The next generation of Blood and Fluid Warming

One of the contributing factors of unintended hypothermia is the intravenous (IV) delivery of cold blood and fluids, resulting in a reduction of the main body temperature by 0.25°C for every litre of IV crystalloid solution administered at room temp (21°C) or with only 1 bag of blood (250 cc) at 5°C.1,2,3

Blood and Fluid Warming can help maintain normothermia and will contribute to a positive patient outcome by providing consistent normothermic blood and fluid at all flow rates. Maintaining the right patient body temperature results in clinical and economic benefits by reducing the length of hospital stay and complications.4,5,6

The 37Company has a complete Blood and Fluid Warming portfolio that offers a safe and controlled technology to consistently deliver warm blood and IV fluids to patients undergoing surgical procedures from low to high flow.

Solutions for Patient Warming
High Flow Warming System

Fluido® AirGuard System is a Blood and Fluid Warming system. It warms blood and IV fluids in only 30 seconds to the desired temperature. The system is suitable for all applications, from standard to high flow.

The Fluido® AirGuard System consists of:
1. Blood and Fluid Warmer
2. Air Guard
3. Pressure Chambers
4. Compressor
5. IV-Pole

Fluido® Pressure Chambers
- 500ml and 1000ml bags
- Pressure Regulator (0-300mmHg)

Fluido® Air Guard
- Air Detection
- Automatic Shut off Clamp
- Cardiac Floating

Fluido® Blood and Fluid Warmer
- Cardiac Floating
- Adjustable set temperature 30 - 39°C
- Flow & volume indicator

Fluido® Compressor
- Silent
- Powerful
- Cardiac Floating

Fluido® IV-Pole
- Integrated Air Tube
- 5 Castors with Brakes
- Stable Design

Plug-in
Prepare
Power On
# Fluido® AirGuard System

**Fluido® Blood and Fluid Warmer** | Article number 651230 - 651115
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Voltage & 220 - 240V~ & 110 - 120V~
Frequency & 50Hz & 60Hz
Power & 6A & 12A
Fuses & 2 x 8AHT/250V & 2 x 15AHT/250V
Capacity & 1400VA
Dimensions & 387mm x 215mm x 255mm
Weight & ± 9.5kg
Set temperature & 30 – 39ºC (end of line)
Unit of temperature increase & 1ºC
Classification (MDD 93/42/EEC) & Class IIb
Classification (IEC 60601-1) & Class I, Cardiac Floating
Classification (IEC 60529) & IPX1

**Fluido® Air Guard** | Article number 660400 - 661400
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Voltage & 220 - 240V~ & 110 - 120V~
Frequency & 50/60Hz & 60Hz
Current & 0.1A & 0.2A
Max. power & 25VA & 25VA
Dimensions & 310mm x 150mm x 190mm
Weight & ± 4.5kg
Classification (MDD 93/42/EEC) & Class IIb
Classification (IEC 60601-1) & Class I, Cardiac Floating
Classification (IEC 60529) & IPX1

**Fluido® Pressure Chambers** | Article number 660300
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Max. overpressure & 300mmHg ± 10%
Dimensions & 370mm x 400mm x 150mm
Weight & ± 4.2kg
Classification (MDD 93/42/EEC) & Class IIA

**Fluido® Compressor** | Article number 660200A
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Voltage & 100 - 240V~
Frequency & 50/60Hz
Current & 0.08 - 0.03A
Max. power & 6 - 16VA
Air flow & 3liter/min (unloaded)
Max. pressure & 1.0bar/750mmHg
Dimensions & 210mm x 150mm x 150mm
Weight & ± 1.3kg
Classification (MDD 93/42/EEC) & Class I
Classification (IEC 60601-1) & Class II, Cardiac Floating
Classification (IEC 60529) & IPX1

**Fluido® IV-Pole** | Article number 660500-B
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Adjustable height & 1914 - 2236mm
Dimensions Pole & ø 38mm
Dimensions Base & ø 630mm
Weight & 13kg
Classification (MDD 93/42/EEC) & Class I

**Watch the Fluido® AirGuard System video**
When administering IV fluids under pressure, it is recommended using a reliable safety mechanism to avoid the risk for air embolism to the patient.

The Fluido® AirGuard System is provided with an ultra-sonic sensor to automatically shut off the IV-line in case air is detected in the bubble trap.

The Fluido® System is warming blood and fluids with IR technology. It is a dry method preventing from the risk of waterborne contamination. The Fluido® disposable sets are interchangeable and move easily with the patient between different Fluido® systems. This allows the caregiver to carry on warming while conveying the patient through different wards with one single disposable and reducing the risk of infection and eliminating additional cost.

Based on in line sensors the Fluido® Blood and Fluid Warmer calculates the required energy to safely warm the perfusates. Algorithms compensate for the heat loss in the patient line to ensure accurate heat adjustment against the set temperature at the end of the line.

**Fluido® Disposable Sets**

**Fluido® Standard Set | Article number 671200**
- Manual air relief
- Patient line (1500mm)
- Max. flow: 650ml/min
- Normothermic flow: 20 - 400ml/min
- Priming volume: 90ml
- Backflow valve

**Fluido® Trauma Set | Article number 671500**
- Manual air relief
- Patient line (1500mm)
- Administration port
- Max. flow: 800ml/min
- Normothermic flow: 20 - 750ml/min
- Filter: 200µm
- Priming volume: 145ml
- Backflow valve

**Fluido® Trauma Plus Set | Article number 671700**
- Manual air relief
- Patient line (2000mm)
- Administration port
- Max. flow: 1100ml/min
- Normothermic flow: 30 - 650ml/min
- Filter: 200µm
- Priming volume: 155ml
- Backflow valve

The Fluido® sets do not contain natural rubber latex.
Low/Moderate Flow Warming Device

Fluido® Compact is a low to moderate flow Blood and Fluid Warming system. It is easy to use, safe and cost effective with an outstanding performance for daily use.

The Fluido® Compact combines ease of use with low operational costs. The intuitive control panel can be operated with only a single button. The fluid will start warming to 39°C +/- 2°C. There are 2 disposable sets, which allow the IV fluid to reach temperature in 30 seconds, and consists of a cassette and patient line. It is an easy-to-use device to prevent inadvertent perioperative hypothermia and improves patient’s outcome. The device is maintenance free. The Fluido® Compact Blood and Fluid Warming system components have a durable and long-lasting design. The 37Company recommends to conduct an electrical safety test and over temperature alarm test once a year. The disposable sets move easily with the patient between different systems. This allows the caregiver to warm IV fluids for the patient across departments with only one disposable without having to move the warming unit. The embedded software enables maximum patient safety through multiple temperature sensors and an independent safety control system. It provides accurate and safe Blood and Fluid Warming.

“Prime, insert the set, switch on and the Fluido® Compact is ready to use”

<table>
<thead>
<tr>
<th>Fluido® Compact System</th>
<th>Article number 650000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Containing Fluido® Compact Control Module &amp; Fluido® Compact Warming Module</td>
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<table>
<thead>
<tr>
<th>Fluido® Compact Control Module</th>
<th>Article number 650100</th>
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<tbody>
<tr>
<td>Dimensions</td>
<td>285mm x 120mm x 195mm</td>
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<tr>
<td>Weight</td>
<td>&lt; 1700g</td>
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<tr>
<td>Voltage</td>
<td>100 - 240V~ (50/60Hz)</td>
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<td>Max. power</td>
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<td>Classification (IEC 60529)</td>
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<td>Classification (MDD 93/42/EEC)</td>
<td>Class IIb</td>
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<tr>
<th>Fluido® Compact Warming Module</th>
<th>Article number 650200</th>
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<tr>
<td>Dimensions</td>
<td>165mm x 75mm x 50mm</td>
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<tr>
<td>Weight</td>
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<td>Set point temperature</td>
<td>39°C ± 2°C</td>
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<td>Classification (IEC 60529)</td>
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<td>Classification (IEC 60601-1)</td>
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<tr>
<th>Fluido® Compact Standard Set</th>
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<tr>
<td>Priming volume</td>
<td>4ml (5ml with 300mmHg pressure)</td>
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<tr>
<td>Patient line</td>
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<td>Max. flow</td>
<td>≥ 400ml/min²</td>
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<tr>
<td>Normothermic flow</td>
<td>5 - 100ml/min² (300 - 6000ml/h)</td>
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<tr>
<td>Heat exchanger</td>
<td>Parylene coated aluminum plate</td>
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<tr>
<td>Box quantity</td>
<td>120 (4 x 30 pieces)</td>
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<table>
<thead>
<tr>
<th>Fluido® Compact Standard Set with drip chamber</th>
<th>Article number 672100</th>
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<tbody>
<tr>
<td>Priming volume</td>
<td>15ml (16ml with 300mmHg pressure)</td>
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<tr>
<td>Patient line</td>
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<tr>
<td>Max. flow</td>
<td>400ml/min²</td>
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<tr>
<td>Normothermic flow</td>
<td>15 - 100ml/min² (900 - 6000ml/h)</td>
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<tr>
<td>Heat exchanger</td>
<td>Parylene coated aluminum plate</td>
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<tr>
<td>Box quantity</td>
<td>60 (4 x 15 pieces)</td>
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The Fluido® Compact sets do not contain natural rubber latex.
Virtual37®
Temperature Management Tool

Virtual37 is a Temperature Management Tool. This simulation tool offers an innovative and easy way to understand the impact of the warming balance and the warming decisions taken in surgeries.

The 37Company - Solutions for Patient Warming

Our core business is all about offering solutions for patient warming, about keeping patients at a constant healthy body temperature. The 37Company is working with respected medical professionals to accomplish continuous innovation, improve patient outcome and to reduce health care costs. This by providing training, education and economically justified, best-in-class products.

Fluido® and Mistral-Air® are registered trademarks of The Surgical Company International B.V.
Fluido® products are covered by the following European patents: 1313521 and 1446179.
Mistral-Air® Blankets Plus are covered by the following American patent: 12/342,933.

Other patents pending.
Thermoflect® is a registered trademark of Encompass Group, LLC.

Mistral-Air®
Forced Air Warming
Fluido®
Blood and Fluid Warming
Fluido® Irrigation
Fluid Warming
Thermoflect®
Heat Reflective Technology