

We improve food quality and safety with freezing and thawing technology.

Galilei Group Food Engineering Solutions



■A precautions for use label is stuck in a product.

- Specifications and appearances are subject to change without notice.
- •The colors of products shown in this catalog may differ from actual colors due to variations in printing. The contents of this catalog are copyrighted by the
- Duplication is prohibited without proper authorization.



- The products shown in this catalog are for indoor use. They should be used and stored in locations away from rain.
 Always carefully read the Operation Manual and Installation Manual prior to use to ensure proper usage.
 Installation and electrical wiring are required. Please consult the store where the product was purchased or a
- Do not place volatile, flammable materials such as ether, benzene, alcohol or lighter tanks in the cabinets. There is a
- danger of explosion.
 Please use for temporary storage of foods. Do not put medical products or research samples in the cabinets. Use for anything besides the intended purpose may cause problems such as a degradation of quality of the stored



Be cool, Be alive.

■Fukushima Galilei (Thailand) Co., Ltd.

16 Asoke Court Gnd FL.,Room 2G,Sukhumvit 21(Asoke)Rd., Klongtoey-Nua, Wattana, Bangkok 10110 Thailand Tel.66-22-583-690

■Fukushima Galilei Singapore Pte. Ltd.

1003 Bukit Merah Central #02-06 Singapore 159836, Singapore Tel.65-6271-0460

■Fukusima Galile Vietnam Co., Ltd.

Floor 9, PVC Sai Gon, 11Bis Nguyen Gia Thieu, Ward 6, District 3, HCMC,Vietnam Tel.84-8-3933-3628

[Hanoi Branch]

8F TID Centre Building, 4 Lieu Giai Street, Cong Vi Ward, Ba Dinh District, Hanoi, Vietnam Tel.010-84-24-3755-6000

■Fukushima Galilei Malaysia Sdn. Bhd.

Lot 6.01, 6th Floor Wisma Central Box617 Jalan Ampang 50450 Kuala Lumpur, Malaysia Tel.60-3-2181-1034

■PT. Fukushima Galilei Indonesia

Ruko Wisteria 1 Lt.2 Jl. Panglima Polim No .7A, Melawai Kec. Kebayoran Baru, Jakarta Selatan 12160, Indonesia TEL. 62-21-2995-9897

■Fukushima Galilei (H.K.) Co., Ltd.

Unit 903, 9/F, Westlands Centre, 20 Westlands Road, Quarry Bay, Hong Kong TEL. 852-2885-5679

■Fukushima Galilei Philippine Corporation

Unit 1715 One Park Drive 11th drive corner 9th Avenue, Bonifacio Global City Taguig City, Philippine Tel.63-917-679-0003

■Fukushima Galilei Taiwan Co.,Ltd.

Rm. 5, 12F., No.112, Sec. 2, Zhongshan N. Rd., Zhongshan Dist., Taipei City 10449, Taiwan (R.O.C.) Tel.886-2-2521-9810

■Fukushima Galilei Cambodia Co., Ltd.

Executive Room#2-E6, The iCON Professional Building, 216 Norodom Boulevard, Tonle Bassac, Chamkarmorn, Phnom Penh, Cambodia. Tel.855-77-778-610

■Fukushima Galilei Myanmar Co. Ltd.

No.(262), 12th Street Ngwe Kyar Yan 3 Quarter South Okkalapa Township, Yangon, Myanmar emailaddress: myanmar@galilei.co.jp

■Fukushima Galilei (Shanghai) Co., Ltd.

Room A316,3rd floor,No.658 Jinzhong Road ,Changning District ,Shanghai 200335 TEL. 86-21-6248-1512

GALILEI (THAILAND) CO., LTD.

FUKUSHIMA GALILEI CO. LTD.

60/105 Moo 3, Mabyangporn Sub-District, Pluakdaeng District, Rayong 21140, Thailand Tel.66-3-8020112





■Head Office

2-6-18 Takeshima, Nishi Yodogawa-ku, Osaka, Japan 555-0011 Tel.81-6-6477-2051

Address inquiries and orders for products made by FUKUSHIMA GALILEI CO.LTD. to:



this leaflet are as of 00000 2024





Blast Chiller / Shock Freezer

Quick chilling and freezing at -40°C

Restore freshness and deliciousness like freshly cooked food.

Equipped with 3 chilling modes* according to the ingredients, and 3 control methods

The combination of 3 chilling modes "Pre-cool", "Chill" and "Shock Freeze" and run control is suitable for handling all kinds of foodstuff and dishes. The temperature control system, is switchable among "Center Temp. Control". "Timer Control" and "Cold Air Control".



actually cooling the food.

can be lowered before

The temperature inside Put the heated food still hot. It is once cooled down and then rapidly chilled. * Not applicable with Model QXF-005SFLT

Shock Chill Freeze

Food is blast-frozen at once at as cold as -40° C.

3 Run Control Methods

Center Temp.Control Food is chilled down to its preset center temperature and then kept cold. The then temperature inside for cold storage becomes equal to the center temperature setting.

Timer Control Food is chilled down only for the timer setting and then kept cold. Continuous run may also be preset.

Cold Air Control Food is chilled down until the temperature inside reaches its setting, and then kept cold.



Blast Chiller / Shock Freezer

LINE UP: A wide range of models to meet your needs.

Type 12 with self-cleaning function

QXC-012SFLV2 Three-phase 200V

[GN pan vertical setup type]

Effective internal volume: 286L External dimensions:W840×D880(932)×H2,062mm

Blast Chiller/Shock Freezer Type 6

Blast Chiller/Shock Freezer Type 12



QXF-012SFLVA Single-phase 240V

[GN pan vertical setup type]

●Effective internal volume:286L

●External dimensions: W840×D880(932)×H1,882mm

Blast Chiller/

Inverter CDV

Shock Freezer 100V

Blast chillers and shock freezers are for slowly cooling down and rapidly chilling and freezing freshly cooked food items.

Keep up the deliciousness and savoriness! Take out fried chicken and delicatessen are also let cool down. Yet fluffy and juicy.





Fried chicken



To keep it fluffy and juicy.

Freeze just cooked baked bread quickly to keep up its yummies. The bread can also be stored for quite a while to extend the market.

Chill freshly cooked food quickly to safely skip the hazardous "food poisoning bacteria growth temperature zone"! Now you ensure the safety and security of food.

Cooling-down data of

fried chicken





Frozen bread





Custard pudding

Cooling-down data of

custard pudding



- Center temperature

Sample: Fried chicken (40g a piece)

*GN pans: 1,850g on each of 5 pans (9.25kg in total) Model in use: QXF-005SFLT

Presettings: Pre-cool: -40°C, Mode: Cold Air, Temp. inside; -2°C, Target core temp.: 3°C, Airflow:





Chill it quickly in blast chiller

No bacteria. Serve it safe and delicious!

Center temperature

Sample: Custard pudding (60g a piece)

*GN pans: 28 puddings on each of 6 pans (168 pieces and about 10kg in

Model in use: QXF-006SFLT2
Presettings: Pre-cool: -40°C, Mode:
Chill, Temp. inside; -2°C, Target core
temp.: 3°C, Airflow: Auto

Blast Chiller/Shock Freezer Types 20, 24, 40 & 80 Remote type CDV







QXF-020SFKS Three-phase 380V

[GN pan horizontal setup type] Stand-alone freezer, cart type Effective internal volume:864L

External dimensions: W1.290×D1.027(1.061)×H2.250mm Product weight: 320kg

QXF-040SFKS Three-phase 380V Stand-alone freezer, cart type •Effective internal volume:1,123L ●External dimensions::W1,290×D1,167(1,201)×H2,210mm

QXF-006SFLVA Single-phase 240V

QXF-006SFLTA Single-phase 240V

■External dimensions:W1 200×D750(802)×H800mm

Effective internal volume:147L

Product weight:145kg

●External dimensions:W840×D880(932)×H1,465mm

[GN pan vertical setup type] Effective internal volume: 173L

QXF-024SFKS Three-phase 380V

QXF-005SFLT Single-phase 100V

●External dimensions: W750×D750(810)×H850mm

• Effective internal volume: 111L

Stand-alone freezer, cart type Effective internal volume: 638L

External dimensions::W1,290×D1,167(1,201)×H1,775mm

QXF-080SFPS3 Three-phase 380V

Stand-alone freezer, cart type •Effective internal volume: 3,105L

●External dimensions::W1,500×D2,372(2,443)×H2,315mm

50 Elasped time (min.) * The cooling-down time depends on the volume, size, thickness, type, initial temperature, etc. of food

Chamber Type / Alcoh ol Brine Type Freezer

Customizable to treatment capacities

Blast Chiller Chamber

Blast Chiller Chamber suitable for a wide variety of products and small lots. Foodstuffs can be cooled and frozen evenly with a large air volume. The simple structure allows for easy cleaning and sanitary. We can propose products according to your production volume.

Prefabricated blast chiller is designed to load food on a cart. This is a flexible freezer designed to suit the customer's production environment, characteristics, volume, and installation conditions.





Ultra-quick freezing of foodstuffs LSHOCK®

This is the freezer for ultra-quick freezing of foodstuffs by immersing in alcohol brine at temperatures from-25°C to-30°C without any loss of quality.

This freezer is immersed in alcohol brine for ultra-quick freezing. This batch-type freezing system can be used for small quantities of various products, and is widely used for surface freezing of ham logs and other products.



Ultra-quick freezing

High efficiency and quality can be achieved by immersing and chilling in liquid. Liquids have superior thermal conductivity compared to air, and are about 20 times faster than air, making ultra-rapid freezing possible.

Improvement in quality

While slow freezing destroys cells and degrades texture and tongue feel, ultra-quick freezing improves quality because the cells are finer and there is less dripping.

Some have built-in refrigeration unit

Built-in refrigeration unit makes it unnecessary to install conventional refrigerant piping. The caster makes it easy to move the unit.

Chilling in shorter time and with higher quality

Differential-pressure Chiller Chamber



Efficient chilling is achieved in a short time by using the difference in pressure (differential pressure) generated in the chiller and the differential-pressure chamber. Compared to cold-air blowing, this chiller provides for even performance, less loss and better yield.

Quicker chilling

The differential pressure generated in the chiller and the differential-pressure chamber is utilized to uniformly and efficiently chill the product installed in the differential-pressure booth. In addition, the air in the booth is blown from the upper differential-pressure fan into the chiller. This way, the air flow is constant without any stagnant air.

〈 Actual application 〉

Quick chilling of prepared foods for lunch boxes

- ■Products: Fried, boiled and grilled foods, and soup
- Capacity: 1,920 kg/batch
- ■Process temperature: +85°C down to +10°C or lower
- ■Temperature inside: 0° C to +5° C
- Chilling time: 90 minutes ■ Number of booths: 12

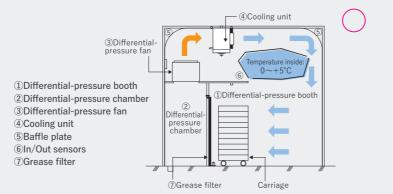
The in-cha

What is differential-pressure chilling equipment?

The in-chamber air, cooled by the cooling unit, is forced to circulate by the differential-pressure fan.

This design chills food products efficiently in a short time.

This system is so called because the pressure in the chiller and that in the differential-pressure chamber are different.





What is the difference between Quick freezing and Slow freezing?

Difference in freezing methods

A comparison of the quality of the food by 2 freezing methods. Slow freezing easily breaks down food cells and ruins texture and taste of food. In quick freezing, on the other hand, the cells are kept fine & preserving the smooth texture.



* Photo credit: Japan Food Research Laboratorie

Typical freezing time by product category



Fillet of fish (vacuum-sealed package)
Temperature: +5°C → -18°C
Time: 30 minutes



Whole pork loin ham
Temperature: +3°C → Surface-frozen
Time: 12 minutes



Beef Temperature: +5°C → -18°C



Shiitake mushroom
Temperature: +5°C → -18°C
Time: 12 minutes



Sushi
Temperature: +5°C → -18°C



Asparagus
C Temperature: +5°C =
Time: 10 minutes



Temperature: +5°C → -18°C Time: 7 minutes



Cheesecake Temperature: +5°C → -18°C Time: 28 minutes

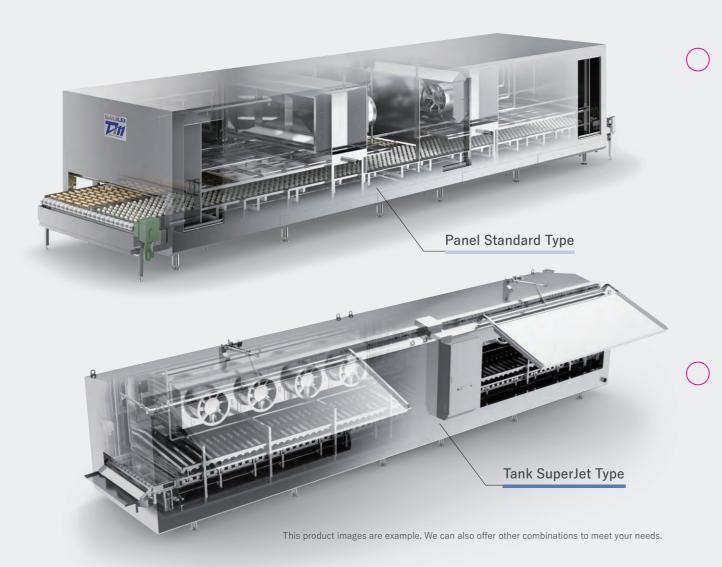
Tunnel Freezer

For freezing in large quantities in food factories, central kitchens, etc.

Innovative quick-chilling/freezing system "TUNNEL FREEZER®"

The "TUNNEL FREEZER", a continuous quick-chilling/freezing equipment, enables freezing even in the room temperature range.

Enjoying the No. 1 market share in Japan, the system is backed by our 60-year-old chilling/freezing expertise. It creates added value of extending the best-by date and expiration date: good even for one day longer. It also helps to solve food loss and factory waste food problems.



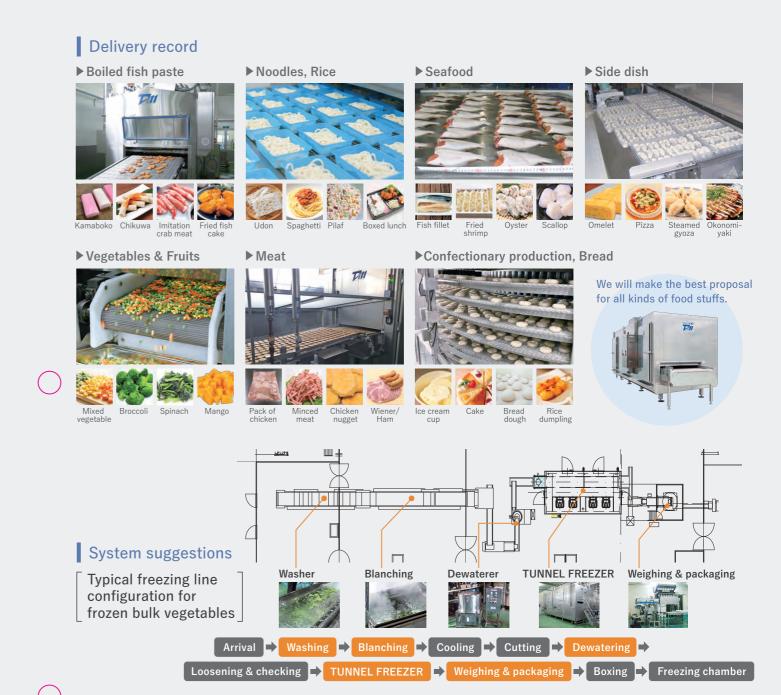
Outer wall structure

Panel Type

Based on the insulating function required in prefabricated panels, this employs highly accurate insulation panels which are needed in TUNNEL FREEZER. These are made on dedicated TUNNEL FREEZER lines by our group company, GALILEI PANEL CREATE CO. LTD.

Tank Type

The inside is insulated with a monocoque stainless steel structure. With a large wing door installed, the structure is superior in cleanability as it is easy to visually inspect the inside of the freezer. Furthermore, it is the only structure capable of taking in steam in order to sterilize the inside of the freezer.



CO2 Refrigeration Unit System



Greenhouse gases still diffuse into the atmosphere due to the release of fluorocarbon refrigerants. In this significant situation, CO₂ refrigerant is considered natural, eco-friendly, and the safest option. The Galilei Group has developed the CO₂ chilling/freezing system "NOBRAC". By integrating the control of CO₂ chillers and freezers, energy can be saved by up to about 20%. This unique system gives optimum approaches: chilling follow-up in response to load fluctuations; optimal freezer expansion valve control; freezer control coupled to system prediction.



What is CO2 refrigerant?

 CO_2 refrigerant is natural, environmentally friendly and the safest. The currently used HFC refrigerant (R404A) has a significant impact on global warming, whereas the CO_2 refrigerant with a GWP of 1, even if leaking, greatly lessens the impact on global warming. This refrigerant can also be safely handled in the same way as the Freon gas.

Global warming potential (GWP)
of the refrigerant itself is
about 1/1400-1/4000
of the Freon gas.

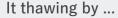
GWP
3,920

1 (386)
2,090

CO₂ R-448A R-410A R-404A

Thawing Cabinet

Two-stage temperature settings are ready, To achieve defrosting in a short time with less dripping.





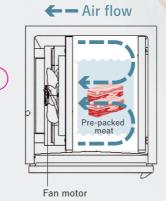




The Thawing machine with stepwise thawing function enables hygienic and high-quality defrosting in constant time throughout the year!

High-quality thawing in 2 steps

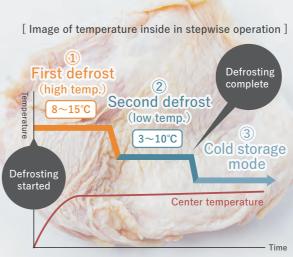
Food is quickly defrosted at high temperature to the extent of keeping its quality. When the surface temperature rises, the setting changes itself to the low level for continuous thawing. In the brief two-step defrosting, quality remains intact. After defrosting, the system automatically switches to the cold storage mode.



Weight

Timer

settings



6- patterns of thawing programs can be temperature and time settings.

*QDD-08DDMDF has two patterns.

Washable! Easy-to-clean design

Equipped with waterproof internal fan, the entire compartment can be washed with water. The tray fittings and shelf pillars are also detachable, ready to clean up the corners too.



shelf brackets

Hygienic with drying mode

The 50°C drying mode keeps the compartment inside hygienic.

Two-compartment independent control

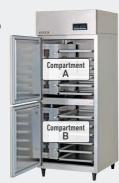
In this type, the two compartments are independently presettable. It serves your applications, such as thawing different ingredients at once.

LINE UP: A wide range of models to meet your needs.

QDD-08DDMD2

(Thawing in top and bottom compartments) ●External dimensions:W755×D800×H1,950mm

Able to defrost in large quantities with sheet pans.



QDD-08DDMDF

(Thawing & frozen storage in top and bottom compartments)

External dimensions: W755×D800×H1,950mm

Able to store frozen food until the start of thawing. Timer-controlled thawing start/end time.







Temperature chart -20.0 — 5th stage Temperature inside

Thawing For frozen chicken

Approx. 48 kg per compartment

First defrost: 120 minutes at 8° C

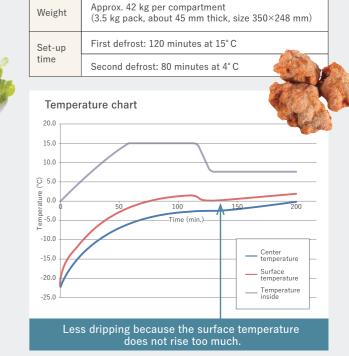
Second defrost: 280 minutes at 4° C

(2 kg pack, about 55 mm thick, size 220×220 mm)

Stable temperatures of thawed food

*The thawing time varies depending on food temperature, size, load, temperature

Thawing example For frozen fried chicken



*The thawing time varies depending on food temperature, size, load, temperature

ODD-12DDM

(Thawing in right and left compartments) ●External dimensions:W1,200×D800×H1,950mm

24 mesh baskets storable Single-phase 100V

It comes with mesh baskets and is ideal for defrosting sliced sushi ingredients and



ODN-06DDM1

(Thawing in top and bottom compartments) ●External dimensions:W610×D650×H1,950mm

Single-phase 100V Designed to save

space.



QDW-09DMT1

●External dimensions:W900×D750×H800mm



Single-phase 100V

One-compartment type available for users with small-quantity processing. The top panel can be used as worktop.



* The image is for reference only. Please see reverse side for the mesh basket specifications.

Thawing expertise behind successful solutions

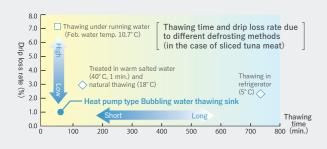
High-quality thawing with temperature control and bubbling

Heat pump type

Bubbling water thawing sink

Thanks to bubbling and optimal thawing temperature control, some downsides such as cell destruction and wrinkling, which would occur during thawing, can be minimized. Dripping is also prevented. For loads up to 30 kg, the finish quality remains stable and the finish time is as specified.

K-value measurement results



Easy to operate with touch panel

Just press the start button for automatic stepwise thawing. Even after defrosting, the freshness is maintained as it is.

Hygienic

The inner surface of the chamber is flat and easy to clean.



High-quality thawing in a short time

A heat pump is used to control the temperature of the thawing chamber. It takes less time than conventional thawing methods.

OIn the case of thawing tuna (Class A)





High-quality thawing of frozen food achieved in large quantities

Treatment capacity per process (approx.)

100 kg (maximum 300 kg daily)

with Japan Light Metal Co., Ltd.

*The Clean Defroster has been co-de

High Humidity Thawing Cabinet

High-quality thawing at high humidity

Humid, low-temperature air gets circulated evenly from the side ducts. It provides for quality thawing with much less dryness, color change and dripping.

Top-quality defrosting of a variety of ingredients				
Types of ingredients	Thawing mode	Time		
Young chicken leg meat (2kg x 54 bags, 108 kg in total)	Automatic defrost (full-thawed)	8-10 hrs.		
	Continuous defrost (half-thawed)	4-5 hrs.		
Diced pork (6 kg x 18 bags, 108 kg in total)	Automatic defrost (full-thawed)	8-10 hrs.		
	Continuous defrost (half-thawed)	4-5 hrs.		

*Each defrosting time is a guideline for the total weight of about 100kg. This duration varies depending on the food thickness

QDM-130CM6 Three-phase 200V Made-to-order

- W1,300×D798(848)×H1,920(2,060)mm ●Effective capacity: 660L
- ●Inside temperature setting range: -15~30°C In-chamber humidity: Higher than 90%

Sterilization and deodorization of in-chamber air

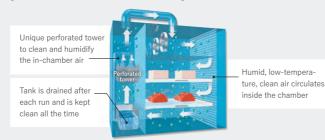
The unique perforated tower is designed to clean (sterilize and deodorize) the in-chamber air while humidifying.

Temperature control

The optimum temperature can be preset from -15 to $+30^{\circ}$ C according to

Easy to operate with touch panel

[Structure of the Clean Defroster]



Thawing meat, fish, and vegetables with a high level of quality!

High Humidity Thawing Chamber

Low-temperature, high-humidity thawing system using superheated steam

Top-notch thawing

Due to low-temperature and high-humidity settings. there is little dripping. Humid air is also sterilized and hygienic due to superheated steam.

Wide-range temperature settings

Optimum temperature presettable to suit food in question (-20° C to +30° C)

Uniform thawing

Food, which is placed between the floor-standing fans. can be defrosted evenly from the top to bottom stages

Labor saving

Compared to thawing in refrigerators, it takes less time to get the job done. Food is in cold storage until you take it out. No draining needed unlike thawing under running water.



Saturated water vapor stays on the surface of things thawed and This frost is condensed (vapor to water) at the melting point, resulting in dew drops. The latent heat of condensation then

melted frost turns into water droplets. Saturated water vapor drops and accumulates, one after generated is used to start thawing. another, to accelerate thawing.

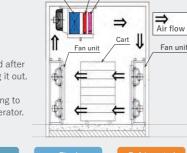
•Water vapor ⇒ Water: 2260 kJ/kg
•lce ⇒ Water: 335 kJ/kg Thawing using about 7 times the latent heat

By uniformly sending humid air to food product, it can be thawed evenly in large volumes too. The ingredients are much less dried and do not change in colors. And with less dripping.

Temperatures can be preset in the range of -15° C to 30° C according to the ingredients. Compared to thawing in refrigerators, it takes less time. Unlike thawing under running water, there is no need to drain thereafter.

Example of thawing cycle

Various thawing cycles can be programmed. Food is stored cold after the final stage and before taking it out. Each process can also be independently controlled, enabling to use the system as normal refrigerator.







Example of thawing schedule: 2kg pack of chicken

Run stage	Set temperature	Set humidity	Process time
First thawing	15°C	90%	1H
Second thawing	5°C	90%	6H
Final stage	0°C	-	1H
Storage after defrosting	3°C	-	Take-out

Typical applications >

► Thawing chicken and pork





Construction Examples >





Sanitation

Daily hygiene control leads to the safety and security of food.

FE CLEAN WATER Electrolytic Dilute Sodium Hypochlorite Generator

FE clean water means sterile water that is generated by electrolysis of saline solution. (It is equivalent to diluted sodium hypochlorite.)

Highly bactericidal

Sterilizes vegetables, meat, fish, etc., and cleans and sanitizes cooking utensils and processing machinery by running FE clean water.



Effective to destain and deodorize

Removes stain and bacteria that would give out an odor. Using this powerful deodorizing effect, connect a hose to clean up floors and drains as well.



Good to keep the ingredients intact The pH level is almost neutral (weakly alkaline).

Food is little affected and easily rinsable.



Friendly to people and the environment

No worry about dishpan hands. The sterilizing solution is just made of water and common salt, therefore eco-friendly.





Experiment to disinfect cutting boards with agar culture media

After washing with detergent (24-hour culture)



Sterilization with FE Clean Water after washing with detergent (24-hour culture)



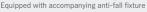
* Based on in-house test data

LINE UP:



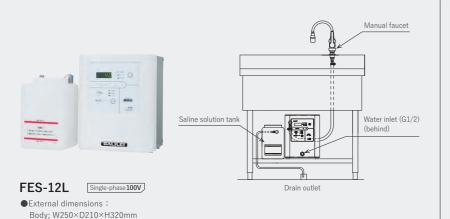
FES-08S Single-phase 100V

Body; W250×D110×H335(310)mm Saline solution tank; W160×D160×H244mm ions in parentheses is for mounting on a wall



Saline solution tank; W160×D160×H244mm





All-in-One type



FE-1U-10000 Single-phase 100V Made-to-order

External dimensions W1,000×D600×H1,790mn The self-imposed tests of food products keep guard on food safety.

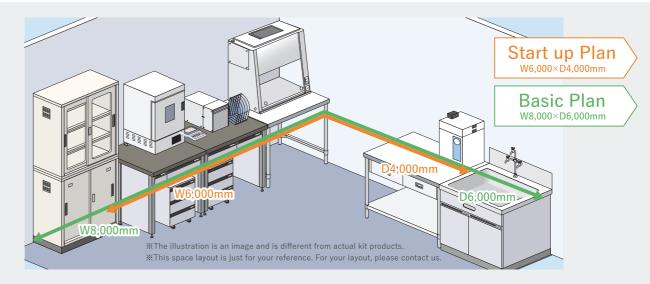
Food Microbiology Testing

The self-imposed tests of food products keep guard on food safety.

Food safety cannot be discussed without scientific verifications. It is important to scientifically verify and record the quality of each process and to feed back the results to the site in a timely manner. To this end, the key point is to create a system for conducting voluntary inspections.

Listening to your request, we will come up with the optimal plan.

Layout Plans for Available space



Example of an introductory kit required for bacteriological testing (simplified method)





For the FMM-240TCB, please specify city gas or propane gas.

Total support solution s for your attention to "Food preparations"

The key point is to create a system that can maintain the added value of "safe and delicious food items." In order for you to keep preparing food products in a safe manner, Galilei Group provide support services. They include the set-up of your indispensable work environments and equipment, essential hygiene management for food safety, the introduction of HACCP and its operation and follow-up, and many other services.



Ouality Control Office/Inspection Room

















A food innovation hub toward the future

MILAB is the Galilei Group's open innovation base, at the Osaka headquarters in Japan. The Galilei Group invites companies from different industries, universities, research institutes, entrepreneurs and other people to incubate

This food innovation hub is intended to promote the human interaction, people-to-technology connection and linkage of different techniques, which means value creation.

brand-new ideas and techniques.



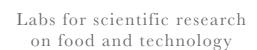












MILAB Laboratory for foodstuffs

This laboratory scientifically verifies and evaluates the taste, safety of foods. We also support our customers' product development with a variety of data instruments and analytical equipment.



I Bacteria test

Experiencing bacterial examination through food microbes, and checking hygiene management level.

Sensory evaluation

Doing the sensory analysis not just using the analytical instruments but also comparing



Freeze test

Next Generation Retail System

When specifically considering the installation of TUNNEL FREEZER. MILAB performs a "freeze test". freeze test means that the desired food is cooled and frozen in TUNNEL FREEZER to test its quality, and our knowledgeable experts will advise you on the best cooling method and the most suitable freezer.













