

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: P561188

Luminaire Tested: FSR-12-4-LD4-1STD-35-UNV-93-86-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561188  
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-35-UNV-93-86-EDD-90  
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

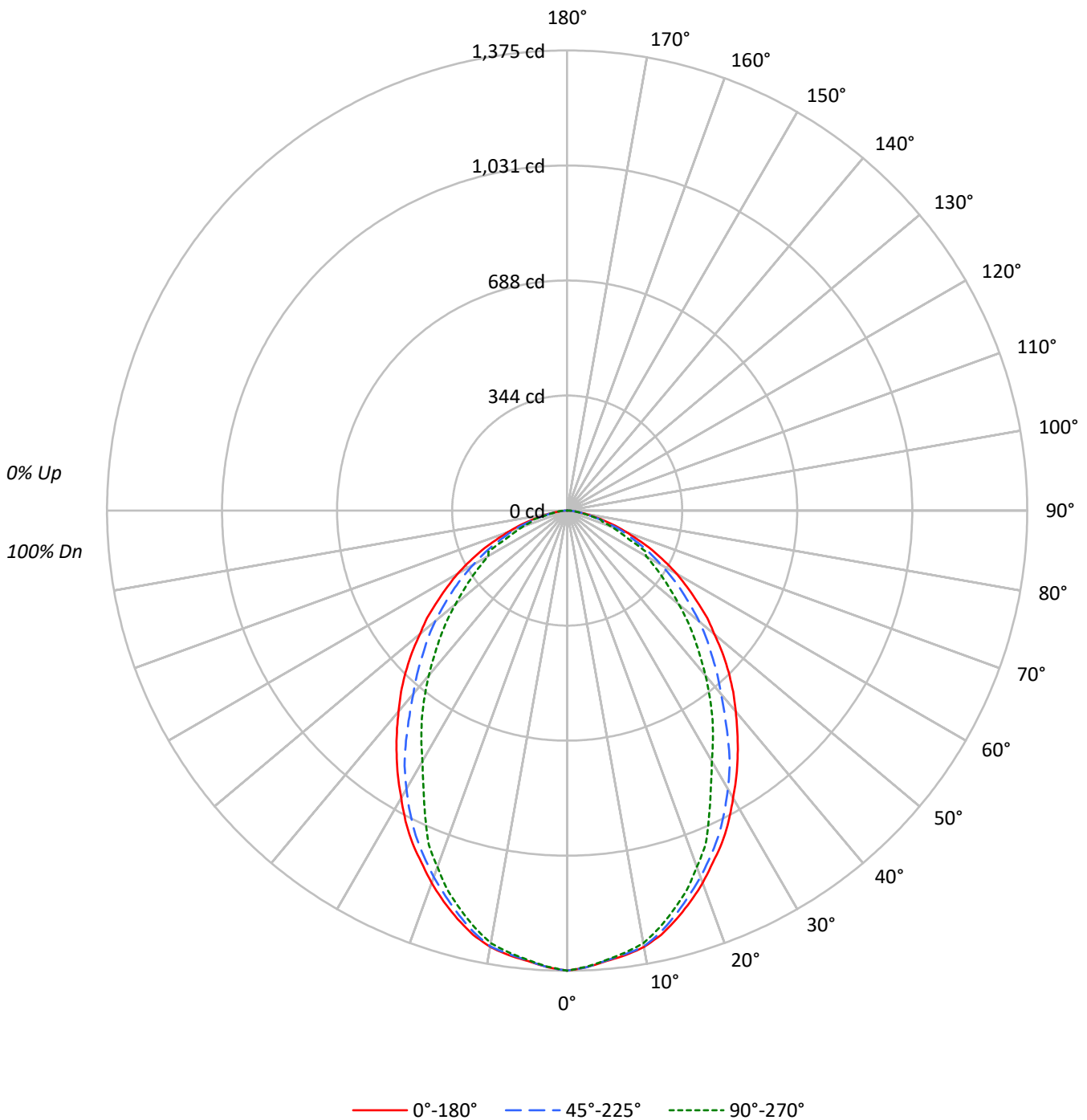
Lumens per Lamp: N/A  
Luminaire Lumens: 2699.0 lumens  
Efficiency: N/A  
Efficacy: 81.1 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.3  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	3700	3700	3700
5°	3649	3645	3641
10°	3618	3613	3587
15°	3520	3485	3436
20°	3391	3336	3245
25°	3252	3181	2983
30°	3082	2983	2687
35°	2919	2757	2485
40°	2753	2512	2261
45°	2595	2323	2044
50°	2402	2156	1823
55°	2222	1954	1633
60°	2036	1745	1463
65°	1791	1528	1295
70°	1475	1338	1101
75°	1173	1024	1074
80°	789	739	690
85°	491	590	689

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2595 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	128.0	4.7
10°-20°	351.2	13.0
20°-30°	486.2	18.0
30°-40°	518.5	19.2
40°-50°	473.0	17.5
50°-60°	370.6	13.7
60°-70°	241.5	8.9
70°-80°	107.0	4.0
80°-90°	23.0	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°	965.4	35.8
0°-40°	1483.9	55.0
0°-60°	2327.5	86.2
0°-90°	2699.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2699.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1375	1375	1375	1375	1375	
5°	1351	1349	1349	1348	1348	128
15°	1264	1264	1251	1238	1233	355
25°	1095	1089	1071	1033	1004	503
35°	888	882	839	776	757	555
45°	682	668	610	560	537	525
55°	474	459	416	367	348	425
65°	281	265	240	245	203	277
75°	113	105	98	94	103	121
85°	16	18	19	21	22	22
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1374.8	1374.8	1374.8	1374.8	1374.8
2.5°	1365.3	1365.3	1365.3	1363.7	1363.7
5°	1351.0	1349.4	1349.4	1347.8	1347.8
7.5°	1339.9	1338.3	1336.7	1335.1	1331.9
10°	1324.0	1324.0	1322.4	1314.4	1312.8
12.5°	1298.5	1297.0	1290.6	1279.5	1276.3
15°	1263.6	1263.6	1250.9	1238.1	1233.4
17.5°	1225.4	1223.8	1207.9	1195.2	1188.9
20°	1184.1	1180.9	1165.0	1144.4	1133.2
22.5°	1138.0	1138.0	1118.9	1091.9	1080.8
25°	1095.1	1088.7	1071.3	1033.1	1004.5
27.5°	1045.8	1036.3	1017.2	963.2	929.8
30°	991.8	987.0	960.0	890.1	864.6
32.5°	940.9	933.0	904.4	831.3	810.6
35°	888.5	882.1	839.2	775.6	756.6
37.5°	836.0	828.1	774.0	723.2	699.3
40°	783.6	774.0	715.2	669.1	643.7
42.5°	734.3	721.6	664.4	615.1	586.5
45°	681.9	667.5	610.3	559.5	537.2
47.5°	629.4	616.7	564.2	511.8	486.4
50°	573.8	562.6	515.0	462.5	435.5
52.5°	527.7	510.2	464.1	411.7	389.4
55°	473.6	459.3	416.4	367.2	348.1
57.5°	424.4	410.1	370.3	324.2	308.3
60°	378.3	357.6	324.2	284.5	271.8
62.5°	327.4	311.5	282.9	249.5	265.4
65°	281.3	265.4	240.0	244.8	203.4
67.5°	230.5	222.5	200.3	178.0	171.7
70°	187.5	178.0	170.1	146.2	139.9
72.5°	149.4	139.9	128.7	116.0	111.3
75°	112.8	104.9	98.5	93.8	103.3
77.5°	77.9	74.7	69.9	65.2	63.6
80°	50.9	49.3	47.7	46.1	44.5
82.5°	30.2	30.2	30.2	30.2	30.2
85°	15.9	17.5	19.1	20.7	22.3
87.5°	9.5	9.5	11.1	12.7	14.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)