

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: P560780

Luminaire Tested: FSR-12-4-LD4-1HI-35-UNV-81-96-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P560780  
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-81-96-EDD-90  
Description: 1X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .250 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

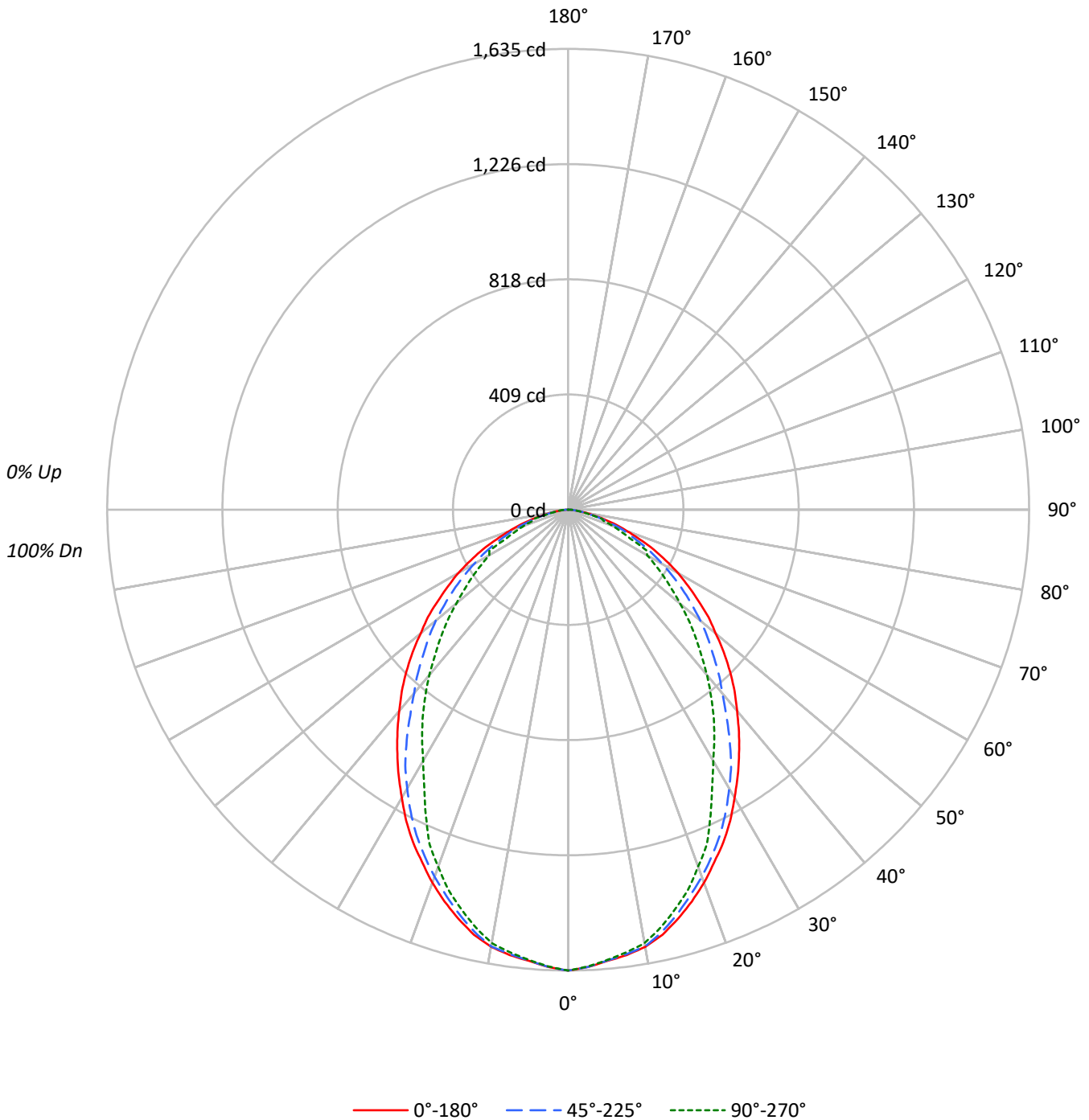
Lumens per Lamp: N/A  
Luminaire Lumens: 3210.0 lumens  
Efficiency: N/A  
Efficacy: 74.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 43.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	4400	4400	4400
5°	4340	4335	4330
10°	4303	4298	4267
15°	4187	4145	4087
20°	4033	3968	3860
25°	3867	3783	3547
30°	3665	3548	3195
35°	3471	3279	2956
40°	3274	2988	2689
45°	3086	2762	2431
50°	2857	2564	2168
55°	2643	2324	1942
60°	2421	2075	1739
65°	2131	1817	1541
70°	1755	1592	1308
75°	1395	1219	1278
80°	938	879	820
85°	584	701	818

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3086 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	152.2	4.7
10°-20°	417.7	13.0
20°-30°	578.3	18.0
30°-40°	616.6	19.2
40°-50°	562.6	17.5
50°-60°	440.7	13.7
60°-70°	287.2	8.9
70°-80°	127.3	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°	1148.2	35.8
0°-40°	1764.9	55.0
0°-60°	2768.2	86.2
0°-90°	3210.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3210.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1635	1635	1635	1635	1635	
5°	1607	1605	1605	1603	1603	153
15°	1503	1503	1488	1473	1467	422
25°	1302	1295	1274	1229	1195	598
35°	1057	1049	998	922	900	661
45°	811	794	726	665	639	625
55°	563	546	495	437	414	505
65°	335	316	285	291	242	330
75°	134	125	117	112	123	144
85°	19	21	23	25	26	26
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1635.1	1635.1	1635.1	1635.1	1635.1
2.5°	1623.8	1623.8	1623.8	1621.9	1621.9
5°	1606.8	1604.9	1604.9	1603.0	1603.0
7.5°	1593.5	1591.7	1589.8	1587.9	1584.1
10°	1574.6	1574.6	1572.8	1563.3	1561.4
12.5°	1544.4	1542.5	1534.9	1521.7	1517.9
15°	1502.8	1502.8	1487.7	1472.6	1466.9
17.5°	1457.4	1455.6	1436.6	1421.5	1414.0
20°	1408.3	1404.5	1385.6	1361.0	1347.8
22.5°	1353.5	1353.5	1330.8	1298.7	1285.4
25°	1302.4	1294.9	1274.1	1228.7	1194.7
27.5°	1243.8	1232.5	1209.8	1145.5	1105.8
30°	1179.6	1173.9	1141.8	1058.6	1028.3
32.5°	1119.1	1109.6	1075.6	988.6	964.1
35°	1056.7	1049.1	998.1	922.5	899.8
37.5°	994.3	984.9	920.6	860.1	831.7
40°	931.9	920.6	850.6	795.8	765.6
42.5°	873.3	858.2	790.2	731.6	697.5
45°	810.9	793.9	725.9	665.4	638.9
47.5°	748.6	733.4	671.1	608.7	578.4
50°	682.4	669.2	612.5	550.1	517.9
52.5°	627.6	606.8	552.0	489.6	463.1
55°	563.3	546.3	495.3	436.7	414.0
57.5°	504.7	487.7	440.4	385.6	366.7
60°	449.9	425.3	385.6	338.4	323.2
62.5°	389.4	370.5	336.5	296.8	315.7
65°	334.6	315.7	285.4	291.1	242.0
67.5°	274.1	264.6	238.2	211.7	204.2
70°	223.1	211.7	202.3	173.9	166.3
72.5°	177.7	166.3	153.1	138.0	132.3
75°	134.2	124.8	117.2	111.5	122.9
77.5°	92.6	88.8	83.2	77.5	75.6
80°	60.5	58.6	56.7	54.8	52.9
82.5°	35.9	35.9	35.9	35.9	35.9
85°	18.9	20.8	22.7	24.6	26.5
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)