

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: P590889

Luminaire Tested: FSR-24-2-LD4-4LO-50-UNV-82-88-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590889  
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-LD4-4LO-50-UNV-82-88-EDD  
Description: 2X2 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

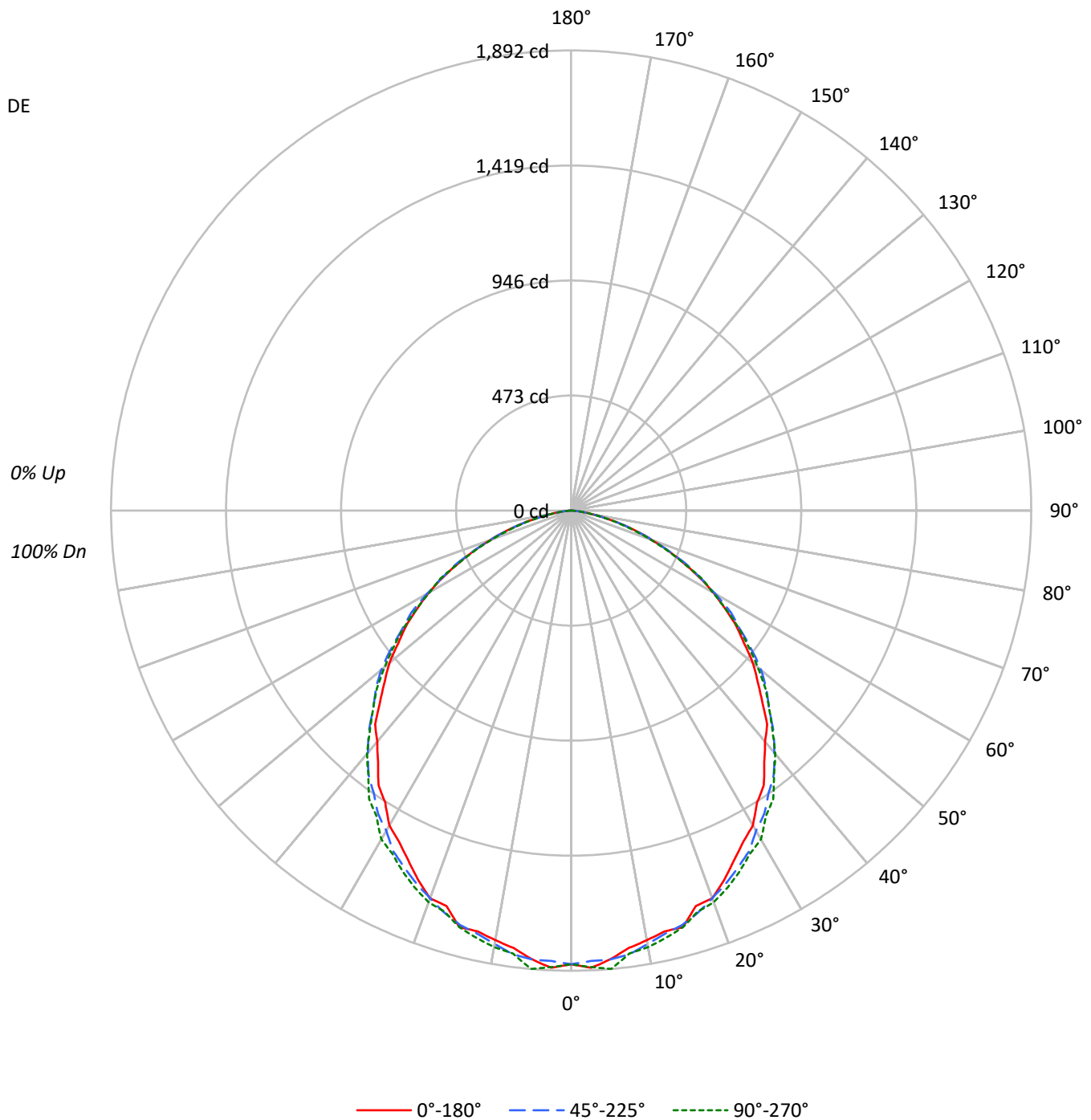
Lumens per Lamp: N/A  
Luminaire Lumens: 4701.0 lumens  
Efficiency: N/A  
Efficacy: 100.4 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 46.8  
Input Voltage (V):  
Input Current (Ain): NR  
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°	5019	5019	5019
5°	5003	5005	5110
10°	4901	4944	4979
15°	4940	4913	4941
20°	4857	4857	4908
25°	4707	4810	4863
30°	4643	4724	4850
35°	4533	4652	4756
40°	4357	4567	4587
45°	4225	4375	4382
50°	4086	4271	4189
55°	3894	3969	3941
60°	3641	3677	3611
65°	3246	3329	3223
70°	2785	2795	2718
75°	2206	2201	2116
80°	1478	1437	1381
85°	803	797	744

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 4488 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	175.5	3.7
10°-20°	497.3	10.6
20°-30°	745.0	15.8
30°-40°	883.0	18.8
40°-50°	884.6	18.8
50°-60°	750.9	16.0
60°-70°	506.2	10.8
70°-80°	222.5	4.7
80°-90°	36.1	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°	1417.7	30.2
0°-40°	2300.7	48.9
0°-60°	3936.2	83.7
0°-90°	4701.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4701.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1865	1865	1865	1865	1865	
5°	1852	1848	1853	1847	1892	175
15°	1773	1753	1764	1773	1774	494
25°	1585	1594	1620	1641	1638	733
35°	1380	1384	1416	1449	1448	857
45°	1110	1131	1150	1179	1151	859
55°	830	824	846	840	840	738
65°	510	503	523	503	506	507
75°	212	208	212	197	204	227
85°	26	25	26	25	24	38
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1865.2	1865.2	1865.2	1865.2	1865.2
2.5°	1881.4	1867.2	1853.9	1869.3	1878.7
5°	1852.0	1847.7	1852.7	1847.2	1891.7
7.5°	1813.9	1830.6	1840.2	1834.2	1836.8
10°	1793.7	1787.9	1809.4	1824.3	1822.1
12.5°	1772.0	1780.7	1781.9	1798.0	1799.5
15°	1773.2	1752.8	1763.6	1772.8	1773.5
17.5°	1704.4	1726.5	1734.0	1754.9	1728.9
20°	1695.9	1679.8	1695.9	1717.4	1714.0
22.5°	1644.2	1626.1	1660.8	1679.8	1678.6
25°	1585.4	1594.1	1620.1	1641.3	1637.9
27.5°	1533.9	1544.0	1581.1	1610.2	1591.4
30°	1494.1	1489.1	1520.4	1546.4	1560.8
32.5°	1423.1	1441.4	1478.0	1503.8	1490.0
35°	1380.0	1384.1	1416.1	1448.8	1447.9
37.5°	1304.6	1323.6	1368.6	1377.8	1369.4
40°	1240.3	1259.3	1300.0	1309.9	1305.8
42.5°	1192.8	1196.2	1231.1	1242.4	1224.4
45°	1110.2	1130.9	1149.7	1179.4	1151.4
47.5°	1039.9	1049.5	1090.0	1097.9	1083.3
50°	976.1	979.5	1020.2	1010.3	1000.7
52.5°	895.9	910.1	933.0	931.1	919.7
55°	829.9	824.4	846.0	840.3	840.0
57.5°	750.7	760.3	778.1	769.0	754.3
60°	676.5	676.7	683.2	672.9	671.0
62.5°	593.9	596.8	598.2	585.5	606.2
65°	509.8	503.1	522.8	502.9	506.2
67.5°	432.5	435.9	434.0	421.5	426.3
70°	354.0	358.4	355.2	341.0	345.4
72.5°	282.3	277.0	280.3	262.5	270.7
75°	212.2	207.8	211.7	196.8	203.5
77.5°	144.5	147.9	145.5	137.5	142.1
80°	95.4	92.7	92.7	88.1	89.1
82.5°	55.6	53.0	52.3	50.8	53.0
85°	26.0	25.3	25.8	25.0	24.1
87.5°	9.4	9.6	9.6	9.2	8.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)