

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: P590537

Luminaire Tested: FSR-24-2-LD4-3LO-35-UNV-82-88-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590537  
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-35-UNV-82-88-EDD  
Description: 2X2 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

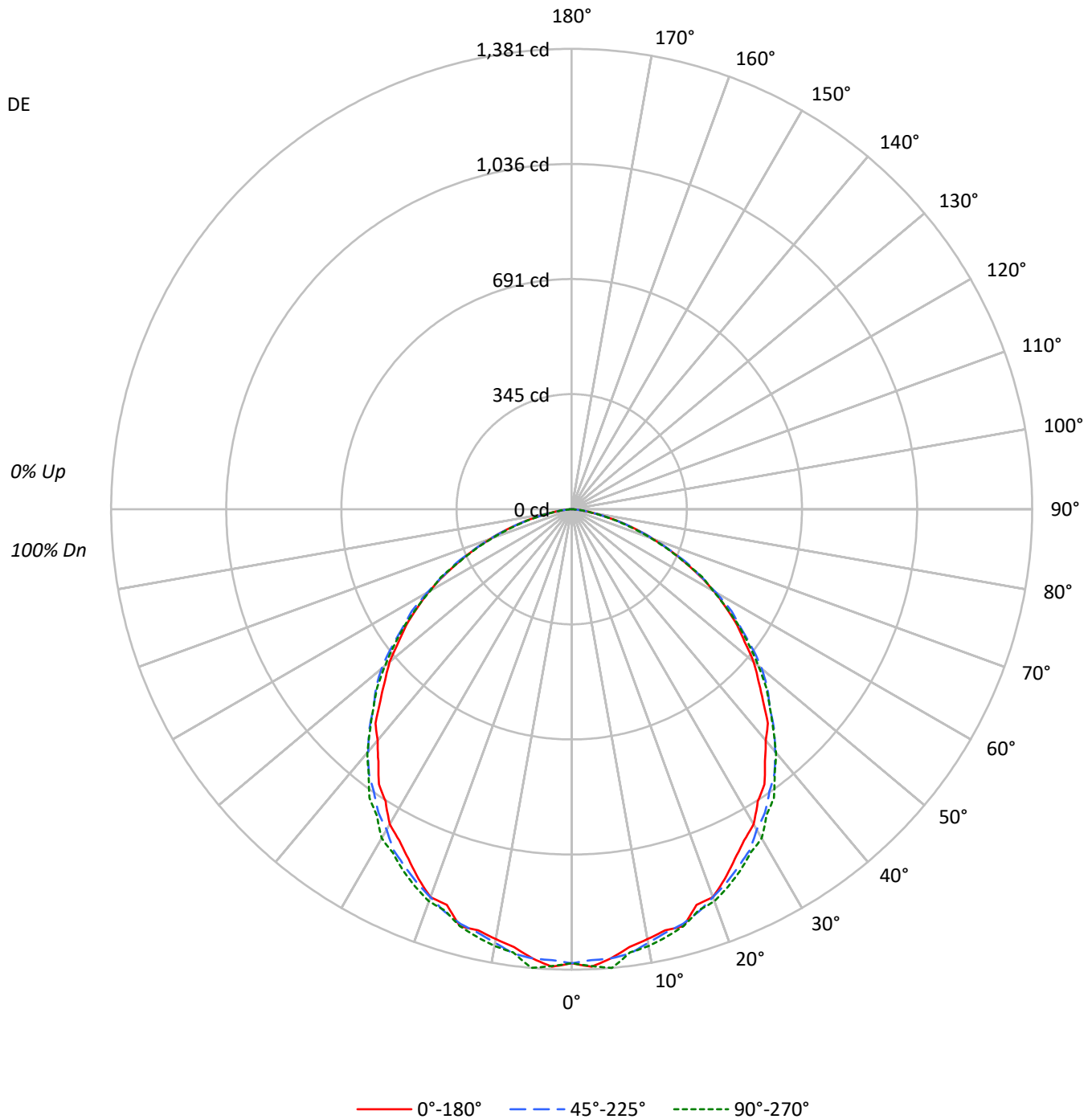
Lumens per Lamp: N/A  
Luminaire Lumens: 3432.0 lumens  
Efficiency: N/A  
Efficacy: 97.8 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 35.1  
Input Voltage (V):  
Input Current (Ain): NR  
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



TEST NUMBER: P590537

CATALOG NUMBER: FSR-24-2-LD4-3LO-35-UNV-82-88-EDD

### Luminous Intensity Polar Plot





TEST NUMBER: P590537

CATALOG NUMBER: FSR-24-2-LD4-3LO-35-UNV-82-88-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	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°	3664	3664	3664
5°	3652	3654	3731
10°	3578	3609	3635
15°	3607	3587	3607
20°	3546	3546	3583
25°	3437	3512	3551
30°	3389	3449	3541
35°	3310	3396	3472
40°	3181	3334	3349
45°	3084	3194	3199
50°	2983	3118	3058
55°	2843	2898	2877
60°	2658	2685	2636
65°	2370	2430	2353
70°	2034	2040	1983
75°	1611	1606	1545
80°	1079	1049	1009
85°	587	580	543

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 3277 cd/sqm



TEST NUMBER: P590537

CATALOG NUMBER: FSR-24-2-LD4-3LO-35-UNV-82-88-EDD

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	128.1	3.7
10°-20°	363.0	10.6
20°-30°	543.9	15.8
30°-40°	644.6	18.8
40°-50°	645.8	18.8
50°-60°	548.2	16.0
60°-70°	369.6	10.8
70°-80°	162.4	4.7
80°-90°	26.4	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°	1035.0	30.2
0°-40°	1679.6	48.9
0°-60°	2873.6	83.7
0°-90°	3432.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3432.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1362	1362	1362	1362	1362	
5°	1352	1349	1353	1348	1381	127
15°	1295	1280	1288	1294	1295	361
25°	1157	1164	1183	1198	1196	535
35°	1008	1010	1034	1058	1057	626
45°	810	826	839	861	841	627
55°	606	602	618	613	613	539
65°	372	367	382	367	370	370
75°	155	152	154	144	149	166
85°	19	18	19	18	18	28
90°	0	0	0	0	0	



TEST NUMBER: P590537

CATALOG NUMBER: FSR-24-2-LD4-3LO-35-UNV-82-88-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1361.7	1361.7	1361.7	1361.7	1361.7
2.5°	1373.5	1363.1	1353.5	1364.7	1371.6
5°	1352.1	1348.9	1352.6	1348.5	1381.1
7.5°	1324.3	1336.4	1343.4	1339.1	1341.0
10°	1309.5	1305.3	1320.9	1331.8	1330.3
12.5°	1293.7	1300.0	1300.9	1312.7	1313.7
15°	1294.6	1279.6	1287.5	1294.2	1294.7
17.5°	1244.3	1260.5	1265.9	1281.2	1262.2
20°	1238.1	1226.3	1238.1	1253.8	1251.3
22.5°	1200.3	1187.1	1212.5	1226.3	1225.5
25°	1157.4	1163.8	1182.7	1198.2	1195.8
27.5°	1119.8	1127.2	1154.3	1175.5	1161.8
30°	1090.8	1087.1	1110.0	1128.9	1139.5
32.5°	1038.9	1052.3	1079.0	1097.8	1087.8
35°	1007.5	1010.4	1033.8	1057.7	1057.0
37.5°	952.4	966.3	999.2	1005.9	999.7
40°	905.5	919.4	949.1	956.3	953.3
42.5°	870.8	873.3	898.8	907.1	893.9
45°	810.5	825.7	839.4	861.0	840.6
47.5°	759.2	766.2	795.8	801.6	790.8
50°	712.6	715.1	744.8	737.6	730.5
52.5°	654.1	664.4	681.1	679.7	671.5
55°	605.9	601.8	617.7	613.4	613.3
57.5°	548.0	555.1	568.1	561.4	550.7
60°	493.9	494.1	498.8	491.2	489.8
62.5°	433.6	435.7	436.7	427.4	442.5
65°	372.2	367.3	381.7	367.1	369.6
67.5°	315.8	318.2	316.8	307.7	311.2
70°	258.5	261.6	259.3	249.0	252.1
72.5°	206.1	202.2	204.7	191.6	197.6
75°	154.9	151.7	154.5	143.6	148.6
77.5°	105.5	108.0	106.2	100.4	103.7
80°	69.6	67.7	67.7	64.4	65.1
82.5°	40.6	38.7	38.2	37.1	38.7
85°	19.0	18.5	18.8	18.3	17.6
87.5°	6.9	7.0	7.0	6.7	6.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)