

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: P560873

Luminaire Tested: FSR-12-4-LD4-1HI-40-UNV-93-88-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P560873  
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-LD4-1HI-40-UNV-93-88-EDD  
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

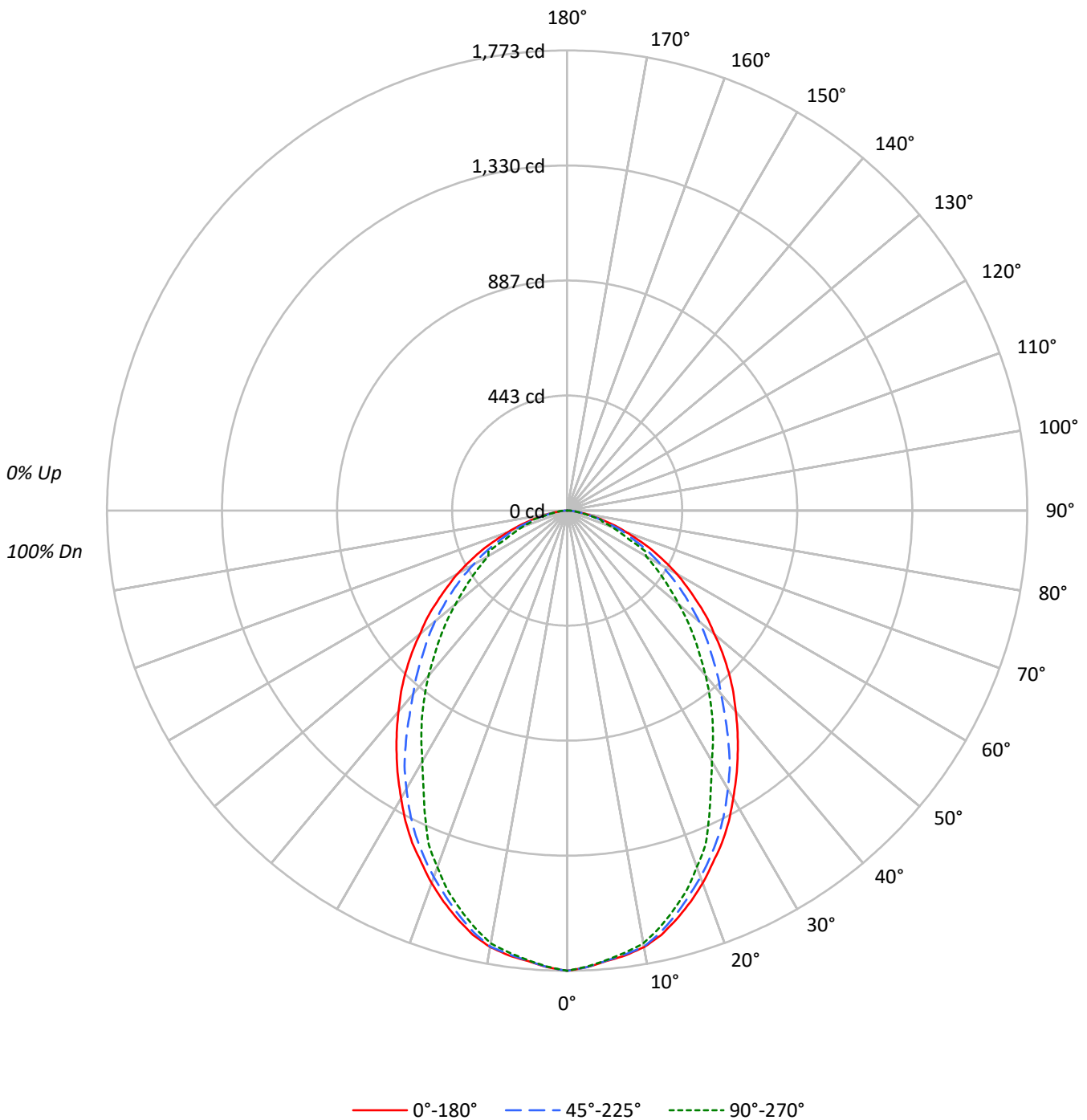
Lumens per Lamp: N/A  
Luminaire Lumens: 3480.9 lumens  
Efficiency: N/A  
Efficacy: 80.6 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 43.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	4772	4772	4772
5°	4707	4701	4696
10°	4666	4660	4627
15°	4540	4495	4432
20°	4373	4303	4186
25°	4194	4102	3847
30°	3975	3847	3465
35°	3764	3556	3206
40°	3550	3241	2916
45°	3347	2996	2637
50°	3098	2781	2352
55°	2866	2520	2106
60°	2626	2251	1886
65°	2310	1971	1671
70°	1903	1725	1419
75°	1513	1321	1385
80°	1017	953	890
85°	633	760	886

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3347 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	165.1	4.7
10°-20°	453.0	13.0
20°-30°	627.1	18.0
30°-40°	668.7	19.2
40°-50°	610.1	17.5
50°-60°	477.9	13.7
60°-70°	311.5	8.9
70°-80°	138.0	4.0
80°-90°	29.6	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°	1245.2	35.8
0°-40°	1913.9	55.0
0°-60°	3001.9	86.2
0°-90°	3480.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3480.9	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1773	1773	1773	1773	1773	
5°	1742	1740	1740	1738	1738	165
15°	1630	1630	1613	1597	1591	458
25°	1412	1404	1382	1332	1296	648
35°	1146	1138	1082	1000	976	716
45°	879	861	787	722	693	677
55°	611	592	537	474	449	548
65°	363	342	310	316	262	358
75°	146	135	127	121	133	156
85°	20	22	25	27	29	28
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1773.2	1773.2	1773.2	1773.2	1773.2
2.5°	1760.9	1760.9	1760.9	1758.8	1758.8
5°	1742.4	1740.4	1740.4	1738.3	1738.3
7.5°	1728.1	1726.0	1724.0	1721.9	1717.8
10°	1707.6	1707.6	1705.5	1695.3	1693.2
12.5°	1674.8	1672.7	1664.5	1650.2	1646.1
15°	1629.7	1629.7	1613.3	1596.9	1590.7
17.5°	1580.5	1578.4	1557.9	1541.5	1533.3
20°	1527.2	1523.1	1502.6	1475.9	1461.6
22.5°	1467.7	1467.7	1443.1	1408.3	1393.9
25°	1412.4	1404.2	1381.6	1332.4	1295.5
27.5°	1348.8	1336.5	1311.9	1242.2	1199.2
30°	1279.1	1273.0	1238.1	1148.0	1115.2
32.5°	1213.5	1203.3	1166.4	1072.1	1045.5
35°	1145.9	1137.7	1082.4	1000.4	975.8
37.5°	1078.3	1068.0	998.3	932.7	902.0
40°	1010.6	998.3	922.5	863.0	830.2
42.5°	947.1	930.7	856.9	793.3	756.4
45°	879.4	861.0	787.2	721.6	692.9
47.5°	811.8	795.4	727.7	660.1	627.3
50°	740.0	725.7	664.2	596.5	561.7
52.5°	680.6	658.0	598.6	530.9	502.2
55°	610.9	592.4	537.1	473.5	448.9
57.5°	547.3	528.9	477.6	418.2	397.7
60°	487.9	461.2	418.2	366.9	350.5
62.5°	422.3	401.8	364.9	321.8	342.3
65°	362.8	342.3	309.5	315.7	262.4
67.5°	297.2	287.0	258.3	229.6	221.4
70°	241.9	229.6	219.3	188.6	180.4
72.5°	192.7	180.4	166.0	149.6	143.5
75°	145.5	135.3	127.1	120.9	133.2
77.5°	100.4	96.3	90.2	84.0	82.0
80°	65.6	63.5	61.5	59.4	57.4
82.5°	38.9	38.9	38.9	38.9	38.9
85°	20.5	22.5	24.6	26.6	28.7
87.5°	12.3	12.3	14.3	16.4	18.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)