

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: P561762

Luminaire Tested: FSR-12-4-LD4-2STD-35-UNV-93-85-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561762  
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-12-4-LD4-2STD-35-UNV-93-85-EDD-90  
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

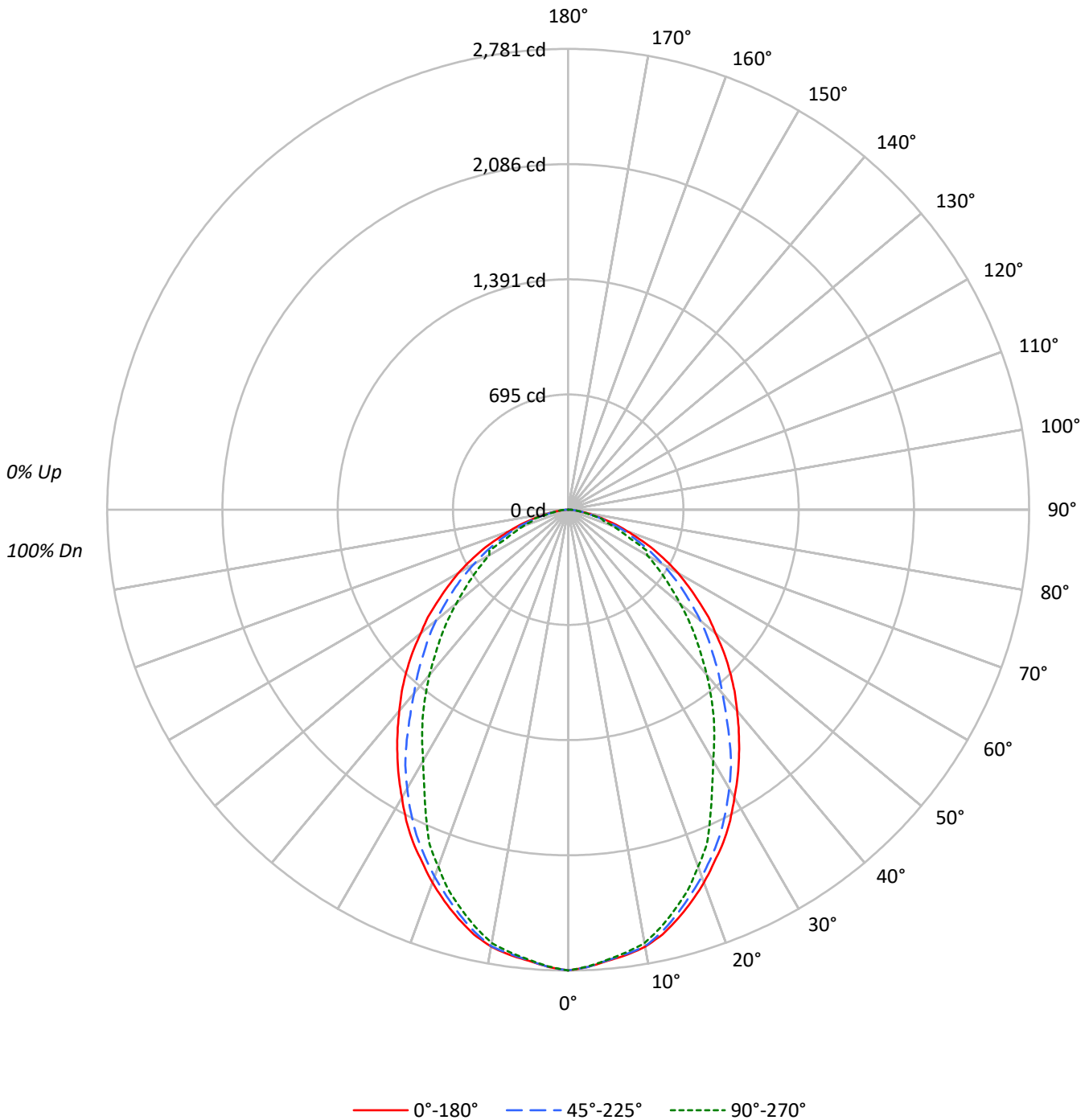
Lumens per Lamp: N/A  
Luminaire Lumens: 5459.0 lumens  
Efficiency: N/A  
Efficacy: 82.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 66.6  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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: P561762

CATALOG NUMBER: FSR-12-4-LD4-2STD-35-UNV-93-85-EDD-90

### Luminous Intensity Polar Plot





TEST NUMBER: P561762

CATALOG NUMBER: FSR-12-4-LD4-2STD-35-UNV-93-85-EDD-90

**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°	7483	7483	7483
5°	7381	7373	7364
10°	7317	7309	7256
15°	7120	7048	6950
20°	6859	6748	6564
25°	6576	6433	6032
30°	6233	6033	5434
35°	5903	5576	5027
40°	5567	5082	4574
45°	5248	4698	4135
50°	4858	4361	3687
55°	4495	3952	3303
60°	4118	3529	2958
65°	3623	3091	2620
70°	2984	2707	2226
75°	2373	2072	2173
80°	1595	1494	1395
85°	991	1192	1389

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 5248 cd/sqm



TEST NUMBER: P561762

CATALOG NUMBER: FSR-12-4-LD4-2STD-35-UNV-93-85-EDD-90

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	258.9	4.7
10°-20°	710.4	13.0
20°-30°	983.5	18.0
30°-40°	1048.7	19.2
40°-50°	956.7	17.5
50°-60°	749.5	13.7
60°-70°	488.5	8.9
70°-80°	216.4	4.0
80°-90°	46.5	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°	1952.7	35.8
0°-40°	3001.4	55.0
0°-60°	4707.6	86.2
0°-90°	5459.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5459.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2781	2781	2781	2781	2781	
5°	2732	2729	2729	2726	2726	259
15°	2556	2556	2530	2504	2495	718
25°	2215	2202	2167	2090	2032	1017
35°	1797	1784	1697	1569	1530	1123
45°	1379	1350	1234	1132	1087	1062
55°	958	929	842	743	704	859
65°	569	537	485	495	412	561
75°	228	212	199	190	209	245
85°	32	35	39	42	45	45
90°	0	0	0	0	0	



TEST NUMBER: P561762

CATALOG NUMBER: FSR-12-4-LD4-2STD-35-UNV-93-85-EDD-90

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2780.7	2780.7	2780.7	2780.7	2780.7
2.5°	2761.5	2761.5	2761.5	2758.2	2758.2
5°	2732.5	2729.3	2729.3	2726.1	2726.1
7.5°	2710.0	2706.8	2703.6	2700.4	2693.9
10°	2677.9	2677.9	2674.7	2658.6	2655.4
12.5°	2626.4	2623.2	2610.4	2587.9	2581.4
15°	2555.7	2555.7	2530.0	2504.3	2494.6
17.5°	2478.6	2475.3	2443.2	2417.5	2404.6
20°	2395.0	2388.5	2356.4	2314.6	2292.1
22.5°	2301.7	2301.7	2263.2	2208.5	2186.0
25°	2214.9	2202.1	2166.7	2089.6	2031.7
27.5°	2115.3	2096.0	2057.4	1948.1	1880.6
30°	2006.0	1996.3	1941.7	1800.2	1748.8
32.5°	1903.1	1887.0	1829.2	1681.3	1639.5
35°	1797.0	1784.2	1697.4	1568.8	1530.2
37.5°	1690.9	1674.9	1565.6	1462.7	1414.5
40°	1584.9	1565.6	1446.6	1353.4	1302.0
42.5°	1485.2	1459.5	1343.8	1244.1	1186.2
45°	1379.1	1350.2	1234.5	1131.6	1086.6
47.5°	1273.0	1247.3	1141.2	1035.1	983.7
50°	1160.5	1138.0	1041.6	935.5	880.8
52.5°	1067.3	1031.9	938.7	832.6	787.6
55°	958.0	929.1	842.3	742.6	704.0
57.5°	858.3	829.4	749.0	655.8	623.7
60°	765.1	723.3	655.8	575.4	549.7
62.5°	662.2	630.1	572.2	504.7	536.9
65°	569.0	536.9	485.4	495.1	411.5
67.5°	466.1	450.1	405.1	360.0	347.2
70°	379.3	360.0	344.0	295.8	282.9
72.5°	302.2	282.9	260.4	234.7	225.0
75°	228.2	212.2	199.3	189.7	209.0
77.5°	157.5	151.1	141.4	131.8	128.6
80°	102.9	99.7	96.4	93.2	90.0
82.5°	61.1	61.1	61.1	61.1	61.1
85°	32.1	35.4	38.6	41.8	45.0
87.5°	19.3	19.3	22.5	25.7	28.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)