

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: P561311

Luminaire Tested: FSR-12-4-LD4-1STD-50-UNV-82-97-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561311  
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-50-UNV-82-97-EDD  
Description: 1X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .375 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

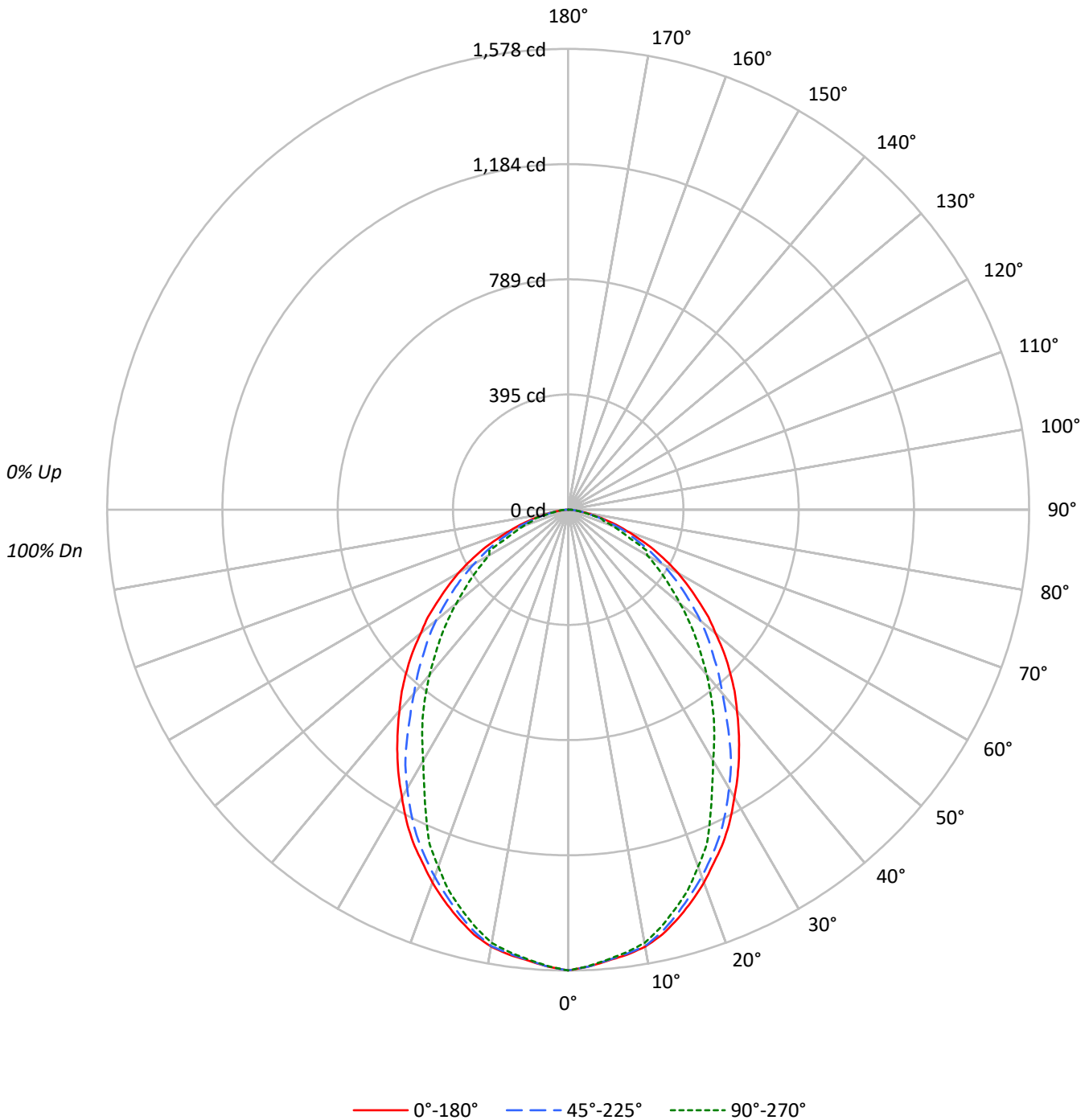
Lumens per Lamp: N/A  
Luminaire Lumens: 3097.0 lumens  
Efficiency: N/A  
Efficacy: 93.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.3  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	4245	4245	4245
5°	4187	4183	4178
10°	4151	4146	4116
15°	4039	3999	3943
20°	3891	3828	3724
25°	3731	3650	3422
30°	3536	3423	3083
35°	3349	3164	2852
40°	3158	2883	2595
45°	2978	2665	2346
50°	2756	2474	2092
55°	2550	2242	1874
60°	2336	2003	1679
65°	2055	1754	1486
70°	1693	1535	1263
75°	1346	1176	1232
80°	905	848	792
85°	562	676	787

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2978 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	146.9	4.7
10°-20°	403.0	13.0
20°-30°	557.9	18.0
30°-40°	594.9	19.2
40°-50°	542.8	17.5
50°-60°	425.2	13.7
60°-70°	277.1	8.9
70°-80°	122.8	4.0
80°-90°	26.4	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°	1107.8	35.8
0°-40°	1702.8	55.0
0°-60°	2670.7	86.2
0°-90°	3097.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3097.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1578	1578	1578	1578	1578	
5°	1550	1548	1548	1547	1547	147
15°	1450	1450	1435	1421	1415	408
25°	1257	1249	1229	1186	1153	577
35°	1020	1012	963	890	868	637
45°	782	766	700	642	616	603
55°	544	527	478	421	399	487
65°	323	305	275	281	233	318
75°	130	120	113	108	118	139
85°	18	20	22	24	26	25
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1577.6	1577.6	1577.6	1577.6	1577.6
2.5°	1566.6	1566.6	1566.6	1564.8	1564.8
5°	1550.2	1548.4	1548.4	1546.6	1546.6
7.5°	1537.4	1535.6	1533.8	1532.0	1528.3
10°	1519.2	1519.2	1517.4	1508.3	1506.4
12.5°	1490.0	1488.2	1480.9	1468.1	1464.5
15°	1449.9	1449.9	1435.3	1420.7	1415.3
17.5°	1406.1	1404.3	1386.1	1371.5	1364.2
20°	1358.7	1355.1	1336.8	1313.1	1300.4
22.5°	1305.8	1305.8	1283.9	1252.9	1240.2
25°	1256.6	1249.3	1229.2	1185.5	1152.6
27.5°	1200.0	1189.1	1167.2	1105.2	1066.9
30°	1138.0	1132.6	1101.6	1021.3	992.1
32.5°	1079.7	1070.6	1037.7	953.8	930.1
35°	1019.5	1012.2	963.0	890.0	868.1
37.5°	959.3	950.2	888.2	829.8	802.5
40°	899.1	888.2	820.7	767.8	738.6
42.5°	842.6	828.0	762.3	705.8	673.0
45°	782.4	766.0	700.3	642.0	616.4
47.5°	722.2	707.6	647.4	587.3	558.1
50°	658.4	645.6	590.9	530.7	499.7
52.5°	605.5	585.4	532.5	472.4	446.8
55°	543.5	527.1	477.8	421.3	399.4
57.5°	486.9	470.5	424.9	372.1	353.8
60°	434.1	410.4	372.1	326.5	311.9
62.5°	375.7	357.5	324.6	286.3	304.6
65°	322.8	304.6	275.4	280.9	233.4
67.5°	264.4	255.3	229.8	204.3	197.0
70°	215.2	204.3	195.1	167.8	160.5
72.5°	171.4	160.5	147.7	133.1	127.7
75°	129.5	120.4	113.1	107.6	118.5
77.5°	89.4	85.7	80.2	74.8	73.0
80°	58.4	56.5	54.7	52.9	51.1
82.5°	34.7	34.7	34.7	34.7	34.7
85°	18.2	20.1	21.9	23.7	25.5
87.5°	10.9	10.9	12.8	14.6	16.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)