

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: P561622

Luminaire Tested: FSR-12-4-LD4-2LO-40-UNV-82-87-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561622  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-5)  
Test Lab: INNOVATION CENTER  
Issue Date: 7/20/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: FAIL-SAFE  
Catalog Number: FSR-12-4-LD4-2LO-40-UNV-82-87-EDD-90  
Description: 1X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

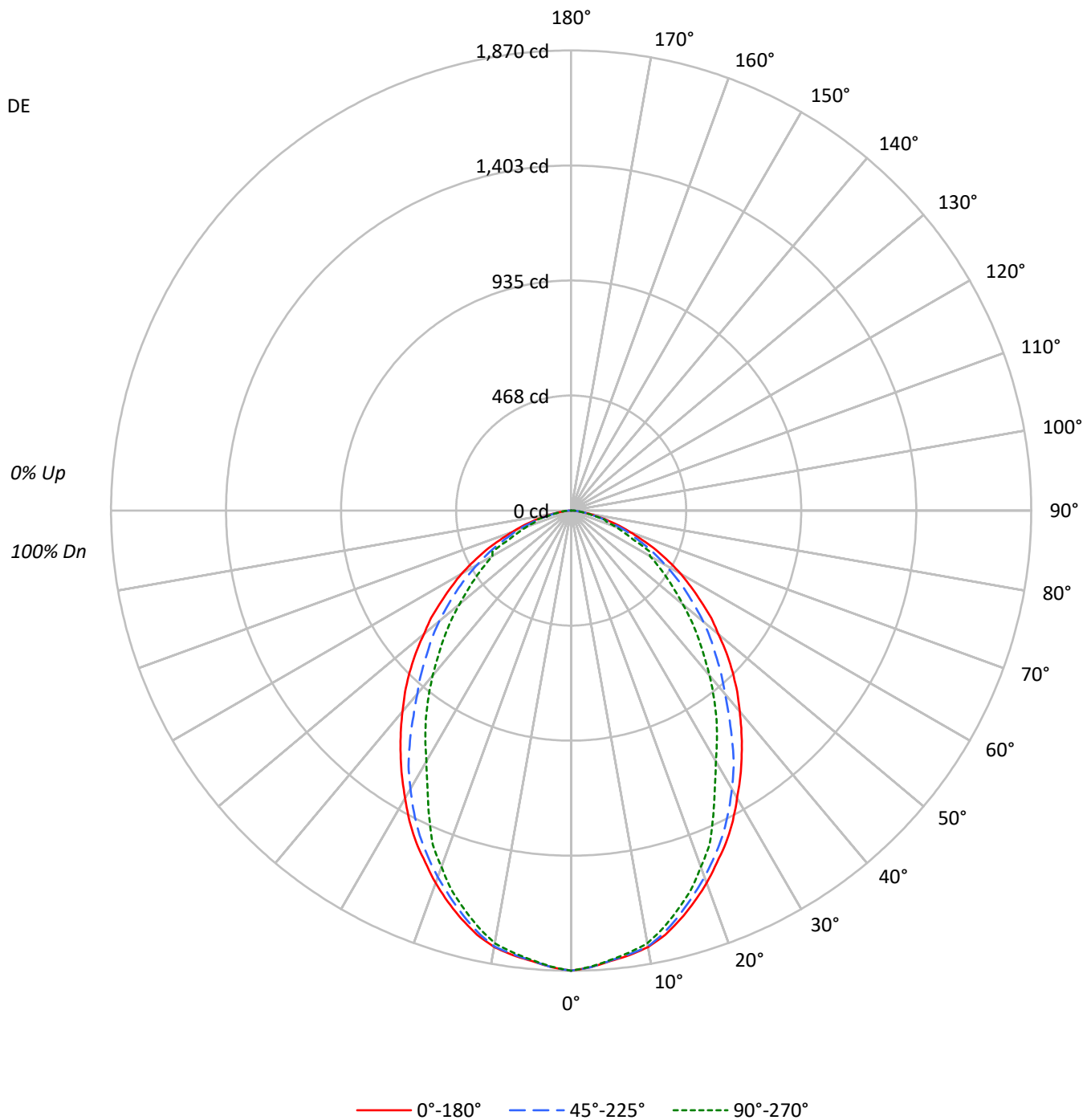
Lumens per Lamp: N/A  
Luminaire Lumens: 3671.0 lumens  
Efficiency: N/A  
Efficacy: 78.4 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 46.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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



TEST NUMBER: P561622

CATALOG NUMBER: FSR-12-4-LD4-2LO-40-UNV-82-87-EDD-90

### Luminous Intensity Polar Plot





TEST NUMBER: P561622

CATALOG NUMBER: FSR-12-4-LD4-2LO-40-UNV-82-87-EDD-90

**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	0																			
RCR																																														
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100																												
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87																												
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75																												
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65																												
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56																												
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50																												
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44																												
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40																												
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36																												
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33																												
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30																												

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	5032	5032	5032
5°	4964	4958	4952
10°	4921	4915	4879
15°	4788	4740	4674
20°	4612	4538	4414
25°	4423	4326	4057
30°	4192	4057	3654
35°	3970	3750	3380
40°	3744	3417	3075
45°	3529	3159	2781
50°	3267	2932	2480
55°	3022	2657	2221
60°	2769	2373	1990
65°	2436	2078	1762
70°	2007	1820	1496
75°	1596	1393	1461
80°	1072	1006	938
85°	667	800	936

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3529 cd/sqm



TEST NUMBER: P561622

CATALOG NUMBER: FSR-12-4-LD4-2LO-40-UNV-82-87-EDD-90

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	174.1	4.7
10°-20°	477.7	13.0
20°-30°	661.4	18.0
30°-40°	705.2	19.2
40°-50°	643.4	17.5
50°-60°	504.0	13.7
60°-70°	328.5	8.9
70°-80°	145.5	4.0
80°-90°	31.3	0.9
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°	1313.2	35.8
0°-40°	2018.4	55.0
0°-60°	3165.7	86.2
0°-90°	3671.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3671.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1870	1870	1870	1870	1870	
5°	1838	1835	1835	1833	1833	174
15°	1719	1719	1701	1684	1678	483
25°	1490	1481	1457	1405	1366	684
35°	1208	1200	1141	1055	1029	755
45°	927	908	830	761	731	714
55°	644	625	566	499	473	578
65°	383	361	326	333	277	377
75°	154	143	134	128	140	164
85°	22	24	26	28	30	30
90°	0	0	0	0	0	



TEST NUMBER: P561622

CATALOG NUMBER: FSR-12-4-LD4-2LO-40-UNV-82-87-EDD-90

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1870.0	1870.0	1870.0	1870.0	1870.0
2.5°	1857.0	1857.0	1857.0	1854.8	1854.8
5°	1837.5	1835.4	1835.4	1833.2	1833.2
7.5°	1822.4	1820.2	1818.1	1815.9	1811.6
10°	1800.8	1800.8	1798.6	1787.8	1785.6
12.5°	1766.2	1764.0	1755.4	1740.3	1735.9
15°	1718.6	1718.6	1701.3	1684.0	1677.6
17.5°	1666.7	1664.6	1643.0	1625.7	1617.0
20°	1610.5	1606.2	1584.6	1556.5	1541.4
22.5°	1547.8	1547.8	1521.9	1485.2	1470.0
25°	1489.5	1480.8	1457.1	1405.2	1366.3
27.5°	1422.5	1409.5	1383.6	1310.1	1264.7
30°	1349.0	1342.5	1305.7	1210.6	1176.0
32.5°	1279.8	1269.0	1230.1	1130.6	1102.5
35°	1208.4	1199.8	1141.4	1055.0	1029.0
37.5°	1137.1	1126.3	1052.8	983.6	951.2
40°	1065.8	1052.8	972.8	910.1	875.5
42.5°	998.8	981.5	903.6	836.6	797.7
45°	927.4	908.0	830.1	761.0	730.7
47.5°	856.1	838.8	767.4	696.1	661.5
50°	780.4	765.3	700.4	629.1	592.3
52.5°	717.7	693.9	631.2	559.9	529.6
55°	644.2	624.8	566.4	499.4	473.4
57.5°	577.2	557.7	503.7	441.0	419.4
60°	514.5	486.4	441.0	387.0	369.7
62.5°	445.3	423.7	384.8	339.4	361.0
65°	382.6	361.0	326.4	332.9	276.7
67.5°	313.5	302.7	272.4	242.1	233.5
70°	255.1	242.1	231.3	198.9	190.2
72.5°	203.2	190.2	175.1	157.8	151.3
75°	153.5	142.7	134.0	127.5	140.5
77.5°	105.9	101.6	95.1	88.6	86.5
80°	69.2	67.0	64.9	62.7	60.5
82.5°	41.1	41.1	41.1	41.1	41.1
85°	21.6	23.8	25.9	28.1	30.3
87.5°	13.0	13.0	15.1	17.3	19.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)