

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: P561258

Luminaire Tested: FSR-12-4-LD4-1STD-40-UNV-93-94-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561258  
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-40-UNV-93-94-EDD-90  
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187 CLEAR TEMPER  
GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

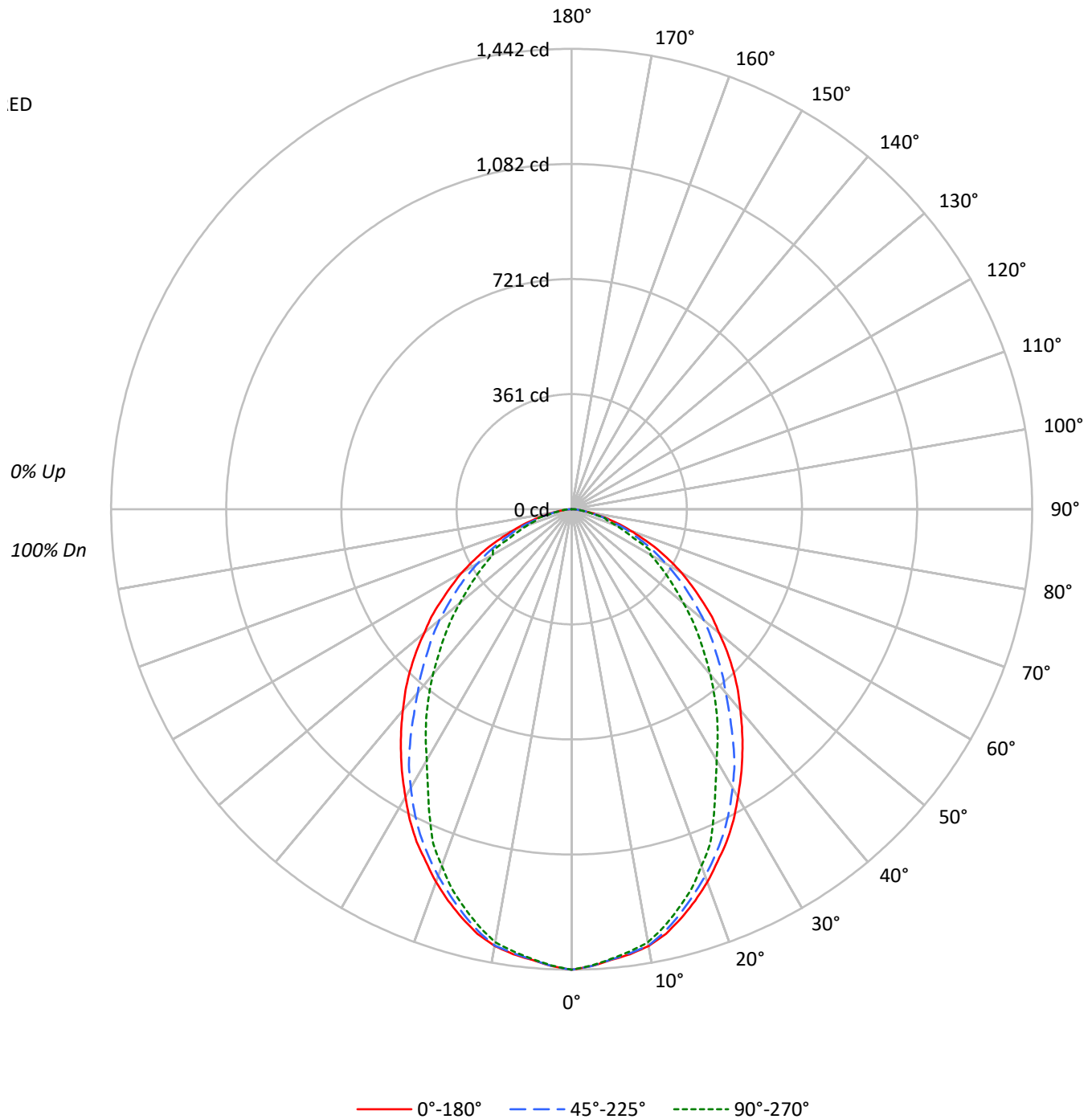
Lumens per Lamp: N/A  
Luminaire Lumens: 2831.0 lumens  
Efficiency: N/A  
Efficacy: 85.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.3  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	3881	3881	3881
5°	3828	3823	3819
10°	3795	3790	3763
15°	3692	3655	3604
20°	3557	3499	3404
25°	3411	3336	3128
30°	3232	3129	2818
35°	3061	2892	2607
40°	2887	2635	2372
45°	2722	2436	2144
50°	2519	2262	1912
55°	2331	2049	1713
60°	2136	1830	1534
65°	1879	1603	1359
70°	1548	1404	1154
75°	1231	1075	1127
80°	826	775	724
85°	516	618	719

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2722 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	134.2	4.7
10°-20°	368.4	13.0
20°-30°	510.0	18.0
30°-40°	543.8	19.2
40°-50°	496.1	17.5
50°-60°	388.7	13.7
60°-70°	253.3	8.9
70°-80°	112.2	4.0
80°-90°	24.1	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°	1012.7	35.8
0°-40°	1556.5	55.0
0°-60°	2441.3	86.2
0°-90°	2831.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2831.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1442	1442	1442	1442	1442	
5°	1417	1415	1415	1414	1414	135
15°	1325	1325	1312	1299	1294	373
25°	1149	1142	1124	1084	1054	527
35°	932	925	880	814	794	583
45°	715	700	640	587	564	551
55°	497	482	437	385	365	446
65°	295	278	252	257	213	291
75°	118	110	103	98	108	127
85°	17	18	20	22	23	23
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1442.1	1442.1	1442.1	1442.1	1442.1
2.5°	1432.1	1432.1	1432.1	1430.4	1430.4
5°	1417.1	1415.4	1415.4	1413.7	1413.7
7.5°	1405.4	1403.7	1402.1	1400.4	1397.1
10°	1388.7	1388.7	1387.1	1378.7	1377.1
12.5°	1362.1	1360.4	1353.7	1342.0	1338.7
15°	1325.4	1325.4	1312.0	1298.7	1293.7
17.5°	1285.4	1283.7	1267.0	1253.7	1247.0
20°	1242.0	1238.7	1222.0	1200.3	1188.7
22.5°	1193.7	1193.7	1173.7	1145.3	1133.7
25°	1148.7	1142.0	1123.7	1083.6	1053.6
27.5°	1097.0	1087.0	1067.0	1010.3	975.3
30°	1040.3	1035.3	1007.0	933.6	906.9
32.5°	986.9	978.6	948.6	871.9	850.2
35°	931.9	925.3	880.2	813.6	793.6
37.5°	876.9	868.6	811.9	758.5	733.5
40°	821.9	811.9	750.2	701.9	675.2
42.5°	770.2	756.9	696.9	645.2	615.2
45°	715.2	700.2	640.2	586.8	563.5
47.5°	660.2	646.8	591.8	536.8	510.1
50°	601.8	590.2	540.2	485.1	456.8
52.5°	553.5	535.2	486.8	431.8	408.4
55°	496.8	481.8	436.8	385.1	365.1
57.5°	445.1	430.1	388.4	340.1	323.4
60°	396.8	375.1	340.1	298.4	285.1
62.5°	343.4	326.8	296.8	261.7	278.4
65°	295.1	278.4	251.7	256.7	213.4
67.5°	241.7	233.4	210.1	186.7	180.1
70°	196.7	186.7	178.4	153.4	146.7
72.5°	156.7	146.7	135.0	121.7	116.7
75°	118.4	110.0	103.4	98.4	108.4
77.5°	81.7	78.4	73.4	68.4	66.7
80°	53.3	51.7	50.0	48.3	46.7
82.5°	31.7	31.7	31.7	31.7	31.7
85°	16.7	18.3	20.0	21.7	23.3
87.5°	10.0	10.0	11.7	13.3	15.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)