# GreenDrive

## Solar Roof for Golf Carts

The complete roof integrated solar power supply for golf carts consists of the high-efficiency solar module GreenDrive with frame, a complete charging electronic for 48V-lead acid batteries with temperature compensation and an LCD display-box. This display denotes the generated energy, the prevented amount of CO2 and further data. The display optionally either feautures with current values or cumulated total values.

The employed solar cells have a contact free, dark blue surface and an extremely high energy conversion efficiency of 22%. The fiberglass-reinforced baseplate has an aluminium colored surface on both sides, and is coated with a UV- and weather resistant foil in the front. Through its special construction technology, the module is semi-flexible with high robustness and light weight. The module is fixed onto a frame made from brushed stainless steel, which can be adjusted to different kinds of golf cart models.

**Technical Data Solar Panel**

| | |
|---|---|
| Rated Power: | 350W @ STC 1000W/m$^2$ AM1,5, $T_{mod}$=25°C |
| Real Performance: | 308W @ 1000W/m$^2$ AM1,5, $T_{mod}$=55°C |
| Real Loading Current: | 5,85A @ 1000W/m$^2$ AM1,5, $T_{mod}$=55°C |
| Measurements / Weight: | approx. 1710 x 1100 x 35mm / approx. 12kg |

**Technical Data Charging Electronics and Display**

| | |
|---|---|
| Output Voltage: | 5 … 56V ($T_{amb}$=25°C /48V Battery) |
| Temperature Compensation: | Lead-Acid / SLA |
| Energy Conversion Efficiency: | approx. 99% @ 10-350W |
| Closed Current from Battery: | max. 3mA @ 50V, $T_{amb}$ = 35°C |
| Measurements: | ca. 50 x 40 x 10mm / 80 x 60 x 60mm (Display) |
| Cable: | 2x 4mm2 insulated |

**Power-Display**


The power-display is attached to the bottom of the solar panel with a binder which allows adjustment of the angle.

The device periodically records precise measurements of relevant parameters such as loading current, power, temperature, time, etc. The recorded data is internally processed and saved, and can be displayed on a big LDC-screen just by keystroke. With the first key press, the LCD lighting switches on. After that, within 2 sec., the key can be used to switch to the next menu. After 2 sec., the light switches off, and the display changes back to its basic menu.

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