

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: P590657

Luminaire Tested: FSR-24-2-LD4-3STD-40-UNV-81-88-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590657  
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-40-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 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

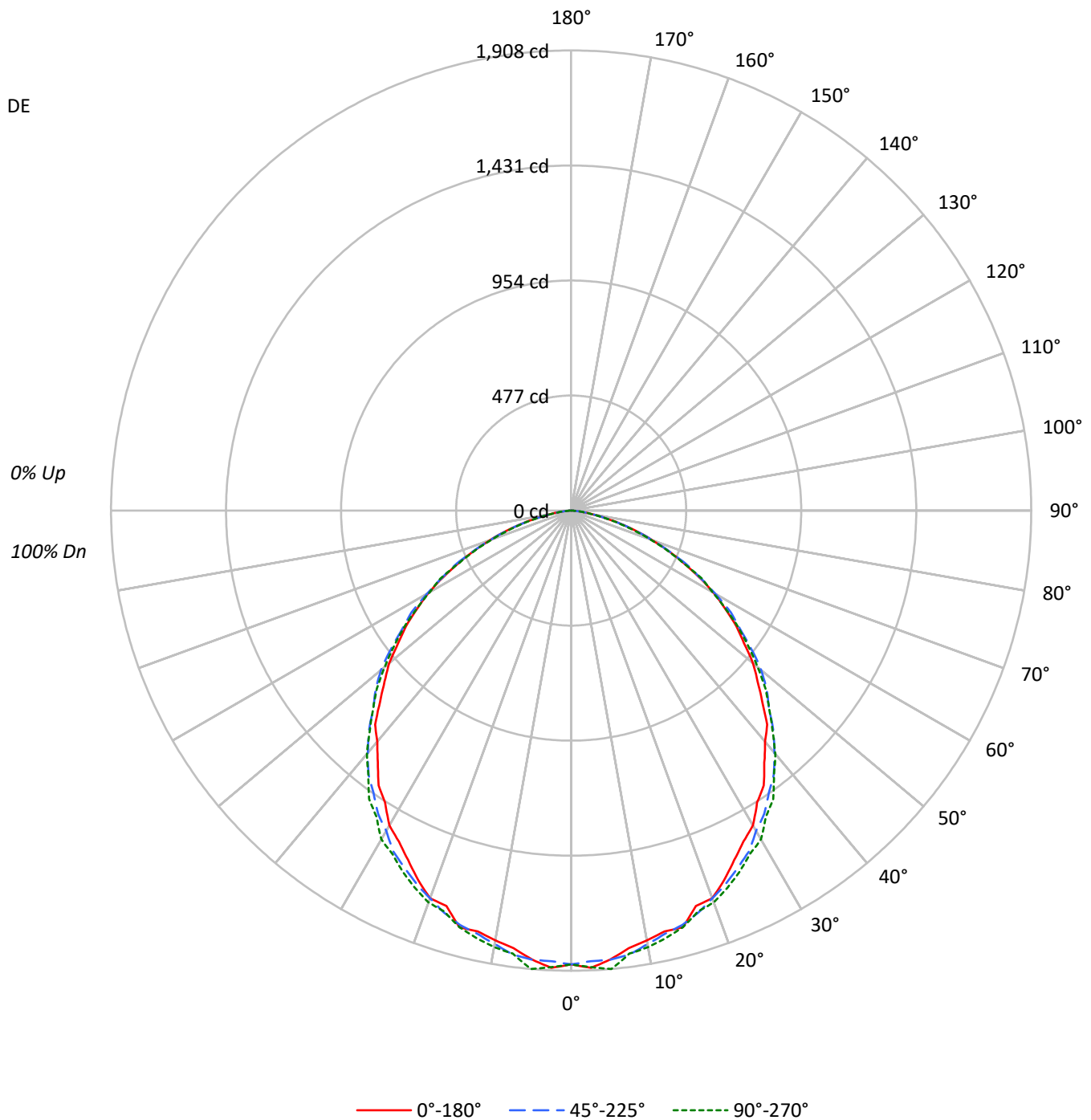
Lumens per Lamp: N/A  
Luminaire Lumens: 4742.0 lumens  
Efficiency: N/A  
Efficacy: 94.8 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 50  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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				
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°	5063	5063	5063
5°	5046	5048	5155
10°	4944	4987	5022
15°	4983	4956	4984
20°	4899	4899	4951
25°	4748	4852	4906
30°	4683	4765	4892
35°	4573	4692	4798
40°	4395	4606	4627
45°	4262	4414	4420
50°	4122	4308	4226
55°	3927	4004	3975
60°	3673	3709	3643
65°	3275	3358	3251
70°	2810	2819	2741
75°	2225	2220	2135
80°	1491	1449	1393
85°	809	803	750

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 4527 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	177.0	3.7
10°-20°	501.6	10.6
20°-30°	751.5	15.8
30°-40°	890.7	18.8
40°-50°	892.3	18.8
50°-60°	757.4	16.0
60°-70°	510.7	10.8
70°-80°	224.4	4.7
80°-90°	36.5	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°	1430.1	30.2
0°-40°	2320.7	48.9
0°-60°	3970.5	83.7
0°-90°	4742.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4742.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1882	1882	1882	1882	1882	
5°	1868	1864	1869	1863	1908	176
15°	1789	1768	1779	1788	1789	498
25°	1599	1608	1634	1656	1652	739
35°	1392	1396	1428	1462	1460	864
45°	1120	1141	1160	1190	1162	866
55°	837	832	853	848	847	745
65°	514	508	527	507	511	511
75°	214	210	214	198	205	229
85°	26	26	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°	1881.5	1881.5	1881.5	1881.5	1881.5
2.5°	1897.8	1883.4	1870.1	1885.6	1895.1
5°	1868.1	1863.8	1868.9	1863.3	1908.2
7.5°	1829.8	1846.5	1856.2	1850.2	1852.8
10°	1809.4	1803.5	1825.1	1840.2	1838.0
12.5°	1787.5	1796.2	1797.5	1813.7	1815.2
15°	1788.7	1768.1	1779.0	1788.2	1788.9
17.5°	1719.2	1741.6	1749.1	1770.2	1744.0
20°	1710.7	1694.4	1710.7	1732.3	1728.9
22.5°	1658.5	1640.3	1675.3	1694.4	1693.2
25°	1599.2	1608.0	1634.2	1655.6	1652.2
27.5°	1547.2	1557.4	1594.8	1624.2	1605.3
30°	1507.1	1502.0	1533.6	1559.9	1574.4
32.5°	1435.5	1453.9	1490.9	1516.9	1503.0
35°	1392.0	1396.1	1428.4	1461.5	1460.5
37.5°	1316.0	1335.2	1380.6	1389.8	1381.3
40°	1251.1	1270.3	1311.3	1321.3	1317.2
42.5°	1203.2	1206.6	1241.9	1253.3	1235.1
45°	1119.9	1140.8	1159.8	1189.6	1161.5
47.5°	1049.0	1058.7	1099.5	1107.5	1092.7
50°	984.6	988.0	1029.1	1019.1	1009.4
52.5°	903.7	918.0	941.1	939.2	927.8
55°	837.1	831.6	853.4	847.6	847.3
57.5°	757.2	766.9	784.9	775.7	760.9
60°	682.4	682.6	689.2	678.8	676.8
62.5°	599.1	602.0	603.4	590.6	611.5
65°	514.3	507.5	527.4	507.2	510.6
67.5°	436.3	439.7	437.8	425.1	430.0
70°	357.1	361.5	358.3	344.0	348.4
72.5°	284.7	279.4	282.8	264.8	273.1
75°	214.0	209.7	213.5	198.5	205.3
77.5°	145.8	149.2	146.7	138.7	143.3
80°	96.2	93.5	93.5	88.9	89.9
82.5°	56.1	53.4	52.7	51.3	53.4
85°	26.2	25.5	26.0	25.3	24.3
87.5°	9.5	9.7	9.7	9.2	8.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)