

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: P590758

Luminaire Tested: FSR-24-2-LD4-4HI-40-UNV-82-85-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590758  
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-LD4-4HI-40-UNV-82-85-EDD  
Description: 2X2 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

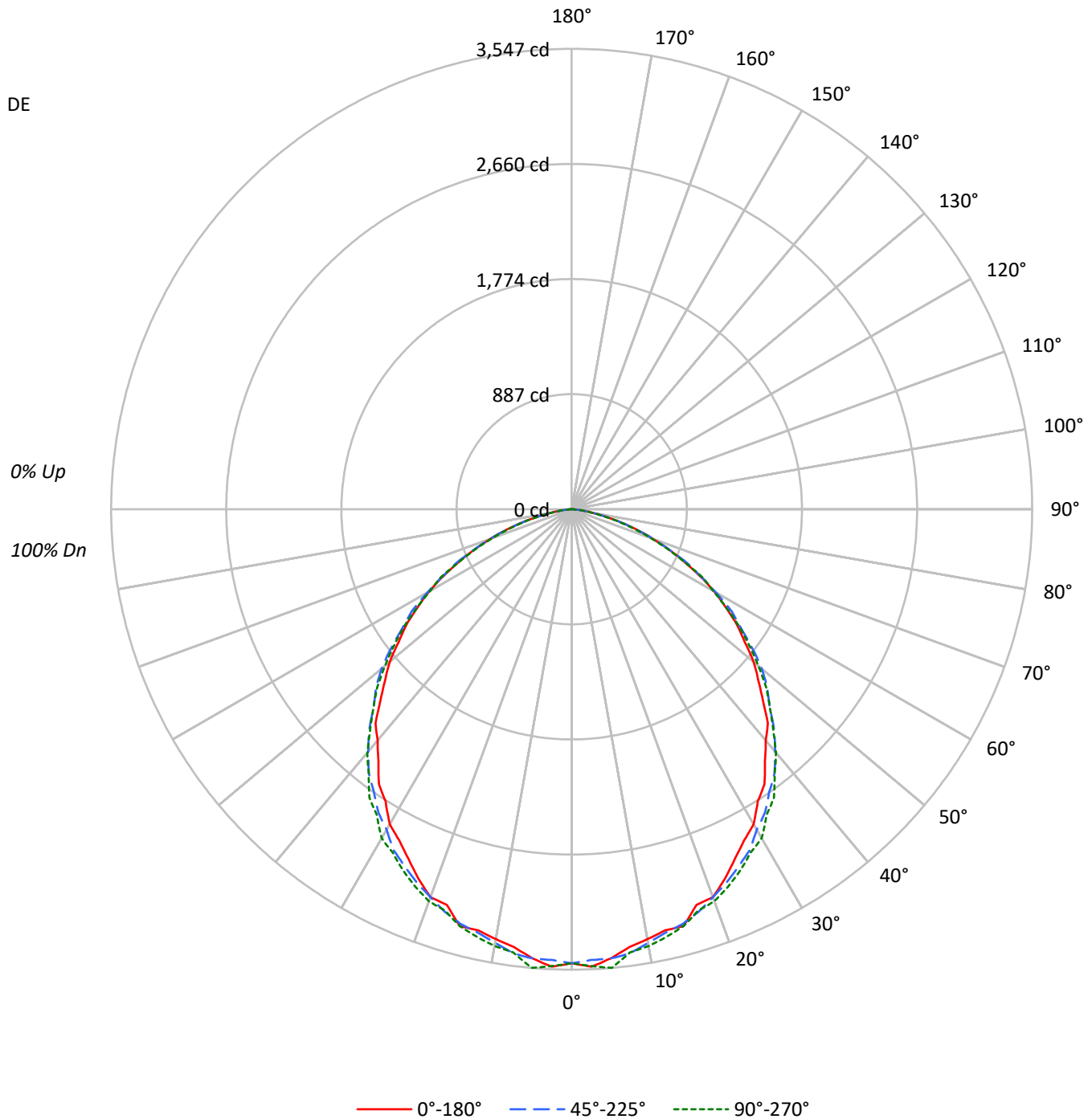
Lumens per Lamp: N/A  
Luminaire Lumens: 8814.0 lumens  
Efficiency: N/A  
Efficacy: 102.0 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 86.4  
Input Voltage (V):  
Input Current (Ain): NR  
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				
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°	9411	9411	9411
5°	9380	9383	9581
10°	9190	9270	9335
15°	9262	9212	9263
20°	9106	9106	9203
25°	8826	9019	9118
30°	8705	8858	9093
35°	8499	8722	8918
40°	8169	8562	8600
45°	7922	8203	8216
50°	7662	8007	7854
55°	7300	7442	7389
60°	6826	6894	6771
65°	6087	6242	6043
70°	5223	5240	5094
75°	4136	4127	3968
80°	2771	2693	2590
85°	1507	1491	1396

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 8415 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	329.0	3.7
10°-20°	932.3	10.6
20°-30°	1396.8	15.8
30°-40°	1655.5	18.8
40°-50°	1658.6	18.8
50°-60°	1407.8	16.0
60°-70°	949.2	10.8
70°-80°	417.1	4.7
80°-90°	67.8	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°	2658.1	30.2
0°-40°	4313.6	48.9
0°-60°	7380.0	83.7
0°-90°	8814.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	8814.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3497	3497	3497	3497	3497	
5°	3472	3464	3474	3463	3547	327
15°	3325	3286	3307	3324	3325	926
25°	2972	2989	3038	3077	3071	1374
35°	2587	2595	2655	2716	2715	1606
45°	2082	2120	2156	2211	2159	1610
55°	1556	1546	1586	1575	1575	1384
65°	956	943	980	943	949	951
75°	398	390	397	369	382	426
85°	49	47	48	47	45	71
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3497.2	3497.2	3497.2	3497.2	3497.2
2.5°	3527.4	3500.8	3476.0	3504.8	3522.5
5°	3472.3	3464.2	3473.7	3463.3	3546.8
7.5°	3401.0	3432.2	3450.2	3438.9	3443.9
10°	3363.1	3352.2	3392.4	3420.4	3416.3
12.5°	3322.4	3338.7	3340.9	3371.2	3373.9
15°	3324.7	3286.3	3306.6	3323.8	3325.1
17.5°	3195.5	3237.1	3251.1	3290.4	3241.6
20°	3179.7	3149.5	3179.7	3219.9	3213.6
22.5°	3082.7	3048.8	3113.8	3149.5	3147.2
25°	2972.5	2988.7	3037.5	3077.2	3070.9
27.5°	2875.9	2894.8	2964.4	3019.0	2983.8
30°	2801.4	2791.9	2850.6	2899.3	2926.4
32.5°	2668.1	2702.5	2771.1	2819.4	2793.7
35°	2587.3	2595.0	2655.1	2716.5	2714.7
37.5°	2446.0	2481.7	2566.1	2583.3	2567.5
40°	2325.4	2361.1	2437.4	2455.9	2448.2
42.5°	2236.5	2242.8	2308.3	2329.5	2295.6
45°	2081.6	2120.4	2155.6	2211.2	2158.8
47.5°	1949.7	1967.8	2043.7	2058.6	2031.0
50°	1830.1	1836.4	1912.7	1894.2	1876.1
52.5°	1679.7	1706.4	1749.3	1745.7	1724.4
55°	1556.0	1545.6	1586.3	1575.4	1575.0
57.5°	1407.4	1425.5	1458.9	1441.8	1414.2
60°	1268.4	1268.8	1281.0	1261.6	1258.0
62.5°	1113.5	1118.9	1121.6	1097.7	1136.5
65°	955.9	943.3	980.3	942.8	949.1
67.5°	811.0	817.3	813.7	790.2	799.2
70°	663.8	671.9	666.0	639.4	647.5
72.5°	529.2	519.3	525.6	492.2	507.5
75°	397.8	389.7	396.9	368.9	381.6
77.5°	270.9	277.2	272.7	257.8	266.4
80°	178.8	173.8	173.8	165.3	167.1
82.5°	104.3	99.3	98.0	95.3	99.3
85°	48.8	47.4	48.3	47.0	45.2
87.5°	17.6	18.1	18.1	17.2	16.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)