

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: P590378

Luminaire Tested: FSR-24-2-LD4-2STD-40-UNV-82-94-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590378  
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-40-UNV-82-94-EDD  
Description: 2X2 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .187 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

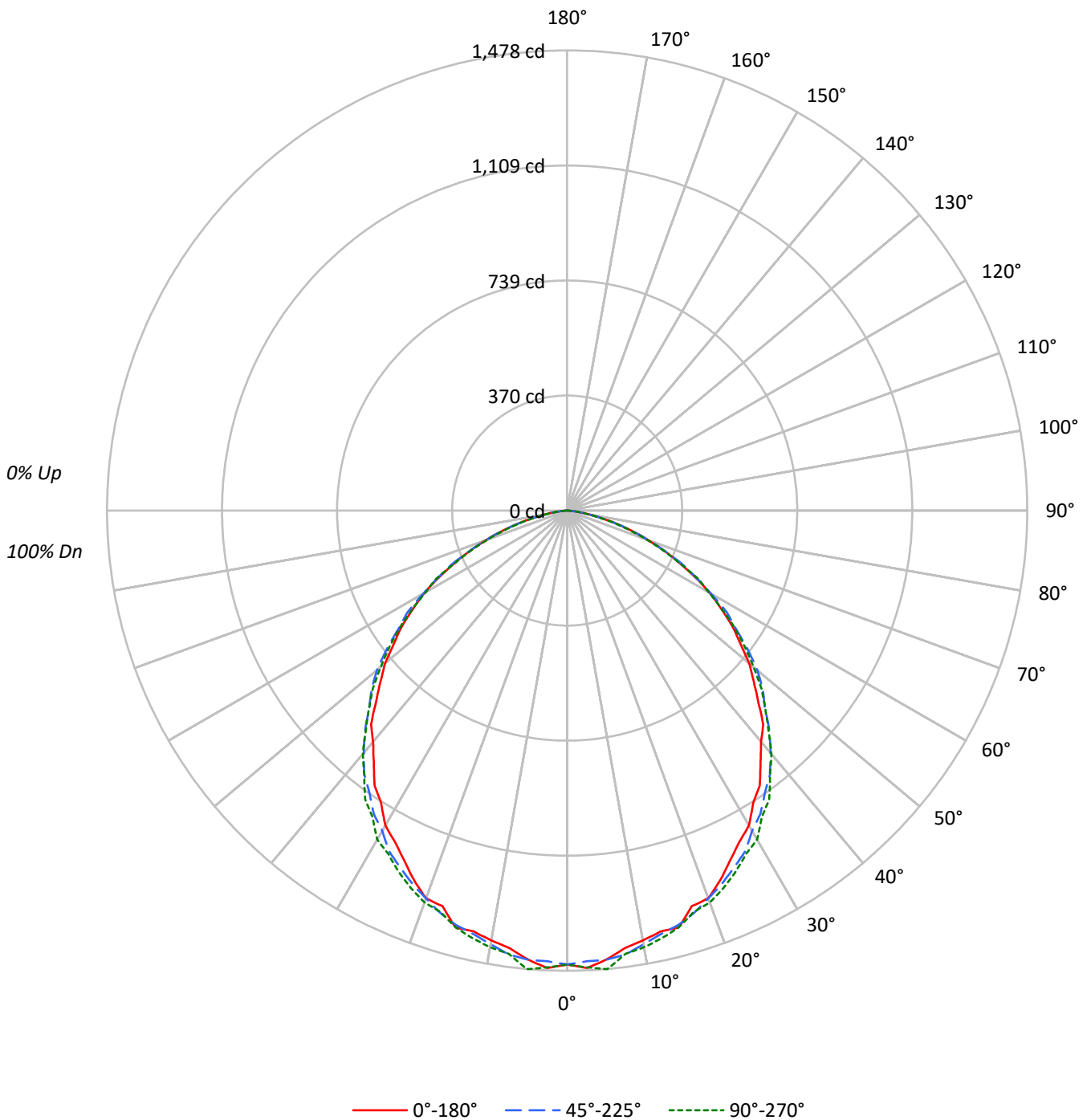
Lumens per Lamp: N/A  
Luminaire Lumens: 3674.0 lumens  
Efficiency: N/A  
Efficacy: 110.3 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.3  
Input Voltage (V):  
Input Current (Ain): NR  
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: P590378

CATALOG NUMBER: FSR-24-2-LD4-2STD-40-UNV-82-94-EDD

### Luminous Intensity Polar Plot





TEST NUMBER: P590378

CATALOG NUMBER: FSR-24-2-LD4-2STD-40-UNV-82-94-EDD

**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	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°	3923	3923	3923
5°	3910	3911	3994
10°	3830	3864	3891
15°	3861	3840	3861
20°	3796	3796	3836
25°	3679	3759	3801
30°	3628	3692	3790
35°	3543	3636	3717
40°	3405	3569	3585
45°	3302	3420	3425
50°	3193	3338	3274
55°	3043	3102	3080
60°	2845	2874	2822
65°	2537	2602	2519
70°	2177	2184	2124
75°	1724	1720	1653
80°	1155	1124	1079
85°	627	621	580

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 3508 cd/sqm



TEST NUMBER: P590378

CATALOG NUMBER: FSR-24-2-LD4-2STD-40-UNV-82-94-EDD

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	137.1	3.7
10°-20°	388.6	10.6
20°-30°	582.2	15.8
30°-40°	690.1	18.8
40°-50°	691.4	18.8
50°-60°	586.9	16.0
60°-70°	395.6	10.8
70°-80°	173.9	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°	1108.0	30.2
0°-40°	1798.1	48.9
0°-60°	3076.3	83.7
0°-90°	3674.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3674.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1458	1458	1458	1458	1458	
5°	1447	1444	1448	1444	1478	136
15°	1386	1370	1378	1386	1386	386
25°	1239	1246	1266	1283	1280	573
35°	1078	1082	1107	1132	1132	670
45°	868	884	899	922	900	671
55°	649	644	661	657	656	577
65°	398	393	409	393	396	396
75°	166	162	165	154	159	178
85°	20	20	20	20	19	29
90°	0	0	0	0	0	



TEST NUMBER: P590378

CATALOG NUMBER: FSR-24-2-LD4-2STD-40-UNV-82-94-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1457.8	1457.8	1457.8	1457.8	1457.8
2.5°	1470.4	1459.3	1448.9	1461.0	1468.3
5°	1447.4	1444.0	1448.0	1443.6	1478.5
7.5°	1417.7	1430.6	1438.2	1433.5	1435.5
10°	1401.8	1397.3	1414.1	1425.8	1424.1
12.5°	1384.9	1391.7	1392.6	1405.2	1406.4
15°	1385.9	1369.9	1378.3	1385.5	1386.0
17.5°	1332.0	1349.3	1355.2	1371.5	1351.2
20°	1325.4	1312.8	1325.4	1342.2	1339.5
22.5°	1285.0	1270.8	1298.0	1312.8	1311.9
25°	1239.0	1245.8	1266.1	1282.7	1280.1
27.5°	1198.8	1206.7	1235.7	1258.4	1243.7
30°	1167.7	1163.8	1188.2	1208.5	1219.8
32.5°	1112.2	1126.5	1155.1	1175.2	1164.5
35°	1078.5	1081.7	1106.7	1132.3	1131.6
37.5°	1019.6	1034.4	1069.6	1076.8	1070.2
40°	969.3	984.2	1016.0	1023.7	1020.5
42.5°	932.2	934.9	962.2	971.0	956.9
45°	867.7	883.9	898.6	921.7	899.9
47.5°	812.7	820.3	851.9	858.1	846.6
50°	762.8	765.5	797.3	789.6	782.0
52.5°	700.2	711.3	729.2	727.7	718.8
55°	648.6	644.3	661.2	656.7	656.5
57.5°	586.7	594.2	608.1	601.0	589.5
60°	528.7	528.9	534.0	525.9	524.4
62.5°	464.1	466.4	467.5	457.6	473.7
65°	398.5	393.2	408.6	393.0	395.6
67.5°	338.0	340.7	339.2	329.4	333.1
70°	276.7	280.1	277.6	266.5	269.9
72.5°	220.6	216.5	219.1	205.2	211.6
75°	165.8	162.4	165.4	153.8	159.0
77.5°	112.9	115.6	113.7	107.5	111.0
80°	74.5	72.5	72.5	68.9	69.6
82.5°	43.5	41.4	40.8	39.7	41.4
85°	20.3	19.8	20.1	19.6	18.8
87.5°	7.3	7.5	7.5	7.2	6.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)