

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: P562399

Luminaire Tested: FSR-24-4-LD4-1STD-40-UNV-82-97-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562399  
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-24-4-LD4-1STD-40-UNV-82-97-EDD  
Description: 2X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .375 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

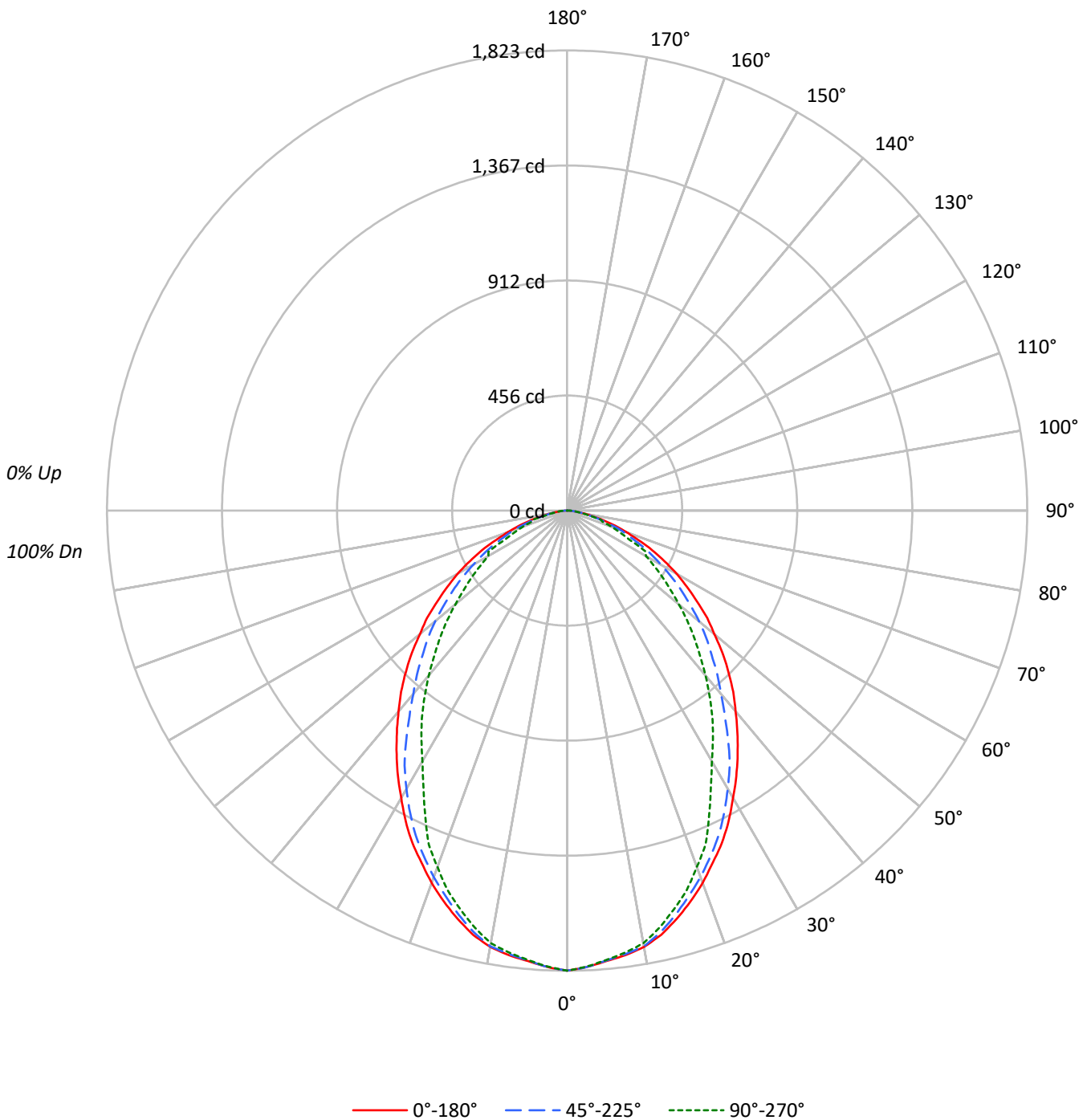
Lumens per Lamp: N/A  
Luminaire Lumens: 3578.0 lumens  
Efficiency: N/A  
Efficacy: 107.4 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.3  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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													100															
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87													87															
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75													75															
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65													65															
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56													56															
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50													50															
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44													44															
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40													40															
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36													36															
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33													33															
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30													30															

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

	0°	45°	90°
0°	2452	2452	2452
5°	2419	2416	2413
10°	2398	2395	2378
15°	2333	2310	2278
20°	2248	2211	2151
25°	2155	2108	1977
30°	2043	1977	1781
35°	1935	1827	1647
40°	1825	1665	1499
45°	1720	1540	1355
50°	1592	1429	1208
55°	1473	1295	1082
60°	1350	1157	970
65°	1187	1013	859
70°	978	887	729
75°	778	679	712
80°	522	490	457
85°	326	391	455

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1720 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	169.7	4.7
10°-20°	465.6	13.0
20°-30°	644.6	18.0
30°-40°	687.3	19.2
40°-50°	627.1	17.5
50°-60°	491.2	13.7
60°-70°	320.2	8.9
70°-80°	141.8	4.0
80°-90°	30.4	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°	1279.9	35.8
0°-40°	1967.2	55.0
0°-60°	3085.5	86.2
0°-90°	3578.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3578.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1823	1823	1823	1823	1823	
5°	1791	1789	1789	1787	1787	170
15°	1675	1675	1658	1641	1635	471
25°	1452	1443	1420	1370	1332	666
35°	1178	1169	1112	1028	1003	736
45°	904	885	809	742	712	696
55°	628	609	552	487	461	563
65°	373	352	318	324	270	368
75°	150	139	131	124	137	160
85°	21	23	25	27	30	29
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1822.6	1822.6	1822.6	1822.6	1822.6
2.5°	1809.9	1809.9	1809.9	1807.8	1807.8
5°	1791.0	1788.9	1788.9	1786.8	1786.8
7.5°	1776.2	1774.1	1772.0	1769.9	1765.7
10°	1755.2	1755.2	1753.1	1742.5	1740.4
12.5°	1721.4	1719.3	1710.9	1696.2	1691.9
15°	1675.1	1675.1	1658.2	1641.4	1635.1
17.5°	1624.5	1622.4	1601.3	1584.5	1576.1
20°	1569.7	1565.5	1544.5	1517.1	1502.3
22.5°	1508.6	1508.6	1483.4	1447.5	1432.8
25°	1451.7	1443.3	1420.1	1369.6	1331.6
27.5°	1386.4	1373.8	1348.5	1276.9	1232.6
30°	1314.8	1308.5	1272.6	1179.9	1146.2
32.5°	1247.4	1236.8	1198.9	1102.0	1074.6
35°	1177.8	1169.4	1112.5	1028.2	1002.9
37.5°	1108.3	1097.8	1026.1	958.7	927.1
40°	1038.8	1026.1	948.2	887.1	853.3
42.5°	973.5	956.6	880.7	815.4	777.5
45°	903.9	885.0	809.1	741.7	712.2
47.5°	834.4	817.5	748.0	678.5	644.8
50°	760.6	745.9	682.7	613.1	577.3
52.5°	699.5	676.4	615.3	545.7	516.2
55°	627.9	608.9	552.0	486.7	461.4
57.5°	562.6	543.6	490.9	429.8	408.8
60°	501.5	474.1	429.8	377.2	360.3
62.5°	434.0	413.0	375.1	330.8	351.9
65°	372.9	351.9	318.2	324.5	269.7
67.5°	305.5	295.0	265.5	236.0	227.6
70°	248.6	236.0	225.5	193.8	185.4
72.5°	198.1	185.4	170.7	153.8	147.5
75°	149.6	139.1	130.6	124.3	137.0
77.5°	103.2	99.0	92.7	86.4	84.3
80°	67.4	65.3	63.2	61.1	59.0
82.5°	40.0	40.0	40.0	40.0	40.0
85°	21.1	23.2	25.3	27.4	29.5
87.5°	12.6	12.6	14.7	16.9	19.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)