

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: P561175

Luminaire Tested: FSR-12-4-LD4-1STD-35-UNV-82-87-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561175  
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-82-87-EDD  
Description: 1X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

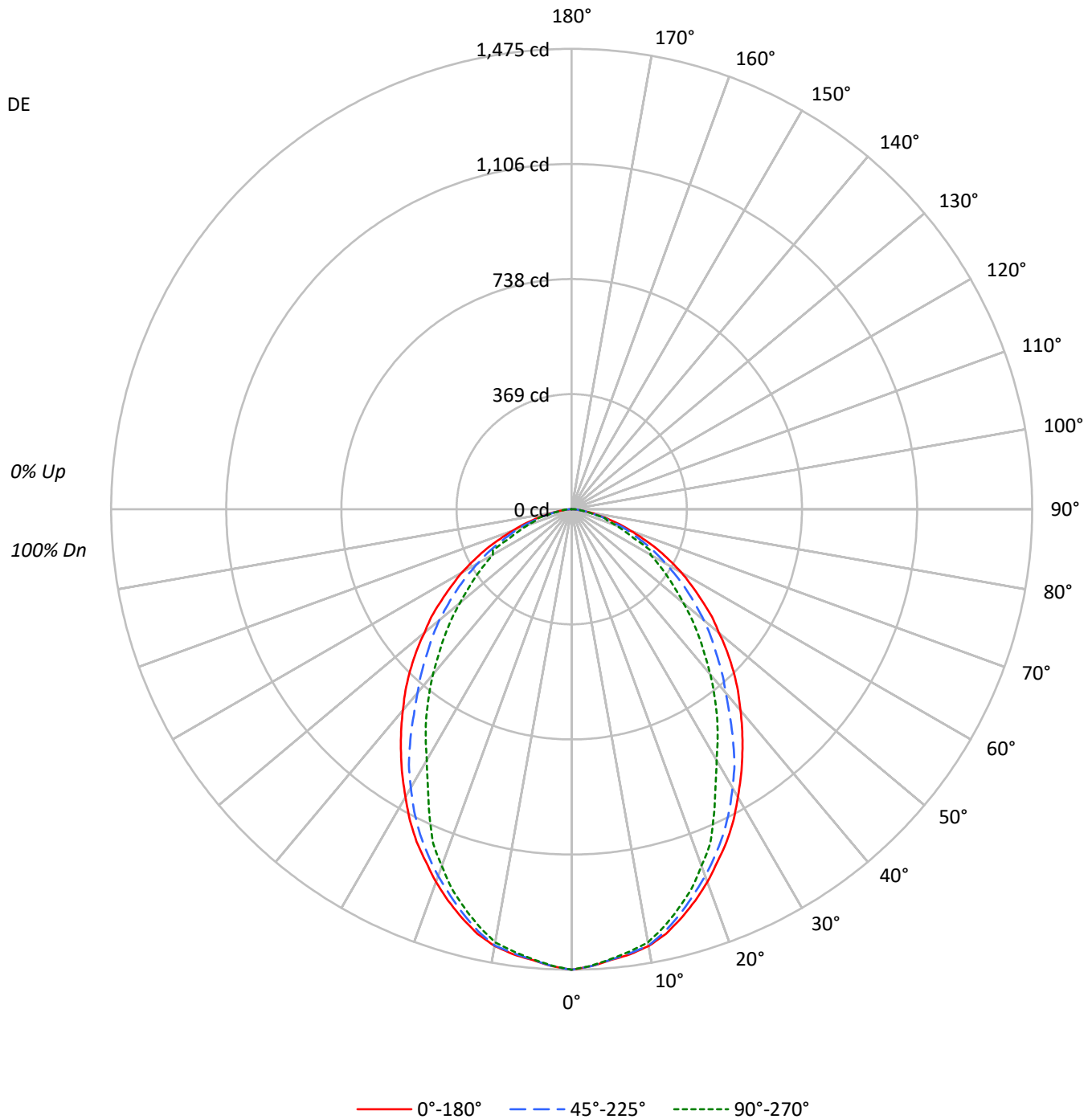
Lumens per Lamp: N/A  
Luminaire Lumens: 2896.0 lumens  
Efficiency: N/A  
Efficacy: 87.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.3  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	3970	3970	3970
5°	3916	3911	3907
10°	3882	3877	3849
15°	3777	3739	3687
20°	3638	3580	3482
25°	3489	3413	3200
30°	3307	3201	2883
35°	3132	2958	2667
40°	2954	2696	2426
45°	2784	2492	2194
50°	2578	2313	1956
55°	2384	2096	1752
60°	2185	1872	1569
65°	1922	1640	1390
70°	1583	1436	1181
75°	1259	1099	1153
80°	846	793	741
85°	528	633	738

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2784 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	137.3	4.7
10°-20°	376.9	13.0
20°-30°	521.7	18.0
30°-40°	556.3	19.2
40°-50°	507.5	17.5
50°-60°	397.6	13.7
60°-70°	259.2	8.9
70°-80°	114.8	4.0
80°-90°	24.7	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°	1035.9	35.8
0°-40°	1592.3	55.0
0°-60°	2497.4	86.2
0°-90°	2896.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2896.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1475	1475	1475	1475	1475	
5°	1450	1448	1448	1446	1446	138
15°	1356	1356	1342	1328	1323	381
25°	1175	1168	1149	1108	1078	539
35°	953	946	900	832	812	596
45°	732	716	655	600	576	564
55°	508	493	447	394	374	456
65°	302	285	258	263	218	297
75°	121	113	106	101	111	130
85°	17	19	20	22	24	24
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1475.2	1475.2	1475.2	1475.2	1475.2
2.5°	1465.0	1465.0	1465.0	1463.2	1463.2
5°	1449.6	1447.9	1447.9	1446.2	1446.2
7.5°	1437.7	1436.0	1434.3	1432.5	1429.1
10°	1420.6	1420.6	1418.9	1410.4	1408.7
12.5°	1393.3	1391.6	1384.8	1372.9	1369.4
15°	1355.8	1355.8	1342.2	1328.5	1323.4
17.5°	1314.9	1313.2	1296.1	1282.5	1275.7
20°	1270.5	1267.1	1250.1	1227.9	1216.0
22.5°	1221.1	1221.1	1200.6	1171.6	1159.7
25°	1175.0	1168.2	1149.4	1108.5	1077.8
27.5°	1122.2	1111.9	1091.5	1033.5	997.7
30°	1064.2	1059.1	1030.1	955.0	927.7
32.5°	1009.6	1001.1	970.4	891.9	869.8
35°	953.3	946.5	900.5	832.2	811.8
37.5°	897.0	888.5	830.5	776.0	750.4
40°	840.8	830.5	767.4	718.0	690.7
42.5°	787.9	774.3	712.9	660.0	629.3
45°	731.6	716.3	654.9	600.3	576.4
47.5°	675.3	661.7	605.4	549.1	521.9
50°	615.7	603.7	552.6	496.3	467.3
52.5°	566.2	547.4	498.0	441.7	417.8
55°	508.2	492.9	446.8	394.0	373.5
57.5°	455.3	440.0	397.4	347.9	330.9
60°	405.9	383.7	347.9	305.3	291.6
62.5°	351.3	334.3	303.6	267.8	284.8
65°	301.9	284.8	257.5	262.6	218.3
67.5°	247.3	238.8	214.9	191.0	184.2
70°	201.2	191.0	182.5	156.9	150.1
72.5°	160.3	150.1	138.1	124.5	119.4
75°	121.1	112.6	105.7	100.6	110.9
77.5°	83.6	80.2	75.0	69.9	68.2
80°	54.6	52.9	51.2	49.5	47.8
82.5°	32.4	32.4	32.4	32.4	32.4
85°	17.1	18.8	20.5	22.2	23.9
87.5°	10.2	10.2	11.9	13.6	15.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)