



“Thaw Right!”

Box Scientific’s convection thawing systems are the ultimate solution for thawing laboratory samples quickly, safely and reproducibly. Read on to learn how Box Scientific systems can help:

- Protect material investments
- Maximize productivity
- Optimize quality

across the full spectrum of life science applications and markets.

Thaw right!...with Box Scientific



Station One



Heliport



Protect Material Investments

- Scarcity of samples and the high cost of reagents is a constant challenge within the Life Sciences
- A high percentage of specimens, stocks, and reagents require storage at -80C, -20C, and +4C
- Most require thawing at ambient conditions due to sensitivity, reactivity, flammability or regulations (FDA “unassisted thawing”¹)
- Uncontrolled ambient thawing comes with its own issues:
 - Risk of pH shifts, recrystallization , etc.²
 - Variability of thermal state of thawed samples
 - Lengthy thaw times
- Box Scientific’s convection thawing systems provide a comprehensive means to remedy all of these factors simultaneously

¹-“Guidance for Industry - Bioanalytical Method Validation”, Food and Drug Administration, May 2001

²- “Impact of freezing on pH of buffered solutions and consequences for monoclonal antibody aggregation” Kolhe P, Amend E, Singh SK., *Biotechnol Progress*, 2010 May-Jun;26(3):727-33. doi: 10.1002/btpr.377.



Maximize Productivity

- The predominance of robotic liquid handling systems has created great advances in laboratory throughput and efficiency
- Long wait times thawing samples at room temperature compromises this efficiency
- Box Scientific thaw stations reduce thaw times by 75%, affording significant improvements in throughput and reducing staff and equipment downtimes
- Additional productivity benefits include:
 - Works in concert with investments environmental control and monitoring.
 - Fits most standard size 1.5 - 50 ml tubes as well as all SBS footprint labware
 - Ultra quiet operation, low energy consumption and no heat exhaust
 - Cost of time savings will return the purchase price in 60 days.



Optimize Quality

- Despite heavy regulatory requirements in the biosciences, minimal standards or means exist around thawing
- Existing means lack the control required for defining repeatable thawing protocols
- Box Scientific's convection based thawing systems offer users a fixed and reproducible platform for thawing
- Ambient air convection thawing has many advantages:
 - Prevents any disruption of existing ambient conditions
 - Creates no risk to delicate samples or reagents
 - Works in concert with existing environmental controls
- Allows users to implement procedural thawing for:
 - Optimum process control
 - Minimal variability
 - Maximum reproducibility across facilities, replications and ambient conditions



Applications and Market

- Box Scientific products have broad applications throughout the life sciences, wherever cold stored specimens and reagents are used. Examples include:
 - Genomics/Proteomics
 - Consistent thermal state inputs for thermal cycling for DNA replication/qPCR
 - Low degradation thawing of proteins for replication and purification
 - Cell culture
 - Thawing and thermostating for cell based assays
 - Stable conditions for optimum enzyme activity
 - Blood and biobanking - Blood, plasma and specimen thawing
 - Ambient air convection endorsed by US College of American Pathologists for serum plasma thawing
 - Compound management - procedural thawing for rapid sample turnaround
 - Standard and testing laboratories - standard thawing protocol as 'menu' item
 - Research and Development - "Quality by design" development tool
- Two available systems are optimized for specific needs and applications within these target markets
 - Station One
 - Heliport

Applications and Market

- Station One: Benchtop unit, featuring accessory racks to accommodate a variety of sample tube sizes (1-50ml), freestanding media containers, and SBS-footprint labware
- Target users include:
 - Hospital and university laboratories
 - Clinical research and development facilities
 - Bioscience incubators
 - Consumable and cold storage customers
- Heliport: High capacity/high throughput unit, featuring automation integration capabilities and custom configurable SBS-footprint carriers.
- Target users include:
 - Biobanks/Blood banks
 - Standard and testing laboratories
 - Genomic assay providers
 - Tissue, cell and oligonucleotide suppliers
 - Reagent/reagent kit OEMs
 - Pharmaceutical manufacturers





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