

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: P561697

Luminaire Tested: FSR-12-4-LD4-2LO-50-UNV-93-84-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561697  
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-50-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 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

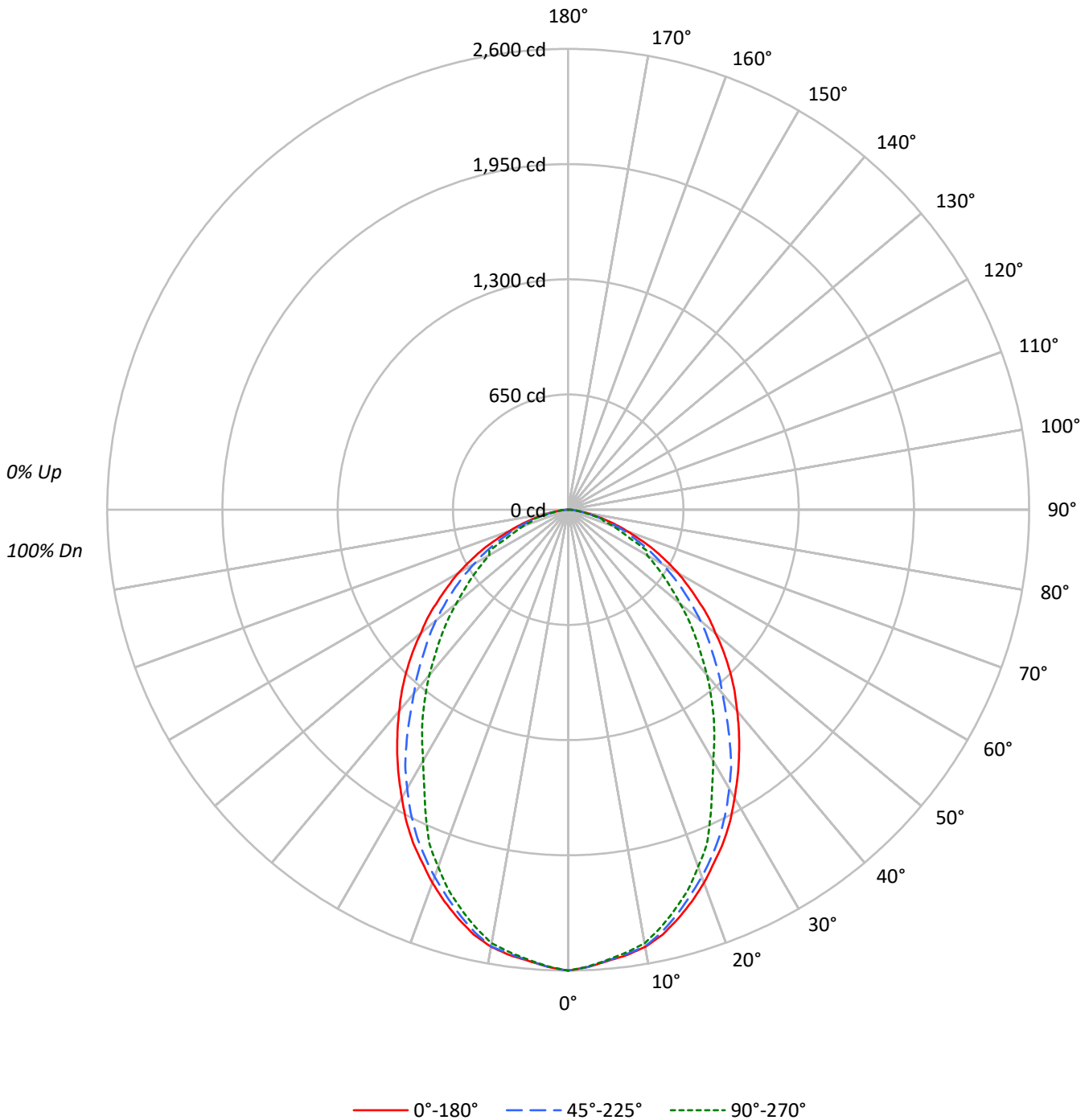
Lumens per Lamp: N/A  
Luminaire Lumens: 5105.0 lumens  
Efficiency: N/A  
Efficacy: 109.1 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 46.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	6998	6998	6998
5°	6903	6894	6886
10°	6843	6835	6785
15°	6658	6591	6499
20°	6414	6310	6138
25°	6150	6016	5641
30°	5829	5642	5082
35°	5521	5214	4701
40°	5206	4752	4277
45°	4908	4393	3867
50°	4544	4078	3448
55°	4203	3695	3089
60°	3851	3301	2767
65°	3388	2890	2450
70°	2791	2531	2082
75°	2219	1938	2032
80°	1491	1398	1305
85°	929	1115	1300

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4908 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	242.1	4.7
10°-20°	664.3	13.0
20°-30°	919.7	18.0
30°-40°	980.7	19.2
40°-50°	894.7	17.5
50°-60°	700.9	13.7
60°-70°	456.8	8.9
70°-80°	202.4	4.0
80°-90°	43.5	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°	1826.1	35.8
0°-40°	2806.8	55.0
0°-60°	4402.3	86.2
0°-90°	5105.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5105.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2600	2600	2600	2600	2600	
5°	2555	2552	2552	2549	2549	243
15°	2390	2390	2366	2342	2333	672
25°	2071	2059	2026	1954	1900	951
35°	1680	1668	1587	1467	1431	1051
45°	1290	1263	1154	1058	1016	993
55°	896	869	788	694	658	804
65°	532	502	454	463	385	524
75°	213	198	186	177	195	229
85°	30	33	36	39	42	42
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2600.4	2600.4	2600.4	2600.4	2600.4
2.5°	2582.4	2582.4	2582.4	2579.4	2579.4
5°	2555.3	2552.3	2552.3	2549.3	2549.3
7.5°	2534.3	2531.3	2528.3	2525.3	2519.2
10°	2504.2	2504.2	2501.2	2486.2	2483.2
12.5°	2456.1	2453.1	2441.1	2420.0	2414.0
15°	2390.0	2390.0	2365.9	2341.9	2332.9
17.5°	2317.8	2314.8	2284.8	2260.7	2248.7
20°	2239.7	2233.7	2203.6	2164.5	2143.5
22.5°	2152.5	2152.5	2116.4	2065.3	2044.3
25°	2071.3	2059.3	2026.2	1954.1	1900.0
27.5°	1978.1	1960.1	1924.0	1821.8	1758.7
30°	1875.9	1866.9	1815.8	1683.5	1635.4
32.5°	1779.7	1764.7	1710.6	1572.3	1533.2
35°	1680.5	1668.5	1587.3	1467.1	1431.0
37.5°	1581.3	1566.3	1464.1	1367.9	1322.8
40°	1482.1	1464.1	1352.8	1265.6	1217.5
42.5°	1388.9	1364.8	1256.6	1163.4	1109.3
45°	1289.7	1262.6	1154.4	1058.2	1016.1
47.5°	1190.5	1166.4	1067.2	968.0	919.9
50°	1085.3	1064.2	974.0	874.8	823.7
52.5°	998.1	965.0	877.8	778.6	736.5
55°	895.9	868.8	787.6	694.4	658.4
57.5°	802.7	775.6	700.5	613.3	583.2
60°	715.5	676.4	613.3	538.1	514.1
62.5°	619.3	589.2	535.1	472.0	502.0
65°	532.1	502.0	453.9	463.0	384.8
67.5°	435.9	420.9	378.8	336.7	324.7
70°	354.7	336.7	321.7	276.6	264.6
72.5°	282.6	264.6	243.5	219.5	210.4
75°	213.4	198.4	186.4	177.4	195.4
77.5°	147.3	141.3	132.3	123.3	120.3
80°	96.2	93.2	90.2	87.2	84.2
82.5°	57.1	57.1	57.1	57.1	57.1
85°	30.1	33.1	36.1	39.1	42.1
87.5°	18.0	18.0	21.0	24.1	27.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)