



Telstar® *Igloo*

Ultra low temperature freezers
-45°C & -86°C
Upright & Chest
370 to 830 liter

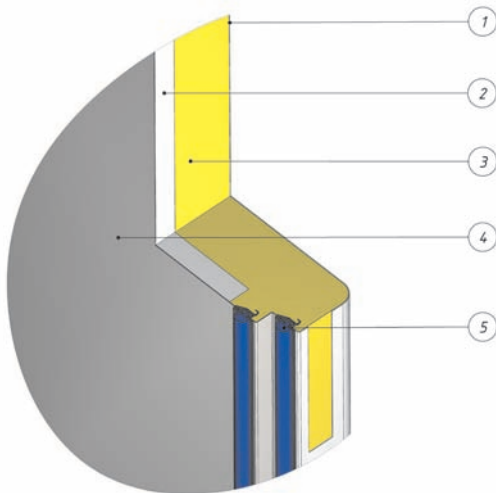




More samples, less footprint

Laboratory space is valuable. In comparison with the traditional freezers, Telstar uses ultra thin vacuum insulation panels. With only 80 mm of insulation, it creates a much better insulation value than 125 mm of regular PU foam.

A temperature of -86°C is guaranteed for an ambient up to $+35^{\circ}\text{C}$. Additionally the thin insulation increases the storage capacity up to 30%.



VIP insulation of Igloo:

1. Polyester coated
2. vacuum insulation
3. PU foam
4. stainless steel interior
5. double door seal (heated)



The slim VIP insulated Igloo easily fits through every standard lab door

Taking real care for the environment

Safety for your samples is most important, but why also not save the environment? That's why Telstar standard uses ecological refrigerants in its freezers. Unlike the traditional used mixed synthetic potent greenhouse gases, Telstar is a pioneer in using 100% pure natural refrigerants. CFC, HCFC and HFC free. Of course the hydrocarbon systems used are safety compliant according EN60335-2-24.

Like an Igloo: low sound level and low power consumption

The Igloo green line only uses high quality and energy efficient compressors. Combined with the use of natural refrigerants it achieves a mix of smoothly running compressors with the lowest power consumption and noise levels around 50 dB(A). This fact is registered according NEN-EN-ISO 11202.

Features and Benefits



Storage capacity & flexibility:

- Largest sample storage capacity per footprint
- Reinforced stainless steel shelves
- Reversible door hingesystem
- Easy fit, 2, 3, 5, 6 inner doors

All options are standard:

- Pressure equalization valve
- 2 (+ 2) sample throughputs
- Stainless steel interior
- RS485, remote alarm

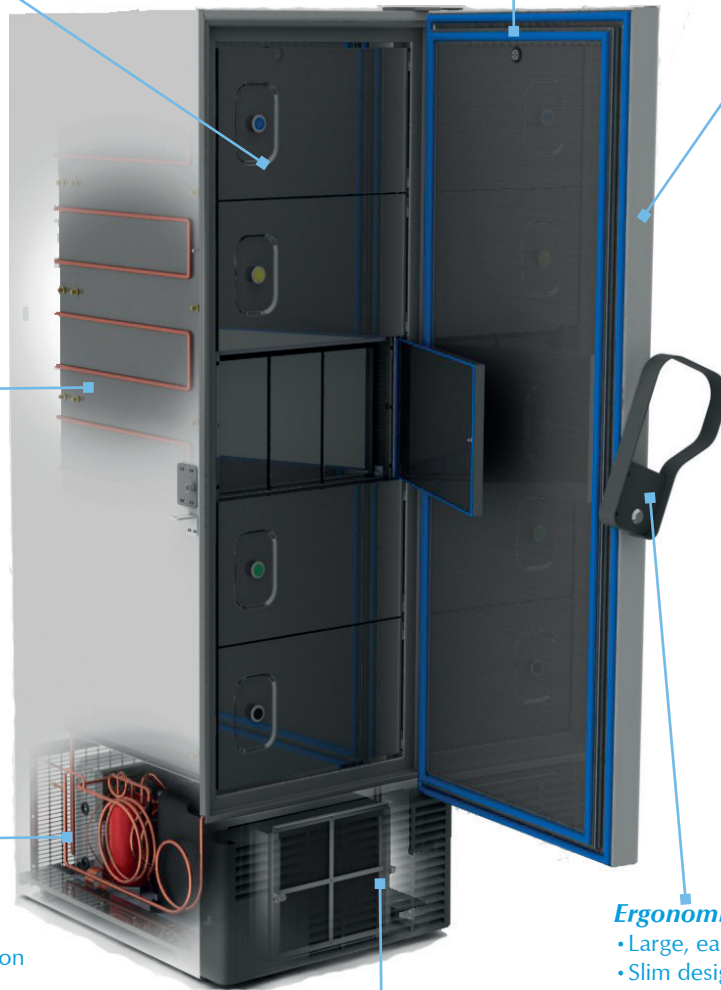


Highest reliability:

- Using the most reliable components available in the world
- Self diagnostic and multiple alarm system on eye level
- Perfect Fit door sealing system with heated seal to prevent ice forming

Top class Cooling Performances:

- Fastest cool down and recovery time
- Superior insulation by vacuum insulation panels



Environmental friendly:

- Natural ecological, green refrigerants
- Lowest power consumption
- Lowest noise level



Ergonomic Design:

- Large, easy grip, single hand opening
- Slim design fits easy through a door

Service friendly:

- Easy filter cleaning
- Accessibility for electronics



Standard eye-level control

A reliable and self diagnostic monitoring and alarm system is positioned on eye level, far from dust and moisture. The bright led lighted digital display is visible from big distances. Performances can be checked in a blink of an eye!



Monitoring & Alarm Specs

- LCD Screen
 - Sample temperature
 - Ambient temperature
 - Voltage
- Adjustable high alarm
- Adjustable low alarm
- Ambient alarm
- Power failure alarm
 - Battery backup
- Event log file
 - Door alarm
 - Power alarm
 - Filter alarm
 - Temperature alarm
 - Ambient alert
- Display graphs
 - Day
 - Month
 - Year
- On-board data history
 - Day
 - Month
 - Year
- Password protection
 - On / Off
 - Temperature settings
 - Tech parameters
 - Engineering menu
- Communication / Outputs
 - RS485
 - Dry contacts (no/nc/com)
- Test / self diagnostic system
- Run time
 - Filter cleaning
 - Compressor time
 - System time

Features of monitoring & alarm system

- Bright, easy to read, digital display
- Readout option in 1 and 0,1°C increments(accuracy)
- Password protected menu's
- Different levels of authorization, user, parameters and engineering menu
- Adjustable temperature set points;
- Audible and visual high/low temperature alarm
- Power outage alarm with battery back up
- Voltage indication and stabilization
- Ambient temperature indication and alarm
- Clean condenser filter alarm;
- Door alarm (also for CO2 or LN2 backup System)
- Remote alarm (NO/NC/COM)
- RS485 port for optional data transfer to computer
- Service friendly plug & play detachable cable housing
- Selection for running optimum mode or economy mode

User friendly access to your samples

In practice a freezer is never opened with empty hands. As a result Telstar developed a single hand opening door handle. This large and easy-grip handle helps to lever the door and firmly press the door without effort.

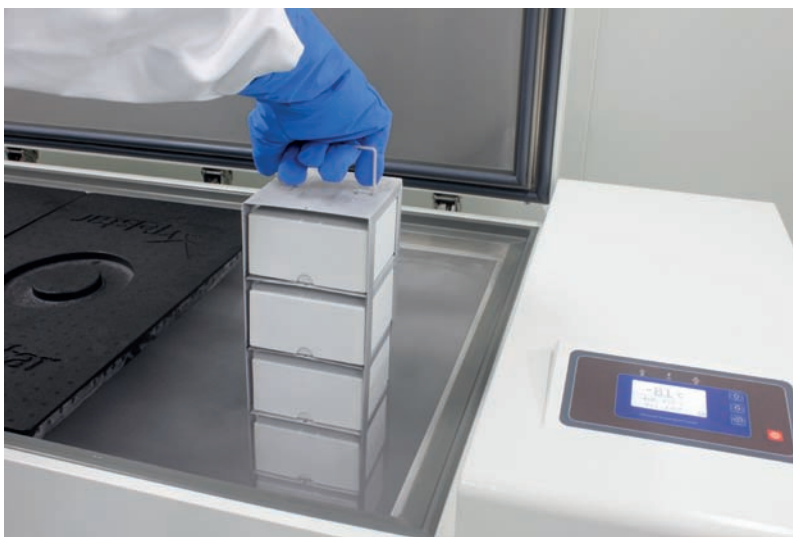
The robust metal system is designed and tested to resist thousands of handlings. Security is safeguarded by a cylinder lock and it allows an additional padlock to be attached when more security is needed.

A heated vacuum equalisation port allows smooth door openings even when the door is opened multiple times.



Flexible sample storage

As a standard the Igloo series are equipped with a 5 compartment configuration to efficiently store the standard racking systems. However, different inner door configurations are available to always have an answer on existing storage systems! The inner doors are well insulated with 20 mm PU foam and are colour coded. To ensure the highest quality standards, the inner chamber is made of stainless steel. Telstar is the only one offering a true stainless steel interior in the market. This means not only stainless steel inside walls, but also stainless steel shelves, inside of the main door and even the inner doors.



Top class temperature performances

Telstar developed a freezer with the lowest power consumption available, without making any compromises in cooling performance. The combination of ultimate temperature recovery times with very stable and uniform temperatures all through the cabinet ensures the top class performances. The package is completed with the VIP insulation giving the best safety in case of power failure.

Unique! Customized door hinge

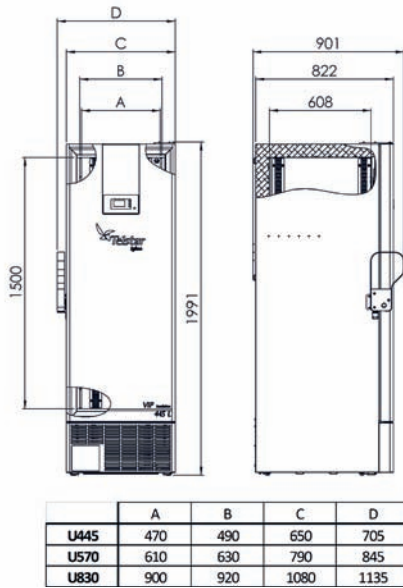
Telstar freezers are ready to easily change the position of the hinge and door handle mechanism. This makes it possible to choose if the door could be opened from the left or right side depending on the installation on the final location into the laboratory.



Technical Specifications Igloo -86°C Upright

STORAGE SPECS	UNIT	-86 Igloo U445	-86 Igloo U570	-86 Igloo U830
Capacity	L	445	570	830
Storage capacity	storage racks	15	20	30
	2" cryo boxes	300	400	600
	2ml vials	30.000	40.000	60.000
Footprint	m ²	0.56	0.68	0.93
Vial to footprint	vials/m ²	53.517	58.823	64.516

*model number clarification: Uxxx: U= Upright Type, xxx=liter capacity

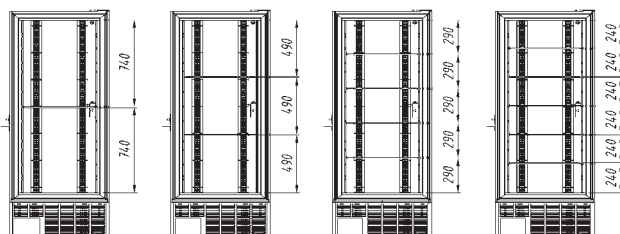


TECHNICAL SPECS	UNIT	-86 Igloo U445	-86 Igloo U570	-86 Igloo U830
Cabinet material	internal	full 304 stainless steel interior		
	external	polyester coated exterior		
Sample throughputs		2 standard ports (+ 2 pre-cut)		
Shelves, inner doors		standard 5 inner doors, 4 shelves		
Weight (uncrated/crated)	Kg	270/302	293/328	352/392
Electricity	V / Hz	220-240 V, 50 Hz (110V /60Hz optional)		
TEMPERATURE SPECS	UNIT	-86 Igloo U445	-86 Igloo U570	-86 Igloo U830
Temperature range	°C	-50 up to -86 (factory set point in -80)		

*model number clarification: Uxxx: U= Upright Type, xxx=liter capacity

Inner door configuration for Uprights

Standard we supply 5 inner doors, 4 shelves (create 5 compartments)



Inner door configurations

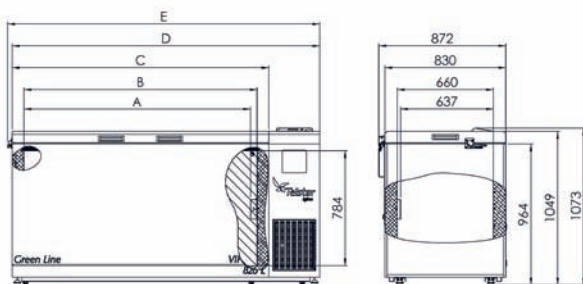
Inner Doors	Shelves	Compartments
2	1	2
3	2	3
6	5	6
5	4	5

Extra shelf including clips

Technical Specifications Igloo -86°C Chest

STORAGE SPECS	UNIT	-86 Igloo C370	-86 Igloo C620	-86 Igloo C820
Capacity	L	370	620	820
	storage racks	20	32	44
Storage capacity	2" cryo boxes	280	448	616
	2ml vials	28.000	44.800	61.600
Footprint	m ²	1.05	1.50	1.84
Vial to footprint	vials/m ²	26.666	29.866	33.478

*model number clarification: Cxxx: C= Chest Type, xxx=liter capacity



	A	B	C	D	E
C370	683	725	885	1235	1267
C620	1158	1200	1360	1710	1742
C820	1558	1600	1760	2110	2142

TECHNICAL SPECS	UNIT	-86 Igloo C370	-86 Igloo C620	-86 Igloo C820
Cabinet material	internal	full 304 stainless steel interior		
	external	polyester coated exterior		
Sample throughputs		2 standard ports (+ 1 pre-cut)		
Weight (uncrated/crated)	Kg	180/200	220/250	285/325
Electricity	V / Hz	220-240 V, 50 Hz (110V /60Hz optional)		
TEMPERATURE SPECS	UNIT	-86 Igloo C370	-86 Igloo C620	-86 Igloo C820
Temperature range	°C	-50 up to -86 (factory set point in -80)		

*model number clarification: Cxxx: C= Chest Type, xxx=liter capacity

Technical Specifications Igloo -45°C Upright & Chest

Basically the specifications of Igloo -45°C Upright & Chest models are equal to the specifications of the Igloo -86°C Upright & Chest models. Below a table with basic differences.

TECHNICAL SPECS	UNIT	-45 Igloo U445	-45 Igloo U570	-45 Igloo U830
Weight (uncrated/crated)	Kg	248/280	271/306	330/370
Temperature range	°C	-20 up to -45 (factory set point in -40)		
	UNIT	-45 Igloo C370	-45 Igloo C620	-45 Igloo C820
Weight (uncrated/crated)	Kg	158/178	198/228	263/303
Temperature range	°C	-20 up to -45 (factory set point in -40)		

*model number clarification: Cxxx: C= Chest Type, xxx=liter capacity

*model number clarification: Uxxx: U= Upright Type, xxx=liter capacity



Why Igloo simply is the right answer to cold storage:

- VIP insulation creates most vials per m2.
- Lowest power consumption.
- Ecological, green refrigerants.
- Superior temperature performance and uniformity.
- Eye level control and alarm system with graphs and event-log.
- Low Noise level.
- Fast door opening due to pressure equalisation port.
- Large, easy-grip door handle.
- Reversible door hinge system.
- Standard stainless steel interior.
- Insulated inner doors, flexible to choose 2, 3, 5 or 6 inner doors

Options and Accessories

Storage racks

RACK TYPE	Box size	Boxes / Rack	Fit in freezer model (total)
Side opening	2" / 50mm	20	U445 (15 racks)/ U570 (20 racks) / U830 (30 racks)
	3" / 75mm	12	U445 (15 racks)/ U570 (20 racks) / U830 (30 racks)
	2" / 50mm	14	C370 (20 racks) / C620 (32 racks) / C820 (44 racks)
	3" / 75mm	9	C370 (20 racks) / C620 (32 racks) / C820 (44 racks)
Sliding shelves	2" / 50mm	20	U445 (15 racks)/ U570 (20 racks) / U830 (30 racks)
	3" / 75mm	12	U445 (15 racks)/ U570 (20 racks) / U830 (30 racks)

* all other racks are available on request (micro plate racks, etc)

CRYO BOXES	
	Polypropylene 2" box with 9 x 9 grid divider
	Polypropylene 3" box with 9 x 9 grid divider
	Cardboard storage 2" box (excl. dividers)
	Cardboard storage 3" box (excl. dividers)



DIVIDERS TO FIT IN CARDBOARD BOXES	
	Storage box divider 7 x 7, 16 mm, 49 cell
	Storage box divider 8 x 8, 14 mm, 64 cell
	Storage box divider 9 x 9, 13 mm, 81 cell
	Storage box divider 10 x 10, 12 mm, 100 cell



OTHER ACCESSORIES	
	Chart recorder, circular, 7 day
	Recorder paper (package with 52 pieces)
	Ink pens for recorder (package with 6 pieces)
	CO2 backup system Uprights (maintains temperature down to -67°C)
	CO2 backup system Chests (maintains temperature down to -67°C)
	LN2 backup system Uprights (maintains temperature down to -80°C)
	LN2 backup system Chests (maintains temperature down to -80°C)
	Water cooled condenseco
	Factory filled in IQ/OQ protocol package
	Cryo gloves small medium
	Cryo gloves large L
	Alarm battery kit for 72 hours
	Software to connect to PC with RS485
	Wireless Lab Plug In option
	Independent temperature data logging and alarm with data readout by USB port



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