

GEOPLUS PROBE

Near-surface geothermal probe, developed and designed to optimize the operation and performance of water-to-water heat pumps assisted by solar energy (solar-assisted). Even small areas of land (gardens) are sufficient for installation.

GeoPlus consists of a double spiral of **PE100 RC PN 16 DN 20** pipe fixed to a metal structure. The total coil length is **approx. 145 m**. During installation, the soil volume inside and around the basket is filled with fine material (sand) with high thermal conductivity. A third spiral, made of a drip irrigation pipe, keeps the soil constantly moist in order to maintain consistent thermal performance both in winter and summer (water evaporation).

FUNCTIONALITY

GeoPlus can be used to recover thermal energy (heat) in winter and to dissipate thermal energy in summer in combination with a **HEAT PUMP for building heating and cooling**.

Inside the basket it is possible to contain approx. **7.5 m³** of eco-compatible material with high thermal conductivity, making available an energy storage volume increased by soil moisture thanks to the innovative humidification system.

The high soil moisture makes it possible to increase (2-3 times the normal value) the heat capacity and therefore increase heat exchange both in winter and in summer. The dissipation of summer heat causes water evaporation and therefore a further increase in heat exchange. Where the water table is high, 2-3 m, **GeoPlus** is made with a double spiral corrugated steel pipe to maximize heat exchange with water.

GeoPlus in tandem with a hybrid solar module (see **DuoSolis**) or another solar thermal system guarantees the storage and subsequent recovery of all excess solar energy, so that the **HEAT PUMP** can always operate with high coefficients of performance (COP > 5).



MAIN TECHNICAL DATA

Calculated with clayey soil and 20% soil moisture

Basket dimensions

Diameter 1.5 m - h 2 m - volume approx. 3.6 m³

PE spiral pipe length

96 m external pipe + 49 m internal pipe

Installation depth

Approx. 3.5 m to basket base

Connection pipe depth

At least 1.5 m

Extractable/storable energy

Short period (4 - 5 h) with delta T=10°C

15kWh
approx.

Power

Short period (4 - 5 h) with delta T=10°C

3kW
approx.

Extractable/storable energy

Medium period (12 - 14 h) with delta T=5°C

25kWh
approx.

Power

Medium period (12 - 14 h) with delta T=5°C

2kW
approx.



Ground Temperature - 3 m Depth

