

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: P560797

Luminaire Tested: FSR-12-4-LD4-1HI-35-UNV-82-96-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P560797  
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-35-UNV-82-96-EDD  
Description: 1X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .250 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

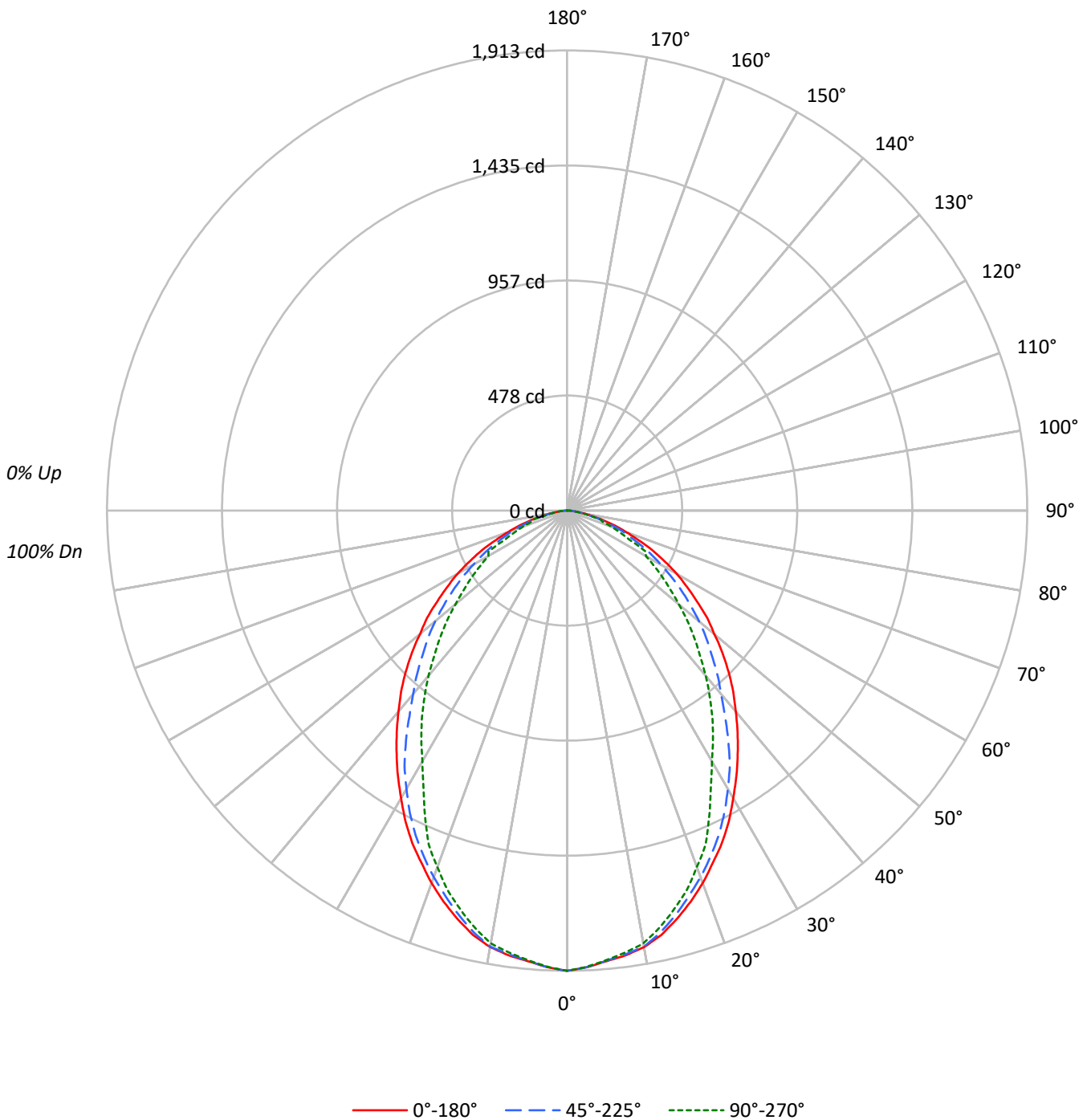
Lumens per Lamp: N/A  
Luminaire Lumens: 3756.0 lumens  
Efficiency: N/A  
Efficacy: 86.9 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 43.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	5149	5149	5149
5°	5079	5073	5067
10°	5035	5029	4992
15°	4899	4849	4782
20°	4719	4643	4516
25°	4525	4426	4151
30°	4289	4151	3739
35°	4062	3837	3459
40°	3830	3496	3147
45°	3611	3232	2845
50°	3343	3000	2537
55°	3092	2719	2273
60°	2833	2428	2035
65°	2493	2127	1803
70°	2054	1862	1531
75°	1632	1425	1495
80°	1097	1029	959
85°	682	818	957

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3611 cd/sqm

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	178.1	4.7
10°-20°	488.8	13.0
20°-30°	676.7	18.0
30°-40°	721.5	19.2
40°-50°	658.3	17.5
50°-60°	515.7	13.7
60°-70°	336.1	8.9
70°-80°	148.9	4.0
80°-90°	32.0	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°	1343.5	35.8
0°-40°	2065.1	55.0
0°-60°	3239.0	86.2
0°-90°	3756.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3756.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1913	1913	1913	1913	1913	
5°	1880	1878	1878	1876	1876	178
15°	1758	1758	1741	1723	1716	494
25°	1524	1515	1491	1438	1398	700
35°	1236	1228	1168	1079	1053	773
45°	949	929	849	779	748	731
55°	659	639	580	511	484	591
65°	392	369	334	341	283	386
75°	157	146	137	130	144	168
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°	1913.3	1913.3	1913.3	1913.3	1913.3
2.5°	1900.0	1900.0	1900.0	1897.8	1897.8
5°	1880.1	1877.9	1877.9	1875.7	1875.7
7.5°	1864.6	1862.4	1860.2	1858.0	1853.5
10°	1842.5	1842.5	1840.3	1829.2	1827.0
12.5°	1807.1	1804.9	1796.0	1780.5	1776.1
15°	1758.4	1758.4	1740.7	1723.0	1716.4
17.5°	1705.3	1703.1	1681.0	1663.3	1654.5
20°	1647.8	1643.4	1621.3	1592.5	1577.1
22.5°	1583.7	1583.7	1557.1	1519.5	1504.1
25°	1524.0	1515.1	1490.8	1437.7	1397.9
27.5°	1455.4	1442.1	1415.6	1340.4	1293.9
30°	1380.2	1373.6	1336.0	1238.6	1203.3
32.5°	1309.4	1298.4	1258.5	1156.8	1128.0
35°	1236.4	1227.6	1167.9	1079.4	1052.8
37.5°	1163.4	1152.4	1077.2	1006.4	973.2
40°	1090.4	1077.2	995.3	931.2	895.8
42.5°	1021.9	1004.2	924.6	856.0	816.2
45°	948.9	929.0	849.4	778.6	747.6
47.5°	875.9	858.2	785.2	712.2	676.8
50°	798.5	783.0	716.6	643.7	606.0
52.5°	734.3	710.0	645.9	572.9	541.9
55°	659.1	639.2	579.5	510.9	484.4
57.5°	590.6	570.7	515.4	451.2	429.1
60°	526.4	497.7	451.2	395.9	378.2
62.5°	455.6	433.5	393.7	347.3	369.4
65°	391.5	369.4	334.0	340.6	283.1
67.5°	320.7	309.7	278.7	247.7	238.9
70°	261.0	247.7	236.7	203.5	194.6
72.5°	207.9	194.6	179.2	161.5	154.8
75°	157.0	146.0	137.1	130.5	143.8
77.5°	108.4	104.0	97.3	90.7	88.5
80°	70.8	68.6	66.4	64.1	61.9
82.5°	42.0	42.0	42.0	42.0	42.0
85°	22.1	24.3	26.5	28.8	31.0
87.5°	13.3	13.3	15.5	17.7	19.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)