

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: P590754

Luminaire Tested: FSR-24-2-LD4-4HI-40-UNV-81-94-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590754  
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-81-94-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .187 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

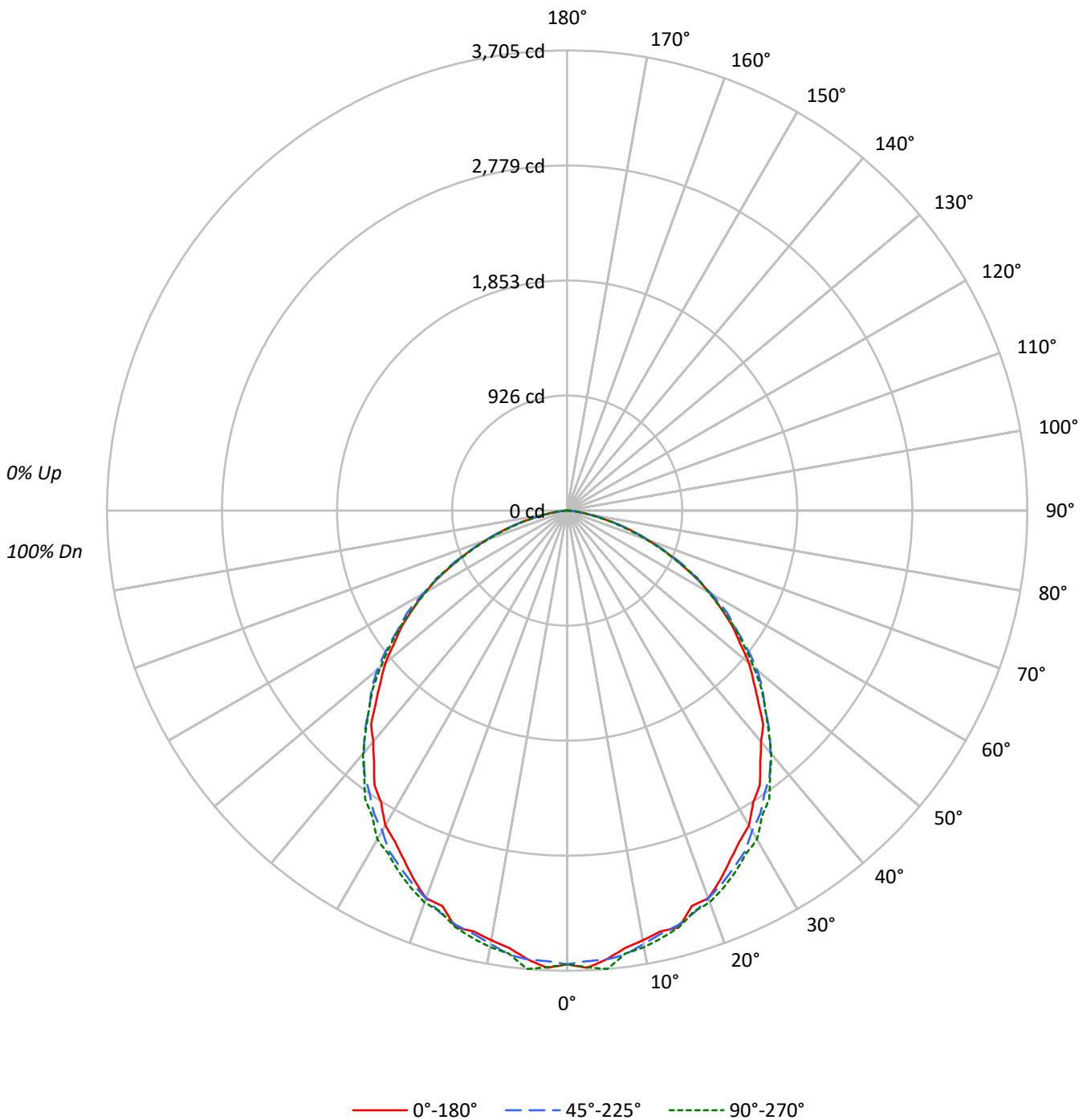
Lumens per Lamp: N/A  
Luminaire Lumens: 9207.0 lumens  
Efficiency: N/A  
Efficacy: 106.6 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 86.4  
Input Voltage (V):  
Input Current (Ain): NR  
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	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°	9830	9830	9830
5°	9798	9802	10008
10°	9599	9683	9751
15°	9675	9623	9677
20°	9512	9512	9613
25°	9219	9421	9524
30°	9093	9253	9499
35°	8879	9111	9315
40°	8533	8944	8984
45°	8275	8569	8582
50°	8003	8364	8205
55°	7626	7774	7719
60°	7131	7202	7072
65°	6358	6520	6313
70°	5456	5474	5322
75°	4320	4311	4144
80°	2895	2814	2704
85°	1572	1559	1457

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 8790 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	343.6	3.7
10°-20°	973.9	10.6
20°-30°	1459.1	15.8
30°-40°	1729.3	18.8
40°-50°	1732.5	18.8
50°-60°	1470.6	16.0
60°-70°	991.5	10.8
70°-80°	435.7	4.7
80°-90°	70.8	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°	2776.6	30.2
0°-40°	4505.9	48.9
0°-60°	7709.1	83.7
0°-90°	9207.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	9207.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3653	3653	3653	3653	3653	
5°	3627	3619	3629	3618	3705	342
15°	3473	3433	3454	3472	3473	968
25°	3105	3122	3173	3214	3208	1435
35°	2703	2711	2773	2838	2836	1678
45°	2174	2215	2252	2310	2255	1682
55°	1625	1614	1657	1646	1645	1446
65°	998	985	1024	985	992	993
75°	416	407	415	385	399	445
85°	51	50	50	49	47	74
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3653.1	3653.1	3653.1	3653.1	3653.1
2.5°	3684.7	3656.9	3630.9	3661.1	3679.5
5°	3627.2	3618.7	3628.6	3617.7	3705.0
7.5°	3552.6	3585.2	3604.1	3592.3	3597.4
10°	3513.0	3501.7	3543.7	3572.9	3568.7
12.5°	3470.6	3487.5	3489.9	3521.5	3524.3
15°	3472.9	3432.8	3454.1	3472.0	3473.4
17.5°	3338.0	3381.4	3396.0	3437.1	3386.1
20°	3321.5	3289.9	3321.5	3363.5	3356.9
22.5°	3220.1	3184.7	3252.7	3289.9	3287.6
25°	3105.0	3122.0	3172.9	3214.4	3207.8
27.5°	3004.1	3023.9	3096.5	3153.6	3116.8
30°	2926.3	2916.4	2977.7	3028.6	3056.9
32.5°	2787.1	2823.0	2894.7	2945.1	2918.2
35°	2702.7	2710.7	2773.4	2837.6	2835.7
37.5°	2555.1	2592.3	2680.5	2698.4	2681.9
40°	2429.1	2466.4	2546.1	2565.4	2557.4
42.5°	2336.2	2342.8	2411.2	2433.4	2398.0
45°	2174.4	2215.0	2251.8	2309.8	2255.1
47.5°	2036.7	2055.5	2134.8	2150.4	2121.6
50°	1911.7	1918.3	1998.0	1978.7	1959.8
52.5°	1754.6	1782.5	1827.3	1823.5	1801.3
55°	1625.4	1614.5	1657.0	1645.7	1645.2
57.5°	1470.2	1489.1	1524.0	1506.1	1477.3
60°	1324.9	1325.4	1338.1	1317.9	1314.1
62.5°	1163.1	1168.8	1171.6	1146.6	1187.2
65°	998.5	985.3	1024.0	984.9	991.5
67.5°	847.1	853.7	850.0	825.4	834.9
70°	693.4	701.8	695.7	667.9	676.4
72.5°	552.8	542.4	549.0	514.1	530.2
75°	415.5	407.1	414.6	385.4	398.6
77.5°	283.0	289.6	284.9	269.3	278.3
80°	186.8	181.6	181.6	172.6	174.5
82.5°	109.0	103.8	102.4	99.5	103.8
85°	50.9	49.5	50.5	49.1	47.2
87.5°	18.4	18.9	18.9	17.9	17.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)