

Zaiflar Supercapacitor

The Zaiflar is one of the heavier classes of supercapacitor modules created by [Solan Starworks](#), and is used primarily for civilian vehicles and [Astral Vanguard](#) powered frames. On the former, it is a primary energy supply module, while it is typically employed as a backup/startup power source when [Cold Fusion Reactors](#) are offline. It is roughly the size of a scuba tank.

Nomenclature Information

Organization: [Astral Vanguard](#) Government: [Iromakuanhe Astral Commonwealth](#) Designer: Solan Starwinds Manufacturer: [Solan Starworks](#) Name: Solanii Zaiflar Supercapacitor Type: Power Storage Device

Functionality

As a supercacitor, the Zaiflar is able to achieve energy storage many times greater than that of electrolytic batteries, and is vastly safer to use than Lithium Ion and Polymer batteries. This is due to a differing construction process compared to standard electro-chemical batteries and capacitors. Traditional batteries use the separation of charge carriers, typically electrons, to store energy. Supercapacitors differ by employing a structure that contains an electrical double layer. In this double layer, the effective thickness of the insulator is exceedingly thin, which, combined with a proportionally large surface area, grants exceedingly high capacitance in practical sizes.

The downside is that the very double layer that makes the supercapacitor so potent also gives it very poor conductance, meaning that multiple in-series supercapacitors have to be assembled for systems with high power consumption.

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Last update: **2023/12/21 00:59**

