

## *V-Tent*

### Solar Powered Car Charging And Protecting Unit

V-Tent is an ecofriendly parking system that protects and charges vehicles. It is a collapsible canopy that can be used in both personal and public parking areas.

Aiming to create a sustainable system for urban environment, V-Tent offers a safe space for electric cars either at home or in city. Functioning as a canopy that prevents weather side-effects such as sun heat or snow, design protects vehicles physically from environmental conditions. Therefore, it prolongs the life and maintenance cycle of vehicles in the long run. Also designed as a precaution for theft, structural elements of design work as barriers.

Designed with a flexible solar panel, collapsible structure of V-Tent enables it to appear only when it's in use, therefore prevents visual complexity. High-tech modern design complements to contemporary urban context. Material used for canopy is a laminated multi-layered textile that holds flexible solar panels. Inner layer is covered with reflective material and middle layer has a pattern with micro ventilation tubes in order to prevent textile and panels from excess temperatures.

Having an area of 24,5 square meters and with 200 W/m<sup>2</sup> flexible solar panels that have 2 millimeters thickness, V-Tent produces 5kW energy in standard test conditions and 4,5 kW in nominal operating cell temperature. The energy required for charging a Toyota Prius batteries having specifications of 2,3 kW and 10 amperes can be gathered with V-Tent in approximately 3 hours in daylight conditions.

System of V-Tent in public usage is designed as a space saving parking lot space that runs on fee. With a simple interface, user is able to choose parking period and make payment by card. Being informed with an estimated charging time, drivers can access the system interface remotely via smartphone applications. Band light on V-Tent indicates availability and charge percentage with color and length. Produced energy from solar power can be used in urban applications such as lighting, where individual users can also benefit carbon-free energy for their usage.

For video please visit:

<http://www.youtube.com/watch?v=sT3SCuwELRU&feature=youtu.be>