



Fluido[®]

Blood and Fluid Warming

by anandic

The next generation of
Blood and Fluid Warming



The Surgical
Company

Specialization through Innovation

UNINTENDED HYPOTHERMIA

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 500 cc of blood 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 Surgical Company 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.

HIGH FLOW

Fluido® AirGuard System is a Blood and Fluid Warming system. It warms to normothermic fluid temperature at high flow rates in only 100 seconds⁷. The system is suitable for all applications, from moderate to high flow.

Fluido® AirGuard System

Blood and Fluid Warming

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

Cardiac Floating

Air Detection

Automatic Shut off Clamp

Fluido® Blood and Fluid Warmer

Cardiac Floating

Adjustable Temperature Setpoint 30 - 39°C

Flow & Volume Indicator

Fluido® IV-Pole

Integrated Air Tubing

Latex Free, Anti-Static Castors with Brakes

Stable Design

Fluido® Compressor

Cardiac Floating

Silent

Powerful



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
Current	6A	12A
Max. power	1400VA	
Dimensions	435 x 250 x 315mm	
Weight	9.5kg	
Temperature setpoint	30 - 39°C	
Unit of temperature setpoint increase	1°C	
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

Voltage	220 - 240V~	110 - 120V~
Frequency	50/60Hz	60Hz
Current	0.1A	0.2A
Max. power	25VA	
Dimensions	310 x 150 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

Max. overpressure	300mmHg ± 10%
Dimensions	370 x 400 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 - 16VA
Air flow	3l/min (unloaded)
Max. pressure	1.0bar/750mmHg
Dimensions	210 x 150 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

Adjustable height	1920 - 2230mm ±10mm
Dimensions Pole	ø 38mm
Dimensions Base	ø 740mm
Weight	13kg
Castors	5, anti-static, latex free, 5 brakes



Watch the Fluido® AirGuard System video

SAFETY

SPEED

CONTROL

When administrating 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.

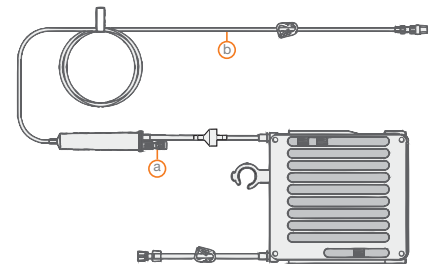
The Fluido® System is warming blood and fluids with infrared technology. It is a dry method, preventing risks of waterborne contamination. The Fluido® disposable sets are interchangeable and move easily with the patient between different Fluido® systems. This allows the caregiver to carry on warming 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.

FLUIDO® DISPOSABLE SETS

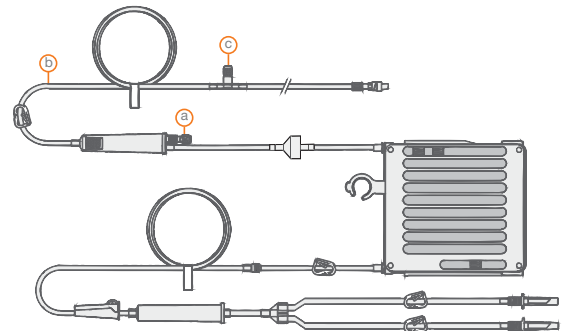
Fluido® Standard Set | Article number 671200

- ⓐ Manual air relief
- ⓑ Patient line (1500mm)
- Max. flow: 400ml/min⁹
- Normothermic flow: 20 - 400ml/min⁹
- Priming volume: 90ml
- Backflow valve



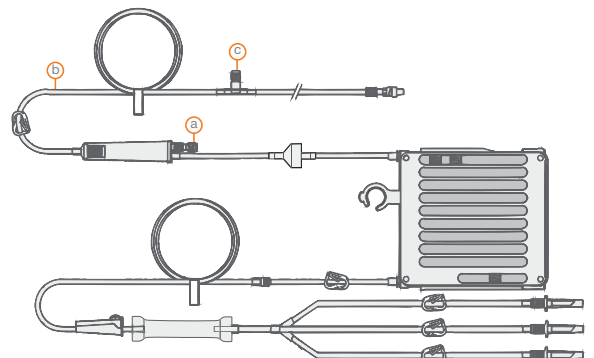
Fluido® Trauma Set | Article number 671500


- ⓐ Manual air relief
- ⓑ Patient line (1500mm)
- ⓒ Administration port
- Max. flow: 800ml/min⁹
- Normothermic flow: 20 - 750ml/min⁹
- Filter: ISO 1135-5 Compliant
- Priming volume: 145ml
- Backflow valve



Fluido® Trauma Plus Set | Article number 671700

- ⓐ Manual air relief
- ⓑ Patient line (2000mm)
- ⓒ Administration port
- Max. flow: 900ml/min⁹
- Normothermic flow: 30 - 650ml/min⁹
- Filter: ISO 1135-5 Compliant
- Priming volume: 155ml
- Backflow valve



 The Fluido® sets do not contain natural rubber latex.

LOW/MODERATE FLOW

Fluido® Compact

Blood and Fluid Warming

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 disposable set consists of a cassette, a 400mm long patient line and is also available with a 700mm long patient line, a drip chamber and an access point. 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	285 x 120 x 195mm
Weight	< 1700g
Voltage	100 - 240V~ (50/60Hz)
Max. power	160W
Classification (MDD 93/42/EEC)	Class IIb
Classification (IEC 60601-1)	Class II, Body Floating
Classification (IEC 60529)	IPX1

Fluido® Compact Warming Module | Article number 650200

Dimensions	165 x 75 x 50mm
Weight	< 450g
Temperature setpoint	39°C
Classification (MDD 93/42/EEC)	Class IIb
Classification (IEC 60601-1)	Class II, Body Floating
Classification (IEC 60529)	IPX4

Fluido® Compact Standard Set | Article number 672000

Priming volume	4ml (5ml with 300mmHg pressure)
Patient line	400mm
Max. flow	400ml/min ⁹
Normothermic flow	5 - 100ml/min ⁹ (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	15ml (16ml with 300mmHg pressure)
Patient line	700mm
Max. flow	400ml/min ⁹
Normothermic flow	15 - 100ml/min ⁹ (900 - 6000ml/h)
Heat exchanger	Parylene coated aluminum plate
Box quantity	60 (4 x 15 pieces)

**The Surgical Company -
Specialization through Innovation**
Our Patient Temperature Management product portfolio is all about offering solutions for patient warming, about keeping patients at a constant healthy body temperature.
The Surgical Company 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.

- 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 prostatectomy. 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 Incoming fluid temperature of 20°C, flow rate 650ml/min
- 8 Free flow with 300 mmHg
- 9 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.



Broncoflex®
Single-use Bronchoscope

Mistral-Air®
Forced Air Warming

Fluido®
Blood and Fluid Warming

Fluido® Irrigation
Fluid Warming

Sensium®
Wireless Vitals Monitoring

Thermoflect®
Heat Reflective Technology

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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.

Images shown, may differ from the actual product

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