

APPLICATION STUDY: KLF AND COOL DRINKS

SECCP

Date: May 2022

SUMMARY

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

Sector: Retail/Display cabinet refrigerator

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



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

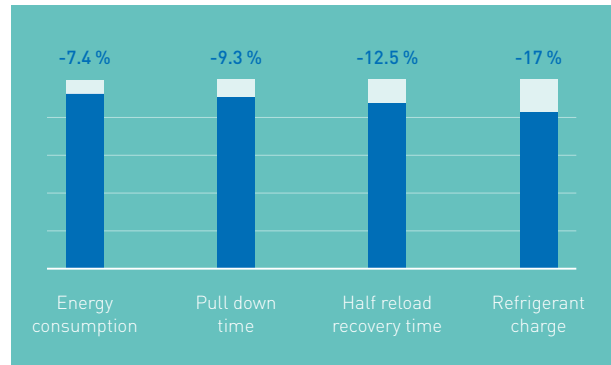
-9.3%
Pull down time

-17.0%
Refrigerant charge

THE NUMBERS

| Model | DLE7.5CN | KLF7.7CND |
|-----------------------------|----------|-----------|
| 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

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

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 KLF7.7CND here:
<https://lmy.de/OWZNCDKZ>



ABOUT SECOP

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

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