**Features and Benefits**

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

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**Why Boreas 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.
- Standard stainless steel interior.

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**Options and Accessories**

**Storage racks**

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<th>Option Type</th>
<th>Box Size</th>
<th>Boxes / Rack</th>
<th>Fit in Freezer model (total)</th>
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**Options and Accessories**

- **Side opening 2” / 50mm:**
  - U445 (15 racks) / U570 (20 racks) / U830 (30 racks)
- **Side opening 3” / 75mm:**
  - U445 (15 racks) / U570 (20 racks) / U830 (30 racks)
- **Sliding shelves 2” / 50mm:**
  - U445 (15 racks) / U570 (20 racks) / U830 (30 racks)
- **Sliding shelves 3” / 75mm:**
  - U445 (15 racks) / U570 (20 racks) / U830 (30 racks)

For more information and options, please visit www.telstar.com or contact sales.laboratory@telstar.com.
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 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 handings. Security is safeguarded by a cylinder lock which 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 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.

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. Telstar is the only one offering a true stainless steel interior in the market. This means not only stainless steel inside wall, but also stainless steel shelves, inside of the main door and even the inner doors.

Flexible sample storage

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

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 gases, Telstar is a pioneer in using 100% pure natural refrigerants. CFC, HCFC and HFC free. Of course the hydrocarbon standard uses ecological refrigerants in its freezers. Unlike the traditional used mixed synthetic potent greenhouse gases.

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%.

More samples, less footprint

Laboratory space is valuable. In comparison with the traditional freezers, Telstar frees you from 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%.

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Flexible sample storage

A heated vacuum equalisation port allows smooth door openings even when the door is opened multiple times.
User friendly access to your samples

In practice a breather 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 lower 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 allows an additional padlock to be attached when more security is needed.

Flexible sample storage

As a standard the Upright Boreas series are the best equipped with security in mind. The inner doors are well insulated with 20 mm PU foam and are colour coded.

Racking systems. The inner doors are well insulated with 20 mm PU foam and are colour coded.

As a standard the Upright Boreas series are equipped with a 5 compartment configuration to efficiently store the standard vial to footprint ratios.

Features of monitoring & alarm system

• Bright, easy to read, digital display
• Readout options in 1 and 0,1ºC increments (accuracy)
• Password protected menu’s
• Different levels of authorization, user, parameters and engineering menu
• Adjustable temperature warnings
• Available with high/low temperature报警
• Door alarm (also for CO2 or LN2 backup System)
• Clean condenser filter alarm;
• Ambient temperature indication and alarm
• Voltage indication
• Power outage alarm with battery back up
• Audible and visual high/low temperature alarm
• Different levels of authorization, user, parameters and engineering menu
• Password protected menu’s
• Readout option in 1 and 0,1ºC increments (accuracy)
• Bright, easy to read, digital display

Technical Specifications Boreas -86°C Upright /

STORAGE SPECS UNIT -86 Boreas U445 -86 Boreas U570 -86 Boreas U830

Storage Capacity (Standard) L 445 570 830

Sample throughputs 2 standard ports (+1 pre-cut)

Cabinet material internal full 304 stainless steel interior

Storage capacity 2” cryo boxes 300 400 600

Vial to footprint vials/m2 26.666 29.866 33.478

Footprint m2 0.56 0.68 0.93

Storage racks 15 20 30

Sample capacity L 445 570 830

Footprint m2 1.05 1.50 1.84

2ml vials 28.000 44.800 61.600

Weight (uncrated/crated) Kg 270/302 293/328 352/392

Compactness 0.37 0.38 0.41

Temperature range oC -50  up to -86 (factory set point in -80)

Technical Specifications Boreas -86°C Chest /

STORAGE SPECS UNIT -86 Boreas C370 -86 Boreas C620 -86 Boreas C820

Storage capacity (Standard) L 370 620 820

Sample throughputs 2 standard ports (+2 pre-cut)

Cabinet material internal full 304 stainless steel interior

Storage capacity 2” cryo boxes 300 400 600

Vial to footprint vials/m2 26.666 29.866 33.478

Footprint m2 1.05 1.50 1.84

Sample capacity L 445 570 830

Footprint m2 1.05 1.50 1.84

2ml vials 28.000 44.800 61.600

Weight (uncrated/crated) Kg 270/302 293/328 352/392

Compactness 0.37 0.38 0.41

Temperature range oC -50  up to -86 (factory set point in -80)
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 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 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 performance. 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 3 compartment configuration 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. 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.

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

Technological solution for monitoring and alarm system

A wide range of features are available.

Features of monitoring & alarm system

- Bright, easy to read, digital display
- Readout options in 1 and 0.1ºC increments (accuracy)
- Password protected menu's
- Different levels of authorisation, user, parameters and engineering menu
- Adjustable temperature set points;
- Adjustable high alarm and low alarm set points
- Adjustable low alarm
- Adjustable high alarm
- Adjustable alarm mode:
- Ambient, frost, battery backup
- Fan failure
- Door alarm
- Power alarm
- Other alarms
- Temperature alarm
- Ambient alarm
- Display angle
- Year
- Month
- Day
- Voltage indication
- Power outage alarm with battery back up
- Adjustable temperature set points;
- Adjustable high alarm and low alarm set points
- Adjustable low alarm
- Adjustable high alarm
- Adjustable alarm mode:
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- Other alarms
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- Power outage alarm with battery back up
- Adjustable temperature set points;
- Adjustable high alarm and low alarm set points
- Adjustable low alarm
Features and Benefits

Top class Cooling Performances:
- Dual compressors and automatic balance
- Superior insulation by vacuum insulation panels

Environmental friendly:
- Natural ecological, green refrigerants
- Low power consumption
- Low noise level

Service friendly:
- Easy filter cleaning
- Accessibility for electronics

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

Why Boreas 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 graph 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

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<thead>
<tr>
<th>Rack Type</th>
<th>Box Size</th>
<th>Boxes / Rack</th>
<th>Fit in Freezer model (total)</th>
</tr>
</thead>
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<tr>
<td>Side opening</td>
<td>2” / 50mm</td>
<td>20</td>
<td>U845 (15 racks) / U570 (20 racks) / U380 (30 racks)</td>
</tr>
<tr>
<td>Side opening</td>
<td>3” / 75mm</td>
<td>12</td>
<td>U845 (15 racks) / U570 (20 racks) / U380 (30 racks)</td>
</tr>
<tr>
<td>Sliding shelves</td>
<td>2” / 50mm</td>
<td>20</td>
<td>U445 (15 racks) / U570 (20 racks) / U830 (30 racks)</td>
</tr>
<tr>
<td>Sliding shelves</td>
<td>3” / 75mm</td>
<td>12</td>
<td>U445 (15 racks) / U570 (20 racks) / U830 (30 racks)</td>
</tr>
</tbody>
</table>

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 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

Why Boreas simply is the right answer to cold storage:
- Standard stainless steel interior.
- Low noise level.
- Low energy consumption.
- Full stainless steel interior.
- 100% pure natural refrigerants.
- Easy to grip handle-door.
- Top class Cooling Performances.
- Environmental friendly.
- Service friendly.
- Ergonomic Design.

Storage capacity & flexibility:
- Large sample storage capacity per footprint
- Reinforced stainless steel shelves

Assured reliability:
- Using certified components sourced across the world
- Self diagnostic and multiple alarm system on eye level
- Perfect fit door double sealing system

Other options are standard:
- Pressure equalization valve
- ≤ 3 separate shelves
- Stainless steel interior
- Doors, -30°C solution

Telstar reserves the right to improvements and specifications changes without notice.
Features and Benefits

Highest reliability:
- Using the most reliable components available in the world
- Single alarm system on eye level
- Perfect fit door double sealing system
- Full stainless steel interior
- 100% pure natural refrigerants
- Easy to grip handle-door
- Low noise level
- Low energy consumption
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Storage capacity & flexibility:
- Largest sample storage capacity per footprint
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Options and Accessories

Storage racks

<table>
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<tr>
<th>RACK TYPE</th>
<th>Box size</th>
<th>Base / Rack</th>
<th>Total in freeze model (total)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Side opening</td>
<td>2&quot; / 50mm</td>
<td>26</td>
<td>U445 (55 racks) / U570 (55 racks) / U830 (55 racks)</td>
</tr>
<tr>
<td></td>
<td>3&quot; / 75mm</td>
<td>9</td>
<td>U445 (55 racks) / U570 (55 racks) / U830 (55 racks)</td>
</tr>
<tr>
<td>Sliding shelves</td>
<td>2&quot; / 50mm</td>
<td>14</td>
<td>C370 (20 racks) / C620 (32 racks) / C820 (44 racks)</td>
</tr>
<tr>
<td></td>
<td>3&quot; / 75mm</td>
<td>9</td>
<td>C370 (20 racks) / C620 (32 racks) / C820 (44 racks)</td>
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Ultra low temperature freezers -86°C
Upright & Chest 370 to 830 liter