



The next generation of Blood and Fluid Warming

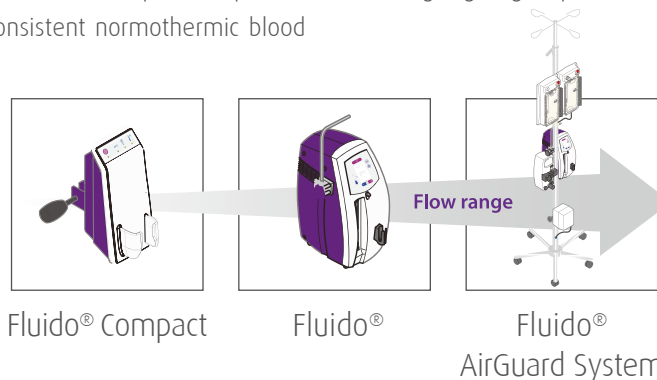


One of the contributing factors of unintended hypothermia is the intravenous (IV) delivery of cold blood and fluids, resulting in a reduction of the main body temperature by 0.25°C for every litre of IV crystalloid solution administered at room temp (21°C) or with only 1 bag of blood (250 cc) at 5°C.^{1,2,3}

Blood and Fluid Warming can help maintaining 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.



The 37° Company
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.



Fluido®

Blood and Fluid Warming

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® IV-Pole

Integrated Air Tube

5 Castors with Brakes

Fluido® Compressor

Silent

Powerful

Cardiac Floating

Stable Design



- 1** Plug-in
- 2** Prepare
- 3** Power On

Fluido® AirGuard System



Fluido® Blood and Fluid Warmer | Article number 651230 - 651115

Voltage	220 - 240V~	110 - 120V~
Frequency	50Hz	60Hz
Power	6A	12A
Fuses	2 x 8AHT/250V	2 x 15AHT/250V
Capacity	1400W	
Dimensions	387mm x 215mm x 255mm	
Weight	± 9.5kg	
Set temperature	30 – 39°C (end of line)	
Unit of temperature increase	1°C	
Classification (MDD 93/42/EEC)	Class IIb	
Classification (IEC 60601-1)	Class I, Cardiac Floating (CF)	
Classification (IEC 60529)	IPX1	



Fluido® Air Guard | Article number 660400 - 661400

Voltage	220 - 240V~	110 - 120V~
Frequency	50/60Hz	60Hz
Current	0,1A	0,2A
Max. power	25W	25W
Dimensions	310mm x 150mm x 190mm	
Weight	± 4.5kg	
Classification (MDD 93/42/EEC)	Class IIb	
Classification (IEC 60601-1)	Class I, Cardiac Floating (CF)	
Classification (IEC 60529)	IPX1	



Fluido® Pressure Chambers | Article number 660300

Max. overpressure	300mmHg ± 10%
Dimensions	370mm x 400mm x 150mm
Weight	± 4.2kg
Classification (MDD 93/42/EEC)	Class IIa



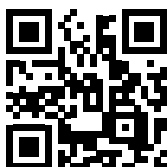
Fluido® Compressor | Article number 660200A

Voltage	100 - 240V~
Frequency	50/60Hz
Current	0,08 - 0,03A
Max. power	6 - 16W
Air flow	3liter/min (unloaded)
Max. pressure	1.0bar/750mmHg
Noise level	33dBA
Dimensions	210mm x 150mm x 150mm
Weight	± 1.3kg
Classification (MDD 93/42/EEC)	Class I
Classification (IEC 60601-1)	Class II, Cardiac Floating (CF)
Classification (IEC 60529)	IPX1



Fluido® IV-Pole | Article number 660500-B

Adjustable height	1914 - 2236mm
Dimensions Pole	ø 38mm
Dimensions Base	ø 630mm
Castors	5, anti-static, latex free, 5 brakes



Watch the Fluido® AirGuard System video

-  **Safety**
-  **Speed**
-  **Control**

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/min⁷

Normothermic flow: 20 - 400ml/min⁸

Priming volume: 90ml

Backflow valve

Fluido® Trauma Set | Article number 671500

 Manual air relief

 Patient line (1500mm)

 Administration port

Max. flow: 800ml/min⁷

Normothermic flow: 20 - 750ml/min⁸

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/min⁷

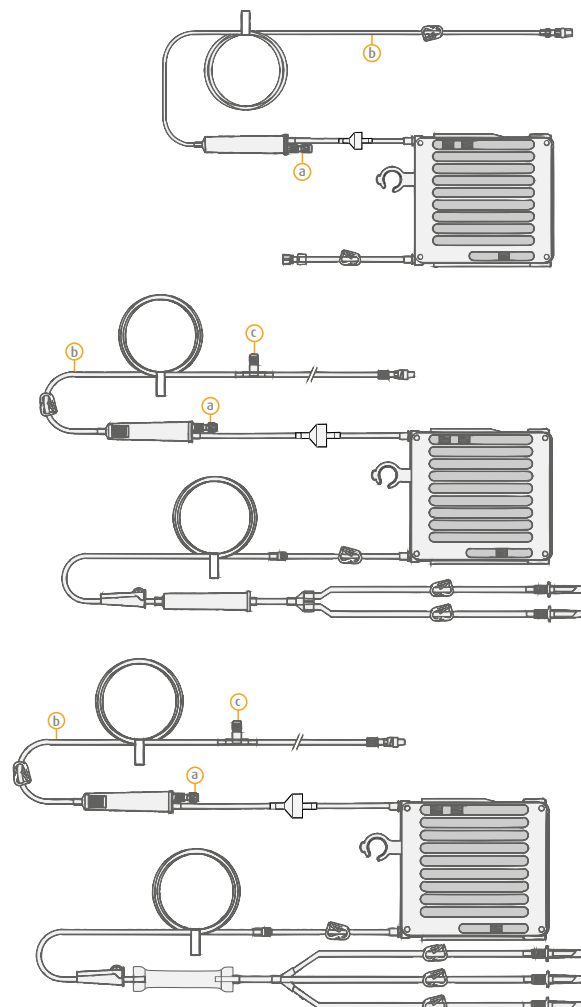
Normothermic flow: 30 - 650ml/min⁸

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.



Fluido® Compact
Blood and Fluid Warming

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”



Fluido® Compact System | Article number 650000

Containing Fluido® Compact Control Module & Fluido® Compact Warming Module

Fluido® Compact Control Module | Article number 650100

Dimensions	285mm x 120mm x 195mm
Weight	1700g
Voltage	100 - 240V~ (50/60Hz)
Max. power	160W
Classification (IEC 60529)	IPX1
Classification (IEC 60601-1)	Class II
Classification (MDD 93/42/EEC)	Class IIb

Fluido® Compact Warming Module | Article number 650200

Dimensions	165mm x 75mm x 50mm
Weight	450g
Temperature range	39°C ± 2°C
Classification (IEC 60529)	IPX4
Classification (IEC 60601-1)	Class II, BF
Classification (MDD 93/42/EEC)	Class IIb

Fluido® Compact Standard Set | Article number 672000

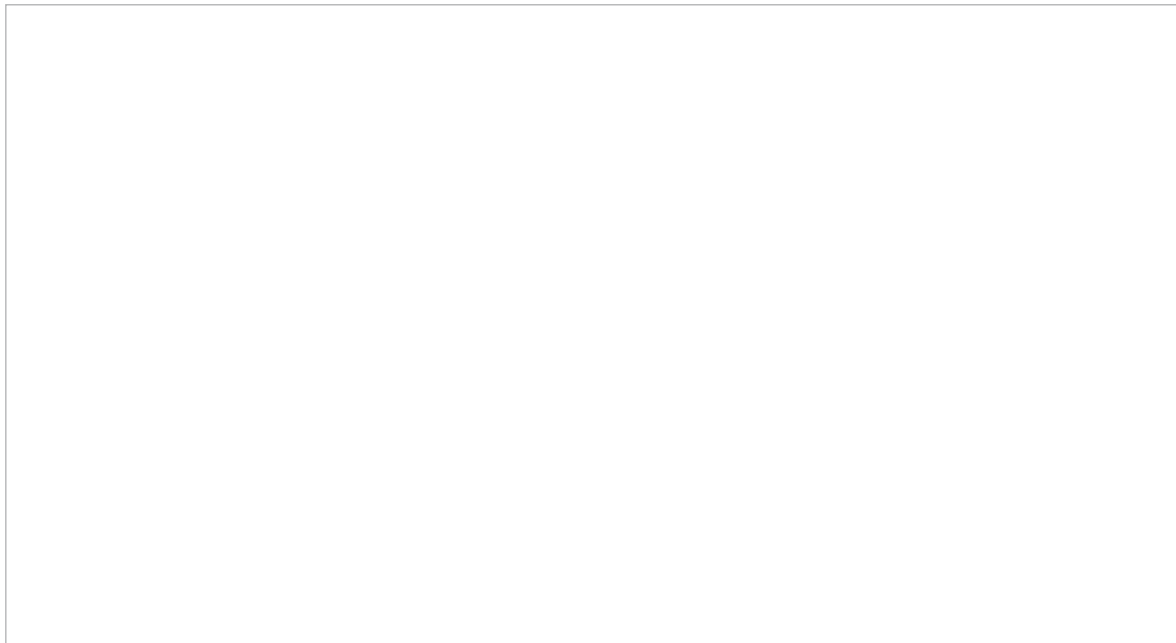
Priming volume	3ml
Patient line	400mm
Max. flow	400ml/min ⁷
Normothermic flow	5 - 100ml/min ⁸ (300 - 6000ml/h)
Heat exchanger	Parylene coated aluminum plate
Box quantity	120 (4 x 30 pieces)

Fluido® Compact Standard Set with drip chamber | Article number 672100

Priming volume	16ml
Patient line	700mm
Max. flow	400ml/min ⁷
Normothermic flow	8 - 100ml/min ⁸ (480 - 6000ml/h)
Heat exchanger	Parylene coated aluminum plate
Box quantity	60 (4 x 15 pieces)



The Fluido® Compact sets do not contain natural rubber latex.



- ¹ Sessler,D.,Mild perioperative hypothermia. N Engl J Med, June 1997, 336(24):1730-1737
- ² Evans J.W, Singer M. , Coppinger S.W. et al., Cardiovascular performance and core temperature during transurethral postastectomy, J. Urol 1994, 152:2025-9
- ³ ECRI Report, Warming Units, Blood/Solution, December 2002
- ⁴ Luna G.K., et al., Incidence and Effect of Hypothermia in Seriously Injured Patients, The Journal of Trauma (1987)
- ⁵ Jurkovich G.J., Hall G.M., Hypothermia in trauma victims: An ominous predictor of survival, The Journal of Trauma (1987)
- ⁶ Kurz A., Sessler D., Lenhardt R., Perioperative normothermia to reduce the incidence of surgical-wound infection and shorten hospitalization. Study of Wound Infection and Temperature Group, New England Journal of Medicine (1996) 334: 1209-15
- ⁷ Free flow with 300 mmHg
- ⁸ Incoming fluid temperature of 20°C, normothermic flow between 36°C and 37.5°C

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 tool has been validated by University Hospital Ghent, Belgium.

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