

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: P590573

Luminaire Tested: FSR-24-2-LD4-3LO-40-UNV-93-84-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590573  
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-LD4-3LO-40-UNV-93-84-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

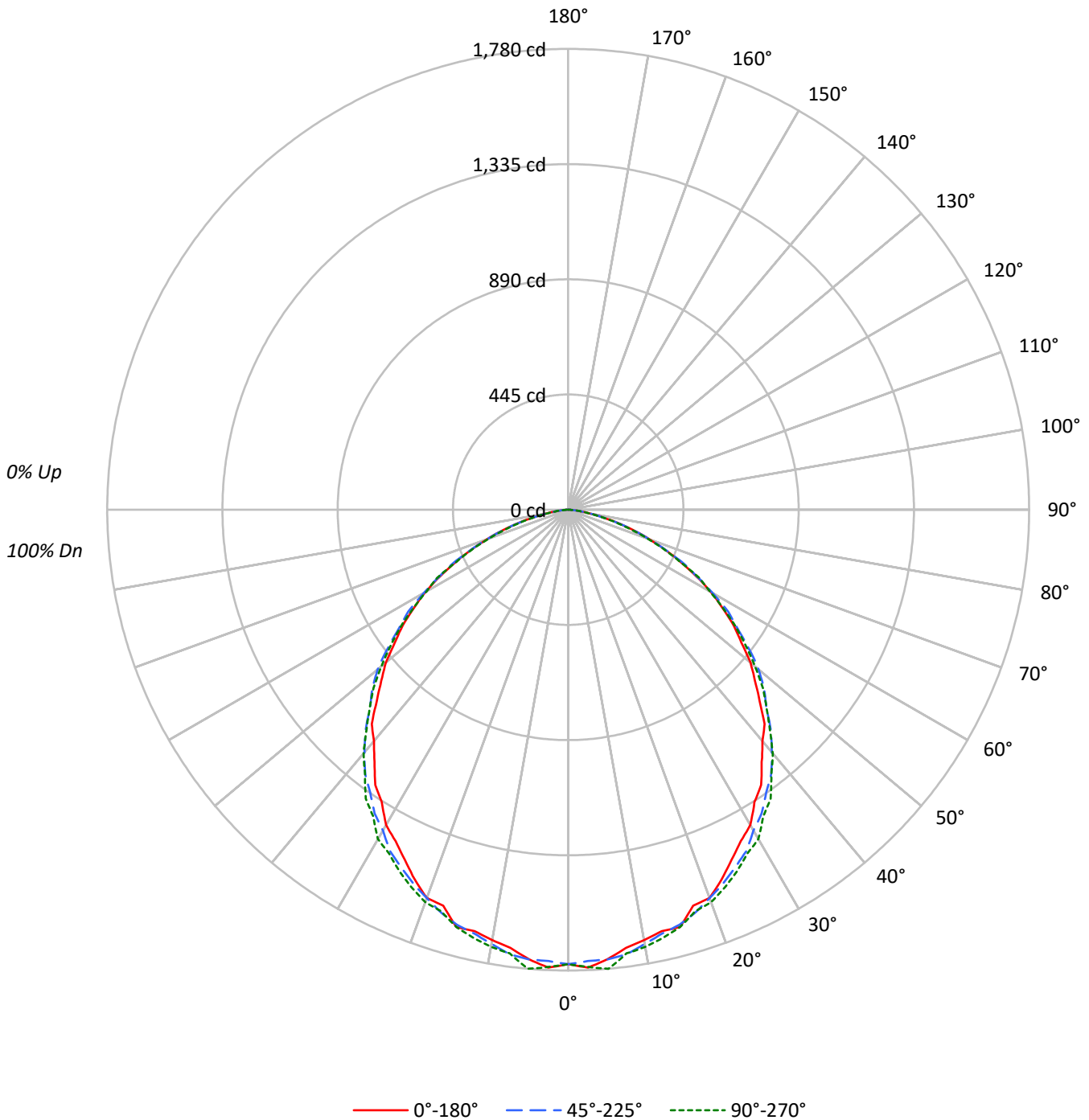
Lumens per Lamp: N/A  
Luminaire Lumens: 4424.0 lumens  
Efficiency: N/A  
Efficacy: 126.0 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 35.1  
Input Voltage (V):  
Input Current (Ain): NR  
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	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°	4723	4723	4723
5°	4708	4710	4809
10°	4612	4653	4686
15°	4649	4624	4650
20°	4570	4570	4619
25°	4430	4527	4577
30°	4369	4446	4564
35°	4266	4378	4476
40°	4100	4298	4317
45°	3976	4118	4124
50°	3846	4019	3942
55°	3664	3735	3709
60°	3426	3461	3398
65°	3055	3133	3033
70°	2622	2630	2557
75°	2076	2071	1991
80°	1390	1353	1300
85°	756	750	701

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 4224 cd/sqm

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	165.1	3.7
10°-20°	468.0	10.6
20°-30°	701.1	15.8
30°-40°	830.9	18.8
40°-50°	832.5	18.8
50°-60°	706.6	16.0
60°-70°	476.4	10.8
70°-80°	209.3	4.7
80°-90°	34.0	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°	1334.2	30.2
0°-40°	2165.1	48.9
0°-60°	3704.2	83.7
0°-90°	4424.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4424.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1755	1755	1755	1755	1755	
5°	1743	1739	1744	1738	1780	164
15°	1669	1650	1660	1668	1669	465
25°	1492	1500	1525	1545	1541	690
35°	1299	1302	1333	1364	1363	806
45°	1045	1064	1082	1110	1084	808
55°	781	776	796	791	790	695
65°	480	474	492	473	476	477
75°	200	196	199	185	192	214
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°	1755.3	1755.3	1755.3	1755.3	1755.3
2.5°	1770.5	1757.1	1744.7	1759.2	1768.0
5°	1742.9	1738.8	1743.5	1738.3	1780.3
7.5°	1707.1	1722.7	1731.8	1726.1	1728.6
10°	1688.0	1682.6	1702.8	1716.8	1714.8
12.5°	1667.6	1675.8	1676.9	1692.1	1693.5
15°	1668.8	1649.5	1659.7	1668.3	1669.0
17.5°	1603.9	1624.8	1631.8	1651.5	1627.1
20°	1596.0	1580.8	1596.0	1616.2	1613.0
22.5°	1547.3	1530.3	1562.9	1580.8	1579.7
25°	1492.0	1500.1	1524.6	1544.6	1541.4
27.5°	1443.5	1453.0	1487.9	1515.3	1497.6
30°	1406.1	1401.3	1430.8	1455.3	1468.9
32.5°	1339.2	1356.4	1390.9	1415.1	1402.2
35°	1298.7	1302.5	1332.6	1363.5	1362.6
37.5°	1227.7	1245.6	1288.0	1296.6	1288.7
40°	1167.2	1185.1	1223.4	1232.7	1228.8
42.5°	1122.6	1125.7	1158.6	1169.2	1152.2
45°	1044.8	1064.3	1082.0	1109.9	1083.6
47.5°	978.6	987.7	1025.8	1033.3	1019.4
50°	918.6	921.7	960.0	950.8	941.7
52.5°	843.1	856.5	878.0	876.2	865.5
55°	781.0	775.8	796.2	790.7	790.5
57.5°	706.4	715.5	732.3	723.7	709.8
60°	636.6	636.9	643.0	633.2	631.4
62.5°	558.9	561.6	563.0	551.0	570.5
65°	479.8	473.5	492.0	473.2	476.4
67.5°	407.0	410.2	408.4	396.6	401.2
70°	333.2	337.2	334.3	320.9	325.0
72.5°	265.6	260.6	263.8	247.0	254.7
75°	199.7	195.6	199.2	185.2	191.5
77.5°	136.0	139.2	136.9	129.4	133.7
80°	89.7	87.3	87.3	83.0	83.9
82.5°	52.4	49.9	49.2	47.8	49.9
85°	24.5	23.8	24.3	23.6	22.7
87.5°	8.8	9.1	9.1	8.6	8.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)