

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: P561404

Luminaire Tested: FSR-12-4-LD4-2HI-40-UNV-80-96-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561404  
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-40-UNV-80-96-EDD-90  
Description: 1X4 FSR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .250 CLEAR TEMPERED G ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

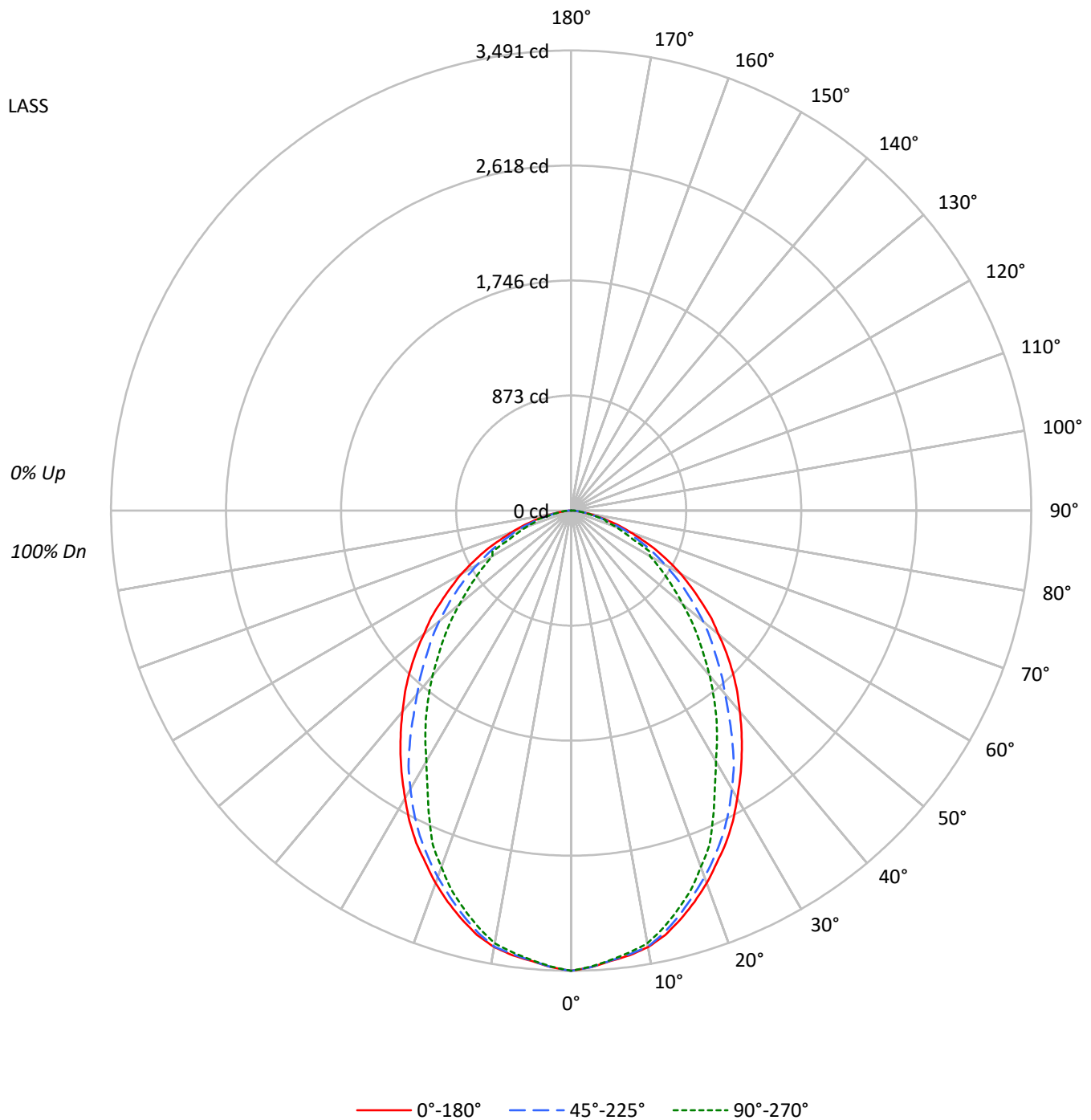
Lumens per Lamp: N/A  
Luminaire Lumens: 6854.0 lumens  
Efficiency: N/A  
Efficacy: 79.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 86.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	9395	9395	9395
5°	9267	9257	9246
10°	9187	9176	9110
15°	8939	8849	8726
20°	8611	8472	8241
25°	8257	8077	7574
30°	7826	7575	6823
35°	7412	7001	6311
40°	6990	6380	5742
45°	6589	5898	5192
50°	6100	5475	4630
55°	5643	4961	4147
60°	5170	4432	3715
65°	4549	3881	3289
70°	3747	3398	2795
75°	2980	2601	2728
80°	2002	1877	1751
85°	1247	1494	1744

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 6589 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	325.0	4.7
10°-20°	891.9	13.0
20°-30°	1234.8	18.0
30°-40°	1316.7	19.2
40°-50°	1201.2	17.5
50°-60°	941.0	13.7
60°-70°	613.3	8.9
70°-80°	271.7	4.0
80°-90°	58.3	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°	2451.7	35.8
0°-40°	3768.4	55.0
0°-60°	5910.6	86.2
0°-90°	6854.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6854.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3491	3491	3491	3491	3491	
5°	3431	3427	3427	3423	3423	326
15°	3209	3209	3176	3144	3132	902
25°	2781	2765	2720	2624	2551	1277
35°	2256	2240	2131	1970	1921	1411
45°	1732	1695	1550	1421	1364	1334
55°	1203	1166	1058	932	884	1079
65°	714	674	610	622	517	704
75°	287	266	250	238	262	307
85°	40	44	48	52	56	56
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3491.3	3491.3	3491.3	3491.3	3491.3
2.5°	3467.1	3467.1	3467.1	3463.1	3463.1
5°	3430.8	3426.8	3426.8	3422.7	3422.7
7.5°	3402.5	3398.5	3394.5	3390.4	3382.4
10°	3362.2	3362.2	3358.1	3338.0	3333.9
12.5°	3297.6	3293.6	3277.4	3249.2	3241.1
15°	3208.8	3208.8	3176.5	3144.2	3132.1
17.5°	3111.9	3107.9	3067.5	3035.2	3019.1
20°	3007.0	2998.9	2958.6	2906.1	2877.8
22.5°	2889.9	2889.9	2841.5	2772.9	2744.6
25°	2781.0	2764.8	2720.4	2623.5	2550.9
27.5°	2655.8	2631.6	2583.2	2446.0	2361.2
30°	2518.6	2506.5	2437.9	2260.3	2195.7
32.5°	2389.4	2369.3	2296.6	2110.9	2058.5
35°	2256.3	2240.1	2131.1	1969.7	1921.2
37.5°	2123.1	2102.9	1965.6	1836.5	1775.9
40°	1989.9	1965.6	1816.3	1699.3	1634.7
42.5°	1864.7	1832.4	1687.1	1562.0	1489.4
45°	1731.5	1695.2	1549.9	1420.8	1364.2
47.5°	1598.3	1566.1	1432.9	1299.7	1235.1
50°	1457.1	1428.8	1307.7	1174.5	1105.9
52.5°	1340.0	1295.6	1178.6	1045.4	988.9
55°	1202.8	1166.5	1057.5	932.4	883.9
57.5°	1077.7	1041.3	940.4	823.4	783.0
60°	960.6	908.2	823.4	722.5	690.2
62.5°	831.5	791.1	718.4	633.7	674.0
65°	714.4	674.0	609.5	621.6	516.6
67.5°	585.3	565.1	508.6	452.1	435.9
70°	476.3	452.1	431.9	371.3	355.2
72.5°	379.4	355.2	326.9	294.6	282.5
75°	286.6	266.4	250.2	238.1	262.4
77.5°	197.8	189.7	177.6	165.5	161.4
80°	129.2	125.1	121.1	117.1	113.0
82.5°	76.7	76.7	76.7	76.7	76.7
85°	40.4	44.4	48.4	52.5	56.5
87.5°	24.2	24.2	28.3	32.3	36.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)