



LILLNORD

next generation cooling technologies

TAILOR MADE COOLING

DOUGH FREEZER, DOUGH COOLER,
DOUGH FREEZER WITH RECOVERY AND
SHOCK FREEZER

Customized units for racks



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LILLNORD INDUSTRIAL FREEZER, COOLING AND PROVING SYSTEMS A STURDY CONSTRUCTION - WITH OPTIMIZED TECHNOLOGY

LILLNORD is a supplier of both standard and custom-built, industrial cooling solutions to the bread and confectionary market.

In consequence of today's many different bread product types and growing quality demands, the need for increasing the operational flexibility of proving, cooling, freezing and storing of the various bread and cake types is quickly rising and hence the need for automation in the shape of automatic transport systems such as spiral and rack transportation systems.

LILLNORD with its in-house, high-powered control technology is able to optimize process function with uniformity of temperature and humidity, efficient cooling systems as well as automatic transport systems to ensure the mentioned process phases at the lowest possible energy consumption and cost – and without ever compromising the quality of the products.

All service personnel both at home in Denmark and at our service partners on our many export markets are fully trained and hold extensive spare parts stocks to ensure our customers the shortest possible distance to an efficient, international service network.

Optionally all units may be delivered with the newest LILLNORD supervision system, which ensures 24 hour service. Info will be sent to employees or service partners of each individual bakery as SMS or email. The info is grouped into 3 as yellow, green

or red error info respectively. The yellow and green error info will be sent to the owner. Red errors will be sent directly to the LILLNORD service partners, who will analyze the situation and solve the problem.

LILLNORD's own production of unit panels ensures an outstanding flexibility both in height and in width, a fact that is shown in special custom-built solutions, which are integrated according to the particular wishes of the baker and exploits the existing space including pillars, corners and other building conditions in a manner no standard solution can offer.

All panels are made of food contact approved, CFC-free, high pressure, green foam systems in either 80 or 120 thickness with efficient groove and tongue as well as integrated, stable, eccentric closing systems.

Finally, a selection of various food contact approved surface types such as stainless steel Linen and pickled versions are offered.

The different LILLNORD floor types are designed to cater for each unit function; the freezer prover floor, for instance, has a water repellent sub-floor, is temperature regulated according to dew point and includes the original LILLNORD stainless steel floor with concave profile and fully welded corners as well as an expansion sealing. The other floor types come as either laminated or steel floors, also for high daily loads.



LILLNORD offers an in-house production of panels to ensure a flexible and optimal use of the bakery floor space.

BAKERLINE DOUGH FREEZER (-20°C/ 0°C)

Why invest in a LILLNORD BAKERLINE unit?

A BakerLine dough freezer is a product concept especially developed by LILLNORD for long term storage of all types of bread and some types of pastry – without any loss of quality. Operationally the aim is to optimize the weekly working process in the bakery to be able to produce larger quantities (units or types) within the working day to store for a whole week or even for specific types of bread up to 2 weeks. During busy times of day or the weekend, the products can be moved to a FlexLine dough controller with thawing, a TopLine freezer prover or a SemiLine retarder prover for subsequent baking off. This way you ensure a large variety of different types of bread early on, and the working process together with the daily routine can be planned without any bottlenecks or stress.

Room sizes

LILLNORD provides its own panel production, ensuring the best possible utilisation of the space in the bakery.

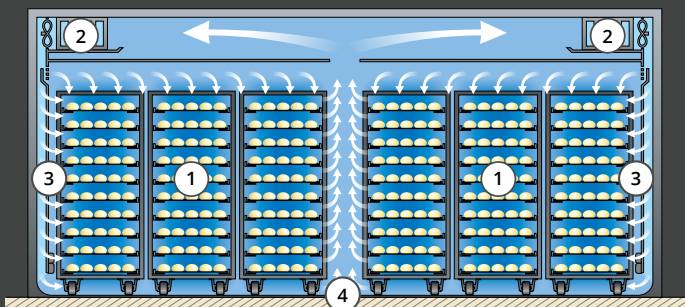
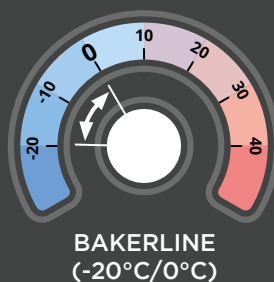
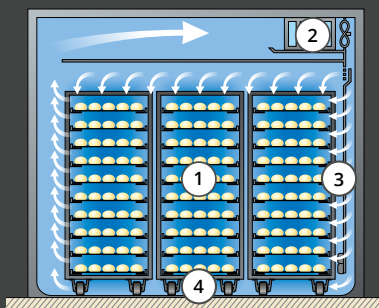
A standard panel size of 150mm width on our panels (80 and 120mm thick) provides us with a flexible starting point for the serial production of our units. As a consequence, every single unit can be tailor-made for an optimal utilisation of the available space in the bakery – even for combination units. Our panels are constructed the sandwich way, increasing its ability to isolate and ensuring as much neutralisation of the surrounding temperature as possible and protecting the temperature inside the unit.

Front and door(s) are in stainless steel, type leinen as a standard on all units. The exact robustness needed in a busy, modern bakery environment.

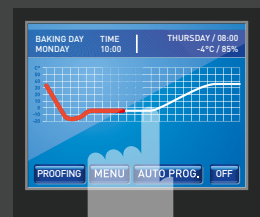


LILLNORD cares about the environment and has developed the following:

- Intelligent fan control for optimized off-time for compressor, steam and heating
- Optimal settings for minimized energy consumption in every working step (freezing, storage, thaw-up, floor- and door heating)
- Heat recovery of compressor
- Optimized water consumption
- Insulated steam container
- Extended wall insulation
- Frequency controlled compressor



- 1 Optimal storage climate without dry-out
- 2 Intelligent air circulation
- 3 Airwall with pressure distribution (as option)
- 4 3mm straight floor in stainless steel (as option)



Color Touch screen computer

- User-friendly design
- User manual inside computer for easy reach
- Digital directions for use within easy reach
- Digital fault finding within easy reach
- Error log viewer (max 120 registrations)
- Quick and easy to set / reset temperature
- Adjustment of floor heating (option in prover and retarder prover)
- USB logging functions available
- Easy to set function of steam container

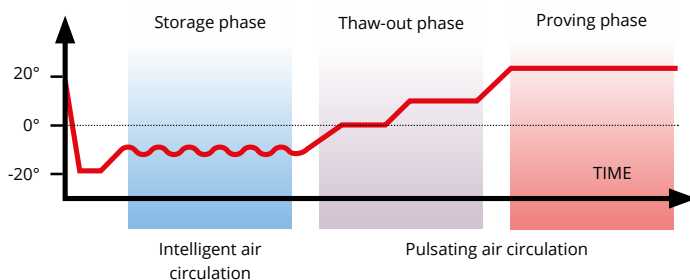
FLEXLINE DOUGH FREEZER WITH RECOVERY (-20°C/+20°C)

Why invest in a LILLNORD dough freezer unit with recovery?

The dough freezer unit with recovery is a product concept especially developed by LILLNORD for long-term storing and subsequent recovery of all bread types – without any loss of quality. At the requested time, the dough pieces will be recovered to a preprogrammed standby temperature, at which they can be stored for 4 to 5 hours until proving, which can take place in a prover, retarder prover or freezer prover. For larger units and when longer standby storage times are predicted, the units are equipped with a humidity unit. This concept offers a unique flexibility in the baking off procedures of the bakery with a response time of 1 to 2 hours.

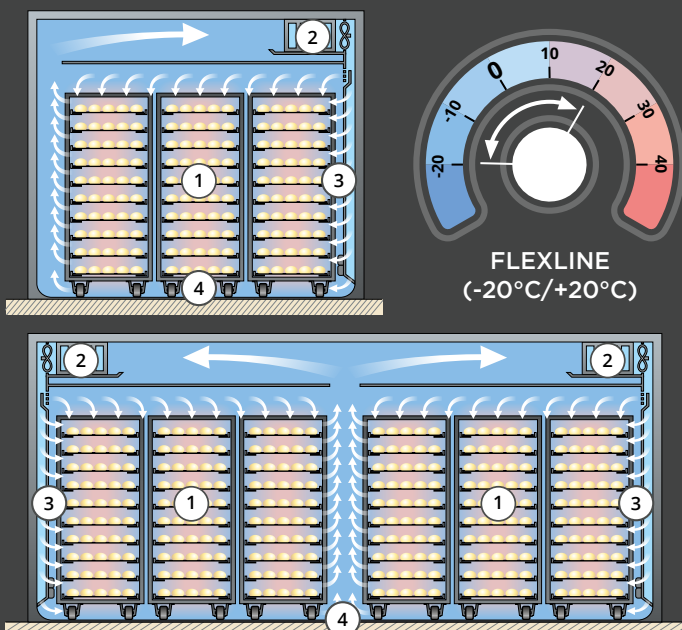
Thus given the possibility of a wide assortment of fresh baked off bread during the entire opening hours of the store, hence optimizing the capacity of the oven. Last but not least the unit provides a more economic planning of the working hours in the bakery, shifting the preparation of dough to the daytime hours several days before baking off. Efficiency / economization is one thing.

The most important issue though, is that the bread quality doesn't suffer. On the contrary, we experience an improvement in quality, even in connection with the necessary transfer of racks from the unit to proving in a prover, retarder prover or freezer prover.

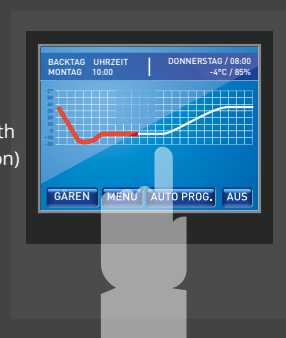


LILLNORD cares about the environment and has developed the following:

- Intelligent fan control for optimized off-time for compressor, steam and heating
- Optimal settings for minimized energy consumption in every working step (freezing, storage, thaw-up, floor- and door heating)
- Heat recovery of compressor
- Optimized water consumption
- Insulated steam container
- Extended wall insulation
- Frequency controlled compressor



- 1 Optimal storage climate without dry-out
- 2 Intelligent air circulation (with humidity control as an option)
- 3 Airwall with pressure distribution (as option)
- 4 3mm floor in stainless steel (fluted moulding as option)



Color Touch screen computer

- User-friendly design
- User manual inside computer for easy reach
- Digital directions for use within easy reach
- Digital fault finding within easy reach
- Error log viewer (max 120 registrations)
- Quick and easy to set / reset temperature and humidity* (*Option)
- Adjustment of floor heating (option in prover and retarder prover)
- USB logging functions available
- Easy to set function of steam container

COOLLINE COLD ROOM (+3°C/+10°C)

Why invest in a LILLNORD CoolLine unit?

The CoolLine coldroom is a product concept especially developed by LILLNORD for long-time storage of all types of bread and pastry (apart from chocolate) – without any loss of quality. On the production side, the aim is to optimize the weekly work processes in the bakery to be able to produce a larger amount (quantity or variety) during a working day, which can be stored – and for some bread types the coldroom can even be used for short or long term proving. During busy times of day or the weekend, the products can be moved to a FlexLine dough controller with thawing, a TopLine freezer prover or a SemiLine retarder prover for subsequent baking off. This way you ensure a large variety of different types of bread early on, and the working process together with the daily routine can be planned without any bottlenecks or stress.

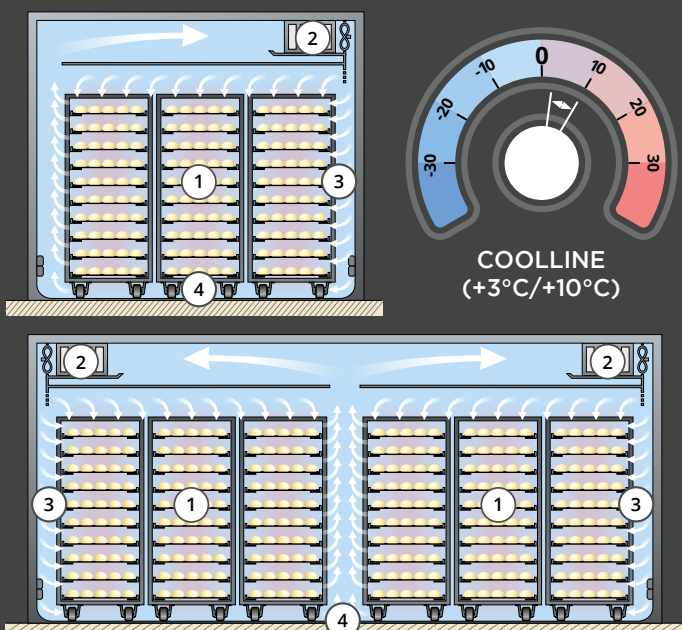
Anlagengrößen

LILLNORD has its own production facility for panels, ensuring flexible and optimal use of space in the bakery. A standard panel size of 150mm in width (80mm or 120mm panels), allows us to have a modifiable system for the production of our units. Therefore, each individual system can be customised and the space in the bakery can be used optimally - even in combination systems. Our panels offer a high insulation capacity with their sandwich construction and thus ensure comprehensive neutralisation of the ambient temperature in order to protect the temperature inside the unit. Front side and doors are made of stainless steel, type Leinen, as standard on all units. Exactly the resistance capacity that is necessary in a busy, modern bakery.



LILLNORD cares about the environment and has developed the following:

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- Optimal settings for minimized energy consumption in every working step (freezing, storage, thaw-up, floor- and door heating)
- Heat recovery of compressor
- Optimized water consumption
- Insulated steam container
- Extended wall insulation
- Frequency controlled compressor



- 1 Optimal storage climate without dry-out
- 2 Intelligent air circulation (with humidity control as an option)
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- 4 3mm floor in stainless steel (fluted moulding as option)



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- User-friendly design
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- Digital directions for use within easy reach
- Digital fault finding within easy reach
- Error log viewer (max 120 registrations)
- Quick and easy to set / reset temperature and humidity* (*Option)
- Adjustment of floor heating (option in prover and retarder prover)
- USB logging functions available
- Easy to set function of steam container

SHOCKLINE: SHOCK FREEZER (-33°C BIS -10°C)

Why invest in a LILLNORD SHOCK FREEZER?

The shock freezer allows pre-proved and pre-baked dough pieces to be shock frozen down to approx. -15° C on the dough surface and -3°C at the core within approx. 60 minutes at a room temperature of -22° C for subsequent long-time storing in a dough controller.

Shock freezing is the right solution, when big quantities of dough need to be frozen down quickly. The LILLNORD shock freezer has the highest freezing capacity with vertical floor evaporators, ensuring a maximal, controlled air circulation for the entire rack height. LILLNORD offers both spiral freezers in tunnel style with an automatic conveyor system and traditional storage shock freezers.

Maximized and correct cooling is not only crucial in the freezing process, but the products also need to remain sufficiently cooled in the storage phase. Only this way a fresh and impeccable look is guaranteed.

In order to obtain optimum quality during shock freezing, correct air circulation and the necessary cooling capacity must be provided. LILLNORD provides special solutions with commercial screw compressors for R404A or CO₂ cooling systems.

The efficiency of the cooling system is essential and must be viewed in light of the fact that units must operate around the clock with an hourly capacity of up to 2000 kg. The vertical LILLNORD evaporators, specially developed, high-powered, laminar design effectively maximize the 24 hours capacity of the unit, also for pre-baked and out of the oven products.

LILLNORD operates with the strictest leakage control system to safeguard the highest operational reliability and to prevent air pollution.

Data collection, storage and later log print-out of all processes in all LILLNORD units are supervised and controlled by the new LILLNORD Touch Computer, including the operation of the compressor.

The compressors are not just picked off a shelf, but are particularly customized Bitzer compressors, user friendly and reliable. The condensers are all dimensioned with a high ambient temperature of 32 to 33°C. The unit is designed with speed regulation thus ensuring operational reliability both summer and winter.

All compressors are delivered complete incl. high and low pressure controls connected to a flexible high-pressure hose, i.e. not as normally to capillary, copper tubes due to lacking reliability. Finally the electric control box is connected to all automatic devices, which entails that during installation all that is required is connection to a network cable.



SHOCKLINE with RACKLINE
Equipped with conveyor
system for racks

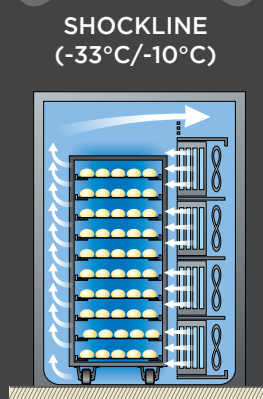
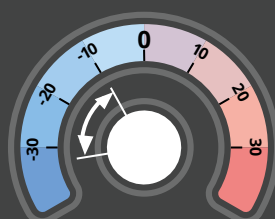


HYGIENE

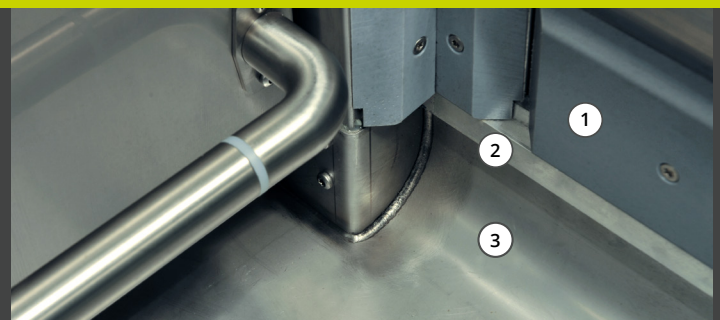
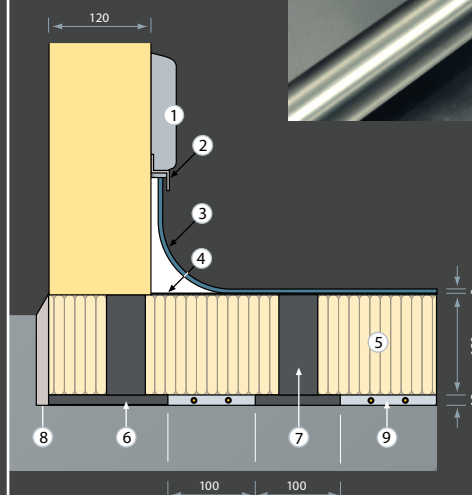
The original 3 mm stainless steel floor with concave profile and fully-welded corners ensures a quick and trouble-free cleaning. The floor heating prevents condensate.

Advantage:

- This unique design prevents condensate water from running into and under the floor. The floor is hence 100% water-repellent.



HHT FLOOR SECTION



1. Bumper rail
2. Expansion joint
3. 3 mm stainless steel floor with fluted moulding
4. 1 mm stainless steel subfloor
5. 120 mm PU insulation (CFC free)
6. Floor profile in 12, 40 and 50mm thickness
7. Supports, 118 x 45mm, 10 per m²
8. Hermetic, 2-component sealing between concrete bakery floor and panels
9. Electric heating element (prevents condensate)

SEMI-SHOCKLINE: SEMI-SHOCK FREEZER (-22°C BIS 0°C)

Why invest in a LILLNORD SEMI SHOCK FREEZER?

The semi-shock freezer allows shock freezing of pre-proven and pre-baked dough pieces down to approx. -15°C at the dough surface and -3°C at the core within approx. 60 minutes at a room temperature of -22°C for subsequent long-term storage in a dough controller.

Ceiling-mounted evaporators exploit the horizontal air-flow to cover the racks from top to bottom and hence uniform freezing of the dough pieces on the plates is ensured. The air is led behind the air duct wall and horizontally and uniformly onto every tray in the rack. In this way, the unit optimizes the use of the floor space.

The use of a rack transport system provides great flexibility and efficiency in the daily production. LILLNORD operates with the strictest leakage control system to safeguard the highest operational reliability and to prevent air pollution.

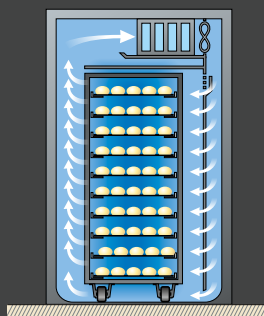
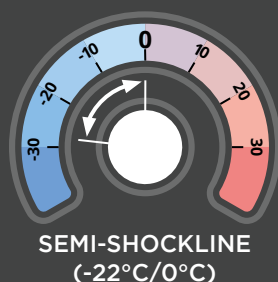
Data collection, storage and later log print-out of all processes in all LILLNORD units are supervised and controlled by the new LILLNORD Touch Computer, including the operation of the compressor.

The compressors are not just picked off a shelf, but are particularly customized Bitzer compressors, user friendly and reliable. The condensers are all dimensioned with a high ambient temperature of 32 to 33°C. The unit is designed with speed regulation thus ensuring operational reliability both summer and winter.

All compressors are delivered complete incl. high and low pressure controls connected to a flexible high-pressure hose, i.e. not as normally to capillary, copper tubes due to lacking reliability. Finally the electric control box is connected to all automatic devices, which entails that during installation all that is required is connection to a network cable.



All LILLNORD units are delivered with a BITZER compressor to safeguard operational reliability



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- Intelligent fan control for optimized off-time for compressor, steam and heating
- Optimized water consumption
- Insulated steam container
- Optimal settings for minimized energy consumption in every working step (freezing, storage, thaw-up, floor- and door heating)
- Extended wall insulation
- Frequency controlled compressor
- Heat recovery of compressor

AUTOMATIC TRANSPORT SYSTEM:

RACKLINE - Adjustable transport speed

Automatic conveyor system for rack trolleys with adjustable throughput speed and programmable transport times. This ensures that the products only remain in the system for a certain period of time. The SHOCKLINE and SEMI SHOCKLINE shock freezers can be equipped with the RACKLINE conveyor system.

LILLNORD PRODUKTPALETTE

PROVING AND REFRIGERATION TECHNOLOGIES

PLUG & PLAY UNITS & SEMI PLUG & PLAY UNIT – INDUSTRIAL UNITS



TopLine – Freezer prover

SemiLine – Retarder prover

LuxLine – Prover

BakerLine – Dough freezer

Flexbaker-UV – Longtime storage of prebaked bread

CoolLine – Coldroom with high humidity and dry cooling

FlexLine – Semiautomatic and dough freezer

ShockLine/Semi-ShockLine – Shock freezer

PG1000 - Plug-in climator

Plug & Play units racks and trays

Maryline – Freezer prover

Maryline – Retarder prover

Maryline – Prover

Maryline – FlexBaker UV

Semi Plug & Play units for racks

SmartLine – Freezer prover

SmartLine - Retarder prover

SmartLine – Prover

Smartline – FlexBaker-UV

RackLine – Automatic conveyor system for racks

StraightLine
(for trays)
with shocker

Module based
refrigeration
for trays



StraightLine High
(for trays) without
shocker

Module based
refrigeration
for trays



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