**New Line of Air-Cooled Condensers from the LU-VE Group Uses Smaller Diameter Copper Tubes, says International Copper Association**

*MicroGroove Tubes Contribute to the High Efficiency of New Generation of Commercial Condensers, Offering Greater Cooling Capacity in Smaller Spaces*

**New York, NY (October 30, 2013)** — According to the International Copper Association (ICA), smaller diameter copper tubes are playing a key role in the development of a new generation of heat exchangers for use in a wide range of commercial applications.

One of the early adopters of the new technology is the LU-VE Group, a manufacturer of ACR products with main offices in Uboldo, Italy. Thanks to the work of the LU-VE Group Research and Development Laboratory, the brand new technology of the MINICHANNEL® coil is now available: It is a miniaturized solution with 5-mm diameter copper tubes and louvered aluminum fins. The MINICHANNEL coil is the basis for a new line of condensers, collectively dubbed the NanoGiant® condensers.

The midsized condensers are grouped into three classes based on fan diameters of 350 mm, 500 mm and 630 mm. The NanoGiant LCM 350 includes capacities from 9.3 to 44.0 kilowatts, using 1 to 4 fans; the LMC 500, from 17.5 to 105.9 kW, using 1 to 3 fans); and the LMC 630, from 24.8 to 247.2 kW, using 1 to 4 fans. Full specifications can be found in a multilingual NanoGiant brochure-catalog from the LU-VE Group.

The air-cooled condensers are suitable for a wide range of refrigeration and air conditioning applications in a variety of residential and commercial buildings.

**Pioneering Research**

LU-VE has carried out a great deal of wide-ranging research in the analysis of all possible alternatives to guarantee the environmental sustainability of its products. Most recently, members of the LU-VE Group R&D Laboratory presented papers XV European Convention on *Le Innovazioni Tecnologiche Nel Freddo E Nel Condizionamento* which was held at the *Politecnico di Milano*, 6-7 June 2013, including titled “Fresh fruit conservation: experimental results from a new air cooler capable of improving the quality of the produce and reducing energy consumption” and “Latest technologies in components and new types of plant in relation to new fluids and the new energy and environmental challenges.”

As the technical director at the LU-VE Group Research and Development Laboratory, Stefano Filippini was an early proponent of MicroGroove technology. In 2010, he delivered a paper at the IIR 2nd Workshop on Refrigerant Charge Reduction titled “A New Heat Exchanger Geometry for Next Condenser Generation with Ultra Low Refrigerant Charge.”

In that paper, Filippini compared a typical coil made with smaller-diameter copper tubes with a microchannel coil made of flat aluminum tubes with respect to a many features, including refrigerant volume. He noted that the refrigerant volume for the coil made with 5-mm tubes could be made much less than the refrigerant volume for microchannel coils, because a large header is required to accommodate the flat tubes of the microchannel coils.

About the new coils made by LU-VE, Filippini says, “The extraordinary performance of the NanoGiant heat exchangers is due to the optimum combination of special profile aluminum fins and high-efficiency 5-mm diameter copper tubes with internal grooves.” According to Filipinni, the coils are made in a consolidated production processes that provides maximum flexibility and reliability.

A list of recent research papers by Stefano Filippini in English, German and Italian is posted in the “Technical Literature” section of the MicroGroove website at [www.microgroove.net/technical-literature](http://www.microgroove.net/technical-literature).

“The LU-VE Group is living up to its reputation as an innovation leader. The new line of air-cooled heat exchangers using 5-mm copper tubes sets a benchmark for other manufacturers,” says Nigel Cotton, MicroGroove Team Leader for the International Copper Association. “Heat transfer engineers are discovering that smaller is better when it comes to copper tube diameters for heat exchanger coils to be used in the next generation of air-conditioners, heat pumps and refrigeration systems.”

**# # #**

**About ICA**

The International Copper Association, Ltd. (ICA) is the leading organization for promoting the use of copper worldwide. ICA’s mission is to promote the use of copper by communicating the unique attributes that make this sustainable element an essential contributor to the formation of life, to advances in science and technology, and to a higher standard of living worldwide. Visit [www.microgroove.net](http://www.microgroove.net) for more information about ICA.

**About the LU-VE Group**

The LU-VE Group is manufacturer of ACR products. Its main offices are in Uboldo, about 20 km from Milan. However, LU-VE is very much an international entity. Seventy percent of its production is exported to 90 countries and there are fifteen sales companies in the LU-VE Group located in the Australia, Austria, China/HK, Costa Rica, France, Germany, India, Poland (Gliwice and Warsaw), Russia, Singapore, Spain, UAE, and the United Kingdom.