

# Solar and Fuel Cell Power Supply Trailer

Solar and Fuel Cell Power supply for LiDAR installed in a trailer



## Description

- Solar and Fuel Cell Power supply for Lidar installed in a trailer
- Hybrid solution combining 125 W fuel cell and 1050 W solar modules with 440 Ah 24 V strong batteries
- Space for LiDAR device inside the trailer

The stand-alone power supply system is especially made to supply and host a LiDAR device. The power supply system is recommended for all climates, except arctic conditions with only little hours of sunshine. The system combines a powerful Methanol-based EFOY Pro fuel cell and three solar modules. The system is equipped with two 28 liters fuel cell cartridges.

In order to monitor and control the EFOY Pro fuel cell, a Netbiter modem is installed. Hence, the modem sends current system data to the web viewer. The frequency can be configured via the web viewer. Alarms, such as low fuel or low battery voltage, can be configured. Thus the system automatically informs via email or SMS in case of triggering alarms.

The trailer is designed to host a LiDAR device. It works with most LiDAR on the market like MeteoLaser, ZX and Windcube. It has a removable hatch on its top for the laser beam.

In very remote sites the trailer can be moved by a helicopter using straps or lifting brackets (optional).

## Specifications

Characteristic	Description
DC Power supply for LiDAR	24 V DC power supply installed in flight case
Power consumption range	30 - 90 W
Power supply for the LiDAR	24 V DC with stabilized DC/DC converter

Characteristic	Description
Battery bank	440 Ah / 24 V (4 x 220 Ah 12 V AGN) Weight: 280 kg Battery guard Note: Battery bank can easily be removed for transport by helicopter.
Solar supply	3 modules @ 350 W / 24 V (Total: 1050 W) Solar panels wattage may deviate by $\pm 10\%$ . Blue Solar MPPT 150/35 solar charger
	Switch for battery bank & solar panels
Remote control	WEB based monitoring & control system (Interface) from Netbiter via GSM-2-GPIO modem (quad-band) including antenna
	Remote control of power supply (on & off)
Extra AC power supply (for Laptop) as an option	24-375 W inverter

Fuel cell	
Type	EFOY Pro 2800 125 W
Power output	125 W
Nominal voltage	24 V
Nominal Methanol consumption	0.9 liters/kWh
Classification of Methanol	Index: 603-00100-X; EINECS, ELINCS, NLP: 200-659-6; CAS 67-56-1
Fuel cell cartridge	2x 28 liters Methanol, M28 cartridge (2 x M28 adapter)
Fuel cell cartridge capacity	62.2 kWh @ 56 liters Methanol

<b>Information on ingredients - Fuel cartridge M28</b>	
Methanol	Substance for which an EU exposure limit value applies
Registration number (REACH)	--
Index	603-001-00-X
ENIECS, ELINCS, NLP	200-659-6
CAS	67-56-1
Classification acc. to Directive 67/548/EEC	Highly flammable, F, R11 Toxic, T, R23/24/25 Toxic, T, R39/23/24/25
Classification acc. to Regulation (EC) 1272/2008 (CLP)	Flam. Liq. 2, H225 Acute Tox. 3, H331 Acute Tox. 3, H311 Acute Tox. 3, H301 STOT SE 1, H370

<b>Trailer adapted for the LiDAR</b>	
Equipment	Roof hatch Bracket for LiDAR Water Drain
Accessories	4 x support legs with flanges Manual fire extinguisher Spare wheel Manual & documentation
Operating temperature	0 ... 35 °C
Total dimensions	3.78 m x 1.81 m x 2.11 m (length x width x height)
Total weight	approx. 850 kg
Manufacturer of Trailer	Humbaur (Germany)