

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: P560847

Luminaire Tested: FSR-12-4-LD4-1HI-40-UNV-81-97-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P560847  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-5)  
Test Lab: INNOVATION CENTER  
Issue Date: 7/20/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: FAIL-SAFE  
Catalog Number: FSR-12-4-LD4-1HI-40-UNV-81-97-EDD  
Description: 1X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .375 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

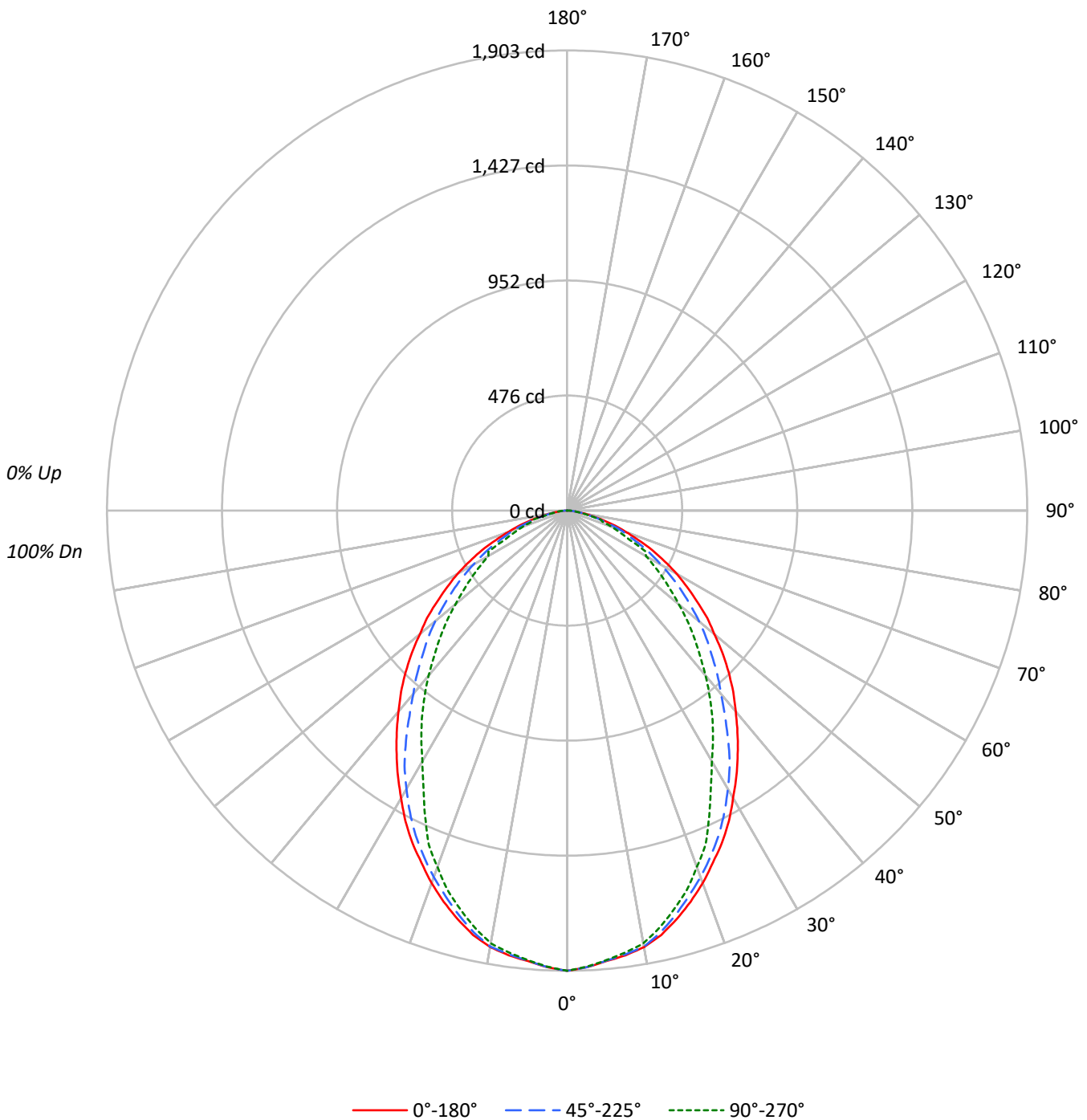
Lumens per Lamp: N/A  
Luminaire Lumens: 3735.9 lumens  
Efficiency: N/A  
Efficacy: 86.5 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 43.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	0																			
RCR																																														
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100																												
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87																												
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75																												
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65																												
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56																												
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50																												
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44																												
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40																												
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36																												
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33																												
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30																												

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	5121	5121	5121
5°	5052	5046	5040
10°	5008	5002	4966
15°	4873	4824	4756
20°	4694	4618	4492
25°	4501	4403	4129
30°	4266	4129	3719
35°	4040	3816	3440
40°	3810	3478	3130
45°	3592	3215	2830
50°	3325	2984	2524
55°	3076	2704	2260
60°	2818	2415	2025
65°	2479	2115	1793
70°	2043	1852	1523
75°	1624	1418	1487
80°	1091	1023	955
85°	679	815	951

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3592 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	177.2	4.7
10°-20°	486.2	13.0
20°-30°	673.1	18.0
30°-40°	717.7	19.2
40°-50°	654.7	17.5
50°-60°	512.9	13.7
60°-70°	334.3	8.9
70°-80°	148.1	4.0
80°-90°	31.8	0.9
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°	1336.4	35.8
0°-40°	2054.1	55.0
0°-60°	3221.7	86.2
0°-90°	3735.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3735.9	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1903	1903	1903	1903	1903	
5°	1870	1868	1868	1866	1866	178
15°	1749	1749	1732	1714	1707	492
25°	1516	1507	1483	1430	1390	696
35°	1230	1221	1162	1074	1047	769
45°	944	924	845	774	744	727
55°	656	636	576	508	482	588
65°	389	367	332	339	282	384
75°	156	145	136	130	143	167
85°	22	24	26	29	31	31
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1903.1	1903.1	1903.1	1903.1	1903.1
2.5°	1889.9	1889.9	1889.9	1887.7	1887.7
5°	1870.1	1867.9	1867.9	1865.7	1865.7
7.5°	1854.7	1852.5	1850.3	1848.1	1843.7
10°	1832.7	1832.7	1830.5	1819.5	1817.3
12.5°	1797.5	1795.3	1786.5	1771.1	1766.7
15°	1749.1	1749.1	1731.5	1713.9	1707.3
17.5°	1696.3	1694.1	1672.1	1654.5	1645.7
20°	1639.1	1634.7	1612.7	1584.1	1568.7
22.5°	1575.3	1575.3	1548.9	1511.5	1496.1
25°	1515.9	1507.1	1482.9	1430.1	1390.5
27.5°	1447.7	1434.5	1408.1	1333.2	1287.0
30°	1372.8	1366.2	1328.8	1232.0	1196.8
32.5°	1302.4	1291.4	1251.8	1150.6	1122.0
35°	1229.8	1221.0	1161.6	1073.6	1047.2
37.5°	1157.2	1146.2	1071.4	1001.0	968.0
40°	1084.6	1071.4	990.0	926.2	891.0
42.5°	1016.4	998.8	919.6	851.4	811.8
45°	943.8	924.0	844.8	774.4	743.6
47.5°	871.2	853.6	781.0	708.4	673.2
50°	794.2	778.8	712.8	640.2	602.8
52.5°	730.4	706.2	642.4	569.8	539.0
55°	655.6	635.8	576.4	508.2	481.8
57.5°	587.4	567.6	512.6	448.8	426.8
60°	523.6	495.0	448.8	393.8	376.2
62.5°	453.2	431.2	391.6	345.4	367.4
65°	389.4	367.4	332.2	338.8	281.6
67.5°	319.0	308.0	277.2	246.4	237.6
70°	259.6	246.4	235.4	202.4	193.6
72.5°	206.8	193.6	178.2	160.6	154.0
75°	156.2	145.2	136.4	129.8	143.0
77.5°	107.8	103.4	96.8	90.2	88.0
80°	70.4	68.2	66.0	63.8	61.6
82.5°	41.8	41.8	41.8	41.8	41.8
85°	22.0	24.2	26.4	28.6	30.8
87.5°	13.2	13.2	15.4	17.6	19.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)