

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: P590625

Luminaire Tested: FSR-24-2-LD4-3STD-35-UNV-81-88-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590625  
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-81-88-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

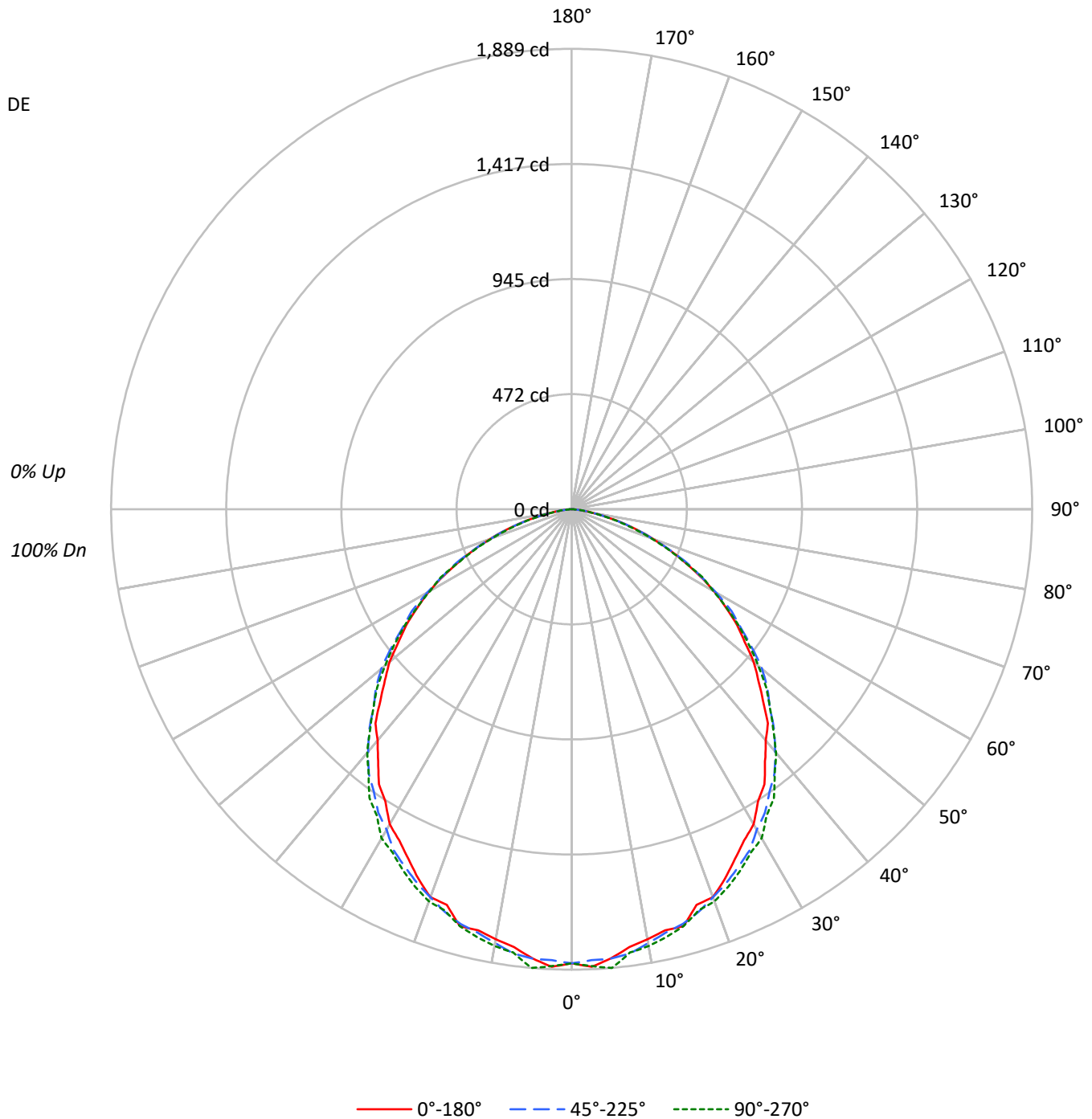
Lumens per Lamp: N/A  
Luminaire Lumens: 4695.0 lumens  
Efficiency: N/A  
Efficacy: 93.9 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 50  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	5013	5013	5013
5°	4996	4998	5103
10°	4895	4938	4973
15°	4934	4907	4934
20°	4851	4851	4902
25°	4701	4804	4857
30°	4637	4718	4844
35°	4527	4646	4750
40°	4351	4561	4581
45°	4220	4370	4376
50°	4081	4266	4184
55°	3888	3964	3936
60°	3636	3673	3606
65°	3242	3325	3219
70°	2782	2792	2714
75°	2203	2198	2113
80°	1475	1435	1379
85°	803	794	744

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 4482 cd/sqm

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	175.2	3.7
10°-20°	496.6	10.6
20°-30°	744.0	15.8
30°-40°	881.8	18.8
40°-50°	883.5	18.8
50°-60°	749.9	16.0
60°-70°	505.6	10.8
70°-80°	222.2	4.7
80°-90°	36.1	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°	1415.9	30.2
0°-40°	2297.7	48.9
0°-60°	3931.1	83.7
0°-90°	4695.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4695.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1863	1863	1863	1863	1863	
5°	1850	1845	1850	1845	1889	174
15°	1771	1750	1761	1770	1771	493
25°	1583	1592	1618	1639	1636	732
35°	1378	1382	1414	1447	1446	856
45°	1109	1130	1148	1178	1150	858
55°	829	823	845	839	839	737
65°	509	502	522	502	506	506
75°	212	208	211	196	203	227
85°	26	25	26	25	24	38
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1862.9	1862.9	1862.9	1862.9	1862.9
2.5°	1879.0	1864.8	1851.6	1866.9	1876.3
5°	1849.6	1845.3	1850.4	1844.8	1889.3
7.5°	1811.6	1828.2	1837.8	1831.8	1834.5
10°	1791.4	1785.6	1807.1	1822.0	1819.8
12.5°	1769.8	1778.4	1779.6	1795.8	1797.2
15°	1771.0	1750.5	1761.4	1770.5	1771.2
17.5°	1702.2	1724.3	1731.8	1752.7	1726.7
20°	1693.8	1677.7	1693.8	1715.2	1711.8
22.5°	1642.1	1624.0	1658.7	1677.7	1676.5
25°	1583.4	1592.0	1618.0	1639.2	1635.8
27.5°	1531.9	1542.0	1579.0	1608.1	1589.4
30°	1492.2	1487.2	1518.4	1544.4	1558.8
32.5°	1421.3	1439.5	1476.1	1501.8	1488.1
35°	1378.2	1382.3	1414.3	1447.0	1446.0
37.5°	1302.9	1321.9	1366.9	1376.0	1367.6
40°	1238.7	1257.7	1298.3	1308.2	1304.1
42.5°	1191.3	1194.7	1229.6	1240.9	1222.8
45°	1108.8	1129.5	1148.3	1177.8	1149.9
47.5°	1038.6	1048.2	1088.6	1096.5	1081.9
50°	974.8	978.2	1018.9	1009.0	999.4
52.5°	894.7	908.9	931.8	929.9	918.6
55°	828.8	823.3	845.0	839.2	838.9
57.5°	749.7	759.3	777.1	768.0	753.3
60°	675.6	675.9	682.4	672.0	670.1
62.5°	593.1	596.0	597.5	584.7	605.4
65°	509.2	502.5	522.2	502.2	505.6
67.5°	432.0	435.3	433.4	420.9	425.7
70°	353.6	357.9	354.8	340.6	344.9
72.5°	281.9	276.6	280.0	262.2	270.3
75°	211.9	207.6	211.4	196.5	203.2
77.5°	144.3	147.7	145.3	137.3	141.9
80°	95.2	92.6	92.6	88.0	89.0
82.5°	55.6	52.9	52.2	50.8	52.9
85°	26.0	25.3	25.7	25.0	24.1
87.5°	9.4	9.6	9.6	9.1	8.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)