

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: P561630

Luminaire Tested: FSR-12-4-LD4-2LO-40-UNV-82-97-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561630  
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-LD4-2LO-40-UNV-82-97-EDD-90  
Description: 1X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .375 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

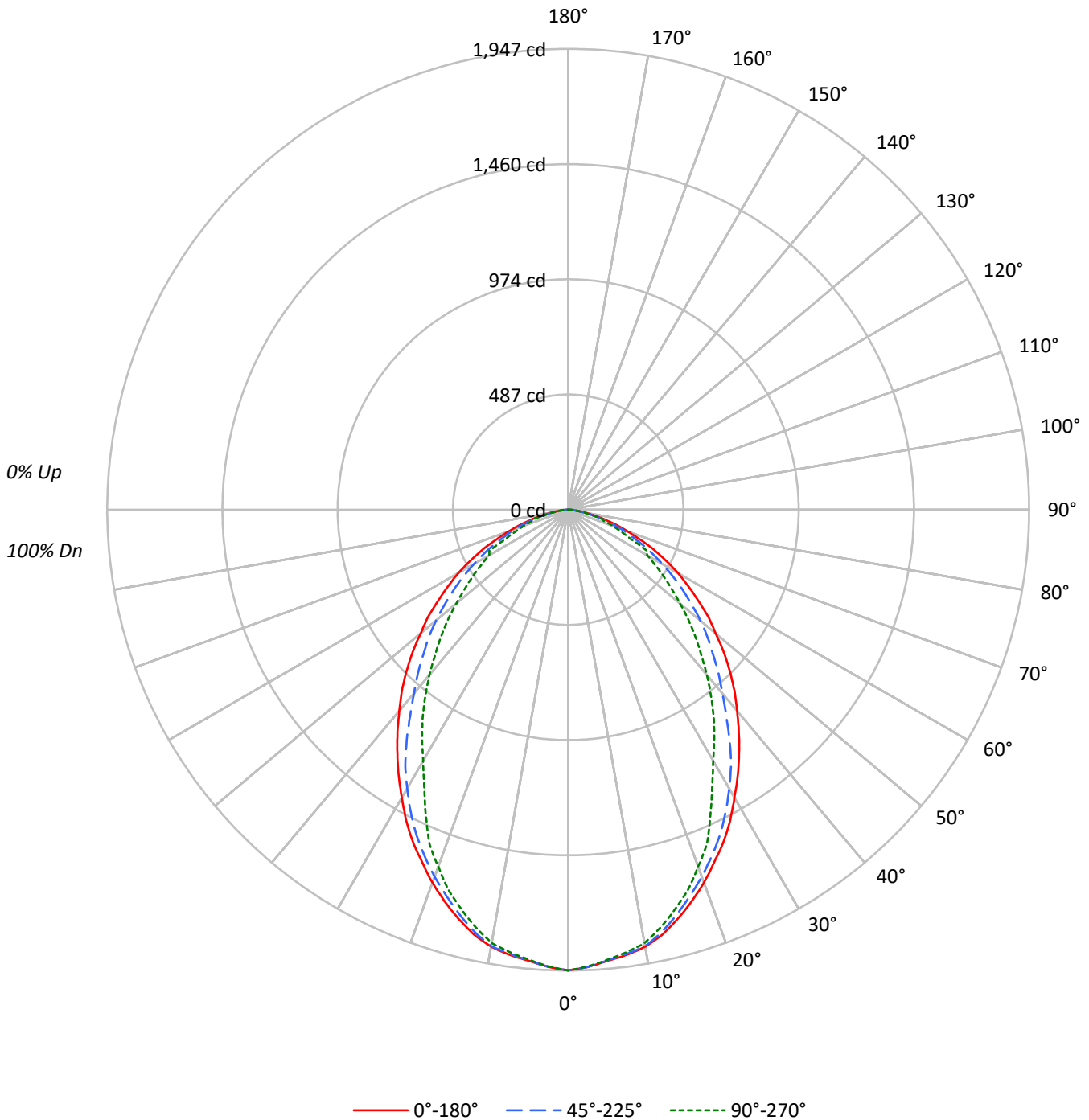
Lumens per Lamp: N/A  
Luminaire Lumens: 3822.0 lumens  
Efficiency: N/A  
Efficacy: 81.7 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 46.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	5239	5239	5239
5°	5168	5162	5156
10°	5123	5117	5080
15°	4985	4935	4866
20°	4802	4724	4596
25°	4604	4504	4224
30°	4364	4224	3805
35°	4133	3904	3519
40°	3898	3558	3202
45°	3675	3289	2895
50°	3401	3053	2582
55°	3147	2767	2312
60°	2883	2471	2072
65°	2537	2164	1834
70°	2090	1895	1559
75°	1661	1450	1521
80°	1116	1046	976
85°	695	834	973

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3675 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	181.2	4.7
10°-20°	497.4	13.0
20°-30°	688.6	18.0
30°-40°	734.2	19.2
40°-50°	669.8	17.5
50°-60°	524.7	13.7
60°-70°	342.0	8.9
70°-80°	151.5	4.0
80°-90°	32.6	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°	1367.2	35.8
0°-40°	2101.4	55.0
0°-60°	3295.9	86.2
0°-90°	3822.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3822.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1947	1947	1947	1947	1947	
5°	1913	1911	1911	1909	1909	182
15°	1789	1789	1771	1753	1747	503
25°	1551	1542	1517	1463	1422	712
35°	1258	1249	1188	1098	1071	787
45°	966	945	864	792	761	744
55°	671	650	590	520	493	602
65°	398	376	340	347	288	393
75°	160	148	140	133	146	171
85°	22	25	27	29	32	31
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1946.9	1946.9	1946.9	1946.9	1946.9
2.5°	1933.4	1933.4	1933.4	1931.1	1931.1
5°	1913.1	1910.9	1910.9	1908.6	1908.6
7.5°	1897.4	1895.1	1892.9	1890.6	1886.1
10°	1874.9	1874.9	1872.6	1861.3	1859.1
12.5°	1838.8	1836.6	1827.6	1811.8	1807.3
15°	1789.3	1789.3	1771.3	1753.3	1746.6
17.5°	1735.3	1733.1	1710.5	1692.5	1683.5
20°	1676.8	1672.3	1649.8	1620.5	1604.8
22.5°	1611.5	1611.5	1584.5	1546.2	1530.5
25°	1550.7	1541.7	1517.0	1463.0	1422.5
27.5°	1481.0	1467.5	1440.5	1363.9	1316.7
30°	1404.5	1397.7	1359.4	1260.4	1224.4
32.5°	1332.4	1321.2	1280.7	1177.1	1147.9
35°	1258.2	1249.2	1188.4	1098.4	1071.3
37.5°	1183.9	1172.6	1096.1	1024.1	990.3
40°	1109.6	1096.1	1012.8	947.6	911.5
42.5°	1039.8	1021.8	940.8	871.0	830.5
45°	965.6	945.3	864.3	792.3	760.7
47.5°	891.3	873.3	799.0	724.7	688.7
50°	812.5	796.8	729.2	655.0	616.7
52.5°	747.2	722.5	657.2	582.9	551.4
55°	670.7	650.5	589.7	519.9	492.9
57.5°	600.9	580.7	524.4	459.1	436.6
60°	535.7	506.4	459.1	402.9	384.9
62.5°	463.6	441.1	400.6	353.4	375.9
65°	398.4	375.9	339.9	346.6	288.1
67.5°	326.4	315.1	283.6	252.1	243.1
70°	265.6	252.1	240.8	207.1	198.1
72.5°	211.6	198.1	182.3	164.3	157.6
75°	159.8	148.5	139.5	132.8	146.3
77.5°	110.3	105.8	99.0	92.3	90.0
80°	72.0	69.8	67.5	65.3	63.0
82.5°	42.8	42.8	42.8	42.8	42.8
85°	22.5	24.8	27.0	29.3	31.5
87.5°	13.5	13.5	15.8	18.0	20.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)