

SolarMedicus

modular, advanced and solar powered medical station

SolarMedicus is a compact, modular and autonomous medical station for remote areas powered by solar energy. The system has been designed for a reliable operation under extreme conditions. SolarMedicus can be operated easily by the medical staff.



The basic-system consists of the Power Block and a high efficient 50L Medicine Cooler for sensitive medicaments. The standard Version with a 500W Solar generator is able to deliver energy for the Medicine Cooler, for 5 x 11W energy saving light, for a notebook with printer, for an inhalator, for an effective Aerosol Therapy and for an air ventilator. A lately developed

advanced UVC Autoclave for surgical instruments can be applied as a stand alone or integrated/adapted device due to its extreme low energy consumption.

A wall mounted cabinet (optional) has enough storage capacity for medicaments, bandage- and first-aid supplies as well as for surgical instruments.

The Charge-Discharge Controller, the battery and the inverter for AC devices (230V,50Hz or 120V,60Hz) are an integral parts of the Solar Power Block cabinet. Only the solar modules must be fixed on a roof or a separate pylon outside the building.



Medicine Cooler



Dimensions: (L x W x H = 710 x 550 x 540 mm) Weight: 27 kg

Effective Volume: 50L

Construction: 1,5mm Aluminum cover : Material: AlMg3 (seawater resistant Aluminum) / pulver coated ; Box Inlay: ABS material; Isolation: 80 mm PU

Electronic Controller with digital display: Adjustment from -20 °C to +20 °C

Defaults: Temperature: 4 °C ; Hysteresis: 1 °C

Ranges for medicine: - 18 °C ice packs freezing
+ 4 °C standard temperature range

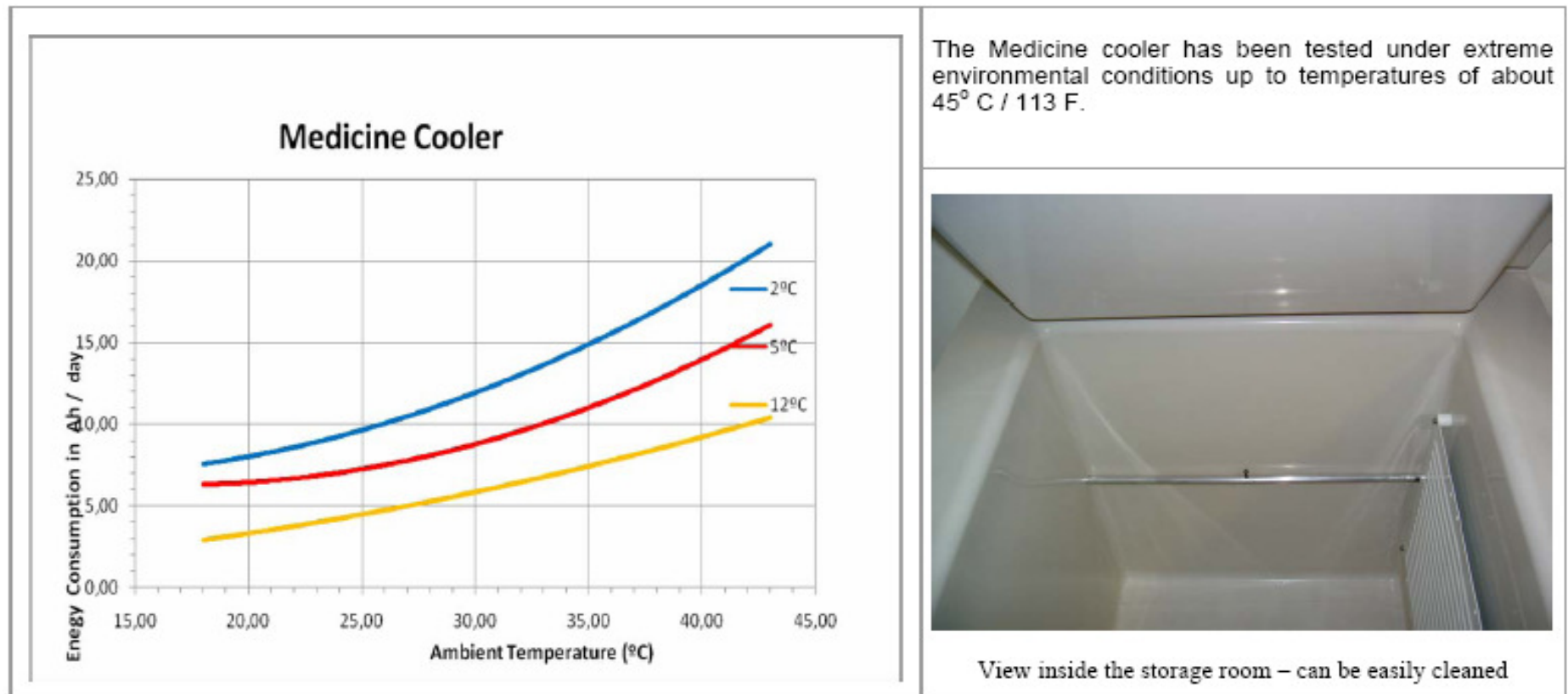
Typical consumption at 30 °C environmental temperature and 4 °C cooling temperature - Energy Consumption = 250 Wh/day

Energy Consumption (environmental temp. vs. cooling temp.) (see graph)

Conversion Factor: Celsius / Fahrenheit $C = \frac{F}{1,8} - 32$

The medicine cooler can be applied as a stand alone device or in combination with the Power Block Systems (see SPB Systems), which are available in a power range from 300 W to 2000 W.

Energy demand of the medicine cooler



Basic energy supply unit for the SolarMedicus Systems – Solar Power Block

	<p>Dimensions:</p> <p>Electronic Box : (L x W x H = 710 x 550 x 280 mm) Weight: 18 kg (Top) Material: AlMg3 (seawater resistant Aluminum) / pulver coated</p> <p>Includes : Charge-Discharge Controller, Inverter, Instruments and Connection Terminals</p>
	<p>Battery Box : L x W x H = 710 x 550 x 275 mm) Weight: 8 kg (Bottom) Material: AlMg3 (seawater resistant Aluminum) / pulver Coated – Designed for two batteries of type S12/230A</p>
	<p>Battery : (L x W x H = 274 x 518 x 242 mm) Weight: 70 kg each S12/230A Maintenance free VRLA battery with dryfit technology</p>
	<p>Total Dimensions: Battery box with two batteries and standard electronic box on top</p> <p>L x W x H = 710 x 550 x 555 mm) Weight: 186 kg</p>

The SolarMedicus can be combined with all types of the Power Block System – The system has been designed with a modular concept – all parts fit together. The standard colours are white and blue.

Detailed Technical Data : Power Supply

Charge-Discharge Controller / Inverter

Charge Discharge Controller CDC2000/24 (2)(3)(4) Inverter AJ 600

System Voltage	24 V
Max. Input Voltage	50V
Max. Input Current 15A / stage	2 stage control: 40 A /24V 3 stage control: 60 A /24V 4 stage control: 80 A /24V
Threshold level - VRLA type:	2,38 V / cell
Temperature Controlled	yes
Sensor Controlled	yes
Operating temperature	-10 °C to + 50 °C
Storage Temperature	-20 °C to + 80 °C
Stand-by consumption	0,5 W

	AJ 600 - 230V/50Hz	AJ 600 – 120V/60Hz
Battery Voltage	24 V	24 V
Input Voltage	21 V – 32 V	21 V – 32 V
Stand-by / ON no load	0,4 / 8,5 W	
Max. Efficiency	94%	
Continuous power (VA) 30 min.	500 W at (25 °C)	600 W at (25 °C)
Continuous power (VA) 5 min.	675 W at (25 °C)	
Continuous power (VA) 5 sec.	1200 W at (25 °C)	
Power factor	0,1 to 1	
Distortion factor	< 5%	
Output Voltage	Sine wave 230V +/- 5% 50 Hz (+/- 0,05%)	Sine wave 120V +/- 5% 60 Hz (+/- 0,05%)