

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: P561162

Luminaire Tested: FSR-12-4-LD4-1STD-35-UNV-81-94-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561162  
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-81-94-EDD-90  
Description: 1X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .187 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

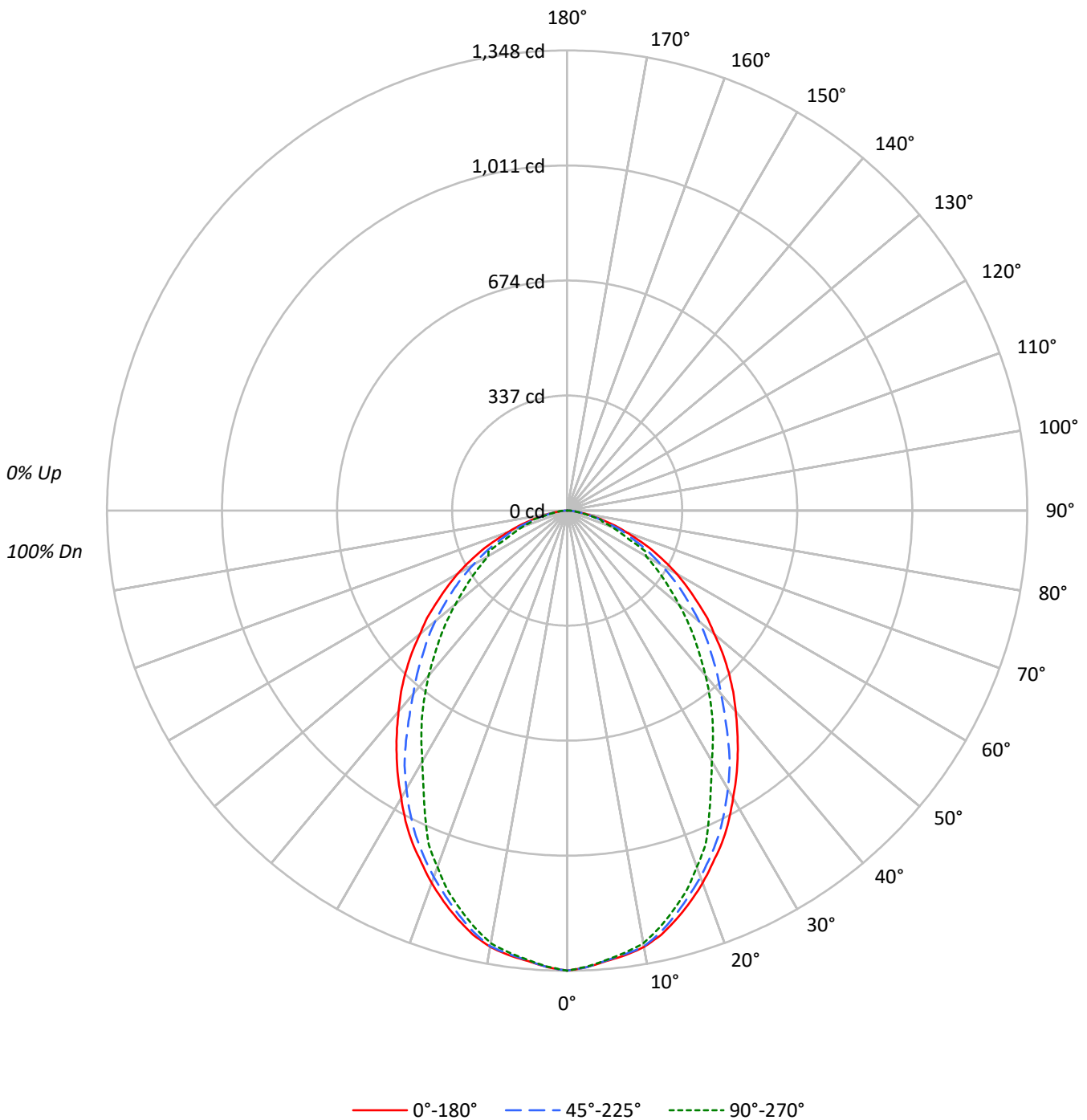
Lumens per Lamp: N/A  
Luminaire Lumens: 2646.0 lumens  
Efficiency: N/A  
Efficacy: 79.5 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.3  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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



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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	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30

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

	0°	45°	90°
0°	3627	3627	3627
5°	3578	3573	3569
10°	3547	3542	3517
15°	3451	3416	3369
20°	3324	3271	3182
25°	3188	3118	2924
30°	3021	2924	2634
35°	2861	2703	2437
40°	2699	2463	2217
45°	2544	2277	2004
50°	2355	2114	1787
55°	2178	1915	1601
60°	1996	1711	1434
65°	1756	1498	1270
70°	1447	1312	1079
75°	1150	1004	1053
80°	773	724	676
85°	482	577	673

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2544 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	125.5	4.7
10°-20°	344.3	13.0
20°-30°	476.7	18.0
30°-40°	508.3	19.2
40°-50°	463.7	17.5
50°-60°	363.3	13.7
60°-70°	236.8	8.9
70°-80°	104.9	4.0
80°-90°	22.5	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°	946.5	35.8
0°-40°	1454.8	55.0
0°-60°	2281.8	86.2
0°-90°	2646.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2646.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1348	1348	1348	1348	1348	
5°	1324	1323	1323	1321	1321	126
15°	1239	1239	1226	1214	1209	348
25°	1074	1067	1050	1013	985	493
35°	871	865	823	760	742	545
45°	668	654	598	548	527	515
55°	464	450	408	360	341	416
65°	276	260	235	240	199	272
75°	111	103	97	92	101	119
85°	16	17	19	20	22	22
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1347.8	1347.8	1347.8	1347.8	1347.8
2.5°	1338.5	1338.5	1338.5	1336.9	1336.9
5°	1324.5	1322.9	1322.9	1321.3	1321.3
7.5°	1313.6	1312.0	1310.4	1308.9	1305.8
10°	1298.0	1298.0	1296.4	1288.6	1287.1
12.5°	1273.0	1271.5	1265.3	1254.3	1251.2
15°	1238.8	1238.8	1226.3	1213.8	1209.2
17.5°	1201.4	1199.8	1184.2	1171.8	1165.5
20°	1160.9	1157.7	1142.2	1121.9	1111.0
22.5°	1115.7	1115.7	1097.0	1070.5	1059.6
25°	1073.6	1067.4	1050.2	1012.8	984.8
27.5°	1025.3	1015.9	997.2	944.3	911.5
30°	972.3	967.6	941.1	872.6	847.7
32.5°	922.5	914.7	886.6	814.9	794.7
35°	871.0	864.8	822.7	760.4	741.7
37.5°	819.6	811.8	758.8	709.0	685.6
40°	768.2	758.8	701.2	656.0	631.1
42.5°	719.9	707.4	651.3	603.0	575.0
45°	668.5	654.4	598.3	548.5	526.7
47.5°	617.0	604.6	553.2	501.7	476.8
50°	562.5	551.6	504.9	453.4	426.9
52.5°	517.3	500.2	455.0	403.6	381.8
55°	464.3	450.3	408.2	359.9	341.2
57.5°	416.0	402.0	363.1	317.9	302.3
60°	370.8	350.6	317.9	278.9	266.5
62.5°	321.0	305.4	277.4	244.6	260.2
65°	275.8	260.2	235.3	240.0	199.4
67.5°	225.9	218.1	196.3	174.5	168.3
70°	183.9	174.5	166.7	143.4	137.1
72.5°	146.5	137.1	126.2	113.7	109.1
75°	110.6	102.8	96.6	91.9	101.3
77.5°	76.4	73.2	68.6	63.9	62.3
80°	49.9	48.3	46.7	45.2	43.6
82.5°	29.6	29.6	29.6	29.6	29.6
85°	15.6	17.1	18.7	20.3	21.8
87.5°	9.3	9.3	10.9	12.5	14.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)