

MODULAR COOLING SOLUTIONS

PRODUCT
CATALOGUE
2025



 **ECOLOGICAL BUSINESS LTD**
Because Nature Cares

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**AGRICULTURAL
PRODUCE PACKHOUSE**

**SOLAR COLD ROOM FOR
FRUITS & VEGETABLE STORAGE**



**FOR YOUR TRUSTED, TESTED
AND TRACEABLE QUALITY
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- Process and
- Store (for a Week).
- Sell.
- Deliver at Competitive Prices

**For your comfort,
Convenience & Health**

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- > 100% POWERED BY SOLAR ENERGY
- > USE OF NATURAL REFRIGERANTS WITH LOW GLOBAL WARMING POTENTIAL
- > MODULAR DESIGN: FLEXIBLE IN SIZE AND TEMPERATURE



OUR SOLAR COOLING PORTFOLIO

Phaesun offers a wide range of solar-powered cooling solutions. All components and systems are carefully selected and tested according to our strict quality standards. They are designed for 100% solar operation and use natural refrigerants, making them an environmentally friendly choice.

In addition to cooling solutions that operate on AC power and are adapted for solar use through DC converters, Phaesun has developed an innovative product line under the SelfChill brand.

This line is based entirely on solar-powered DC technology and utilizes thermal storage for maximum

efficiency and environmental sustainability. (For more information on the SelfChill design, please refer to page 5 or visit selfchill.org.)

This catalogue provides an overview of pre-configured systems available through Phaesun. For customized solutions, please contact our sales team. We offer full support with system sizing.



Discover our complete range of cooling products, including individual components and kits here:



WE OFFER SYSTEMS FOR VARIOUS PURPOSES

AGRICULTURAL

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Cold Rooms
Freezing Rooms
Milk Cooling
Ice Maker

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Cooling for batteries and electronic equipment

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Air conditioning
Chest freezers and coolers
Cool boxes and refrigerators

SINGLE COMPONENTS

15

Solar Cooling Units SelfChill
Monoblocks and freezing units



COOLING FOR AGRICULTURAL USE



SOLAR COLD ROOM SELFCHILL LATENT COOL DC

The Solar Cold Room SelfChill DC is a pre-configured, plug-and-play kit, designed to reliably cool products to around 10°C each day, even under extreme ambient conditions. This stand-alone system comes complete with PV panels and batteries. It is based on the SelfChill® concept, where solar-powered SelfChill® Cooling Units generate ice in a thermal energy storage for efficient energy transfer, minimal losses, and maximum autonomy.

A heat exchanger and thermostat ensure reliable and consistent cold distribution. Various configurations are available, offering different cold room sizes, cooling capacities, and suitability for a wide range of ambient temperatures.



Have a look
at page 5 to
learn about
the SelfChill
concept.



Description	DC 20-45	DC 30-45	DC 20-35	DC 30-35
Volume	20 m ³	30 m ³	20 m ³	30 m ³
Min. cold room temperature	10 °C			
Daily input	250 kg/d	500 kg/d	250 kg/d	500 kg/d
Ambient temperature	45 °C		35 °C	
PV capacity	6640 Wp	9130 Wp	3320 Wp	4565 Wp
Battery capacity	25 kWh		15 kWh	
Ice Storage	600 kg		300 kg	
Cooling power, max.	6.8 kW		3.4 kW	
Cooling power, rated	1.35 kW	1.8 kW	0.9 kW	1.2 kW
Total power consumption	940 W	1240 W	490 W	640 W
Number of cooling units	12	16	6	8
Nominal voltage	24 VDC			
Refrigerant	R600a			
Refrigerant load	<0.1 kg			
Inverter	none			
Art.No.	600529	600530	600531	600532

SOLAR COLD ROOM PHAESUN ALWAYS COOL AC

Solar Cold Room Always Cool is a pre-configured plug-and-play kit, designed to reliably cool products each day to a temperature of around 2°C, even under extreme ambient conditions. This stand-alone system comes complete with PV panels, batteries, and an inverter that also allows for optional connection to the power grid as a backup power source. Various configurations are available, with different cold room sizes, cooling capacities, and suitability for a range of ambient temperatures.



Description	AC 30-45	AC 60-45	AC 30-35	AC 60-35
Volume	30 m3	60 m3	30 m3	60 m3
Min. cold room temperature	2°C			
Daily input	250 kg/d	750 kg/d	250 kg/d	750 kg/d
Ambient temperature	45 °C		35 °C	
PV capacity	9100 Wp	17400 Wp	6640 Wp	13280 Wp
Battery capacity	40 kWh	80 kWh	25 kWh	45 kWh
Cooling power	3150 W	5250 W	2100 W	4200 W
Total power consumption	1560 W	2600 W	1040 W	2080 W
Number of monoblocks	3	5	2	4
Max. electrical current per monoblock	3.3 A			
Nominal voltage	230 VAC			
Refrigerant	R290a			
Refrigerant load	<0.1 kg			
Inverter	3 kVA 1-phase	5 kVA 1-phase	3 kVA 1-phase	5 kVA 1-phase
Art.No.	600533	600534	600535	600536

SOLAR COLD ROOM PHAESUN ALWAYS FREEZE AC

For very low temperatures we offer the Solar Cold Room Phaesun Always Freeze AC. It is a fully pre-configured, plug-and-play solution designed to reliably maintain temperatures around -15 °C, even in challenging ambient conditions. This autonomous system includes PV panels, batteries, and an inverter, with the added option of grid connection for backup power. It is available in various configurations to match different freezing room sizes, cooling capacities, and environmental requirements.



Our technical team customizes the number of PV panels and Monoblock units according to your specific location and daily cooling needs. Adaptations in cold room size and cooling load to specific conditions are always possible.

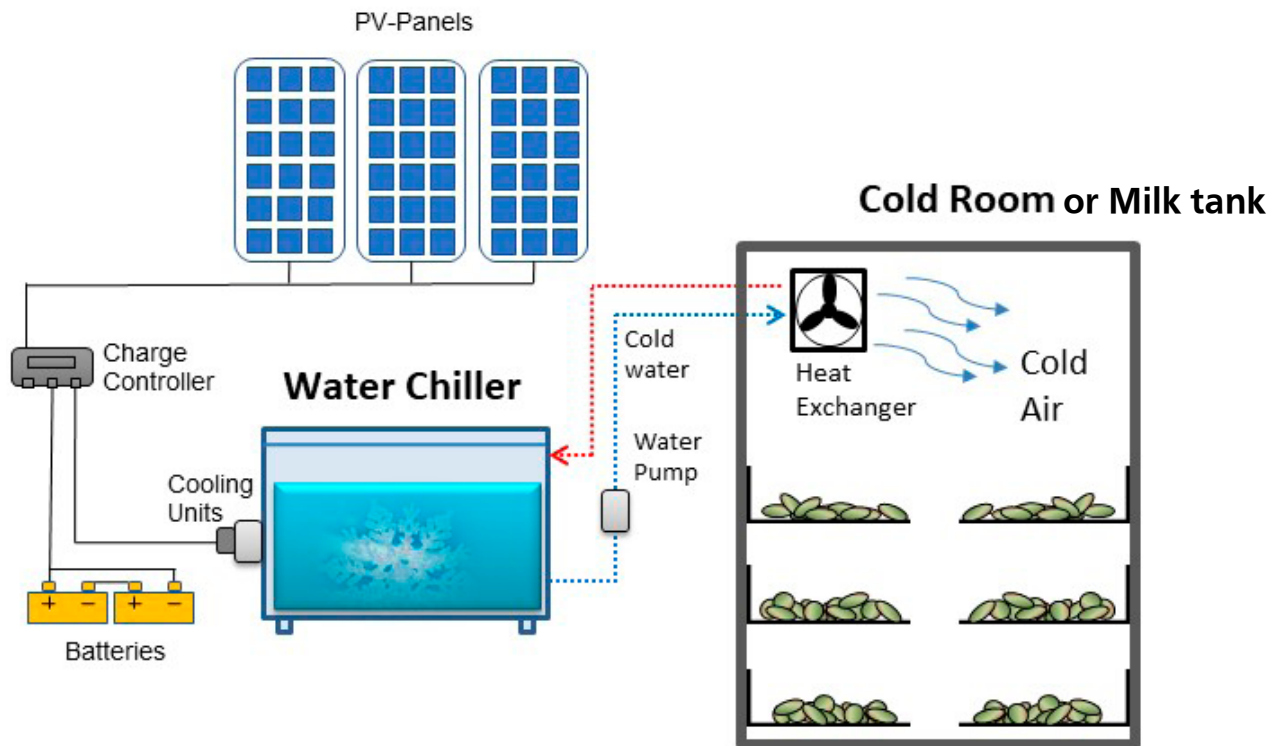
Description	AC 50-45	AC 300-45	AC 50-35	AC 300-35
Volume	10 m ³			
Min. cold room temperature	-15 °C			
Daily input	50 kg/d	300 kg/d	50 kg/d	300 kg/d
Ambient temperature	45 °C		35 °C	
PV capacity	7500 Wp	20000 Wp	7500 Wp	20000 Wp
Battery capacity	35 kWh	85 kWh	25 kWh	65 kWh
Cooling power	1580 W	3160 W	790 W	3160 W
Total power consumption	960 W	1920 W	480 W	1920 W
Number of monoblocks	2	4	1	4
Max. electrical current per monoblock	4.3 A			
Nominal voltage	230 VAC			
Refrigerant	R290a			
Refrigerant load	<0.1 kg			
Inverter	3 kVA 1-phase	5 kVA 1-phase	3 kVA 1-phase	5 kVA 1-phase
Art.No.	600537	600538	600539	600540

SELFCHILL-CONCEPT: HOW IT WORKS

SelfChill is an innovative concept for modular cooling solutions powered by solar energy. Efficient, high-quality core components are used to create a wide variety of system configurations for cooling milk, fruits, vegetables, seeds, beverages or fish.

The core components of the systems are the SelfChill Cooling Units which run on direct current (DC) from the PV panels, use natural refrigerants and allow the use of thermal storage instead of electrical battery storage.

The cooling units are installed in an insulated water basin, that serves as thermal energy storage (water chiller). Ice is generated during operation hours of the SelfChill cooling units. The water chiller provides cold water to be pumped to a heat exchanger (fan coil) cooling down the cold room or milk chiller. A small battery is used to run the water pump and the fan coil also at night.



The SelfChill concept was developed by Phaesun in cooperation with Solar Cooling Engineering and the University of Hohenheim. Cooling systems can be created in different sizes for different applications. The concept also allows delivery of individual components and use of local materials, so that transport volume and costs are kept low and final assembly can be carried out on site



SOLAR MILK COOLING SYSTEM

SELFCHILL COOL TANK DC 560

With the Solar Milk Cooling System, milk can be reliably cooled independently of any infrastructure using only the energy of the sun. The system can cool up to 560 liters at once in less than 4 hours.

This pre-configured assembly kit comes complete with PV panels and batteries.

It is based on the SelfChill® concept, where solar-powered SelfChill® Cooling Units generate ice in a thermal energy storage for efficient energy transfer, minimal losses, and maximum autonomy. The double-walled milk cooling tank has an integrated agitator to avoid temperature and fat stratification. Up to 560 liters of milk can be stored at 4°C up to 48 hours. Various configurations are available, offering different milk tank sizes, cooling capacities, and suitability for a wide range of ambient temperatures. Our technical team customizes the number of PV panels and cooling units according to your specific location and daily cooling needs.



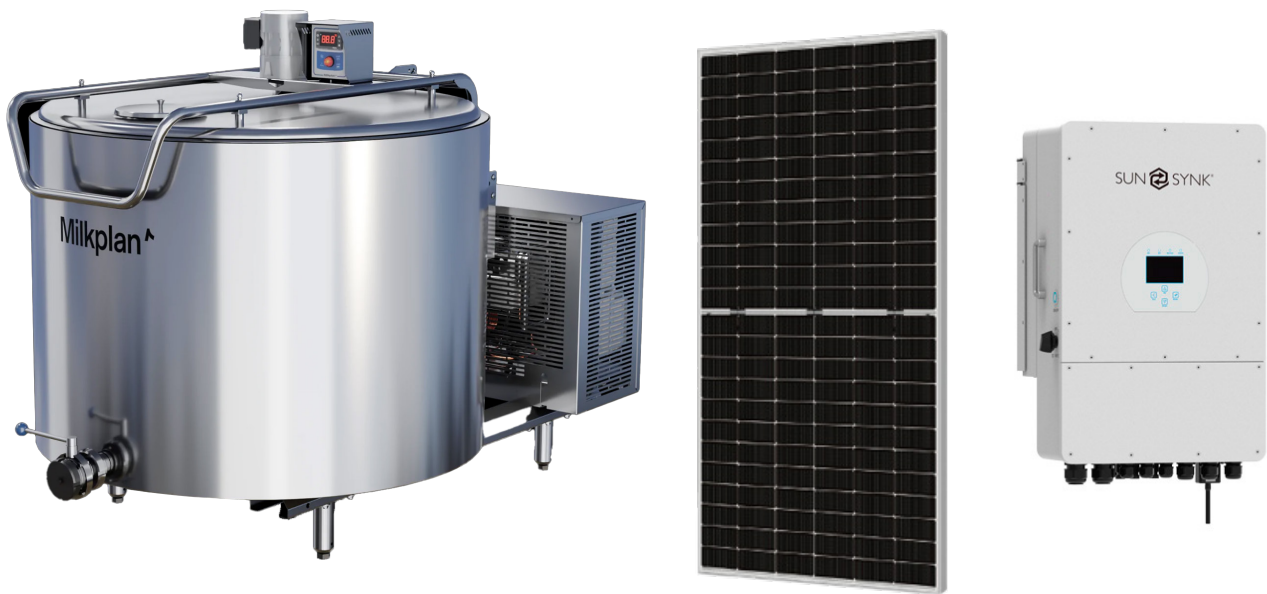
Milk tank volume	560 l
Ice storage	300 kg
Electrical power (6 Cooling Units)	450 W
Electrical power (pump + agitator)	150 W
Cooling power, rated (@ 30°C ambient temperature)	900 W
Cooling power, max*	6.8 kW
PV capacity (for 6 Cooling Units)	2100 Wp
PV capacity (for pump + heat exchanger)	700 Wp
Battery capacity (for 6 Cooling Units)	500 Ah @24VDC
Battery capacity (for pump&heat exchanger)	175 Ah @24VDC
Max. cooling power milk tank	6.80 kW
Art.No.	600467

SOLAR MILK COOLING SYSTEM

PHAESUN COOL TANK AC

The Systems are pre-configured, plug-and-play kit, designed to reliably cool down milk to 4°C, even under extreme ambient conditions. The milk tank features an integrated AC-powered refrigeration unit. This stand-alone system comes complete with PV panels, batteries, and an inverter that also allows for optional connection to the power grid as a backup power source.

Standard kits are available in 500 L and 1000 L sizes, while customized solutions can accommodate tank volumes ranging from 300 L to 2500 L.



Our technical team tailors the number of PV panels and cooling units according to the specific location and daily cooling needs.

Description	Solar Milk Cooling System Phaesun Cool Tank AC 500	Solar Milk Cooling System Phaesun Cool Tank AC 1000
PV capacity	5460 Wp	10920 Wp
Battery capacity	20 kWh	40 kWh
Max. capacity	532 l	1081 l
Cooling capacity	3998 W	7497 W
Max. power rate	2124 W	3567 W
Refrigerant type	R449A	
Art.No.	600550	600551

MILK COOLING TANK MILKPLAN

The Milkplan MPV milk cooling tanks combine innovative refrigeration technology with long-lasting quality. Made from high-grade stainless steel, they ensure hygienic and safe milk storage – from production to processing.

Thanks to their powerful and energy-efficient cooling system, the milk is rapidly brought to the optimal storage temperature and stays fresh for longer. The MPV series is available in various capacities, making it perfectly adaptable to the needs of both small and large dairy operations. With their robust construction, user-friendly operation, and reliable cooling performance, the Milkplan MPV milk tanks are the ideal solution for a modern and energy-efficient dairy industry.

Description	MPV 300	MPV 500	MPV 650	MPV 1000	MPV 1250	MPV 2000	MPV 2500
Max. capacity	336 l	532 l	659 l	1081 l	1285 l	2029 l	2487 l
Weight	128 kg	176 kg	202 kg	285 kg	300 kg	450 kg	480 kg
Voltage	380-400V, 50Hz, 3~	380-400V, 50Hz, 3~	380-400V, 50Hz, 3~	380-400V, 50Hz, 3~	380-400V, 50Hz, 3~	380-400V, 50Hz, 3~	380-400V, 50Hz, 3~
Cooling capacity	2636 W	3998 W	4288 W	7497 W	8246 W	13526 W	13526 W
Max. power rate	1265 W	2124 W	2399 W	3567 W	4024 W	5210 W	5210 W
Run current	4.1 A	4.92 A	5.16 A	7.59 A	8.64 A	11.51 A	11.51 A
Max.current	5.6 A	5.9 A	8.8 A	10.75 A	11.75 A	15.14 A	15.14 A
Refrigerant type	R449A						
Art.No.	392943	393279	392944	393278	392945	392286	392946



SOLAR ICE MAKER SELFCHILL BLOCK ICE DC 50

This is a fully self-sufficient, solar-powered system designed to produce ice blocks for cooling fish, meat, vacuum-packed food, or beverages. With a production capacity of up to 50 kg of ice per day, it provides a reliable and sustainable cooling solution completely independent of existing infrastructure.



Based on the proven SelfChill® concept, the system uses solar-powered SelfChill® Cooling Units to generate temperatures as low as -10 °C in the water chiller, which is filled with a salt solution. Ice blocks are formed directly in the salt-water bath using dedicated ice containers —ensuring highly efficient cold transfer and minimal energy loss.



Ice production	50 kg/d (10x 5kg/d)
Ambient temperature	< 45°C
PV capacity	1660 Wp
Battery capacity	7 kWh
Cooling power, rated	320 W
Total power consumption	300 W
Number of cooling units	4
Nominal voltage	24 VDC
Refrigerant	R600a
Refrigerant load	35g
Art.No.	600468

INDUSTRIAL USE

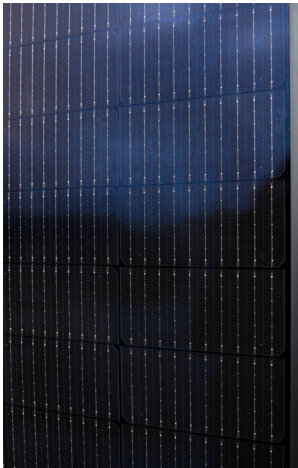


SELFCHILL COOLING KIT FOR BATTERIES OR ELECTRONIC EQUIPMENT



The cooling kit offers reliable protection for batteries or electrical devices from high ambient temperatures and external influences. It can be equipped with one or two high-efficiency vapor compression cooling units, which can be powered directly from PV panels or an external DC power source. Thanks to an efficient heat exchanger, there are no moving parts on the outside.

The insulated PVC sandwich construction provides good thermal insulation and excellent weather resistance. SelfChill battery cooling solutions are individually scalable and can be dismantled for transport. With 90g of refrigerant per refrigeration circuit, the box can also be sent by air freight.



External dimensions L x W x H		121.5 x 72 x 76.7 cm
Internal dimensions L x W x H		112.5 x 63 x 74.6 cm (528 l)
Thermal insulation AU value		7.6 W/K
Operating voltage		10-40 VDC
Max. electrical power		75+4 W per CU
Cooling capacity / Coefficient of performance (COP) at	35°C	110 W / 1.51
	45°C	101 W / 1.22
	55°C	96 W / 1.04
Cooling temperature at	35°C	17,5 °C
	45°C	29,0 °C
	55°C	39,8 °C
Refrigerant / Global warming potential		R600a / 3
Quantity of refrigerant		90 g per CU
Ingress protection		IP54 / IP22
Weight		95 kg
Art.No.		600528



RESIDENTIAL USE

AIR CONDITIONING ASSEMBLY KIT

Our Air Conditioning Assembly Kits are pre-configured, ready-to-install solutions designed for seamless plug-and-play integration. Each kit includes all essential components for easy setup and immediate operation.

The system features PV panels that integrate with the existing power grid, enabling efficient hybrid operation. Ideal for cooling or heating spaces between 17 and 30 m², the air conditioning unit is paired with a smart inverter that connects the PV panels to the AC system.

During daylight hours, the air conditioning unit is primarily powered by solar energy, significantly reducing electricity consumption from the grid. The included hybrid inverter is able to feed any excess solar power into the grid, making it available for other appliances.

For extended efficiency, the system can optionally be equipped with batteries to store surplus solar energy for nighttime use—further minimizing grid dependency.



Description	On-Grid Model	Off-Grid Day Model	Off-Grid Night Model
PV capacity	2300 Wp	3000 Wp	3800 Wp
Battery capacity	6 kWh	6 kWh	12 kWh
Max. electrical power input	3500 W	3500 W	3500 W
Nominal voltage	220-240 VAC, 1-phase	220-240 VAC, 1-phase	220-240 VAC, 1-phase
Aircon unit rated current	10.5 A	10.5 A	10.5 A
Cooling capacity	12000 Btu/h	12000 Btu/h	12000 Btu/h
Heating capacity	13000 Btu/h	13000 Btu/h	13000 Btu/h
Refrigerant	R290	R290	R290
Refrigerant load	380 g	380 g	380 g
Inverter power	5 kW	5 kW	5 kW
Art.No.	600510	600511	600512

CHEST REFRIGERATORS /FREEZERS STECA PF

The programmable freezers of the Steca PF series with environmentally friendly refrigerant can be used either as a refrigerator or as a freezer. Therefore, the units are ideally suited for all DC applications up to and including medication cooling. Electronic control, speed control and economical LED lighting ensure high efficiency and thus reduce system costs.



Description	PF166-H	PF240-H
Nominal voltage	12V / 24V	
Volume	166 l	240 l
Cooling temperature	+2 °C ... +12 °C	
Freezing temperature	-20 °C ... -10 °C	
Ambient temperature	+10 °C ... +43 °C	
Max. electrical power	50 W ... 72 W	
Dimensions	872 x 917 x 709 mm	1288 x 919 x 760 mm
Refrigerant	R290	
Refrigerant load	60g	
Art.No.	360211	360212

COOL BOXES AND REFRIGERATORS ENGEL

We offer a wide range of cool boxes and refrigerators of ENGEL, that are best suited either for mobile use (industrial shipping, caravans, yachts) or for domestic use in homes. There are products both for built-in and free standing use. Most boxes and refrigerators are best suited for cooling and freezing with a free adjustable temperature ranging from +10°C to -18°C. The latest generation of oscillating compressors is even more low-noise, more efficient and even less power consuming. Especially when applied with a battery/PV system their low starting current is an important advantage.



Please find the full product range of ENGEL cool boxes and refrigerators on order.phaesun.com

SINGLE COMPONENTS



SOLAR COOLING UNITS SELFCHILL

INDOOR/OUTDOOR

The SelfChill Air/Liquid cooling units are hermetically sealed cooling devices that work as a vapor-compression heat pump. They are filled with refrigerant and ready to be plugged to a PV system with or without batteries for different cooling applications. The Units consist of the following parts: compressor (SECOP BD35K), condenser, evaporator plate and electronic control unit (SECOP 101N0420).

The indoor versions use an air forced condenser (322021, 322110) while the outdoor version (322123) has a static condenser suitable for exposure to harsh environments where the use of an external fan is not desired. The indoor version is available with two different evaporator plate coatings. The article 322021 with anticorrosive white paint for applications in contact with air or solid parts, and the article 322110 with a special rubber coating for applications where liquids are to be cooled down.



Description		Air Indoor 45/75 A-F und Liquid Indoor 45/75 A-F	Air Outdoor 45/75 A-F
Power consumption		45 W (at 2000 1/min) - 75 W (at 3500 1/min)	
Temperature range	Evaporator	-5°C to 15°	
	Ambient	10°C to 45°C	
Voltage range		10 - 45 VDC	
Refrigerant		R-600a (Isobutane), 35g	R-600a (Isobutane), 90g
Evaporator plate dimensions (H x W)		515,8 x 502,6 mm	
Suction line between condensing unit and evaporator (diameter/length)		0,8 / 600 mm	0,8 / 1000 mm
Dimensions (packed) (W x L x H)		250 x 600 x 630 mm	710x245x800 mm
Weight (packed)		10 kg	15kg
Art.No.		322021/ 322110	322123

MONOBLOCK COOLING AND FREEZING UNITS INTARCON

Description	AC 0,38 kW -20°C	AC 0,48 kW -20°C	AC 0,73 kW -20°C	AC 0,97 kW -20°C	AC 0,4 kW 0°C	AC 0,52 kW 0°C	AC 0,68 kW 0°C	AC 0,94 kW 0°C	AC 1,31 kW 0°C
Max cooling capacity	520 W	790 W	1090 W	1470 W	850 W	1410 W	1780 W	2540 W	2960 W
Max. electrical power	380 W	480 W	730 W	970 W	400 W	520 W	680 W	940 W	1310 W
Max. electrical current	3.6 A	4.3 A	5.6 A	9.3 A	3.5 A	3.3 A	4.3 A	5.9 A	9.0 A
Evaporator Fan Airflow	300 m3/h	500 m3/h		950 m3/h	300 m3/h	500 m3/h		950 m3/h	
Refrigerant load	<0.1 kg		<0.15 kg	<0.2 kg	<0.1 kg		<0.15 kg		<0.2 kg
Max ambient temp.	45°C								
Nominal voltage	230 VAC, 50Hz, 1-phase								
Refrigerant	R290a								
Art.No.	392859	392316	392860	392861	392862	392863	392864	392865	392866

Intarcon monoblocks provide an efficient and compact solution for storage rooms either in cooling or freezing applications. Designed as plug-and-play units, they integrate all main refrigeration components into a single wall-mounted system, ensuring fast installation and minimal space requirements. These reliable units are factory-tested and pre-filled with refrigerant, requiring no external piping. Built from durable, corrosion-resistant materials and using environmentally friendly refrigerants, Intarcon monoblocks are suitable for various sectors including food storage, hospitality, and pharmaceuticals. Available in multiple models for different cold room sizes and temperature ranges, they combine performance, sustainability, and ease of use in one compact system.



OUTSTANDING
PROJECTS
2025 WINNER

OUTSTANDING
PROJECTS

Phaesun

The "BeCool: Clean Cooling for Markets in Kenya" initiative was honored as a winner of the smarter E AWARD 2025.

The “Low-Carbon Cold Room” is an independent PV-powered system to chill up to 500kg of agricultural products daily to 10°C, even with ambient temperatures as high as 35°C. The system is based on the SelfChill concept, using a thermal energy storage to cool the inner of the cold cell. Construction and insulation material is mainly wood and straw, to keep costs and CO2-footprint low.



DEVELOPMENT AND PILOTING OF THE WORLD´S FIRST LOW-CARBON COLD ROOM IN HOMABAY, KENYA



EforA has published the findings in the report:



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SELFCHILL

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