

## Epta Launches New R290 Plug-in Cases with Enhanced Product Visibility

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Epta's new Spices range of R290 plug-in cases includes an open semi-vertical (Pepper), an open vertical (Ginger) and a closed vertical (Vanilla). (Source: Epta)

Italian OEM [Epta](#) has launched a new range of propane (R290) plug-in cases under its Costan brand that is designed to maximize product visibility and accessibility, while also offering a lower carbon footprint.

The [Spices](#) range was premiered at the EuroShop 2023 tradeshow and comprises three models: a closed vertical cabinet ([Vanilla](#)), an open vertical cabinet ([Ginger](#)) and an open semi-vertical cabinet ([Pepper](#)).

According to the manufacturer, the medium-temperature cases are ideal for food stores of any size, from supermarkets and convenience stores to gas stations.

### Where sustainability meets design

"Spices focuses attention on enhancing the promotional leverage while ensuring compliance with one of the Group's pillars, sustainability," said William Pagani, Chief Marketing Officer of Epta.

The range is available exclusively with R290 and offers a high refrigeration performance – 3M0 for Vanilla and 3M1 for Ginger and Pepper – making the cabinets suitable for a range of different goods, including dairy products and prepackaged meat and fish.

## Efficiency improvements

While CO<sub>2</sub>-based refrigeration systems work well in mild climates, efforts are needed to improve performance in high-ambient-temperature conditions when they operate in transcritical rather than subcritical mode, Chaparro explained in his presentation.

"In cold-weather conditions, CO<sub>2</sub> systems are efficient, reliable and have good energy consumption," he said. "What we need to do is improve how they operate in transcritical mode."

When ambient temperatures increase, so too does the formation of vapor inside a CO<sub>2</sub> system's flash tank, he noted, adding that this leads to inefficiencies with the system's medium-temperature compressors.

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According to Chaparro there are multiple ways to improve the efficiency of a CO<sub>2</sub> system in hotter climates, and many companies have been developing a range of technologies, including mechanical subcooling, adiabatic cooling, parallel compression and ejectors with parallel compression.

"Each technology has its benefits," he said. However, as they evolve, "we must make sure that they are efficient, cost-effective and simple for end users to adopt."

## Extreme Temperature Efficiency

Over the last seven years, Epta has also been developing technologies with the aim of boosting the performance of CO<sub>2</sub> refrigeration systems. Its focus has been on making simple improvements, said Chaparro.

One of the advancements to have come out of Epta's efforts has been its ETE technology, which helps to reduce the formation of flash gas in the flash tank in mild-to-high ambient temperatures. ETE works by adding an extra compressor and some other components to the system after the gas cooler.

"We are cooling the line that comes out of the gas cooler rather than cooling the liquid line, as is common with mechanical cooling in HFC-based systems," he explained.

The approach uses simple components that technicians are familiar with, such as compressors, plate heat exchangers, expansion valves and controls.