

# Advanced Outdoor Cabinet



v 1.2

## INTRODUCTION

In order to meet the requirements for reliable telecommunications systems and other advanced electronic systems - under challenging operational conditions - we at PowiDian have developed an innovative energy efficient solution – known as the [Advanced Outdoor Cabinet](#).

## BASIC OPERATION

The [Advanced Outdoor Cabinet](#) was designed for housing electronic equipment like Base Radio Stations/Microwave/Radars/Measurement systems etc. with passive cooling system. A double wall construction keeps the cabinet airtight and water resistant, which optimizes air channels and heat dissipation.

## FEATURES & BENEFITS

- IP55 Aluminium outdoor cabinet
- Double wall construction with insulation material
- Adaptive heat management concept
- Increased surface area for better heat dissipation
- Flexible 19" rack mounting for customer load equipment
- Optional battery shelves
- Front accessible for installation and maintenance
- *Vandalism protected*
- **AIRTIGHT** – Internal humidity between 40% and 60%



## INTELLIGENT DESIGN

### Air Flow Design

The cabinet is composed of a unique combination of air flow design and increased surface area.

Thus no active cooling equipment like air conditioning or free cooling is required which result in up to 85% lower power consumption compared to a conventional container solution.

### Heat Dissipation

The increased surface area and optimized air channels lead to a better heat dissipation of the internal electronics.

For 1 kW of heat dissipation:  $\Delta t^\circ = 4^\circ\text{C}$ .

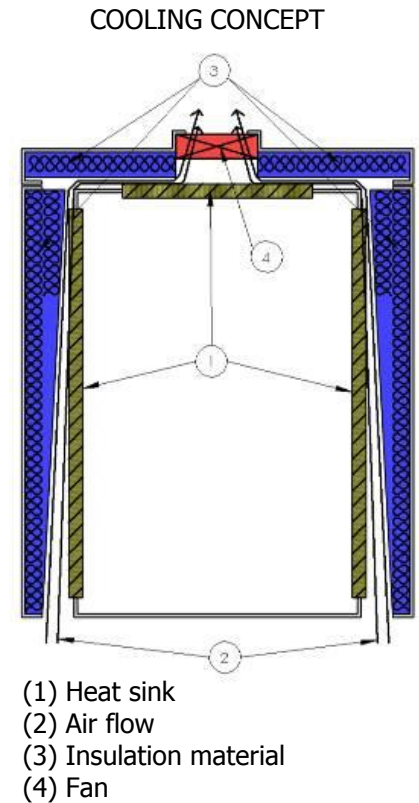
For 2 kW of heat dissipation:  $\Delta t^\circ = 7^\circ\text{C}$ .

Comparison with regular cabinets:  $\Delta t^\circ \geq 15^\circ\text{C}$ .

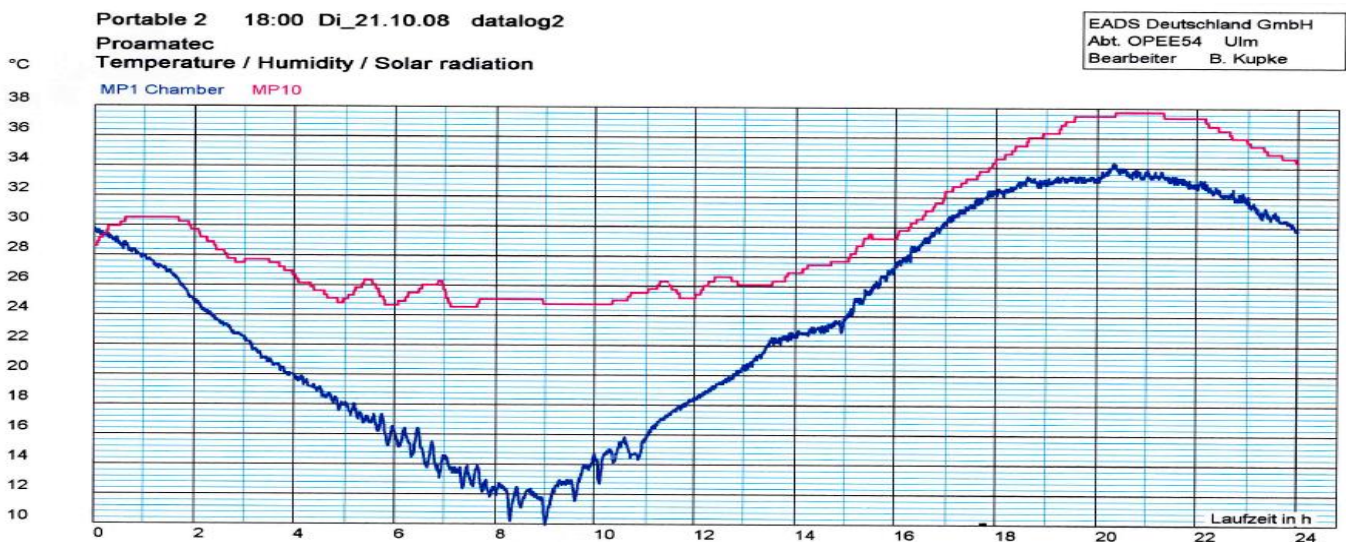
### Temperature

The majority of electronic equipment can support up to  $+55^\circ\text{C}$  that is rarely reached inside the cabinet.

In the graph below, the cycle of inside temperature increases batteries life cycle.



Advanced Outdoor Cabinet reduces power consumption up to 85%



**Blue:** Ambient temperature

**Red:** Internal cabinet temperature

X: Hours

Y: Temperature in Celsius



## ENVIRONMENTAL

### Humidity

10% – 100% (Int. Humidity will always be maintained between 40 – 60%).

### Temperature

The Advanced cabinet behaves like a Selective Heat Exchanger (from -15°C to +55°C).  
 $\lambda = 300 \text{ W/K}$  (when ext. Temp = +45°C).  
 $\lambda = 23 \text{ W/K}$  (when ext. Temp = -15°C).

### Altitude (over sea level)

Max Altitude: 4000m.

### Winds Speed

Max Wind: 80 km/h MIL-STD-810F.  
 Test Procedure Method 506.4.



## OPTIONS

### Solar Panels

Solar Panels can be added on top of the cabinet in order to decrease the power consumption compared to conventional containers solutions.

### Air Conditioning

The design of the cabinet contains a location in the door in order to install easily an air conditioning for extreme conditions (950W – 1500W).

### Flexible Cabinet

Generally, there is enough place for a base station and for power management equipment in the standard version. However, the cabinet is extendable to more than two 19" compartments –and if you have special needs we can redesign a fully customized solution – integrating our fantastic intelligent design – no matter if you need a smaller or bigger cabinet.



## MECHANICAL

Height without Solar Panels	2420 mm
Height with Solar Panels	2857 mm
Width with Solar Panels	1822 (2011) mm
Depth (external)	1071 mm
Depth with Solar Panels	1617 mm
Integrity	IP 55
Free 19 inch HU	20 HU
Weight of complete system without electronic systems	490 kg
Cable entry bottom with forklift	
Material Aluminium AlMg1 / W5005 stainless steel	
Powder coated NCS4502 R and NCS1502 R	

## ELECTRICAL EQUIPMENTS

AC Supply	1 x 230V ; 2 x 127V
Wide range input	85V - 275V ; 47 - 63Hz
DC Output	-48V nominal voltage
Solar Panels (optional)	470 Wp (-48V)
Supported Batteries	Lithium-Ion Lead Acid Nickel Cadmium

## CABINET FRONT VIEW



- (1) Power Compartment
- (2) Electronic System Compartment

**PowiDian SAS**

[www.PowiDian.com](http://www.PowiDian.com)

e-mail: [sales@PowiDian.com](mailto:sales@PowiDian.com)