Technology.
Science.
Life.

Telstar.
A SYNTEGON COMPANY

Boreas

Green Line VIP Insulation

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



- Low noise level
- Low energy consumption
- Full stainless steel interior
- 100% pure natural refrigerants
- Easy to grip handle-door

RESEARCH & MEDICAL

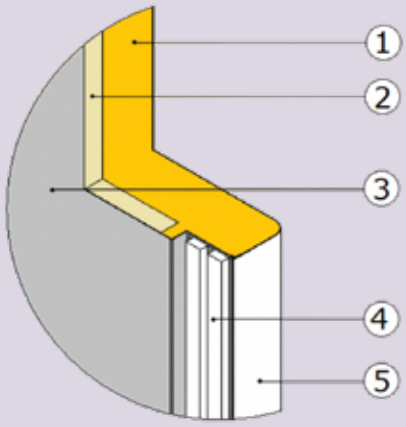
Boreas

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 +30°C. Additionally the thin insulation increases the storage capacity up to 30%.





VIP insulation of Boreas:
1. PU Foam
2. Vacuum Insulation Panel (VIP)
3. Stainless Steel interior
4. Double door Seal
5. Polyester Coated paint



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

Taking real care for the environment

Safety for your samples is most important, but also a good care of the environment must be considered. That's why Telstar standard uses ecological refrigerants in its freezers. Unlike the traditional used mixed synthetic potent greenhouse effect 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.

Low sound level and low power consumption

The Boreas 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 minimal power consumption and noise levels around 50 dB(A). This fact is registered according NEN-EN-ISO 11202.

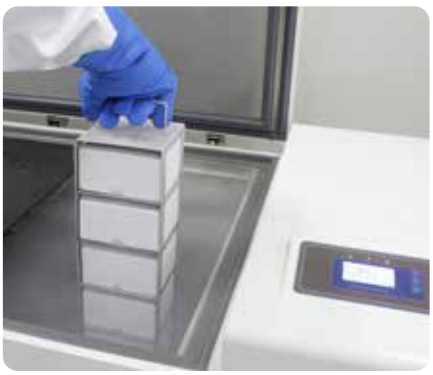
User friendly access to your samples

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.



Top class temperature performances

Telstar developed a freezer using low 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.



Flexible sample storage

As a standard the Upright Boreas series are equipped with a 5 compartment configuration to efficiently store the standard racking systems. The inner doors are well insulated with 20 mm PU foam and are colour coded.
For all Boreas series, to ensure the highest quality standards , the inner chamber is made of stainless steel. This means not only stainless steel inside walls, but also stainless steel shelves, inside of the main door and even the inner doors.

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 screen
  - 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
- Ambient temperature indication and alarm
- Clean condenser filter alarm;
- Door alarm (also for CO_2 or LN_2 backup System)
- RS485 port for optional data transfer to computer (Boreas Logger
- program required)
- Service friendly plug & play detachable cable housing
- Selection for running optimum mode or economy mode

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Technical Specifications Boreas -86°C Upright

STORAGE SPECS	UNIT	-86 °C Boreas U445	-86 °C Boreas U570	-86 °C Boreas 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 °C Boreas U445	-86 °C Boreas U570	-86 °C Boreas 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 (60Hz optional)		
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 supply 5 inner doors, 4 shelves (create 5 compartments)

Technical Specifications Boreas -86°C Chest

STORAGE SPECS	UNIT	-86 °C Boreas C370	-86 °C Boreas C620	-86 °C Boreas C820
Capacity	L	370	620	820
Storage capacity	storage racks	20	32	44
	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

TECHNICAL SPECS	UNIT	-86 °C Boreas C370	-86 °C Boreas C620	-86 °C Boreas C820
Cabinet material	internal	full 304 stainless steel interior		
	external	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 (60Hz optional)		
Temperature range	°C	-50 up to -86 (factory set point in -80)		

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

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Features and Benefits



Storage capacity & flexibility:

- Large sample storage capacity per footprint
- Reinforced stainless steel shelves

All options are standard:

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





Assured reliability:

- Using certified components sourced across the globe
- Self diagnostic and multiple alarm system on eye level
- Perfect Fit door double sealing system







Top class Cooling Performances:

- Rapid cooldown and recovery time
- Superior insulation by vacuum insulation panels

Ergonomic Design:

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

Environmental friendly:

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







Service friendly:

- Easy filter cleaning
- Accessibility for electronics

Boreas

Why Boreas simply is the right answer to cold storage:

- VIP insulation creates most vials per m².
- Low 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.
- Standard stainless steel interior.

Options and Accessories

Storage racks

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

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 -80oC)
	LN2 backup system Chests (maintains temperature down to -80oC)
	Water cooled condenser
	IQ/OQ protocol package
	Alarm battery kit for 72 hours
	Software to connect to PC with RS485
	Independent temperature data logging and alarm with data readout by USB port





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