

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: P561169

Luminaire Tested: FSR-12-4-LD4-1STD-35-UNV-82-84-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561169  
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-82-84-EDD  
Description: 1X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

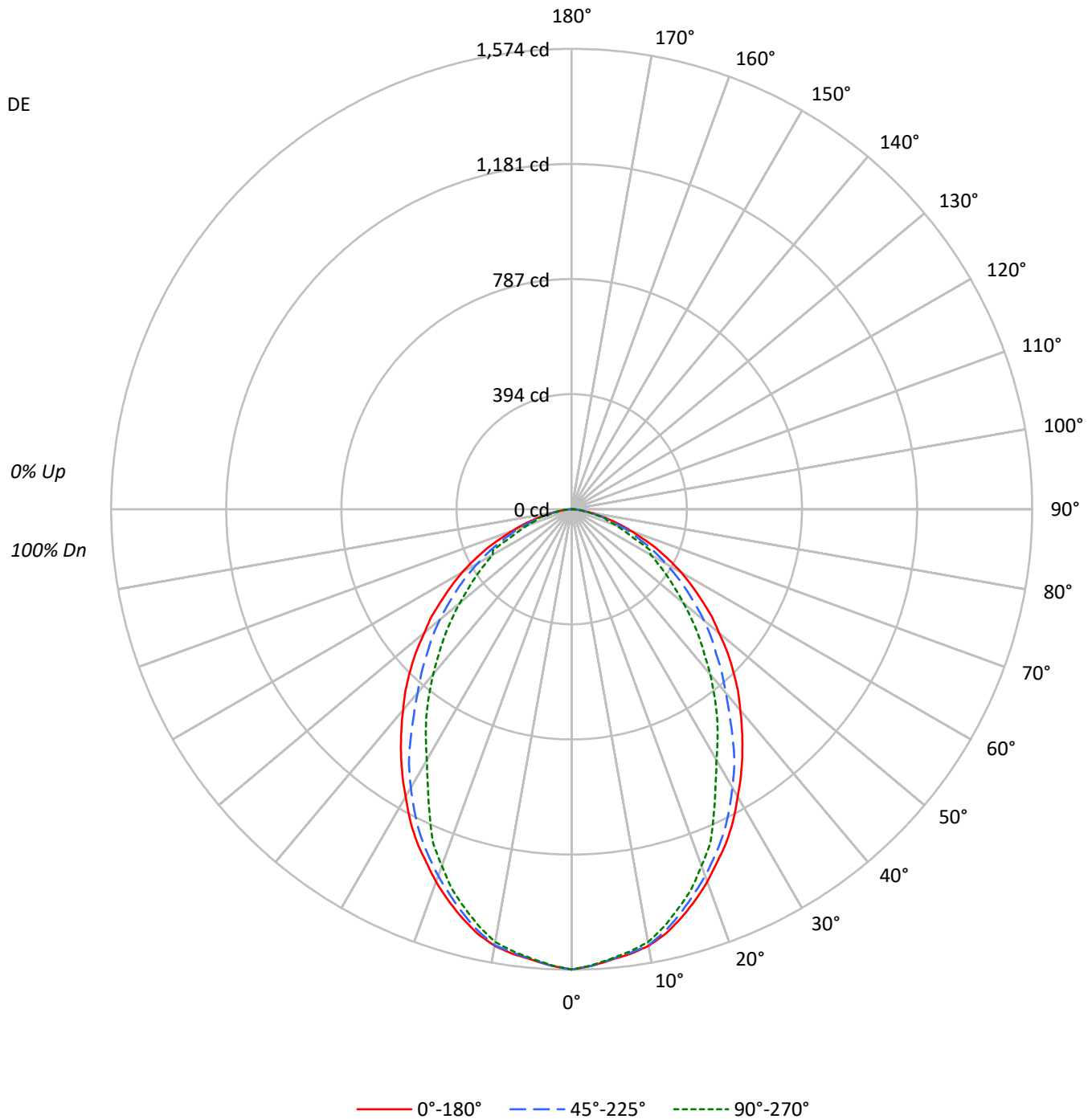
Lumens per Lamp: N/A  
Luminaire Lumens: 3089.0 lumens  
Efficiency: N/A  
Efficacy: 92.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.3  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	4234	4234	4234
5°	4177	4172	4167
10°	4141	4136	4106
15°	4029	3988	3933
20°	3881	3818	3714
25°	3721	3640	3414
30°	3527	3414	3075
35°	3341	3155	2845
40°	3150	2876	2588
45°	2970	2658	2340
50°	2749	2467	2087
55°	2543	2236	1869
60°	2330	1997	1674
65°	2050	1749	1482
70°	1689	1531	1260
75°	1343	1173	1229
80°	902	846	789
85°	562	673	787

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2970 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	146.5	4.7
10°-20°	402.0	13.0
20°-30°	556.5	18.0
30°-40°	593.4	19.2
40°-50°	541.4	17.5
50°-60°	424.1	13.7
60°-70°	276.4	8.9
70°-80°	122.5	4.0
80°-90°	26.3	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°	1105.0	35.8
0°-40°	1698.4	55.0
0°-60°	2663.8	86.2
0°-90°	3089.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3089.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1574	1574	1574	1574	1574	
5°	1546	1544	1544	1543	1543	147
15°	1446	1446	1432	1417	1412	407
25°	1253	1246	1226	1182	1150	575
35°	1017	1010	960	888	866	636
45°	780	764	698	640	615	601
55°	542	526	477	420	398	486
65°	322	304	275	280	233	317
75°	129	120	113	107	118	138
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°	1573.5	1573.5	1573.5	1573.5	1573.5
2.5°	1562.6	1562.6	1562.6	1560.8	1560.8
5°	1546.2	1544.4	1544.4	1542.6	1542.6
7.5°	1533.5	1531.7	1529.8	1528.0	1524.4
10°	1515.3	1515.3	1513.5	1504.4	1502.6
12.5°	1486.2	1484.4	1477.1	1464.4	1460.7
15°	1446.2	1446.2	1431.6	1417.1	1411.6
17.5°	1402.5	1400.7	1382.5	1367.9	1360.7
20°	1355.2	1351.6	1333.4	1309.7	1297.0
22.5°	1302.5	1302.5	1280.6	1249.7	1237.0
25°	1253.3	1246.1	1226.1	1182.4	1149.7
27.5°	1196.9	1186.0	1164.2	1102.4	1064.2
30°	1135.1	1129.6	1098.7	1018.7	989.6
32.5°	1076.9	1067.8	1035.1	951.4	927.7
35°	1016.9	1009.6	960.5	887.7	865.9
37.5°	956.8	947.7	885.9	827.7	800.4
40°	896.8	885.9	818.6	765.8	736.7
42.5°	840.4	825.9	760.4	704.0	671.2
45°	780.4	764.0	698.5	640.3	614.8
47.5°	720.4	705.8	645.8	585.7	556.6
50°	656.7	644.0	589.4	529.3	498.4
52.5°	603.9	583.9	531.2	471.1	445.7
55°	542.1	525.7	476.6	420.2	398.4
57.5°	485.7	469.3	423.8	371.1	352.9
60°	432.9	409.3	371.1	325.6	311.1
62.5°	374.7	356.5	323.8	285.6	303.8
65°	322.0	303.8	274.7	280.1	232.8
67.5°	263.8	254.7	229.2	203.7	196.5
70°	214.7	203.7	194.6	167.4	160.1
72.5°	171.0	160.1	147.3	132.8	127.3
75°	129.2	120.1	112.8	107.3	118.2
77.5°	89.1	85.5	80.0	74.6	72.8
80°	58.2	56.4	54.6	52.8	50.9
82.5°	34.6	34.6	34.6	34.6	34.6
85°	18.2	20.0	21.8	23.6	25.5
87.5°	10.9	10.9	12.7	14.6	16.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)