

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: P561634

Luminaire Tested: FSR-12-4-LD4-2LO-40-UNV-93-85-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561634  
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-93-85-EDD-90  
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

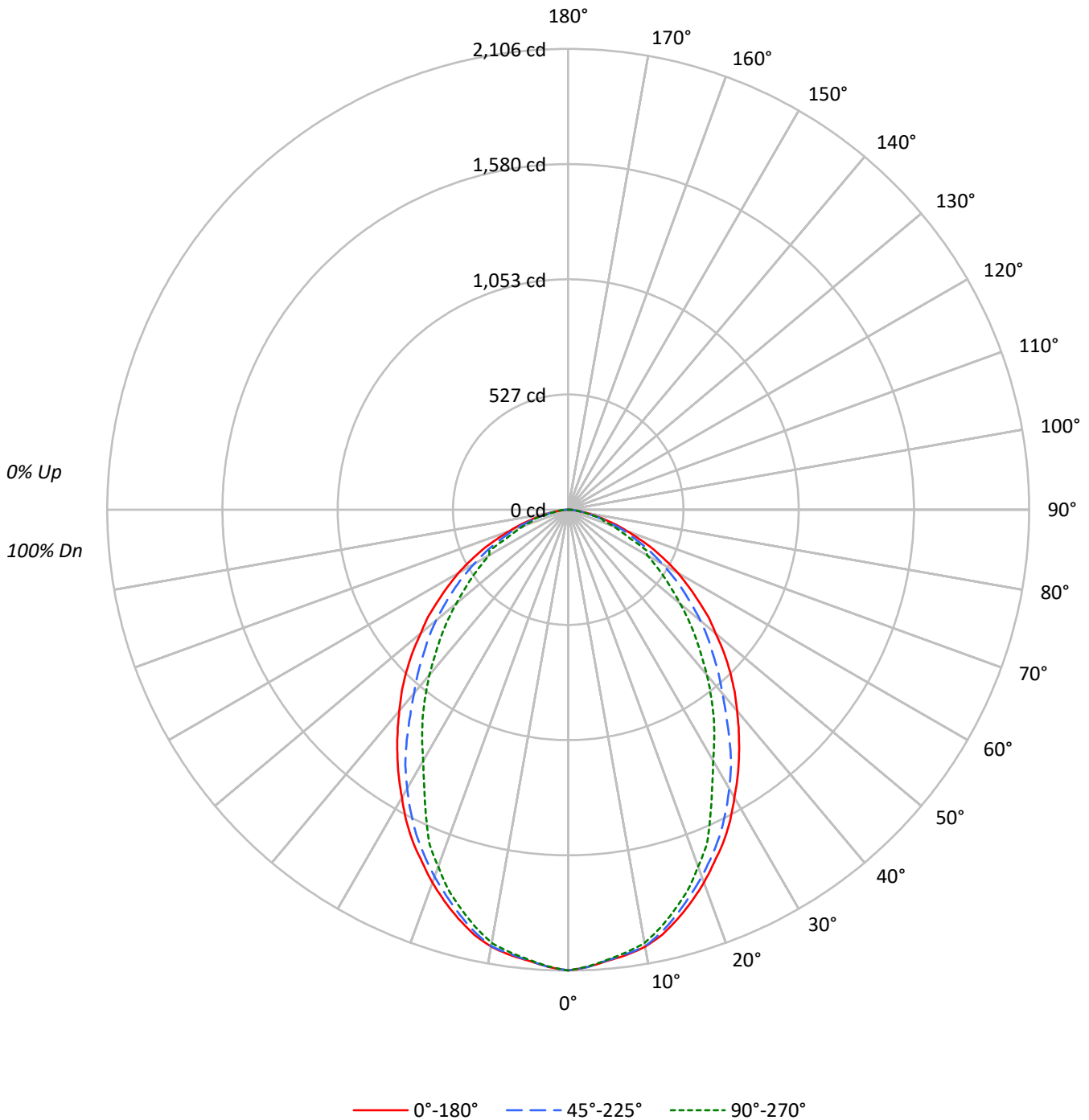
Lumens per Lamp: N/A  
Luminaire Lumens: 4134.0 lumens  
Efficiency: N/A  
Efficacy: 88.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 46.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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					87			
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75					75			
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65					65			
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56					56			
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50					50			
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44					44			
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40					40			
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36					36			
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33					33			
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30					30			

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

	0°	45°	90°
0°	5667	5667	5667
5°	5590	5583	5576
10°	5541	5535	5495
15°	5392	5338	5263
20°	5194	5110	4971
25°	4980	4872	4568
30°	4720	4569	4115
35°	4471	4223	3807
40°	4216	3848	3464
45°	3975	3557	3131
50°	3679	3302	2792
55°	3404	2992	2501
60°	3118	2673	2241
65°	2744	2341	1984
70°	2260	2050	1685
75°	1797	1569	1645
80°	1207	1131	1057
85°	750	902	1053

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3975 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	196.0	4.7
10°-20°	538.0	13.0
20°-30°	744.8	18.0
30°-40°	794.2	19.2
40°-50°	724.5	17.5
50°-60°	567.6	13.7
60°-70°	369.9	8.9
70°-80°	163.9	4.0
80°-90°	35.2	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°	1478.8	35.8
0°-40°	2272.9	55.0
0°-60°	3565.0	86.2
0°-90°	4134.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4134.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2106	2106	2106	2106	2106	
5°	2069	2067	2067	2064	2064	196
15°	1935	1935	1916	1896	1889	544
25°	1677	1668	1641	1582	1539	770
35°	1361	1351	1285	1188	1159	851
45°	1044	1022	935	857	823	804
55°	726	704	638	562	533	651
65°	431	407	368	375	312	425
75°	173	161	151	144	158	185
85°	24	27	29	32	34	34
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2105.8	2105.8	2105.8	2105.8	2105.8
2.5°	2091.2	2091.2	2091.2	2088.8	2088.8
5°	2069.3	2066.9	2066.9	2064.4	2064.4
7.5°	2052.2	2049.8	2047.4	2044.9	2040.1
10°	2027.9	2027.9	2025.5	2013.3	2010.9
12.5°	1989.0	1986.5	1976.8	1959.7	1954.9
15°	1935.4	1935.4	1915.9	1896.4	1889.1
17.5°	1877.0	1874.5	1850.2	1830.7	1821.0
20°	1813.7	1808.8	1784.5	1752.8	1735.8
22.5°	1743.1	1743.1	1713.9	1672.5	1655.4
25°	1677.3	1667.6	1640.8	1582.4	1538.6
27.5°	1601.9	1587.3	1558.1	1475.3	1424.2
30°	1519.1	1511.8	1470.4	1363.3	1324.3
32.5°	1441.2	1429.0	1385.2	1273.2	1241.6
35°	1360.9	1351.1	1285.4	1188.0	1158.8
37.5°	1280.5	1268.4	1185.6	1107.7	1071.2
40°	1200.2	1185.6	1095.5	1024.9	986.0
42.5°	1124.7	1105.2	1017.6	942.1	898.3
45°	1044.4	1022.5	934.8	856.9	822.8
47.5°	964.0	944.6	864.2	783.9	744.9
50°	878.8	861.8	788.8	708.4	667.0
52.5°	808.2	781.5	710.9	630.5	596.4
55°	725.5	703.6	637.8	562.4	533.1
57.5°	650.0	628.1	567.2	496.6	472.3
60°	579.4	547.8	496.6	435.8	416.3
62.5°	501.5	477.2	433.3	382.2	406.6
65°	430.9	406.6	367.6	374.9	311.6
67.5°	353.0	340.8	306.7	272.7	262.9
70°	287.3	272.7	260.5	224.0	214.2
72.5°	228.8	214.2	197.2	177.7	170.4
75°	172.8	160.7	150.9	143.6	158.2
77.5°	119.3	114.4	107.1	99.8	97.4
80°	77.9	75.5	73.0	70.6	68.2
82.5°	46.3	46.3	46.3	46.3	46.3
85°	24.3	26.8	29.2	31.6	34.1
87.5°	14.6	14.6	17.0	19.5	21.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)