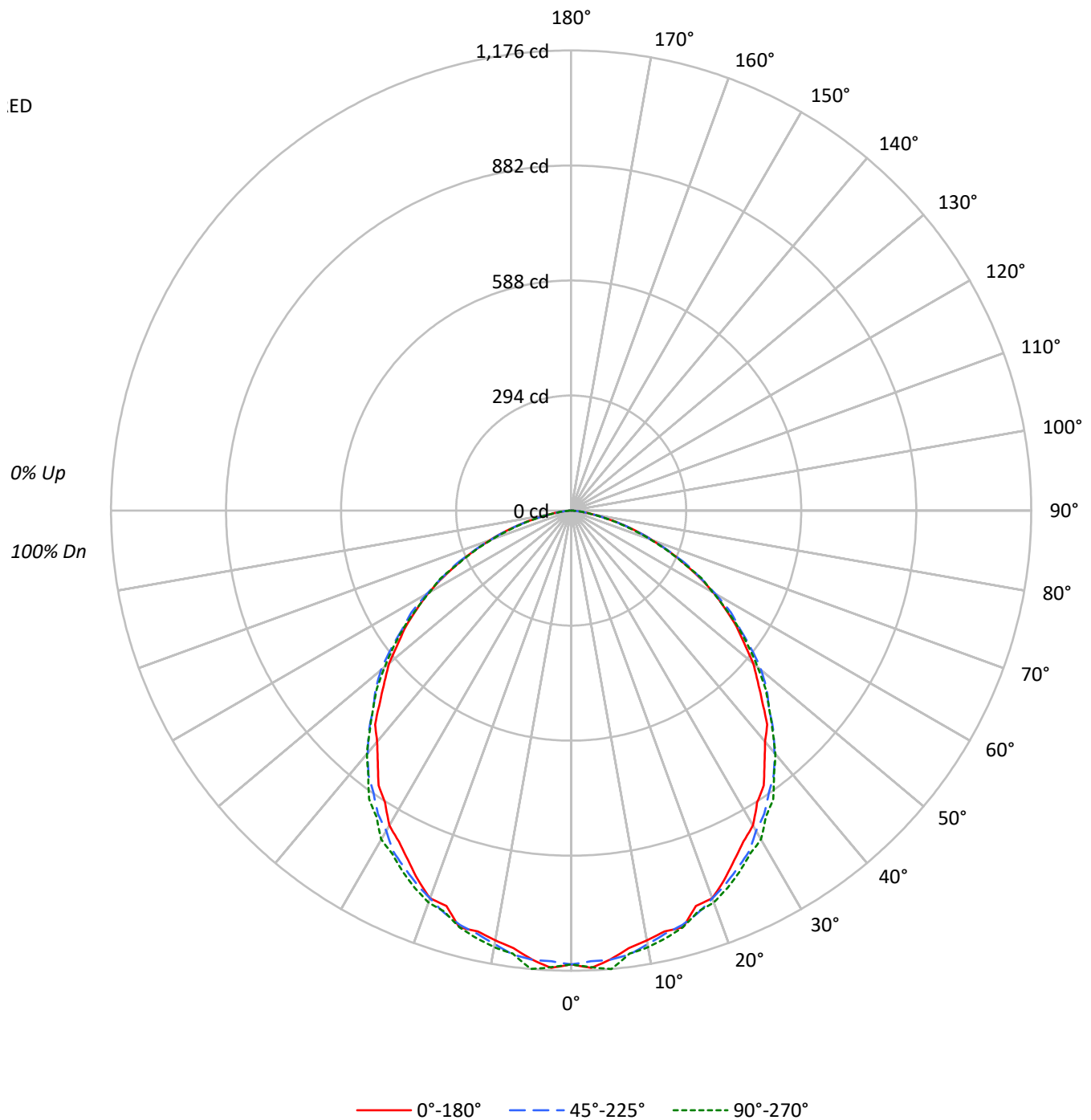
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2923.0 lumens  
Efficiency: N/A  
Efficacy: 124.9 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°	3121	3121	3121
5°	3110	3112	3177
10°	3048	3074	3096
15°	3072	3055	3072
20°	3020	3020	3052
25°	2927	2991	3024
30°	2887	2937	3016
35°	2819	2893	2958
40°	2709	2839	2852
45°	2627	2721	2724
50°	2541	2655	2605
55°	2421	2468	2450
60°	2264	2286	2245
65°	2018	2070	2004
70°	1732	1738	1689
75°	1371	1368	1315
80°	919	894	859
85°	500	494	463

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 2791 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	109.1	3.7
10°-20°	309.2	10.6
20°-30°	463.2	15.8
30°-40°	549.0	18.8
40°-50°	550.0	18.8
50°-60°	466.9	16.0
60°-70°	314.8	10.8
70°-80°	138.3	4.7
80°-90°	22.5	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°	881.5	30.2
0°-40°	1430.5	48.9
0°-60°	2447.4	83.7
0°-90°	2923.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2923.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1160	1160	1160	1160	1160	
5°	1152	1149	1152	1148	1176	109
15°	1103	1090	1097	1102	1103	307
25°	986	991	1007	1020	1018	456
35°	858	861	880	901	900	533
45°	690	703	715	733	716	534
55°	516	513	526	522	522	459
65°	317	313	325	313	315	315
75°	132	129	132	122	126	141
85°	16	16	16	16	15	23
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1159.8	1159.8	1159.8	1159.8	1159.8
2.5°	1169.8	1161.0	1152.7	1162.3	1168.2
5°	1151.5	1148.8	1152.0	1148.5	1176.2
7.5°	1127.9	1138.2	1144.2	1140.5	1142.1
10°	1115.3	1111.7	1125.0	1134.3	1133.0
12.5°	1101.8	1107.2	1108.0	1118.0	1118.9
15°	1102.6	1089.8	1096.6	1102.3	1102.7
17.5°	1059.7	1073.5	1078.2	1091.2	1075.0
20°	1054.5	1044.5	1054.5	1067.8	1065.7
22.5°	1022.3	1011.1	1032.6	1044.5	1043.7
25°	985.8	991.2	1007.3	1020.5	1018.4
27.5°	953.7	960.0	983.1	1001.2	989.5
30°	929.0	925.9	945.3	961.5	970.5
32.5°	884.8	896.2	919.0	935.0	926.5
35°	858.0	860.6	880.5	900.9	900.3
37.5°	811.2	823.0	851.0	856.7	851.4
40°	771.2	783.0	808.3	814.5	811.9
42.5°	741.7	743.8	765.5	772.5	761.3
45°	690.3	703.2	714.9	733.3	715.9
47.5°	646.6	652.6	677.7	682.7	673.6
50°	606.9	609.0	634.3	628.2	622.2
52.5°	557.1	565.9	580.1	578.9	571.9
55°	516.0	512.6	526.1	522.5	522.3
57.5°	466.8	472.7	483.8	478.1	469.0
60°	420.6	420.8	424.8	418.4	417.2
62.5°	369.3	371.1	372.0	364.0	376.9
65°	317.0	312.8	325.1	312.7	314.8
67.5°	268.9	271.0	269.8	262.1	265.0
70°	220.1	222.8	220.9	212.0	214.7
72.5°	175.5	172.2	174.3	163.2	168.3
75°	131.9	129.2	131.6	122.3	126.5
77.5°	89.8	91.9	90.4	85.5	88.3
80°	59.3	57.7	57.7	54.8	55.4
82.5°	34.6	32.9	32.5	31.6	32.9
85°	16.2	15.7	16.0	15.6	15.0
87.5°	5.8	6.0	6.0	5.7	5.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)