

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: P590878

Luminaire Tested: FSR-24-2-LD4-4LO-50-UNV-81-85-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590878  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-1)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/8/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: FAIL-SAFE  
Catalog Number: FSR-24-2-LD4-4LO-50-UNV-81-85-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

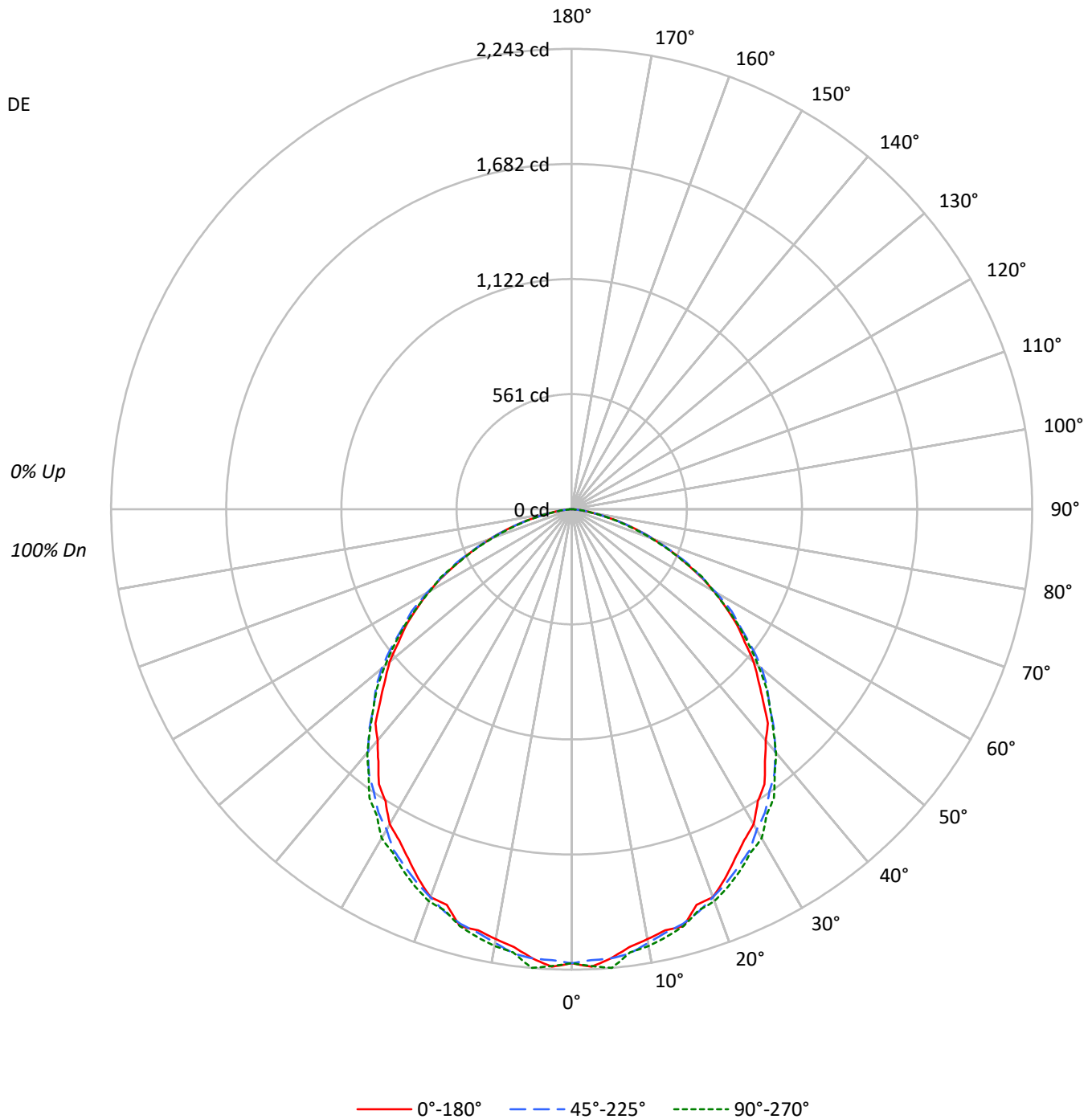
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5574.0 lumens  
Efficiency: N/A  
Efficacy: 119.1 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' 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																		
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																												
1	110	105	101	98	107	103	100	96	99	96	93	95	93	90	91	90	88	86																												
2	100	93	86	81	98	91	85	80	87	82	78	84	80	76	81	78	75	73																												
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64	62																												
4	84	73	64	58	82	71	64	58	69	62	57	67	61	56	65	59	55	53																												
5	78	65	57	50	76	64	56	50	62	55	49	60	54	49	58	53	48	46																												
6	72	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	43	41																												
7	67	53	45	39	65	53	45	39	51	44	39	50	43	38	48	42	38	36																												
8	62	49	41	35	61	48	40	35	47	40	34	46	39	34	44	39	34	32																												
9	58	45	37	31	57	44	37	31	43	36	31	42	36	31	41	35	31	29																												
10	54	41	34	29	53	41	33	28	40	33	28	39	33	28	38	32	28	26																												

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

	0°	45°	90°
0°	5951	5951	5951
5°	5932	5934	6059
10°	5811	5862	5904
15°	5857	5826	5858
20°	5759	5759	5820
25°	5581	5703	5766
30°	5505	5601	5751
35°	5375	5516	5640
40°	5166	5415	5439
45°	5010	5188	5195
50°	4845	5064	4967
55°	4617	4707	4673
60°	4317	4360	4282
65°	3849	3947	3822
70°	3303	3314	3222
75°	2616	2610	2509
80°	1753	1703	1638
85°	951	945	883

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 5322 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	208.0	3.7
10°-20°	589.6	10.6
20°-30°	883.3	15.8
30°-40°	1046.9	18.8
40°-50°	1048.9	18.8
50°-60°	890.3	16.0
60°-70°	600.2	10.8
70°-80°	263.8	4.7
80°-90°	42.9	0.8
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°	1681.0	30.2
0°-40°	2727.9	48.9
0°-60°	4667.1	83.7
0°-90°	5574.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5574.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2212	2212	2212	2212	2212	
5°	2196	2191	2197	2190	2243	207
15°	2102	2078	2091	2102	2103	586
25°	1880	1890	1921	1946	1942	869
35°	1636	1641	1679	1718	1717	1016
45°	1316	1341	1363	1398	1365	1018
55°	984	978	1003	996	996	875
65°	604	596	620	596	600	601
75°	252	246	251	233	241	270
85°	31	30	31	30	29	45
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2211.6	2211.6	2211.6	2211.6	2211.6
2.5°	2230.8	2213.9	2198.2	2216.5	2227.6
5°	2195.9	2190.8	2196.8	2190.2	2243.0
7.5°	2150.8	2170.5	2181.9	2174.8	2177.9
10°	2126.8	2120.0	2145.4	2163.1	2160.5
12.5°	2101.1	2111.4	2112.8	2132.0	2133.7
15°	2102.5	2078.3	2091.1	2102.0	2102.8
17.5°	2020.9	2047.1	2056.0	2080.8	2050.0
20°	2010.9	1991.7	2010.9	2036.3	2032.3
22.5°	1949.5	1928.1	1969.2	1991.7	1990.3
25°	1879.8	1890.1	1920.9	1946.1	1942.1
27.5°	1818.7	1830.7	1874.7	1909.2	1886.9
30°	1771.6	1765.6	1802.7	1833.5	1850.7
32.5°	1687.3	1709.0	1752.5	1783.0	1766.7
35°	1636.2	1641.1	1679.1	1717.9	1716.8
37.5°	1546.9	1569.4	1622.8	1633.7	1623.7
40°	1470.6	1493.2	1541.4	1553.1	1548.3
42.5°	1414.4	1418.4	1459.8	1473.2	1451.8
45°	1316.4	1341.0	1363.2	1398.4	1365.2
47.5°	1233.0	1244.4	1292.4	1301.8	1284.4
50°	1157.4	1161.4	1209.6	1197.9	1186.5
52.5°	1062.3	1079.1	1106.2	1104.0	1090.5
55°	984.0	977.5	1003.2	996.3	996.0
57.5°	890.1	901.5	922.6	911.8	894.4
60°	802.1	802.4	810.1	797.8	795.6
62.5°	704.2	707.6	709.3	694.2	718.7
65°	604.5	596.5	619.9	596.2	600.2
67.5°	512.9	516.9	514.6	499.7	505.4
70°	419.8	424.9	421.2	404.3	409.5
72.5°	334.7	328.4	332.4	311.3	321.0
75°	251.6	246.4	251.0	233.3	241.3
77.5°	171.3	175.3	172.5	163.1	168.5
80°	113.1	109.9	109.9	104.5	105.7
82.5°	66.0	62.8	62.0	60.3	62.8
85°	30.8	30.0	30.6	29.7	28.6
87.5°	11.1	11.4	11.4	10.9	10.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)