

## Size matters

In a camper van, the installation of an air conditioning unit on the roof is not always easy due to the limited space. The Teleco Group has responded to this issue with its Clima e-Van series.

*Words Paolo Galvani*

Air conditioning on recreational vehicles can be a complicated issue, with products that are often the result of a series of compromises between size, power, consumption, aesthetics and cost.

Over the years, a certain degree of standardization has been reached, with monobloc roof-mounted units with very similar characteristics. In this context, being innovative becomes a real challenge. The Teleco Group, thanks to its long experience in the air conditioning industry, has accepted this challenge and the result is the creation of a product line that today has no real competition.

Starting from the assumption that the market is increasingly orientating itself in favour of the so-called "camper vans", the problem to be addressed lies *mostly* with the size of the air conditioning devices. The amount of roof space on these vehicles is much more limited than that on low-profiles, over-cabs or motor-homes. And the number of roof lights, antennas, solar panels and roof racks on a camper van reduces the space available.

From here, the Teleco Group kicked off its research and development department with the aim of designing a unit that was not only particularly efficient, but also very compact. Thus, it launched the Clima e-Van range, now available in two models, both with heat pump, but differ in power and therefore cooling capacity. The smallest Clima e-Van 5400H has a capacity of 5,800 BTU / 1.7 kW (5,600 / 1.65 in the heating phase), a current absorption of 2.6 Ampère (15 when starting for no more than 100 milliseconds) and a power of 600 Watts. This allows it to be used without any problem in any camping or rest area, even in those where the electric hook-up has limited power available. Despite this, the 5400H maintains an air flow rate of 270 cubic meters per hour, making it an ideal product for vehicles up to six metres in length.

For larger camper vans, such as the 636 cm Ducato / Jumper / Boxer, the installation of the



Clima e-Van 7400H model is recommended as it is capable of reaching 7,200 BTU / 2.10 kW (6,800 / 2.00 during heating) and to treat 370 cubic meters of air per hour. In this case, there is an absorption of 4.0 Ampère (18 starting) and a power of 920 Watt. However, despite the different characteristics, the two models share exactly the same compact dimensions.

The compact dimensions of these two air conditioners are a key feature as they are the smallest on the market today. In fact, the outdoor unit measures only 71 cm long, 61 cm wide and 23.2 cm high.

Compared to other products with similar technical characteristics, these are more than 25 cm shorter in length and a few cms less wide: these are values that can make the difference between the possibility of an installation at the most

suitable point or not. The weight is around 30 kg.

To install the Clima e-Van, the classic 40x40 cm hole usually used for rooflights must be used (or created). If necessary, the opening can be limited to only 36 cm x 36 cm.

In addition to carefully designing the external part of the air conditioning unit, Teleco Group has done an equally important job on the diffuser. With the limited space available on camper van roofs, it may mean that the internal part of the unit will not allow the opening of some wall units. Further research was carried out: one about the design, to make what is in all respects a piece of furniture look as





pleasant as possible, and the other about the technical aspects, to save every possible millimetre and obtain useful space. The use of 3D printing for the prototyping phase has proved indispensable to keep development times within acceptable limits. The result is a diffuser that does not exceed 4.2 cm in height, a couple less than other products in the same category.

*"We have done a great job to contain the dimensions of the new air conditioners and we have not compromised on performance,"* explains Vincenzo Mazza, technical manager of Teleco Group. *"Several tests have been conducted in a climatic chamber both on our products and on those of the competition and I can say without fear of being contradicted that in terms of performance this is a product that has no competitors".*

On a commercial level, the Teleco Group made a surprising decision to offer the new products at the same price as those already in the price list, namely the Silent 5400H and 7400H models. In this way, the installer can freely choose which product to offer to the customer, according to the space available on the vehicle. For the same price, it makes sense to focus on the Silent versions when the dimensions allow, given that compared to the Clima e-Van they offer some advantages in the air flow rate, with respectively 350 and 420 cubic meters per hour.

An important aspect concerns the environmental impact of the gas used to charge the cooling system. The Clima e-Van systems use

R32 refrigerant, which has the lowest Global Warming Potential (GWP equal to 675) currently registered on air conditioners for mobile vehicles, reducing the environmental pollution power by 70 percent compared to the gases used previously.

*"We are in the middle of a path that will lead us to the use of refrigerants with a GWP value of 1, without any environmental impact,"* explains Mazza. *"There are already refrigerants capable of reaching that value, but they are covered by expensive patents and require specific compressors, which are not compatible with the needs of an air conditioner for a recreational vehicle. It will still take some time, but we will get there."*

Teleco Group's Clima e-Van models are excellent from a technological point of view, but they do not forget functionality and ease of use, essential for any tourist who loves outdoor holidays. A practical remote control, which in this version has improved useability, even by those who are less inclined towards technology, which allows you to set the desired temperature and automatic operation, letting the system decide whether to refresh or heat the air. In case the remote control is lost, the unit can still operate in fully automatic mode with a comfort temperature preset at 24 degrees.

Finally, for maintenance there are a few basic operations to be carried-out by the customer and proven operations for workshop professionals. The former can be limited to cleaning the filters contained in the diffuser with soap



and water once every 6/12 months (depending on the dustiness of the environment in which the unit has operated and the management of the batteries of the remote control, which should be removed during long periods of not being used), while the installers will work with well-known components.

Compared to the products already in the catalogue, the Teleco Group has maintained the same basic scheme, providing greater protection to the electronic board. The refrigeration system is obviously sealed, but the valves for refilling have been maintained in order to facilitate any restoration interventions. In the end, whether you are an end user or a qualified installer, the Teleco Group air conditioners of the e-Van series will meet your needs.



Teleco Clima e-Van - rear view

Technical specifications	Clima e-Van 5400H	Clima e-Van 7400H
Refrigerating yield	5.800 BTU / 1,7 kW	7.200 BTU / 2,1 kW
Heater	5.600 BTU / 1,65 kW	6.800 BTU / 2 kW
Ventilation speeds	3 + auto	3 + auto
Power supply	230 V - 50 Hz	230 V - 50 Hz
Average absorbed current	2,6 A ❄️ / 🔥	4,0 A ❄️ / 🔥
Starting current	15 A (100 ms)	18 A (100 ms)
Absorbed power	600 W ❄️ / 🔥	920 W ❄️ / 🔥
Required generator	2200 W	2200 W
Maximum air flow rate	270 m3/h	370 m3/h
Weight	30 kg	31 kg
Dimensions	71x61,9x23,2 cm	71x61,9x23,2 cm
Air diffuser height	4,2 cm	4,2 cm

Teleco Clima e-Van - inside view

