

## SYSTEM "FREE COOLING" self-powered



Approximate height above ground level 4,700

Stranded wire diameter 4mm

Galvanized steel clamps

Fixing support to BTS



**Saving energy consumption of air conditioning up to 75%**

Fossil Kilowatt consumed, 650 grams of CO2 are emitted. We would be leaving to emit between 3,369 and 4,212 kilos of CO2 less than conventional air conditioning.



Motorized grid with anti vandalism protection

Ø450 hole made in the wall of the BTS for 90 ° bend anchor



## SYSTEM "FREE COOLING" self-powered

CONDITIONS OF POSITIONING	
Outlet conduits	Effective height above level zero
500 mm Ø	± 4.700 mm
400 mm Ø	
EXTRACTION CAPACITY	
Indoor-outdoor thermal gradient $\geq 3^{\circ}\text{C}$	
Operation only in autorotation (without motor)	

**Kilowatt consumed by fossil 650 grams of CO<sub>2</sub> are emitted. In a BTS whose air conditioning consumes in a year 8604 Kw, 5,616 kilos of CO<sub>2</sub> are emitted.**

**If our device saves between 60 and 75% of energy to the system, we would be failing to deliver between 3,369 and 4,212 kilos kilos of CO<sub>2</sub>.**

### SAFETY THRESHOLD OF THE TEMPERATURE CONTROL IN BTS

The electronic system is equipped with two temperature sensors to ensure effective control over the maximum temperature parameters. From  $55^{\circ}\text{C}$ , our system will close the air inlet grille by motorized disposal, so air conditioning of the BTS can recirculate the cold air being generated and this, given their greater weight, do not leave the enclosure.

	EXTRACTOR 500 MM	EXTRACTOR 400MM
Wind speed (Km/h)	Extraction in m3/h	Extraction in m3/h
0	610	390
5	1.560	999
10	2.580	1.655
15	3.515	2.250
20	4.700	3.100

### MATERIALS

Darrius wings: Anodized aluminum
Turbine extractor: Anodized aluminum
Shaft: Aluminium
Structural support: Stainless F-114
Support tube: Galvanized sheet
Alternator Engine: S & P Brushless 48V 400W

### ELECTRONIC MODULE

Processor: ARM CORTEX-M3 NXP
Model: LPC 1763 from 32 bits to 100 Mhz
Supply: 5V stabilized
subsystems:
Pole relay switch to 24V
Grid connection relay 24V motorized
Temperature sensor type "K" bimetallic

### COMPONENTS OF INSTALLATION

turbine height: 1500mm
Diameter: 1,200 mm (wings)
Tube: 500 mm
Extension tube: 2,000 mm
Elbow $90^{\circ}$
galvanized steel brackets
Embed galvanized steel molding
Braided galvanized steel cable stayed 4 mm diameter

### MOTORIZED GRILLE

Airzone 600x300 2.0 24V
Made of anodized aluminum

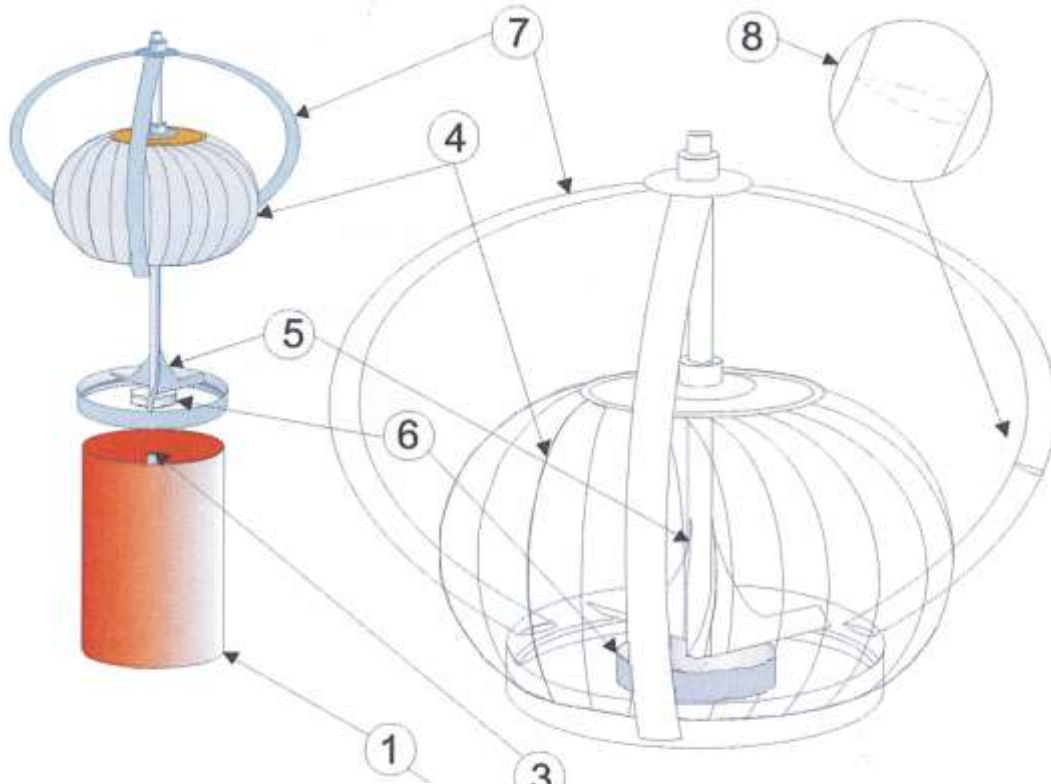
### BATTERIES

Group lead-gel batteries 24V-40 A / h
Mounting: Chassis metal closed

### ELECTRIC CABINET

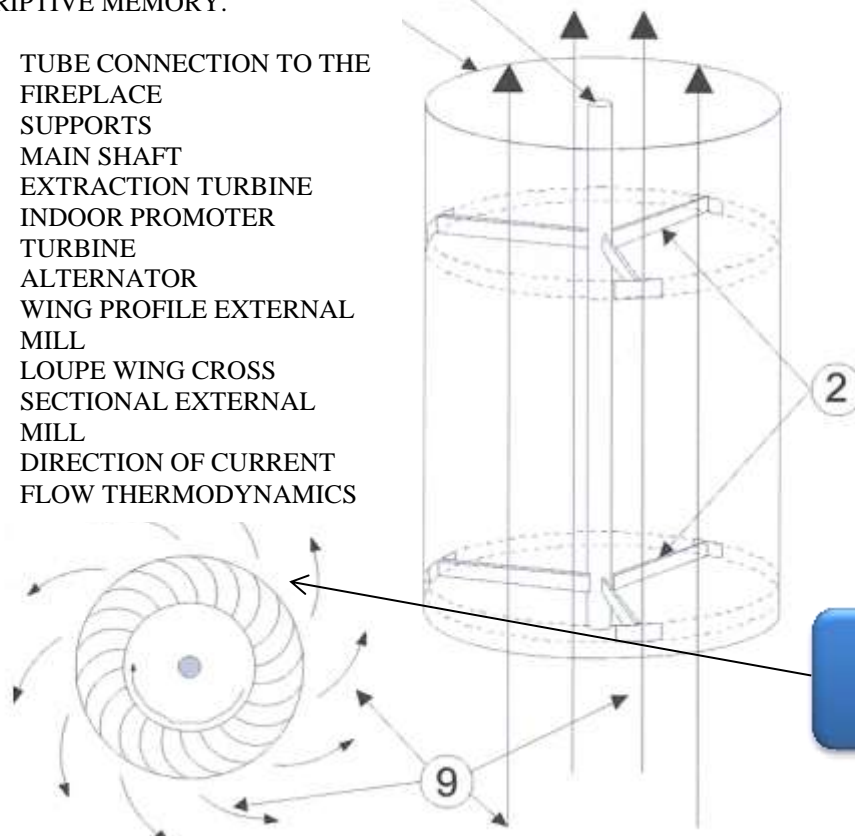
Plastic enclosure protection IP 55/65
---------------------------------------

## SYSTEM "FREE COOLING" self-powered



### DESCRIPTIVE MEMORY.

1. TUBE CONNECTION TO THE FIREPLACE
2. SUPPORTS
3. MAIN SHAFT
4. EXTRACTION TURBINE
5. INDOOR PROMOTER TURBINE
6. ALTERNATOR
7. WING PROFILE EXTERNAL MILL
8. LOUPE WING CROSS SECTIONAL EXTERNAL MILL
9. DIRECTION OF CURRENT FLOW THERMODYNAMICS



AUTO-ROTATION



## SYSTEM "FREE COOLING" self-powered

Electronic module

By electronic module control:

- Opening / closing grids
- charging auxiliary battery
- Monitoring systems allowed



Electronic module

Auxiliary battery

