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# SALVA REFRIGERATION

# SALVA 制冷

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**SALVA** has been providing solutions for bakers and cake makers since 1943.

Controlling the cold is the art of the baker. Proper control means you can offer your customers a larger range of recently baked products around the clock, as the current market demands.

Freezing technology differs completely from baking technology, which is why **SALVA** created the **SALVA FREEZING** division some years ago. This division specialises in the design and manufacture of units to control moisture and temperature curves, guaranteeing a fresh, aromatic, mouth-watering product.

SALVA公司，自1943年开始，就为全世界的面包和蛋糕行业提供解决方案。

冷藏控制，对于一个面包师来说是一门艺术。通过冷藏，能够让面包师在一天24小时内，为顾客提供各式各样的制品，并且所有制品都是新鲜出炉的，这正是当今最苛刻市场的要求。

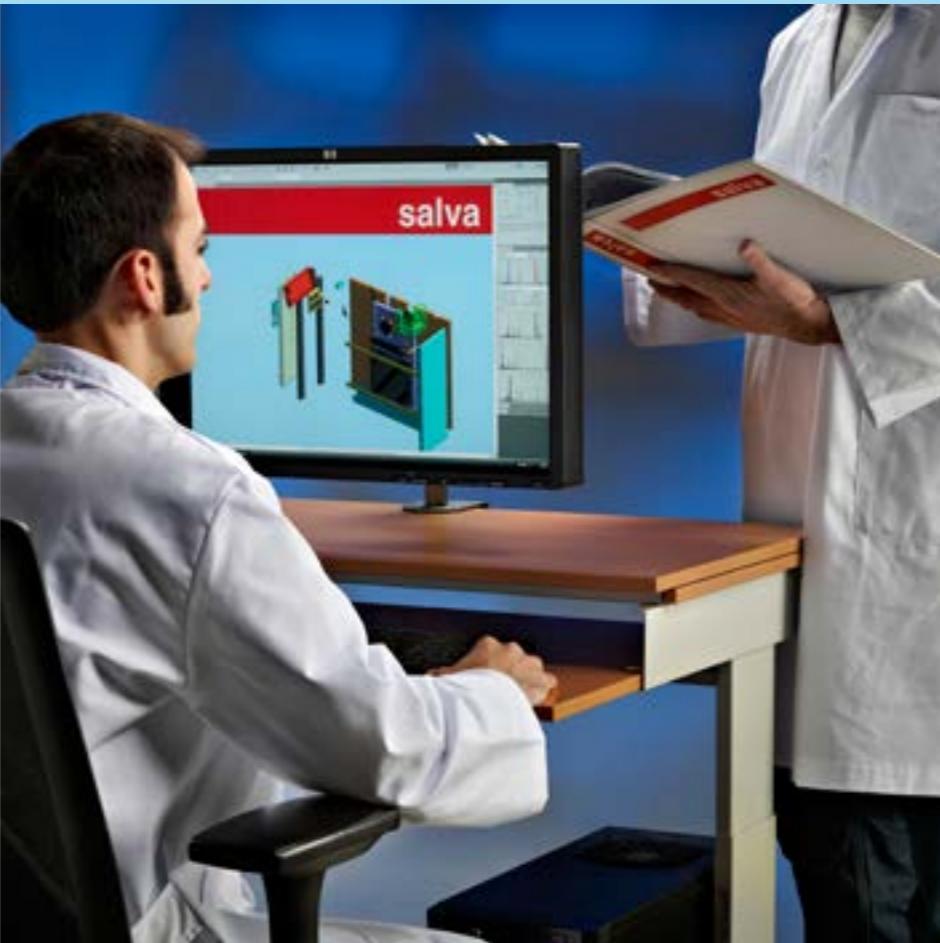
制冷技术，和烘焙技术是完全不同的两个概念，所以，多年前SALVA公司就成立了SALVA制冷部门。这个部门专门致力于设计和生产控制温度和湿度曲线的制冷设备，这样，最后做出来的制品才能保证新鲜、芳香、美味。





Controlling cold technology requires true professionals. People who understand and master the chemical reactions produced by the yeast enzymes. Professionals who control this activity at different temperatures and moisture levels. Experts who understand and control everything which affects the dough in this critical manufacture process.

控制制冷技术需要由专业的人士来完成。这些专业人士需要能够了解熟悉酵母菌产生的化学作用，能够在不同的温度和湿度情况下控制酵母菌的活动，在生产面包这个严格过程中能够控制所有影响面团性能的因素。



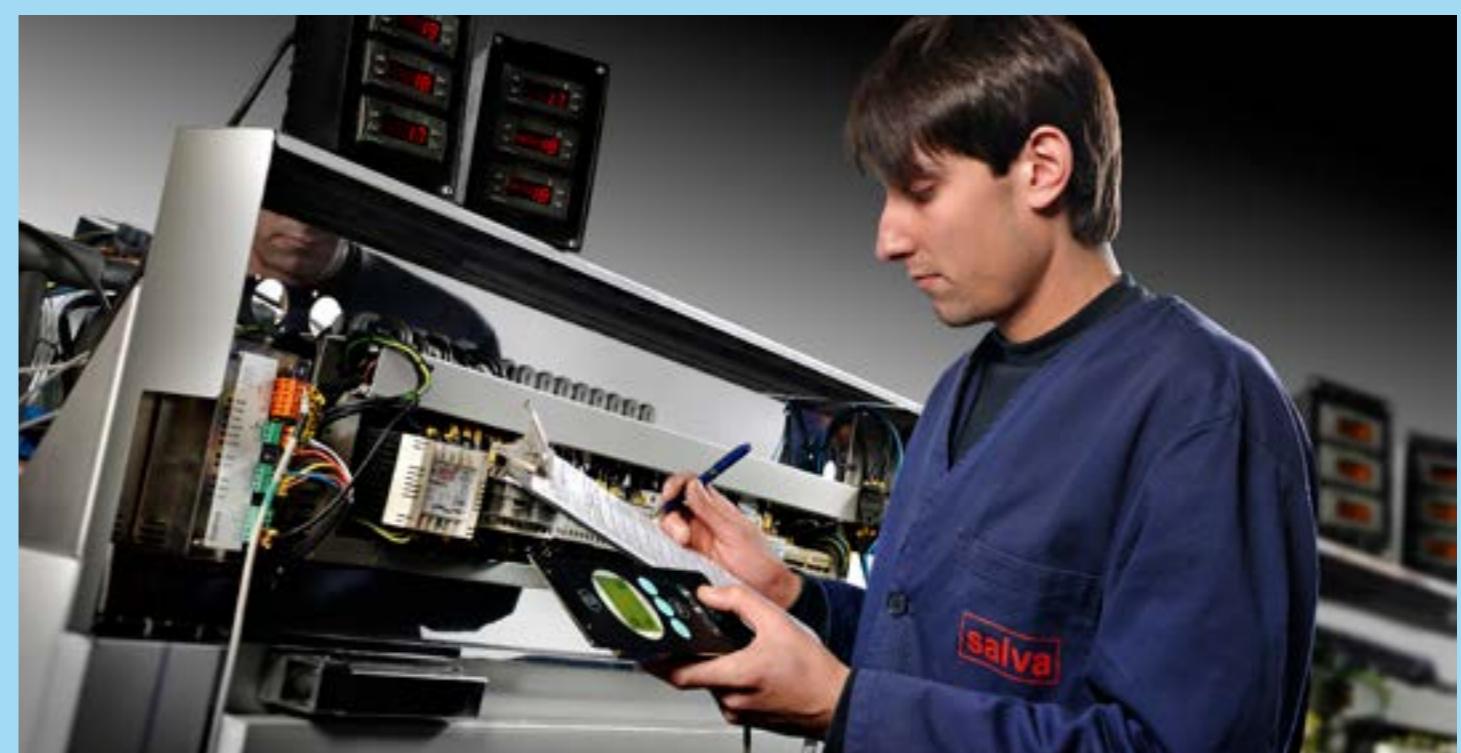
This requires in-depth knowledge of how heat is extracted from the dough, the production of cold air, uniform circulation around the chamber and the generation and suitable provision of moisture, in order to reinforce the aroma and smell of the dough.

To this end SALVA counts on leading experts in freezing technology and the best production means and quality control for each of the construction elements which make up the equipment, and is thus able to offer the market the best product.



为了能够使得面团的香味和口感更加淳厚，对各个步骤如：从面团中提取热量，产生冷空气，腔室内空气的均匀分布，产生合适的湿度，都需要具备深层次的专业知识。

在这一方面，SALVA公司拥有最优秀的冷藏技术专家，最先进的生产技术和对设备各个组成部分的质量监控手段，从而能够为市场提供最优质的产品。



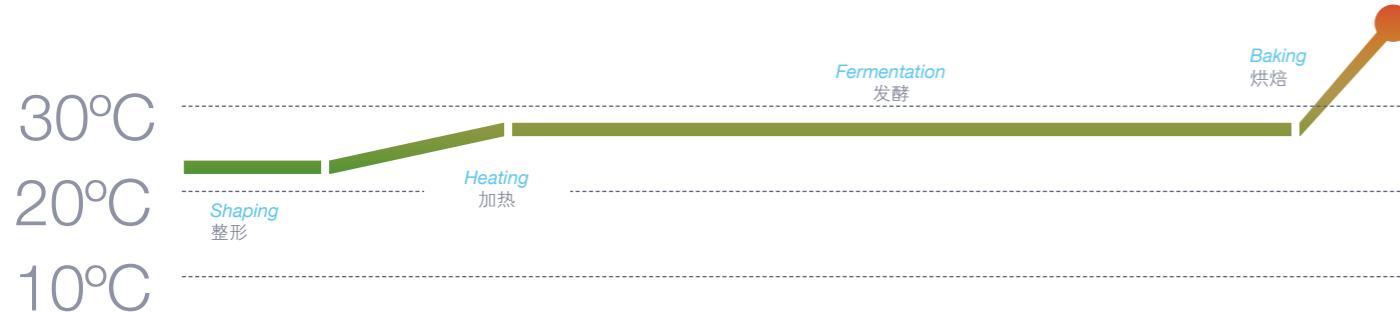
# Fermentation

## 发酵



### Direct Fermentation / 直接发酵

Ranges / 系列: FC, FC France, AF, AR-22, IVERPAN, FCSR-11



After reaching the optimum fermentation temperature (26-28°), this is maintained constant throughout the process, along with the moisture percentages (70-82%). These conditions provide a balance between acid and fermentation processes.

在达到发酵的理想温度（26–28°）之后，在整个发酵过程中会保持在这个温度点，同时也会保持湿度(70–82%)。在这样的条件下，发酵过程和酸的活动达到了平衡。

### Delayed Fermentation / 延迟发酵



The long duration fermentation processes (from 6 to 24 hours) at positive temperatures lower than those of classic fermentation are directly applicable in 2 business models:

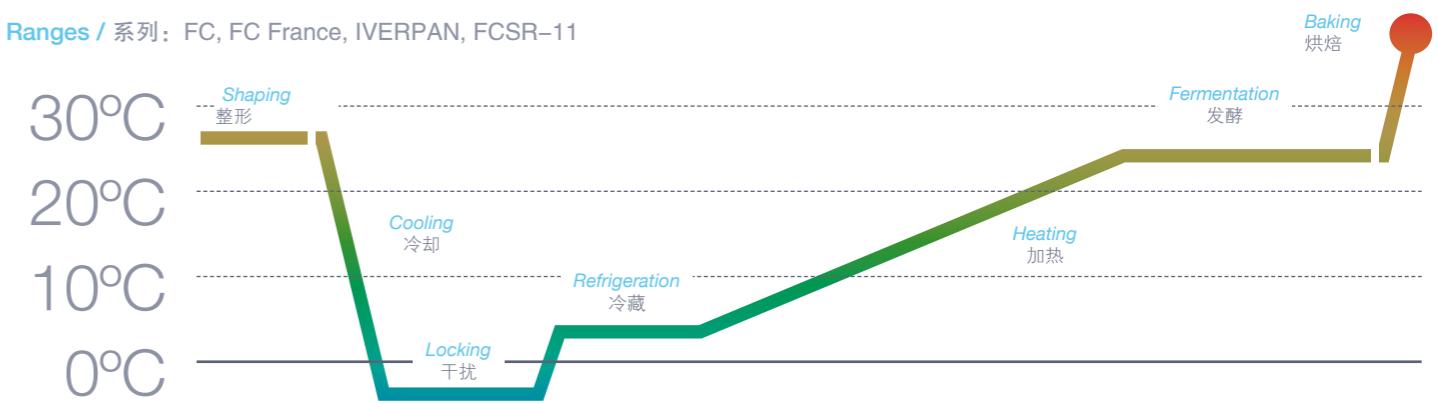
1. The bread baker. Allows continuous working, guaranteeing product in line with the production process and at minimum energy cost.
2. The professional artisan baker striving for excellence in all products. The temperature range between 5 and 20° allows the doughs to develop with CO<sub>2</sub> production and slow enzymatic activity, resulting in pieces with excellent properties in terms of aroma and taste.

这种长时间（6至24小时）温度在零度以上却低于经典发酵温度的发酵过程，可以直接应用在两种情况：

1. 面包店。连续性生产，在任何时候面团都能满足生产过程的需要，能耗成本低。
2. 寻求最高质量制品的专业面包师。在5° 到20° 之间，CO<sub>2</sub>气体和酶的活性放缓，从而能够使得面团的香味和口感更加浓厚。

### Controlled Fermentation / 控制发酵

Ranges / 系列: FC, FC France, IVERPAN, FCSR-11



Controlled fermentation allows the professional artisan baker to rationalise production times. A drop in temperature to -1°C blocks all enzymatic activity. Correct moisture level and temperature parameters, along with the optimum design of the chambers, prevents any condensation in the product, leading to fresh, aromatic bread.

Fermentation is programmed in line with capacity at the bakery.

控制发酵，允许专业面包师合理地安排生产计划。当温度在-1° C以下，所有的酶的活性受到干扰。正确设置温度和湿度参数，外加设计完美的醒发箱腔室，才能防止面包胚出现凝结，最后做出来的面包才能新鲜，芳香。

发酵可通过程序设置而与面包房的产量相一致。

### Frozen dough process / 冷冻面团过程

Ranges / 系列: FC, FC France, ABT



After shaping, the pieces are blasted at  $-18^{\circ}\text{C}$  in the heart, thus guaranteeing all the properties of the product as if it were fresh.

Conservation is done in negative freezing chambers, meaning stock can be kept in line with existing demand.

Thawing takes place at the point of sale in fermentation chambers which are controlled with moisture and thaw temperature parameters to guarantee a fresh, crusty final product.

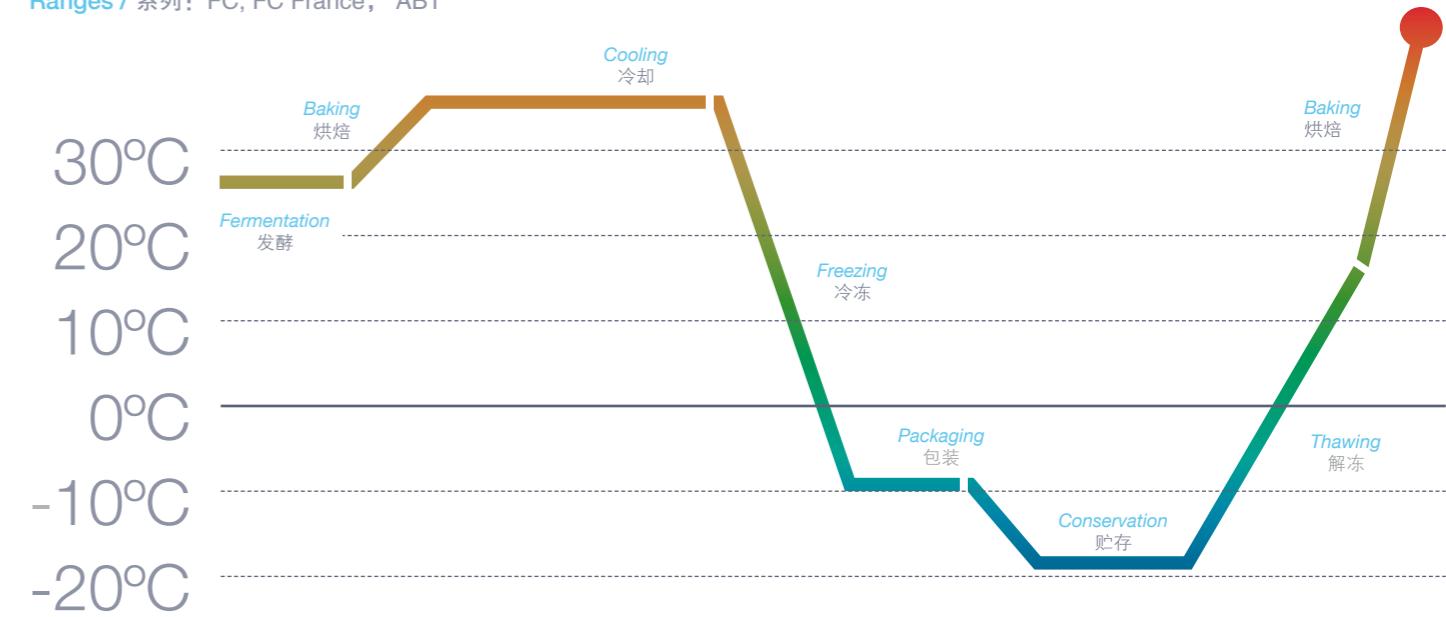
整形后，面包胚被冷冻起来，面包胚的中心温度达到 $-18^{\circ}\text{C}$ ，这样能够保留面包胚的所有特性，如同是新鲜制作的一样。

这个贮存过程是在零度以下的腔室里完成，能够根据现有的生产需要做好面包胚的库存。

在销售的时候，把面包胚拿到发酵腔室内解冻，发酵腔室的解冻温度和湿度参数需要设置好，这样才能保证最后做出来的面包新鲜、焦脆。

### Pre-baked bread process / 预烘焙面包过程

Ranges / 系列: FC, FC France, ABT



The recently baked pieces, still hot, are blasted at  $-18^{\circ}\text{C}$  in the heart, thus maintaining all the properties of the product as if it were recently baked. Production is always distributed to sales points in line with the cold chain, which is key in this process.

Pre-baked bread means demand can be met around the clock with a fresh, recently baked product.

刚刚烘烤过的面包胚，热的，被冷冻起来，中心温度达到 $-18^{\circ}\text{C}$ ，这样就能保存面包胚所有的特性，就像新鲜烘焙出来一样。生产的分布，在任何时候都能够根据销售时点来安排，这是这个过程的关键。

预烘焙面包，能够保证24小时内都能提供新鲜、现烤的面包。

## Direct Fermentation Cabinet AR-22

### 直接发酵醒发箱 AR-22

The solution to direct fermentation processes is just a connection point away. The AR-22 is designed as an easy installation product.

Essential in any hot spot.

直接发酵醒发箱只需要提供一个插座就可以，所以AR-22是一款安装非常简易的醒发箱。

这是一款任何一家现烤店都需要装备的设备。



The generation of steam and dry heat is controlled independently. Its power provides optimum steam conditions and temperatures in an instant.

蒸汽和干热的产生，都是独立控制的。它的功率，能够在瞬间产生理想的蒸汽和温度条件。



## Controlled Fermentation Cabinet. IVERPAN Range

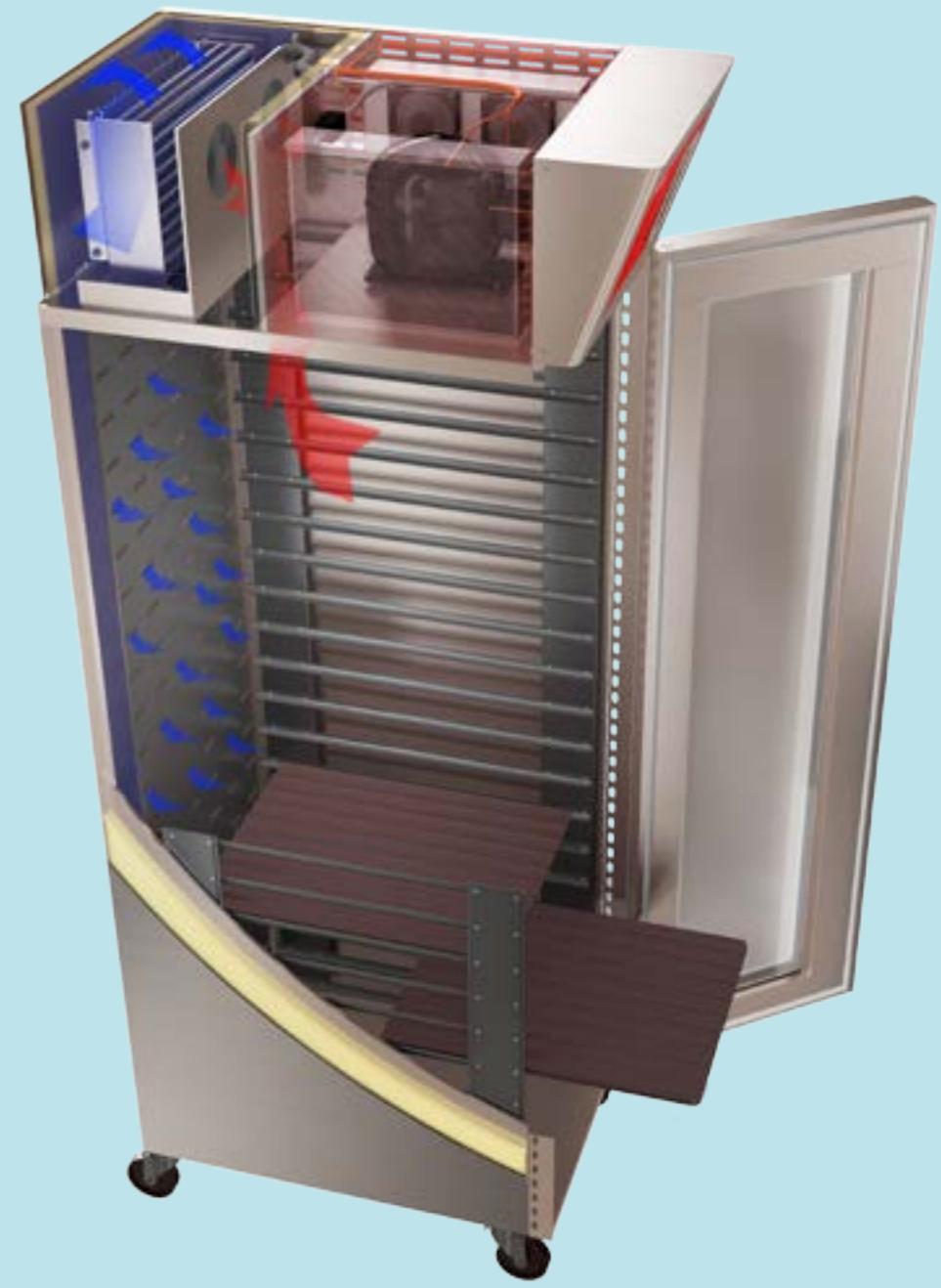
### 控制发酵醒发箱 IVERPAN系列

For over 40 years, Salva's range of controlled fermenters for IVERPAN trays has been recognised as an essential piece of equipment for cake makers and hot points around the world.

A practical solution thanks to its compact and robust design. It is easy to install and extremely versatile, allowing controlled or direct fermentation to be carried out. The entire rear of the cabinet is fitted with baffles which guarantee the optimum distribution of air, offering maximum protection for the most delicate products.

40年以来，SALVA公司适用于IVERPAN烤盘的控制发酵醒发箱，已经为全世界的蛋糕店和现烤店所熟知，被认为是不可或缺的设备。

得益于其紧凑坚固的设计，这款醒发箱非常实用。它安装方便，而且功能多样，既可以作为控制发酵使用，也可以作为直接发酵使用。整个醒发箱的内侧装有气流槽，以保证理想分布空气。它可以用于制作任何糕点，即使是最精致的制品。



## Controlled Fermentation Chamber for Racks. FCSR-11

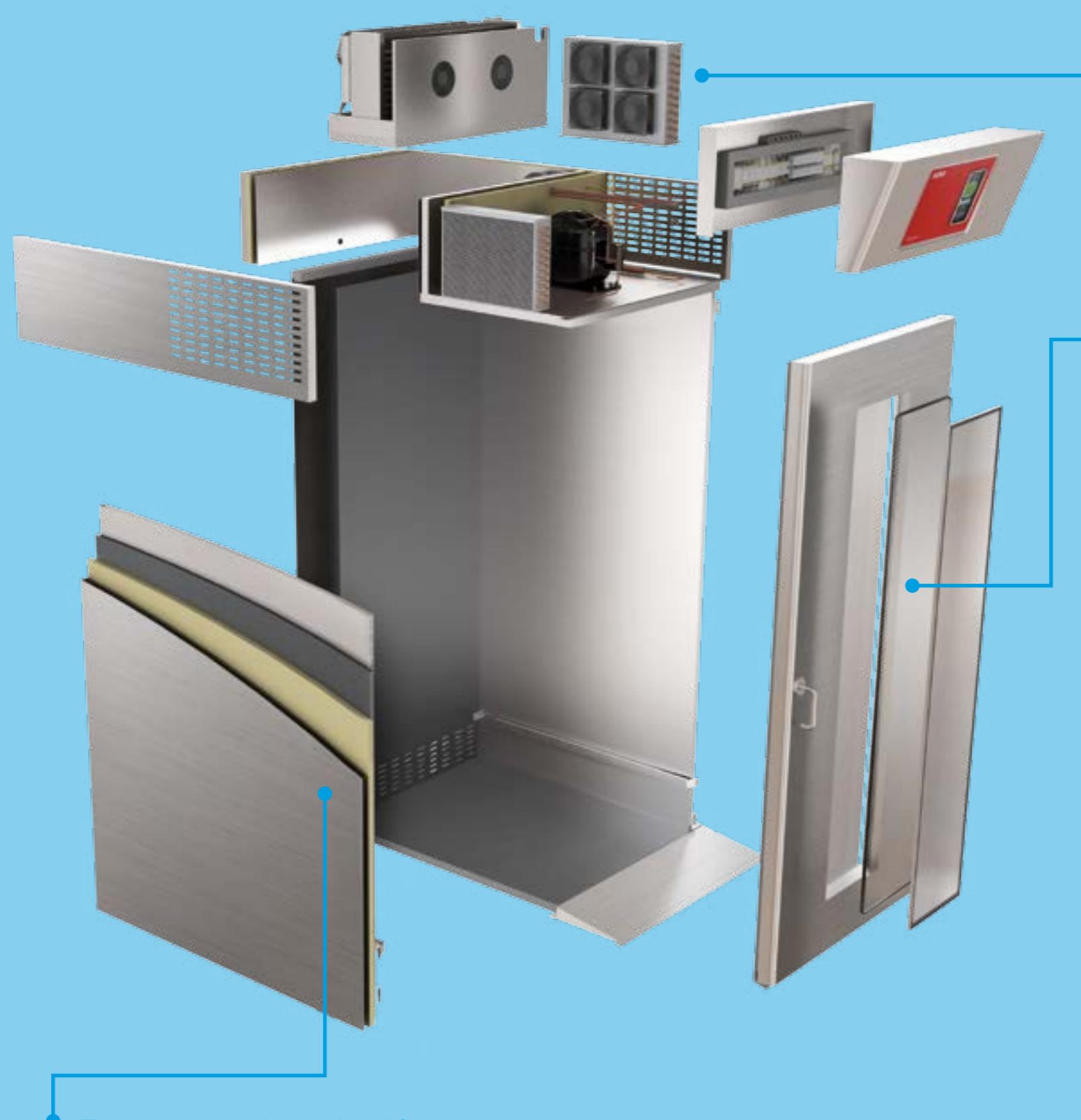
适用于台车的控制发酵醒发箱 FCSR-11

The FCSR-11 applies all the quality and technical solutions of the IVERPAN controlled fermentation range to a rack chamber.

Introduces the convenience and benefits of controlled fermentation in small bakeries which base their production on the use of racks. Fitted with Salva's most advanced fermentation control software, providing small artisan bakers with a range of possibilities previously only available to large chambers.

FCSR-11醒发箱沿用了IVERPAN控制发酵醒发箱的所有品质和技术方案，只是它的腔室是适用于台车的。

它继承了控制发酵醒发箱的实用性和优点，适用于基于台车生产的小规模的面包房使用。同时，这款醒发箱配备了SALVA公司最先进的发酵控制软件，从而让这款适用于小型面包房的醒发箱具备所有大体积腔室醒发箱的功能。



The 60 mm thick insulation and the AISI 304 stainless steel internal coating provide maximum resistance from corrosion and also energy savings.

60 mm 厚的绝缘层，不锈钢304材质内涂层，保证了最大的抗腐蚀性和节能效果。

The powerful freezing equipment developed by our engineers has maximum consumption of less than 2kW.

由我们工程师开发的强大的制冷机组，最大耗电量为2kw。

Triple tempered insulating glass with dual air chamber. A unique design which prevents condensation and energy losses.

三层钢化绝缘玻璃，内有两个气室。独家设计，防止热量损失和产生凝露。

### CHARACTERISTICS / 特征

- The cabinet can be used as:
  - Controlled fermentation chamber for racks.
  - Direct fermentation chamber.
  - Conservation chamber at 2°C.
- 40 mm insulated base. Includes access ramp to facilitate rack entry.
- Working temperature range between -2°C and 40°C.
- ST climate class refrigeration group (subtropicalised).
- Control panel for easy operation and programming in line with the user's possibilities.
- Sound power level emitted is less than 70 dB.
- Refrigerating noise R 404 A. Refrigerant which does not harm the ozone layer.
- Capacity: 2 racks 60x40. 1 rack 80x60.
- 这款醒发箱可以用于：
  - 适用于台车的控制发酵
  - 直接发酵箱
  - 2° C的贮存箱
- 底面绝缘层为40mm。装有滑板，方便台车的推出推出。
- 工作温度为-2° C至40° C。
- 制冷机组气候类型：ST（亚热带气候）
- 控制面板操作简易，可以根据用户需要编程设置。
- 声音功率等级是：低于70 dB。
- 制冷剂为R404A，不会破坏臭氧层。
- 容量：2台60x40的台车。1台80 x60 的台车。

## Direct Fermentation Chambers. AF Range.

### 直接发酵醒发箱 AF系列

Salva's AF range of chambers for direct fermentation offers a wide variety of sizes and heights in order to adapt to the needs of any bakery. The 70 mm sandwich panels and 21 mm base ensure perfect insulation. Moreover, the exclusive INSTACLACK assembly technology allows for quick, straightforward assembly without any work.

In conjunction with the CRF-2 convector, the professional can fit direct fermentation equipment with minimum energy costs.

直接发酵AF系列醒发箱，有各种尺寸和高度可供选择，能够满足任何工作车间的需要。侧面隔离层厚度为70mm，底面为21mm，保证了完美的绝缘性能。另外，独家设计的INSTACLACK组装方式，使得装配不需人力，快速简单。

装配上专业的换流器CRF-2之后，能够用于直接发酵，使得能源成本最小化。



### CRF-2 Convector / 换流器CRF-2

The CRF-2 convector is designed and manufactured by Salva for the quick, efficient production of heat and moisture inside the AF direct fermentation chambers.

The efficient generation of steam using an electrical arc minimises electrical consumption. In combination with the dry heat resistor, it can generate ideal fermentation conditions for a volume of 17 m<sup>3</sup>.

这款CRF-2对流器，是由SALVA公司设计生产的，能够为直接发酵AF系列醒发箱快速有效地产生热量和湿度。

由电弧高效产生蒸汽，最大程度降低耗电量。结合干热电阻，能够提供17m<sup>3</sup>的理想发酵条件。



## FC Controlled Fermentation Range

### 控制发酵FC系列

Salva's extensive experience in the design and manufacture of controlled fermentation chambers means the FC range is a cutting-edge product for bakeries.

Our exchange of knowledge with customers can be seen in this extensive range, with the application of advanced solutions in its construction. An integral structure, comprising 70 mm high-density insulating panels; ST class cold groups (subtropicalised), ready to work in the most adverse conditions; interior designed to facilitate perfect air distribution; stainless steel interior surfaces, making this our flagship range.

SALVA公司这么多年设计和生产控制发酵醒发箱积累的经验，使得FC系列醒发箱成为一款技术最新的适用于面包行业的产品。

SALVA公司和客户之间的交流沟通，也在这个系列的醒发箱上体现出来，因为在其构造上都采用了先进的技术方案。整个构造都是用高密度的70mm厚的绝缘层组成；制冷机组符合ST气候类型（亚热带气候），能够在最恶劣的气候条件下工作；内部设计有利于气流的完美分布；内部表面都是不锈钢制造，使得这个系列产品成为我们的旗舰产品。



#### Characteristics / 特征

- Made of plastic coated metal panels on the outside and stainless steel on the inside, injected with 70 mm thick polyurethane.
- Electronic control panel, control for temperature, moisture, times and periods and optical indications for the processes. With possibility of five fermentation stages.
- Capacity to work at -10°C (standard).
- 21 mm thick insulated base.
- Independent moisture and heat generator.
- 外侧采用塑料涂层金属面板，内侧采用不锈钢板，内注70mm厚的聚氨酯绝缘层。
- 电子控制面板，控制温度、湿度、时间、周期以及生产过程中的光学指标。可以设置5个发酵阶段。
- -10° C为标准工作能力范围。
- 底面绝缘层厚度为21mm。
- 独立的热量和湿度产生装置。

# Controlled Fermentation Chambers. FC Range

## 控制发酵醒发箱 FC系列

The FC range of controlled fermentation chambers brings together all the characteristics to make it an essential item in all 21st-century bakeries.

FC系列控制发酵醒发箱综合了所有最先进的技术，使它成为21世纪任何面包房都不可或缺的一台设备。



### Air distribution / 气流分布

The interior is designed to ensure the perfect distribution of cold, heat and moisture throughout the volume of the chamber. The suction system is designed to conduct air and moisture from bottom to the top, obtaining perfect uniform fermentation.

醒发箱的内部设计能够保证冷气、热量和湿度在整个腔室内的完美发布。吸气系统的设计，能够引导空气和湿度自下而上流通，从而达到完美均匀的发酵效果。



### Control panel / 控制面板

The whole FC range is fitted with the FC 95 LCD panel. Its process control unit houses all of Salva's experience in controlled fermentation.

FC系列所有产品都配备FC 95 LCD面板。这款面板的处理控制单元的设计凝结了SALVA公司在控制发酵领域的所有经验。



### Easy assembly system / 简易的安装系统

NO INSTALLATION WORK, NO PROBLEMS: the INSTACLACK system is fast, clean and simple. The FC range is thermally shielded with high-density injected polyurethane SANDWICH panels of 70 mm on the sides and top section and 21 mm in the base.

勿需安装，不出现任何问题：INSTACLACK系统是快速、清洁、简单的安装系统。FC系列醒发箱的侧面和顶部由厚度为70mm的高密度聚氨酯绝缘层夹芯板构成，底面的厚度为21mm。



### Cooling unit / 制冷机组

As is the case with all Salva cold equipment, the heart of each FC comprises carefully selected components from leading suppliers, assembled and tested for 24 hours at our facilities by experts in refrigeration.

如同SALVA公司的所有制冷机组，FC系列醒发箱的核心部分——制冷机组的所有零配件，都是经过仔细挑选，由最优秀的供应商提供，然后由冷藏专业工人组装，并且经过24小时的测试检验。



### Independent Isothermal steam generator / 独立的恒温蒸汽产生器

The powerful 2.2 kW steamgenerator is capable of filling the chamber with moisture in a few seconds. Has a simple, ingenious design with a double communicated vat which does not cover the water resistor, leading to energy savings.



Steam generator's functioning does not affect chamber's temperature: increases proofing homogeneity.

2.2kW的强大的蒸汽产生器能够在几秒钟之内使得整个腔室内的湿度达到饱和状态。两个相连箱体的设计，巧妙简单，不会使水电阻达到饱和，从而达到节能的效果。

蒸汽产生器的运行不会改变腔室内的温度，从而使得发酵更加均匀。

## Controlled Fermentation Chambers. Gamme France Range

### 控制发酵醒发箱 France系列

Gamme France Range controlled fermentation chambers are designed and manufactured for artisan bakers who use W (高于180) 面粉的面包工艺师使用。

The Gamme France range includes many construction elements from the FC range, such as the quality of the cold group components, the control panel, the wall thicknesses and exceptional fermentation quality.

The differences compared to the FC range are that the base is optional, the cold group is adapted to northern European temperatures and the moisture is produced through dripping in the evaporators.

France系列控制发酵醒发箱的设计和构造，适用于使用高W (高于180) 面粉的面包工艺师使用。

France系列融合了很多FC系列的构造要点，比如制冷机组零配件的质量，控制面板，绝缘层夹芯板的厚度和优异的发酵效果。

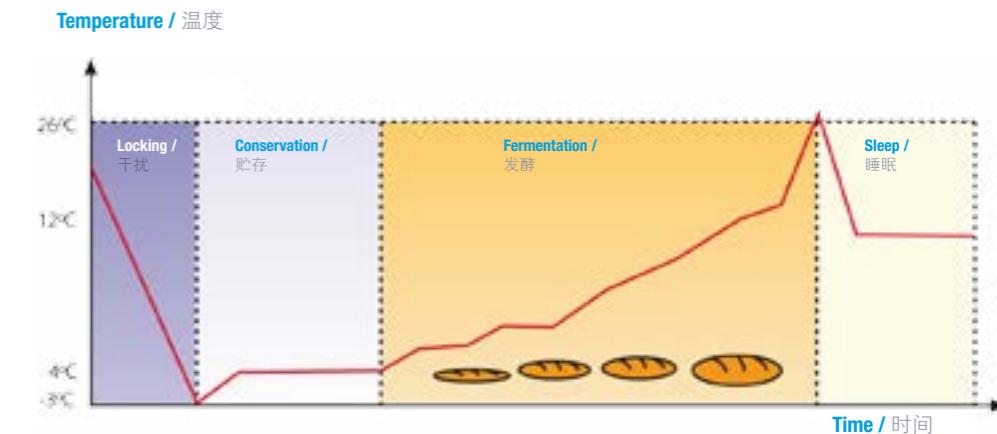
France系列与FC系列的区别在于：其底面是可选的，制冷机组符合北欧特殊温度要求，湿度由蒸发器内的水珠产生。



### KS-95 LCD Control Panel / 控制面板 FC-95 LCD

The KS-95 LCD control panel is found throughout the FC range and the Gamme France range. Governs the operation mode of the fermentation chambers in accordance with the baker's requirements. Its easy programming makes it an indispensable ally for all artisan bakers.

KS-95 LCD control panel 在 FC 系列和 France 系列醒发箱中通用，可以根据面包师的需要设置醒发箱的操作模式。它设置简单，是工作车间不可或缺的设备。



Gamme-France controlled fermentation cabinets have 3 operation modes:

1. Conservation (including lock stage and conservation stage).
  - Only the cold cycle is carried out.
  - The conservation temperature is defined.
  - The achievable temperature is -3°C.
  - The optional defroster should be added in conservation temperatures below 0°C and times of over 12 hours.
2. Conservation and fermentation (including all the stages).
  - The following are defined to control this cycle:
    - Time and date of baking.
    - Lock time.
    - Lock temperature.
    - Conservation temperature.
    - Fermentation time.
    - Fermentation temperature.
    - Relative fermentation moisture.
3. Fermentation (fermentation cycle only).
  - To control this cycle we could define:
    - Fermentation time.
    - Fermentation temperature.
    - Relative fermentation moisture.

#### \* Sleep function

- The Sleep Function is provided as standard in Gamme-France controlled fermentation cabinets.
- This function is automatically activated when either controlled fermentation or direct fermentation is selected, and can be disabled by the baker/cake maker by simply pressing the "sleep" button.

France系列控制发酵醒发箱有3中操作模式：

1. 贮存 (包含干扰阶段和贮存阶段)
  - 只能在冷藏周期内使用
  - 可以定义贮存温度
  - 温度可达-3° C
  - 贮存温度在0° C以下，而且时间超过12小时的情况下，需要配备除霜器 (可选)
2. 贮存和发酵 (包含所有阶段)
  - 为了控制这个周期，需要定义：
    - 烘焙的时间和日期
    - 干扰时间
    - 干扰温度
    - 贮存温度
    - 发酵时间
    - 发酵温度
    - 发酵的相关湿度
3. 发酵 (只有发酵周期)
  - 为了控制这个周期，需要定义：
    - 发酵时间
    - 发酵温度
    - 发酵的相关湿度

#### \* 睡眠功能

- France 系列控制发酵醒发箱配有睡眠功能。
- 在选定采用控制发酵或者直接发酵后，睡眠功能会自动激活。也可以根据面包师/蛋糕师的喜好通过“sleep”按钮取消这个功能。

# Gamme France Range Controlled Fermentation Chambers

## 控制发酵醒发箱 France 系列

### Air distribution / 气流分布

Set of vertical evaporators and fans for the uniform distribution of heat and cold from the chamber.

通过风扇和垂直的蒸发器，使得冷热在整个腔室均匀分布。



### Heater group / 加热机组

Comprising shielded electrical resistors. Its power is dimensioned so proofing processes are slower, more natural.

由电阻组成，其功率是根据让直接发酵更缓慢更自然的标准设计的。



### Control panel / 控制面板

- Electronic control panel as standard. Located at a lower height for easier access and protection from bangs.
- Includes sleep mode as standard.
- Programming of temperature, moisture and time (real time) in the 3 functions.
- 电子控制面板。安装在较低易接触位置，且有防撞装置。
- 包含睡眠功能。
- 可以在3种操作模式下设置温度、湿度和时间（实时）。



### Moisturizing system / 保湿系统

Gamme-France controlled fermentation cabinets have a standard humidifier which provides moist steam, thus guaranteeing the hydration of the product and ensuring its quality.

France系列控制发酵醒发箱配有增湿器，能够提供足够的水蒸气，保证制品的水化作用，从而确保产品的质量。



### Switchboard / 电气盒

- Independent magnetothermic switches to protect all the circuits.
- Non-pull glands for all electrical connection ducts
- Switching transformer
- Safety thermostat for fermentation resistors
- Independent component power supply input terminals
- Main isolating switch

- 独立电磁式开关保护所有线路
- 连接电气件的所有软管的防颤抖填塞物
- 开关变压器
- 发酵电阻的安全温控器
- 独立部件的电源输入终端
- 主隔离开关

### Refrigerating group / 制冷机组

Thermostat located in the top of the cabinet. Unit with power to lower the total capacity to -3°C in 3 hours.

冷凝器单元安装于醒发箱的顶部。它的功率能够使得在满载情况下3个小时内温度下降到-3°C。



### Sandwich Panels / 夹芯面板

- 70mm thick injected polyurethane panels. Up to 40% more than that usually found on the market.
- Highly optimised panel assembly system. Very short panel assembly time (30 minutes approx.)
- Size of panels suitable for the customer's premises.
- Interior of the AISI 304 stainless steel cabinet.
- 70mm厚的聚氨酯绝缘层面板，比市场上通用的要厚40%。
- 优化的面板组装系统，安装时间大大减少（约30分钟）。
- 面板的尺寸可以根据客户工作间的情况设计。
- 内部由不锈钢304组成。



# Salva LINK

## SALVA LINK系统

Salva LINK is the management programme for total control of the complete facility. The ovens and fermenters intercommunicate through a central PC.

The fermenter may, at a specific point during the process, start up the ovens through the PC, ensuring baking temperature is reached at the moment fermentation finishes.

If there are several ovens, the fermenter starts up the one at the highest temperature. The Salva LINK programme gives the order at the exact moment, since it knows the required heating time.

If an ignition oven has been left on inadvertently, Salva LINK can, after analysing baking requirements, take smart decisions: turn off, power saving mode or remain on.

Apart from allowing communication between SALVA units, Salva LINK has an optional production control model to manage:

- The devices used throughout the working day.
- Time of use.
- Facility productivity.
- Downtime due to lack of planning or capacity.
- Idle time
- Detection of errors in the manufacturing process.

The Salva LINK maintenance model allows the facility to communicate with any person in the event of failure. It can communicate with SALVA's official Technical Assistance Service, allowing the failure to be diagnosed and the unit started up from the remote control at the earliest opportunity.

Salva LINK is a baking management programme which can be used to save energy costs, achieve greater productivity and reduce downtime in the event of failure.

SALVA LINK 系统是一个能够全面控制所有设备的操作程序。通过一台主机，能够把烤炉和醒发箱彼此连接起来。

醒发箱，可以通过主机在设定的时间启动运行；烤炉，在醒发箱完成发酵的时候会自动加热到烘焙温度。

当多台烤炉对接一台醒发箱时，醒发箱会在烤炉达到最高温度时启动它。SALVA LINK程序会把启动顺序做到非常精确，因为它知道每台烤炉所需的加热时间。

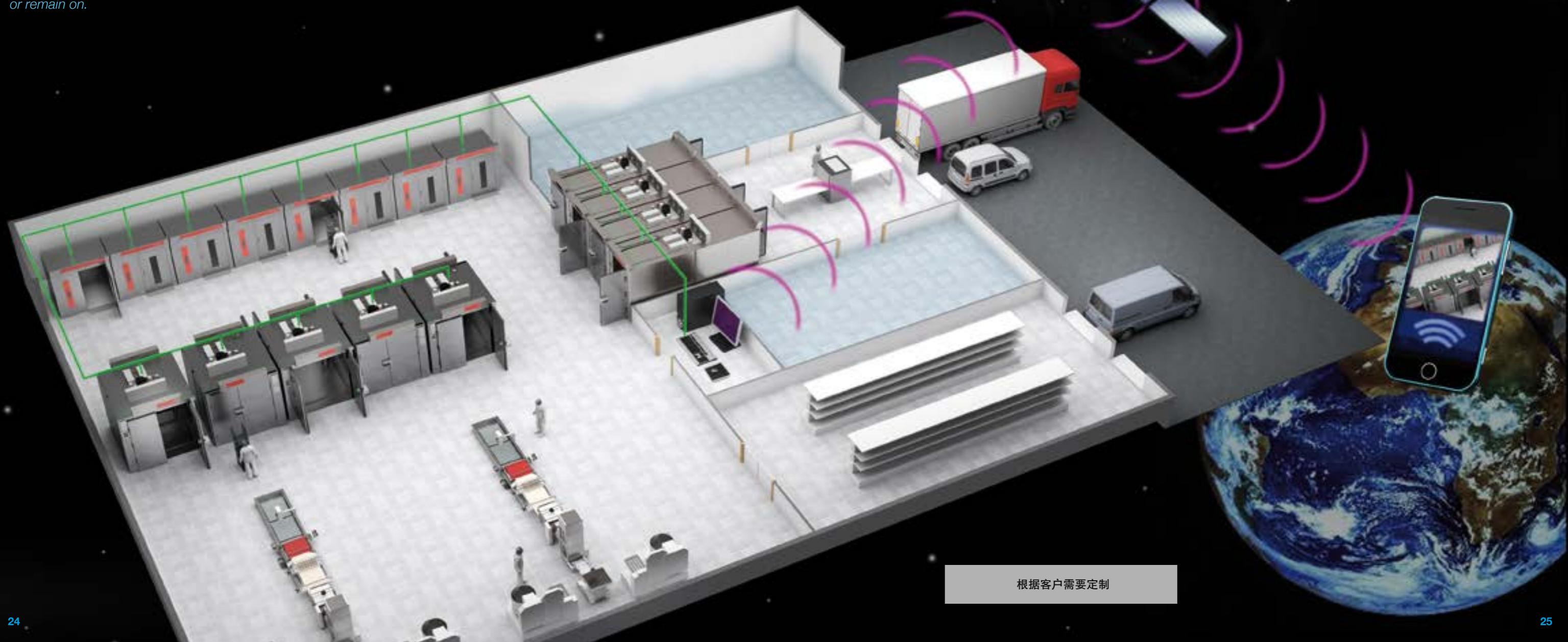
SALVA LINK系统，除了能够使得SALVA公司的各个设备连接起来，还有一个控制生产的可选模型，能够管理以下方面：

- 在工作日使用的烘焙和发酵设备
- 使用时间
- 设备的生产能力
- 由于计划出错或者容量问题出现的停机状况
- 停机时间
- 在生产过程中的故障检测

SALVA LINK的维修模块，允许在出现故障情况时，让人和设备连接起来。可以联系SALVA公司的技术支持部门，通过远程控制，诊断故障原因，从而让设备尽早恢复运行。

SALVA LINK，是一款面包师需要的管理程序，能够节省能源成本，保证最大产能，减少因故障而出现的停产时间。

Tailor-made development.



## Blast freezers

## 速冻柜

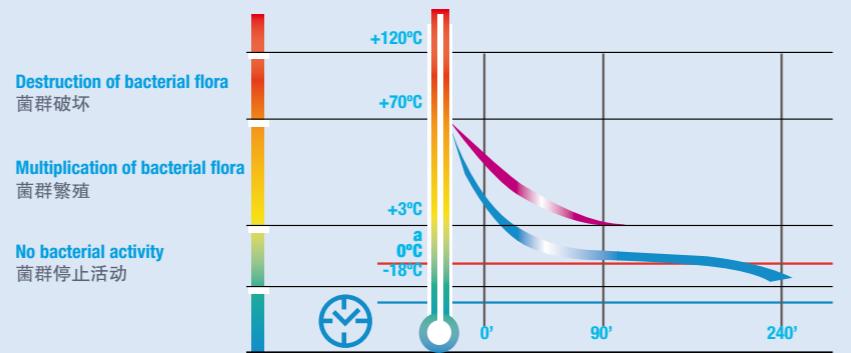
The SALVA range of blasts allows bakers to meet the challenges to their business in the 21st-century. Two processes in a single machine.

SALVA公司的速冻柜系列，是面包房应对21世纪挑战的最好选择。一台设备，具有两种工作程序。

### BLAST / 快速冷却

Consists of significantly speeding up the freezing process. The product is taken from baking temperature up to temperature in the heart of +3°C in 90 min.

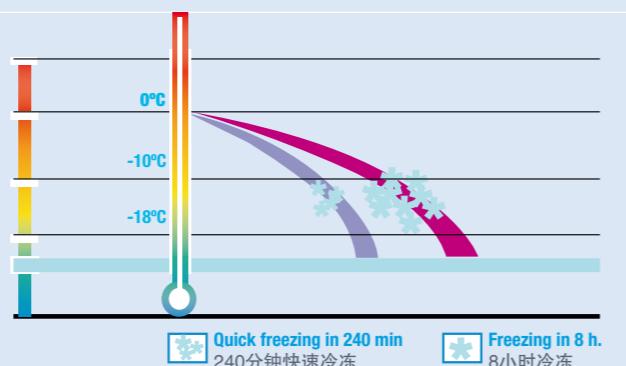
显著加快冷却过程。制品的中心温度在90分钟内从烘焙温度冷却到+3° C。



### DEEP FREEZE / 深度冷冻

Lowers the temperature of the product from baking to -18°C in 240 minutes. Prevents the formation of microcrystalline.

制品的温度在240分钟内从烘焙温度降至-18° C。防止产生微结晶块。



### FRESH PRODUCT / 新鲜的制品

Allows the product to be served at any moment with the same properties as recently baked, just as your customers demand.

在任何时候，都可以向顾客供应他们希望的如同新鲜出炉的制品。

### REDUCE WASTE PRODUCT / 降低废品率

Keep sales in line with production, reducing defective products by 50%.

从销售到生产变得更加协调，废品率降低50%。

### STREAMLINE THE PRODUCTION PROCESS / 生产过程合理化

Allows you to meet peak demand without any risk of losing sales.

即使是在销售最旺的时点，也能应付自如，不会丢失顾客。

### BETTER MANAGE HUMAN RESOURCES / 更好地管理人力资源

Better organise personnel needs. Avoid night-time and holiday periods.

能够更好地管理人力资源需求，避免夜间和假日加班。



### MAXIMUM TEMPERATURE UNIFORMITY / 最均匀的温度

The rounded, seal tight internal chamber allows the airflow to rapidly reach the temperatures required in all points.

腔室圆形封闭设计，使得气流能够快速达到任何所需的温度。



### MAXIMUM FUNCTIONALITY / 最大功能

The high-quality components which make up the refrigerator group offer high performance even in intensive work conditions.

Uses R404A refrigerant, in accordance with environmental protection standards.

制冷机组采用高质量的配件，即使是在高强度工作的情况下也能保证最高性能。

采用R404A制冷剂，有利于环保。

### MAXIMUM PRECISION / 最大精确度

The multipoint temperature sensor allows the temperature of the foodstuffs to be detected with maximum accuracy in the different blast or deep-freeze stages.

多探头温度传感器，能够最大精确度地探测到不同快速冷却或者深度冷冻时段的食物温度。



## Blast freezers

### 速冻柜

#### Tray / 适用于烤盘



- Sliding system with 3 positions for each tray:  
- Standard: 65mm / -A 50mm / -A 32.5mm.
- 60 mm high-density polyurethane insulation (42kg/m³).
- Finished in 18/10 shiny Aisi 304 stainless steel.
- Includes temperature sensor and defrost as standard.
- Memory for up to 99 deep freeze or temperature blast cycles  
Allows the product to be blasted or deep frozen based on a pre-set time interval (and, in consequence, in the 90 mins or 240 mins as set out in HAccp Standards) or through temperature control in the heart of the product using a temperature sensor.

- 烤盘的导轨位置有三种设计可供选择：  
- 标准: 65 mm / -A 50mm / -A 32.5mm
- 高密度 ( 42kg/m³ ) 60mm厚的聚氨酯绝缘层。
- 采用不锈钢Aisi 304, 18/10板面制造。
- 配有温度传感器和除霜功能。
- 高达99个快速冷却或者深度冷冻的温度周期记忆功能，可以根据预先设置的时间间隔 (根据HAccp标准要求是90分钟内或者240分钟内) 快速冷却或者深度冷冻产品，或者通过温度传感器控制产品的中心温度。

#### Rack / 适用于台车



- Range fitted with multipoint temperature sensor, with 4 temperature sensors.
- This range can change the airspeed inside the chamber, thus maintaining the degree of moisture.
- Memory for up to 99 deep freeze or temperature blast cycles.
- Fitted with HACCP memory to register the high-temperature alarms and cycles which have exceeded the maximum time envisaged:
  - 90 minutes for positive blast.
  - 240 minutes for deep freeze.
- 这个系列配有多探头温度传感器，有4个温度探头。
- 能够通过设置改变腔室内的空气流通速度，从而保证里面的湿度。
- 高达99个快速冷却或者深度冷冻的温度周期记忆功能。
- 配有HACCP记忆功能，当超过预先设置的温度和时间周期范围时，会发出警报。
  - 快速冷却时为90分钟。
  - 深度冷冻时为240分钟。

TYPE	Dimensions	Blast cycle	Freezing cycle	Blast capacity	Freezing capacity	Refrigeration capacity	Voltage	Power	Current	Tray capacity	Weight
类型	尺寸	快速冷却周期	冷冻周期	快速冷却容量	冷冻容量	制冷量	电压	功率	电流	烤盘容量	重量
ABT-5	790x800x850	+90/+3	+90/-18	12 Kg	8 Kg	690	230/1/50	1200	6.2	5	103
ABT-8	790x800x1320	+90/+3	+90/-18	25 Kg	16 Kg	1300	230/1/50	2000	9.2	8	142
ABT-12	790x800x1800	+90/+3	+90/-18	36 Kg	24 Kg	2850	400/3/50	3500	4.2	12	188
ABT-16	790x800x1950	+90/+3	+90/-18	55 Kg	36 Kg	3930	400/3/50	5150	5.7	16	221

TYPE	Dimensions	Blast cycle	Freezing cycle	Blast capacity	Freezing capacity	Refrigeration capacity	Voltage	Power	Current	Rack capacity	Weight
类型	尺寸	快速冷却周期	冷冻周期	快速冷却容量	冷冻容量	制冷量	电压	功率	电流	台车容量	重量
ABT-SM11	1200x1050x2430	+90/+3	+90/-18	70 Kg	48 Kg	5970	400/3/50	4770	14.2	1 (60x40)	320
ABT-SR11	1600x1450x2430	+90/+3	+90/-18	150 Kg	100 Kg	11030	400/3/50	5620	14.6	1 (60x80)	420
ABT-SM12	1200x1750x2430	+90/+3	+90/-18	140 Kg	96 Kg	9650	400/3/50	7650	23.6	2 (60x40)	640
ABT-SR12	1600x2550x2430	+90/+3	+90/-18	300 Kg	200 Kg	16290	400/3/50	14460	35.8	2 (60x80)	640
ABT-SP11	1700x1450x2430	+90/+3	+90/+3	150 Kg	100 Kg	9650	400/3/50	-	-	1 (100x80)	-

SALVA's capacity and experience means it can offer its knowledge in the bespoke design of your facility.

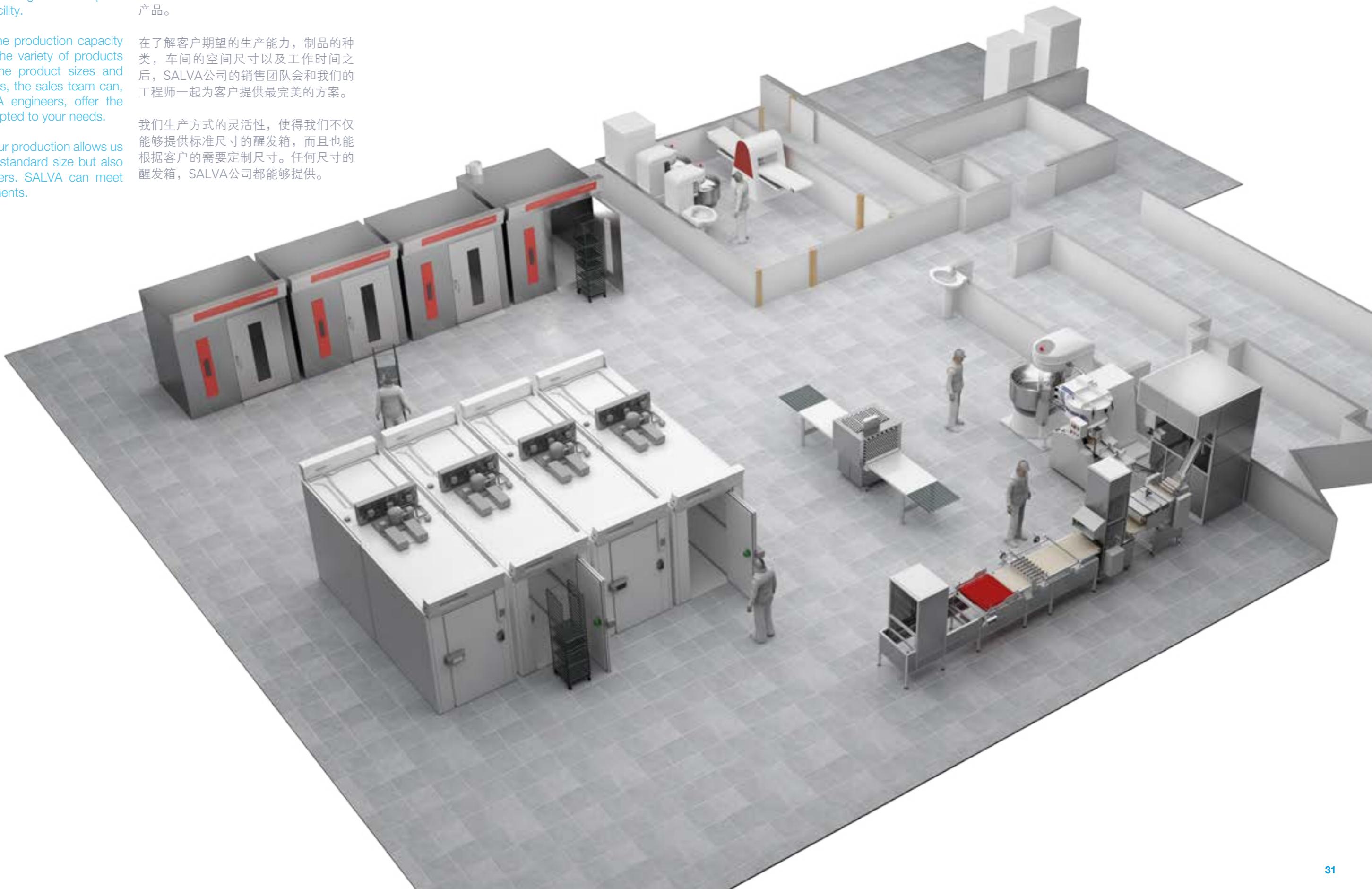
Once it knows the production capacity to be reached, the variety of products to be offered, the product sizes and the working hours, the sales team can, alongside SALVA engineers, offer the solution best adapted to your needs.

The flexibility of our production allows us to offer not only standard size but also bespoke chambers. SALVA can meet any size requirements.

SALVA公司拥有的能力和经验，使我们能够应用专业知识根据车间的尺寸设计产品。

在了解客户期望的生产能力，制品的种类，车间的空间尺寸以及工作时间之后，SALVA公司的销售团队会和我们的工程师一起为客户提供最完美的方案。

我们生产方式的灵活性，使得我们不仅能够提供标准尺寸的醒发箱，而且也能根据客户的需要定制尺寸。任何尺寸的醒发箱，SALVA公司都能够提供。





## Technical characteristics. AR-22 / 技术参数 AR-22



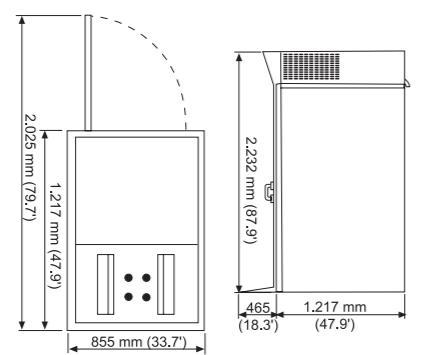
TYPE	Vertical pitch of shelves	Voltage	Kw	Weight
类型	烤盘间距	电压	Kw	重量
AR-22	6.8 cm	Single-phase 230 V 单相电 230V	2	90 Kg.

## Technical characteristics. Iverpan Range / 技术参数 IVERPAN系列



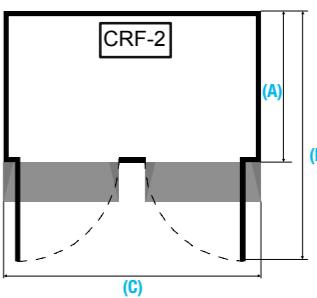
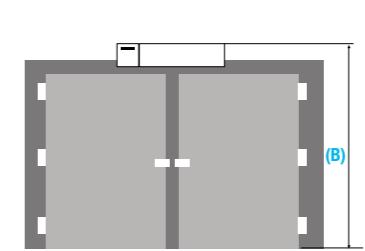
TYPE	Exterior dimensions / 外部尺寸			Tray sep./ 烤盘间距	Tray capacity / 烤盘容量	Voltage / 电压	Power / 功率 (kW)				Weight / 重量
	Length / 长度	Depth / 深度	Height / 高度				Heating group / 制热	Refrigeration / 制冷	Moisture protector / 湿度产生器	Total / 总功率	
FC-18	520	810	2.170	88	18 (600x400)	230	1.1	3/8	0.1	1.2	215
FC-22	520	810	2.170	72	22 (600x400)	230	1.1	3/8	0.1	1.2	215
FCL-18	580	1.010	2.170	88	18 (660x460)	230	1.1	3/8	0.1	1.2	240
					18 (800x400)						
					18 (800x460 / 750x450)						
FCL-22	580	1.010	2.170	72	22 (660x460)	230	1.1	3/8	0.1	1.2	240
					22 (800x400)						
					22 (800x460 / 750x450)						
FC-46	740	1.075	2.180	69	46 (600x400)	230	1.1	1/2	0.1	1.2	288
					23 (800x600)						

## Technical characteristics. FCSR-11 / 技术参数 FCSR-11



TYPE	Refrigerating power	Fermentation	Moisture protector	Ventilation Evaporation+Condens.	Consumed power	Weight	Rack capacity	V	A	Hz	Phases	Kw	Refrigerating	Refrigeration Kg.	KWh/24h.	Clim. Class
类型	制冷功率	发酵	湿度产生器	风扇, 蒸发器+冷凝器	耗能	重量	烤盘容量	V	A	Hz	相数	Kw	制冷剂	制冷剂重量	KWh/24h.	气候类型
FCSR-11	1/2 CV	1.1 kW	0.3 kW	0.35 kW	1.4 kW	290 Kg.	1 (80x60cm)	230	9.3	50	1	2.1	R-404 A	0.85	7.5	4
							2 (60x40cm)									
							1 (80x46cm)									
							1 (75x45cm)									

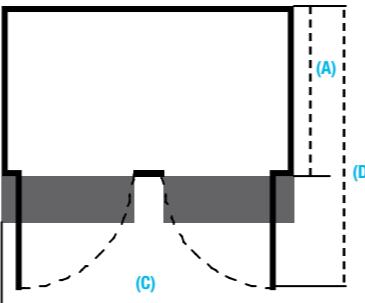
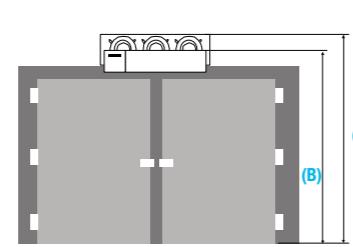
## Technical characteristics. AF Fermentation / 技术参数 AF系列



TYPE	Exterior dimensions / 外部尺寸				Number of doors / 门的数量	Rack's tray capacity / 烤盘台车								Power / 功率 (kW)	Voltage / 电压	Door light* / 门上的灯* (mm)	
	Length / 长度 (C)	Depth / 深度 (A)	Depth / 深度 (D)	Height / 高度 (B)		60x40	66x46	75x45	70x50	80x40	80x46	80x60	90/92x65	100x80			
<b>FOR RACKS (1.80 m height) / 适用于高度为1.8M的烤盘台车</b>																	
AF-SM 12	1.260	1.260	2.260	2.280	1	2	2	1	1	1	1	1	-	-	2.7	230/400	900 x 1.845
AF-SM 16	2.020	2.020	2.850	2.280	1	6	2	2	2	2	2	2	1	1	2.7	230/400	730 x 1.845
AF-SM 26	2.020	2.020	2.850	2.280	2	6	6	4	4	4	4	3	-	-	2.7	230/400	730 x 1.845
AFK-12	1.260	1.640	2.640	2.280	1	2	2	1	2	2	1	1	1	1	2.7	230/400	900 x 1.845
AFK-13	1.260	2.020	3.020	2.280	1	3	3	3	3	3	3	1	1	1	2.7	230/400	900 x 1.845
AFK-14	2.020	1.640	2.640	2.280	1	6	4	4	4	3	3	2	2	1	2.7	230/400	900 x 1.845
AFK-16	2.400	2.020	3.020	2.280	1	9	6	6	6	6	6	4	4	2	2.7	230/400	900 x 1.845
AFK-24(A)	2.400	1.260	2.260	2.280	2	6	4	4	3	3	2	2	2	2	2.7	230/400	900 x 1.845
AFK-24(B)	2.400	1.640	2.640	2.280	2	9	5	4	4	4	4	2	2	2	2.7	230/400	900 x 1.845
AFK-26	2.400	2.020	3.020	2.280	2	9	6	6	6	6	6	4	2	2	2.7	230/400	900 x 1.845
AF-SR-12	1.640	1.640	2.790	2.280	1	5	3	3	3	3	3	2	2	1	2.7	230/400	1.050 x 1.845
AF-SR-13	1.640	2.400	3.550	2.280	1	6	6	5	4	4	3	3	2	2	2.7	230/400	1.050 x 1.845
AF-SR-14	2.400	1.640	2.790	2.280	1	8	6	5	4	4	4	2	2	2	2.7	230/400	1.050 x 1.845
AF-SR-16	2.400	2.400	3.550	2.280	1	12	9	8	6	6	6	6	4	2	2.7	230/400	1.050 x 1.845
AF-SR-24	2.780	1.640	2.790	2.280	2	8	8	6	6	6	6	4	4	2	2.7	230/400	1.050 x 1.845
AF-SR-26	2.780	2.400	3.550	2.280	2	12	12	10	8	8	8	6	4	2.7	230/400	1.050 x 1.845	
AF-SP-12	1.640	2.020	3.32														

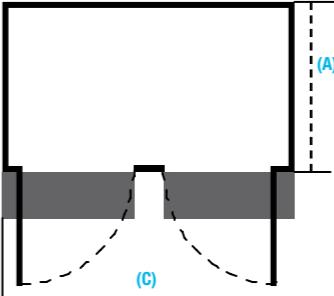


## Technical characteristics. FC Controlled Fermenter / 技术参数 FC 系列控制发酵醒发箱



TYPE 类型	Exterior dimensions / 外部尺寸				Number of doors 门的数量	Rack's tray capacity / 烤盘台车								Power / 功率 (Kw)	Voltage / 电压	Door light* / 门上的灯 (mm)	
	Length (C) 长度 (C)	Depth (A) 深度 (A)	Depth (D) 深度 (D)	Height (B) 高度 (B)		60x40	66x46	75x45	70x50	80x40	80x46	80x60	90/92x65	100x80			
<b>FOR RACKS (1.80 m height) / 适用于高度为1.8M的烤盘台车</b>																	
FC-SM-12	1.260	1.260	2.090	2.280 / 2.341	1	2	2	1	1	1	1	-	-	3.6	230/400	730x1.845	
FC-SM-16	2.020	2.020	2.850	2.280 / 2.491	1	6	6	4	4	4	4	3	-	-	7.3	230/400	730x1.845
FC-SM-26	2.020	2.020	2.850	2.280 / 2.491	2	6	6	4	4	6	4	3	-	-	7.3	230/400	730x1.845
FCK-12	1.260	1.260	2.260	2.280 / 2.341	1	2	2	2	1	2	2	1	1	1	3.6	230/400	900 x 1.845
FCK-13	1.260	2.020	3.020	2.280 / 2.341	1	3	3	3	3	3	3	1	1	1	3.6	230/400	900 x 1.845
FCK-14(B)	2.020	1.640	2.640	2.280 / 2.341	1	6	4	4	4	3	3	2	2	1	5.2	230/400	900 x 1.845
FCK-16	2.400	2.020	3.020	2.280 / 2.491	1	9	6	6	6	6	6	4	4	2	7.3	230/400	900 x 1.845
FCK-24(A)	2.400	1.260	2.260	2.280 / 2.341	2	6	4	4	3	3	3	2	2	2	5.2	230/400	900 x 1.845
FCK-24(B)	2.400	1.640	2.640	2.280 / 2.341	2	9	5	4	4	4	4	2	2	2	5.2	230/400	900 x 1.845
FCK-26	2.400	2.020	3.020	2.280 / 2.491	2	9	6	6	6	6	6	4	2	2	7.3	230/400	900 x 1.845
FC-SR-12	1.640	1.640	2.790	2.280 / 2.341	1	5	3	3	3	3	3	2	2	1	3.6	230/400	1.050 x 1.845
FC-SR-13	1.640	2.400	3.550	2.280 / 2.341	1	6	6	5	5	4	4	3	3	2	5.1	230/400	1.050 x 1.845
FC-SR-14	2.400	1.640	2.790	2.280 / 2.491	1	8	6	5	4	4	4	4	2	2	7.3	230/400	1.050 x 1.845
FC-SR-16	2.400	2.400	3.550	2.280 / 2.491	1	12	9	8	6	6	6	6	6	4	10.4	230/400	1.050 x 1.845
FC-SR-24	2.780	1.640	2.790	2.280 / 2.491	2	8	8	6	6	6	6	4	4	2	7.3	230/400	1.050 x 1.845
FC-SR-26	2.780	2.400	3.550	2.280 / 2.491	2	12	12	10	8	8	8	6	6	4	10.4	230/400	1.050 x 1.845
FC-SP-12	1.640	2.020	3.320	2.280 / 2.491	1	6	4	4	4	4	4	2	2	2	5.2	230/400	1.200 x 1.845
FC-SP-13	1.640	2.780	4.080	2.280 / 2.491	1	8	6	6	6	5	5	3	3	3	5.2	230/400	1.200 x 1.845
FC-SP-14	2.780	2.020	3.320	2.280 / 2.491	1	8	8	8	8	8	8	5	5	4	10.4	230/400	1.200 x 1.845
FC-SP-16	3.160	2.400	3.700	2.280 / 2.491	1	12	12	10	8	10	8	5	5	4	10.4	230/400	1.200 x 1.845
FC-SP-24	3.160	2.020	3.320	2.280 / 2.491	2	12	9	9	8	8	8	6	6	4	10.4	230/400	1.200 x 1.845
FC-SP-26	3.160	2.400	3.700	2.280 / 2.491	2	12	12	10	9	10	8	8	8	6	10.4	230/400	1.200 x 1.845
<b>FOR RACKS (2.04 m height) / 适用于高度为2.04M的烤盘台车</b>																	
FC-SR-12	1.640	1.640	2.790	2.505 / 2.721	1	5	3	3	3	3	3	2	2	1	3.6	230/400	1.050 x 1.845
FC-SR-13	1.640	2.400	3.550	2.505 / 2.721	1	6	6	5	5	4	4	3	3	2	5.1	230/400	1.050 x 1.845
FC-SR-14	2.400	1.640	2.790	2.505 / 2.871	1	8	6	5	4	4	4	4	2	2	7.3	230/400	1.050 x 1.845
FC-SR-16	2.400	2.400	3.550	2.505 / 2.871	1	12	9	8	6	6	6	6	6	4	10.4	230/400	1.050 x 1.845
FC-SR-24	2.780	1.640	2.790	2.505 / 2.871	2	8	8	6	6	6	6	4	4	2	7.3	230/400	1.050 x 1.845
FC-SR-26	2.780	2.400	3.550	2.505 / 2.871	2	12	12	10	8	8	8	6	6	4	10.4	230/400	1.050 x 1.845
FC-SP-12	1.640	2.020	3.320	2.505 / 2.871	1	6	4	4	4	4	4	2	2	2	5.2	230/400	1.200 x 1.845
FC-SP-13	1.640	2.780	4.080	2.505 / 2.871	1	8	6	6	6	5	5	3	3	3	5.2	230/400	1.200 x 1.845
FC-SP-14	2.780	2.020	3.320	2.505 / 2.871	1	8	8	8	8	8	8	5	5	4	10.4	230/400	1.200 x 1.845
FC-SP-16	3.160	2.400	3.700	2.505 / 2.871	1	12	12	10	8	10	8	5	5	4	10.4	230/400	1.200 x 1.845
FC-SP-24	3.160	2.020	3.320	2.505 / 2.871	2	12	9	9	8	8	8	6	6	4	10.4	230/400	1.200 x 1.845
FC-SP-26	3.160	2.400	3.700	2.505 / 2.871	2	12	12	10	9	10	8	8	8	6	10.4	230/400	1.200 x 1.845

## Technical characteristics. FC France Range / 技术参数 FC France 系列



TYPE 类型	Width (C)* 宽度 (C)*	Depth (A)* 深度 (A)*	Door 门	Capacity 容量	Tray 烤盘
FC-SR-120 T	1.260	1.640	900	1 X 2 = 2	(60x80)
FC-SR-130 T	1.260	2.400	900	1 X 3 = 3	(60 X 80)
FC-SR-131 T	1.260	2.400	900	1 X 3 = 3	(60 X 80)
FC-SR-14 T	2.020	1.640	900	2 X 2 = 4	(60 X 80)
FC-SR-1					