

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: P561569

Luminaire Tested: FSR-12-4-LD4-2LO-35-UNV-93-84-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561569  
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-35-UNV-93-84-EDD  
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

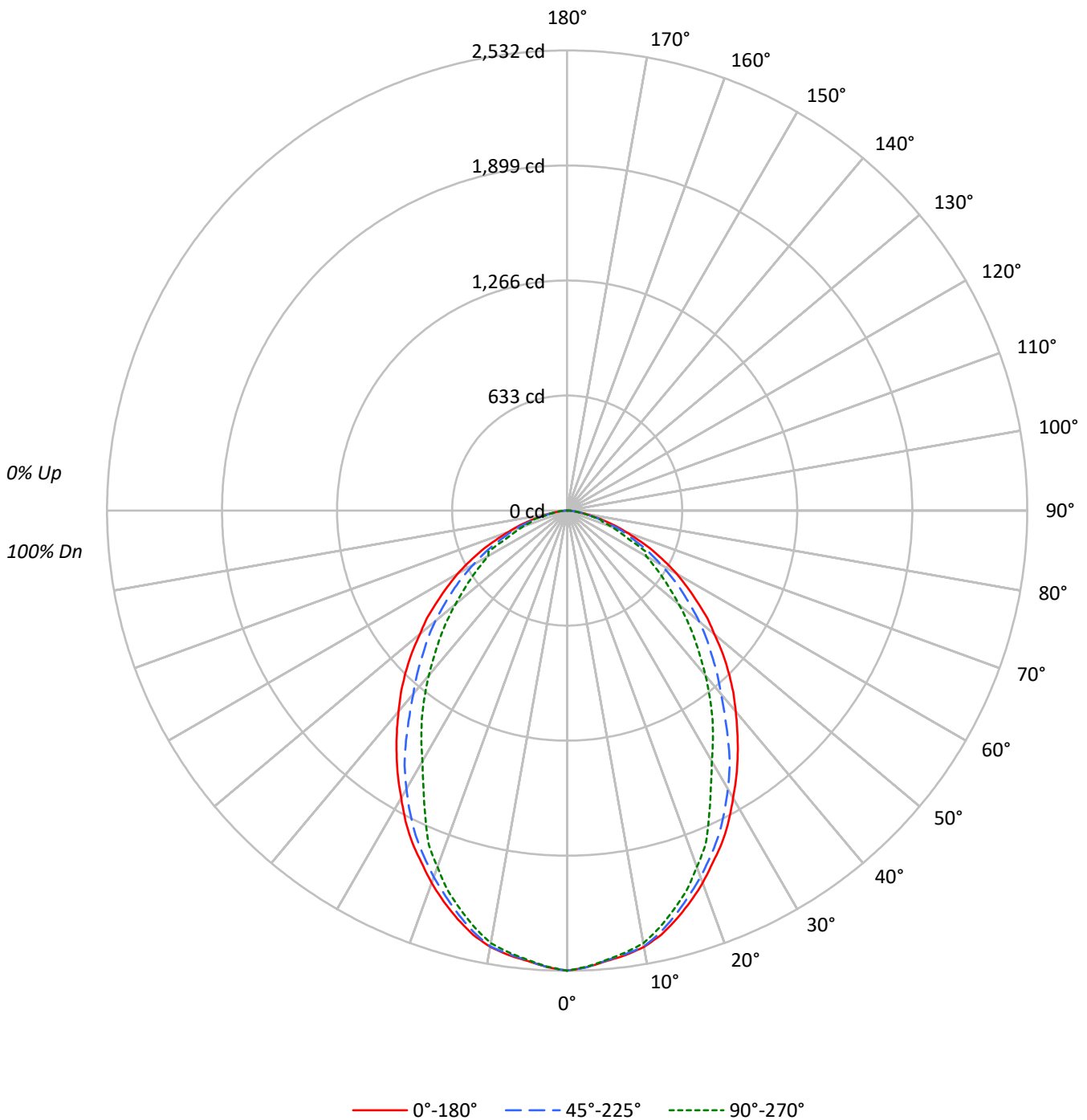
Lumens per Lamp: N/A  
Luminaire Lumens: 4970.0 lumens  
Efficiency: N/A  
Efficacy: 106.2 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 46.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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



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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	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					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°	6813	6813	6813
5°	6720	6712	6704
10°	6662	6654	6606
15°	6482	6417	6327
20°	6244	6143	5976
25°	5987	5857	5492
30°	5675	5493	4947
35°	5375	5076	4576
40°	5069	4626	4164
45°	4778	4277	3765
50°	4423	3970	3357
55°	4092	3598	3007
60°	3749	3214	2694
65°	3298	2814	2385
70°	2718	2464	2027
75°	2161	1887	1978
80°	1452	1361	1269
85°	905	1084	1266

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4778 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	235.7	4.7
10°-20°	646.8	13.0
20°-30°	895.4	18.0
30°-40°	954.7	19.2
40°-50°	871.0	17.5
50°-60°	682.4	13.7
60°-70°	444.7	8.9
70°-80°	197.1	4.0
80°-90°	42.3	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°	1777.8	35.8
0°-40°	2732.6	55.0
0°-60°	4285.9	86.2
0°-90°	4970.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4970.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2532	2532	2532	2532	2532	
5°	2488	2485	2485	2482	2482	236
15°	2327	2327	2303	2280	2271	654
25°	2016	2005	1973	1902	1850	926
35°	1636	1624	1545	1428	1393	1023
45°	1256	1229	1124	1030	989	967
55°	872	846	767	676	641	782
65°	518	489	442	451	375	511
75°	208	193	182	173	190	223
85°	29	32	35	38	41	41
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2531.7	2531.7	2531.7	2531.7	2531.7
2.5°	2514.1	2514.1	2514.1	2511.2	2511.2
5°	2487.8	2484.8	2484.8	2481.9	2481.9
7.5°	2467.3	2464.3	2461.4	2458.5	2452.6
10°	2438.0	2438.0	2435.1	2420.4	2417.5
12.5°	2391.2	2388.2	2376.5	2356.0	2350.2
15°	2326.8	2326.8	2303.4	2279.9	2271.2
17.5°	2256.5	2253.6	2224.3	2200.9	2189.2
20°	2180.4	2174.6	2145.3	2107.3	2086.8
22.5°	2095.6	2095.6	2060.4	2010.7	1990.2
25°	2016.5	2004.8	1972.6	1902.4	1849.7
27.5°	1925.8	1908.3	1873.1	1773.6	1712.2
30°	1826.3	1817.5	1767.8	1639.0	1592.2
32.5°	1732.6	1718.0	1665.3	1530.7	1492.7
35°	1636.1	1624.4	1545.3	1428.3	1393.1
37.5°	1539.5	1524.8	1425.3	1331.7	1287.8
40°	1442.9	1425.3	1317.0	1232.2	1185.3
42.5°	1352.2	1328.8	1223.4	1132.7	1080.0
45°	1255.6	1229.2	1123.9	1030.2	989.2
47.5°	1159.0	1135.6	1039.0	942.4	895.6
50°	1056.6	1036.1	948.3	851.7	801.9
52.5°	971.7	939.5	854.6	758.0	717.1
55°	872.2	845.8	766.8	676.1	641.0
57.5°	781.4	755.1	681.9	597.1	567.8
60°	696.6	658.5	597.1	523.9	500.5
62.5°	602.9	573.6	521.0	459.5	488.8
65°	518.0	488.8	441.9	450.7	374.6
67.5°	424.4	409.7	368.8	327.8	316.1
70°	345.4	327.8	313.2	269.3	257.6
72.5°	275.1	257.6	237.1	213.7	204.9
75°	207.8	193.2	181.5	172.7	190.2
77.5°	143.4	137.6	128.8	120.0	117.1
80°	93.7	90.7	87.8	84.9	81.9
82.5°	55.6	55.6	55.6	55.6	55.6
85°	29.3	32.2	35.1	38.0	41.0
87.5°	17.6	17.6	20.5	23.4	26.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)