

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: P590687

Luminaire Tested: FSR-24-2-LD4-3STD-50-UNV-81-86-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590687  
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-81-86-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

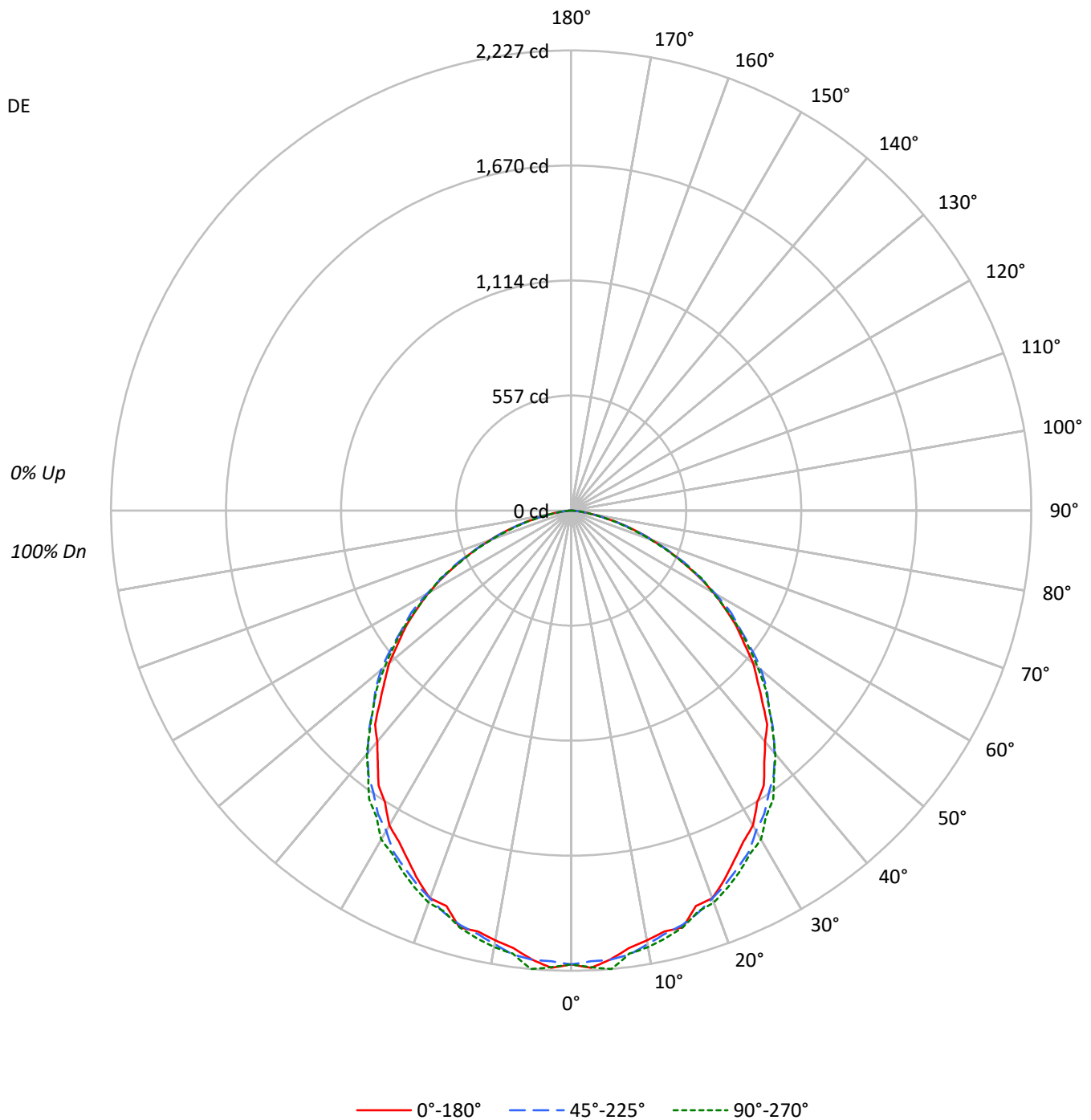
Lumens per Lamp: N/A  
Luminaire Lumens: 5535.0 lumens  
Efficiency: N/A  
Efficacy: 110.7 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 50  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	5910	5910	5910
5°	5890	5893	6017
10°	5771	5821	5862
15°	5816	5785	5817
20°	5718	5718	5779
25°	5543	5664	5726
30°	5466	5562	5710
35°	5338	5477	5600
40°	5130	5377	5401
45°	4975	5152	5159
50°	4811	5028	4932
55°	4584	4673	4640
60°	4287	4330	4252
65°	3822	3920	3795
70°	3279	3290	3199
75°	2597	2591	2491
80°	1740	1692	1626
85°	945	936	877

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 5284 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	206.6	3.7
10°-20°	585.5	10.6
20°-30°	877.2	15.8
30°-40°	1039.6	18.8
40°-50°	1041.5	18.8
50°-60°	884.1	16.0
60°-70°	596.1	10.8
70°-80°	261.9	4.7
80°-90°	42.6	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°	1669.2	30.2
0°-40°	2708.8	48.9
0°-60°	4634.5	83.7
0°-90°	5535.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5535.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2196	2196	2196	2196	2196	
5°	2181	2175	2181	2175	2227	206
15°	2088	2064	2076	2087	2088	582
25°	1867	1877	1908	1932	1928	863
35°	1625	1630	1667	1706	1705	1009
45°	1307	1332	1354	1389	1356	1011
55°	977	971	996	989	989	869
65°	600	592	616	592	596	597
75°	250	245	249	232	240	268
85°	31	30	30	30	28	44
90°	0	0	0	0	0	

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2196.1	2196.1	2196.1	2196.1	2196.1
2.5°	2215.1	2198.4	2182.8	2201.0	2212.0
5°	2180.6	2175.4	2181.4	2174.9	2227.3
7.5°	2135.8	2155.3	2166.7	2159.6	2162.7
10°	2111.9	2105.1	2130.4	2147.9	2145.4
12.5°	2086.4	2096.6	2098.0	2117.0	2118.7
15°	2087.8	2063.7	2076.5	2087.3	2088.1
17.5°	2006.7	2032.8	2041.6	2066.3	2035.7
20°	1996.8	1977.8	1996.8	2022.0	2018.1
22.5°	1935.8	1914.6	1955.4	1977.8	1976.4
25°	1866.7	1876.9	1907.5	1932.4	1928.5
27.5°	1806.0	1817.9	1861.6	1895.9	1873.7
30°	1759.2	1753.2	1790.1	1820.7	1837.7
32.5°	1675.5	1697.1	1740.2	1770.5	1754.4
35°	1624.8	1629.6	1667.3	1705.9	1704.7
37.5°	1536.0	1558.4	1611.5	1622.2	1612.3
40°	1460.3	1482.7	1530.6	1542.3	1537.4
42.5°	1404.5	1408.4	1449.5	1462.9	1441.6
45°	1307.2	1331.6	1353.7	1388.6	1355.7
47.5°	1224.4	1235.7	1283.4	1292.7	1275.4
50°	1149.3	1153.2	1201.1	1189.5	1178.2
52.5°	1054.8	1071.6	1098.5	1096.2	1082.9
55°	977.1	970.6	996.1	989.3	989.0
57.5°	883.8	895.2	916.2	905.4	888.1
60°	796.5	796.8	804.5	792.3	790.0
62.5°	699.3	702.7	704.4	689.3	713.7
65°	600.3	592.4	615.6	592.1	596.0
67.5°	509.3	513.2	511.0	496.2	501.9
70°	416.8	421.9	418.2	401.5	406.6
72.5°	332.3	326.1	330.1	309.1	318.7
75°	249.8	244.7	249.2	231.7	239.6
77.5°	170.1	174.1	171.3	161.9	167.3
80°	112.3	109.2	109.2	103.8	104.9
82.5°	65.5	62.4	61.5	59.8	62.4
85°	30.6	29.8	30.3	29.5	28.4
87.5°	11.1	11.3	11.3	10.8	10.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)