

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: P563669

Luminaire Tested: FSR-24-4-LD4-4HI-35-UNV-82-86-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563669  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-5)  
Test Lab: INNOVATION CENTER  
Issue Date: 7/20/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: FAIL-SAFE  
Catalog Number: FSR-24-4-LD4-4HI-35-UNV-82-86-EDD  
Description: 2X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

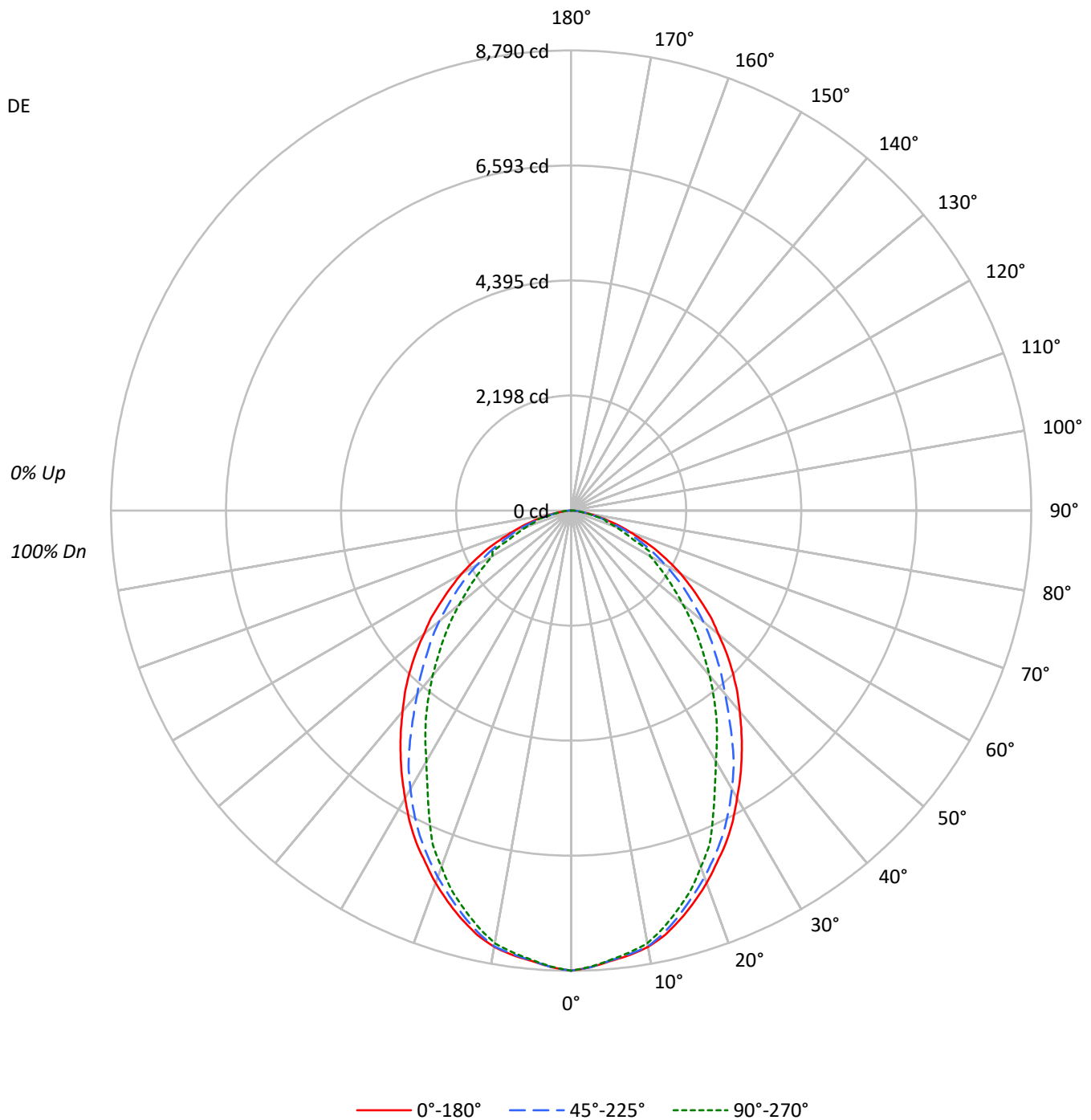
Lumens per Lamp: N/A  
Luminaire Lumens: 17255.0 lumens  
Efficiency: N/A  
Efficacy: 99.9 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 172.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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													100															
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87													87															
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75													75															
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65													65															
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56													56															
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50													50															
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44													44															
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40													40															
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36													36															
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33													33															
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30													30															

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

	0°	45°	90°
0°	11826	11826	11826
5°	11665	11652	11638
10°	11564	11550	11467
15°	11253	11139	10984
20°	10839	10665	10374
25°	10394	10167	9534
30°	9851	9535	8588
35°	9330	8812	7944
40°	8799	8031	7228
45°	8295	7425	6535
50°	7678	6891	5828
55°	7103	6245	5220
60°	6508	5578	4676
65°	5726	4885	4141
70°	4717	4277	3518
75°	3750	3275	3434
80°	2520	2362	2204
85°	1568	1882	2197

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 8295 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	818.2	4.7
10°-20°	2245.4	13.0
20°-30°	3108.6	18.0
30°-40°	3314.7	19.2
40°-50°	3024.0	17.5
50°-60°	2369.1	13.7
60°-70°	1544.0	8.9
70°-80°	684.1	4.0
80°-90°	146.9	0.9
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°	6172.2	35.8
0°-40°	9487.0	55.0
0°-60°	14880.0	86.2
0°-90°	17255.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	17255.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	8790	8790	8790	8790	8790	
5°	8637	8627	8627	8617	8617	820
15°	8078	8078	7997	7916	7885	2271
25°	7001	6960	6849	6605	6422	3214
35°	5680	5640	5365	4959	4837	3551
45°	4359	4268	3902	3577	3434	3358
55°	3028	2937	2662	2347	2225	2716
65°	1798	1697	1534	1565	1301	1772
75°	721	671	630	600	660	773
85°	102	112	122	132	142	141
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	8789.5	8789.5	8789.5	8789.5	8789.5
2.5°	8728.5	8728.5	8728.5	8718.3	8718.3
5°	8637.0	8626.9	8626.9	8616.7	8616.7
7.5°	8565.9	8555.8	8545.6	8535.4	8515.1
10°	8464.3	8464.3	8454.1	8403.3	8393.2
12.5°	8301.7	8291.6	8250.9	8179.8	8159.5
15°	8078.2	8078.2	7996.9	7915.6	7885.1
17.5°	7834.3	7824.1	7722.5	7641.2	7600.6
20°	7570.1	7549.8	7448.2	7316.1	7245.0
22.5°	7275.4	7275.4	7153.5	6980.8	6909.6
25°	7001.1	6960.4	6848.7	6604.8	6421.9
27.5°	6686.1	6625.1	6503.2	6157.7	5944.3
30°	6340.6	6310.1	6137.4	5690.3	5527.7
32.5°	6015.4	5964.6	5781.7	5314.3	5182.2
35°	5680.1	5639.5	5365.1	4958.7	4836.7
37.5°	5344.8	5294.0	4948.5	4623.4	4470.9
40°	5009.5	4948.5	4572.6	4277.9	4115.3
42.5°	4694.5	4613.2	4247.4	3932.4	3749.5
45°	4359.2	4267.7	3901.9	3576.8	3434.5
47.5°	4023.8	3942.6	3607.2	3271.9	3109.3
50°	3668.2	3597.1	3292.2	2956.9	2784.2
52.5°	3373.5	3261.8	2967.1	2631.8	2489.5
55°	3028.0	2936.6	2662.2	2347.2	2225.3
57.5°	2713.0	2621.6	2367.6	2072.9	1971.3
60°	2418.4	2286.3	2072.9	1818.9	1737.6
62.5°	2093.2	1991.6	1808.7	1595.3	1696.9
65°	1798.5	1696.9	1534.3	1564.8	1300.6
67.5°	1473.4	1422.6	1280.3	1138.1	1097.4
70°	1199.0	1138.1	1087.3	934.8	894.2
72.5°	955.2	894.2	823.1	741.8	711.3
75°	721.4	670.6	630.0	599.5	660.5
77.5°	497.9	477.6	447.1	416.6	406.4
80°	325.2	315.0	304.8	294.7	284.5
82.5°	193.1	193.1	193.1	193.1	193.1
85°	101.6	111.8	121.9	132.1	142.3
87.5°	61.0	61.0	71.1	81.3	91.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)