

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: P590887

Luminaire Tested: FSR-24-2-LD4-4LO-50-UNV-82-86-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590887  
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-82-86-EDD  
Description: 2X2 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

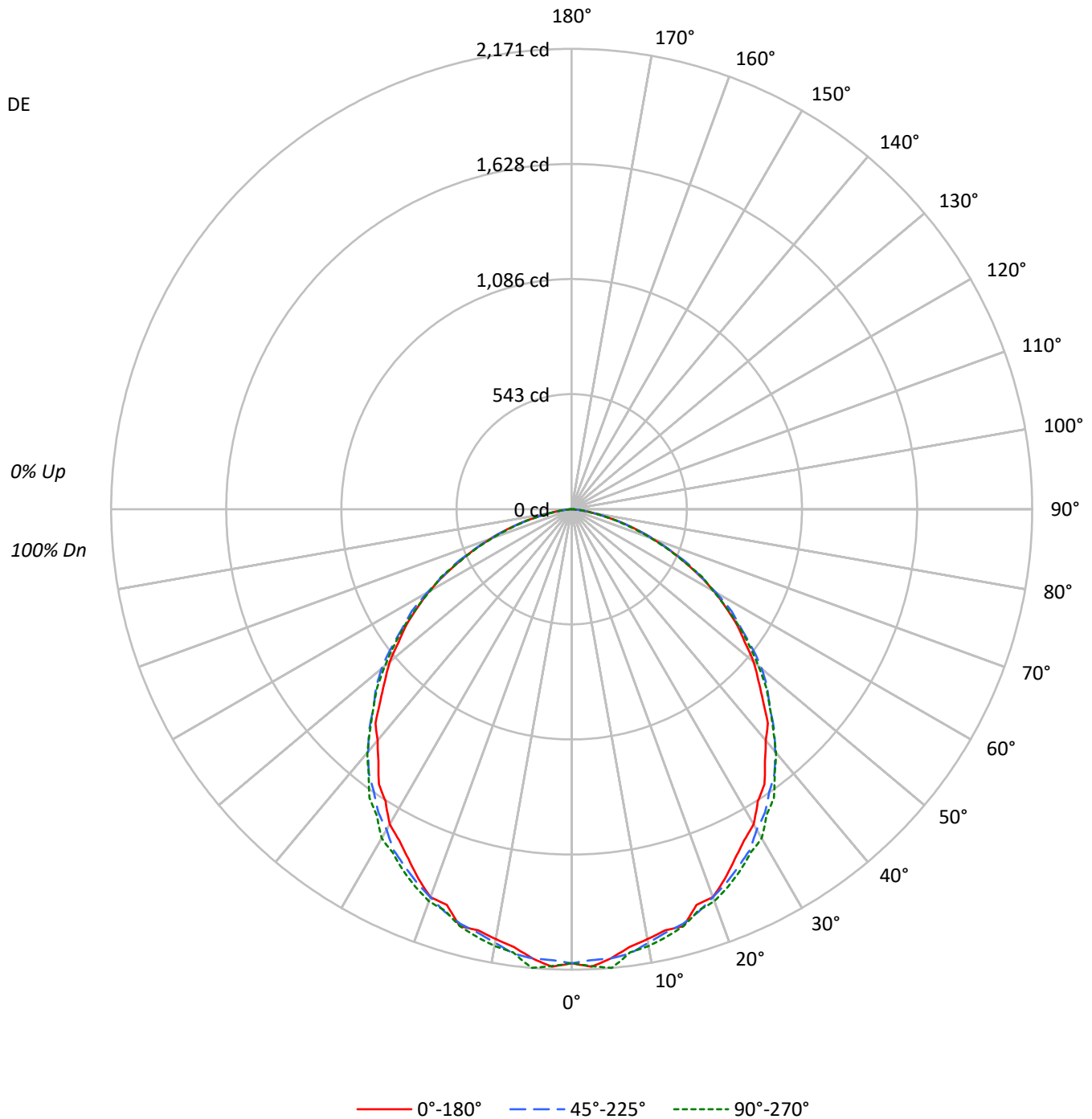
Lumens per Lamp: N/A  
Luminaire Lumens: 5395.0 lumens  
Efficiency: N/A  
Efficacy: 115.3 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 46.8  
Input Voltage (V):  
Input Current (Ain): NR  
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									100																			
1	110	105	101	98	107	103	100	96	99	96	93	95	93	90	91	90	88	86									86																			
2	100	93	86	81	98	91	85	80	87	82	78	84	80	76	81	78	75	73									73																			
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64	62									62																			
4	84	73	64	58	82	71	64	58	69	62	57	67	61	56	65	59	55	53									53																			
5	78	65	57	50	76	64	56	50	62	55	49	60	54	49	58	53	48	46									46																			
6	72	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	43	41									41																			
7	67	53	45	39	65	53	45	39	51	44	39	50	43	38	48	42	38	36									36																			
8	62	49	41	35	61	48	40	35	47	40	34	46	39	34	44	39	34	32									32																			
9	58	45	37	31	57	44	37	31	43	36	31	42	36	31	41	35	31	29									29																			
10	54	41	34	29	53	41	33	28	40	33	28	39	33	28	38	32	28	26									26																			

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

	0°	45°	90°
0°	5760	5760	5760
5°	5741	5743	5864
10°	5625	5674	5714
15°	5669	5639	5670
20°	5574	5574	5633
25°	5402	5520	5581
30°	5328	5422	5566
35°	5203	5339	5458
40°	5000	5241	5264
45°	4849	5022	5029
50°	4690	4901	4808
55°	4468	4555	4523
60°	4179	4220	4144
65°	3726	3820	3699
70°	3197	3208	3118
75°	2532	2525	2428
80°	1695	1649	1585
85°	920	914	852

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 5151 cd/sqm

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	201.4	3.7
10°-20°	570.7	10.6
20°-30°	855.0	15.8
30°-40°	1013.3	18.8
40°-50°	1015.2	18.8
50°-60°	861.7	16.0
60°-70°	581.0	10.8
70°-80°	255.3	4.7
80°-90°	41.5	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°	1627.0	30.2
0°-40°	2640.3	48.9
0°-60°	4517.3	83.7
0°-90°	5395.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5395.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2141	2141	2141	2141	2141	
5°	2125	2120	2126	2120	2171	200
15°	2035	2012	2024	2034	2035	567
25°	1819	1829	1859	1884	1880	841
35°	1584	1588	1625	1663	1662	983
45°	1274	1298	1320	1354	1321	986
55°	952	946	971	964	964	847
65°	585	577	600	577	581	582
75°	244	238	243	226	234	261
85°	30	29	30	29	28	43
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2140.6	2140.6	2140.6	2140.6	2140.6
2.5°	2159.1	2142.8	2127.6	2145.3	2156.1
5°	2125.4	2120.4	2126.2	2119.9	2171.0
7.5°	2081.7	2100.8	2111.9	2104.9	2108.0
10°	2058.5	2051.9	2076.5	2093.6	2091.1
12.5°	2033.6	2043.6	2045.0	2063.5	2065.1
15°	2035.0	2011.5	2024.0	2034.5	2035.3
17.5°	1956.0	1981.4	1990.0	2014.0	1984.2
20°	1946.3	1927.8	1946.3	1970.9	1967.0
22.5°	1886.9	1866.1	1905.9	1927.8	1926.4
25°	1819.4	1829.4	1859.2	1883.6	1879.7
27.5°	1760.3	1771.9	1814.5	1847.9	1826.4
30°	1714.7	1708.9	1744.8	1774.7	1791.2
32.5°	1633.2	1654.2	1696.2	1725.7	1710.0
35°	1583.7	1588.4	1625.1	1662.7	1661.6
37.5°	1497.2	1519.0	1570.7	1581.2	1571.5
40°	1423.4	1445.2	1491.9	1503.3	1498.6
42.5°	1368.9	1372.8	1412.9	1425.9	1405.1
45°	1274.1	1297.9	1319.5	1353.5	1321.4
47.5°	1193.4	1204.5	1250.9	1260.0	1243.2
50°	1120.2	1124.1	1170.8	1159.4	1148.4
52.5°	1028.2	1044.5	1070.7	1068.5	1055.5
55°	952.4	946.1	970.9	964.3	964.0
57.5°	861.5	872.5	893.0	882.5	865.6
60°	776.4	776.6	784.1	772.2	770.0
62.5°	681.6	684.9	686.5	671.9	695.7
65°	585.1	577.4	600.0	577.1	581.0
67.5°	496.4	500.3	498.0	483.7	489.2
70°	406.3	411.3	407.7	391.4	396.3
72.5°	323.9	317.8	321.7	301.3	310.7
75°	243.5	238.5	242.9	225.8	233.5
77.5°	165.8	169.7	166.9	157.8	163.1
80°	109.4	106.4	106.4	101.2	102.3
82.5°	63.8	60.8	60.0	58.3	60.8
85°	29.8	29.0	29.6	28.7	27.6
87.5°	10.8	11.1	11.1	10.5	9.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)