

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: P590856

Luminaire Tested: FSR-24-2-LD4-4LO-40-UNV-82-87-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590856  
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-82-87-EDD  
Description: 2X2 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

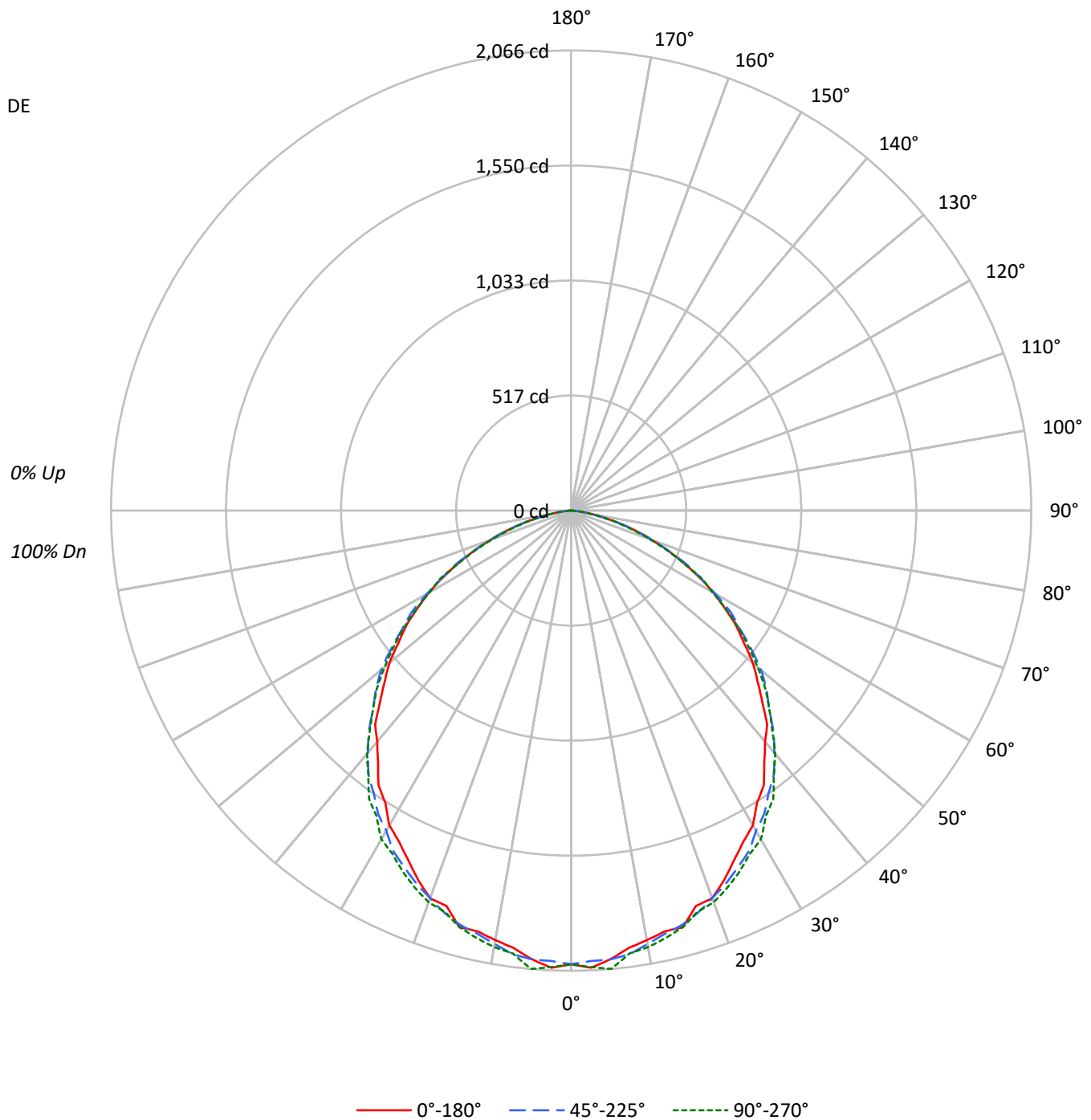
Lumens per Lamp: N/A  
Luminaire Lumens: 5133.0 lumens  
Efficiency: N/A  
Efficacy: 109.7 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 46.8  
Input Voltage (V):  
Input Current (Ain): NR  
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°	5480	5480	5480
5°	5462	5465	5580
10°	5352	5398	5437
15°	5394	5365	5395
20°	5303	5303	5359
25°	5140	5252	5310
30°	5069	5158	5296
35°	4950	5079	5193
40°	4757	4986	5009
45°	4614	4778	4784
50°	4462	4663	4574
55°	4252	4334	4303
60°	3976	4015	3943
65°	3545	3635	3519
70°	3042	3052	2967
75°	2409	2403	2310
80°	1613	1568	1508
85°	877	868	812

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 4900 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	191.6	3.7
10°-20°	543.0	10.6
20°-30°	813.5	15.8
30°-40°	964.1	18.8
40°-50°	965.9	18.8
50°-60°	819.9	16.0
60°-70°	552.8	10.8
70°-80°	242.9	4.7
80°-90°	39.5	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°	1548.0	30.2
0°-40°	2512.1	48.9
0°-60°	4297.9	83.7
0°-90°	5133.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5133.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2037	2037	2037	2037	2037	
5°	2022	2017	2023	2017	2066	191
15°	1936	1914	1926	1936	1936	539
25°	1731	1740	1769	1792	1788	800
35°	1507	1511	1546	1582	1581	936
45°	1212	1235	1255	1288	1257	938
55°	906	900	924	918	917	806
65°	557	549	571	549	553	554
75°	232	227	231	215	222	248
85°	28	28	28	27	26	41
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2036.6	2036.6	2036.6	2036.6	2036.6
2.5°	2054.3	2038.7	2024.3	2041.1	2051.4
5°	2022.2	2017.4	2023.0	2016.9	2065.6
7.5°	1980.6	1998.8	2009.3	2002.7	2005.6
10°	1958.5	1952.2	1975.6	1991.9	1989.6
12.5°	1934.9	1944.3	1945.7	1963.3	1964.9
15°	1936.2	1913.8	1925.7	1935.7	1936.5
17.5°	1861.0	1885.2	1893.3	1916.2	1887.8
20°	1851.8	1834.2	1851.8	1875.2	1871.5
22.5°	1795.2	1775.5	1813.4	1834.2	1832.8
25°	1731.1	1740.5	1768.9	1792.1	1788.4
27.5°	1674.8	1685.9	1726.3	1758.2	1737.7
30°	1631.4	1625.9	1660.1	1688.5	1704.3
32.5°	1553.8	1573.8	1613.8	1641.9	1626.9
35°	1506.8	1511.2	1546.2	1582.0	1580.9
37.5°	1424.5	1445.2	1494.4	1504.4	1495.2
40°	1354.3	1375.0	1419.5	1430.3	1425.8
42.5°	1302.5	1306.1	1344.3	1356.6	1336.9
45°	1212.3	1234.9	1255.4	1287.7	1257.2
47.5°	1135.5	1146.0	1190.2	1198.8	1182.8
50°	1065.8	1069.5	1113.9	1103.1	1092.6
52.5°	978.2	993.7	1018.7	1016.6	1004.3
55°	906.2	900.1	923.8	917.5	917.2
57.5°	819.7	830.2	849.6	839.6	823.6
60°	738.7	738.9	746.0	734.7	732.6
62.5°	648.5	651.6	653.2	639.3	661.9
65°	556.7	549.3	570.9	549.1	552.7
67.5°	472.3	476.0	473.9	460.2	465.4
70°	386.6	391.3	387.9	372.4	377.1
72.5°	308.2	302.4	306.1	286.6	295.6
75°	231.7	226.9	231.1	214.8	222.2
77.5°	157.8	161.5	158.8	150.2	155.1
80°	104.1	101.2	101.2	96.2	97.3
82.5°	60.7	57.9	57.1	55.5	57.9
85°	28.4	27.6	28.1	27.3	26.3
87.5°	10.3	10.5	10.5	10.0	9.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)