

# APPLICATION STUDY: POWERFUL OPTIMIZATION

SECOP

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## SUMMARY

**Project:** SLVE18CN  
in vertical multideck cooler/MBP application

**Sector:** Food retail, food service

**Task:** Conversion to a new generation electronic controlled hermetic hydrocarbon compressor.

Stationary  
Cooling



## THE STORY

**Energy Class:** D level Europe Ecodesign  
Commission Delegated Regulation (EU) 2019/2018 of 11 March 2019  
**Dimensions:** Length with ends: 2540 mm  
Horizontal display surface: 5.35 m<sup>2</sup>  
Number of doors: 4  
**Net Volume:** 1062 l

### Starting configuration

**Compressor:** Fixed-speed drive hermetic compressor  
**Refrigerant:** R404A **Displacement:** 27.8 cc.  
**Height:** 250 mm **Weight:** 18.3 kg

### Requirements

- Achieve targets of new energy regulations
- Adopt low GWP refrigerants
- Electronic controlled variable speed drive for optimized performances

### Background

Light commercial refrigeration market is driven by the new energy regulations, like Ecodesign in Europe, and the transition to low GWP refrigerants, like F-gas regulation in EU. So installations in food retail, food service require more efficient green solutions, both in LBP and MBP applications.

### Challenges

Reduce energy consumption with electronic controlled efficient compressors and optimize performances with the conversion to green refrigerant.



Energy  
Efficient



Natural  
Refrigerants



Variable-Speed  
Efficiency

## THE OUTCOME

### SOLUTION: from FSD\* R404A to VSD\*\* R290

Direct drop-in from a R404A compressor to a R290 compressor improved energy savings for the system by up to 15 % and ranked the cabinet 1 level higher based on the EU standards.  
Upgrade from fixed-speed compressors to variable-speed compressors controlled by optimized electronic control unit.

\* Fixed-speed drive | \*\* Variable-speed drive (electronic controlled)

### RESULTS: Secop SLVE18CN R290 VSD 17.7 cc. compressor installed

**-12 %**

Footprint (Compressor Size vs. FSD 27.8 cc.)

### 1 Level higher

Europe Ecosign (EU Standard)

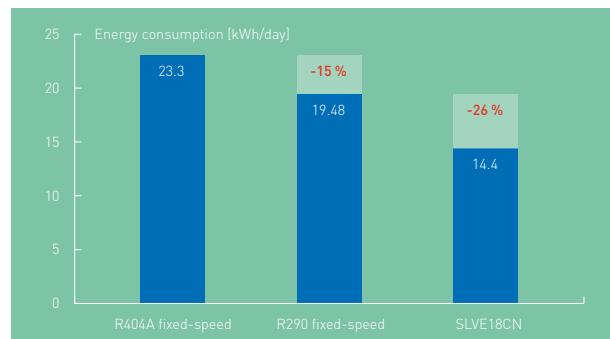
Commission Delegated Regulation (EU) 2019/2018 of 11 March 2019

**-37 %**

Energy consumption

## THE NUMBERS

Key improvements EC R290	vs. R404A fixed-speed	vs. R290 fixed-speed
Footprint (compressor size)	-12 %	-12 %
COP	+20 %	+15 %
Energy consumption	-37 %	-26 %
Pull-down time	-	-14 %



## THE BENEFITS

	Effective Solutions		Energy Efficient		Small Footprint		Natural Refrigerants		Premium Controllers		Variable-Speed Efficiency
Efficient system settings and control	Better Ecodesign ranking	Advantages in stock management and cooler design	R290 green refrigerant	High level controls and settings	Optimal energy consumption and performances						

## TAKE AWAY

- Secop's new SLVE18CN is the most powerful hermetic reciprocating variable-speed compressor for propane on the market
- It can operate continuously inside an evaporating temperature range from -45 °C to +10 °C and can cover the full range of LBP and MBP application conditions
- Meets Ecodesign requirements and all related safety regulations
- Intelligent electronics-controlled compressor supports all customers' needs (simple drop-in, frequency control and serial control) with automatic input detection and easy customization via Tool4Cool®
- The new Multipurpose controller offers enhanced robustness and safety, featuring two additional relay outputs for case control and two-speed defrost control
- Learn more about the SLVE18CN



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### ABOUT SECOP

Secop is the expert for advanced hermetic compressor technologies and cooling solutions in commercial refrigeration.