

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: P590667

Luminaire Tested: FSR-24-2-LD4-3STD-40-UNV-82-96-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590667  
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-LD4-3STD-40-UNV-82-96-EDD  
Description: 2X2 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**

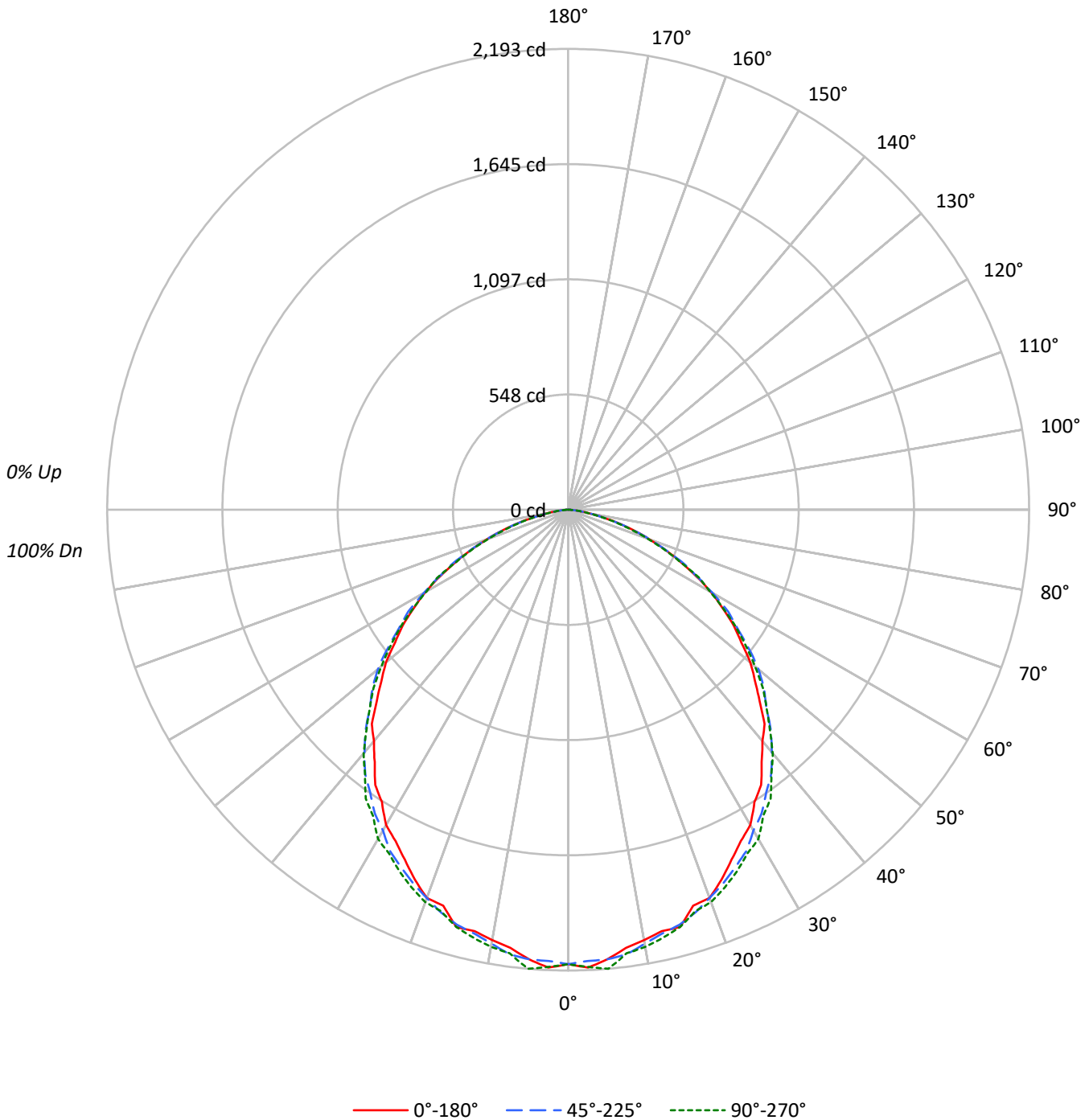
Lumens per Lamp: N/A  
Luminaire Lumens: 5450.0 lumens  
Efficiency: N/A  
Efficacy: 109.0 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 50  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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



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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	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	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°	5819	5819	5819
5°	5800	5802	5924
10°	5682	5732	5772
15°	5727	5696	5728
20°	5630	5630	5690
25°	5457	5577	5638
30°	5382	5477	5623
35°	5255	5393	5514
40°	5051	5294	5318
45°	4898	5073	5080
50°	4737	4951	4857
55°	4514	4601	4569
60°	4221	4263	4187
65°	3764	3859	3737
70°	3229	3240	3150
75°	2558	2551	2453
80°	1714	1666	1601
85°	932	923	861

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 5203 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	203.4	3.7
10°-20°	576.5	10.6
20°-30°	863.7	15.8
30°-40°	1023.6	18.8
40°-50°	1025.6	18.8
50°-60°	870.5	16.0
60°-70°	586.9	10.8
70°-80°	257.9	4.7
80°-90°	41.9	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°	1643.6	30.2
0°-40°	2667.2	48.9
0°-60°	4563.3	83.7
0°-90°	5450.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5450.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2162	2162	2162	2162	2162	
5°	2147	2142	2148	2142	2193	202
15°	2056	2032	2045	2055	2056	573
25°	1838	1848	1878	1903	1899	850
35°	1600	1605	1642	1680	1679	993
45°	1287	1311	1333	1367	1335	996
55°	962	956	981	974	974	856
65°	591	583	606	583	587	588
75°	246	241	245	228	236	264
85°	30	29	30	29	28	44
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2162.4	2162.4	2162.4	2162.4	2162.4
2.5°	2181.1	2164.7	2149.3	2167.2	2178.1
5°	2147.1	2142.0	2147.9	2141.5	2193.1
7.5°	2103.0	2122.2	2133.4	2126.4	2129.5
10°	2079.5	2072.8	2097.6	2115.0	2112.4
12.5°	2054.4	2064.4	2065.8	2084.5	2086.2
15°	2055.8	2032.0	2044.6	2055.2	2056.0
17.5°	1975.9	2001.6	2010.3	2034.5	2004.4
20°	1966.1	1947.4	1966.1	1991.0	1987.1
22.5°	1906.1	1885.2	1925.4	1947.4	1946.0
25°	1838.0	1848.0	1878.2	1902.8	1898.9
27.5°	1778.2	1790.0	1833.0	1866.7	1845.0
30°	1732.2	1726.3	1762.6	1792.8	1809.5
32.5°	1649.8	1671.0	1713.5	1743.3	1727.4
35°	1599.8	1604.6	1641.7	1679.7	1678.6
37.5°	1512.4	1534.5	1586.7	1597.3	1587.5
40°	1437.9	1459.9	1507.1	1518.6	1513.8
42.5°	1382.9	1386.8	1427.3	1440.4	1419.5
45°	1287.1	1311.1	1332.9	1367.3	1334.9
47.5°	1205.6	1216.8	1263.7	1272.9	1255.9
50°	1131.6	1135.5	1182.7	1171.3	1160.1
52.5°	1038.6	1055.1	1081.6	1079.4	1066.3
55°	962.1	955.7	980.8	974.1	973.9
57.5°	870.3	881.4	902.1	891.5	874.5
60°	784.3	784.6	792.1	780.1	777.9
62.5°	688.5	691.9	693.5	678.7	702.8
65°	591.1	583.3	606.1	583.0	586.9
67.5°	501.4	505.4	503.1	488.6	494.2
70°	410.4	415.5	411.8	395.4	400.4
72.5°	327.2	321.1	325.0	304.3	313.8
75°	246.0	241.0	245.4	228.1	235.9
77.5°	167.5	171.4	168.6	159.4	164.7
80°	110.6	107.5	107.5	102.2	103.3
82.5°	64.5	61.4	60.6	58.9	61.4
85°	30.2	29.3	29.9	29.0	27.9
87.5°	10.9	11.2	11.2	10.6	10.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)