

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: P590746

Luminaire Tested: FSR-24-2-LD4-4HI-40-UNV-80-94-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590746  
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-LD4-4HI-40-UNV-80-94-EDD  
Description: 2X2 FSR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .187 CLEAR TEMPERED G ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

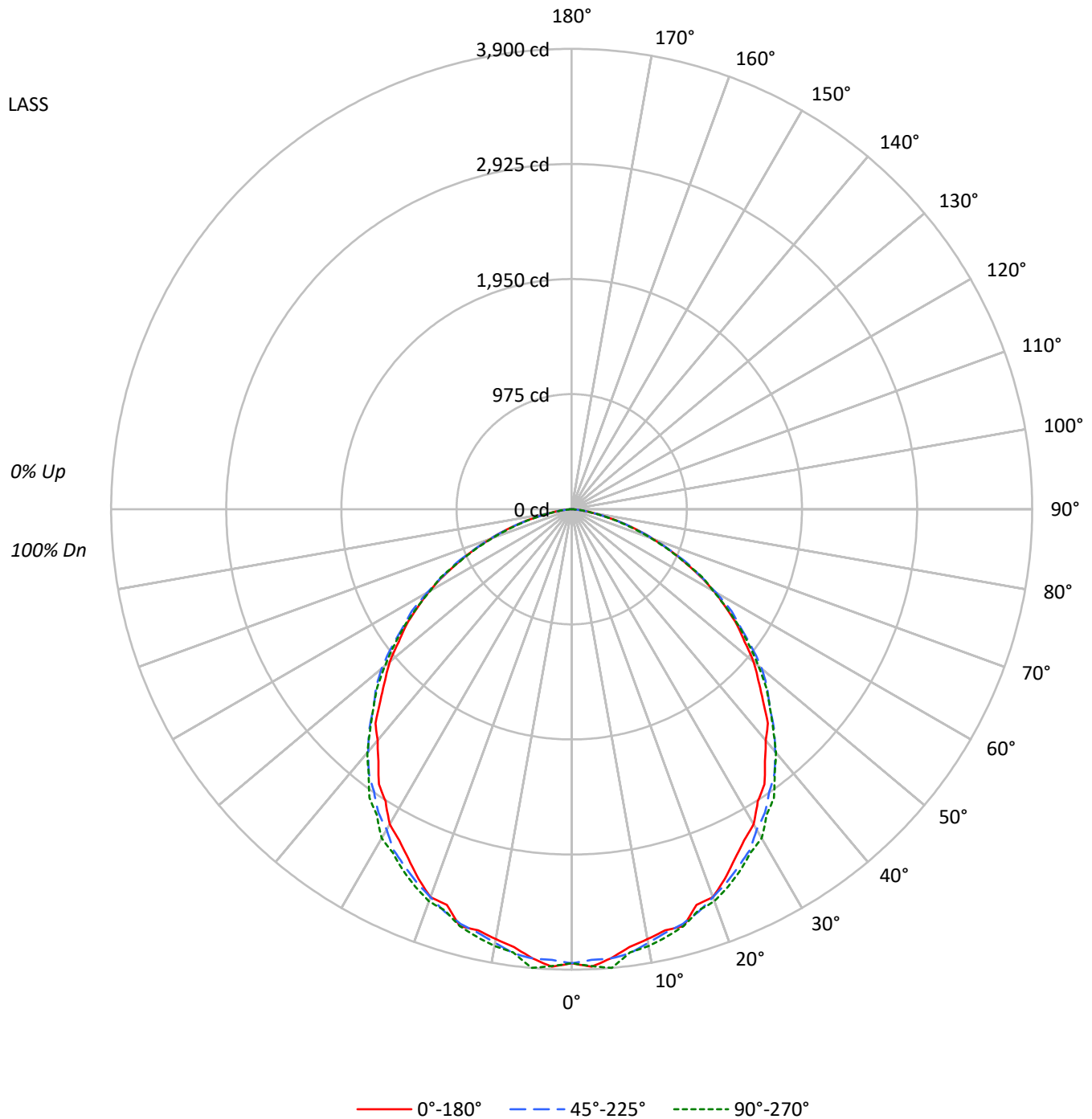
Lumens per Lamp: N/A  
Luminaire Lumens: 9691.0 lumens  
Efficiency: N/A  
Efficacy: 112.2 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 86.4  
Input Voltage (V):  
Input Current (Ain): NR  
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°	10347	10347	10347
5°	10313	10317	10534
10°	10104	10192	10264
15°	10184	10128	10185
20°	10012	10012	10119
25°	9704	9916	10025
30°	9571	9739	9998
35°	9345	9590	9805
40°	8982	9414	9456
45°	8710	9020	9033
50°	8424	8804	8636
55°	8026	8183	8124
60°	7506	7580	7444
65°	6692	6863	6645
70°	5742	5762	5601
75°	4548	4537	4362
80°	3047	2961	2847
85°	1655	1639	1531

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 9252 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	361.7	3.7
10°-20°	1025.1	10.6
20°-30°	1535.8	15.8
30°-40°	1820.2	18.8
40°-50°	1823.6	18.8
50°-60°	1547.9	16.0
60°-70°	1043.6	10.8
70°-80°	458.6	4.7
80°-90°	74.5	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°	2922.6	30.2
0°-40°	4742.8	48.9
0°-60°	8114.3	83.7
0°-90°	9691.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	9691.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3845	3845	3845	3845	3845	
5°	3818	3809	3819	3808	3900	360
15°	3656	3613	3636	3654	3656	1018
25°	3268	3286	3340	3383	3376	1511
35°	2845	2853	2919	2987	2985	1766
45°	2289	2331	2370	2431	2374	1770
55°	1711	1699	1744	1732	1732	1522
65°	1051	1037	1078	1037	1044	1045
75°	437	428	436	406	420	469
85°	54	52	53	52	50	78
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3845.1	3845.1	3845.1	3845.1	3845.1
2.5°	3878.4	3849.1	3821.8	3853.6	3872.9
5°	3817.8	3808.9	3819.3	3807.9	3899.8
7.5°	3739.4	3773.7	3793.5	3781.1	3786.6
10°	3697.7	3685.8	3730.0	3760.7	3756.3
12.5°	3653.0	3670.9	3673.4	3706.6	3709.6
15°	3655.5	3613.3	3635.6	3654.5	3656.0
17.5°	3513.5	3559.2	3574.6	3617.8	3564.1
20°	3496.1	3462.9	3496.1	3540.3	3533.4
22.5°	3389.4	3352.2	3423.6	3462.9	3460.4
25°	3268.2	3286.1	3339.7	3383.4	3376.5
27.5°	3162.0	3182.9	3259.3	3319.4	3280.7
30°	3080.1	3069.7	3134.2	3187.8	3217.6
32.5°	2933.6	2971.4	3046.8	3099.9	3071.6
35°	2844.8	2853.2	2919.2	2986.8	2984.8
37.5°	2689.4	2728.6	2821.4	2840.3	2822.9
40°	2556.8	2596.0	2679.9	2700.3	2691.8
42.5°	2459.0	2466.0	2537.9	2561.3	2524.0
45°	2288.7	2331.4	2370.1	2431.2	2373.6
47.5°	2143.7	2163.6	2247.0	2263.4	2233.1
50°	2012.2	2019.1	2103.0	2082.7	2062.8
52.5°	1846.9	1876.2	1923.3	1919.3	1896.0
55°	1710.8	1699.4	1744.1	1732.2	1731.7
57.5°	1547.5	1567.3	1604.1	1585.2	1554.9
60°	1394.6	1395.1	1408.5	1387.1	1383.2
62.5°	1224.3	1230.2	1233.2	1206.9	1249.6
65°	1051.0	1037.1	1077.8	1036.6	1043.6
67.5°	891.7	898.6	894.6	868.8	878.7
70°	729.8	738.7	732.3	703.0	711.9
72.5°	581.9	570.9	577.9	541.2	558.0
75°	437.4	428.5	436.4	405.6	419.5
77.5°	297.9	304.8	299.9	283.5	292.9
80°	196.6	191.1	191.1	181.7	183.7
82.5°	114.7	109.2	107.7	104.8	109.2
85°	53.6	52.1	53.1	51.6	49.6
87.5°	19.4	19.9	19.9	18.9	17.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)