

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: P590182

Luminaire Tested: FSR-24-2-LD4-2HI-40-UNV-82-85-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590182  
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-LD4-2HI-40-UNV-82-85-EDD  
Description: 2X2 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

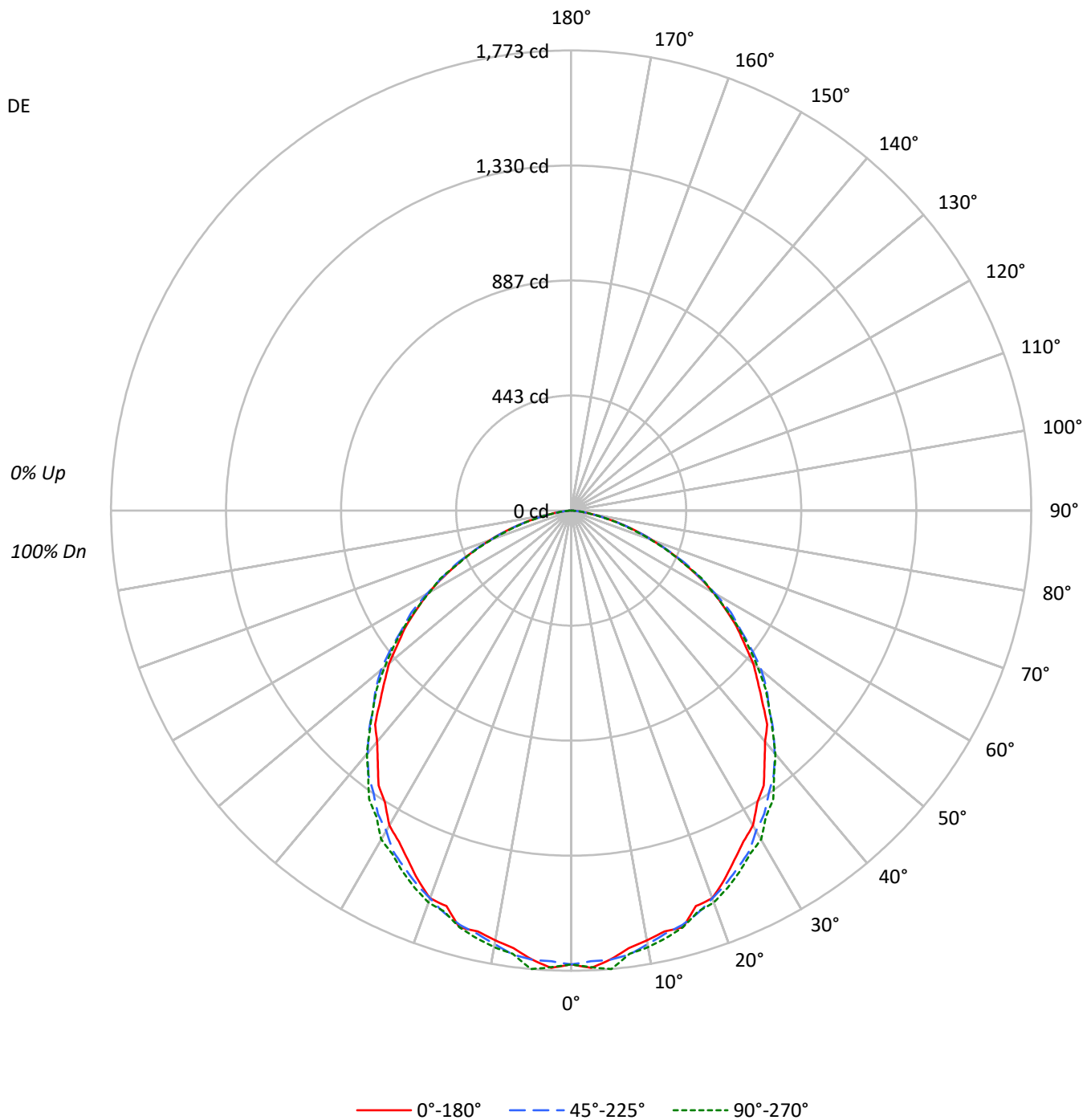
Lumens per Lamp: N/A  
Luminaire Lumens: 4407.0 lumens  
Efficiency: N/A  
Efficacy: 102.0 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 43.2  
Input Voltage (V):  
Input Current (Ain): NR  
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	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°	4705	4705	4705
5°	4690	4692	4790
10°	4595	4635	4668
15°	4631	4606	4632
20°	4553	4553	4601
25°	4413	4510	4559
30°	4352	4429	4547
35°	4250	4361	4459
40°	4084	4281	4300
45°	3961	4102	4108
50°	3831	4004	3927
55°	3650	3721	3695
60°	3413	3447	3385
65°	3044	3121	3022
70°	2611	2620	2548
75°	2068	2064	1984
80°	1385	1347	1294
85°	753	747	698

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 4207 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	164.5	3.7
10°-20°	466.2	10.6
20°-30°	698.4	15.8
30°-40°	827.7	18.8
40°-50°	829.3	18.8
50°-60°	703.9	16.0
60°-70°	474.6	10.8
70°-80°	208.5	4.7
80°-90°	33.9	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°	1329.0	30.2
0°-40°	2156.8	48.9
0°-60°	3690.0	83.7
0°-90°	4407.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4407.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1749	1749	1749	1749	1749	
5°	1736	1732	1737	1732	1773	164
15°	1662	1643	1653	1662	1663	463
25°	1486	1494	1519	1539	1536	687
35°	1294	1298	1328	1358	1357	803
45°	1041	1060	1078	1106	1079	805
55°	778	773	793	788	788	692
65°	478	472	490	471	475	475
75°	199	195	198	184	191	213
85°	24	24	24	24	23	35
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1748.6	1748.6	1748.6	1748.6	1748.6
2.5°	1763.7	1750.4	1738.0	1752.4	1761.2
5°	1736.2	1732.1	1736.8	1731.7	1773.4
7.5°	1700.5	1716.1	1725.1	1719.5	1721.9
10°	1681.5	1676.1	1696.2	1710.2	1708.2
12.5°	1661.2	1669.3	1670.5	1685.6	1687.0
15°	1662.3	1643.2	1653.3	1661.9	1662.6
17.5°	1597.8	1618.5	1625.5	1645.2	1620.8
20°	1589.9	1574.7	1589.9	1610.0	1606.8
22.5°	1541.3	1524.4	1556.9	1574.7	1573.6
25°	1486.2	1494.4	1518.8	1538.6	1535.5
27.5°	1437.9	1447.4	1482.2	1509.5	1491.9
30°	1400.7	1395.9	1425.3	1449.7	1463.2
32.5°	1334.1	1351.2	1385.5	1409.7	1396.8
35°	1293.7	1297.5	1327.5	1358.2	1357.3
37.5°	1223.0	1240.8	1283.0	1291.6	1283.7
40°	1162.7	1180.5	1218.7	1228.0	1224.1
42.5°	1118.2	1121.4	1154.1	1164.7	1147.8
45°	1040.8	1060.2	1077.8	1105.6	1079.4
47.5°	974.9	983.9	1021.8	1029.3	1015.5
50°	915.0	918.2	956.4	947.1	938.1
52.5°	839.9	853.2	874.6	872.8	862.2
55°	778.0	772.8	793.1	787.7	787.5
57.5°	703.7	712.8	729.5	720.9	707.1
60°	634.2	634.4	640.5	630.8	629.0
62.5°	556.7	559.5	560.8	548.8	568.3
65°	478.0	471.6	490.1	471.4	474.6
67.5°	405.5	408.6	406.8	395.1	399.6
70°	331.9	335.9	333.0	319.7	323.8
72.5°	264.6	259.6	262.8	246.1	253.8
75°	198.9	194.8	198.5	184.5	190.8
77.5°	135.5	138.6	136.4	128.9	133.2
80°	89.4	86.9	86.9	82.6	83.5
82.5°	52.2	49.7	49.0	47.6	49.7
85°	24.4	23.7	24.2	23.5	22.6
87.5°	8.8	9.0	9.0	8.6	8.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)