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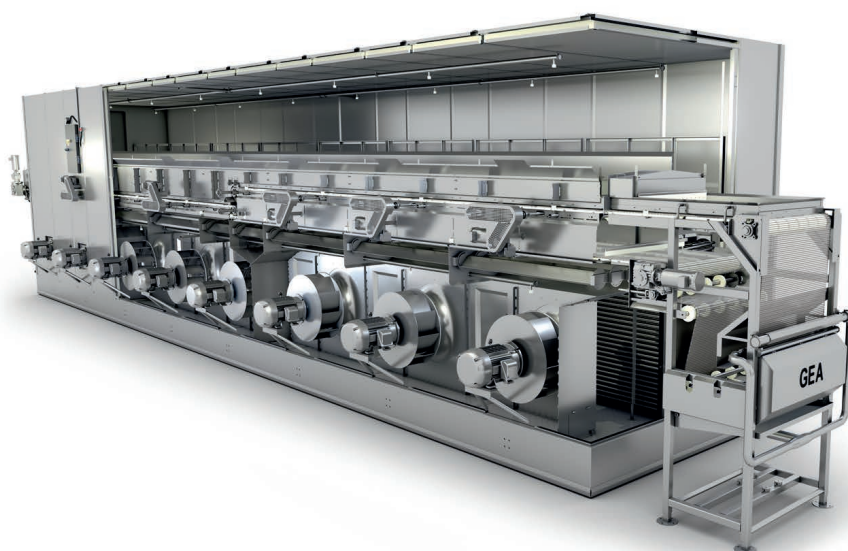
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МОРОЗИЛЬНИКИ IQF Технические характеристики



GEA A-SERIES IQF TUNNEL FREEZER

High product quality and sustainable
solution for potato applications

Unmatched experience in the potato freezing process

With increasing freezing capacity and extension of production time for french fries, sliced or diced potato to address market demands, continuous development is required to maximize food safety, product yield and this with minimum of energy consumption.

GEA IQF tunnel freezers for potato applications are specifically designed for pre-cooling and freezing process steps with multi zone temperature freezer embedding unique features for hygiene, efficiency, high uptime, and reliability.

Our technology is proven over 40 years of experience in the potato industry with a large freezer installed base.

GEA experts in frozen food applications ensure that the best solution is identified for your product and select a tunnel configuration to guarantee quality and safe products throughout your entire freezing process.

Our IQF tunnel range design includes energy savings and energy recovery systems with minimum of 22% reduction of CO² emissions certified by EU-Taxonomy classification.

Innovative, optimized, scientifically proven

Our engineering department uses the latest airflow and heat transfer technologies. With the ability to conduct simulations and confirm the results in our test freezers, we can quickly generate new and industry-leading solutions that energy efficiently maximize product quality and yield.

GEA IQF tunnel features and benefits

Customized solution:

- Modular configuration.
- Belt width and mesh options for optimum product handling.
- Precool / Freezing/ Stabilization multiple combinations.
- External/Internal fan motors option.
- Sequential defrost option for long continuous operating time, up to 21 days.
- Cleaning system options from manual to full recirculating CIP sequence.

Safe product handling:

- Open profiles and fully welded structure matching 3A and EHEDG design guidelines.
- Design answers the most stringent hygiene requirements with fully welded floor and fully welded enclosure option.
- Full recirculating cleaning system that acts like a giant dishwasher.
- Optimum bacteria log reduction with precise control of water temperature and detergent concentration.

Reduced cleaning time:

- Automated Cleaning system for reduction of water usage, labor hours and cleaning time.
- Exhaust fan option reducing warm-up time before cleaning and start in cold time after cleaning.

Energy savings:

- Free cooling with Thermosyphon Pre-cool.
- Free plant water heating from +15 to +30°C with water precool section.
- Optimum evaporating temperature design setting for freezing section.
- Callifreeze system to control freezer parameters according to product frozen condition target and this with minimum of energy consumption.

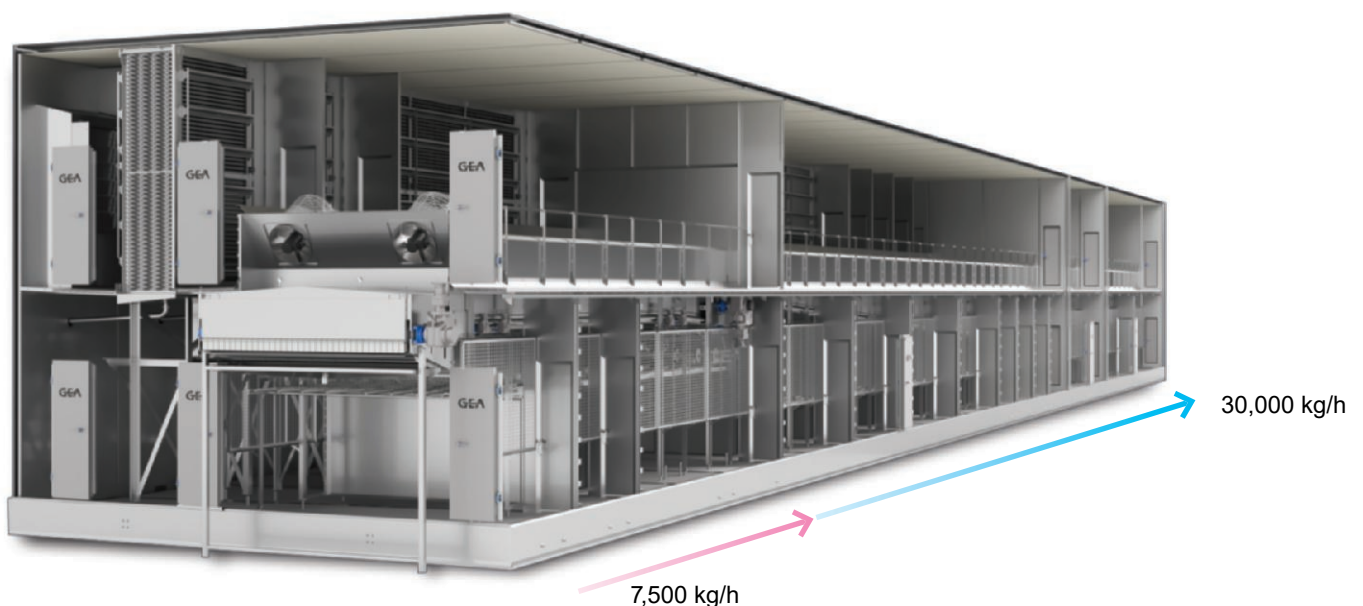
Long operating time

- Sequential defrost option combined with GEA SPCS air balance system for comfortable 21 days operating time.
- Special louver design for fan section isolation providing faster sequential defrosting. No partitions between fan sections for better access for cleaning.

Low total cost of ownership:

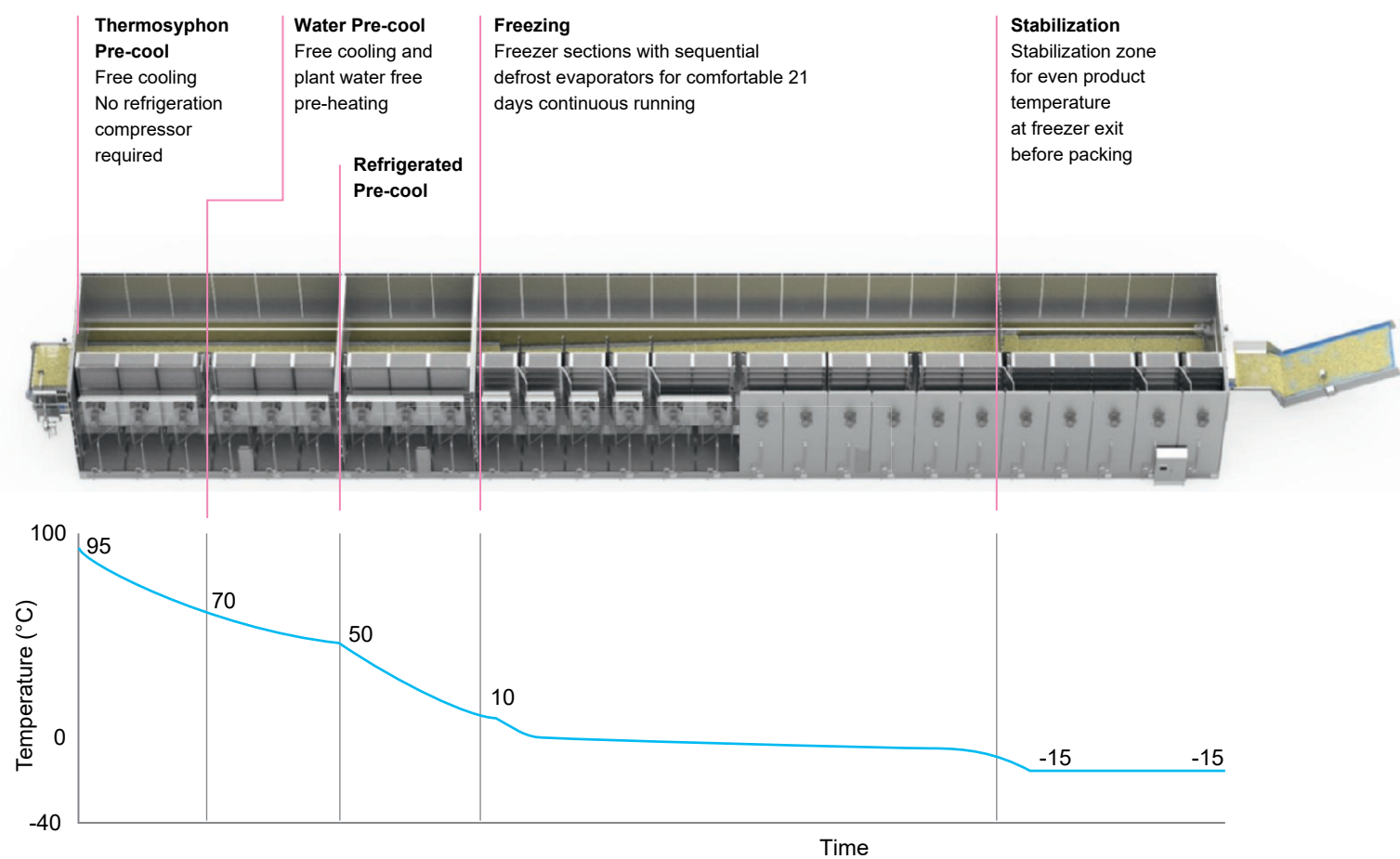
- Energy recovery option and energy optimization system.
- External drive motors and external fan motors option for ease of maintenance.
- Robust and reliable design.
- Non proprietary parts.

IQF tunnel freezers capacity range



With Sequential Defrost option: up to 21 days continuous running

GEA IQF Tunnel Configurations



Proven Energy savings



Designed for energy recovery and minimum energy consumption with Thermosyphon Pre-cool sections and Water pre-cool sections.

Minimum of 22% reduction of CO² emissions certified by EU taxonomy certification body.



GEA Callifreeze® system
GEA unique sensor and control system

- Continuous product level of frozenness monitoring and recording.
- Full traceability to support HACCP program.
- Adjustment of freezer parameters to maintain product frozen quality with minimum of energy consumption. 10% to 15+% energy savings with Callifreeze control system.

GEA IQF Hygienic design

Design matching 3A / EHEDG guidelines to reduce the number of critical control points.

- Fully welded structure, floor and enclosure to eliminate dirt traps.
- Open profiles, sloped surfaces for perfect drainability.
- Ample access to all internal components.



Customer satisfaction is our main objective

Working with GEA Service means partnering with a dedicated team of service experts. Our focus is to build, maintain, and improve customer performance throughout the entire life cycle of the plant and its equipment.

Beginning of Life Services

Getting you started with seamless support for instant productivity and performance.

Lifetime Services

Keeping it running with the cost-efficient way of ensuring safety and reliability.

Extended Life Services

Constantly improving by sharing our knowledge to safeguard your investment .

Consulting & Enhanced Operations

Together with you by enduring commitment to you and your business.



Technology Center

Experienced product application team at your service

Our application experts can test your products using our in-house freezing test facility before you invest. Our Technology Centers located in Richmond, BC, Canada and Bakel, The Netherlands, offer a wide range of freezer and chiller equipment, and configurable air temperature and airflow conditions to match your processing needs.

We offer comprehensive hands on training and product test programs to support your operational requirements. Data collected during testing can be analyzed by our technology experts to help you to select the right process conditions for your product. We can even ship testing units to your site for product trials under the correct production conditions.

GEA AY-SERIES IQF TUNNEL FREEZER

In touch with GEA – Long Wave Fluidization™
for perfect IQF quality

Ideal product handling with Long Wave Fluidization™

GEA IQF technology enhances
product quality and yield

GEA Freezer product range represents innovative solutions in industrial freezing and chilling closely oriented to the stringent requirements of its customers: Safe food processing, cost-efficient, energy-efficient and high product yield.

GEA conducted intensive and continuous research and development to significantly improve the individual quick freezing (IQF) of fruits and vegetables. The Long Wave Fluidization™ system resulting from this development outperforms all existing IQF techniques. The new AY-series IQF tunnels integration of this technology exceeds food 'processors' expectations in product quality, low product dehydration, and low product clumping. "This freezer has reduced our operational costs tremendously while improving product quality," says Andy Enfield, at Enfield Farms, North West United States.

The GEA AY-series even eliminates the need for liquid nitrogen pre-crusting before freezing for highly sensitive products such as raspberries. By combining even air distribution, high air pressure and gentle mechanical product agitation, not belt shaking, the GEA AY-series ensures true fluidization.

Hygienically engineered design in a cost-effective solution

With a fully stainless steel welded enclosure, floor and structure and ample access to all components, the GEA AY-series design is the most hygienic on the market today. It allows easy, effective cleaning year after year, satisfying the highest food safety requirements.

The GEA AY-series can operate at -37°C/-35°F evaporative temperature, which can save more than **10% of energy, compared to the -40°C/-40°F.**

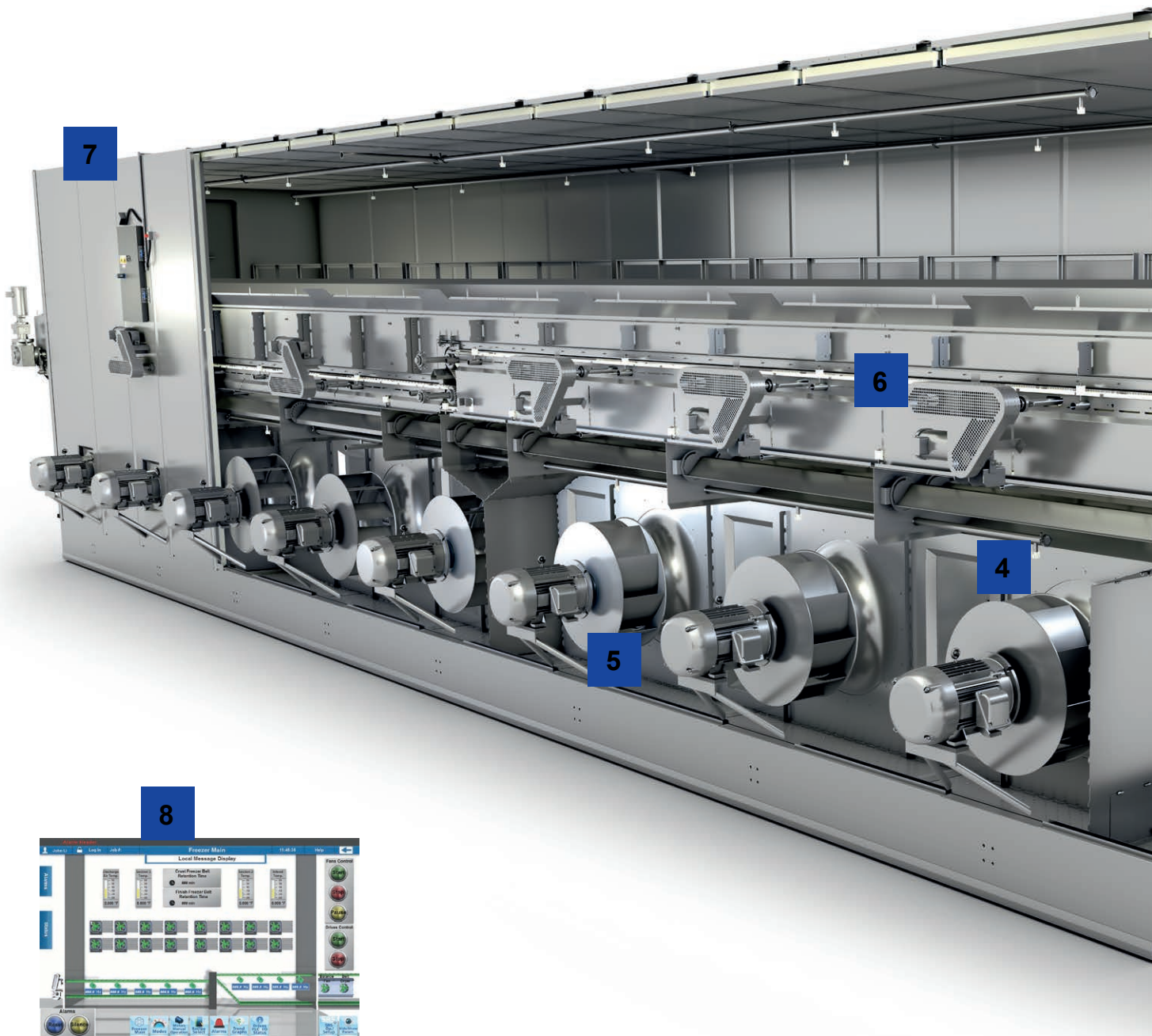
Flexibility

By simply selecting a product from the menu on the touch panel, the user can adapt the airflow to each product in the IQF tunnel, ensuring the same IQF quality throughout production. The freezer only requires frequency inverters on the fan motors – without any additional airflow pulsators or bypass hatches.



GEA AY-series IQF tunnel freezers

In touch with your needs: gentle product handling and high hygiene





Features and benefits

1. Higher yield from less damage on product: Product loading directly on the belt outside the freezer.
2. Less free water on the product: Excellent water management due to dewatering system. Reduces crumbles and frost build-up in the tunnel.
3. Product loaded on a clean and dried belt: Possibility of continuous belt cleaning in operation.
4. Superior IQF treatment: High product yield and quality with Long Wave Fluidization™.
5. Easy to shift from one product to another: Frequency inverters on all fans for adjustable fluidization.
6. Lower product dehydration: Evaporators and airflow designed for shorter freezing time.
7. Food safety: Hygienically engineered design. Fully welded stainless steel floor, enclosure and structure, external fan motors.
8. Easy operation: Intuitive touch panel.

Capable of handling capacities from 1.5 to 15+ tons per hour, the GEA AY-series IQF tunnel range is designed to cost efficiently, durably and easily provide optimal IQF quality with a short installation time.

Wide range of applications

- A wide range of applications: berries, fruits and vegetables; whole, sliced and diced, seafood products.
- Sensitive products gently and minimizes the risk of damaging your product.
- 1 shift to 40 hours of continuous operation with the Snow Removal System (SRS).

Cost-efficient production

- Increase yield by gently handling product, fluidizing just enough to produce superior IQF product.
- Save energy by using higher evaporating temperature and lower pressure drop.
- Clean quickly and effectively.
- Ease maintenance, use non-proprietary spare parts.

Great durability

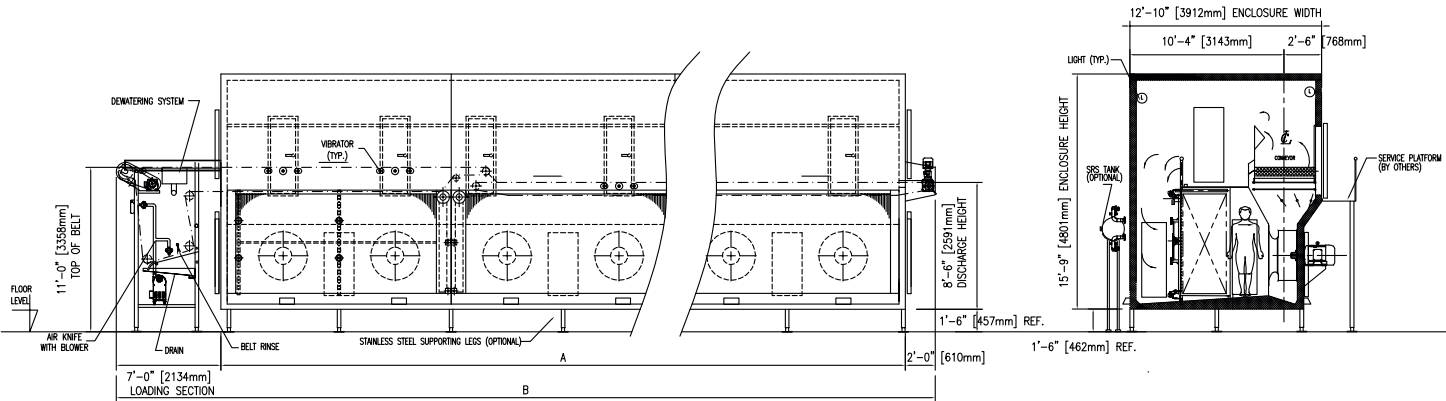
- Fully welded stainless steel.
- Ease of operation.
- Customer support.

Selection table GEA 4AY-series

Capacity (kg/hr) table for each 4AY IQF tunnel freezer model -40°C suction temperature										
Model	4AY-4C	4AY-5C	4AY-6C	4AY-7C	4AY-8C	4AY-9C	4AY-10C	4AY-11C	4AY-12C	4AY-13C
Vegetables										
Asparagus, cut, 25mm	4,700	6,000	7,200	8,300	9,600	10,700	11,900	13,100	14,300	15,500
Bean, green cut	4,700	6,000	7,200	8,300	9,600	10,700	11,900	13,100	14,300	15,500
Bean, soy	5,200	6,600	8,000	9,200	10,600	11,800	13,200	14,500	15,800	17,200
Broccoli, florets, 19-50mm	3,900	5,000	6,000	6,900	8,000	8,900	9,900	10,900	11,900	12,900
Carrots, diced, 9-13mm	4,500	5,700	6,800	7,900	9,100	10,100	11,300	12,400	13,500	14,700
Carrots, sliced, crinkle	3,900	5,000	6,000	6,900	8,000	8,900	9,900	10,900	11,900	12,900
Carrots, whole (baby)	4,500	5,700	6,800	7,900	9,100	10,100	11,300	12,400	13,500	14,700
Cauliflower, florets, 19-50mm	3,900	5,000	6,000	6,900	8,000	8,900	9,900	10,900	11,900	12,900
Corn, cut / kernel	4,700	6,000	7,200	8,300	9,600	10,700	11,900	13,100	14,300	15,500
Peas, black eyed	5,200	6,600	8,000	9,200	9,200	11,800	13,200	14,500	15,800	17,200
Peas, green	5,200	6,600	8,000	9,200	9,200	11,800	13,200	14,500	15,800	17,200
Potatoes, diced, 9-13mm	3,900	5,000	6,000	6,900	8,000	8,900	9,900	10,900	11,900	12,900
Fruit										
Blueberries wild	4,500	5,700	6,800	7,900	9,100	10,100	11,300	12,400	13,500	14,700
Blueberries cult. 6% sugar	4,200	5,300	6,400	7,400	8,500	9,500	10,600	11,600	12,700	13,800
Blueberries cult. 12% sugar	3,700	4,700	5,600	6,500	7,500	8,300	9,300	10,200	11,100	12,100
Cherries, pitted	3,700	4,700	5,600	6,500	7,500	8,300	9,300	10,200	11,100	12,100
Raspberries	3,400	4,300	5,200	6,000	6,900	7,700	8,600	9,500	10,300	11,200
Strawberries, 35-45mm	3,400	4,300	5,200	6,000	6,900	7,700	8,600	9,500	10,300	11,200
Strawberries, 25-35mm	3,700	4,700	5,600	6,500	7,500	8,300	9,300	10,200	11,100	12,100
Shrimp										
Shrimp, peeled, cooked and deveined, 450-900 count/kg	3,900	5,000	6,000	6,900	8,000	8,900	9,900	10,900	11,900	12,900
Shrimp, raw, head off, shell on, 160-200 count/kg	3,700	4,700	5,600	6,500	7,500	8,300	9,300	10,200	11,100	12,100

Dimension table for each GEA 4AY IQF tunnel freezer model

Dimension table										
Model	4AY-4C	4AY-5C	4AY-6C	4AY-7C	4AY-8C	4AY-9C	4AY-10C	4AY-11C	4AY-12C	4AY-13C
Enclosure length (A)	9,400	11,700	14,000	16,300	18,600	20,900	23,200	25,400	27,700	30,000
Overall length (B)	12,200	14,500	16,800	19,000	21,300	23,600	25,900	28,200	30,500	32,800



In touch with high flexibility for any food application

S-series



The S-series flexibly handles any application, specifically configured:

For a wide range of products

- Hollow and soft when ripe, broken when frozen
- Cracked when over-frozen
- Damaged if abused when frozen

The S-series integrates the desired solution into any processing line:

- Pre-cooling
- Retrograding
- Freezing
- Chilling
- Finish-freezing
- After-glaze hardening

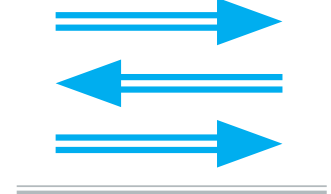
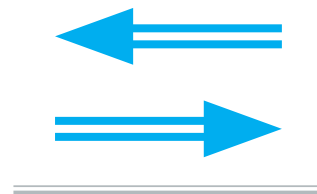
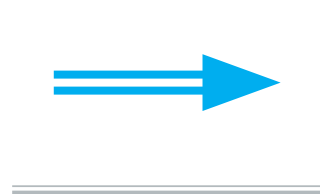
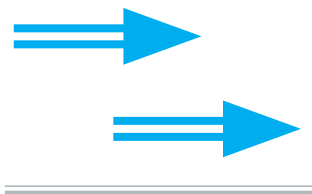
With varying belt options

- Asca
- dc

• One Pass

• Double Pass

• Triple Pass



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