

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: P590864

Luminaire Tested: FSR-24-2-LD4-4LO-40-UNV-93-87-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590864  
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-LD4-4LO-40-UNV-93-87-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

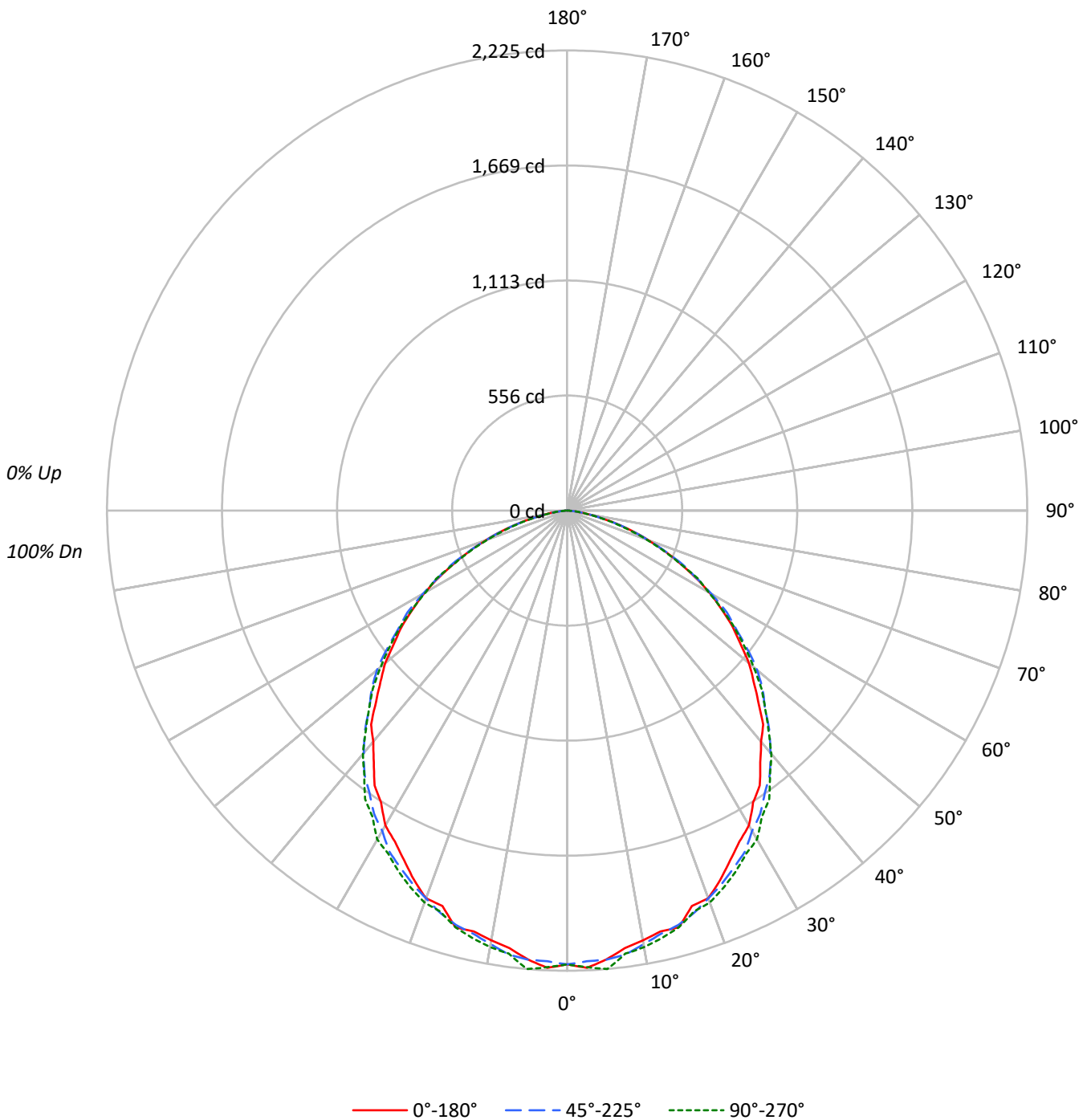
Lumens per Lamp: N/A  
Luminaire Lumens: 5530.0 lumens  
Efficiency: N/A  
Efficacy: 118.2 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 46.8  
Input Voltage (V):  
Input Current (Ain): NR  
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																												
1	110	105	101	98	107	103	100	96	99	96	93	95	93	90	91	90	88	86																												
2	100	93	86	81	98	91	85	80	87	82	78	84	80	76	81	78	75	73																												
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64	62																												
4	84	73	64	58	82	71	64	58	69	62	57	67	61	56	65	59	55	53																												
5	78	65	57	50	76	64	56	50	62	55	49	60	54	49	58	53	48	46																												
6	72	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	43	41																												
7	67	53	45	39	65	53	45	39	51	44	39	50	43	38	48	42	38	36																												
8	62	49	41	35	61	48	40	35	47	40	34	46	39	34	44	39	34	32																												
9	58	45	37	31	57	44	37	31	43	36	31	42	36	31	41	35	31	29																												
10	54	41	34	29	53	41	33	28	40	33	28	39	33	28	38	32	28	26																												

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

	0°	45°	90°
0°	5905	5905	5905
5°	5885	5887	6011
10°	5766	5816	5857
15°	5811	5780	5812
20°	5713	5713	5774
25°	5537	5659	5721
30°	5461	5557	5705
35°	5333	5472	5595
40°	5125	5372	5396
45°	4970	5147	5155
50°	4807	5024	4928
55°	4580	4669	4636
60°	4283	4325	4248
65°	3819	3916	3792
70°	3277	3288	3197
75°	2595	2589	2489
80°	1739	1691	1624
85°	945	936	874

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 5280 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	206.4	3.7
10°-20°	584.9	10.6
20°-30°	876.4	15.8
30°-40°	1038.7	18.8
40°-50°	1040.6	18.8
50°-60°	883.3	16.0
60°-70°	595.5	10.8
70°-80°	261.7	4.7
80°-90°	42.5	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°	1667.7	30.2
0°-40°	2706.4	48.9
0°-60°	4630.3	83.7
0°-90°	5530.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5530.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2194	2194	2194	2194	2194	
5°	2179	2174	2179	2173	2225	205
15°	2086	2062	2075	2085	2086	581
25°	1865	1875	1906	1931	1927	862
35°	1623	1628	1666	1704	1703	1008
45°	1306	1330	1352	1387	1354	1010
55°	976	970	995	988	988	868
65°	600	592	615	592	596	596
75°	250	244	249	232	239	267
85°	31	30	30	30	28	44
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2194.2	2194.2	2194.2	2194.2	2194.2
2.5°	2213.1	2196.4	2180.8	2199.0	2210.0
5°	2178.6	2173.5	2179.4	2172.9	2225.3
7.5°	2133.8	2153.4	2164.7	2157.6	2160.7
10°	2110.0	2103.2	2128.4	2146.0	2143.5
12.5°	2084.5	2094.7	2096.1	2115.1	2116.8
15°	2085.9	2061.9	2074.6	2085.4	2086.2
17.5°	2004.9	2031.0	2039.8	2064.4	2033.8
20°	1995.0	1976.0	1995.0	2020.2	2016.3
22.5°	1934.1	1912.8	1953.6	1976.0	1974.6
25°	1865.0	1875.2	1905.8	1930.7	1926.7
27.5°	1804.3	1816.2	1859.9	1894.1	1872.1
30°	1757.6	1751.6	1788.5	1819.1	1836.1
32.5°	1674.0	1695.6	1738.6	1768.9	1752.8
35°	1623.3	1628.1	1665.8	1704.3	1703.2
37.5°	1534.6	1557.0	1610.0	1620.8	1610.8
40°	1459.0	1481.4	1529.3	1540.9	1536.1
42.5°	1403.2	1407.2	1448.2	1461.5	1440.3
45°	1306.0	1330.4	1352.5	1387.3	1354.5
47.5°	1223.3	1234.6	1282.2	1291.6	1274.3
50°	1148.2	1152.2	1200.1	1188.4	1177.1
52.5°	1053.9	1070.6	1097.5	1095.2	1081.9
55°	976.3	969.7	995.2	988.4	988.2
57.5°	883.0	894.4	915.3	904.6	887.3
60°	795.8	796.1	803.7	791.5	789.3
62.5°	698.6	702.0	703.7	688.7	713.1
65°	599.7	591.8	615.0	591.5	595.5
67.5°	508.8	512.8	510.5	495.8	501.4
70°	416.5	421.6	417.9	401.2	406.3
72.5°	332.0	325.8	329.8	308.8	318.4
75°	249.6	244.5	249.0	231.5	239.4
77.5°	170.0	173.9	171.1	161.8	167.1
80°	112.2	109.1	109.1	103.7	104.8
82.5°	65.4	62.3	61.5	59.8	62.3
85°	30.6	29.7	30.3	29.5	28.3
87.5°	11.0	11.3	11.3	10.8	10.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)