

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: P560964

Luminaire Tested: FSR-12-4-LD4-1LO-35-UNV-81-86-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P560964  
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-LD4-1LO-35-UNV-81-86-EDD-90  
Description: 1X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

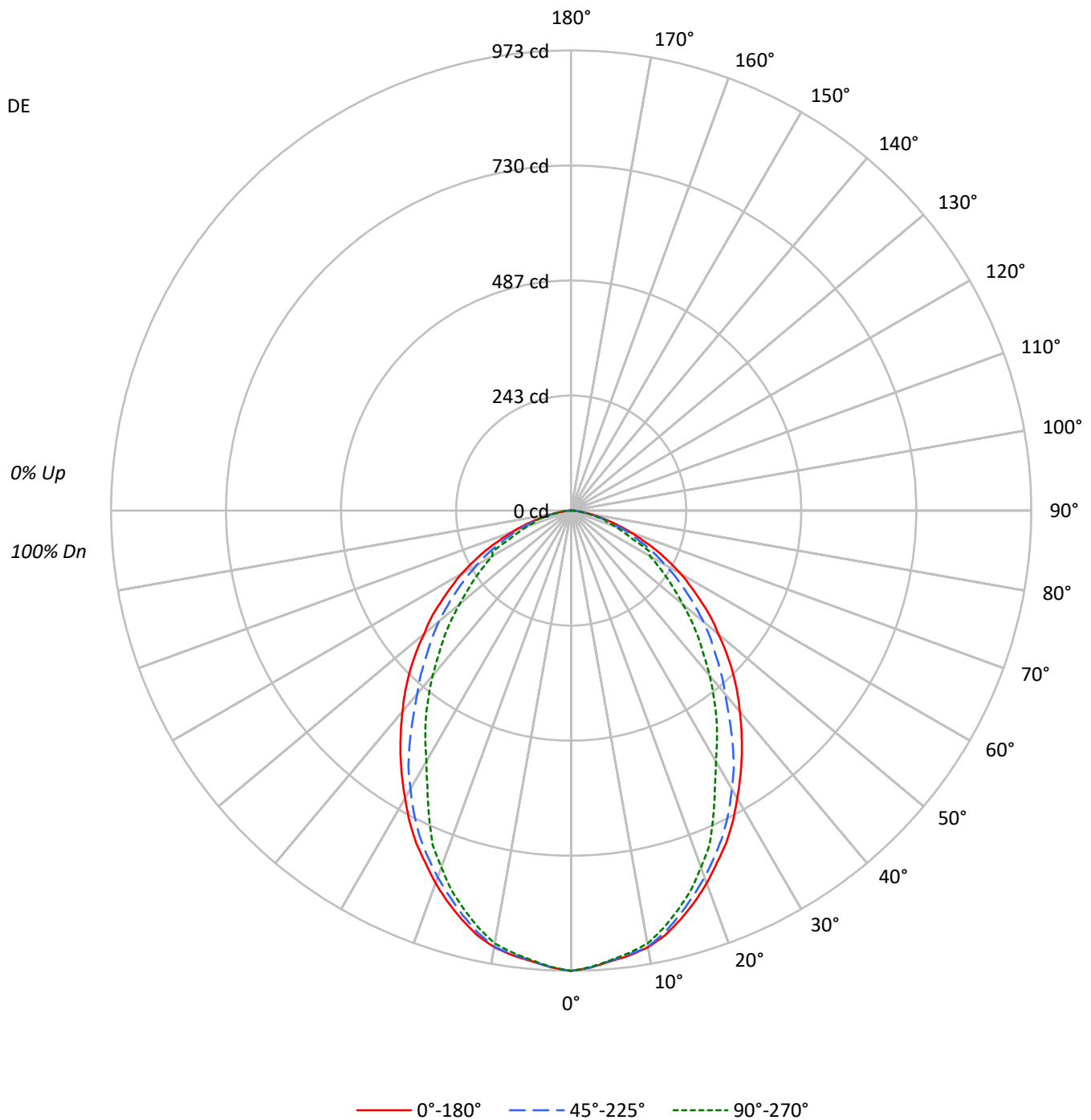
Lumens per Lamp: N/A  
Luminaire Lumens: 1911.0 lumens  
Efficiency: N/A  
Efficacy: 81.7 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 23.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	2619	2619	2619
5°	2584	2581	2578
10°	2561	2558	2540
15°	2493	2467	2433
20°	2401	2362	2298
25°	2302	2252	2112
30°	2182	2112	1902
35°	2067	1952	1760
40°	1949	1779	1601
45°	1837	1644	1448
50°	1701	1526	1291
55°	1574	1383	1156
60°	1441	1236	1035
65°	1268	1082	917
70°	1045	947	779
75°	831	726	760
80°	558	524	488
85°	349	417	488

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1837 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	90.6	4.7
10°-20°	248.7	13.0
20°-30°	344.3	18.0
30°-40°	367.1	19.2
40°-50°	334.9	17.5
50°-60°	262.4	13.7
60°-70°	171.0	8.9
70°-80°	75.8	4.0
80°-90°	16.3	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°	683.6	35.8
0°-40°	1050.7	55.0
0°-60°	1648.0	86.2
0°-90°	1911.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1911.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	973	973	973	973	973	
5°	957	955	955	954	954	91
15°	895	895	886	877	873	252
25°	775	771	758	732	711	356
35°	629	625	594	549	536	393
45°	483	473	432	396	380	372
55°	335	325	295	260	246	301
65°	199	188	170	173	144	196
75°	80	74	70	66	73	86
85°	11	12	14	15	16	16
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	973.4	973.4	973.4	973.4	973.4
2.5°	966.7	966.7	966.7	965.6	965.6
5°	956.6	955.4	955.4	954.3	954.3
7.5°	948.7	947.6	946.4	945.3	943.1
10°	937.4	937.4	936.3	930.7	929.5
12.5°	919.4	918.3	913.8	905.9	903.7
15°	894.7	894.7	885.7	876.7	873.3
17.5°	867.7	866.5	855.3	846.3	841.8
20°	838.4	836.1	824.9	810.3	802.4
22.5°	805.8	805.8	792.3	773.1	765.2
25°	775.4	770.9	758.5	731.5	711.2
27.5°	740.5	733.7	720.2	682.0	658.3
30°	702.2	698.8	679.7	630.2	612.2
32.5°	666.2	660.6	640.3	588.6	573.9
35°	629.1	624.6	594.2	549.2	535.7
37.5°	591.9	586.3	548.1	512.0	495.2
40°	554.8	548.1	506.4	473.8	455.8
42.5°	519.9	510.9	470.4	435.5	415.3
45°	482.8	472.7	432.1	396.1	380.4
47.5°	445.6	436.6	399.5	362.4	344.4
50°	406.3	398.4	364.6	327.5	308.3
52.5°	373.6	361.2	328.6	291.5	275.7
55°	335.4	325.2	294.8	260.0	246.5
57.5°	300.5	290.3	262.2	229.6	218.3
60°	267.8	253.2	229.6	201.4	192.4
62.5°	231.8	220.6	200.3	176.7	187.9
65°	199.2	187.9	169.9	173.3	144.0
67.5°	163.2	157.6	141.8	126.0	121.5
70°	132.8	126.0	120.4	103.5	99.0
72.5°	105.8	99.0	91.2	82.2	78.8
75°	79.9	74.3	69.8	66.4	73.1
77.5°	55.1	52.9	49.5	46.1	45.0
80°	36.0	34.9	33.8	32.6	31.5
82.5°	21.4	21.4	21.4	21.4	21.4
85°	11.3	12.4	13.5	14.6	15.8
87.5°	6.8	6.8	7.9	9.0	10.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)