

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: P590350

Luminaire Tested: FSR-24-2-LD4-2STD-35-UNV-93-85-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590350  
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-LD4-2STD-35-UNV-93-85-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

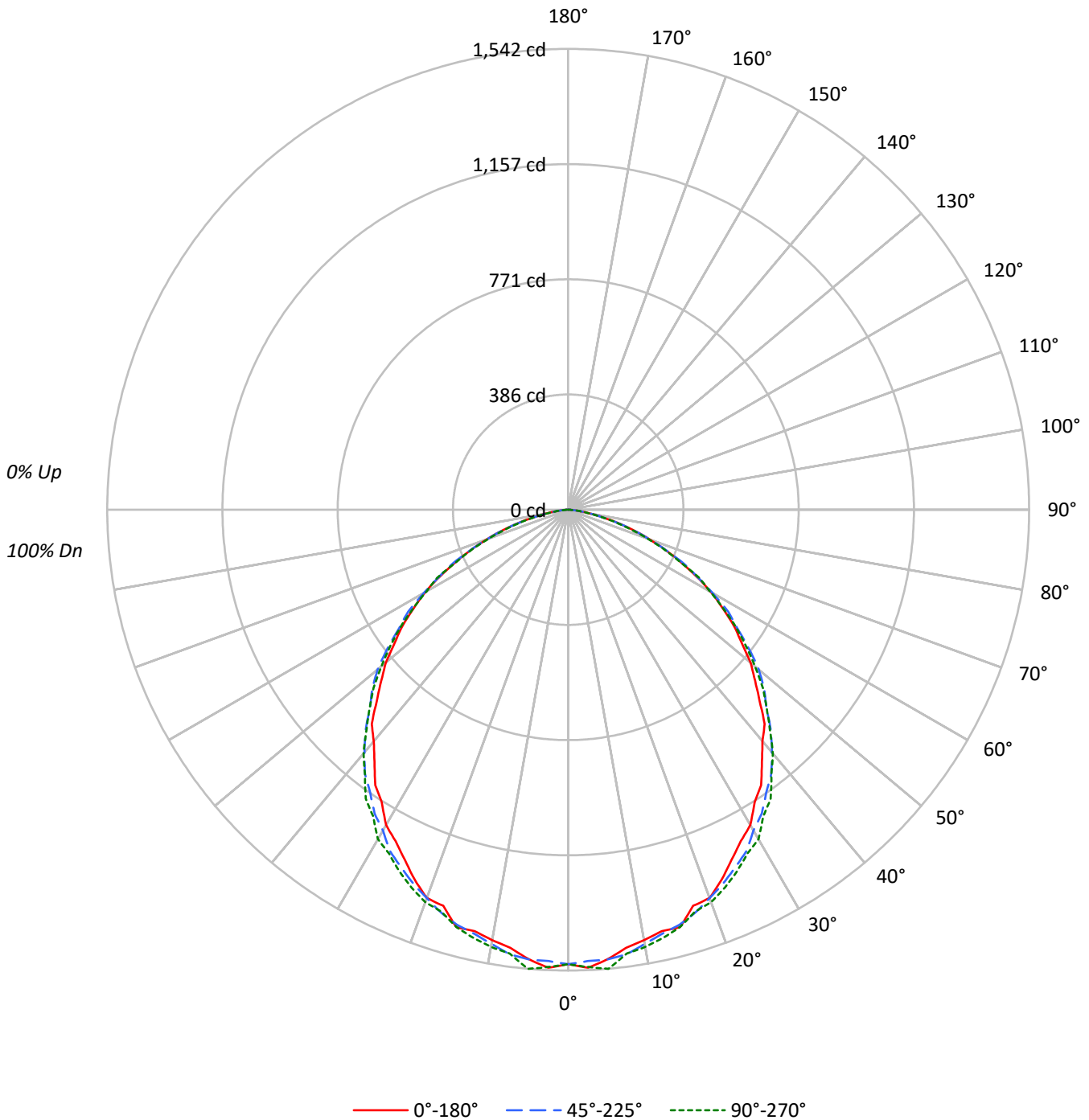
Lumens per Lamp: N/A  
Luminaire Lumens: 3833.0 lumens  
Efficiency: N/A  
Efficacy: 115.1 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.3  
Input Voltage (V):  
Input Current (Ain): NR  
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				
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°	4092	4092	4092
5°	4079	4081	4166
10°	3996	4031	4060
15°	4028	4006	4028
20°	3960	3960	4002
25°	3838	3922	3965
30°	3785	3852	3954
35°	3696	3793	3878
40°	3553	3724	3740
45°	3445	3567	3573
50°	3332	3482	3416
55°	3175	3236	3213
60°	2969	2998	2944
65°	2647	2714	2628
70°	2271	2279	2216
75°	1799	1795	1725
80°	1206	1172	1127
85°	655	648	605

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 3659 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	143.1	3.7
10°-20°	405.4	10.6
20°-30°	607.4	15.8
30°-40°	719.9	18.8
40°-50°	721.3	18.8
50°-60°	612.2	16.0
60°-70°	412.8	10.8
70°-80°	181.4	4.7
80°-90°	29.5	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°	1155.9	30.2
0°-40°	1875.9	48.9
0°-60°	3209.4	83.7
0°-90°	3833.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3833.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1521	1521	1521	1521	1521	
5°	1510	1506	1511	1506	1542	142
15°	1446	1429	1438	1445	1446	403
25°	1293	1300	1321	1338	1336	598
35°	1125	1128	1155	1181	1180	699
45°	905	922	937	962	939	700
55°	677	672	690	685	685	602
65°	416	410	426	410	413	413
75°	173	170	173	160	166	185
85°	21	21	21	20	20	31
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1520.8	1520.8	1520.8	1520.8	1520.8
2.5°	1534.0	1522.4	1511.6	1524.2	1531.8
5°	1510.0	1506.5	1510.6	1506.1	1542.4
7.5°	1479.0	1492.6	1500.4	1495.5	1497.7
10°	1462.5	1457.8	1475.3	1487.5	1485.7
12.5°	1444.8	1451.9	1452.9	1466.1	1467.2
15°	1445.8	1429.1	1438.0	1445.4	1446.0
17.5°	1389.7	1407.7	1413.8	1430.9	1409.7
20°	1382.8	1369.6	1382.8	1400.3	1397.5
22.5°	1340.6	1325.8	1354.1	1369.6	1368.7
25°	1292.7	1299.7	1320.9	1338.2	1335.5
27.5°	1250.6	1258.9	1289.1	1312.9	1297.6
30°	1218.2	1214.1	1239.6	1260.9	1272.6
32.5°	1160.3	1175.2	1205.1	1226.1	1214.9
35°	1125.2	1128.5	1154.6	1181.3	1180.5
37.5°	1063.7	1079.2	1115.9	1123.4	1116.5
40°	1011.3	1026.8	1060.0	1068.0	1064.7
42.5°	972.6	975.3	1003.8	1013.0	998.3
45°	905.2	922.1	937.4	961.6	938.8
47.5°	847.9	855.8	888.7	895.2	883.2
50°	795.9	798.6	831.8	823.7	815.9
52.5°	730.5	742.1	760.7	759.1	749.9
55°	676.7	672.2	689.8	685.1	684.9
57.5°	612.1	619.9	634.5	627.0	615.0
60°	551.6	551.8	557.1	548.6	547.1
62.5°	484.2	486.6	487.8	477.4	494.2
65°	415.7	410.2	426.3	410.0	412.8
67.5°	352.7	355.4	353.8	343.6	347.6
70°	288.7	292.2	289.6	278.1	281.6
72.5°	230.1	225.8	228.6	214.0	220.7
75°	173.0	169.5	172.6	160.4	165.9
77.5°	117.8	120.6	118.6	112.1	115.9
80°	77.8	75.6	75.6	71.9	72.7
82.5°	45.4	43.2	42.6	41.4	43.2
85°	21.2	20.6	21.0	20.4	19.6
87.5°	7.7	7.9	7.9	7.5	7.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)