

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: P590088

Luminaire Tested: FSR-24-2-LD4-1STD-40-UNV-82-87-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590088  
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-LD4-1STD-40-UNV-82-87-EDD  
Description: 2X2 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

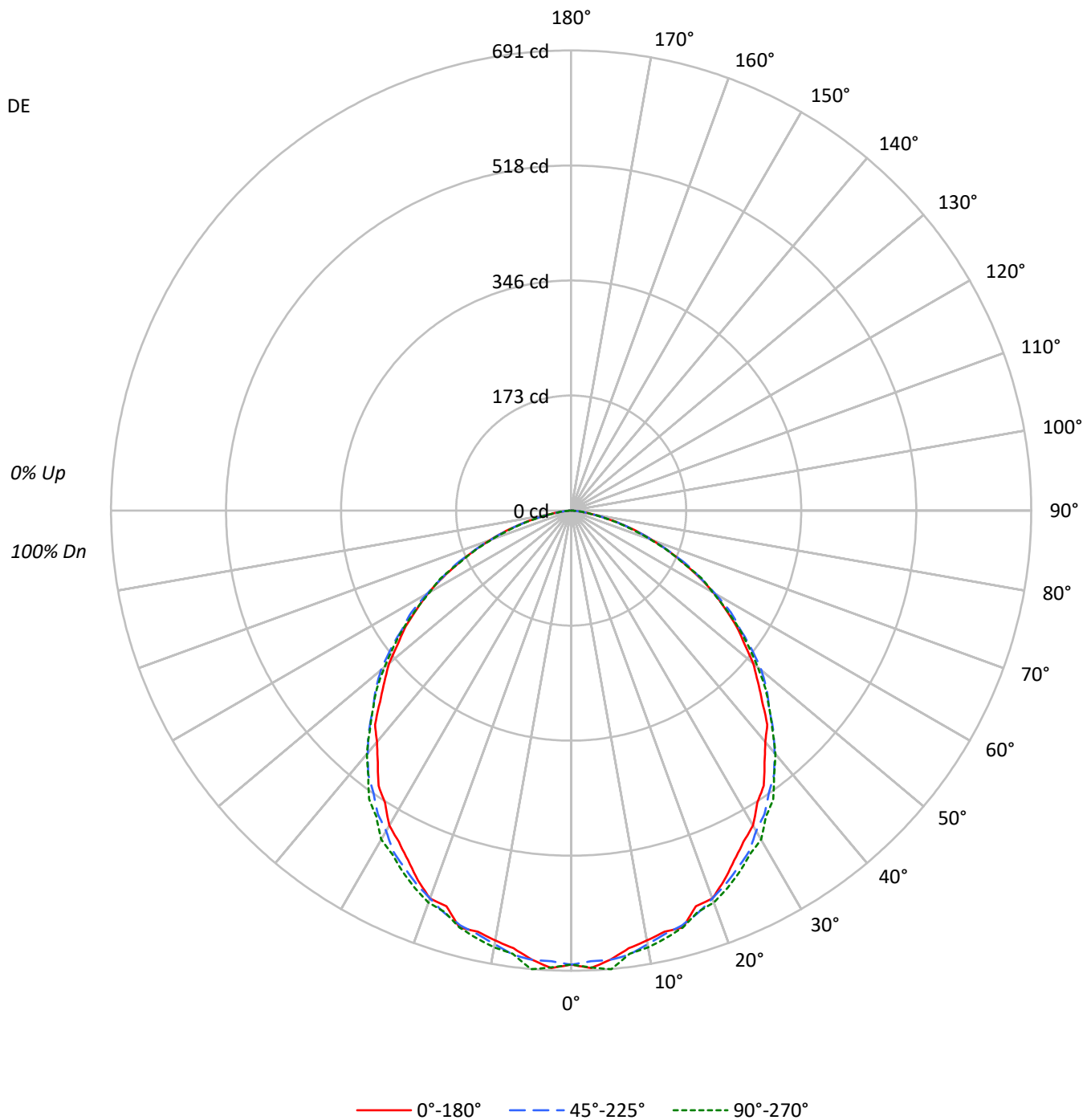
Lumens per Lamp: N/A  
Luminaire Lumens: 1718.0 lumens  
Efficiency: N/A  
Efficacy: 103.5 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 16.6  
Input Voltage (V):  
Input Current (Ain): NR  
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°	1834	1834	1834
5°	1828	1829	1867
10°	1791	1807	1820
15°	1805	1796	1806
20°	1775	1775	1794
25°	1720	1758	1777
30°	1697	1726	1772
35°	1657	1700	1738
40°	1592	1669	1676
45°	1544	1599	1601
50°	1493	1561	1531
55°	1423	1451	1440
60°	1330	1344	1320
65°	1186	1217	1178
70°	1018	1021	993
75°	806	805	774
80°	541	525	505
85°	293	290	272

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 1640 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	64.1	3.7
10°-20°	181.7	10.6
20°-30°	272.3	15.8
30°-40°	322.7	18.8
40°-50°	323.3	18.8
50°-60°	274.4	16.0
60°-70°	185.0	10.8
70°-80°	81.3	4.7
80°-90°	13.2	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°	518.1	30.2
0°-40°	840.8	48.9
0°-60°	1438.5	83.7
0°-90°	1718.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1718.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	682	682	682	682	682	
5°	677	675	677	675	691	64
15°	648	641	644	648	648	181
25°	579	583	592	600	599	268
35°	504	506	518	530	529	313
45°	406	413	420	431	421	314
55°	303	301	309	307	307	270
65°	186	184	191	184	185	185
75°	78	76	77	72	74	83
85°	10	9	9	9	9	14
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	681.7	681.7	681.7	681.7	681.7
2.5°	687.6	682.4	677.5	683.2	686.6
5°	676.8	675.2	677.1	675.1	691.3
7.5°	662.9	669.0	672.5	670.3	671.3
10°	655.5	653.4	661.2	666.7	665.9
12.5°	647.6	650.8	651.2	657.1	657.6
15°	648.0	640.6	644.5	647.9	648.1
17.5°	622.9	631.0	633.7	641.3	631.8
20°	619.8	613.9	619.8	627.6	626.4
22.5°	600.9	594.3	606.9	613.9	613.4
25°	579.4	582.6	592.1	599.8	598.6
27.5°	560.6	564.2	577.8	588.5	581.6
30°	546.0	544.2	555.6	565.1	570.4
32.5°	520.1	526.8	540.1	549.6	544.5
35°	504.3	505.8	517.5	529.5	529.1
37.5°	476.8	483.7	500.2	503.5	500.4
40°	453.3	460.2	475.1	478.7	477.2
42.5°	435.9	437.2	449.9	454.1	447.5
45°	405.7	413.3	420.2	431.0	420.8
47.5°	380.0	383.6	398.3	401.3	395.9
50°	356.7	357.9	372.8	369.2	365.7
52.5°	327.4	332.6	341.0	340.3	336.1
55°	303.3	301.3	309.2	307.1	307.0
57.5°	274.3	277.9	284.4	281.0	275.7
60°	247.2	247.3	249.7	245.9	245.2
62.5°	217.0	218.1	218.6	214.0	221.5
65°	186.3	183.9	191.1	183.8	185.0
67.5°	158.1	159.3	158.6	154.0	155.8
70°	129.4	131.0	129.8	124.6	126.2
72.5°	103.2	101.2	102.4	95.9	98.9
75°	77.5	76.0	77.4	71.9	74.4
77.5°	52.8	54.0	53.2	50.3	51.9
80°	34.9	33.9	33.9	32.2	32.6
82.5°	20.3	19.4	19.1	18.6	19.4
85°	9.5	9.2	9.4	9.2	8.8
87.5°	3.4	3.5	3.5	3.3	3.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)