

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: P562196

Luminaire Tested: FSR-24-4-LD4-1LO-40-UNV-82-86-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562196  
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-24-4-LD4-1LO-40-UNV-82-86-EDD-90  
Description: 2X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

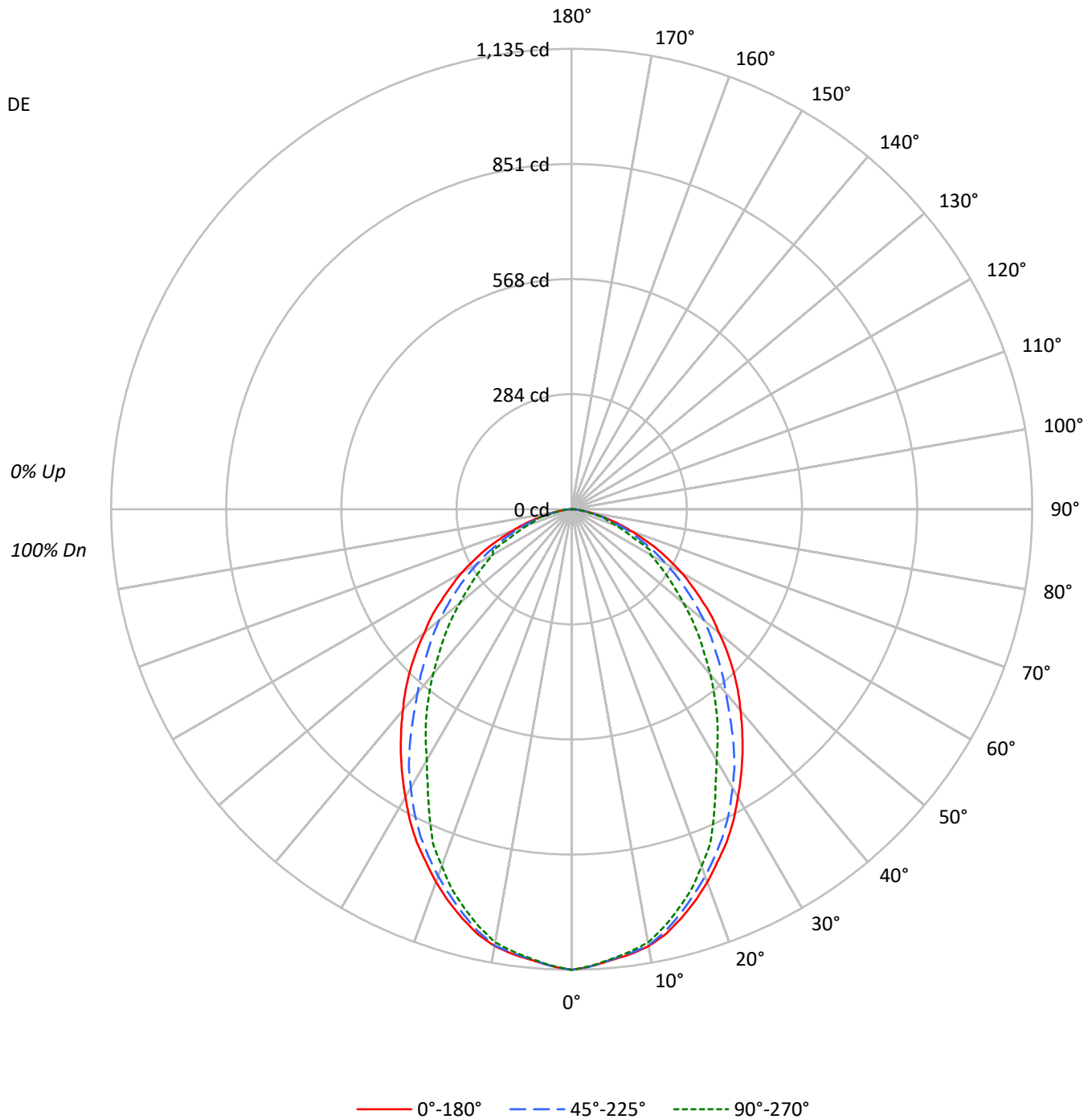
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2229.0 lumens  
Efficiency: N/A  
Efficacy: 95.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 23.4  
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																												
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°	1528	1528	1528
5°	1507	1505	1503
10°	1494	1492	1481
15°	1454	1439	1419
20°	1400	1378	1340
25°	1343	1313	1232
30°	1273	1232	1109
35°	1205	1138	1026
40°	1137	1038	934
45°	1071	959	844
50°	992	890	753
55°	918	807	674
60°	841	721	604
65°	740	631	535
70°	609	553	454
75°	485	423	443
80°	325	305	285
85°	202	244	284

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1071 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	105.7	4.7
10°-20°	290.1	13.0
20°-30°	401.6	18.0
30°-40°	428.2	19.2
40°-50°	390.6	17.5
50°-60°	306.0	13.7
60°-70°	199.5	8.9
70°-80°	88.4	4.0
80°-90°	19.0	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°	797.3	35.8
0°-40°	1225.5	55.0
0°-60°	1922.2	86.2
0°-90°	2229.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2229.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1135	1135	1135	1135	1135	
5°	1116	1114	1114	1113	1113	106
15°	1044	1044	1033	1022	1019	293
25°	904	899	885	853	830	415
35°	734	728	693	641	625	459
45°	563	551	504	462	444	434
55°	391	379	344	303	288	351
65°	232	219	198	202	168	229
75°	93	87	81	77	85	100
85°	13	14	16	17	18	18
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1135.4	1135.4	1135.4	1135.4	1135.4
2.5°	1127.5	1127.5	1127.5	1126.2	1126.2
5°	1115.7	1114.4	1114.4	1113.1	1113.1
7.5°	1106.5	1105.2	1103.9	1102.6	1100.0
10°	1093.4	1093.4	1092.1	1085.5	1084.2
12.5°	1072.4	1071.1	1065.9	1056.7	1054.0
15°	1043.5	1043.5	1033.0	1022.5	1018.6
17.5°	1012.0	1010.7	997.6	987.1	981.8
20°	977.9	975.3	962.2	945.1	935.9
22.5°	939.8	939.8	924.1	901.8	892.6
25°	904.4	899.1	884.7	853.2	829.6
27.5°	863.7	855.8	840.1	795.5	767.9
30°	819.1	815.1	792.8	735.1	714.1
32.5°	777.1	770.5	746.9	686.5	669.4
35°	733.8	728.5	693.1	640.6	624.8
37.5°	690.4	683.9	639.2	597.2	577.6
40°	647.1	639.2	590.7	552.6	531.6
42.5°	606.4	595.9	548.7	508.0	484.4
45°	563.1	551.3	504.0	462.0	443.7
47.5°	519.8	509.3	466.0	422.7	401.7
50°	473.9	464.7	425.3	382.0	359.7
52.5°	435.8	421.4	383.3	340.0	321.6
55°	391.2	379.3	343.9	303.2	287.5
57.5°	350.5	338.7	305.8	267.8	254.6
60°	312.4	295.3	267.8	235.0	224.5
62.5°	270.4	257.3	233.6	206.1	219.2
65°	232.3	219.2	198.2	202.1	168.0
67.5°	190.3	183.8	165.4	147.0	141.8
70°	154.9	147.0	140.5	120.8	115.5
72.5°	123.4	115.5	106.3	95.8	91.9
75°	93.2	86.6	81.4	77.4	85.3
77.5°	64.3	61.7	57.8	53.8	52.5
80°	42.0	40.7	39.4	38.1	36.8
82.5°	24.9	24.9	24.9	24.9	24.9
85°	13.1	14.4	15.8	17.1	18.4
87.5°	7.9	7.9	9.2	10.5	11.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)