

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: P561332

Luminaire Tested: FSR-12-4-LD4-2HI-35-UNV-80-86-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561332  
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-LD4-2HI-35-UNV-80-86-EDD-90  
Description: 1X4 FSR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .250 CLEAR PC ENVIRON  
SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

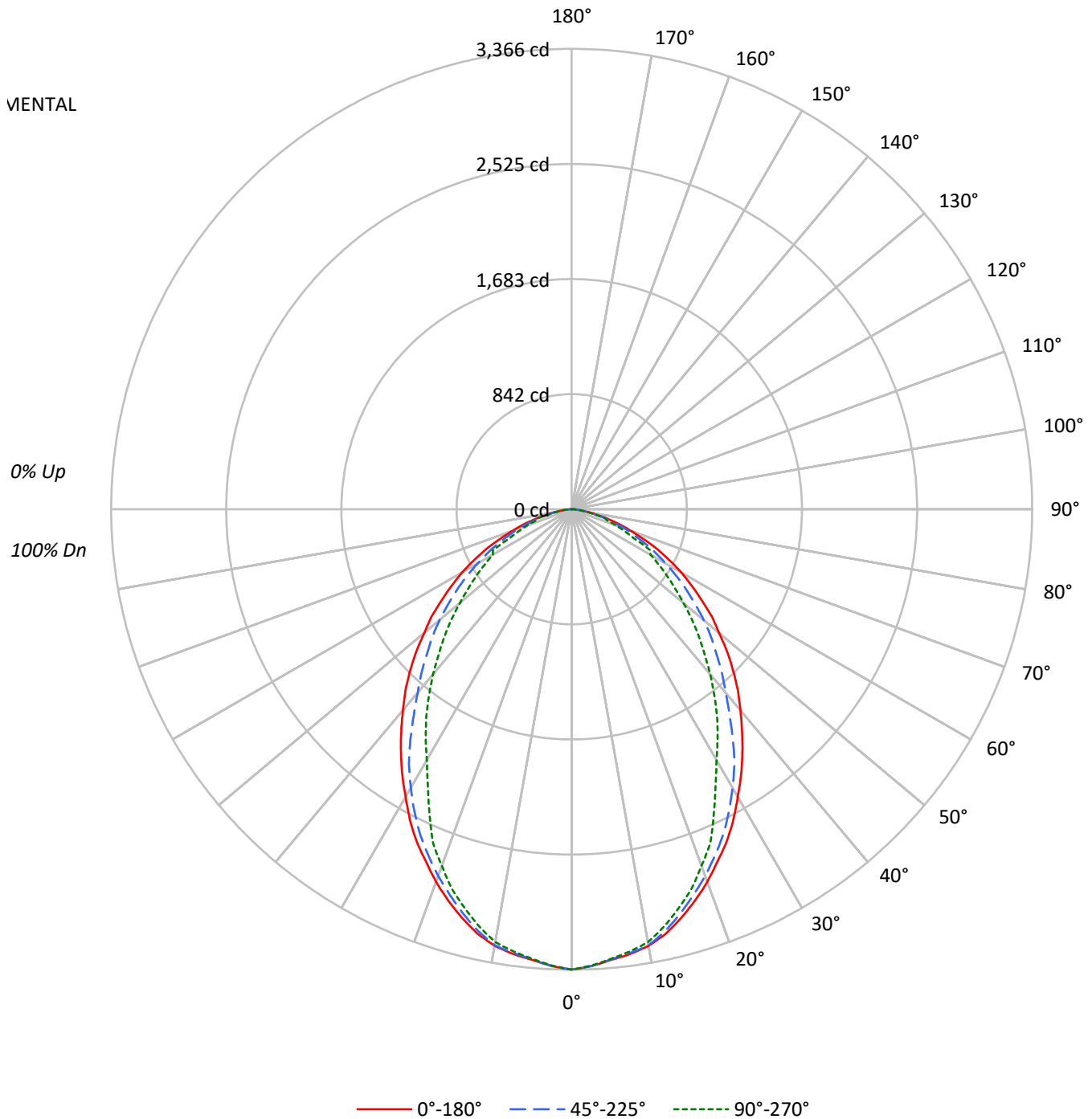
Lumens per Lamp: N/A  
Luminaire Lumens: 6607.0 lumens  
Efficiency: N/A  
Efficacy: 76.5 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 86.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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												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°	9056	9056	9056
5°	8934	8923	8913
10°	8856	8845	8782
15°	8617	8530	8411
20°	8301	8167	7944
25°	7959	7786	7301
30°	7544	7302	6577
35°	7145	6749	6084
40°	6738	6150	5536
45°	6352	5686	5005
50°	5880	5277	4463
55°	5439	4783	3998
60°	4984	4272	3581
65°	4385	3741	3171
70°	3612	3275	2694
75°	2872	2508	2629
80°	1929	1808	1688
85°	1201	1442	1683

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 6352 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	313.3	4.7
10°-20°	859.8	13.0
20°-30°	1190.3	18.0
30°-40°	1269.2	19.2
40°-50°	1157.9	17.5
50°-60°	907.1	13.7
60°-70°	591.2	8.9
70°-80°	261.9	4.0
80°-90°	56.2	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°	2363.4	35.8
0°-40°	3632.6	55.0
0°-60°	5697.6	86.2
0°-90°	6607.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6607.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3366	3366	3366	3366	3366	
5°	3307	3303	3303	3299	3299	314
15°	3093	3093	3062	3031	3019	870
25°	2681	2665	2622	2529	2459	1231
35°	2175	2159	2054	1899	1852	1360
45°	1669	1634	1494	1370	1315	1286
55°	1159	1124	1019	899	852	1040
65°	689	650	588	599	498	679
75°	276	257	241	230	253	296
85°	39	43	47	51	54	54
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3365.5	3365.5	3365.5	3365.5	3365.5
2.5°	3342.2	3342.2	3342.2	3338.3	3338.3
5°	3307.2	3303.3	3303.3	3299.4	3299.4
7.5°	3279.9	3276.0	3272.1	3268.2	3260.5
10°	3241.0	3241.0	3237.1	3217.7	3213.8
12.5°	3178.8	3174.9	3159.3	3132.1	3124.3
15°	3093.2	3093.2	3062.0	3030.9	3019.2
17.5°	2999.8	2995.9	2957.0	2925.9	2910.3
20°	2898.6	2890.8	2851.9	2801.4	2774.1
22.5°	2785.8	2785.8	2739.1	2673.0	2645.7
25°	2680.7	2665.2	2622.4	2529.0	2459.0
27.5°	2560.1	2536.8	2490.1	2357.8	2276.1
30°	2427.8	2416.2	2350.0	2178.8	2116.6
32.5°	2303.3	2283.9	2213.8	2034.9	1984.3
35°	2174.9	2159.4	2054.3	1898.7	1852.0
37.5°	2046.5	2027.1	1894.8	1770.3	1711.9
40°	1918.2	1894.8	1750.8	1638.0	1575.8
42.5°	1797.5	1766.4	1626.3	1505.7	1435.7
45°	1669.1	1634.1	1494.1	1369.6	1315.1
47.5°	1540.7	1509.6	1381.2	1252.8	1190.6
50°	1404.6	1377.3	1260.6	1132.2	1066.1
52.5°	1291.7	1248.9	1136.1	1007.7	953.2
55°	1159.4	1124.4	1019.4	898.8	852.1
57.5°	1038.8	1003.8	906.5	793.7	754.8
60°	926.0	875.4	793.7	696.4	665.3
62.5°	801.5	762.6	692.6	610.9	649.8
65°	688.7	649.8	587.5	599.2	498.0
67.5°	564.2	544.7	490.2	435.8	420.2
70°	459.1	435.8	416.3	358.0	342.4
72.5°	365.7	342.4	315.2	284.0	272.4
75°	276.2	256.8	241.2	229.6	252.9
77.5°	190.6	182.9	171.2	159.5	155.6
80°	124.5	120.6	116.7	112.8	108.9
82.5°	73.9	73.9	73.9	73.9	73.9
85°	38.9	42.8	46.7	50.6	54.5
87.5°	23.3	23.3	27.2	31.1	35.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)