

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: P590858

Luminaire Tested: FSR-24-2-LD4-4LO-40-UNV-82-94-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590858  
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-82-94-EDD  
Description: 2X2 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .187 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

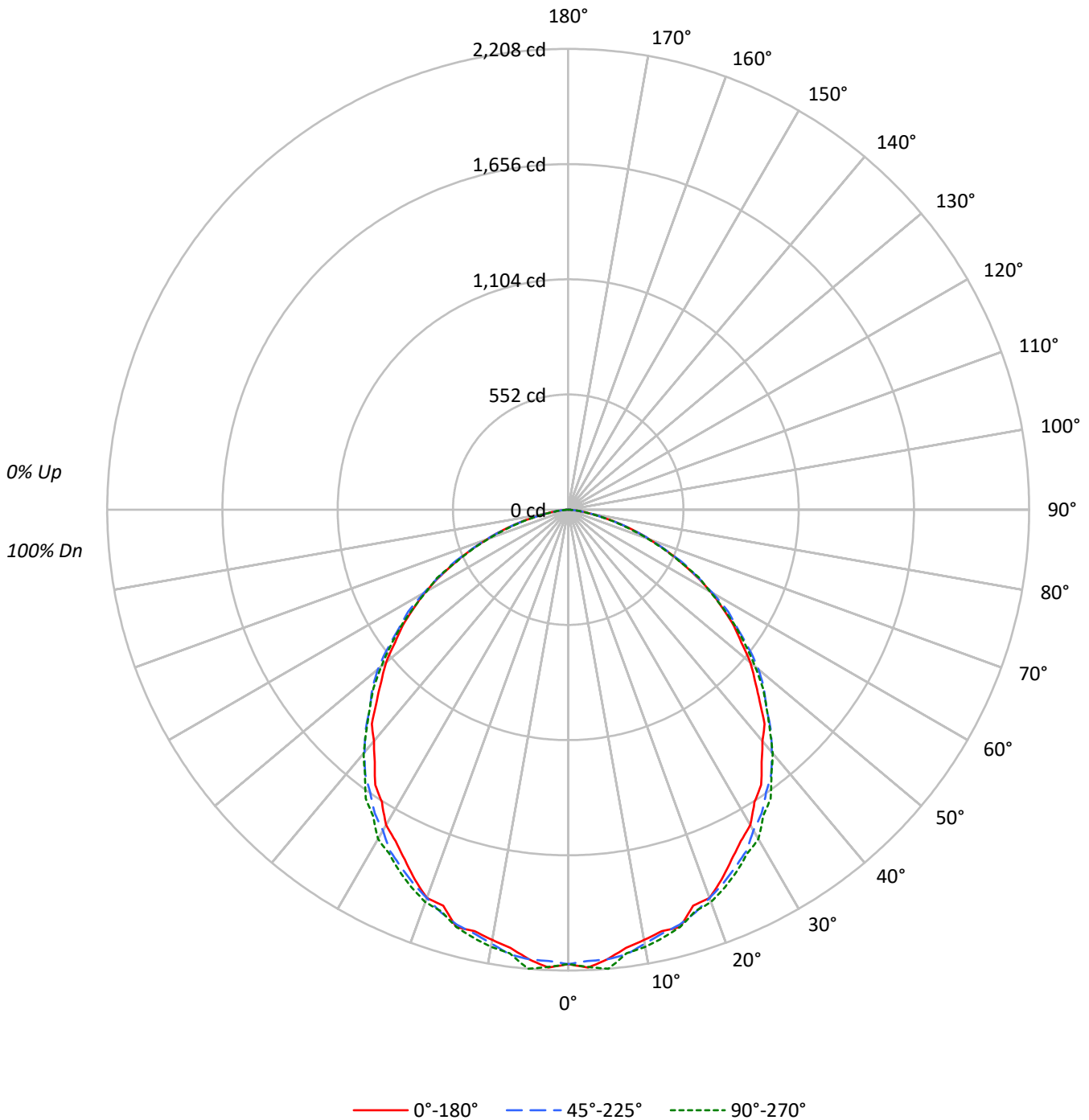
Lumens per Lamp: N/A  
Luminaire Lumens: 5487.0 lumens  
Efficiency: N/A  
Efficacy: 117.2 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 46.8  
Input Voltage (V):  
Input Current (Ain): NR  
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					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					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°	5859	5859	5859
5°	5839	5841	5964
10°	5721	5771	5811
15°	5766	5735	5767
20°	5669	5669	5729
25°	5494	5614	5676
30°	5419	5514	5661
35°	5291	5430	5552
40°	5086	5330	5354
45°	4932	5107	5114
50°	4770	4985	4890
55°	4545	4633	4600
60°	4250	4292	4215
65°	3789	3886	3762
70°	3251	3262	3172
75°	2574	2569	2469
80°	1725	1677	1612
85°	939	929	868

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 5238 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	204.8	3.7
10°-20°	580.4	10.6
20°-30°	869.6	15.8
30°-40°	1030.6	18.8
40°-50°	1032.5	18.8
50°-60°	876.4	16.0
60°-70°	590.9	10.8
70°-80°	259.6	4.7
80°-90°	42.2	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°	1654.7	30.2
0°-40°	2685.4	48.9
0°-60°	4594.3	83.7
0°-90°	5487.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5487.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2177	2177	2177	2177	2177	
5°	2162	2157	2162	2156	2208	204
15°	2070	2046	2058	2069	2070	577
25°	1850	1861	1891	1916	1912	855
35°	1611	1616	1653	1691	1690	1000
45°	1296	1320	1342	1376	1344	1002
55°	969	962	988	981	980	862
65°	595	587	610	587	591	592
75°	248	243	247	230	238	265
85°	30	30	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°	2177.1	2177.1	2177.1	2177.1	2177.1
2.5°	2195.9	2179.4	2163.9	2181.9	2192.8
5°	2161.6	2156.6	2162.5	2156.0	2208.0
7.5°	2117.2	2136.6	2147.9	2140.8	2143.9
10°	2093.6	2086.9	2111.9	2129.3	2126.8
12.5°	2068.3	2078.4	2079.8	2098.7	2100.4
15°	2069.7	2045.8	2058.5	2069.2	2070.0
17.5°	1989.3	2015.2	2023.9	2048.4	2018.0
20°	1979.5	1960.7	1979.5	2004.5	2000.6
22.5°	1919.1	1898.0	1938.5	1960.7	1959.3
25°	1850.5	1860.6	1890.9	1915.7	1911.7
27.5°	1790.3	1802.1	1845.4	1879.4	1857.5
30°	1743.9	1738.0	1774.6	1804.9	1821.8
32.5°	1661.0	1682.4	1725.1	1755.2	1739.2
35°	1610.7	1615.5	1652.9	1691.1	1690.0
37.5°	1522.7	1544.9	1597.5	1608.2	1598.3
40°	1447.7	1469.9	1517.4	1528.9	1524.1
42.5°	1392.3	1396.2	1437.0	1450.2	1429.1
45°	1295.9	1320.0	1342.0	1376.5	1343.9
47.5°	1213.8	1225.0	1272.2	1281.5	1264.4
50°	1139.3	1143.2	1190.7	1179.2	1168.0
52.5°	1045.7	1062.3	1089.0	1086.7	1073.5
55°	968.7	962.2	987.5	980.8	980.5
57.5°	876.2	887.4	908.2	897.5	880.4
60°	789.6	789.9	797.5	785.4	783.1
62.5°	693.2	696.6	698.2	683.3	707.5
65°	595.1	587.2	610.3	586.9	590.9
67.5°	504.9	508.8	506.5	491.9	497.5
70°	413.2	418.3	414.6	398.0	403.1
72.5°	329.4	323.3	327.2	306.4	316.0
75°	247.6	242.6	247.1	229.7	237.5
77.5°	168.7	172.6	169.8	160.5	165.8
80°	111.3	108.2	108.2	102.9	104.0
82.5°	64.9	61.8	61.0	59.3	61.8
85°	30.4	29.5	30.1	29.2	28.1
87.5°	11.0	11.2	11.2	10.7	10.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)