

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: P564115

Luminaire Tested: FSR-24-4-LD4-4STD-40-UNV-82-85-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P564115  
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-82-85-EDD  
Description: 2X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

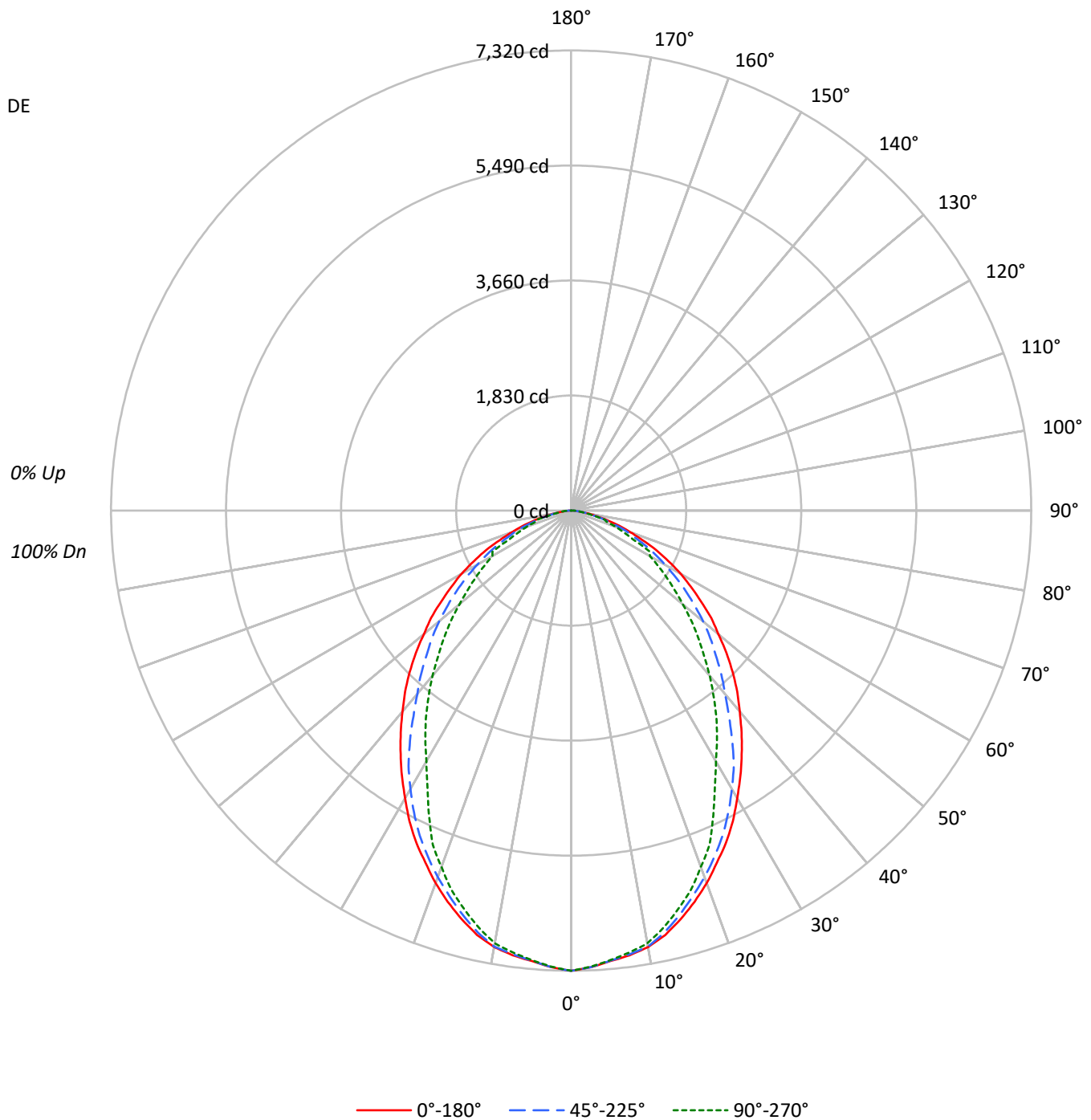
Lumens per Lamp: N/A  
Luminaire Lumens: 14371.0 lumens  
Efficiency: N/A  
Efficacy: 107.9 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 133.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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



TEST NUMBER: P564115

CATALOG NUMBER: FSR-24-4-LD4-4STD-40-UNV-82-85-EDD

### Luminous Intensity Polar Plot



TEST NUMBER: P564115

CATALOG NUMBER: FSR-24-4-LD4-4STD-40-UNV-82-85-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																												
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°	9850	9850	9850
5°	9716	9704	9693
10°	9631	9620	9550
15°	9372	9277	9148
20°	9027	8882	8640
25°	8656	8468	7940
30°	8204	7942	7153
35°	7771	7340	6617
40°	7328	6689	6020
45°	6908	6184	5443
50°	6395	5740	4854
55°	5916	5201	4348
60°	5420	4646	3894
65°	4769	4068	3449
70°	3928	3562	2930
75°	3124	2728	2860
80°	2098	1967	1836
85°	1306	1568	1829

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 6908 cd/sqm



TEST NUMBER: P564115

CATALOG NUMBER: FSR-24-4-LD4-4STD-40-UNV-82-85-EDD

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	681.4	4.7
10°-20°	1870.1	13.0
20°-30°	2589.1	18.0
30°-40°	2760.7	19.2
40°-50°	2518.6	17.5
50°-60°	1973.1	13.7
60°-70°	1286.0	8.9
70°-80°	569.7	4.0
80°-90°	122.3	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°	5140.6	35.8
0°-40°	7901.3	55.0
0°-60°	12393.0	86.2
0°-90°	14371.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	14371.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	7320	7320	7320	7320	7320	
5°	7194	7185	7185	7176	7176	683
15°	6728	6728	6660	6593	6567	1891
25°	5831	5797	5704	5501	5348	2677
35°	4731	4697	4468	4130	4028	2958
45°	3631	3554	3250	2979	2860	2797
55°	2522	2446	2217	1955	1853	2262
65°	1498	1413	1278	1303	1083	1476
75°	601	559	525	499	550	644
85°	85	93	102	110	118	117
90°	0	0	0	0	0	



TEST NUMBER: P564115

CATALOG NUMBER: FSR-24-4-LD4-4STD-40-UNV-82-85-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	7320.4	7320.4	7320.4	7320.4	7320.4
2.5°	7269.6	7269.6	7269.6	7261.2	7261.2
5°	7193.5	7185.0	7185.0	7176.5	7176.5
7.5°	7134.2	7125.7	7117.3	7108.8	7091.9
10°	7049.6	7049.6	7041.1	6998.8	6990.3
12.5°	6914.2	6905.7	6871.9	6812.6	6795.7
15°	6728.0	6728.0	6660.3	6592.6	6567.2
17.5°	6524.9	6516.4	6431.8	6364.1	6330.2
20°	6304.8	6287.9	6203.3	6093.3	6034.0
22.5°	6059.4	6059.4	5957.9	5814.0	5754.8
25°	5830.9	5797.1	5704.0	5500.9	5348.5
27.5°	5568.6	5517.8	5416.2	5128.5	4950.8
30°	5280.8	5255.5	5111.6	4739.2	4603.8
32.5°	5010.0	4967.7	4815.4	4426.1	4316.1
35°	4730.8	4696.9	4468.4	4129.9	4028.3
37.5°	4451.5	4409.2	4121.4	3850.6	3723.7
40°	4172.2	4121.4	3808.3	3562.9	3427.5
42.5°	3909.9	3842.1	3537.5	3275.1	3122.8
45°	3630.6	3554.4	3249.7	2978.9	2860.5
47.5°	3351.3	3283.6	3004.3	2725.0	2589.6
50°	3055.1	2995.9	2742.0	2462.7	2318.8
52.5°	2809.7	2716.6	2471.2	2191.9	2073.4
55°	2521.9	2445.8	2217.3	1954.9	1853.4
57.5°	2259.6	2183.4	1971.9	1726.4	1641.8
60°	2014.2	1904.1	1726.4	1514.9	1447.2
62.5°	1743.4	1658.7	1506.4	1328.7	1413.3
65°	1497.9	1413.3	1277.9	1303.3	1083.2
67.5°	1227.1	1184.8	1066.3	947.8	914.0
70°	998.6	947.8	905.5	778.6	744.7
72.5°	795.5	744.7	685.5	617.8	592.4
75°	600.9	558.6	524.7	499.3	550.1
77.5°	414.7	397.8	372.4	347.0	338.5
80°	270.8	262.3	253.9	245.4	237.0
82.5°	160.8	160.8	160.8	160.8	160.8
85°	84.6	93.1	101.6	110.0	118.5
87.5°	50.8	50.8	59.2	67.7	76.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)