

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: P590963

Luminaire Tested: FSR-24-2-LD4-4STD-40-UNV-93-96-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590963  
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-40-UNV-93-96-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR TEMPER  
GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

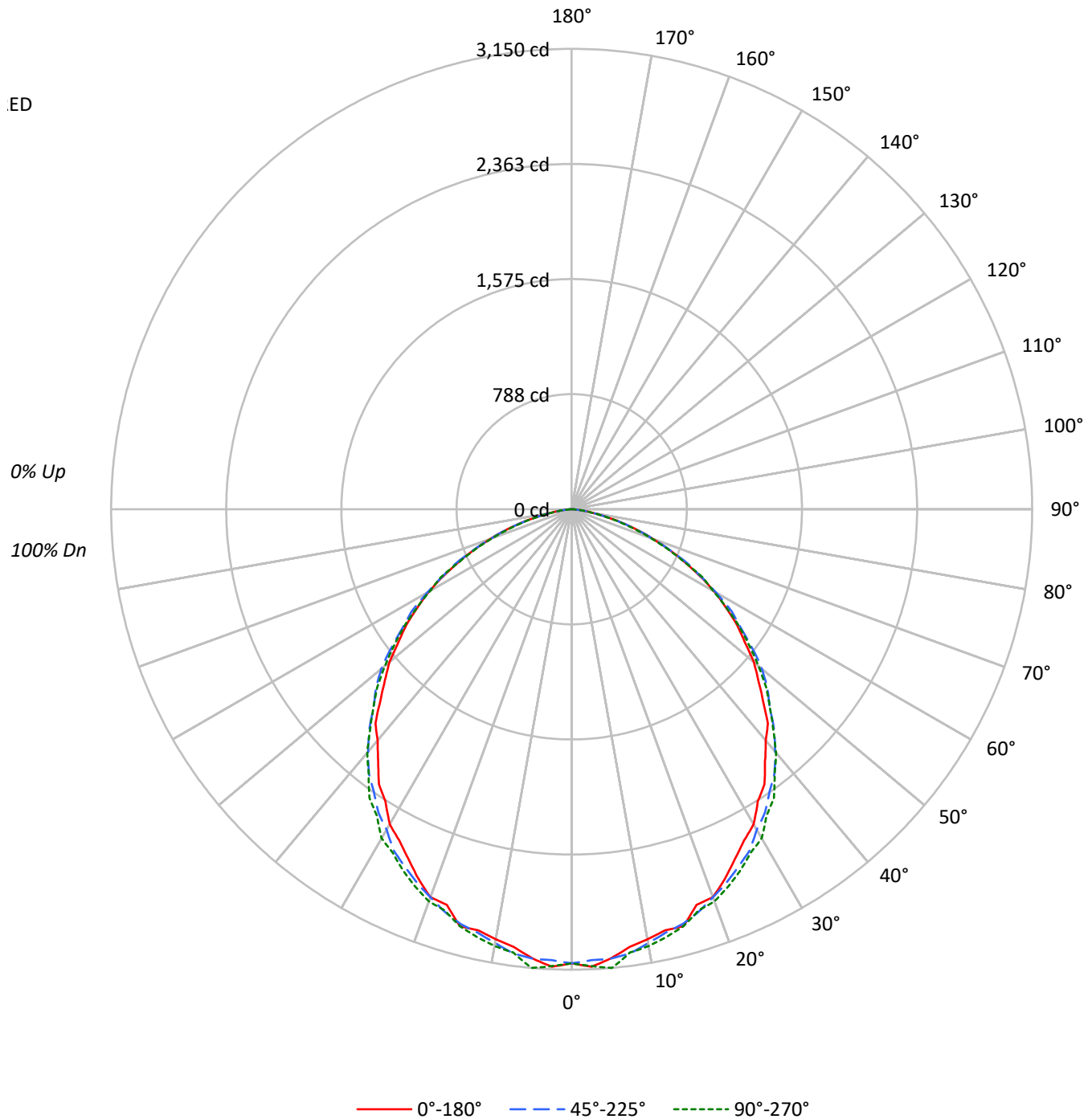
Lumens per Lamp: N/A  
Luminaire Lumens: 7829.0 lumens  
Efficiency: N/A  
Efficacy: 117.6 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 66.6  
Input Voltage (V):  
Input Current (Ain): NR  
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: P590963

CATALOG NUMBER: FSR-24-2-LD4-4STD-40-UNV-93-96-EDD

### Luminous Intensity Polar Plot





TEST NUMBER: P590963

CATALOG NUMBER: FSR-24-2-LD4-4STD-40-UNV-93-96-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	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°	8359	8359	8359
5°	8331	8335	8510
10°	8162	8234	8292
15°	8227	8182	8228
20°	8088	8088	8174
25°	7839	8011	8099
30°	7732	7868	8077
35°	7550	7747	7921
40°	7256	7605	7639
45°	7037	7287	7298
50°	6805	7113	6977
55°	6484	6610	6564
60°	6063	6124	6014
65°	5407	5544	5368
70°	4639	4655	4525
75°	3673	3665	3524
80°	2461	2393	2300
85°	1337	1325	1238

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 7475 cd/sqm



TEST NUMBER: P590963

CATALOG NUMBER: FSR-24-2-LD4-4STD-40-UNV-93-96-EDD

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	292.2	3.7
10°-20°	828.1	10.6
20°-30°	1240.7	15.8
30°-40°	1470.5	18.8
40°-50°	1473.2	18.8
50°-60°	1250.5	16.0
60°-70°	843.1	10.8
70°-80°	370.5	4.7
80°-90°	60.2	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°	2361.0	30.2
0°-40°	3831.5	48.9
0°-60°	6555.3	83.7
0°-90°	7829.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7829.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3106	3106	3106	3106	3106	
5°	3084	3077	3086	3076	3150	291
15°	2953	2919	2937	2952	2954	823
25°	2640	2655	2698	2733	2728	1221
35°	2298	2305	2358	2413	2411	1427
45°	1849	1884	1915	1964	1918	1430
55°	1382	1373	1409	1399	1399	1229
65°	849	838	871	838	843	844
75°	353	346	352	328	339	379
85°	43	42	43	42	40	63
90°	0	0	0	0	0	



TEST NUMBER: P590963

CATALOG NUMBER: FSR-24-2-LD4-4STD-40-UNV-93-96-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3106.3	3106.3	3106.3	3106.3	3106.3
2.5°	3133.2	3109.6	3087.5	3113.2	3128.8
5°	3084.3	3077.1	3085.5	3076.3	3150.5
7.5°	3020.9	3048.6	3064.6	3054.6	3059.0
10°	2987.2	2977.6	3013.3	3038.2	3034.6
12.5°	2951.1	2965.6	2967.6	2994.4	2996.9
15°	2953.1	2919.0	2937.1	2952.3	2953.5
17.5°	2838.4	2875.3	2887.8	2922.7	2879.3
20°	2824.4	2797.5	2824.4	2860.1	2854.5
22.5°	2738.2	2708.1	2765.8	2797.5	2795.5
25°	2640.3	2654.7	2698.1	2733.3	2727.7
27.5°	2554.5	2571.3	2633.1	2681.6	2650.3
30°	2488.3	2479.9	2532.0	2575.3	2599.4
32.5°	2370.0	2400.5	2461.4	2504.3	2481.5
35°	2298.2	2305.0	2358.3	2412.9	2411.3
37.5°	2172.6	2204.3	2279.3	2294.6	2280.5
40°	2065.6	2097.2	2165.0	2181.5	2174.6
42.5°	1986.5	1992.2	2050.3	2069.2	2039.1
45°	1849.0	1883.5	1914.7	1964.1	1917.6
47.5°	1731.9	1747.9	1815.3	1828.5	1804.0
50°	1625.6	1631.2	1699.0	1682.5	1666.5
52.5°	1492.0	1515.7	1553.8	1550.6	1531.7
55°	1382.1	1372.9	1409.0	1399.4	1399.0
57.5°	1250.2	1266.2	1295.9	1280.6	1256.2
60°	1126.6	1127.0	1137.9	1120.6	1117.4
62.5°	989.1	993.9	996.3	975.0	1009.5
65°	849.1	837.9	870.7	837.5	843.1
67.5°	720.3	726.0	722.7	701.9	709.9
70°	589.6	596.8	591.6	567.9	575.1
72.5°	470.1	461.2	466.9	437.2	450.8
75°	353.3	346.1	352.5	327.7	338.9
77.5°	240.6	246.3	242.3	229.0	236.6
80°	158.8	154.4	154.4	146.8	148.4
82.5°	92.6	88.2	87.0	84.6	88.2
85°	43.3	42.1	42.9	41.7	40.1
87.5°	15.6	16.0	16.0	15.2	14.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)