

APPLICATION STUDY: KLF AND COOL DRINKS

SECCP

Date: May 2022

SUMMARY

Project: KLF7.7MND
in bottle cooler/MBP application

Sector: Retail/Display cabinet refrigerator

Task: Replace the DLE compressor
with the new KLF7.7MND



STATIONARY
COOLING



THE STORY

Cabinet Type: Bottle cooler
Net Volume: 765l
Input Voltage: 230V/50Hz
Dimensions: 785mm x 810*mm x 2139mm
Temperature class: Class 4 M2: 30 °C, 55 % rH

STARTING CONFIGURATION

Compressor: DLE7.5CN **Refrigerant:** R290
Displacement: 7.48 cm³ **Height:** 174 mm
Weight: 8.7 kg

*Excluding 40 mm handle and 80 mm back spacer

REQUIREMENTS

- Reduce electrical energy consumption
- Keep half reload recovery time
- Reduce pull down time
- Lower refrigerant charge

BACKGROUND

The light commercial refrigeration market is driven by new energy regulations. Therefore, energy efficiency is a key goal for new generation cabinets. Energy consumption must be kept to a minimum for installations.

CHALLENGES

Offer a reliable, top performing and cost-effective solution for the next generation of light commercial display cabinet refrigerators using environmentally friendly propane as the refrigerant.



EFFECTIVE
SOLUTIONS

THE OUTCOME

SOLUTION:
Substitute a DLE series compressor with the new KLF compressor to improve system efficiency with minimum system adjustments.

Keeping the same capillary tube (26 l/min) the KL-Series compressor improves the coolers performance in all important areas.

RESULTS: the new KLF compared to a DLE compressor

-7.4%
Energy consumption

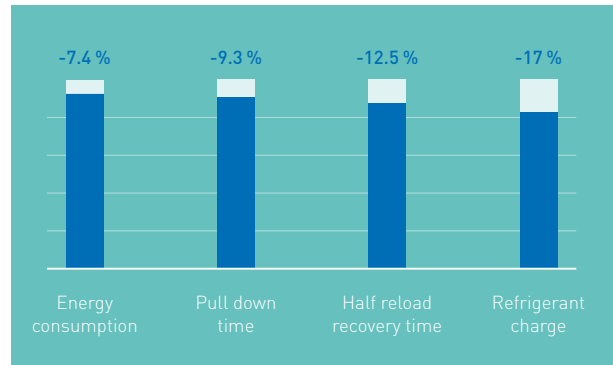
-9.3%
Pull down time

-17.0%
Refrigerant charge

THE NUMBERS

Model	DLE7.5CN	KLF7.7MND
R290 refrigerant charge (g)	94	78

Cabinet Performance	Start	Result
24h energy consumption (kWh/d)	2.96	2.74
Initial pull down time (h)	23.8	21.6
Half reload recovery time (h)	16.3	14.2



THE BENEFITS

<p>ENERGY EFFICIENT</p> <p>Optimal energy consumption</p>	<p>LONG PRODUCT LIFECYCLES</p> <p>Max. robustness and reliability</p>	<p>NATURAL REFRIGERANT</p> <p>R290 green refrigerant</p>	<p>NEW HERMETIC TERMINAL PLUG</p> <p>Innovative solution for refrigerant R290</p>	<p>LOW NOISE</p> <p>Reduced noise and vibration</p>	<p>NEW TERMINAL BOARD</p> <p>Easier application assembly</p>
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TAKE AWAY

- Premium robustness**
The KL-Series features the tried and trusted quality of our K-Series optimized for light commercial applications
- Robust solution for merchandizers and food service**
Dedicated reliable design for bottle coolers, glass door merchandisers (LBP and MBP applications)
- Superior efficiency**
High COP and top efficiency for light commercial applications with low GWP refrigerant propane (R290)
- Innovative solution for flammable refrigerant propane (R290)**
Including a patented solution to increase robustness for usage with flammable refrigerant
- Easier application assembly**
New terminal board design for additional interconnections
- Reduced noise level**
Improved noise and reduced vibration, a new benchmark level for hydrocarbon refrigerants
- Learn more about the KLF7.7MND here: <https://lmy.de/1sVJi>



ABOUT SECOP

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

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