

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: P590303

Luminaire Tested: FSR-24-2-LD4-2LO-50-UNV-81-86-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590303  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-1)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/8/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: FAIL-SAFE  
Catalog Number: FSR-24-2-LD4-2LO-50-UNV-81-86-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

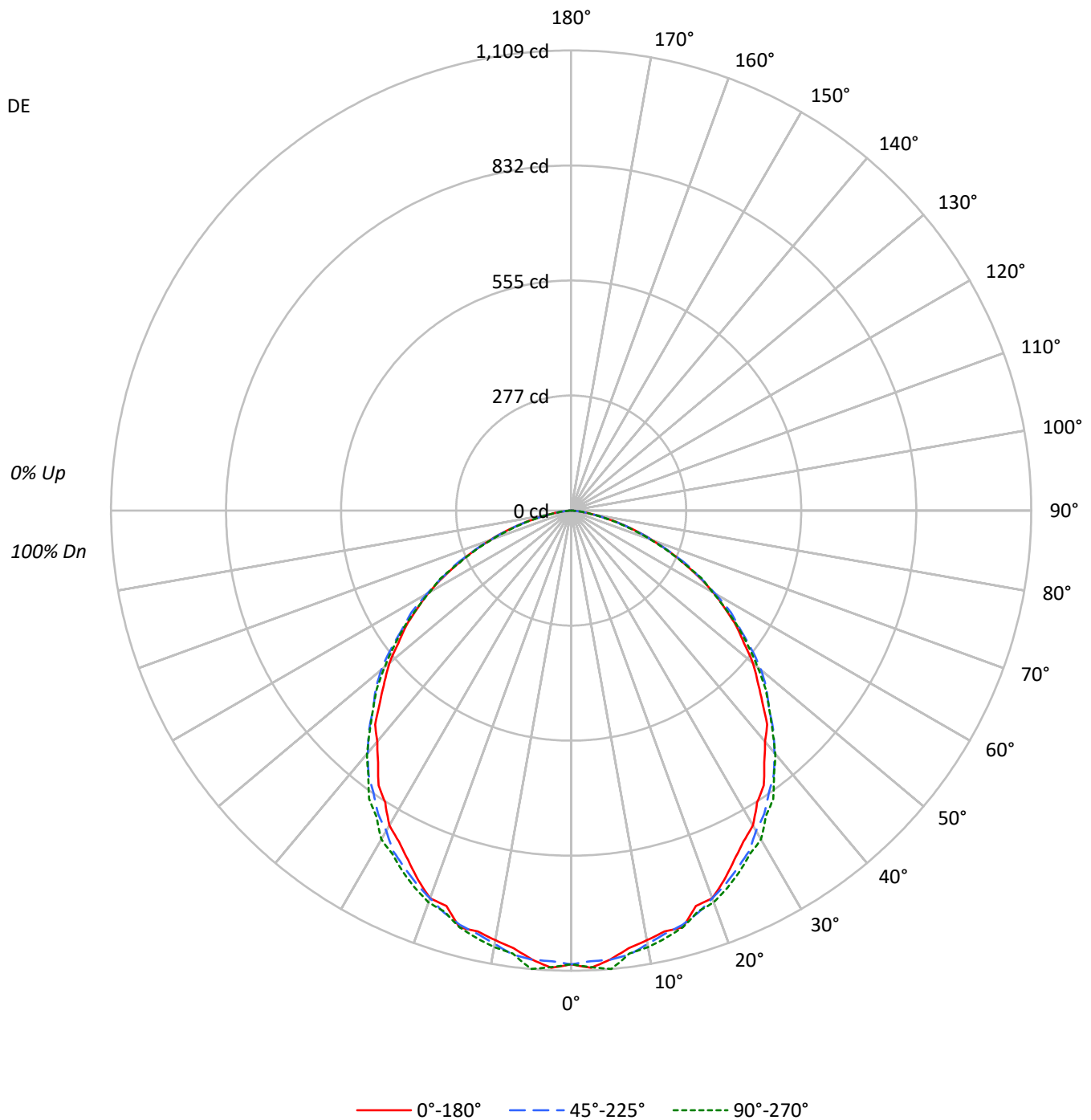
Lumens per Lamp: N/A  
Luminaire Lumens: 2756.0 lumens  
Efficiency: N/A  
Efficacy: 117.8 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 23.4  
Input Voltage (V):  
Input Current (Ain): NR  
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	0		
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100					100			
1	110	105	101	98	107	103	100	96	99	96	93	95	93	90	91	90	88	86					86			
2	100	93	86	81	98	91	85	80	87	82	78	84	80	76	81	78	75	73					73			
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64	62					62			
4	84	73	64	58	82	71	64	58	69	62	57	67	61	56	65	59	55	53					53			
5	78	65	57	50	76	64	56	50	62	55	49	60	54	49	58	53	48	46					46			
6	72	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	43	41					41			
7	67	53	45	39	65	53	45	39	51	44	39	50	43	38	48	42	38	36					36			
8	62	49	41	35	61	48	40	35	47	40	34	46	39	34	44	39	34	32					32			
9	58	45	37	31	57	44	37	31	43	36	31	42	36	31	41	35	31	29					29			
10	54	41	34	29	53	41	33	28	40	33	28	39	33	28	38	32	28	26					26			

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	2943	2943	2943
5°	2933	2934	2996
10°	2873	2899	2919
15°	2896	2880	2897
20°	2847	2847	2877
25°	2760	2820	2851
30°	2722	2770	2843
35°	2658	2727	2788
40°	2554	2677	2689
45°	2477	2565	2569
50°	2395	2504	2456
55°	2282	2327	2311
60°	2134	2156	2117
65°	1903	1952	1890
70°	1633	1639	1593
75°	1293	1290	1240
80°	866	843	809
85°	469	466	435

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 2631 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	102.9	3.7
10°-20°	291.5	10.6
20°-30°	436.8	15.8
30°-40°	517.6	18.8
40°-50°	518.6	18.8
50°-60°	440.2	16.0
60°-70°	296.8	10.8
70°-80°	130.4	4.7
80°-90°	21.2	0.8
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°	831.1	30.2
0°-40°	1348.8	48.9
0°-60°	2307.6	83.7
0°-90°	2756.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2756.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1094	1094	1094	1094	1094	
5°	1086	1083	1086	1083	1109	102
15°	1040	1028	1034	1039	1040	290
25°	929	934	950	962	960	430
35°	809	811	830	849	849	502
45°	651	663	674	691	675	503
55°	486	483	496	493	492	433
65°	299	295	306	295	297	297
75°	124	122	124	115	119	133
85°	15	15	15	15	14	22
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1093.5	1093.5	1093.5	1093.5	1093.5
2.5°	1103.0	1094.6	1086.9	1095.9	1101.4
5°	1085.7	1083.2	1086.2	1082.9	1109.0
7.5°	1063.4	1073.2	1078.8	1075.3	1076.9
10°	1051.6	1048.2	1060.8	1069.5	1068.2
12.5°	1038.9	1044.0	1044.7	1054.1	1055.0
15°	1039.6	1027.6	1033.9	1039.3	1039.7
17.5°	999.2	1012.2	1016.6	1028.8	1013.6
20°	994.3	984.8	994.3	1006.8	1004.8
22.5°	963.9	953.3	973.6	984.8	984.1
25°	929.4	934.5	949.8	962.2	960.2
27.5°	899.2	905.2	926.9	944.0	933.0
30°	875.9	873.0	891.3	906.6	915.0
32.5°	834.3	845.0	866.5	881.6	873.5
35°	809.0	811.4	830.2	849.4	848.8
37.5°	764.8	776.0	802.4	807.7	802.8
40°	727.1	738.3	762.1	767.9	765.5
42.5°	699.3	701.3	721.8	728.4	717.8
45°	650.9	663.0	674.0	691.4	675.0
47.5°	609.7	615.3	639.0	643.7	635.1
50°	572.2	574.2	598.1	592.3	586.6
52.5°	525.2	533.6	547.0	545.8	539.2
55°	486.5	483.3	496.0	492.6	492.5
57.5°	440.1	445.7	456.2	450.8	442.2
60°	396.6	396.7	400.6	394.5	393.4
62.5°	348.2	349.9	350.7	343.2	355.4
65°	298.9	294.9	306.5	294.8	296.8
67.5°	253.6	255.6	254.4	247.1	249.9
70°	207.5	210.1	208.3	199.9	202.5
72.5°	165.5	162.4	164.3	153.9	158.7
75°	124.4	121.8	124.1	115.4	119.3
77.5°	84.7	86.7	85.3	80.6	83.3
80°	55.9	54.4	54.4	51.7	52.2
82.5°	32.6	31.1	30.6	29.8	31.1
85°	15.2	14.8	15.1	14.7	14.1
87.5°	5.5	5.6	5.6	5.4	5.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)