

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: P561319

Luminaire Tested: FSR-12-4-LD4-1STD-50-UNV-93-87-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561319  
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-LD4-1STD-50-UNV-93-87-EDD  
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

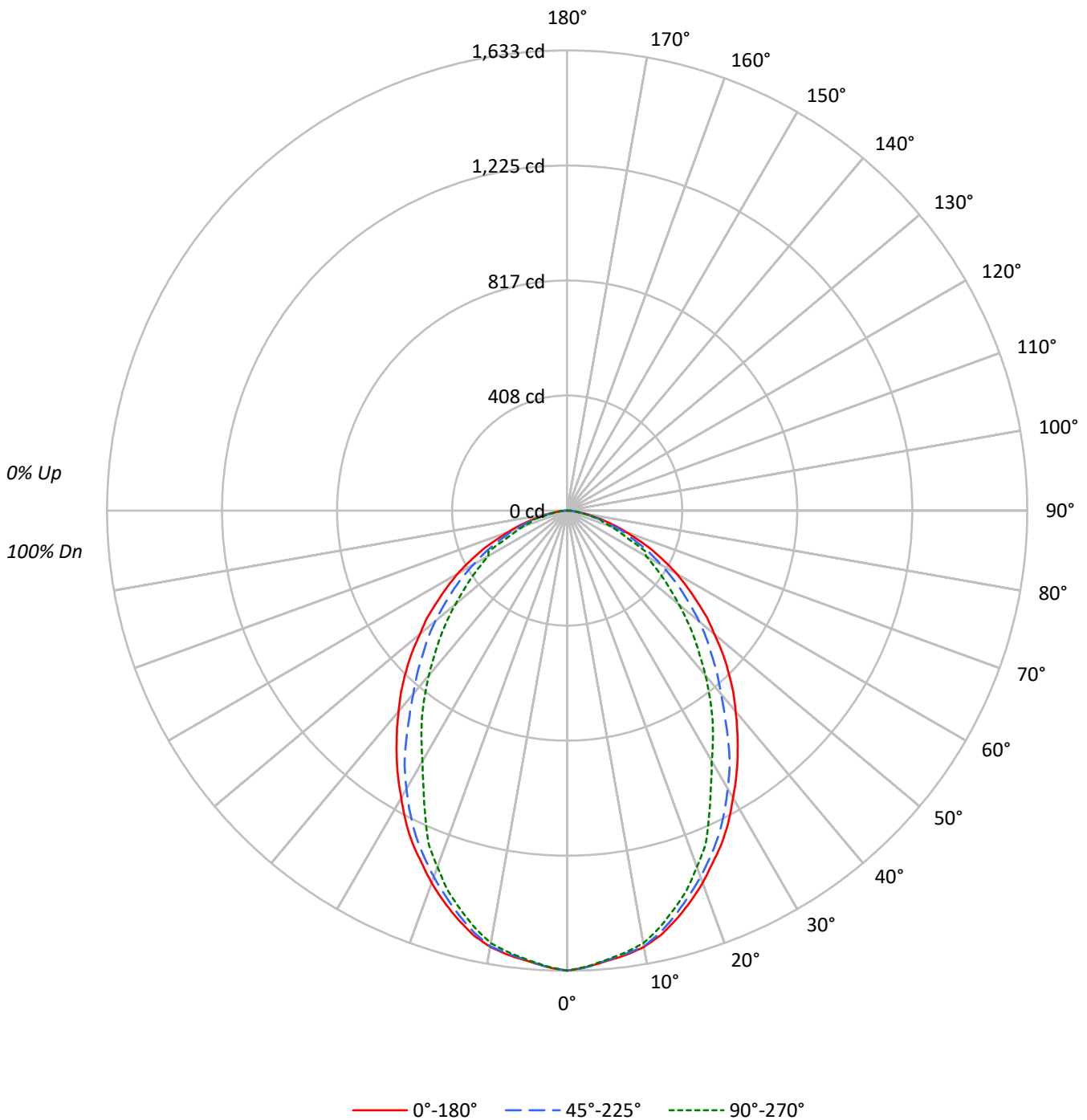
Lumens per Lamp: N/A  
Luminaire Lumens: 3205.0 lumens  
Efficiency: N/A  
Efficacy: 96.2 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.3  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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																												
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°	4393	4393	4393
5°	4334	4328	4323
10°	4296	4291	4260
15°	4180	4138	4080
20°	4027	3962	3854
25°	3861	3777	3542
30°	3659	3542	3190
35°	3466	3274	2951
40°	3269	2983	2685
45°	3081	2758	2428
50°	2852	2560	2165
55°	2639	2320	1939
60°	2418	2072	1737
65°	2127	1815	1538
70°	1752	1589	1307
75°	1393	1216	1276
80°	936	877	818
85°	584	698	815

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3081 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	152.0	4.7
10°-20°	417.1	13.0
20°-30°	577.4	18.0
30°-40°	615.7	19.2
40°-50°	561.7	17.5
50°-60°	440.0	13.7
60°-70°	286.8	8.9
70°-80°	127.1	4.0
80°-90°	27.3	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°	1146.5	35.8
0°-40°	1762.1	55.0
0°-60°	2763.9	86.2
0°-90°	3205.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3205.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1633	1633	1633	1633	1633	
5°	1604	1602	1602	1600	1600	152
15°	1500	1500	1485	1470	1465	422
25°	1300	1293	1272	1227	1193	597
35°	1055	1048	996	921	898	660
45°	810	793	725	664	638	624
55°	562	546	494	436	413	504
65°	334	315	285	291	242	329
75°	134	125	117	111	123	144
85°	19	21	23	24	26	26
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1632.6	1632.6	1632.6	1632.6	1632.6
2.5°	1621.3	1621.3	1621.3	1619.4	1619.4
5°	1604.3	1602.4	1602.4	1600.5	1600.5
7.5°	1591.1	1589.2	1587.3	1585.4	1581.6
10°	1572.2	1572.2	1570.3	1560.9	1559.0
12.5°	1542.0	1540.1	1532.6	1519.3	1515.6
15°	1500.5	1500.5	1485.4	1470.3	1464.6
17.5°	1455.2	1453.3	1434.4	1419.3	1411.8
20°	1406.1	1402.3	1383.4	1358.9	1345.7
22.5°	1351.4	1351.4	1328.7	1296.6	1283.4
25°	1300.4	1292.9	1272.1	1226.8	1192.8
27.5°	1241.9	1230.6	1207.9	1143.8	1104.1
30°	1177.7	1172.1	1140.0	1056.9	1026.7
32.5°	1117.3	1107.9	1073.9	987.1	962.6
35°	1055.0	1047.5	996.5	921.0	898.4
37.5°	992.8	983.3	919.2	858.8	830.4
40°	930.5	919.2	849.3	794.6	764.4
42.5°	872.0	856.9	788.9	730.4	696.4
45°	809.7	792.7	724.8	664.4	637.9
47.5°	747.4	732.3	670.0	607.7	577.5
50°	681.3	668.1	611.5	549.2	517.1
52.5°	626.6	605.8	551.1	488.8	462.4
55°	562.4	545.5	494.5	436.0	413.3
57.5°	503.9	486.9	439.8	385.0	366.2
60°	449.2	424.7	385.0	337.8	322.7
62.5°	388.8	369.9	336.0	296.3	315.2
65°	334.1	315.2	285.0	290.7	241.6
67.5°	273.7	264.2	237.8	211.4	203.8
70°	222.7	211.4	201.9	173.6	166.1
72.5°	177.4	166.1	152.9	137.8	132.1
75°	134.0	124.6	117.0	111.4	122.7
77.5°	92.5	88.7	83.0	77.4	75.5
80°	60.4	58.5	56.6	54.7	52.8
82.5°	35.9	35.9	35.9	35.9	35.9
85°	18.9	20.8	22.6	24.5	26.4
87.5°	11.3	11.3	13.2	15.1	17.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)