

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: P590312

Luminaire Tested: FSR-24-2-LD4-2LO-50-UNV-82-87-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590312  
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-82-87-EDD  
Description: 2X2 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

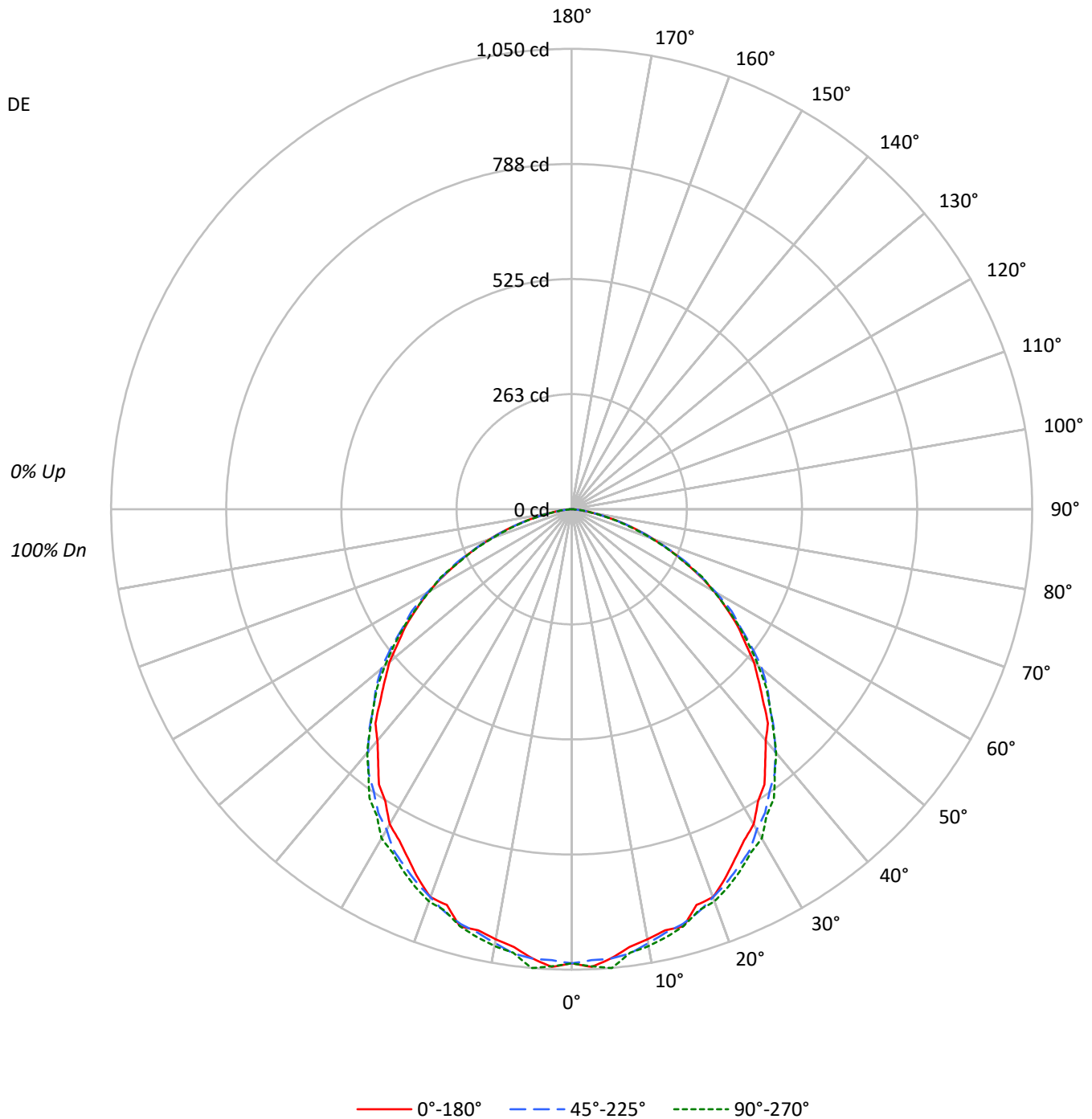
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2610.0 lumens  
Efficiency: N/A  
Efficacy: 111.5 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	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	110	105	101	98	107	103	100	96	99	96	93	95	93	90	91	90	88	86
2	100	93	86	81	98	91	85	80	87	82	78	84	80	76	81	78	75	73
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64	62
4	84	73	64	58	82	71	64	58	69	62	57	67	61	56	65	59	55	53
5	78	65	57	50	76	64	56	50	62	55	49	60	54	49	58	53	48	46
6	72	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	43	41
7	67	53	45	39	65	53	45	39	51	44	39	50	43	38	48	42	38	36
8	62	49	41	35	61	48	40	35	47	40	34	46	39	34	44	39	34	32
9	58	45	37	31	57	44	37	31	43	36	31	42	36	31	41	35	31	29
10	54	41	34	29	53	41	33	28	40	33	28	39	33	28	38	32	28	26

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

	0°	45°	90°
0°	2787	2787	2787
5°	2777	2779	2837
10°	2721	2745	2764
15°	2743	2728	2743
20°	2696	2696	2725
25°	2613	2671	2700
30°	2577	2623	2693
35°	2517	2583	2641
40°	2419	2536	2547
45°	2346	2429	2433
50°	2269	2371	2326
55°	2162	2204	2188
60°	2021	2041	2005
65°	1803	1848	1790
70°	1547	1552	1508
75°	1225	1222	1175
80°	820	798	767
85°	445	442	414

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 2492 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	97.4	3.7
10°-20°	276.1	10.6
20°-30°	413.6	15.8
30°-40°	490.2	18.8
40°-50°	491.1	18.8
50°-60°	416.9	16.0
60°-70°	281.1	10.8
70°-80°	123.5	4.7
80°-90°	20.1	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°	787.1	30.2
0°-40°	1277.3	48.9
0°-60°	2185.4	83.7
0°-90°	2610.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2610.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1036	1036	1036	1036	1036	
5°	1028	1026	1029	1026	1050	97
15°	984	973	979	984	985	274
25°	880	885	900	911	909	407
35°	766	768	786	804	804	476
45°	616	628	638	655	639	477
55°	461	458	470	466	466	410
65°	283	279	290	279	281	282
75°	118	115	118	109	113	126
85°	14	14	14	14	13	21
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1035.6	1035.6	1035.6	1035.6	1035.6
2.5°	1044.5	1036.7	1029.3	1037.9	1043.1
5°	1028.2	1025.8	1028.6	1025.6	1050.3
7.5°	1007.1	1016.3	1021.7	1018.3	1019.8
10°	995.9	992.7	1004.6	1012.9	1011.6
12.5°	983.8	988.6	989.3	998.3	999.1
15°	984.5	973.1	979.2	984.2	984.6
17.5°	946.3	958.6	962.7	974.3	959.9
20°	941.6	932.6	941.6	953.5	951.6
22.5°	912.8	902.8	922.1	932.6	932.0
25°	880.2	885.0	899.5	911.2	909.4
27.5°	851.6	857.2	877.8	894.0	883.6
30°	829.5	826.7	844.1	858.6	866.6
32.5°	790.1	800.3	820.6	834.9	827.3
35°	766.2	768.4	786.2	804.4	803.9
37.5°	724.3	734.9	759.9	765.0	760.3
40°	688.6	699.2	721.8	727.2	725.0
42.5°	662.3	664.1	683.5	689.8	679.8
45°	616.4	627.9	638.3	654.8	639.3
47.5°	577.4	582.7	605.2	609.6	601.4
50°	541.9	543.8	566.4	560.9	555.6
52.5°	497.4	505.3	518.0	516.9	510.6
55°	460.8	457.7	469.7	466.5	466.4
57.5°	416.8	422.1	432.0	426.9	418.8
60°	375.6	375.7	379.3	373.6	372.5
62.5°	329.7	331.3	332.1	325.0	336.5
65°	283.1	279.3	290.3	279.2	281.1
67.5°	240.1	242.0	240.9	234.0	236.7
70°	196.6	199.0	197.2	189.3	191.7
72.5°	156.7	153.8	155.6	145.7	150.3
75°	117.8	115.4	117.5	109.2	113.0
77.5°	80.2	82.1	80.8	76.3	78.9
80°	52.9	51.5	51.5	48.9	49.5
82.5°	30.9	29.4	29.0	28.2	29.4
85°	14.4	14.0	14.3	13.9	13.4
87.5°	5.2	5.3	5.3	5.1	4.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)