

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: P561546

Luminaire Tested: FSR-12-4-LD4-2LO-35-UNV-81-94-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561546  
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-35-UNV-81-94-EDD-90  
Description: 1X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .187 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

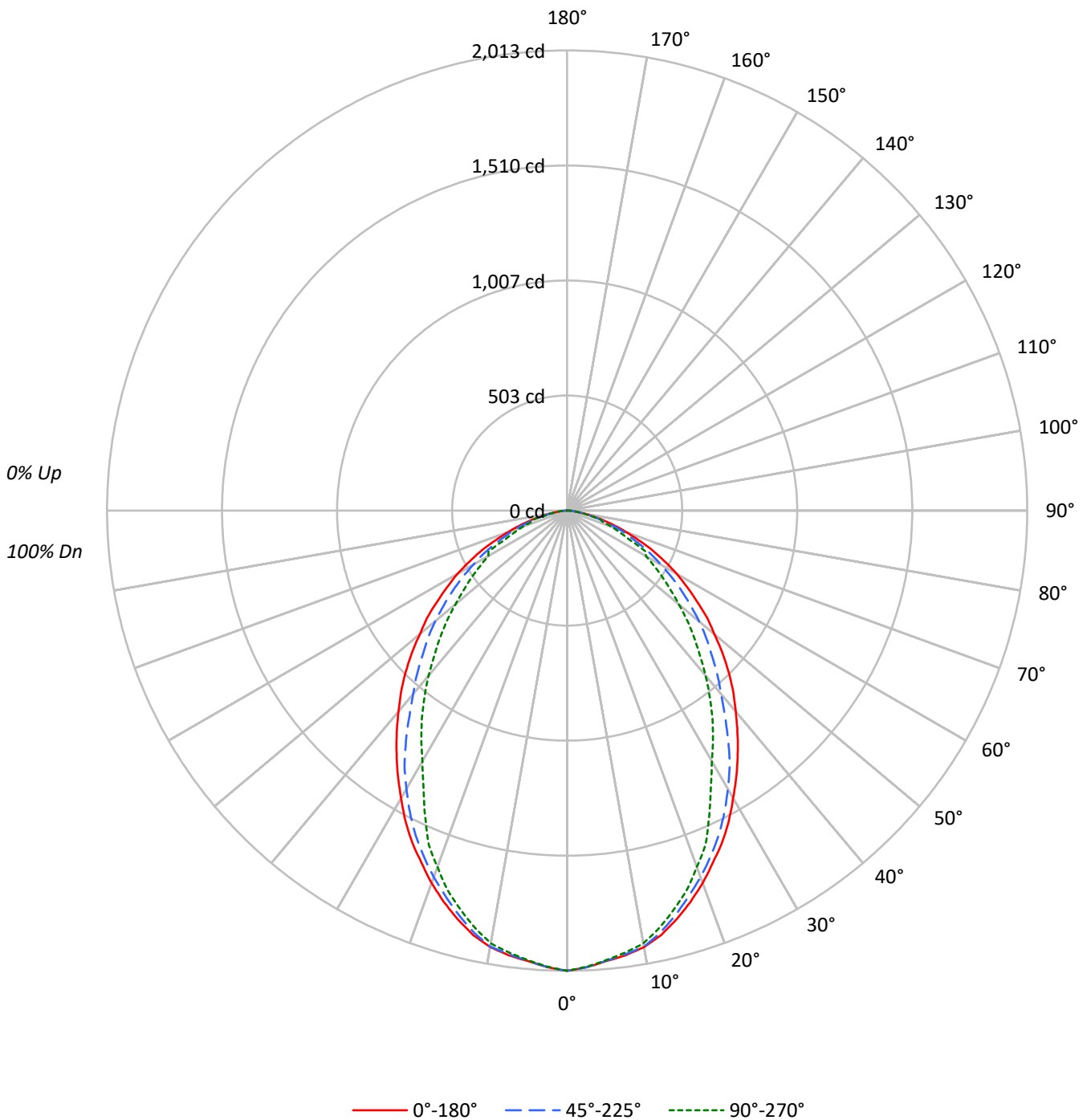
Lumens per Lamp: N/A  
Luminaire Lumens: 3952.0 lumens  
Efficiency: N/A  
Efficacy: 84.4 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 46.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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										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°	5417	5417	5417
5°	5344	5337	5331
10°	5297	5291	5253
15°	5154	5103	5031
20°	4965	4885	4752
25°	4761	4657	4367
30°	4512	4368	3934
35°	4274	4037	3639
40°	4030	3679	3311
45°	3800	3401	2993
50°	3517	3157	2670
55°	3254	2860	2391
60°	2981	2555	2142
65°	2623	2238	1897
70°	2161	1959	1611
75°	1718	1500	1573
80°	1155	1082	1010
85°	719	861	1007

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3800 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	187.4	4.7
10°-20°	514.3	13.0
20°-30°	712.0	18.0
30°-40°	759.2	19.2
40°-50°	692.6	17.5
50°-60°	542.6	13.7
60°-70°	353.6	8.9
70°-80°	156.7	4.0
80°-90°	33.6	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°	1413.7	35.8
0°-40°	2172.8	55.0
0°-60°	3408.1	86.2
0°-90°	3952.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3952.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2013	2013	2013	2013	2013	
5°	1978	1976	1976	1974	1974	188
15°	1850	1850	1832	1813	1806	520
25°	1604	1594	1569	1513	1471	736
35°	1301	1292	1229	1136	1108	813
45°	998	978	894	819	787	769
55°	694	673	610	538	510	622
65°	412	389	351	358	298	406
75°	165	154	144	137	151	177
85°	23	26	28	30	33	32
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2013.1	2013.1	2013.1	2013.1	2013.1
2.5°	1999.1	1999.1	1999.1	1996.8	1996.8
5°	1978.2	1975.9	1975.9	1973.5	1973.5
7.5°	1961.9	1959.6	1957.2	1954.9	1950.3
10°	1938.6	1938.6	1936.3	1924.7	1922.3
12.5°	1901.4	1899.1	1889.8	1873.5	1868.8
15°	1850.2	1850.2	1831.6	1813.0	1806.0
17.5°	1794.3	1792.0	1768.7	1750.1	1740.8
20°	1733.8	1729.2	1705.9	1675.6	1659.3
22.5°	1666.3	1666.3	1638.4	1598.8	1582.5
25°	1603.5	1594.2	1568.6	1512.7	1470.8
27.5°	1531.3	1517.4	1489.5	1410.3	1361.5
30°	1452.2	1445.2	1405.7	1303.3	1266.0
32.5°	1377.7	1366.1	1324.2	1217.2	1186.9
35°	1300.9	1291.6	1228.8	1135.7	1107.8
37.5°	1224.1	1212.5	1133.4	1058.9	1024.0
40°	1147.3	1133.4	1047.3	979.8	942.5
42.5°	1075.2	1056.6	972.8	900.7	858.8
45°	998.4	977.5	893.7	819.2	786.6
47.5°	921.6	903.0	826.2	749.4	712.1
50°	840.1	823.9	754.0	677.2	637.7
52.5°	772.7	747.1	679.6	602.8	570.2
55°	693.5	672.6	609.7	537.6	509.7
57.5°	621.4	600.4	542.3	474.8	451.5
60°	553.9	523.6	474.8	416.6	398.0
62.5°	479.4	456.1	414.3	365.4	388.7
65°	411.9	388.7	351.4	358.4	297.9
67.5°	337.5	325.8	293.2	260.7	251.3
70°	274.6	260.7	249.0	214.1	204.8
72.5°	218.8	204.8	188.5	169.9	162.9
75°	165.2	153.6	144.3	137.3	151.3
77.5°	114.0	109.4	102.4	95.4	93.1
80°	74.5	72.1	69.8	67.5	65.2
82.5°	44.2	44.2	44.2	44.2	44.2
85°	23.3	25.6	27.9	30.3	32.6
87.5°	14.0	14.0	16.3	18.6	20.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)