

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: P590884

Luminaire Tested: FSR-24-2-LD4-4LO-50-UNV-81-97-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590884  
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-50-UNV-81-97-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .375 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

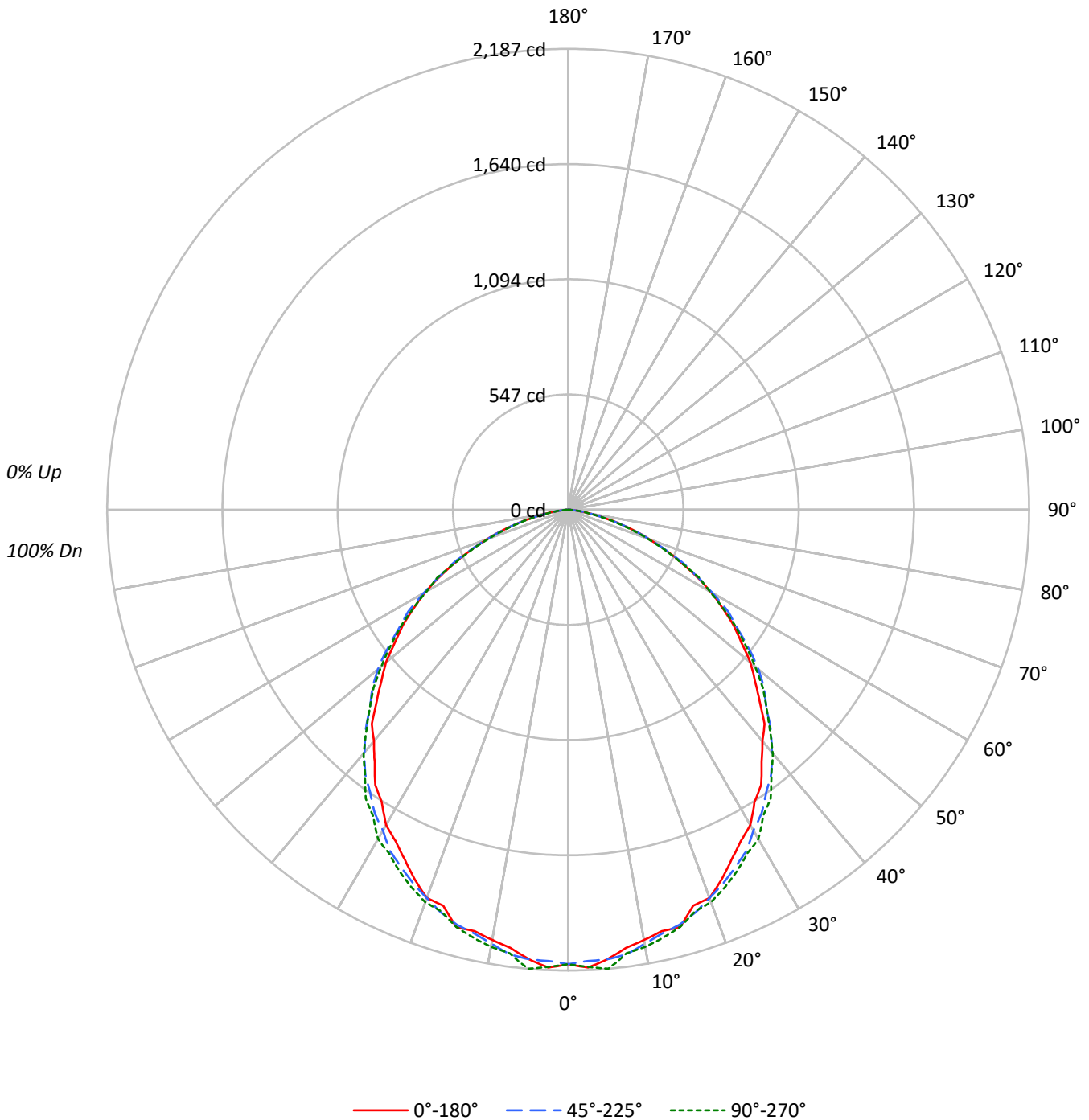
Lumens per Lamp: N/A  
Luminaire Lumens: 5435.0 lumens  
Efficiency: N/A  
Efficacy: 116.1 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 46.8  
Input Voltage (V):  
Input Current (Ain): NR  
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					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				
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°	5803	5803	5803
5°	5784	5786	5908
10°	5667	5716	5756
15°	5711	5680	5712
20°	5615	5615	5675
25°	5442	5561	5622
30°	5368	5462	5607
35°	5241	5378	5499
40°	5037	5280	5303
45°	4885	5058	5066
50°	4724	4937	4843
55°	4502	4589	4556
60°	4209	4251	4175
65°	3753	3849	3727
70°	3220	3231	3142
75°	2550	2544	2446
80°	1709	1661	1596
85°	929	920	858

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 5189 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	202.8	3.7
10°-20°	574.9	10.6
20°-30°	861.3	15.8
30°-40°	1020.8	18.8
40°-50°	1022.7	18.8
50°-60°	868.1	16.0
60°-70°	585.3	10.8
70°-80°	257.2	4.7
80°-90°	41.8	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°	1639.1	30.2
0°-40°	2659.9	48.9
0°-60°	4550.7	83.7
0°-90°	5435.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5435.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2156	2156	2156	2156	2156	
5°	2141	2136	2142	2136	2187	202
15°	2050	2026	2039	2050	2050	571
25°	1833	1843	1873	1898	1894	847
35°	1595	1600	1637	1675	1674	991
45°	1284	1308	1329	1364	1331	993
55°	960	953	978	972	971	854
65°	589	582	604	581	585	586
75°	245	240	245	228	235	263
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°	2156.5	2156.5	2156.5	2156.5	2156.5
2.5°	2175.1	2158.7	2143.4	2161.2	2172.1
5°	2141.2	2136.1	2142.0	2135.6	2187.1
7.5°	2097.2	2116.4	2127.5	2120.6	2123.6
10°	2073.8	2067.1	2091.9	2109.1	2106.6
12.5°	2048.7	2058.7	2060.1	2078.8	2080.5
15°	2050.1	2026.4	2039.0	2049.6	2050.4
17.5°	1970.5	1996.1	2004.7	2028.9	1998.9
20°	1960.7	1942.1	1960.7	1985.5	1981.6
22.5°	1900.9	1880.0	1920.1	1942.1	1940.7
25°	1832.9	1843.0	1873.0	1897.5	1893.6
27.5°	1773.3	1785.0	1827.9	1861.6	1839.9
30°	1727.4	1721.6	1757.8	1787.8	1804.5
32.5°	1645.3	1666.4	1708.7	1738.5	1722.7
35°	1595.4	1600.2	1637.2	1675.1	1673.9
37.5°	1508.3	1530.3	1582.3	1592.9	1583.2
40°	1433.9	1455.9	1503.0	1514.4	1509.7
42.5°	1379.1	1383.0	1423.4	1436.4	1415.6
45°	1283.6	1307.5	1329.2	1363.5	1331.2
47.5°	1202.3	1213.4	1260.2	1269.4	1252.4
50°	1128.5	1132.4	1179.4	1168.0	1156.9
52.5°	1035.8	1052.2	1078.7	1076.4	1063.3
55°	959.5	953.1	978.1	971.5	971.2
57.5°	867.9	879.0	899.6	889.0	872.1
60°	782.1	782.4	789.9	777.9	775.7
62.5°	686.6	690.0	691.6	676.9	700.8
65°	589.4	581.6	604.5	581.4	585.3
67.5°	500.1	504.0	501.7	487.3	492.8
70°	409.3	414.3	410.7	394.3	399.3
72.5°	326.3	320.2	324.1	303.5	313.0
75°	245.3	240.3	244.7	227.5	235.3
77.5°	167.1	171.0	168.2	159.0	164.3
80°	110.3	107.2	107.2	101.9	103.0
82.5°	64.3	61.3	60.4	58.7	61.3
85°	30.1	29.2	29.8	29.0	27.8
87.5°	10.9	11.1	11.1	10.6	10.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)