

### SC3000-270-ATP



#### APPLICATIONS

- Wind Turbine Pitch Control
- Industrial Backup Power
- Rail Transit
- Renewable Energy Systems
- Engine Starting
- Hybrid Power Systems



#### FEATURES & ADVANTAGES

- One Million Cycles Lifetime
- Exceptional Low Temperature Performance
- Ultra High Power Density
- Ultra Low Internal Resistance



#### Specifications

Capacitance	Rated <sup>1</sup>	3000F
	Tolerance	-0/+20%
Voltage	Rated	2.7V DC
	Surge <sup>2</sup>	2.85V DC
ESR	ESR (DC) - typical	0.22mΩ
	ESR (DC) - maximum initial	0.28mΩ
Current	Maximum leakage <sup>3</sup>	5.2mA
	Maximum peak	2100A
	Maximum continuous current ( $\Delta T = 15^{\circ}\text{C}$ ) <sup>4</sup>	131 RMS
	Maximum continuous current ( $\Delta T = 40^{\circ}\text{C}$ ) <sup>4</sup>	211A RMS
Energy Storage	Maximum energy <sup>5</sup>	3.04Wh
	Usable energy <sup>6</sup>	2.3Wh
	Volumetric energy density <sup>7</sup>	7.3Wh/L
	Gravametric energy density <sup>8</sup>	5.8Wh/kg
Power Density	Power density <sup>9</sup>	6008W/kg

#### Temperature

Temperature Characteristics	Operating Temperature Range <sup>10</sup>	-50°C to +65°C
	Storage Temperature Range	-50°C to +70°C

#### Standards, Safety & Environmental

Safety	Short Circuit Current	4600A
	<ul style="list-style-type: none"> <li>• This product may vent or rupture if overcharged, reverse charged incinerated or heated above 100°C</li> <li>• Do not crush, mutilate, or disassemble</li> <li>• Do not dispose of unit in trash</li> </ul>	

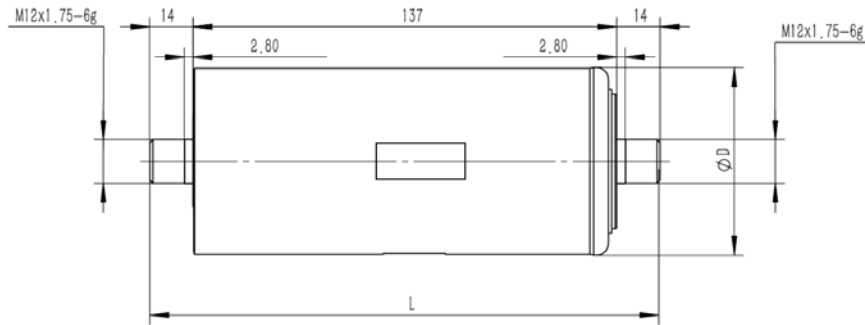
#### Service Lifetime

Endurance	<b>Product held at rated voltage in 65°C environment for 1500 hours</b>	
	Change in capacitance (% drop from rated)	≤20%
	Change in ESR (% increase from maximum initial)	≤100%
DC Life	<b>Product held at rated voltage in 25°C environment</b>	
	Projected Life	10+ years
	Change in capacitance (% drop from rated)	≤20%
	Change in ESR (% increase from maximum initial)	≤100%
Cycle Life	<b>Cycling from rated voltage to 50% voltage under constant current in 25°C environment</b>	
	Projected Life	1,000,000 cycles
	Change in capacitance (% drop from rated)	≤20%
	Change in ESR (% increase from maximum initial)	≤100%
Storage Life	<b>Stored uncharged in original packaging in 25°C environment</b>	
	Life	4 years

#### Physical Characteristics

Mechanical	Operation Vibration	IEC60068-2-6, SAEJ380
	Impact	IEC60068-2-27, SAE J2464

## Outline Drawings:



## Weight and Size:

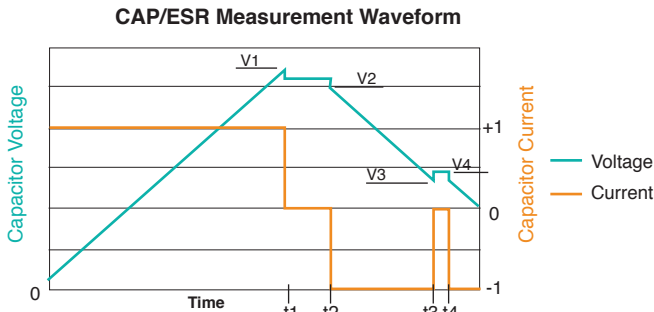
**Weight: 520g | Size: L (Max.) 142.2mm, D (Max.) 61.0mm**

## Naming Rules:

Type	Capacitance	Dash	Rated Voltage	Dash	Termination
SC	3000 = 3000F	-	270 = 2.7V	-	ATP = Axial Threaded Post

## Notes:

1. Measure capacitance and DC internal resistance at 25°C under specified test current per Figure 1



$V1 = V_{rated}$        $t2 - t1 = 15 \text{ seconds}$        $Capacitance = I \times (t3-t2)/(V2-V3)$   
 $V3 = 0.5 \times V_{rated}$        $t4 - t3 = 5 \text{ seconds}$        $ESR = (V4 - V3)/I$

Figure 1

2. Surge voltage is non-repeatable and duration cannot exceed 1s

3. Corresponding current value after 72 hours of rated voltage at 25°C

4.  $\Delta T = I_{rms}^2 \times ESR \times R_{ca}$

5.  $0.5CV^2/3600$

6.  $0.5C(V_{nom}^2 - V_{min}^2)/3600$

7.  $Wh_{usable} / \left( \frac{\pi r^2(\text{mm}) \times L(\text{mm})}{1 \times 10^6} \right)$

8.  $Wh_{usable} / \text{weight}(\text{kg})$

9. Per IEC62391-2  $P_d = \frac{0.12V^2}{ESR_{DC} \times \text{weight}(\text{kg})}$

10. Test after the sample has been maintained at -50°C for 16 hours and the temperature raised 10°C each time and maintained for 1 hour, then test the sample Figure 2

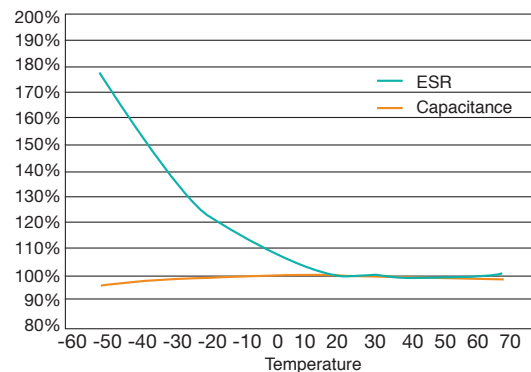


Figure 2

**Axial weldable version available, please contact LICAP for details**

Specifications are subject to change without notice.