

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: P561567

Luminaire Tested: FSR-12-4-LD4-2LO-35-UNV-82-97-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561567  
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-82-97-EDD  
Description: 1X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .375 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

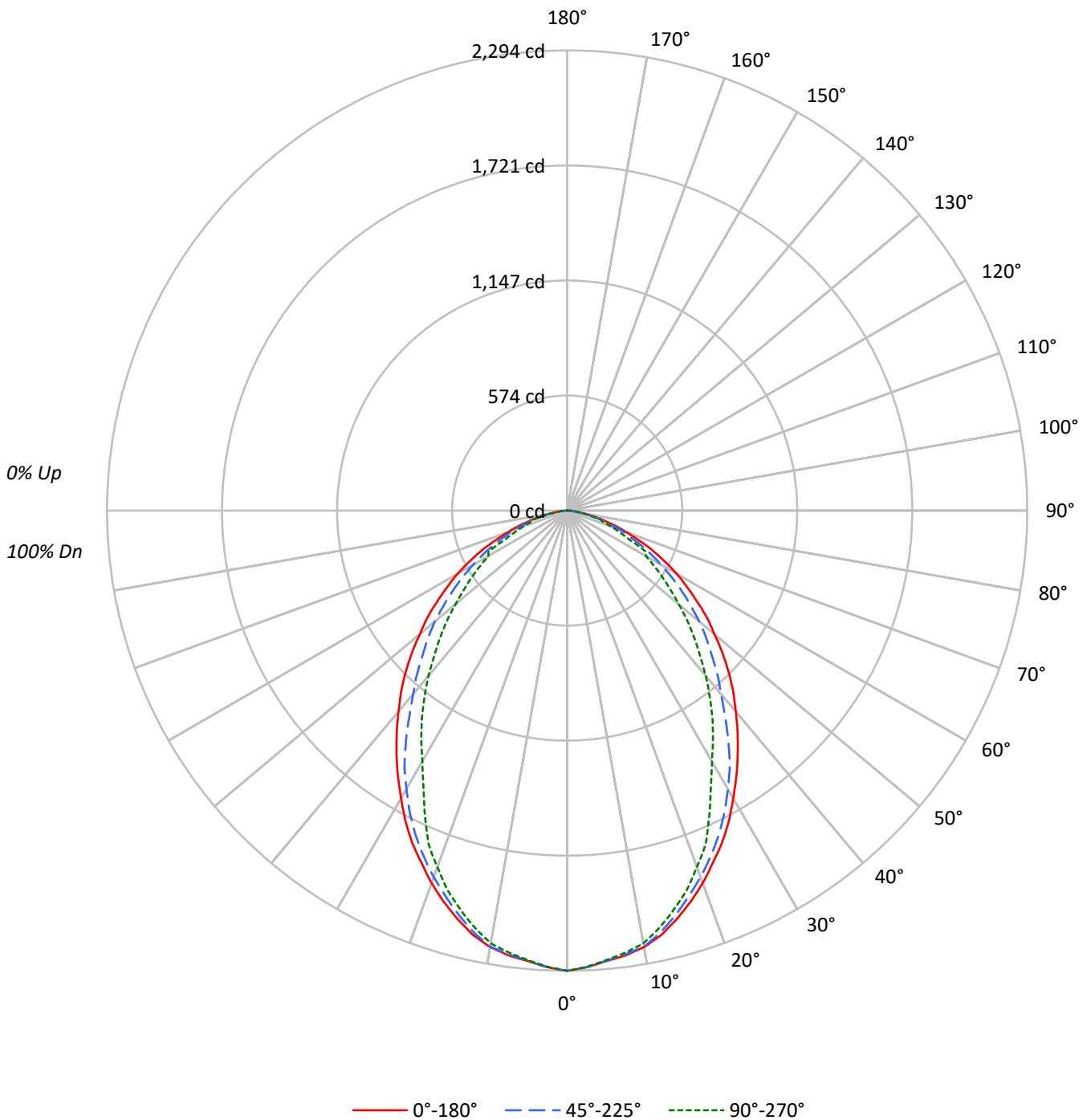
Lumens per Lamp: N/A  
Luminaire Lumens: 4504.0 lumens  
Efficiency: N/A  
Efficacy: 96.2 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 46.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	6174	6174	6174
5°	6090	6083	6076
10°	6037	6030	5986
15°	5874	5815	5734
20°	5659	5568	5416
25°	5426	5308	4977
30°	5143	4978	4483
35°	4871	4600	4147
40°	4593	4193	3773
45°	4330	3876	3412
50°	4008	3598	3042
55°	3708	3260	2725
60°	3398	2912	2441
65°	2989	2550	2162
70°	2463	2233	1836
75°	1958	1709	1792
80°	1316	1234	1151
85°	818	982	1145

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4330 cd/sqm

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	213.6	4.7
10°-20°	586.1	13.0
20°-30°	811.4	18.0
30°-40°	865.2	19.2
40°-50°	789.3	17.5
50°-60°	618.4	13.7
60°-70°	403.0	8.9
70°-80°	178.6	4.0
80°-90°	38.3	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°	1611.1	35.8
0°-40°	2476.4	55.0
0°-60°	3884.1	86.2
0°-90°	4504.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4504.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2294	2294	2294	2294	2294	
5°	2254	2252	2252	2249	2249	214
15°	2109	2109	2087	2066	2058	593
25°	1828	1817	1788	1724	1676	839
35°	1483	1472	1400	1294	1262	927
45°	1138	1114	1018	934	896	876
55°	790	766	695	613	581	709
65°	470	443	400	408	340	463
75°	188	175	164	156	172	202
85°	26	29	32	34	37	37
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2294.3	2294.3	2294.3	2294.3	2294.3
2.5°	2278.4	2278.4	2278.4	2275.7	2275.7
5°	2254.5	2251.8	2251.8	2249.2	2249.2
7.5°	2235.9	2233.3	2230.6	2228.0	2222.7
10°	2209.4	2209.4	2206.8	2193.5	2190.8
12.5°	2167.0	2164.3	2153.7	2135.1	2129.8
15°	2108.6	2108.6	2087.4	2066.2	2058.2
17.5°	2045.0	2042.3	2015.8	1994.6	1984.0
20°	1976.0	1970.7	1944.2	1909.7	1891.1
22.5°	1899.1	1899.1	1867.3	1822.2	1803.6
25°	1827.5	1816.9	1787.7	1724.0	1676.3
27.5°	1745.2	1729.3	1697.5	1607.3	1551.6
30°	1655.1	1647.1	1602.0	1485.3	1442.9
32.5°	1570.2	1556.9	1509.2	1387.2	1352.7
35°	1482.7	1472.1	1400.4	1294.3	1262.5
37.5°	1395.1	1381.9	1291.7	1206.8	1167.0
40°	1307.6	1291.7	1193.6	1116.6	1074.2
42.5°	1225.4	1204.2	1108.7	1026.5	978.7
45°	1137.9	1114.0	1018.5	933.6	896.5
47.5°	1050.3	1029.1	941.6	854.1	811.6
50°	957.5	938.9	859.4	771.8	726.7
52.5°	880.6	851.4	774.5	687.0	649.8
55°	790.4	766.5	694.9	612.7	580.9
57.5°	708.2	684.3	618.0	541.1	514.6
60°	631.3	596.8	541.1	474.8	453.6
62.5°	546.4	519.9	472.1	416.4	442.9
65°	469.5	442.9	400.5	408.5	339.5
67.5°	384.6	371.3	334.2	297.1	286.5
70°	313.0	297.1	283.8	244.0	233.4
72.5°	249.3	233.4	214.8	193.6	185.7
75°	188.3	175.1	164.4	156.5	172.4
77.5°	130.0	124.7	116.7	108.7	106.1
80°	84.9	82.2	79.6	76.9	74.3
82.5°	50.4	50.4	50.4	50.4	50.4
85°	26.5	29.2	31.8	34.5	37.1
87.5°	15.9	15.9	18.6	21.2	23.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)