

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: P561094

Luminaire Tested: FSR-12-4-LD4-1LO-50-UNV-81-87-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561094  
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-LD4-1LO-50-UNV-81-87-EDD-90  
Description: 1X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

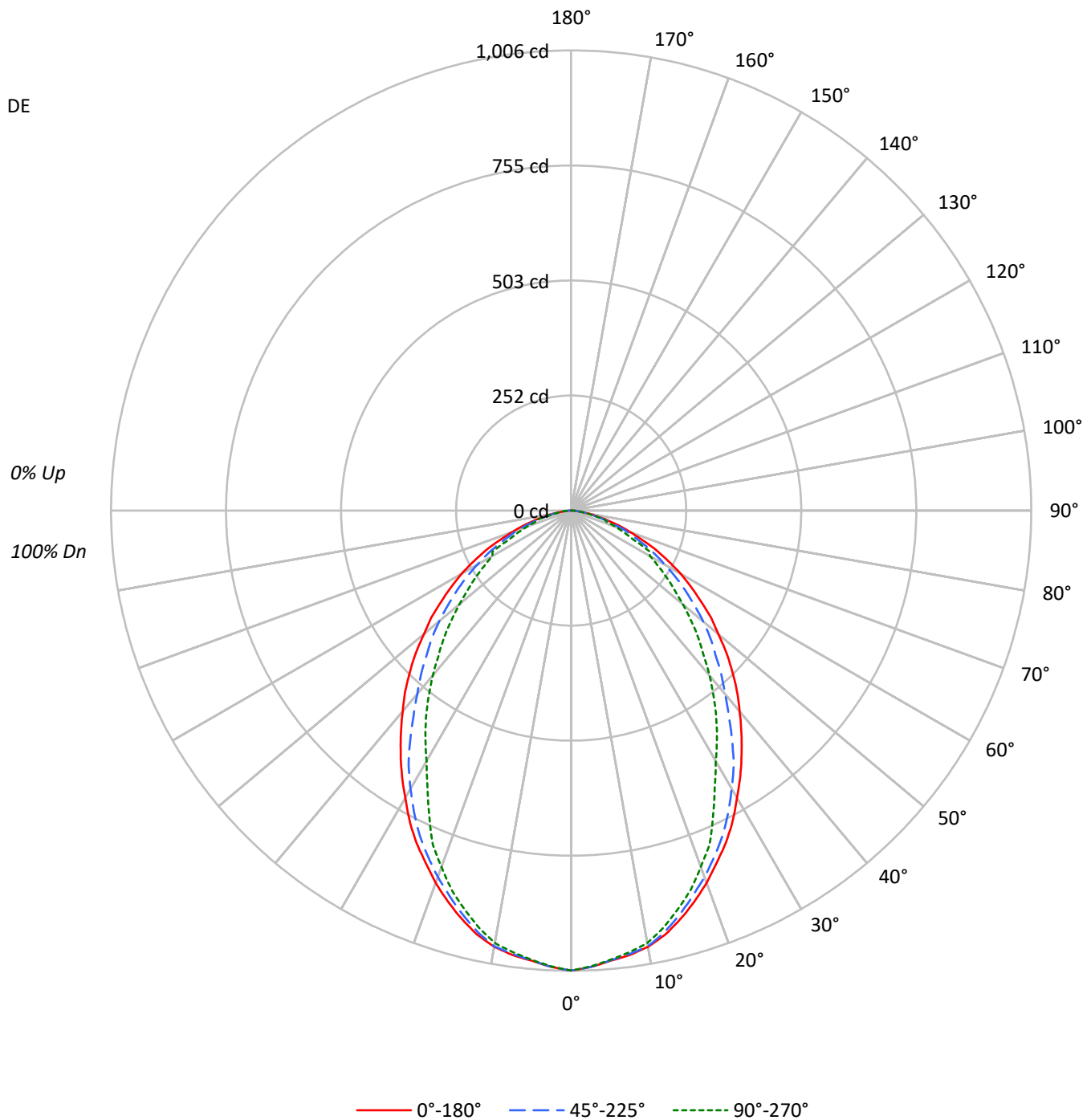
Lumens per Lamp: N/A  
Luminaire Lumens: 1974.0 lumens  
Efficiency: N/A  
Efficacy: 84.4 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 23.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	2706	2706	2706
5°	2669	2666	2663
10°	2646	2643	2624
15°	2575	2549	2513
20°	2480	2440	2373
25°	2378	2326	2181
30°	2254	2182	1965
35°	2135	2016	1818
40°	2013	1838	1654
45°	1898	1699	1495
50°	1757	1577	1333
55°	1625	1429	1194
60°	1489	1276	1070
65°	1310	1117	947
70°	1079	979	805
75°	858	750	786
80°	576	541	504
85°	358	429	503

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1898 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	93.6	4.7
10°-20°	256.9	13.0
20°-30°	355.6	18.0
30°-40°	379.2	19.2
40°-50°	345.9	17.5
50°-60°	271.0	13.7
60°-70°	176.6	8.9
70°-80°	78.3	4.0
80°-90°	16.8	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°	706.1	35.8
0°-40°	1085.3	55.0
0°-60°	1702.3	86.2
0°-90°	1974.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1974.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1006	1006	1006	1006	1006	
5°	988	987	987	986	986	94
15°	924	924	915	906	902	260
25°	801	796	784	756	735	368
35°	650	645	614	567	553	406
45°	499	488	446	409	393	384
55°	346	336	305	268	255	311
65°	206	194	176	179	149	203
75°	82	77	72	69	76	88
85°	12	13	14	15	16	16
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1005.5	1005.5	1005.5	1005.5	1005.5
2.5°	998.6	998.6	998.6	997.4	997.4
5°	988.1	986.9	986.9	985.8	985.8
7.5°	980.0	978.8	977.6	976.5	974.1
10°	968.3	968.3	967.2	961.4	960.2
12.5°	949.7	948.6	943.9	935.8	933.5
15°	924.2	924.2	914.9	905.6	902.1
17.5°	896.3	895.1	883.5	874.2	869.5
20°	866.0	863.7	852.1	837.0	828.8
22.5°	832.3	832.3	818.4	798.6	790.5
25°	800.9	796.3	783.5	755.6	734.7
27.5°	764.9	757.9	744.0	704.5	680.0
30°	725.4	721.9	702.1	651.0	632.4
32.5°	688.2	682.4	661.4	608.0	592.9
35°	649.8	645.2	613.8	567.3	553.3
37.5°	611.5	605.6	566.1	528.9	511.5
40°	573.1	566.1	523.1	489.4	470.8
42.5°	537.1	527.8	485.9	449.9	428.9
45°	498.7	488.2	446.4	409.2	392.9
47.5°	460.3	451.0	412.7	374.3	355.7
50°	419.6	411.5	376.6	338.3	318.5
52.5°	385.9	373.2	339.4	301.1	284.8
55°	346.4	336.0	304.6	268.5	254.6
57.5°	310.4	299.9	270.9	237.1	225.5
60°	276.7	261.6	237.1	208.1	198.8
62.5°	239.5	227.8	206.9	182.5	194.1
65°	205.8	194.1	175.5	179.0	148.8
67.5°	168.6	162.7	146.5	130.2	125.5
70°	137.2	130.2	124.4	106.9	102.3
72.5°	109.3	102.3	94.2	84.9	81.4
75°	82.5	76.7	72.1	68.6	75.6
77.5°	57.0	54.6	51.1	47.7	46.5
80°	37.2	36.0	34.9	33.7	32.5
82.5°	22.1	22.1	22.1	22.1	22.1
85°	11.6	12.8	13.9	15.1	16.3
87.5°	7.0	7.0	8.1	9.3	10.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)