

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: P590959

Luminaire Tested: FSR-24-2-LD4-4STD-40-UNV-93-86-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590959  
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-40-UNV-93-86-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

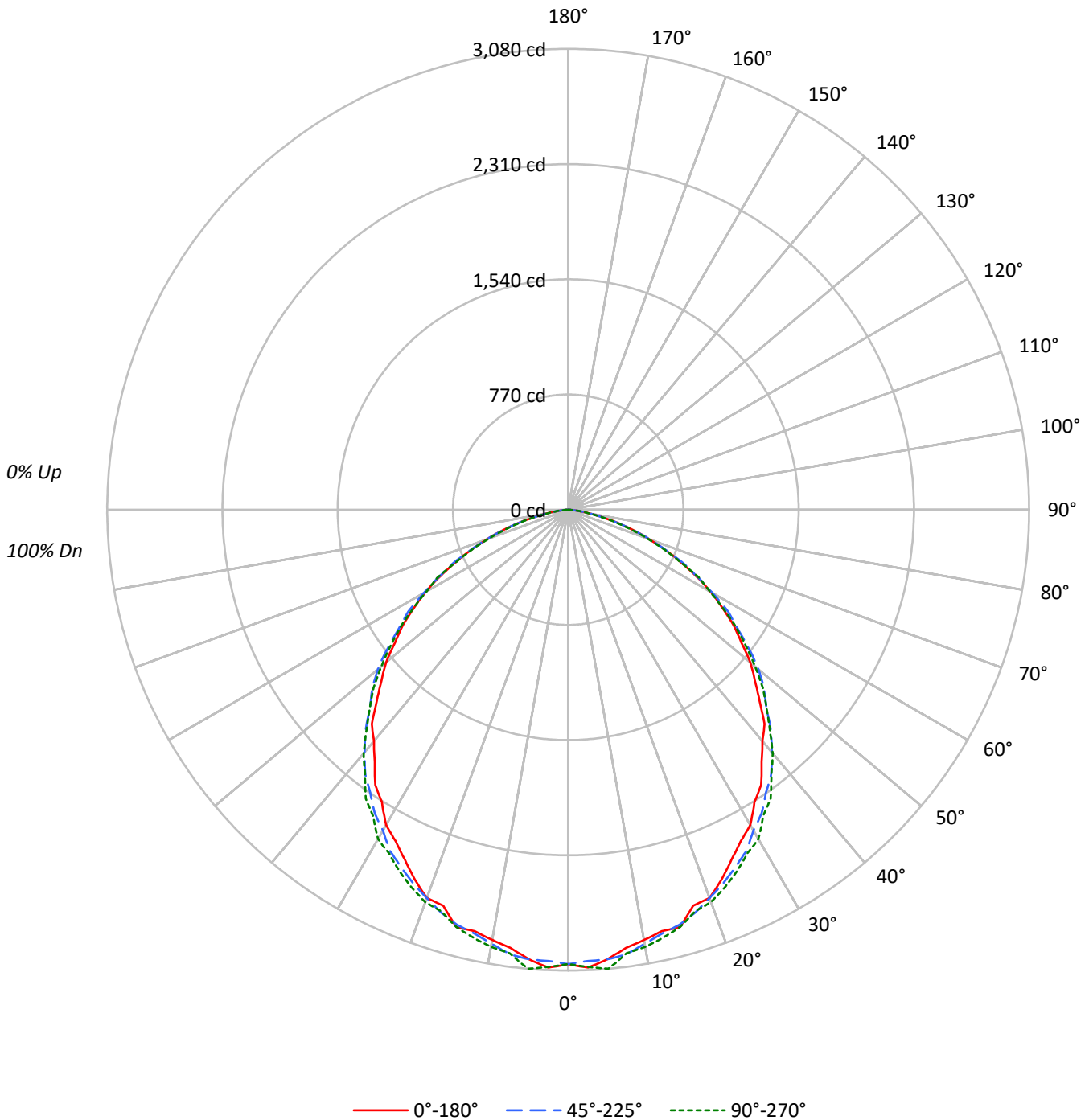
Lumens per Lamp: N/A  
Luminaire Lumens: 7654.0 lumens  
Efficiency: N/A  
Efficacy: 114.9 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 66.6  
Input Voltage (V):  
Input Current (Ain): NR  
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	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°	8172	8172	8172
5°	8145	8148	8320
10°	7980	8050	8106
15°	8043	7999	8044
20°	7907	7907	7992
25°	7664	7832	7918
30°	7559	7692	7897
35°	7381	7574	7744
40°	7094	7435	7468
45°	6879	7124	7134
50°	6653	6954	6821
55°	6339	6463	6417
60°	5928	5987	5879
65°	5286	5421	5248
70°	4535	4551	4424
75°	3592	3584	3445
80°	2407	2340	2249
85°	1306	1297	1210

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 7308 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	285.7	3.7
10°-20°	809.6	10.6
20°-30°	1213.0	15.8
30°-40°	1437.6	18.8
40°-50°	1440.3	18.8
50°-60°	1222.6	16.0
60°-70°	824.2	10.8
70°-80°	362.2	4.7
80°-90°	58.9	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°	2308.3	30.2
0°-40°	3745.9	48.9
0°-60°	6408.7	83.7
0°-90°	7654.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7654.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3037	3037	3037	3037	3037	
5°	3015	3008	3016	3008	3080	284
15°	2887	2854	2871	2886	2888	804
25°	2581	2595	2638	2672	2667	1193
35°	2247	2254	2306	2359	2357	1395
45°	1808	1841	1872	1920	1875	1398
55°	1351	1342	1378	1368	1368	1202
65°	830	819	851	819	824	826
75°	346	338	345	320	331	370
85°	42	41	42	41	39	61
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3036.9	3036.9	3036.9	3036.9	3036.9
2.5°	3063.2	3040.1	3018.5	3043.6	3058.9
5°	3015.3	3008.3	3016.5	3007.5	3080.0
7.5°	2953.4	2980.4	2996.1	2986.3	2990.6
10°	2920.5	2911.0	2945.9	2970.3	2966.7
12.5°	2885.2	2899.3	2901.2	2927.5	2929.9
15°	2887.1	2853.8	2871.4	2886.3	2887.5
17.5°	2775.0	2811.1	2823.2	2857.3	2815.0
20°	2761.3	2735.0	2761.3	2796.2	2790.7
22.5°	2677.0	2647.5	2704.0	2735.0	2733.0
25°	2581.3	2595.4	2637.7	2672.2	2666.8
27.5°	2497.4	2513.8	2574.2	2621.7	2591.1
30°	2432.7	2424.4	2475.4	2517.8	2541.3
32.5°	2317.0	2346.8	2406.4	2448.4	2426.0
35°	2246.8	2253.5	2305.6	2359.0	2357.4
37.5°	2124.1	2155.1	2228.4	2243.3	2229.6
40°	2019.4	2050.4	2116.6	2132.7	2126.0
42.5°	1942.1	1947.6	2004.5	2022.9	1993.5
45°	1807.6	1841.4	1871.9	1920.2	1874.7
47.5°	1693.1	1708.8	1774.7	1787.6	1763.7
50°	1589.2	1594.7	1661.0	1644.9	1629.2
52.5°	1458.7	1481.8	1519.0	1515.9	1497.5
55°	1351.2	1342.2	1377.5	1368.1	1367.7
57.5°	1222.2	1237.9	1266.9	1252.0	1228.1
60°	1101.4	1101.8	1112.4	1095.6	1092.4
62.5°	967.0	971.7	974.0	953.2	986.9
65°	830.1	819.1	851.3	818.7	824.2
67.5°	704.2	709.7	706.6	686.2	694.0
70°	576.4	583.5	578.4	555.2	562.3
72.5°	459.6	450.9	456.4	427.4	440.7
75°	345.5	338.4	344.7	320.4	331.3
77.5°	235.3	240.8	236.8	223.9	231.3
80°	155.3	151.0	151.0	143.5	145.1
82.5°	90.6	86.3	85.1	82.7	86.3
85°	42.3	41.2	42.0	40.8	39.2
87.5°	15.3	15.7	15.7	14.9	14.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)