

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: P590663

Luminaire Tested: FSR-24-2-LD4-3STD-40-UNV-82-86-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590663  
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-LD4-3STD-40-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 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

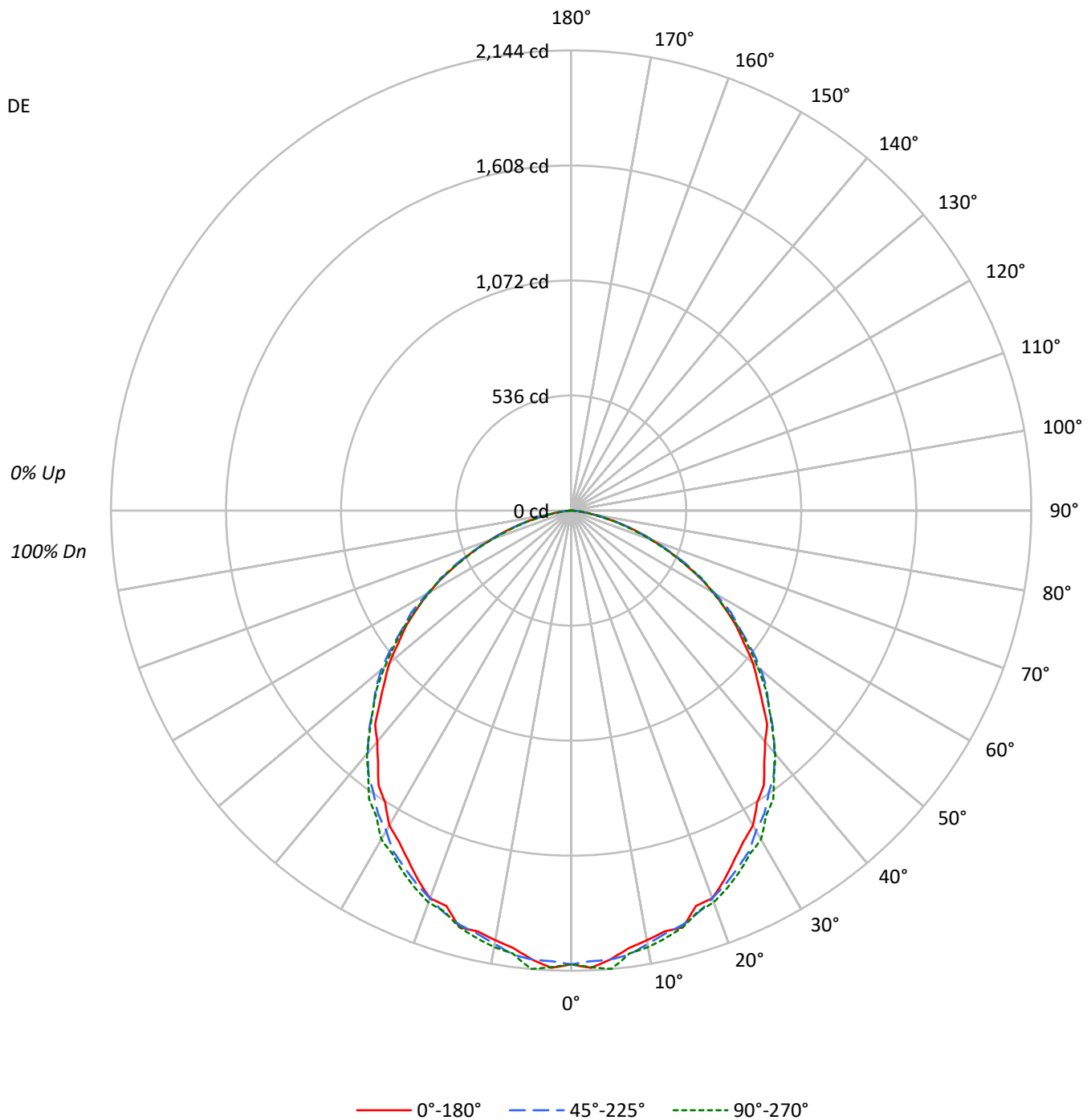
Lumens per Lamp: N/A  
Luminaire Lumens: 5328.0 lumens  
Efficiency: N/A  
Efficacy: 106.6 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 50  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	5689	5689	5689
5°	5670	5672	5791
10°	5555	5604	5643
15°	5599	5568	5600
20°	5504	5504	5563
25°	5335	5452	5512
30°	5262	5354	5497
35°	5138	5273	5391
40°	4938	5176	5199
45°	4789	4959	4966
50°	4631	4840	4748
55°	4413	4499	4467
60°	4126	4168	4092
65°	3679	3773	3653
70°	3157	3168	3079
75°	2501	2494	2398
80°	1675	1629	1565
85°	911	902	843

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 5087 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	198.9	3.7
10°-20°	563.6	10.6
20°-30°	844.4	15.8
30°-40°	1000.7	18.8
40°-50°	1002.6	18.8
50°-60°	851.0	16.0
60°-70°	573.8	10.8
70°-80°	252.1	4.7
80°-90°	41.0	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°	1606.8	30.2
0°-40°	2607.5	48.9
0°-60°	4461.1	83.7
0°-90°	5328.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5328.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2114	2114	2114	2114	2114	
5°	2099	2094	2100	2094	2144	198
15°	2010	1986	1999	2009	2010	560
25°	1797	1807	1836	1860	1856	831
35°	1564	1569	1605	1642	1641	971
45°	1258	1282	1303	1337	1305	973
55°	941	934	959	952	952	837
65°	578	570	593	570	574	575
75°	240	236	240	223	231	258
85°	30	29	29	28	27	43
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2114.0	2114.0	2114.0	2114.0	2114.0
2.5°	2132.3	2116.2	2101.2	2118.7	2129.3
5°	2099.0	2094.1	2099.8	2093.5	2144.0
7.5°	2055.9	2074.7	2085.6	2078.8	2081.8
10°	2032.9	2026.4	2050.7	2067.6	2065.2
12.5°	2008.4	2018.2	2019.6	2037.9	2039.5
15°	2009.7	1986.5	1998.8	2009.2	2010.0
17.5°	1931.7	1956.8	1965.3	1989.0	1959.5
20°	1922.1	1903.8	1922.1	1946.4	1942.6
22.5°	1863.4	1843.0	1882.3	1903.8	1902.5
25°	1796.8	1806.7	1836.2	1860.2	1856.3
27.5°	1738.4	1749.9	1791.9	1825.0	1803.7
30°	1693.4	1687.7	1723.1	1752.6	1769.0
32.5°	1612.9	1633.6	1675.1	1704.3	1688.8
35°	1564.0	1568.7	1605.0	1642.1	1641.0
37.5°	1478.6	1500.1	1551.2	1561.6	1552.0
40°	1405.7	1427.3	1473.4	1484.6	1479.9
42.5°	1351.9	1355.8	1395.3	1408.2	1387.7
45°	1258.3	1281.8	1303.1	1336.6	1305.0
47.5°	1178.6	1189.5	1235.4	1244.4	1227.7
50°	1106.3	1110.1	1156.2	1145.0	1134.1
52.5°	1015.4	1031.5	1057.4	1055.2	1042.4
55°	940.6	934.3	958.9	952.3	952.1
57.5°	850.8	861.7	881.9	871.5	854.9
60°	766.7	767.0	774.4	762.6	760.4
62.5°	673.1	676.4	678.0	663.5	687.0
65°	577.8	570.2	592.6	569.9	573.7
67.5°	490.2	494.0	491.9	477.7	483.1
70°	401.2	406.2	402.6	386.5	391.4
72.5°	319.9	313.9	317.7	297.5	306.8
75°	240.5	235.6	239.9	223.0	230.6
77.5°	163.8	167.6	164.9	155.9	161.0
80°	108.1	105.1	105.1	99.9	101.0
82.5°	63.1	60.0	59.2	57.6	60.0
85°	29.5	28.7	29.2	28.4	27.3
87.5°	10.6	10.9	10.9	10.4	9.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)