

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: P590227

Luminaire Tested: FSR-24-2-LD4-2HI-50-UNV-93-96-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590227  
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-LD4-2HI-50-UNV-93-96-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR TEMPER  
GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

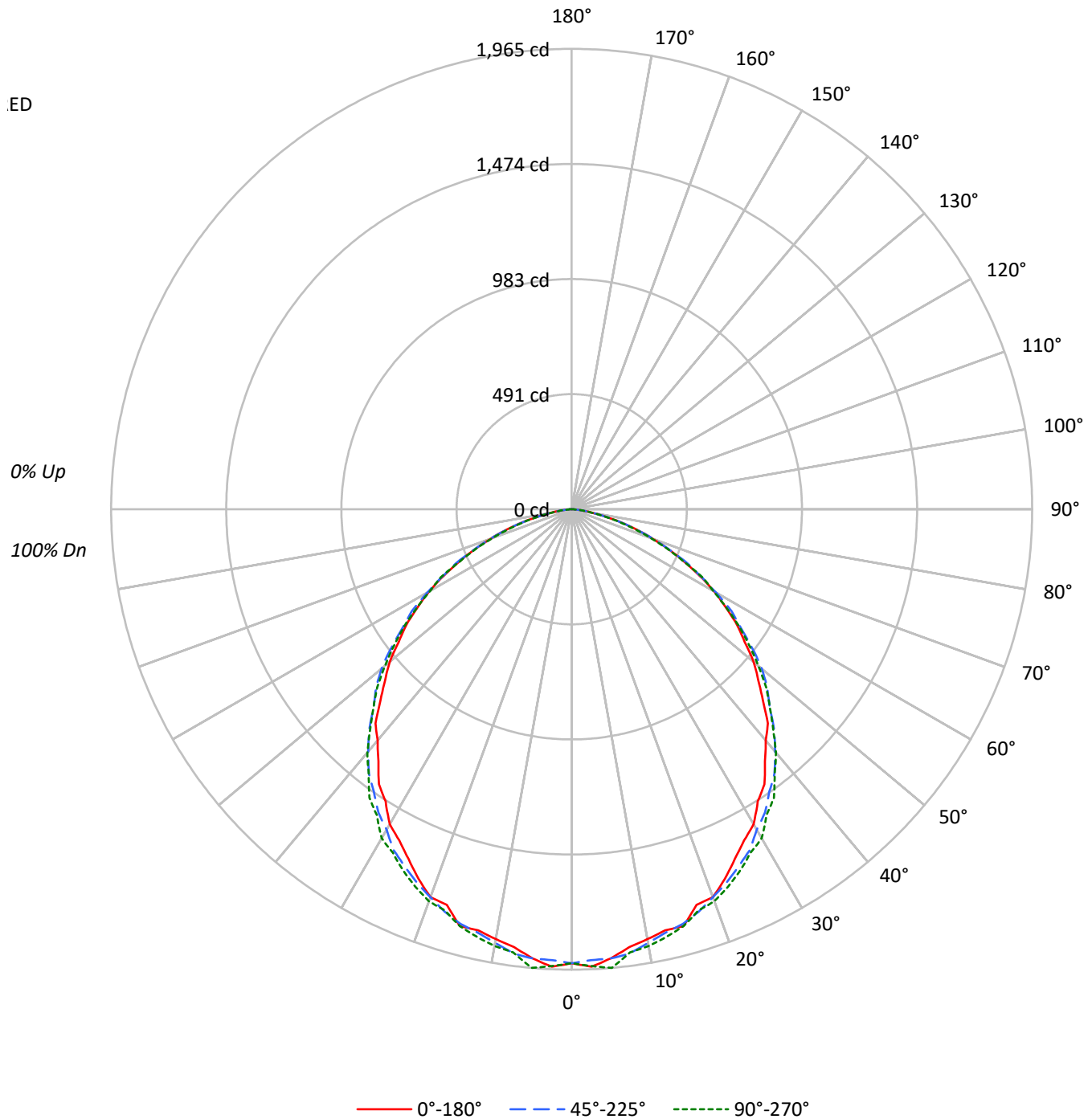
Lumens per Lamp: N/A  
Luminaire Lumens: 4883.0 lumens  
Efficiency: N/A  
Efficacy: 113.0 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 43.2  
Input Voltage (V):  
Input Current (Ain): NR  
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°	5214	5214	5214
5°	5196	5198	5308
10°	5091	5135	5172
15°	5131	5104	5132
20°	5045	5045	5098
25°	4890	4997	5051
30°	4822	4907	5038
35°	4709	4832	4940
40°	4526	4743	4764
45°	4389	4545	4552
50°	4245	4436	4351
55°	4044	4123	4093
60°	3782	3820	3751
65°	3372	3458	3348
70°	2893	2903	2822
75°	2292	2286	2198
80°	1536	1492	1435
85°	834	827	772

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 4662 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	182.2	3.7
10°-20°	516.5	10.6
20°-30°	773.8	15.8
30°-40°	917.2	18.8
40°-50°	918.9	18.8
50°-60°	779.9	16.0
60°-70°	525.8	10.8
70°-80°	231.1	4.7
80°-90°	37.6	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°	1472.6	30.2
0°-40°	2389.7	48.9
0°-60°	4088.5	83.7
0°-90°	4883.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4883.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1938	1938	1938	1938	1938	
5°	1924	1919	1924	1919	1965	181
15°	1842	1821	1832	1841	1842	513
25°	1647	1656	1683	1705	1701	761
35°	1433	1438	1471	1505	1504	890
45°	1153	1175	1194	1225	1196	892
55°	862	856	879	873	872	767
65°	530	523	543	522	526	527
75°	220	216	220	204	211	236
85°	27	26	27	26	25	39
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1937.5	1937.5	1937.5	1937.5	1937.5
2.5°	1954.2	1939.5	1925.7	1941.7	1951.5
5°	1923.7	1919.2	1924.4	1918.7	1965.0
7.5°	1884.2	1901.4	1911.4	1905.2	1907.9
10°	1863.2	1857.2	1879.4	1894.9	1892.7
12.5°	1840.6	1849.6	1850.9	1867.7	1869.2
15°	1841.9	1820.6	1831.9	1841.4	1842.1
17.5°	1770.3	1793.4	1801.1	1822.9	1795.9
20°	1761.6	1744.8	1761.6	1783.9	1780.4
22.5°	1707.8	1689.0	1725.1	1744.8	1743.6
25°	1646.8	1655.8	1682.8	1704.8	1701.3
27.5°	1593.2	1603.7	1642.3	1672.5	1653.0
30°	1552.0	1546.7	1579.2	1606.2	1621.3
32.5°	1478.2	1497.2	1535.2	1562.0	1547.7
35°	1433.4	1437.6	1470.9	1504.9	1503.9
37.5°	1355.1	1374.9	1421.6	1431.1	1422.4
40°	1288.3	1308.1	1350.3	1360.6	1356.3
42.5°	1239.0	1242.5	1278.8	1290.6	1271.8
45°	1153.2	1174.7	1194.2	1225.0	1196.0
47.5°	1080.2	1090.2	1132.2	1140.5	1125.2
50°	1013.9	1017.4	1059.7	1049.4	1039.4
52.5°	930.6	945.3	969.1	967.1	955.3
55°	862.0	856.3	878.8	872.8	872.5
57.5°	779.7	789.7	808.3	798.7	783.5
60°	702.7	702.9	709.7	698.9	696.9
62.5°	616.9	619.9	621.4	608.1	629.6
65°	529.6	522.6	543.1	522.3	525.8
67.5°	449.3	452.8	450.8	437.8	442.8
70°	367.7	372.2	369.0	354.2	358.7
72.5°	293.2	287.7	291.2	272.7	281.2
75°	220.4	215.9	219.9	204.4	211.4
77.5°	150.1	153.6	151.1	142.8	147.6
80°	99.1	96.3	96.3	91.6	92.6
82.5°	57.8	55.0	54.3	52.8	55.0
85°	27.0	26.3	26.8	26.0	25.0
87.5°	9.8	10.0	10.0	9.5	9.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)