

# Digital Grocery Solutions for Sustainable Omnichannel Growth

Active-cooling technology to enable  
tri-temp order consolidation



# The Phononic Actively-Cooled Platform

## Big savings on curbside boost business growth & customer satisfaction

### Freezer and refrigerator tote solutions that scale with your store's needs

Phononic's omnichannel grocery solution, which includes actively-cooled refrigerator and freezer totes, picking and staging carts and tri-temperature racks, enables stores to unlock huge benefits from tri-temp order consolidation. These flexible and sustainable alternatives to traditional order fulfillment help grocers reduce labor and space requirements, increase customer satisfaction, and — when combined with real-time system data — provide immediate and continuous improvement to their online fulfillment business.



- Strong ROI
- No HFCs — highly sustainable

- Modular & flexible
- Compressor-free
- Scalable — grows with your business

- Real-time insights
- Demand-based energy savings
- Immediate business impact

OVER  
**50%**  
reduction in staging time & labor



OVER  
**70%**  
reduction in curbside delivery timing

OVER  
**50%**  
reduction in staging footprint needed



# Reimagine omnichannel fulfillment

Tri-temp staging and order consolidation can grow your business



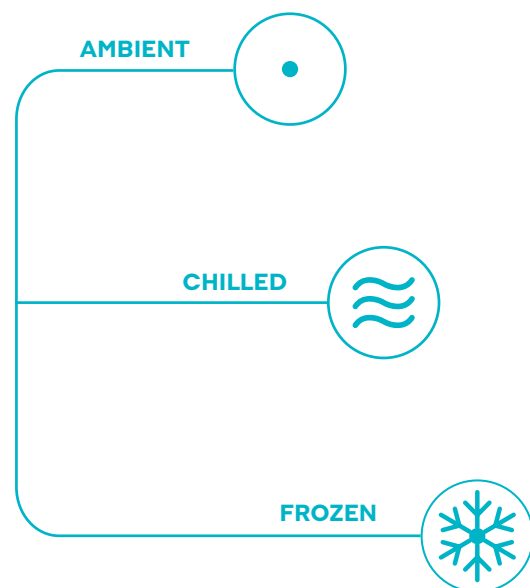
Cool only what you need



Save space and time



Eliminate toxic refrigerants



## Solid state technology that's both scalable & sustainable

Phononic's freezer and refrigerator totes offer grocers a highly efficient option for omnichannel growth with proprietary, solid state cooling technology. This industry-unique solution not only eliminates refrigerants, it also helps boost margins by streamlining curbside labor and operations — and improving the customer experience.

The Phononic cooling solution works within existing fulfillment systems and can scale as needed, across any size retail footprint. Specialized carts, powered racks and vertical lift modules can be used to transport orders and store the freezer and refrigerator totes wherever they fit best in your store. No matter where you are in your digital grocery journey, Phononic's solutions are designed to drive efficiencies and growth.



**JUST GETTING STARTED**  
0-50 orders per day



**ESTABLISHED**  
50-100 orders per day



**THRIVING & GROWING**  
100+ orders per day



## Flexible, cost-effective and scalable omnichannel cooling solutions

**JUST GETTING STARTED**  
0-50 orders per day

- Pick orders with Phononic refrigerator and freezer totes
- Use powered cart for order picking, staging and curbside delivery
- Seamlessly move throughout your store footprint using totes and carts
- Eliminate single use bags by picking directly into the totes

**ESTABLISHED**  
50-100 orders per day

- Pick orders with Phononic refrigerator and freezer totes
- Eliminate single use bags by picking directly into the totes
- Use powered carts for both discrete picking and curbside delivery
- Retrofit existing racks to power Phononic totes
- Scale solution as your business grows
- Flex cooling capacity as your demand shifts

**THRIVING & GROWING**  
100+ orders per day

- Enable complete automation of refrigerated and frozen orders
- Easily expand capacity with refrigerator and freezer totes utilizing VLMs and MFCs
- Totes seamlessly transition between retail and automation operations
- Eliminate single use bags by picking directly into the totes

# Unmatched cooling sustainability

- Solid state technology eliminates hazardous HFCs
- Replacing 100 traditional freezer reach-ins with equivalent volume of Phononic totes saves 36 tonnes of CO<sub>2</sub> per year
- Replacing 100 traditional refrigerated reach-ins with equivalent volume of Phononic totes saves 27 tonnes of CO<sub>2</sub> per year

# Cooling technology that's also better for the environment



Replacing 100 freezer reach-ins with Phononic totes can save

# 40K pounds of coal

burned per year

Replacing 100 refrigerated reach-ins with Phononic totes can save

# 30K pounds of coal

burned per year



## Connected Services

Ongoing analytics of operating conditions and times to optimize energy costs and ongoing operational costs

Real-time monitoring of system operations to ensure peak performance

Proactive alerts help ensure ideal temperature is maintained, eliminating food waste and safety concerns



## Real-time monitoring enables real-time action, impact and continuous improvement

Phononic's Connected Services, part of the ACS™ (Active Cooling Solutions) Platform provides real-time monitoring of tote operating conditions and utilization that empower team members to take clear and necessary action, while reassuring end customers of their food safety and integrity.

Continuous operating condition read-out enables continuous improvement and system performance optimization to minimize energy usage and maximize ROI.

Effortlessly monitor energy consumption and greenhouse gas reduction data to document energy consumption and sustainability metrics.



**About Phononic:** As the global leader in solid state cooling technology, Phononic is driving the world to a more sustainable way to cool. Its transformational technology reduces greenhouse gas (GhG) emissions and supports climate goals, while meeting the demanding performance needs of the market. The company's thermoelectric devices and integrated products are mission critical to how people work and communicate; automobiles 'see'; the protection and effective delivery of life-saving vaccines and drugs; last mile solutions supporting e-commerce; and innovative methods to cool living and workspaces.

Learn more at: [www.phononic.com](http://www.phononic.com)

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