

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: P590352

Luminaire Tested: FSR-24-2-LD4-2STD-35-UNV-93-87-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590352  
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-93-87-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

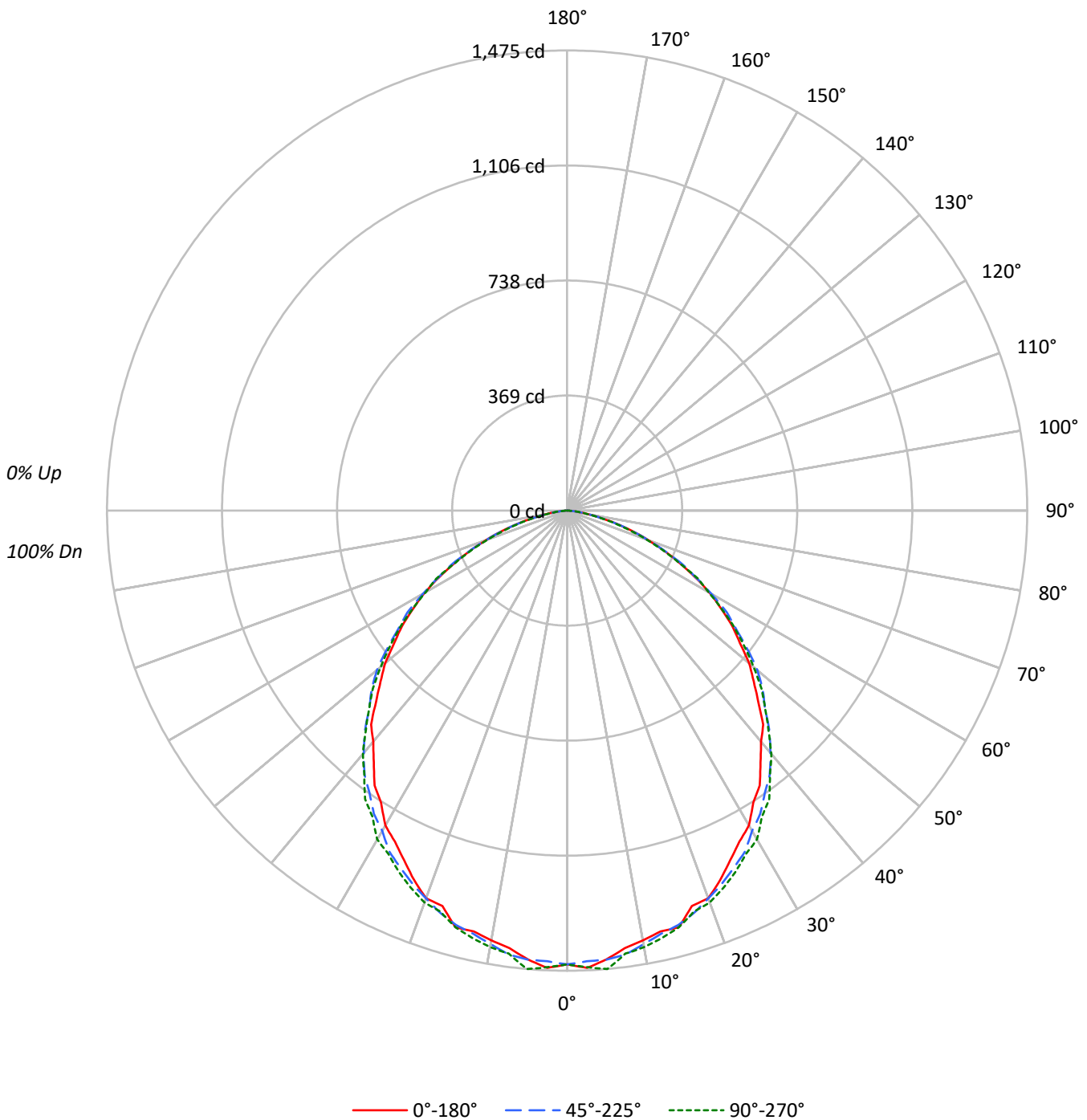
Lumens per Lamp: N/A  
Luminaire Lumens: 3666.0 lumens  
Efficiency: N/A  
Efficacy: 110.1 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.3  
Input Voltage (V):  
Input Current (Ain): NR  
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



TEST NUMBER: P590352

CATALOG NUMBER: FSR-24-2-LD4-2STD-35-UNV-93-87-EDD

### Luminous Intensity Polar Plot





TEST NUMBER: P590352

CATALOG NUMBER: FSR-24-2-LD4-2STD-35-UNV-93-87-EDD

**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																												
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°	3914	3914	3914
5°	3901	3903	3985
10°	3822	3856	3883
15°	3852	3831	3853
20°	3787	3787	3828
25°	3671	3751	3793
30°	3621	3684	3782
35°	3535	3628	3709
40°	3398	3561	3577
45°	3295	3412	3417
50°	3187	3331	3267
55°	3036	3096	3073
60°	2840	2868	2816
65°	2532	2596	2514
70°	2172	2179	2119
75°	1721	1717	1650
80°	1153	1120	1077
85°	627	621	580

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 3500 cd/sqm



TEST NUMBER: P590352

CATALOG NUMBER: FSR-24-2-LD4-2STD-35-UNV-93-87-EDD

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	136.8	3.7
10°-20°	387.8	10.6
20°-30°	581.0	15.8
30°-40°	688.6	18.8
40°-50°	689.8	18.8
50°-60°	585.6	16.0
60°-70°	394.8	10.8
70°-80°	173.5	4.7
80°-90°	28.2	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°	1105.6	30.2
0°-40°	1794.2	48.9
0°-60°	3069.6	83.7
0°-90°	3666.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3666.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1455	1455	1455	1455	1455	
5°	1444	1441	1445	1440	1475	136
15°	1383	1367	1375	1382	1383	385
25°	1236	1243	1263	1280	1277	572
35°	1076	1079	1104	1130	1129	668
45°	866	882	897	920	898	670
55°	647	643	660	655	655	576
65°	398	392	408	392	395	395
75°	166	162	165	153	159	177
85°	20	20	20	20	19	29
90°	0	0	0	0	0	



TEST NUMBER: P590352

CATALOG NUMBER: FSR-24-2-LD4-2STD-35-UNV-93-87-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1454.6	1454.6	1454.6	1454.6	1454.6
2.5°	1467.2	1456.1	1445.7	1457.8	1465.1
5°	1444.2	1440.9	1444.8	1440.5	1475.2
7.5°	1414.6	1427.5	1435.0	1430.3	1432.4
10°	1398.8	1394.3	1411.0	1422.6	1421.0
12.5°	1381.9	1388.7	1389.6	1402.2	1403.3
15°	1382.8	1366.9	1375.3	1382.5	1383.0
17.5°	1329.1	1346.4	1352.2	1368.6	1348.3
20°	1322.5	1310.0	1322.5	1339.3	1336.6
22.5°	1282.2	1268.1	1295.1	1310.0	1309.0
25°	1236.3	1243.1	1263.4	1279.9	1277.3
27.5°	1196.2	1204.0	1233.0	1255.7	1241.0
30°	1165.2	1161.2	1185.6	1205.9	1217.2
32.5°	1109.8	1124.0	1152.6	1172.7	1162.0
35°	1076.1	1079.3	1104.3	1129.9	1129.1
37.5°	1017.4	1032.2	1067.3	1074.5	1067.9
40°	967.2	982.1	1013.8	1021.5	1018.3
42.5°	930.2	932.8	960.1	968.9	954.8
45°	865.8	881.9	896.6	919.7	897.9
47.5°	811.0	818.5	850.0	856.2	844.8
50°	761.2	763.8	795.6	787.9	780.3
52.5°	698.6	709.7	727.6	726.1	717.2
55°	647.2	642.9	659.8	655.3	655.1
57.5°	585.4	592.9	606.8	599.7	588.2
60°	527.6	527.7	532.8	524.7	523.2
62.5°	463.1	465.4	466.5	456.6	472.7
65°	397.6	392.3	407.7	392.1	394.8
67.5°	337.3	339.9	338.4	328.7	332.4
70°	276.1	279.5	277.0	265.9	269.3
72.5°	220.1	216.0	218.6	204.7	211.1
75°	165.5	162.1	165.1	153.4	158.7
77.5°	112.7	115.3	113.4	107.2	110.8
80°	74.4	72.3	72.3	68.7	69.5
82.5°	43.4	41.3	40.8	39.6	41.3
85°	20.3	19.7	20.1	19.5	18.8
87.5°	7.3	7.5	7.5	7.1	6.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)