

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: P590717

Luminaire Tested: FSR-24-2-LD4-4HI-35-UNV-81-84-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590717  
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-35-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 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

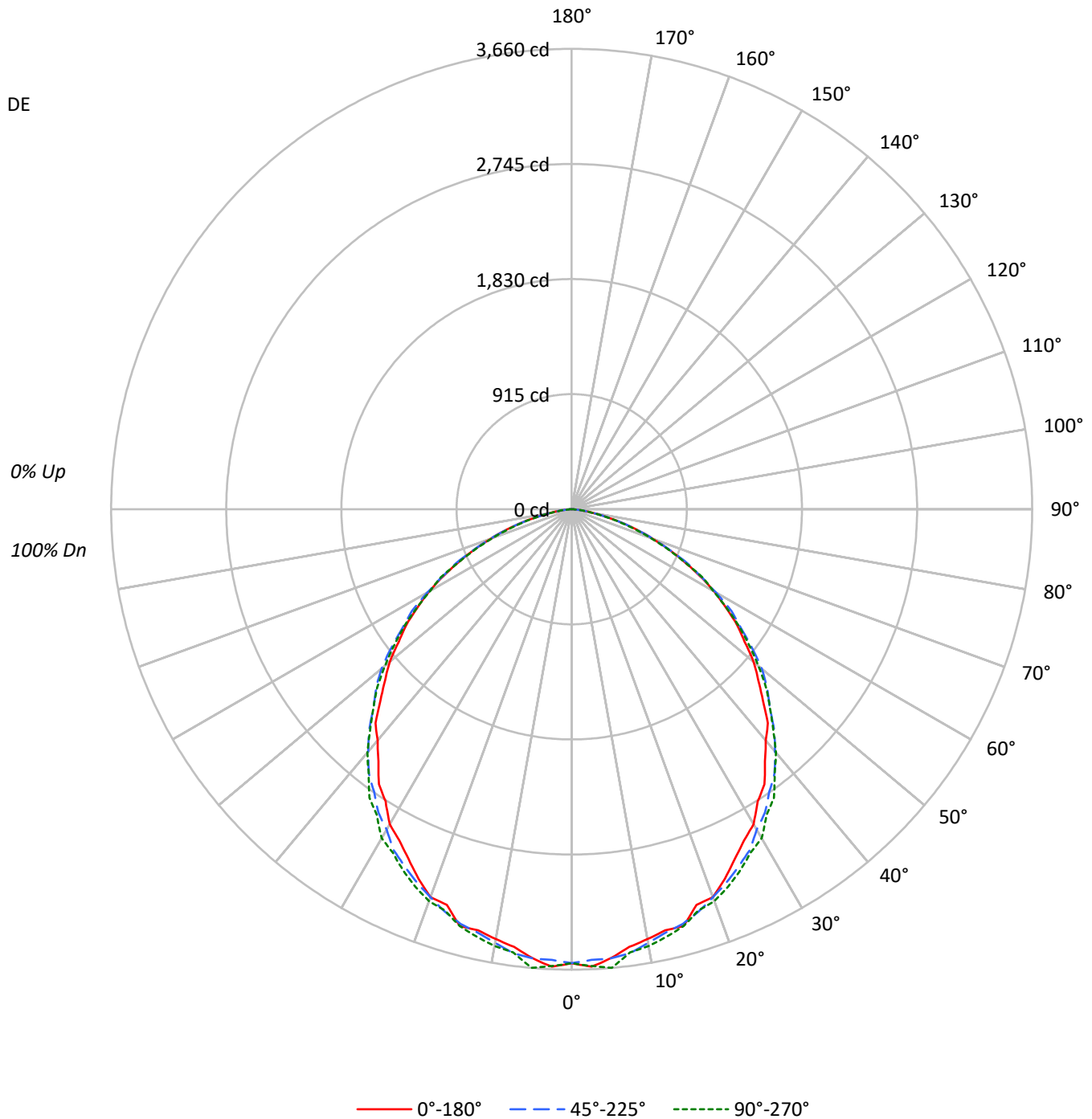
Lumens per Lamp: N/A  
Luminaire Lumens: 9094.0 lumens  
Efficiency: N/A  
Efficacy: 105.3 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 86.4  
Input Voltage (V):  
Input Current (Ain): NR  
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°	9710	9710	9710
5°	9678	9681	9885
10°	9481	9564	9632
15°	9556	9505	9558
20°	9395	9395	9495
25°	9106	9305	9408
30°	8981	9139	9382
35°	8770	8999	9201
40°	8428	8834	8873
45°	8173	8464	8477
50°	7905	8262	8104
55°	7532	7678	7624
60°	7043	7113	6986
65°	6280	6440	6236
70°	5388	5407	5257
75°	4267	4258	4093
80°	2859	2780	2672
85°	1553	1538	1439

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 8682 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	339.4	3.7
10°-20°	961.9	10.6
20°-30°	1441.2	15.8
30°-40°	1708.1	18.8
40°-50°	1711.2	18.8
50°-60°	1452.6	16.0
60°-70°	979.3	10.8
70°-80°	430.3	4.7
80°-90°	69.9	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°	2742.5	30.2
0°-40°	4450.6	48.9
0°-60°	7614.4	83.7
0°-90°	9094.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	9094.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3608	3608	3608	3608	3608	
5°	3583	3574	3584	3573	3660	338
15°	3430	3391	3412	3429	3431	956
25°	3067	3084	3134	3175	3168	1418
35°	2670	2677	2739	2803	2801	1657
45°	2148	2188	2224	2281	2227	1661
55°	1605	1595	1637	1626	1625	1428
65°	986	973	1011	973	979	981
75°	410	402	410	381	394	440
85°	50	49	50	48	47	73
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3608.3	3608.3	3608.3	3608.3	3608.3
2.5°	3639.5	3612.0	3586.4	3616.2	3634.4
5°	3582.6	3574.3	3584.0	3573.3	3659.5
7.5°	3509.0	3541.2	3559.8	3548.2	3553.3
10°	3469.9	3458.7	3500.2	3529.1	3524.9
12.5°	3428.0	3444.7	3447.1	3478.3	3481.1
15°	3430.3	3390.7	3411.7	3429.4	3430.8
17.5°	3297.1	3339.9	3354.4	3394.9	3344.6
20°	3280.8	3249.5	3280.8	3322.2	3315.7
22.5°	3180.6	3145.6	3212.7	3249.5	3247.2
25°	3066.9	3083.7	3134.0	3175.0	3168.5
27.5°	2967.2	2986.8	3058.5	3114.9	3078.6
30°	2890.3	2880.6	2941.1	2991.4	3019.4
32.5°	2752.9	2788.3	2859.1	2909.0	2882.4
35°	2669.5	2677.4	2739.4	2802.8	2800.9
37.5°	2523.7	2560.5	2647.6	2665.3	2649.0
40°	2399.3	2436.1	2514.8	2533.9	2526.0
42.5°	2307.5	2314.0	2381.6	2403.5	2368.6
45°	2147.7	2187.8	2224.1	2281.4	2227.4
47.5°	2011.7	2030.3	2108.6	2124.0	2095.5
50°	1888.2	1894.7	1973.5	1954.4	1935.7
52.5°	1733.1	1760.6	1804.8	1801.1	1779.2
55°	1605.4	1594.7	1636.6	1625.5	1625.0
57.5°	1452.2	1470.8	1505.3	1487.6	1459.1
60°	1308.7	1309.1	1321.7	1301.7	1298.0
62.5°	1148.9	1154.5	1157.3	1132.6	1172.6
65°	986.3	973.2	1011.4	972.8	979.3
67.5°	836.7	843.2	839.5	815.3	824.6
70°	684.8	693.2	687.2	659.7	668.1
72.5°	546.0	535.8	542.3	507.8	523.7
75°	410.4	402.1	409.5	380.6	393.7
77.5°	279.5	286.1	281.4	266.0	274.9
80°	184.5	179.4	179.4	170.5	172.4
82.5°	107.6	102.5	101.1	98.3	102.5
85°	50.3	48.9	49.8	48.5	46.6
87.5°	18.2	18.6	18.6	17.7	16.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)