

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: P590689

Luminaire Tested: FSR-24-2-LD4-3STD-50-UNV-81-88-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590689  
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-50-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 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

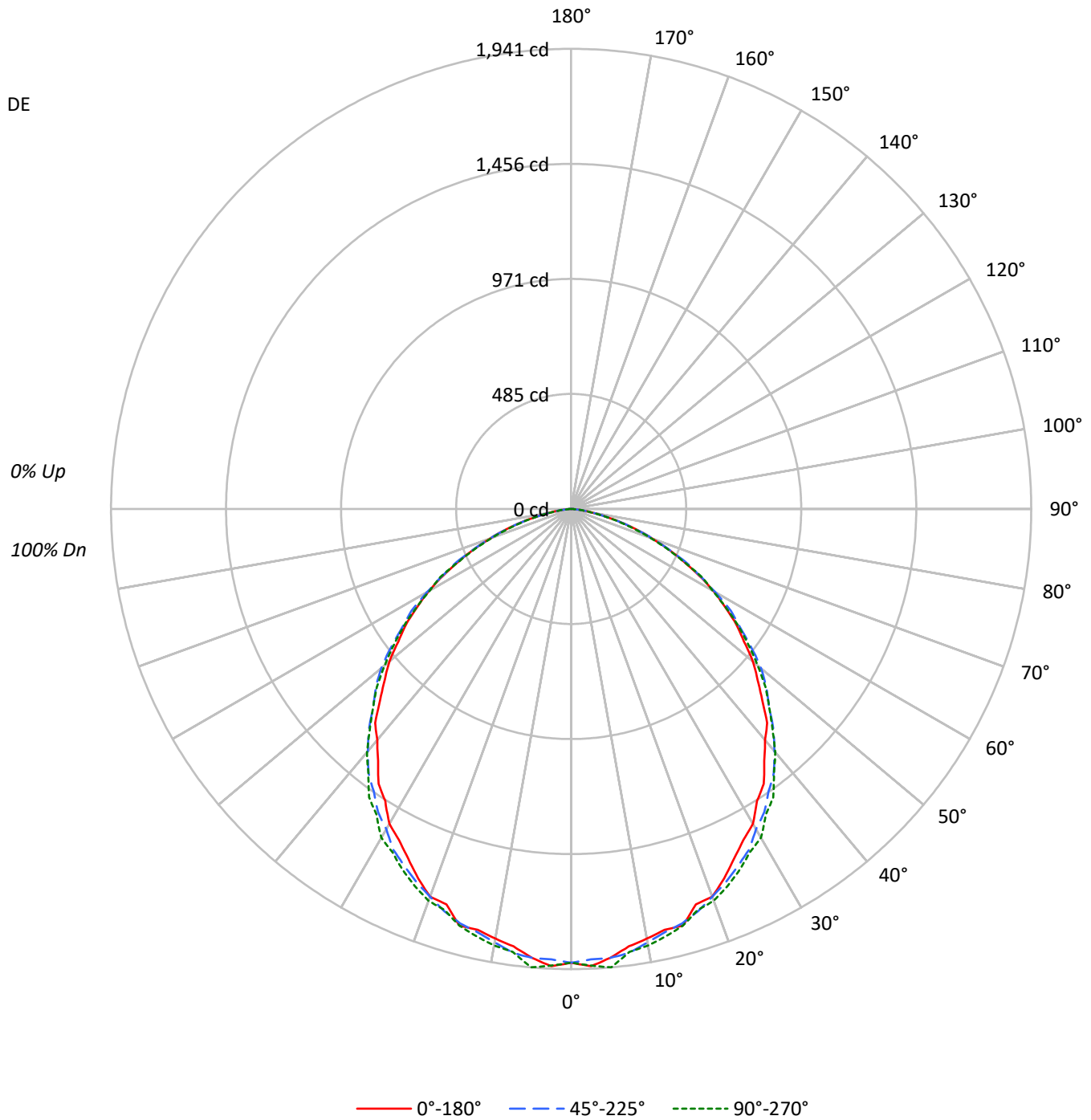
Lumens per Lamp: N/A  
Luminaire Lumens: 4823.0 lumens  
Efficiency: N/A  
Efficacy: 96.5 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 50  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	5149	5149	5149
5°	5133	5135	5243
10°	5029	5072	5108
15°	5068	5041	5069
20°	4983	4983	5036
25°	4829	4935	4989
30°	4763	4847	4976
35°	4651	4773	4880
40°	4470	4685	4706
45°	4335	4489	4496
50°	4192	4382	4298
55°	3994	4072	4043
60°	3736	3773	3705
65°	3331	3415	3307
70°	2858	2867	2788
75°	2263	2258	2171
80°	1516	1474	1416
85°	824	815	763

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 4605 cd/sqm

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	180.0	3.7
10°-20°	510.2	10.6
20°-30°	764.3	15.8
30°-40°	905.9	18.8
40°-50°	907.6	18.8
50°-60°	770.4	16.0
60°-70°	519.4	10.8
70°-80°	228.2	4.7
80°-90°	37.1	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°	1454.5	30.2
0°-40°	2360.4	48.9
0°-60°	4038.3	83.7
0°-90°	4823.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4823.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1914	1914	1914	1914	1914	
5°	1900	1896	1901	1895	1941	179
15°	1819	1798	1809	1819	1820	507
25°	1626	1635	1662	1684	1680	752
35°	1416	1420	1453	1486	1486	879
45°	1139	1160	1180	1210	1181	881
55°	851	846	868	862	862	757
65°	523	516	536	516	519	520
75°	218	213	217	202	209	233
85°	27	26	26	26	25	39
90°	0	0	0	0	0	

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1913.6	1913.6	1913.6	1913.6	1913.6
2.5°	1930.2	1915.6	1902.0	1917.8	1927.5
5°	1900.1	1895.6	1900.8	1895.1	1940.8
7.5°	1861.0	1878.1	1887.9	1881.8	1884.5
10°	1840.3	1834.3	1856.3	1871.6	1869.4
12.5°	1818.0	1826.9	1828.2	1844.7	1846.2
15°	1819.3	1798.3	1809.4	1818.8	1819.5
17.5°	1748.6	1771.3	1779.0	1800.5	1773.8
20°	1739.9	1723.4	1739.9	1761.9	1758.5
22.5°	1686.8	1668.3	1703.9	1723.4	1722.2
25°	1626.5	1635.4	1662.1	1683.9	1680.4
27.5°	1573.7	1584.0	1622.1	1652.0	1632.7
30°	1532.9	1527.7	1559.8	1586.5	1601.3
32.5°	1460.0	1478.8	1516.3	1542.8	1528.7
35°	1415.8	1420.0	1452.8	1486.4	1485.5
37.5°	1338.4	1358.0	1404.2	1413.6	1404.9
40°	1272.5	1292.0	1333.7	1343.9	1339.7
42.5°	1223.8	1227.3	1263.1	1274.7	1256.2
45°	1139.0	1160.3	1179.6	1210.0	1181.3
47.5°	1066.9	1076.8	1118.3	1126.4	1111.4
50°	1001.4	1004.9	1046.6	1036.5	1026.6
52.5°	919.1	933.7	957.2	955.2	943.6
55°	851.4	845.8	868.0	862.1	861.8
57.5°	770.2	780.0	798.3	788.9	773.9
60°	694.1	694.3	701.0	690.3	688.4
62.5°	609.3	612.3	613.7	600.7	621.9
65°	523.1	516.2	536.4	515.9	519.4
67.5°	443.8	447.2	445.2	432.4	437.3
70°	363.2	367.7	364.4	349.9	354.3
72.5°	289.6	284.1	287.6	269.3	277.7
75°	217.7	213.2	217.2	201.9	208.8
77.5°	148.2	151.7	149.2	141.1	145.8
80°	97.8	95.1	95.1	90.4	91.4
82.5°	57.1	54.4	53.6	52.1	54.4
85°	26.7	25.9	26.4	25.7	24.7
87.5°	9.6	9.9	9.9	9.4	8.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)