

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: P590644

Luminaire Tested: FSR-24-2-LD4-3STD-35-UNV-93-97-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590644  
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-35-UNV-93-97-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR TEMPER  
GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

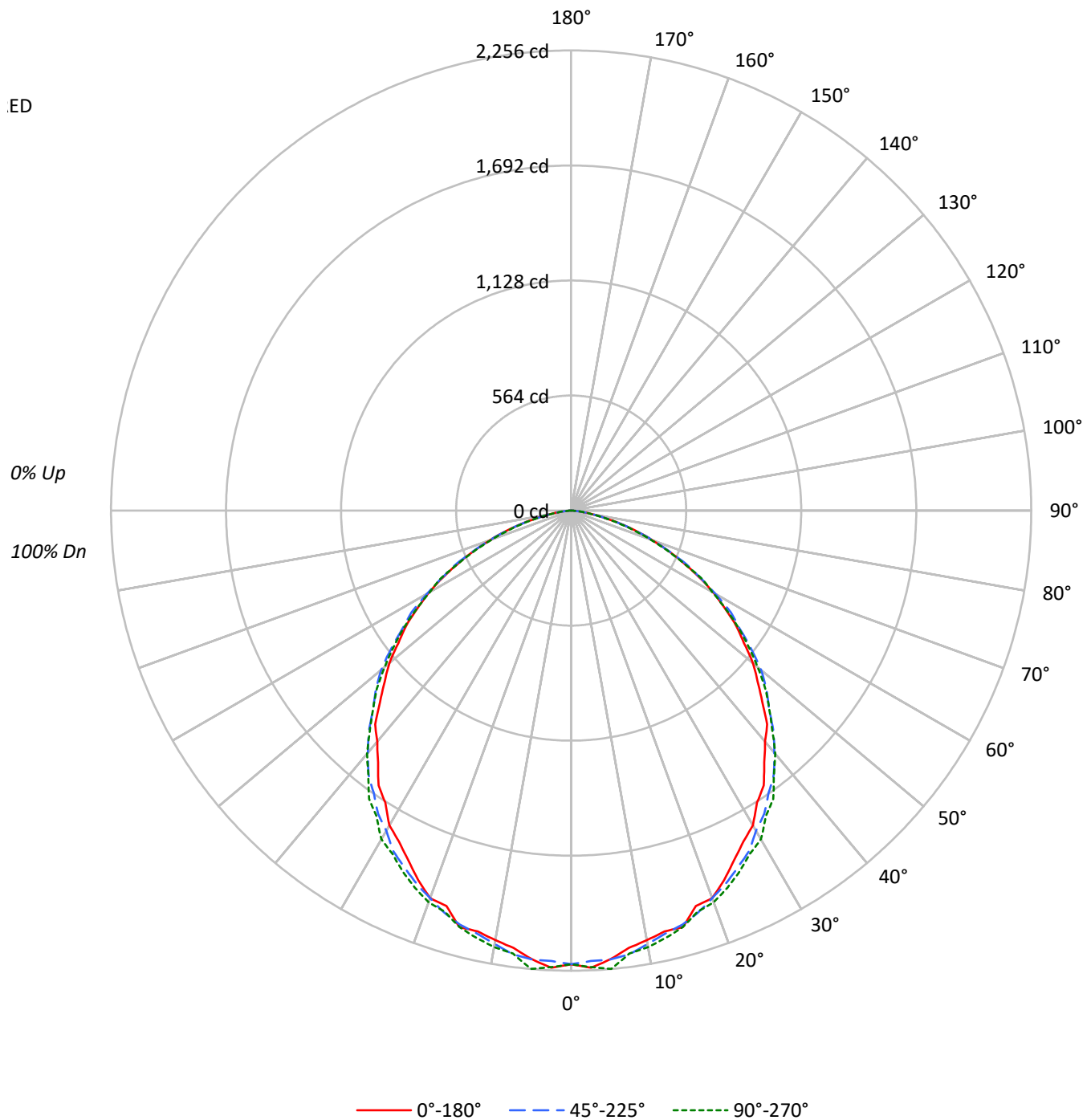
Lumens per Lamp: N/A  
Luminaire Lumens: 5605.0 lumens  
Efficiency: N/A  
Efficacy: 112.1 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 50  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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					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°	5984	5984	5984
5°	5965	5967	6093
10°	5844	5895	5936
15°	5890	5858	5891
20°	5791	5791	5852
25°	5613	5735	5798
30°	5535	5633	5783
35°	5405	5547	5671
40°	5195	5445	5469
45°	5037	5217	5224
50°	4872	5092	4995
55°	4642	4732	4699
60°	4341	4384	4306
65°	3871	3969	3843
70°	3321	3332	3240
75°	2630	2624	2522
80°	1762	1714	1646
85°	957	948	886

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 5351 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	209.2	3.7
10°-20°	592.9	10.6
20°-30°	888.3	15.8
30°-40°	1052.8	18.8
40°-50°	1054.7	18.8
50°-60°	895.3	16.0
60°-70°	603.6	10.8
70°-80°	265.2	4.7
80°-90°	43.1	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°	1690.3	30.2
0°-40°	2743.1	48.9
0°-60°	4693.1	83.7
0°-90°	5605.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5605.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2224	2224	2224	2224	2224	
5°	2208	2203	2209	2202	2256	208
15°	2114	2090	2103	2114	2114	589
25°	1890	1901	1932	1957	1953	874
35°	1645	1650	1688	1728	1726	1022
45°	1324	1348	1371	1406	1373	1024
55°	990	983	1009	1002	1002	880
65°	608	600	623	600	604	605
75°	253	248	252	235	243	271
85°	31	30	31	30	29	45
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2223.9	2223.9	2223.9	2223.9	2223.9
2.5°	2243.2	2226.2	2210.4	2228.8	2240.0
5°	2208.1	2203.0	2209.0	2202.4	2255.5
7.5°	2162.8	2182.6	2194.1	2186.9	2190.0
10°	2138.6	2131.7	2157.3	2175.1	2172.5
12.5°	2112.8	2123.1	2124.6	2143.8	2145.5
15°	2114.2	2089.8	2102.7	2113.7	2114.5
17.5°	2032.1	2058.5	2067.4	2092.4	2061.4
20°	2022.1	2002.8	2022.1	2047.6	2043.6
22.5°	1960.3	1938.8	1980.1	2002.8	2001.4
25°	1890.3	1900.6	1931.6	1956.9	1952.9
27.5°	1828.8	1840.9	1885.1	1919.8	1897.4
30°	1781.4	1775.4	1812.7	1843.7	1861.0
32.5°	1696.7	1718.6	1762.2	1792.9	1776.6
35°	1645.3	1650.2	1688.4	1727.5	1726.3
37.5°	1555.5	1578.1	1631.8	1642.7	1632.7
40°	1478.8	1501.5	1550.0	1561.8	1556.9
42.5°	1422.2	1426.2	1467.9	1481.4	1459.8
45°	1323.7	1348.4	1370.8	1406.1	1372.8
47.5°	1239.9	1251.4	1299.6	1309.1	1291.6
50°	1163.8	1167.8	1216.3	1204.6	1193.1
52.5°	1068.2	1085.1	1112.4	1110.1	1096.6
55°	989.5	982.9	1008.7	1001.8	1001.6
57.5°	895.0	906.5	927.8	916.8	899.3
60°	806.6	806.9	814.6	802.3	800.0
62.5°	708.1	711.5	713.3	698.0	722.7
65°	607.9	599.8	623.4	599.6	603.6
67.5°	515.7	519.7	517.4	502.5	508.2
70°	422.1	427.3	423.5	406.6	411.8
72.5°	336.5	330.2	334.2	313.0	322.7
75°	253.0	247.8	252.4	234.6	242.6
77.5°	172.3	176.3	173.4	164.0	169.4
80°	113.7	110.6	110.6	105.1	106.2
82.5°	66.3	63.2	62.3	60.6	63.2
85°	31.0	30.2	30.7	29.9	28.7
87.5°	11.2	11.5	11.5	10.9	10.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)