

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: P589917

Luminaire Tested: FSR-24-2-LD4-1HI-50-UNV-81-84-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P589917  
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-LD4-1HI-50-UNV-81-84-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

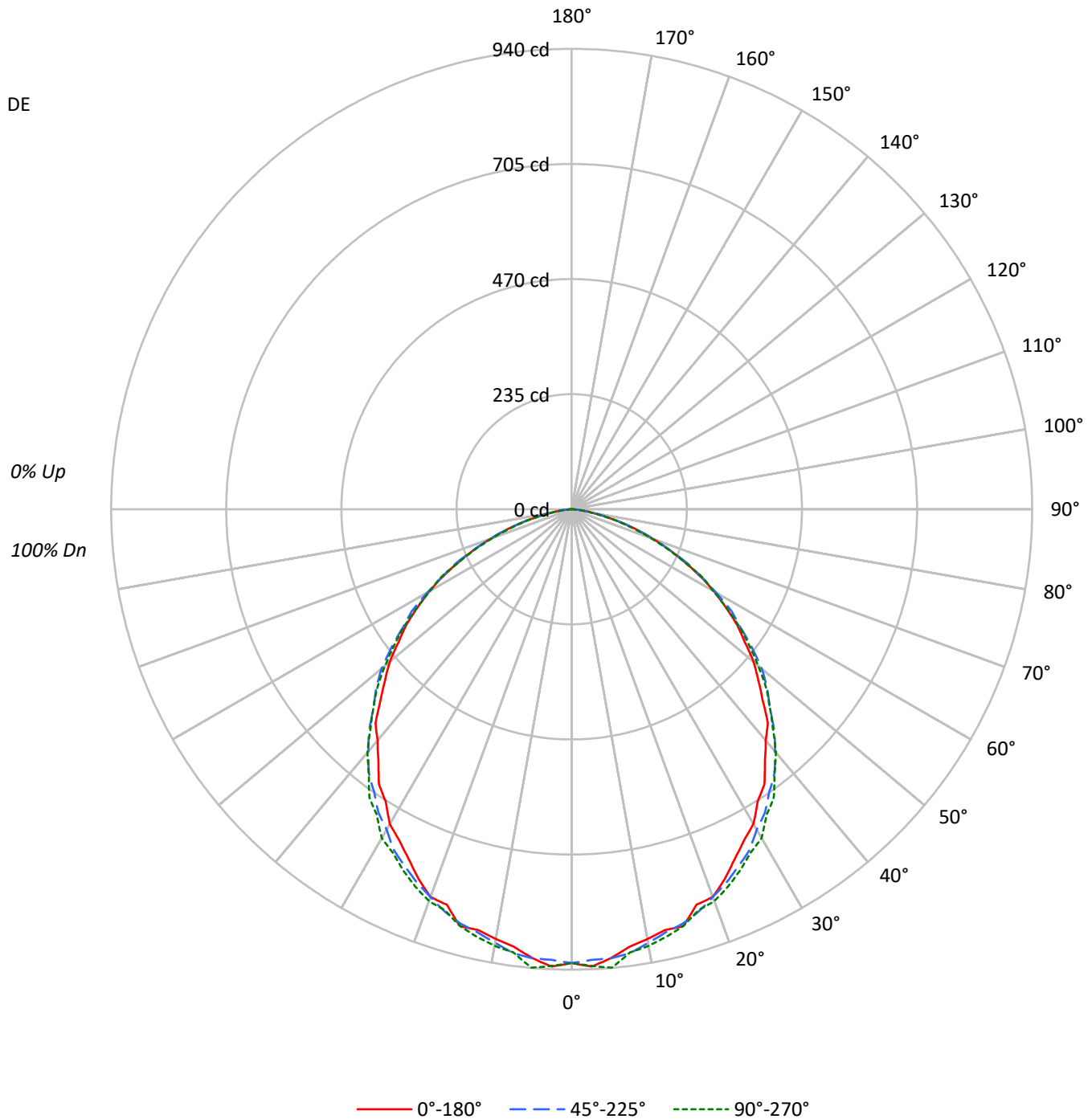
Lumens per Lamp: N/A  
Luminaire Lumens: 2335.0 lumens  
Efficiency: N/A  
Efficacy: 108.1 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 21.6  
Input Voltage (V):  
Input Current (Ain): NR  
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	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°	2493	2493	2493
5°	2485	2486	2538
10°	2434	2456	2473
15°	2454	2440	2454
20°	2412	2412	2438
25°	2338	2389	2415
30°	2306	2347	2409
35°	2252	2311	2363
40°	2164	2268	2278
45°	2099	2173	2176
50°	2030	2121	2081
55°	1934	1971	1957
60°	1808	1827	1794
65°	1612	1654	1601
70°	1383	1388	1349
75°	1096	1093	1051
80°	735	714	687
85°	398	395	371

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 2229 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	87.1	3.7
10°-20°	247.0	10.6
20°-30°	370.0	15.8
30°-40°	438.6	18.8
40°-50°	439.4	18.8
50°-60°	373.0	16.0
60°-70°	251.4	10.8
70°-80°	110.5	4.7
80°-90°	18.0	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°	704.2	30.2
0°-40°	1142.8	48.9
0°-60°	1955.1	83.7
0°-90°	2335.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2335.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	926	926	926	926	926	
5°	920	918	920	918	940	87
15°	881	871	876	880	881	245
25°	788	792	805	815	814	364
35°	685	688	703	720	719	426
45°	552	562	571	586	572	427
55°	412	410	420	417	417	367
65°	253	250	260	250	251	252
75°	105	103	105	98	101	113
85°	13	13	13	12	12	19
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	926.5	926.5	926.5	926.5	926.5
2.5°	934.5	927.4	920.8	928.5	933.2
5°	919.9	917.7	920.2	917.5	939.6
7.5°	901.0	909.2	914.0	911.0	912.4
10°	890.9	888.1	898.7	906.1	905.1
12.5°	880.2	884.5	885.1	893.1	893.8
15°	880.8	870.6	876.0	880.5	880.9
17.5°	846.6	857.6	861.3	871.7	858.8
20°	842.4	834.4	842.4	853.0	851.3
22.5°	816.7	807.7	824.9	834.4	833.8
25°	787.5	791.8	804.7	815.2	813.5
27.5°	761.9	766.9	785.3	799.8	790.5
30°	742.1	739.6	755.2	768.1	775.3
32.5°	706.8	715.9	734.1	746.9	740.1
35°	685.4	687.5	703.4	719.6	719.2
37.5°	648.0	657.4	679.8	684.4	680.2
40°	616.1	625.5	645.7	650.6	648.6
42.5°	592.5	594.2	611.5	617.1	608.2
45°	551.5	561.7	571.1	585.8	571.9
47.5°	516.5	521.3	541.4	545.4	538.1
50°	484.8	486.5	506.7	501.8	497.0
52.5°	445.0	452.0	463.4	462.5	456.8
55°	412.2	409.5	420.2	417.4	417.2
57.5°	372.9	377.6	386.5	382.0	374.7
60°	336.0	336.1	339.4	334.2	333.3
62.5°	295.0	296.4	297.1	290.8	301.1
65°	253.2	249.9	259.7	249.8	251.4
67.5°	214.8	216.5	215.6	209.3	211.7
70°	175.8	178.0	176.4	169.4	171.5
72.5°	140.2	137.6	139.2	130.4	134.5
75°	105.4	103.2	105.1	97.7	101.1
77.5°	71.8	73.4	72.3	68.3	70.6
80°	47.4	46.1	46.1	43.8	44.3
82.5°	27.6	26.3	26.0	25.2	26.3
85°	12.9	12.6	12.8	12.4	12.0
87.5°	4.7	4.8	4.8	4.5	4.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)