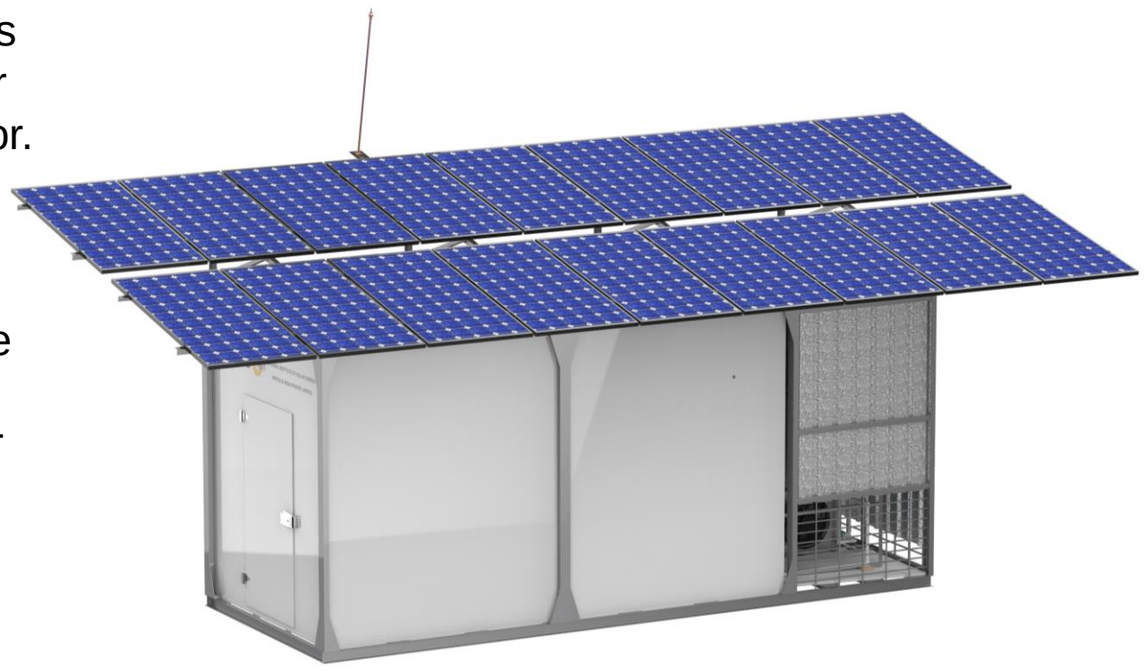
Solar Cold Storage

Powered with hybrid ice technology

This cold storage works on hybrid ice technology with features such as fast cooling, cooling backup from thermal energy storage for non-solar hours and no requirement of electric batteries to power the compressor. Using the hybrid ice technology, the compressor and thermal energy storage work in tandem to boost the cooling performance.

This cold storage is ideal for short term storage and aggregation of the fruits, vegetables, flowers, and other perishable commodities at the farmgate level. The system can also be utilized as a ripening chamber for fruits.

The entire system is automatic and doesn't require user intervention.



Features

FLEXIBLE CONFIGURATION

Can retrofit to existing system; Large capacity systems feasible with multiple refrigeration units

-4 to 15 ºC TEMPERATURE RANGE

World's one of the few solar cold storage based on thermal energy storage with wide temperature applications

SITE & USAGE OPTIMIZED SIZING

Sizing of compressor, solar panels & energy storage is optimized for site & usage conditions

MUTI CHAMBER

Same system can have multiple chambers with different temperature set points

Specifications

Description	5 MT	10 MT	20 MT
Internal storage volume	750 cubic feet	1500 cubic feet	3000 cubic feet
Temperature range	4 to 15 ºC (standard) 2 to 10 ºC (optional) -4 to 4 ºC (optional)		
Thermal storage capacity	200 MJ	350 MJ	600 MJ
Cooling backup capacity on thermal storage	1000 kg	2000 kg	4000 kg
Compressor	2.5 TR	5 TR	9 TR
Solar photovoltaic panels	6 to 8 kWp	10 to 14 kWp	17 to 24 kWp
Multiple chamber options	1 or up to 2	1 or up to 3	1 or up to 4
System configuration	Containerized or on-site assembly	On-site assembly	

Notes:

1. All performance data is based on 5 kWh/m2-day of global solar horizontal irradiance and standard operating conditions
2. Cold storage capacity is indicative and commodity-dependent
3. Cooling capacity is defined as cooling of the incoming material from 30 ºC to 7 ºC
4. Alternate power supply such as grid backup is strongly recommended for system operations during cloudy conditions
5. Cold storage capacity other than the mentioned sizes is possible and can be designed as per requirement
6. Rendered picture shown in the brochure is representative in nature

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Competitive advantages over other 5 & 10 MT solar cold storage

Parameters	Inficold		Competition	
System size	5 MT	10 MT	5 MT	10 MT
Multi chamber capabilities Maximum number of chambers with independent temperature	2	3	None	
Temperature set point range	4 to 15 ºC 2 to 10 ºC -4 to 4 ºC All based on thermal storage		4 to 15 ºC (thermal storage) -10 to 4 ºC (electric battery based)	
Temperature stability of the individual room at the set point	± 2 ºC in day and night		± 2 ºC in day ± 10 ºC in night (limited cooling at night)	
Solar photovoltaics	6 to 8 kWp	10 to 14 kWp	5 kWp	5 to 7 kWp
Solar structure tilt	5 to 18 degrees (site dependent)		No tilt	
Quantity of phase change material for thermal energy storage	1000 kg	2000 kg	366 kg	
Thermal storage capacity (as per NISE test report)	200 MJ	350 MJ*	80 – 100 MJ Typically, not specified	
Fruits & vegetable cooling capacity from 30 ºC to 7 ºC if loaded at night with thermal storage is fully charged	1000 kg	2000 kg	300 kg	
Axial fans	Brushless		Carbon brush	
Condenser construction	Copper		Aluminium	
Roof water proofing	Steel roofing		Plastic tape	
Equipment room for reliable, waterproof operation and safety	Yes		No	

* Results based on internal testing

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