

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: P590851

Luminaire Tested: FSR-24-2-LD4-4LO-40-UNV-81-96-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590851  
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-81-96-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .250 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

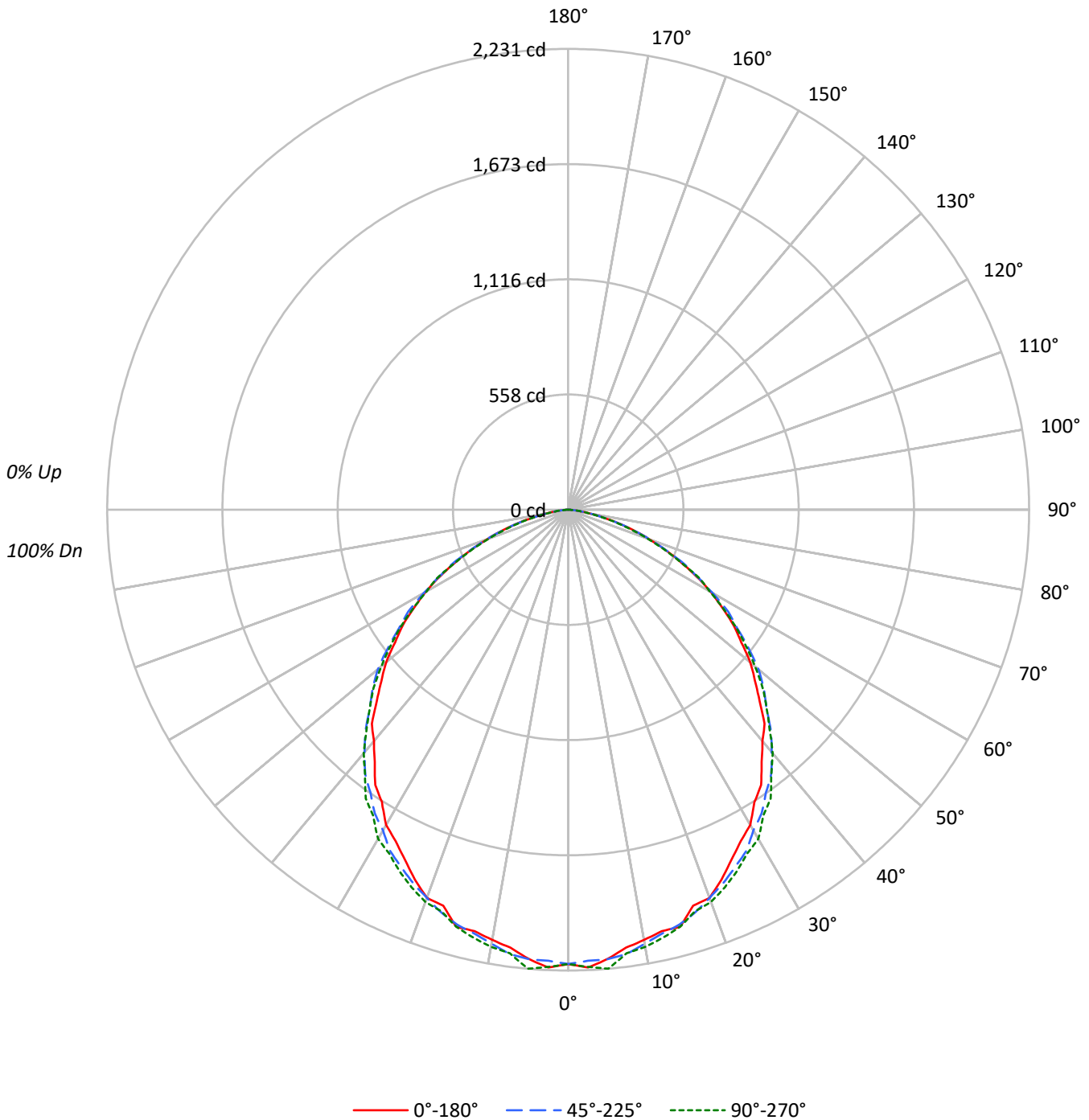
Lumens per Lamp: N/A  
Luminaire Lumens: 5543.0 lumens  
Efficiency: N/A  
Efficacy: 118.4 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 46.8  
Input Voltage (V):  
Input Current (Ain): NR  
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	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°	5918	5918	5918
5°	5899	5901	6025
10°	5779	5829	5871
15°	5825	5793	5826
20°	5727	5727	5787
25°	5551	5672	5734
30°	5474	5570	5719
35°	5345	5485	5608
40°	5137	5385	5409
45°	4982	5159	5167
50°	4818	5036	4940
55°	4591	4680	4647
60°	4293	4336	4258
65°	3828	3926	3801
70°	3284	3296	3204
75°	2601	2595	2495
80°	1743	1694	1629
85°	948	939	877

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 5292 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	206.9	3.7
10°-20°	586.3	10.6
20°-30°	878.4	15.8
30°-40°	1041.1	18.8
40°-50°	1043.0	18.8
50°-60°	885.4	16.0
60°-70°	596.9	10.8
70°-80°	262.3	4.7
80°-90°	42.6	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°	1671.6	30.2
0°-40°	2712.8	48.9
0°-60°	4641.2	83.7
0°-90°	5543.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5543.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2199	2199	2199	2199	2199	
5°	2184	2179	2185	2178	2231	206
15°	2091	2067	2080	2090	2091	583
25°	1869	1880	1910	1935	1931	864
35°	1627	1632	1670	1708	1707	1010
45°	1309	1334	1356	1391	1358	1013
55°	978	972	998	991	990	870
65°	601	593	616	593	597	598
75°	250	245	250	232	240	268
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°	2199.3	2199.3	2199.3	2199.3	2199.3
2.5°	2218.3	2201.6	2186.0	2204.1	2215.2
5°	2183.7	2178.6	2184.6	2178.0	2230.6
7.5°	2138.8	2158.4	2169.8	2162.7	2165.8
10°	2115.0	2108.2	2133.4	2151.0	2148.5
12.5°	2089.4	2099.7	2101.1	2120.1	2121.8
15°	2090.8	2066.7	2079.5	2090.3	2091.1
17.5°	2009.6	2035.8	2044.6	2069.3	2038.6
20°	1999.7	1980.7	1999.7	2025.0	2021.0
22.5°	1938.6	1917.3	1958.2	1980.7	1979.2
25°	1869.4	1879.6	1910.2	1935.2	1931.3
27.5°	1808.6	1820.5	1864.2	1898.6	1876.5
30°	1761.7	1755.8	1792.7	1823.4	1840.4
32.5°	1678.0	1699.5	1742.7	1773.1	1756.9
35°	1627.1	1632.0	1669.7	1708.3	1707.2
37.5°	1538.2	1560.7	1613.8	1624.6	1614.6
40°	1462.4	1484.9	1532.9	1544.5	1539.7
42.5°	1406.5	1410.5	1451.6	1465.0	1443.7
45°	1309.1	1333.5	1355.7	1390.6	1357.6
47.5°	1226.2	1237.5	1285.2	1294.6	1277.3
50°	1150.9	1154.9	1202.9	1191.2	1179.9
52.5°	1056.4	1073.1	1100.1	1097.8	1084.5
55°	978.5	972.0	997.6	990.8	990.5
57.5°	885.1	896.5	917.5	906.7	889.4
60°	797.7	797.9	805.6	793.4	791.1
62.5°	700.3	703.7	705.4	690.3	714.7
65°	601.2	593.2	616.5	592.9	596.9
67.5°	510.0	514.0	511.7	496.9	502.6
70°	417.4	422.5	418.9	402.1	407.2
72.5°	332.8	326.6	330.5	309.5	319.2
75°	250.2	245.1	249.6	232.0	240.0
77.5°	170.4	174.4	171.5	162.1	167.5
80°	112.5	109.3	109.3	103.9	105.1
82.5°	65.6	62.5	61.6	59.9	62.5
85°	30.7	29.8	30.4	29.5	28.4
87.5°	11.1	11.4	11.4	10.8	10.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)