

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: P590911

Luminaire Tested: FSR-24-2-LD4-4STD-35-UNV-81-86-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590911  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-1)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/8/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: FAIL-SAFE  
Catalog Number: FSR-24-2-LD4-4STD-35-UNV-81-86-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

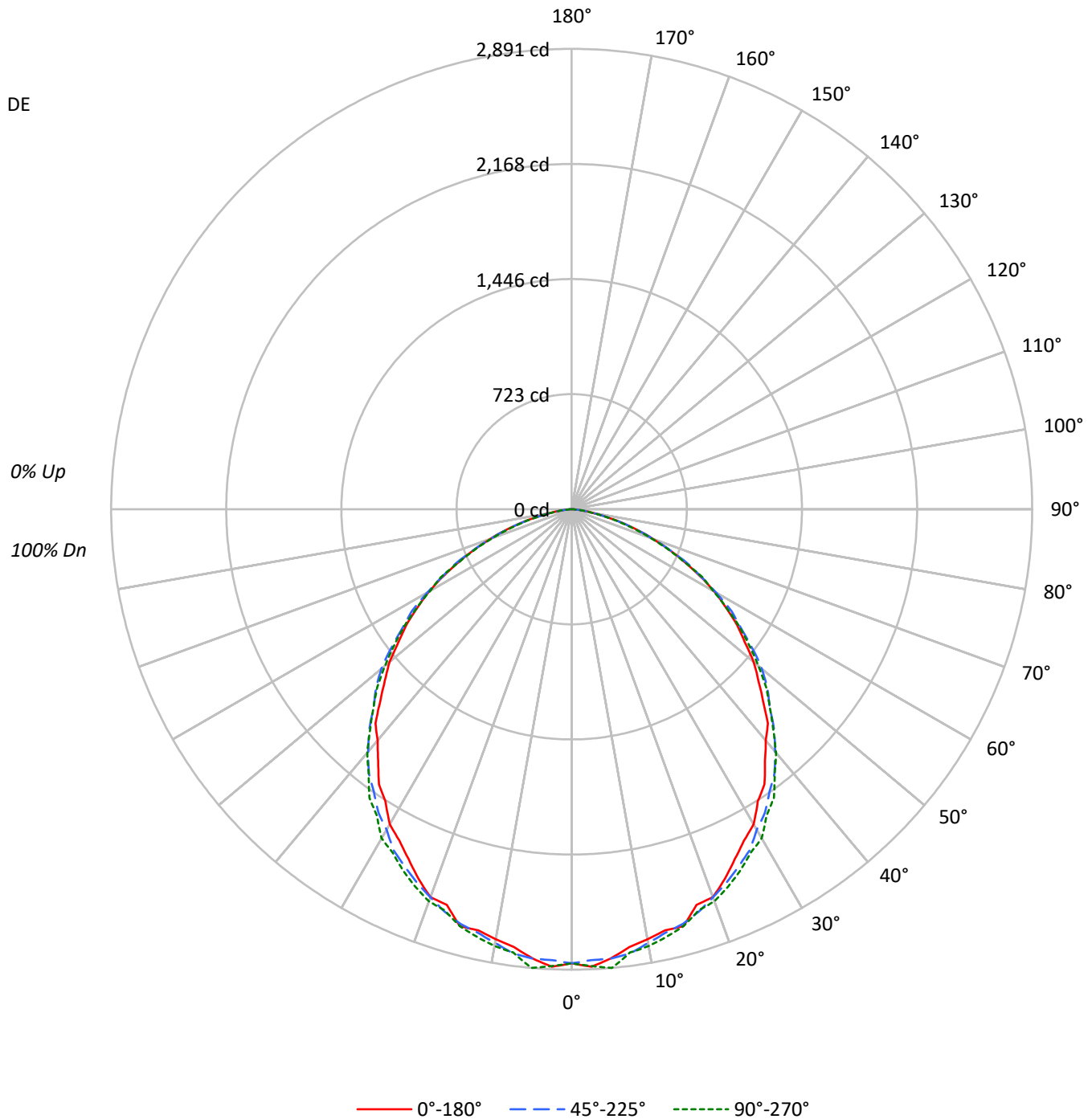
Lumens per Lamp: N/A  
Luminaire Lumens: 7185.0 lumens  
Efficiency: N/A  
Efficacy: 107.9 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 66.6  
Input Voltage (V):  
Input Current (Ain): NR  
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: P590911

CATALOG NUMBER: FSR-24-2-LD4-4STD-35-UNV-81-86-EDD

### Luminous Intensity Polar Plot



TEST NUMBER: P590911

CATALOG NUMBER: FSR-24-2-LD4-4STD-35-UNV-81-86-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	0		
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100					100			
1	110	105	101	98	107	103	100	96	99	96	93	95	93	90	91	90	88	86					86			
2	100	93	86	81	98	91	85	80	87	82	78	84	80	76	81	78	75	73					73			
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64	62					62			
4	84	73	64	58	82	71	64	58	69	62	57	67	61	56	65	59	55	53					53			
5	78	65	57	50	76	64	56	50	62	55	49	60	54	49	58	53	48	46					46			
6	72	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	43	41					41			
7	67	53	45	39	65	53	45	39	51	44	39	50	43	38	48	42	38	36					36			
8	62	49	41	35	61	48	40	35	47	40	34	46	39	34	44	39	34	32					32			
9	58	45	37	31	57	44	37	31	43	36	31	42	36	31	41	35	31	29					29			
10	54	41	34	29	53	41	33	28	40	33	28	39	33	28	38	32	28	26					26			

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

	0°	45°	90°
0°	7671	7671	7671
5°	7646	7649	7810
10°	7491	7556	7610
15°	7550	7509	7551
20°	7423	7423	7502
25°	7195	7352	7433
30°	7096	7220	7413
35°	6929	7110	7270
40°	6659	6980	7011
45°	6458	6687	6697
50°	6246	6527	6403
55°	5951	6067	6024
60°	5565	5620	5519
65°	4961	5088	4926
70°	4257	4271	4153
75°	3372	3363	3234
80°	2259	2196	2111
85°	1229	1216	1136

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 6860 cd/sqm

TEST NUMBER: P590911

CATALOG NUMBER: FSR-24-2-LD4-4STD-35-UNV-81-86-EDD

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	268.2	3.7
10°-20°	760.0	10.6
20°-30°	1138.7	15.8
30°-40°	1349.5	18.8
40°-50°	1352.0	18.8
50°-60°	1147.6	16.0
60°-70°	773.7	10.8
70°-80°	340.0	4.7
80°-90°	55.3	0.8
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°	2166.8	30.2
0°-40°	3516.3	48.9
0°-60°	6016.0	83.7
0°-90°	7185.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7185.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2851	2851	2851	2851	2851	
5°	2831	2824	2832	2823	2891	267
15°	2710	2679	2696	2710	2711	755
25°	2423	2436	2476	2508	2503	1120
35°	2109	2115	2164	2214	2213	1310
45°	1697	1728	1757	1802	1760	1313
55°	1268	1260	1293	1284	1284	1128
65°	779	769	799	769	774	775
75°	324	318	324	301	311	348
85°	40	39	39	38	37	58
90°	0	0	0	0	0	

TEST NUMBER: P590911

CATALOG NUMBER: FSR-24-2-LD4-4STD-35-UNV-81-86-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2850.8	2850.8	2850.8	2850.8	2850.8
2.5°	2875.5	2853.8	2833.5	2857.1	2871.4
5°	2830.6	2824.0	2831.7	2823.2	2891.3
7.5°	2772.4	2797.8	2812.5	2803.3	2807.4
10°	2741.5	2732.7	2765.4	2788.3	2784.9
12.5°	2708.4	2721.6	2723.5	2748.1	2750.3
15°	2710.2	2678.9	2695.5	2709.5	2710.6
17.5°	2604.9	2638.8	2650.2	2682.2	2642.5
20°	2592.1	2567.4	2592.1	2624.8	2619.7
22.5°	2512.9	2485.3	2538.3	2567.4	2565.6
25°	2423.1	2436.4	2476.1	2508.5	2503.4
27.5°	2344.3	2359.8	2416.5	2461.0	2432.3
30°	2283.6	2275.9	2323.7	2363.5	2385.6
32.5°	2175.0	2203.0	2258.9	2298.3	2277.3
35°	2109.1	2115.4	2164.3	2214.4	2212.9
37.5°	1993.9	2023.0	2091.8	2105.8	2092.9
40°	1895.6	1924.7	1986.9	2002.0	1995.8
42.5°	1823.1	1828.3	1881.7	1899.0	1871.3
45°	1696.9	1728.5	1757.2	1802.5	1759.8
47.5°	1589.4	1604.1	1666.0	1678.1	1655.7
50°	1491.9	1497.0	1559.2	1544.1	1529.4
52.5°	1369.3	1391.0	1426.0	1423.0	1405.7
55°	1268.4	1260.0	1293.1	1284.3	1283.9
57.5°	1147.3	1162.0	1189.3	1175.3	1152.8
60°	1034.0	1034.3	1044.3	1028.4	1025.5
62.5°	907.7	912.1	914.3	894.8	926.5
65°	779.2	768.9	799.1	768.6	773.7
67.5°	661.1	666.2	663.3	644.2	651.5
70°	541.1	547.7	542.9	521.2	527.8
72.5°	431.4	423.3	428.5	401.2	413.7
75°	324.3	317.7	323.5	300.7	311.0
77.5°	220.9	226.0	222.3	210.2	217.2
80°	145.8	141.7	141.7	134.7	136.2
82.5°	85.0	81.0	79.9	77.7	81.0
85°	39.8	38.6	39.4	38.3	36.8
87.5°	14.4	14.7	14.7	14.0	13.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)