

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: P590149

Luminaire Tested: FSR-24-2-LD4-2HI-35-UNV-82-84-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590149  
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-35-UNV-82-84-EDD  
Description: 2X2 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

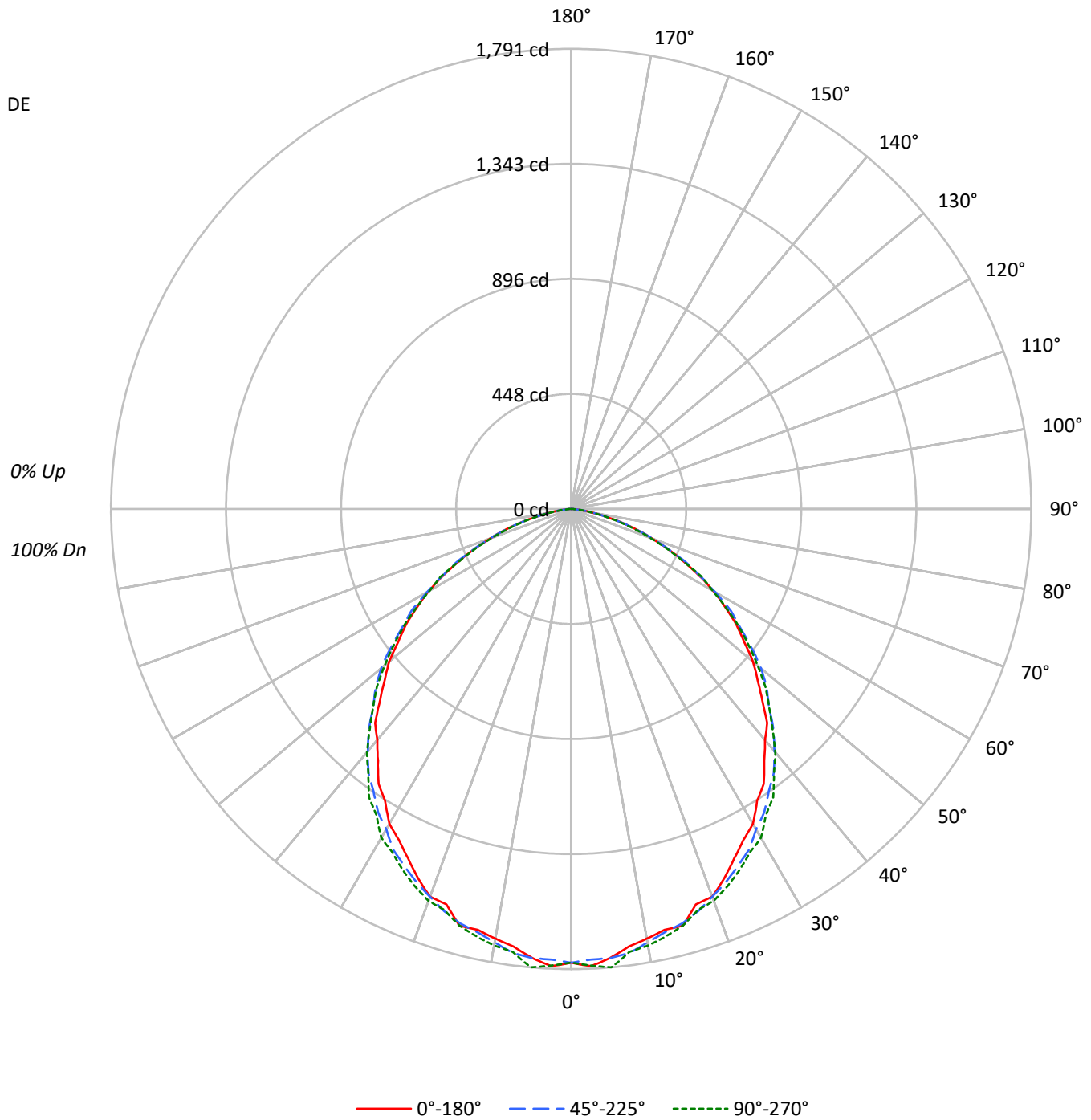
Lumens per Lamp: N/A  
Luminaire Lumens: 4451.0 lumens  
Efficiency: N/A  
Efficacy: 103.0 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 43.2  
Input Voltage (V):  
Input Current (Ain): NR  
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	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°	4752	4752	4752
5°	4737	4739	4838
10°	4641	4681	4714
15°	4677	4652	4678
20°	4598	4598	4647
25°	4457	4554	4605
30°	4396	4473	4592
35°	4292	4405	4504
40°	4125	4324	4343
45°	4000	4143	4149
50°	3869	4044	3966
55°	3687	3758	3731
60°	3447	3482	3419
65°	3074	3152	3052
70°	2637	2646	2573
75°	2089	2084	2004
80°	1399	1361	1308
85°	760	753	704

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 4249 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	166.1	3.7
10°-20°	470.8	10.6
20°-30°	705.4	15.8
30°-40°	836.0	18.8
40°-50°	837.6	18.8
50°-60°	710.9	16.0
60°-70°	479.3	10.8
70°-80°	210.6	4.7
80°-90°	34.2	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°	1342.3	30.2
0°-40°	2178.3	48.9
0°-60°	3726.8	83.7
0°-90°	4451.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4451.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1766	1766	1766	1766	1766	
5°	1754	1749	1754	1749	1791	165
15°	1679	1660	1670	1678	1679	468
25°	1501	1509	1534	1554	1551	694
35°	1307	1310	1341	1372	1371	811
45°	1051	1071	1089	1117	1090	813
55°	786	780	801	796	795	699
65°	483	476	495	476	479	480
75°	201	197	200	186	193	215
85°	25	24	24	24	23	36
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1766.0	1766.0	1766.0	1766.0	1766.0
2.5°	1781.3	1767.9	1755.3	1769.9	1778.8
5°	1753.5	1749.4	1754.2	1748.9	1791.1
7.5°	1717.5	1733.2	1742.3	1736.6	1739.1
10°	1698.3	1692.8	1713.1	1727.3	1725.2
12.5°	1677.8	1686.0	1687.1	1702.4	1703.8
15°	1678.9	1659.6	1669.8	1678.5	1679.2
17.5°	1613.7	1634.7	1641.8	1661.6	1637.0
20°	1605.7	1590.5	1605.7	1626.0	1622.8
22.5°	1556.7	1539.6	1572.5	1590.5	1589.3
25°	1501.1	1509.3	1533.9	1554.0	1550.8
27.5°	1452.3	1461.9	1497.0	1524.6	1506.8
30°	1414.7	1409.9	1439.5	1464.1	1477.8
32.5°	1347.4	1364.7	1399.4	1423.8	1410.8
35°	1306.6	1310.5	1340.8	1371.8	1370.9
37.5°	1235.2	1253.2	1295.9	1304.5	1296.5
40°	1174.3	1192.3	1230.9	1240.2	1236.3
42.5°	1129.4	1132.6	1165.7	1176.4	1159.3
45°	1051.2	1070.8	1088.6	1116.6	1090.2
47.5°	984.6	993.7	1032.0	1039.6	1025.7
50°	924.2	927.4	965.9	956.6	947.4
52.5°	848.2	861.7	883.4	881.5	870.8
55°	785.8	780.5	801.0	795.6	795.3
57.5°	710.8	719.9	736.7	728.1	714.2
60°	640.5	640.7	646.9	637.1	635.3
62.5°	562.3	565.0	566.4	554.3	573.9
65°	482.7	476.3	495.0	476.1	479.3
67.5°	409.5	412.7	410.9	399.0	403.6
70°	335.2	339.3	336.3	322.9	327.0
72.5°	267.2	262.2	265.4	248.5	256.3
75°	200.9	196.8	200.4	186.3	192.7
77.5°	136.8	140.0	137.7	130.2	134.5
80°	90.3	87.8	87.8	83.5	84.4
82.5°	52.7	50.2	49.5	48.1	50.2
85°	24.6	23.9	24.4	23.7	22.8
87.5°	8.9	9.1	9.1	8.7	8.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)