

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: P561180

Luminaire Tested: FSR-12-4-LD4-1STD-35-UNV-82-96-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561180  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-5)  
Test Lab: INNOVATION CENTER  
Issue Date: 7/20/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: FAIL-SAFE  
Catalog Number: FSR-12-4-LD4-1STD-35-UNV-82-96-EDD-90  
Description: 1X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .250 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

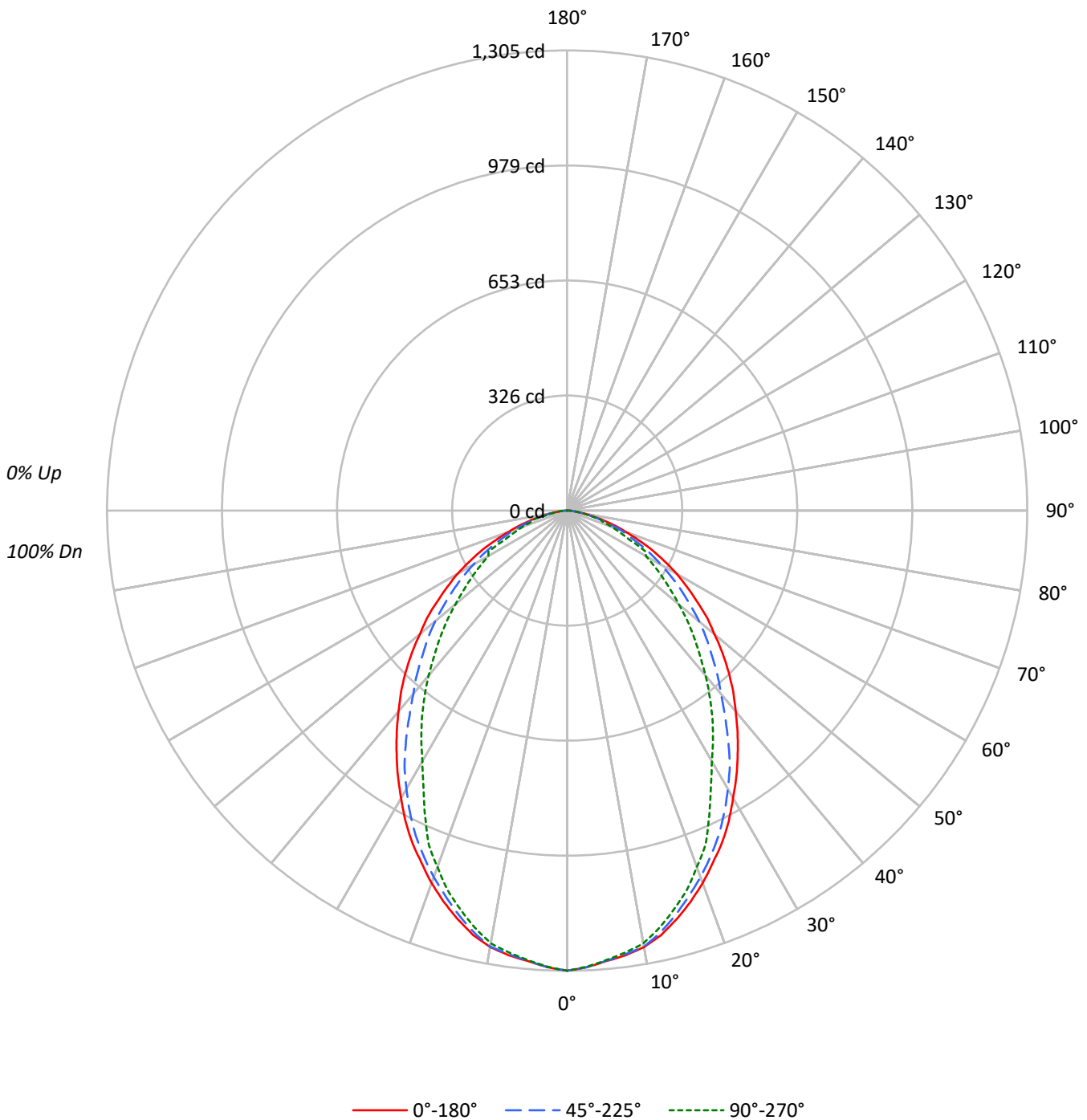
Lumens per Lamp: N/A  
Luminaire Lumens: 2562.0 lumens  
Efficiency: N/A  
Efficacy: 76.9 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.3  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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: P561180

CATALOG NUMBER: FSR-12-4-LD4-1STD-35-UNV-82-96-EDD-90

### Luminous Intensity Polar Plot





TEST NUMBER: P561180

CATALOG NUMBER: FSR-12-4-LD4-1STD-35-UNV-82-96-EDD-90

**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	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87					87			
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75					75			
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65					65			
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56					56			
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50					50			
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44					44			
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40					40			
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36					36			
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33					33			
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30					30			

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	3512	3512	3512
5°	3464	3460	3456
10°	3434	3430	3405
15°	3341	3308	3262
20°	3219	3167	3080
25°	3086	3019	2831
30°	2925	2832	2550
35°	2771	2617	2359
40°	2613	2385	2146
45°	2463	2205	1940
50°	2280	2046	1731
55°	2109	1855	1550
60°	1933	1657	1389
65°	1700	1450	1230
70°	1400	1270	1045
75°	1114	972	1020
80°	748	702	654
85°	466	559	651

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2463 cd/sqm



TEST NUMBER: P561180

CATALOG NUMBER: FSR-12-4-LD4-1STD-35-UNV-82-96-EDD-90

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	121.5	4.7
10°-20°	333.4	13.0
20°-30°	461.6	18.0
30°-40°	492.2	19.2
40°-50°	449.0	17.5
50°-60°	351.8	13.7
60°-70°	229.3	8.9
70°-80°	101.6	4.0
80°-90°	21.8	0.9
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°	916.4	35.8
0°-40°	1408.6	55.0
0°-60°	2209.4	86.2
0°-90°	2562.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2562.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1305	1305	1305	1305	1305	
5°	1282	1281	1281	1279	1279	122
15°	1199	1199	1187	1175	1171	337
25°	1040	1034	1017	981	954	477
35°	843	837	797	736	718	527
45°	647	634	579	531	510	499
55°	450	436	395	348	330	403
65°	267	252	228	232	193	263
75°	107	100	94	89	98	115
85°	15	17	18	20	21	21
90°	0	0	0	0	0	



TEST NUMBER: P561180

CATALOG NUMBER: FSR-12-4-LD4-1STD-35-UNV-82-96-EDD-90

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1305.0	1305.0	1305.0	1305.0	1305.0
2.5°	1296.0	1296.0	1296.0	1294.5	1294.5
5°	1282.4	1280.9	1280.9	1279.4	1279.4
7.5°	1271.9	1270.3	1268.8	1267.3	1264.3
10°	1256.8	1256.8	1255.3	1247.7	1246.2
12.5°	1232.6	1231.1	1225.1	1214.5	1211.5
15°	1199.4	1199.4	1187.4	1175.3	1170.8
17.5°	1163.2	1161.7	1146.6	1134.6	1128.5
20°	1124.0	1121.0	1105.9	1086.3	1075.7
22.5°	1080.2	1080.2	1062.1	1036.5	1025.9
25°	1039.5	1033.5	1016.9	980.7	953.5
27.5°	992.7	983.7	965.6	914.3	882.6
30°	941.4	936.9	911.3	844.9	820.7
32.5°	893.2	885.6	858.5	789.1	769.5
35°	843.4	837.3	796.6	736.3	718.2
37.5°	793.6	786.0	734.7	686.5	663.8
40°	743.8	734.7	678.9	635.2	611.0
42.5°	697.0	685.0	630.6	583.9	556.7
45°	647.2	633.7	579.4	531.1	509.9
47.5°	597.5	585.4	535.6	485.8	461.7
50°	544.7	534.1	488.8	439.0	413.4
52.5°	500.9	484.3	440.5	390.8	369.6
55°	449.6	436.0	395.3	348.5	330.4
57.5°	402.8	389.3	351.5	307.8	292.7
60°	359.1	339.5	307.8	270.1	258.0
62.5°	310.8	295.7	268.6	236.9	252.0
65°	267.0	252.0	227.8	232.3	193.1
67.5°	218.8	211.2	190.1	169.0	162.9
70°	178.0	169.0	161.4	138.8	132.8
72.5°	141.8	132.8	122.2	110.1	105.6
75°	107.1	99.6	93.5	89.0	98.1
77.5°	73.9	70.9	66.4	61.9	60.3
80°	48.3	46.8	45.3	43.8	42.2
82.5°	28.7	28.7	28.7	28.7	28.7
85°	15.1	16.6	18.1	19.6	21.1
87.5°	9.1	9.1	10.6	12.1	13.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)