

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: P564109

Luminaire Tested: FSR-24-4-LD4-4STD-40-UNV-81-96-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P564109  
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-LD4-4STD-40-UNV-81-96-EDD  
Description: 2X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .250 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

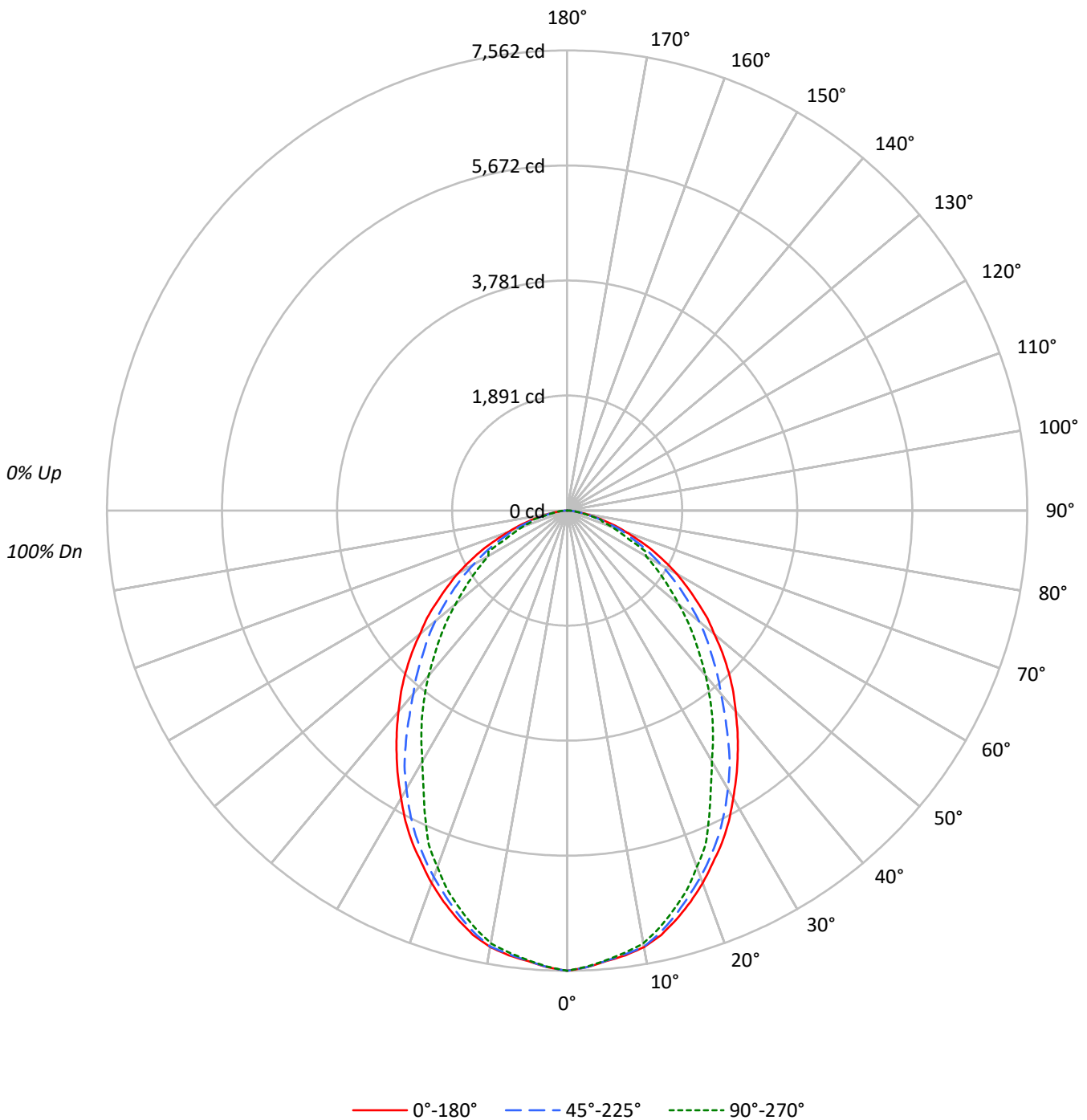
Lumens per Lamp: N/A  
Luminaire Lumens: 14846.0 lumens  
Efficiency: N/A  
Efficacy: 111.5 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 133.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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																		
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	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87																												
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75																												
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65																												
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56																												
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50																												
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44																												
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40																												
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36																												
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33																												
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30																												

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

	0°	45°	90°
0°	10175	10175	10175
5°	10037	10025	10013
10°	9950	9938	9866
15°	9682	9584	9450
20°	9326	9176	8925
25°	8943	8748	8203
30°	8476	8204	7389
35°	8027	7582	6835
40°	7570	6910	6219
45°	7137	6388	5623
50°	6606	5929	5014
55°	6111	5373	4491
60°	5599	4799	4023
65°	4926	4203	3563
70°	4058	3680	3026
75°	3227	2818	2954
80°	2168	2032	1897
85°	1349	1619	1890

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 7137 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	704.0	4.7
10°-20°	1931.9	13.0
20°-30°	2674.6	18.0
30°-40°	2851.9	19.2
40°-50°	2601.8	17.5
50°-60°	2038.3	13.7
60°-70°	1328.5	8.9
70°-80°	588.6	4.0
80°-90°	126.4	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°	5310.5	35.8
0°-40°	8162.5	55.0
0°-60°	12802.6	86.2
0°-90°	14846.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	14846.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	7562	7562	7562	7562	7562	
5°	7431	7422	7422	7414	7414	705
15°	6950	6950	6880	6810	6784	1954
25°	6024	5989	5892	5683	5525	2765
35°	4887	4852	4616	4266	4162	3055
45°	3751	3672	3357	3077	2955	2889
55°	2605	2527	2291	2020	1915	2337
65°	1547	1460	1320	1346	1119	1525
75°	621	577	542	516	568	665
85°	87	96	105	114	122	121
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	7562.4	7562.4	7562.4	7562.4	7562.4
2.5°	7509.9	7509.9	7509.9	7501.2	7501.2
5°	7431.2	7422.5	7422.5	7413.7	7413.7
7.5°	7370.0	7361.3	7352.5	7343.8	7326.3
10°	7282.6	7282.6	7273.8	7230.1	7221.4
12.5°	7142.7	7134.0	7099.0	7037.8	7020.3
15°	6950.4	6950.4	6880.4	6810.5	6784.3
17.5°	6740.5	6731.8	6644.4	6574.4	6539.5
20°	6513.2	6495.8	6408.3	6294.7	6233.5
22.5°	6259.7	6259.7	6154.8	6006.2	5945.0
25°	6023.7	5988.7	5892.5	5682.7	5525.3
27.5°	5752.6	5700.2	5595.3	5298.0	5114.4
30°	5455.4	5429.2	5280.5	4895.9	4756.0
32.5°	5175.6	5131.9	4974.5	4572.4	4458.7
35°	4887.1	4852.1	4616.1	4266.4	4161.5
37.5°	4598.6	4554.9	4257.6	3977.9	3846.7
40°	4310.1	4257.6	3934.2	3680.6	3540.8
42.5°	4039.1	3969.1	3654.4	3383.4	3226.0
45°	3750.6	3671.9	3357.2	3077.4	2955.0
47.5°	3462.1	3392.1	3103.6	2815.1	2675.2
50°	3156.1	3094.9	2832.6	2544.1	2395.5
52.5°	2902.5	2806.4	2552.8	2264.3	2141.9
55°	2605.3	2526.6	2290.6	2019.5	1914.6
57.5°	2334.3	2255.6	2037.0	1783.5	1696.1
60°	2080.7	1967.1	1783.5	1564.9	1495.0
62.5°	1801.0	1713.6	1556.2	1372.6	1460.0
65°	1547.4	1460.0	1320.1	1346.4	1119.1
67.5°	1267.7	1224.0	1101.6	979.2	944.2
70°	1031.6	979.2	935.5	804.3	769.3
72.5°	821.8	769.3	708.2	638.2	612.0
75°	620.7	577.0	542.0	515.8	568.3
77.5°	428.4	410.9	384.7	358.4	349.7
80°	279.8	271.0	262.3	253.5	244.8
82.5°	166.1	166.1	166.1	166.1	166.1
85°	87.4	96.2	104.9	113.7	122.4
87.5°	52.5	52.5	61.2	69.9	78.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)