

EDGE COMFORT™

Edge Comfort™

Passive PCM Thermal Buffer System

Store thermal comfort inside building structures.

-  Phase change temperature
-18 °C to 28 °C
-  Stable & reliable cooling
-  Non-toxic, safe & clean

*We create sustainability
for a better everyday.*

BUILDING COMFORT

PASSIVE BUFFER

22-32 °C

Buildings need a room-side thermal buffer, not only insulation.

Solar gain, occupancy, and equipment loads push indoor temperature away from the comfort band. Buildings need a room-side thermal buffer to maintain comfort and reduce HVAC loads.



Not ordinary insulation.

Conventional insulation

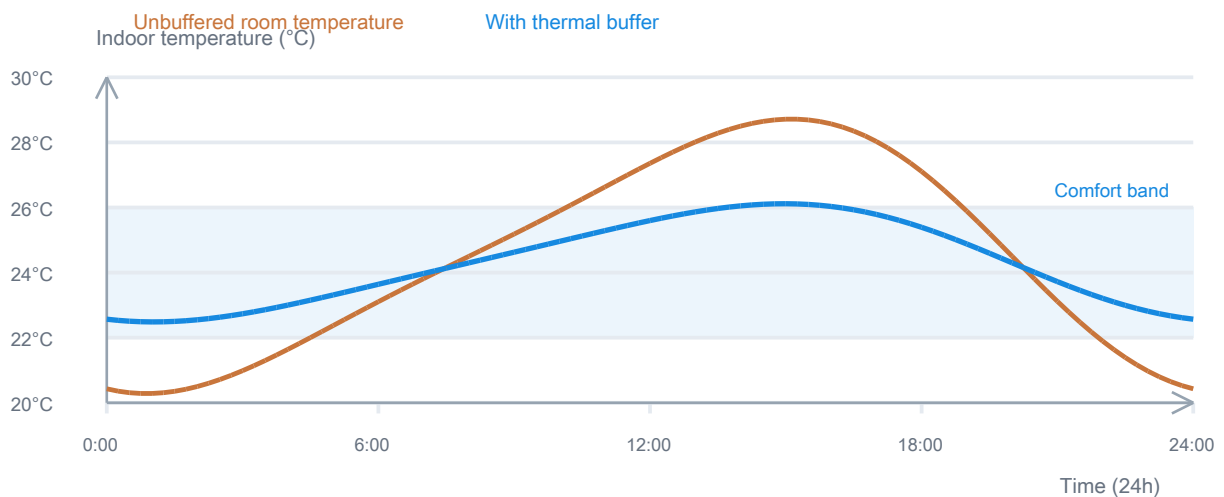
Primarily resists heat transfer; it does not store short-term room-side fluctuations.

Edge Comfort™

Absorbs and releases heat on the room side, participating in daily building thermal dynamics.

Daily indoor temperature fluctuation

Illustrative chart, not measured project data

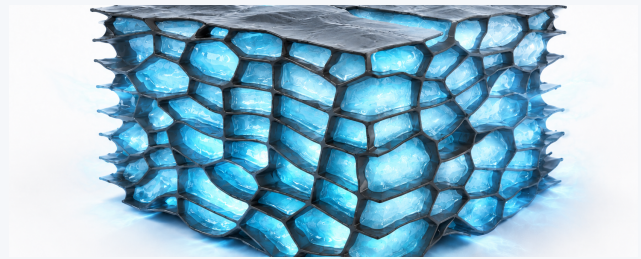


UltraST solid-state PCM modules become a building thermal buffer.

The module combines an UltraST inorganic PCM core, high-conductivity structure, and protective enclosure for integration into ceiling cavities, window furniture, or interior assemblies.



UltraST material features



UltraST PCM microstructure concept rendering

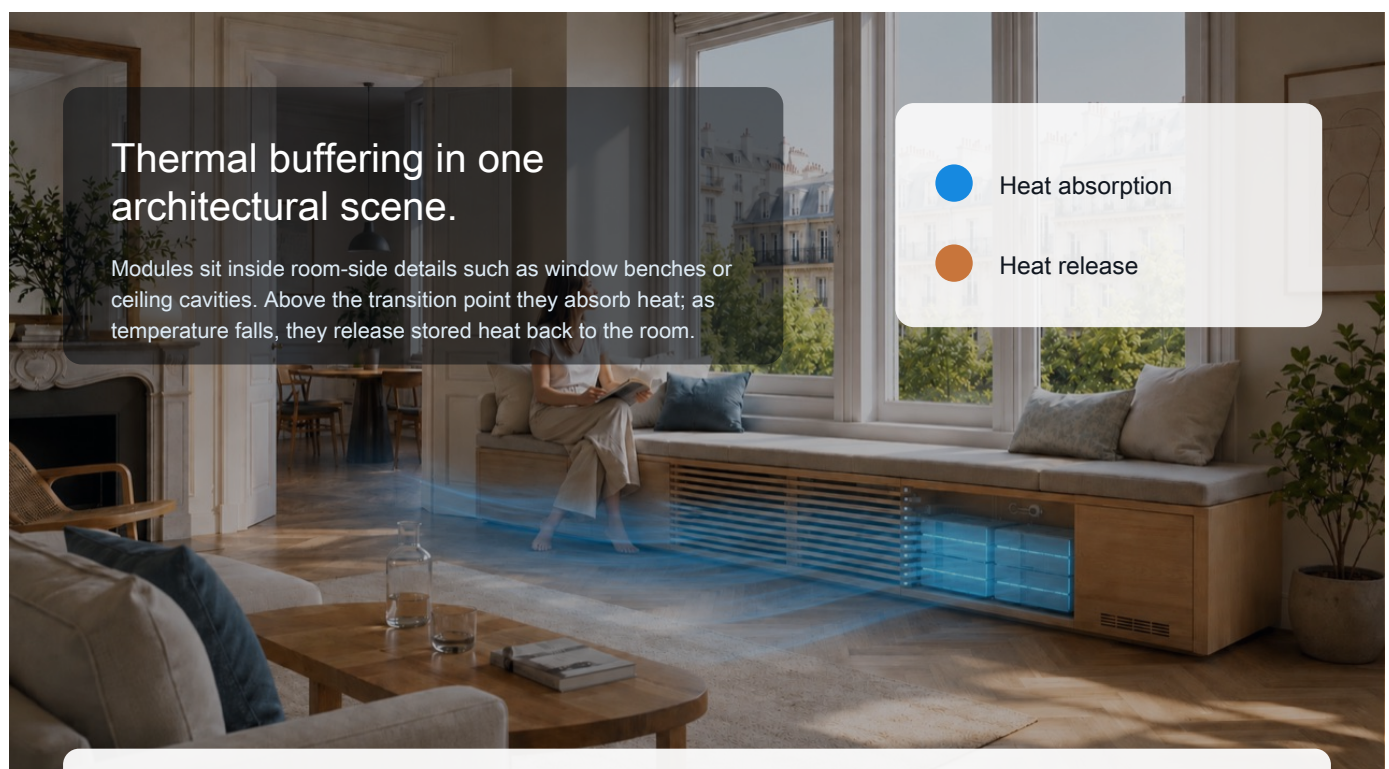
- No leakage** Solid-state phase-change format avoids liquid PCM leakage risk.
- Environmental safety** Inorganic material system for interior building integration.
- Flame retardant** Flame-retardant material design; not a project certification claim.

PCM principle

PCM absorbs or releases latent heat near a selected transition temperature. As room temperature rises it stores heat; as temperature falls it releases heat, smoothing occupied-zone temperature change. Project selection is based on comfort target, thermal disturbance, and installation position.

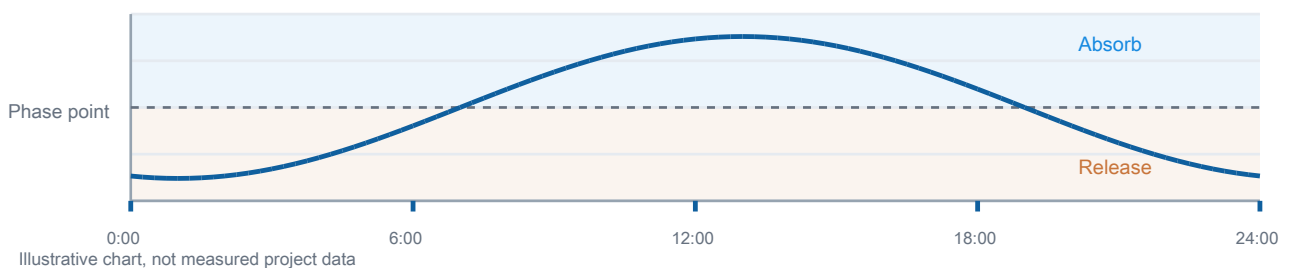
Store heat above the transition point. Release heat below it.

The same module logic supports summer cooling comfort and winter heating comfort, depending on the room temperature profile relative to the selected phase point.



Smoother comfort zone 22 / 24 / 26 / 28 / 30 / 32 °C are selectable phase-point SKUs, not continuous thermostat settings.

24-hour charge / discharge state



For building spaces with daily temperature fluctuation.

Page 5 defines project-fit scenarios. Page 7 covers installation methods and engineering boundaries.

1 New residential / premium apartments

For rooms with facade, ceiling, or occupied-zone daily thermal disturbance.

Facade gain

2 Hotel rooms / serviced apartments

For room types that need smoother perceived comfort while preserving interior space.

Guest comfort

3 Office and commercial spaces

For repeated daytime zones with occupancy, equipment, and solar loads.

Daytime load

4 Existing-building comfort retrofit

For projects that can use ceiling or furniture cavities without major plant replacement.

Low-intrusion retrofit

Applications

Project fit should be checked against orientation, occupancy schedule, indoor temperature profile, and available installation cavities.

Single-module data for engineering selection.

Verified values for 300 x 300 mm UltraST modules used in early assessment, sample discussion, and pilot selection.

Parameter	T3 (30 mm)	T5 (50 mm)
Module size	300 x 300 x 30 mm	300 x 300 x 50 mm
PCM volume	2.7 L	4.5 L
Storage capacity	0.154 kWh / module	0.257 kWh / module
Thermal conductivity	XY 10 W/mK; Z 2 W/mK	XY 10 W/mK; Z 2 W/mK
Temperature options	22 / 24 / 26 / 28 / 30 / 32 °C	22 / 24 / 26 / 28 / 30 / 32 °C

T3 / T5 are module-thickness codes for 30 mm and 50 mm variants.

Material structure

UltraST inorganic PCM core + high-conductivity structure + protective enclosure.

Selection logic

Define thermal-disturbance zone, target phase point, and available installation depth first, then estimate module count from single-module storage capacity. Final layout requires project thermal analysis and pilot verification.

Claim boundary

This manual does not claim certifications, cycle life, fixed energy savings, or customer case results. Project performance must be validated against building physics, operation profile, and pilot data.

Installation quality depends on heat-exchange paths and inspection access.

Modules should remain close to a room-side heat exchange path and should not be isolated inside a sealed cavity without airflow or conductive coupling.

Installation Guide

Engineering boundary: airflow path, grille opening, and inspection dimensions must be confirmed for the specific ceiling, cabinet, or interior assembly.



Ceiling cavity installation

Module installed above the ceiling panel, close to the room-side heat exchange path with inspection access

300 x 300 mm

T3 / T5



Window bench / cabinet integration

Modules placed inside a ventilated cabinet, exchanging heat with room air through grilles near the facade

300 x 300 mm

T3 / T5

Passive Edge Tech

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Contact

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