

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: P563933

Luminaire Tested: FSR-24-4-LD4-4LO-40-UNV-82-96-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563933  
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-LD4-4LO-40-UNV-82-96-EDD  
Description: 2X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .250 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

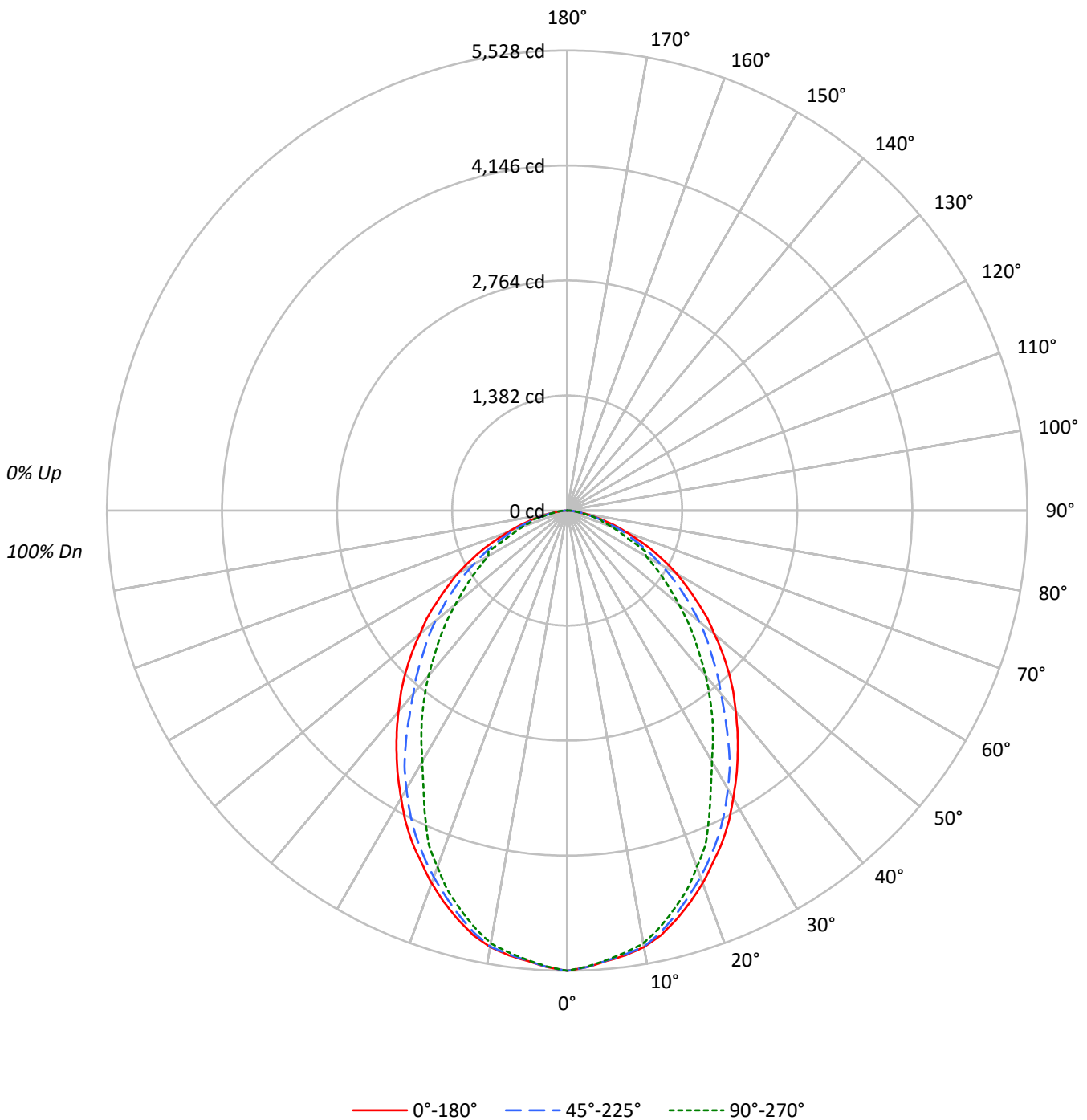
Lumens per Lamp: N/A  
Luminaire Lumens: 10853.0 lumens  
Efficiency: N/A  
Efficacy: 116.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 93.6  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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



TEST NUMBER: P563933

CATALOG NUMBER: FSR-24-4-LD4-4LO-40-UNV-82-96-EDD

### Luminous Intensity Polar Plot





TEST NUMBER: P563933

CATALOG NUMBER: FSR-24-4-LD4-4LO-40-UNV-82-96-EDD

**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°	7438	7438	7438
5°	7337	7329	7320
10°	7274	7265	7213
15°	7078	7006	6908
20°	6818	6708	6525
25°	6537	6395	5997
30°	6196	5998	5402
35°	5868	5543	4997
40°	5534	5051	4546
45°	5217	4670	4110
50°	4829	4334	3666
55°	4468	3928	3283
60°	4093	3508	2941
65°	3601	3073	2605
70°	2967	2690	2212
75°	2359	2060	2159
80°	1585	1485	1387
85°	986	1184	1382

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 5217 cd/sqm



TEST NUMBER: P563933

CATALOG NUMBER: FSR-24-4-LD4-4LO-40-UNV-82-96-EDD

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	514.6	4.7
10°-20°	1412.3	13.0
20°-30°	1955.3	18.0
30°-40°	2084.9	19.2
40°-50°	1902.0	17.5
50°-60°	1490.1	13.7
60°-70°	971.2	8.9
70°-80°	430.3	4.0
80°-90°	92.4	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°	3882.2	35.8
0°-40°	5967.1	55.0
0°-60°	9359.2	86.2
0°-90°	10853.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	10853.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	5528	5528	5528	5528	5528	
5°	5432	5426	5426	5420	5420	516
15°	5081	5081	5030	4979	4960	1428
25°	4404	4378	4308	4154	4039	2022
35°	3573	3547	3374	3119	3042	2234
45°	2742	2684	2454	2250	2160	2112
55°	1905	1847	1674	1476	1400	1708
65°	1131	1067	965	984	818	1115
75°	454	422	396	377	415	486
85°	64	70	77	83	90	89
90°	0	0	0	0	0	



TEST NUMBER: P563933

CATALOG NUMBER: FSR-24-4-LD4-4LO-40-UNV-82-96-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	5528.4	5528.4	5528.4	5528.4	5528.4
2.5°	5490.0	5490.0	5490.0	5483.6	5483.6
5°	5432.5	5426.1	5426.1	5419.7	5419.7
7.5°	5387.8	5381.4	5375.0	5368.6	5355.8
10°	5323.9	5323.9	5317.5	5285.5	5279.1
12.5°	5221.6	5215.2	5189.6	5144.9	5132.1
15°	5081.0	5081.0	5029.9	4978.7	4959.6
17.5°	4927.6	4921.2	4857.3	4806.2	4780.6
20°	4761.4	4748.6	4684.7	4601.7	4556.9
22.5°	4576.1	4576.1	4499.4	4390.7	4346.0
25°	4403.5	4378.0	4307.7	4154.3	4039.2
27.5°	4205.4	4167.1	4090.4	3873.1	3738.8
30°	3988.1	3968.9	3860.3	3579.1	3476.8
32.5°	3783.6	3751.6	3636.6	3342.6	3259.5
35°	3572.7	3547.1	3374.5	3118.9	3042.2
37.5°	3361.8	3329.8	3112.5	2908.0	2812.1
40°	3150.9	3112.5	2876.0	2690.7	2588.4
42.5°	2952.7	2901.6	2671.5	2473.4	2358.3
45°	2741.8	2684.3	2454.2	2249.7	2160.2
47.5°	2530.9	2479.8	2268.9	2058.0	1955.7
50°	2307.2	2262.5	2070.7	1859.8	1751.2
52.5°	2121.9	2051.6	1866.2	1655.3	1565.8
55°	1904.6	1847.1	1674.5	1476.4	1399.7
57.5°	1706.4	1648.9	1489.1	1303.8	1239.9
60°	1521.1	1438.0	1303.8	1144.0	1092.9
62.5°	1316.6	1252.7	1137.6	1003.4	1067.3
65°	1131.2	1067.3	965.1	984.2	818.1
67.5°	926.7	894.8	805.3	715.8	690.2
70°	754.2	715.8	683.9	588.0	562.4
72.5°	600.8	562.4	517.7	466.6	447.4
75°	453.8	421.8	396.3	377.1	415.4
77.5°	313.2	300.4	281.2	262.0	255.6
80°	204.5	198.1	191.7	185.3	179.0
82.5°	121.4	121.4	121.4	121.4	121.4
85°	63.9	70.3	76.7	83.1	89.5
87.5°	38.3	38.3	44.7	51.1	57.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)