

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: P562821

Luminaire Tested: FSR-24-4-LD4-2LO-50-UNV-81-86-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562821  
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-LD4-2LO-50-UNV-81-86-EDD  
Description: 2X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

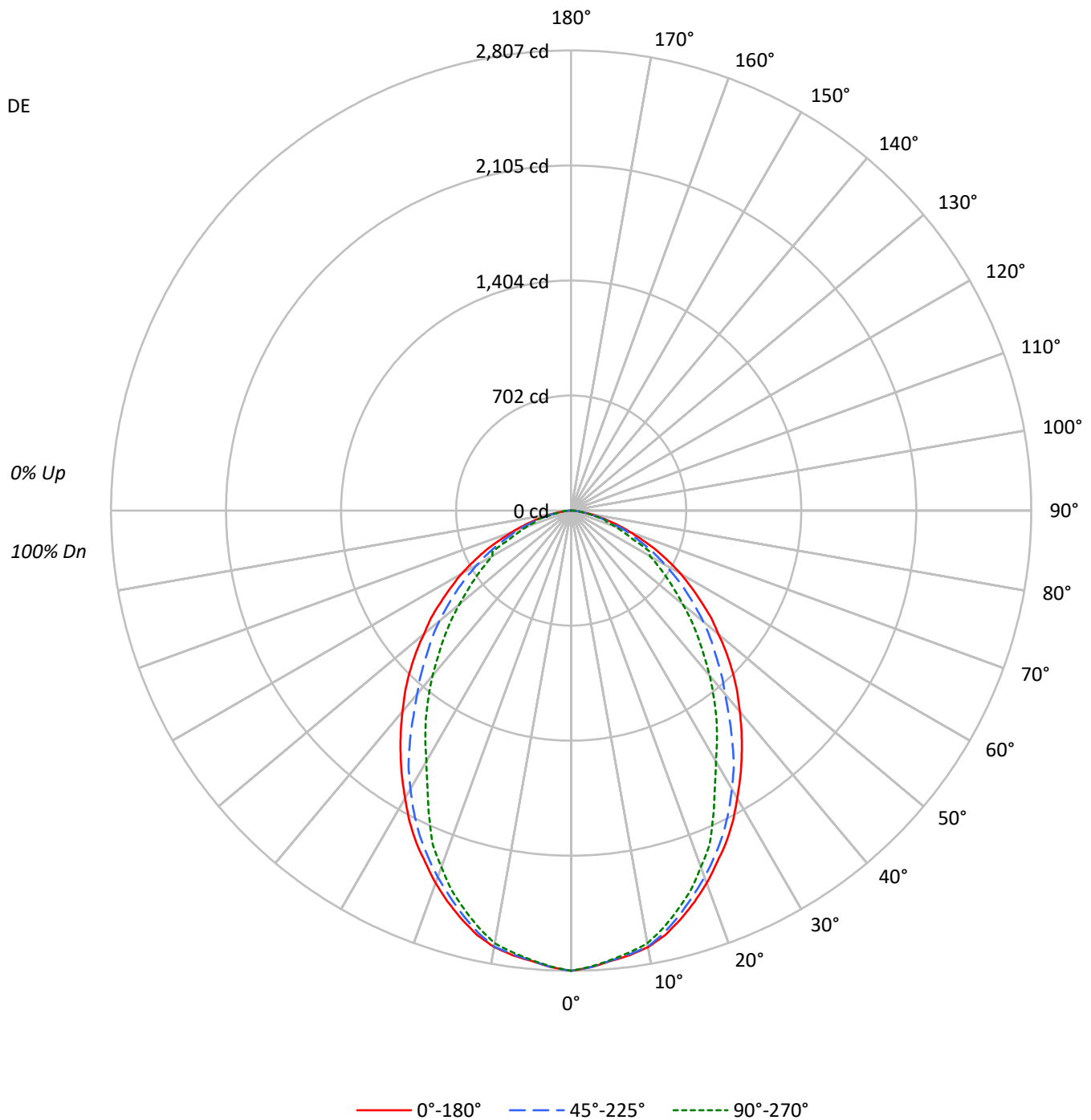
Lumens per Lamp: N/A  
Luminaire Lumens: 5511.0 lumens  
Efficiency: N/A  
Efficacy: 117.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 46.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	3777	3777	3777
5°	3726	3721	3717
10°	3694	3689	3662
15°	3594	3558	3508
20°	3462	3406	3313
25°	3320	3247	3045
30°	3146	3045	2743
35°	2980	2814	2537
40°	2810	2565	2309
45°	2649	2371	2087
50°	2452	2201	1861
55°	2269	1995	1667
60°	2079	1782	1493
65°	1829	1560	1323
70°	1507	1366	1124
75°	1198	1046	1096
80°	805	755	704
85°	502	601	701

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2649 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	261.3	4.7
10°-20°	717.2	13.0
20°-30°	992.9	18.0
30°-40°	1058.7	19.2
40°-50°	965.8	17.5
50°-60°	756.6	13.7
60°-70°	493.1	8.9
70°-80°	218.5	4.0
80°-90°	46.9	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°	1971.3	35.8
0°-40°	3030.0	55.0
0°-60°	4752.5	86.2
0°-90°	5511.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5511.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2807	2807	2807	2807	2807	
5°	2758	2755	2755	2752	2752	262
15°	2580	2580	2554	2528	2518	725
25°	2236	2223	2187	2110	2051	1027
35°	1814	1801	1714	1584	1545	1134
45°	1392	1363	1246	1142	1097	1072
55°	967	938	850	750	711	867
65°	574	542	490	500	415	566
75°	230	214	201	192	211	247
85°	32	36	39	42	45	45
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2807.2	2807.2	2807.2	2807.2	2807.2
2.5°	2787.8	2787.8	2787.8	2784.5	2784.5
5°	2758.5	2755.3	2755.3	2752.1	2752.1
7.5°	2735.8	2732.6	2729.3	2726.1	2719.6
10°	2703.4	2703.4	2700.1	2683.9	2680.7
12.5°	2651.5	2648.2	2635.2	2612.5	2606.0
15°	2580.1	2580.1	2554.1	2528.1	2518.4
17.5°	2502.2	2498.9	2466.5	2440.5	2427.5
20°	2417.8	2411.3	2378.8	2336.7	2313.9
22.5°	2323.7	2323.7	2284.7	2229.6	2206.8
25°	2236.0	2223.1	2187.4	2109.5	2051.1
27.5°	2135.4	2116.0	2077.0	1966.7	1898.5
30°	2025.1	2015.4	1960.2	1817.4	1765.5
32.5°	1921.2	1905.0	1846.6	1697.3	1655.1
35°	1814.2	1801.2	1713.5	1583.7	1544.8
37.5°	1707.1	1690.8	1580.5	1476.6	1428.0
40°	1600.0	1580.5	1460.4	1366.3	1314.4
42.5°	1499.4	1473.4	1356.6	1256.0	1197.5
45°	1392.3	1363.0	1246.2	1142.4	1096.9
47.5°	1285.2	1259.2	1152.1	1045.0	993.1
50°	1171.6	1148.9	1051.5	944.4	889.2
52.5°	1077.5	1041.8	947.6	840.5	795.1
55°	967.1	937.9	850.3	749.7	710.7
57.5°	866.5	837.3	756.2	662.1	629.6
60°	772.4	730.2	662.1	580.9	555.0
62.5°	668.5	636.1	577.7	509.5	542.0
65°	574.4	542.0	490.0	499.8	415.4
67.5°	470.6	454.3	408.9	363.5	350.5
70°	383.0	363.5	347.3	298.6	285.6
72.5°	305.1	285.6	262.9	236.9	227.2
75°	230.4	214.2	201.2	191.5	210.9
77.5°	159.0	152.5	142.8	133.1	129.8
80°	103.9	100.6	97.4	94.1	90.9
82.5°	61.7	61.7	61.7	61.7	61.7
85°	32.5	35.7	38.9	42.2	45.4
87.5°	19.5	19.5	22.7	26.0	29.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)