

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: P562342

Luminaire Tested: FSR-24-4-LD4-1STD-35-UNV-93-87-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562342  
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-35-UNV-93-87-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

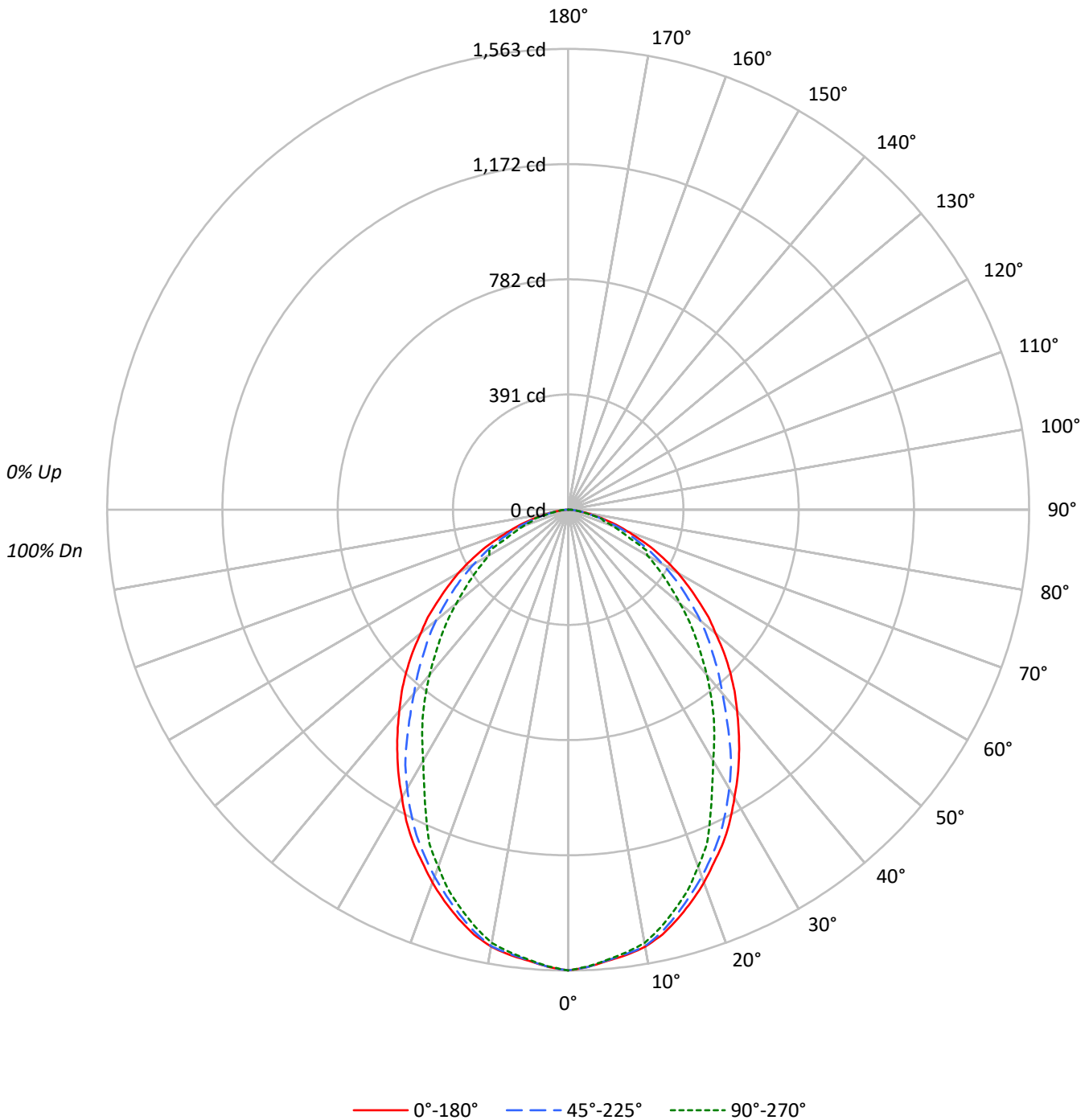
Lumens per Lamp: N/A  
Luminaire Lumens: 3068.0 lumens  
Efficiency: N/A  
Efficacy: 92.1 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.3  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	2103	2103	2103
5°	2074	2072	2069
10°	2056	2054	2039
15°	2001	1981	1953
20°	1927	1896	1844
25°	1848	1808	1695
30°	1752	1695	1527
35°	1659	1567	1413
40°	1564	1428	1285
45°	1475	1320	1162
50°	1365	1225	1036
55°	1263	1110	928
60°	1157	992	831
65°	1018	869	736
70°	839	760	625
75°	667	582	610
80°	448	420	392
85°	279	335	391

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1475 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	145.5	4.7
10°-20°	399.2	13.0
20°-30°	552.7	18.0
30°-40°	589.4	19.2
40°-50°	537.7	17.5
50°-60°	421.2	13.7
60°-70°	274.5	8.9
70°-80°	121.6	4.0
80°-90°	26.1	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°	1097.5	35.8
0°-40°	1686.8	55.0
0°-60°	2645.7	86.2
0°-90°	3068.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3068.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1563	1563	1563	1563	1563	
5°	1536	1534	1534	1532	1532	146
15°	1436	1436	1422	1407	1402	404
25°	1245	1238	1218	1174	1142	571
35°	1010	1003	954	882	860	631
45°	775	759	694	636	611	597
55°	538	522	473	417	396	483
65°	320	302	273	278	231	315
75°	128	119	112	107	117	137
85°	18	20	22	24	25	25
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1562.8	1562.8	1562.8	1562.8	1562.8
2.5°	1552.0	1552.0	1552.0	1550.2	1550.2
5°	1535.7	1533.9	1533.9	1532.1	1532.1
7.5°	1523.1	1521.2	1519.4	1517.6	1514.0
10°	1505.0	1505.0	1503.2	1494.1	1492.3
12.5°	1476.1	1474.3	1467.0	1454.4	1450.8
15°	1436.3	1436.3	1421.9	1407.4	1402.0
17.5°	1393.0	1391.2	1373.1	1358.6	1351.4
20°	1346.0	1342.4	1324.3	1300.8	1288.2
22.5°	1293.6	1293.6	1271.9	1241.2	1228.6
25°	1244.8	1237.6	1217.7	1174.4	1141.8
27.5°	1188.8	1178.0	1156.3	1094.9	1056.9
30°	1127.4	1122.0	1091.2	1011.8	982.8
32.5°	1069.6	1060.5	1028.0	944.9	921.4
35°	1009.9	1002.7	953.9	881.7	860.0
37.5°	950.3	941.3	879.9	822.0	794.9
40°	890.7	879.9	813.0	760.6	731.7
42.5°	834.7	820.2	755.2	699.2	666.7
45°	775.1	758.8	693.8	636.0	610.7
47.5°	715.5	701.0	641.4	581.8	552.9
50°	652.2	639.6	585.4	525.8	495.0
52.5°	599.8	580.0	527.6	467.9	442.6
55°	538.4	522.1	473.4	417.3	395.7
57.5°	482.4	466.1	421.0	368.6	350.5
60°	430.0	406.5	368.6	323.4	308.9
62.5°	372.2	354.1	321.6	283.7	301.7
65°	319.8	301.7	272.8	278.2	231.3
67.5°	262.0	252.9	227.6	202.4	195.1
70°	213.2	202.4	193.3	166.2	159.0
72.5°	169.8	159.0	146.3	131.9	126.5
75°	128.3	119.2	112.0	106.6	117.4
77.5°	88.5	84.9	79.5	74.1	72.3
80°	57.8	56.0	54.2	52.4	50.6
82.5°	34.3	34.3	34.3	34.3	34.3
85°	18.1	19.9	21.7	23.5	25.3
87.5°	10.8	10.8	12.6	14.5	16.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)