

## Reversible Heat Pump “GEOPLUS” by Enex – Natural Refrigerant CO<sub>2</sub> – R744

A new heat pump/chiller for space heating and cooling has been installed at Enex office building.



The heat source /sink is outside air and energy is transferred to the heat pump through a water loop.

The heat pump “GEOPLUS” uses the principle of ECONOMIZER for increasing efficiency over a large range of external temperature.

The heat pump can work as a water chiller during summer and has been tested during summer 2011.

### *Design conditions and operating limits*

		WINTER	SUMMER
Design temperature water in/out	[°C]	40-55	12-7
Design ambient conditions – outdoor air temp.	[°C]	7	30
Capacity / COP at design conditions	[kW]	39 / 3,3	30 / 3,6
Min (winter) /max (summer) outdoor air temp.	[°C]	-15	45
Max water return / flow temperature	[°C]	50/65	50/--

Several tests were performed at summer and winter conditions to make the heat pump / chiller reliable and efficient.

### IT IS A ALSO A DEMONSTRATION FOR SUPERMARKET REFRIGERATION WITH ECONOMIZER



The new heat pump is using the concept developed for supermarket racks in warm climates, making CO<sub>2</sub> refrigeration systems more efficient under all climatic conditions.

It operates according to economizer cycle: one compressor removes flash vapor from liquid receiver and compresses it to gas cooler, avoiding unnecessary thermodynamic losses.

### WEB ACCESS

The parameters of the unit in operation can be accessed through the web. Enex will provide a password to interested customers.

For further information ask [info@enex.it](mailto:info@enex.it)